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세계일류상품

# CUTTING TOOLS

HOLEMAKING THREADING MILLING TOOLING SYSTEM

钻削工具 / 螺纹工具 / 铣削工具 / 刀具系统

www.yg1.kr

YG-1 CO., LTD.

# CUTTING TOOLS

钻削工具 / 螺纹工具 / 铣削工具 / 刀具系统

# Guide Line to Icons
## 标记的说明

YG-1 CO., LTD.

## GUIDE LINE TO ICONS 标记的说明

### Tool Material 工具材质

- CBN — Cubic Boron Nitride 立方氮化硼
- CARBIDE — Carbide 硬质合金
- HSS PM — YG-1 Premium Powder Metallurgy HSS YG-1超细粉末高速钢
- PM 60 — Powder Metallurgy HSS 粉末高速钢
- HSS Co8 — 8% Cobalt HSS 含钴8%的高速钢
- HSS-E — 5% Cobalt HSS 含钴5%高速钢
- HSS — High Speed Steel 高速钢

### Standard of Tools 道具标准

- YG STD — YG-1 Standard YG-1标准号
- DIN 327 / DIN 844 / DIN 1889 — Number of DIN Standard DIN标准号
- JIS / JIS II / JIS III — Number of JIS Standard JIS标准号

### No. of Flute 钻顶角

- 2
- 3
- 3&4
- 4-6

### Point Angle 钻顶角

- 120°
- 135°
- 140°
- 180°

### Cutting Condition 切削条件

- End mills 铣刀
- Drills 钻头
- Taps 丝锥
- Reamers 绞刀
- Countersinks 深孔

### Helix Angle 螺旋角

- 30° / 30° — End mills 铣刀
- 30° / N 20~30° — Drills 钻头
- R40 / R45 — Taps 丝锥
- LH7° / LH45° — Reamers 绞刀

### The Type of Shank 柄形

- PLAIN / DIN 6535HA — Plain shank 直柄 (with DIN Standard)
- FLAT / DIN 6535HB — Flat shank 槽柄 (with DIN Standard)
- 1~5 — Range of Morse Taper Shank 削平柄

### Tolerance of Radius 半径公差

- R ±0.005 / R ±0.01 — Tolerance of Ball Radius ±0.005, ±0.01 mm 球头半径公差
- R ±0.010 / R ±0.015 — Tolerance of Corner Radius ±0.005, ±0.015 mm 圆角公差

### Tolerance of Dimension 尺寸公差

- m7 / h8 — Tolerance of Outside Diameter 外径公差
- h7 / h8 — Tolerance of Shank Diameter 柄部公差

### Chamfer Angle 倒角

- 15° / 45° — Reamers 绞刀

### O.D. Tolerance of Reamer 绞刀的外径公差

- H7 — DIN 1420 for H7 Reamed Hole

# GUIDE LINE TO ICONS

## Surface Treatment 表面处理

- BLUE — YG-1 Blue-Coating 蓝色涂层
- X-Coating — YG-1 X-Coating YG-1 X-涂层
- Z-Coating — YG-1 Z-Coating YG-1 Z-涂层
- Y-Coating — YG-1 Y-Coating YG-1 Y-涂层
- Diamond — Diamond Coating 金刚石涂层
- AlTiN — Aluminum Titanium Nitride Coating 铝氮化钛涂层
- TiAlN — Titanium Aluminum Nitride Coating 氮化铝钛涂层
- DLC — Diamond-Like Carbon Coating 类金刚石涂层
- Uncoated — Non coated 无涂层
- Hardslick — TiAlN + WC/C Coating TiAlN + WC/C涂层
- TiN — Titanium Nitride Coating 氮化钛涂层
- TiCN — Titanium Carbon Nitride Coating 氮碳化钛涂层
- Homo — Steam Tempered 氧化处理 (Black Oxide finish)
- Bright — Bright Finish 白色

## Chamfer Lead Acc. 倒角长度遵循

- 2.0P/4.0P 1.5P/5.0P/9.0P — Set of Hand Taps 成套手用丝锥
- 2.5P 4.0P 5.0P — Chamfer Lead 倒角长度

## Class of Thread 螺纹等级

YH | GH | ANSI | ANSI G

## Thread Angle 螺纹角

60° | 55°

## The Type of Periphery 外缘类型

- NR — Roughing - Coarse 粗加工用，粗齿
- WR — Roughing - Aluminium 粗加工铝用
- NF — Roughing & Finishing 粗&精加工用
- HR — Roughing - Fine 粗加工用，细齿

## Coolant Supply Pressure 冷却压力

- 45 bar — Internal Coolant Suppy at 45 bar average pressure 内冷压力平均45Bar
- 20 bar — Internal Coolant Suppy at 20 bar average pressure 内冷压力平均20Bar

## Working Material 切削工件

- Material groups GS — Steels with good machinability Rm<850N/mm² 易加工钢
- Material groups VG — Heat treated and heat-resistant steels 850N/mm² ≤Rm≤1,200N/mm² 热处理和不导热钢
- Material groups HR — High alloyed steels Rm>1,200N/mm² 高合金钢
- Material groups VA — Stainless steels 不锈钢
- Material groups NW — Carbon steels with low contents of alloys Rm<700N/mm² 低合金钢
- Material groups Ti — Titanium alloys 钛合金
- Material groups Ni — Nickel alloys 镍合金
- Material groups GV — Any material with at least 8~10% elongation 具有8-10%延展性材料
- Material groups Al — Aluminum & Aluminum alloys 铝及铝合金
- Material groups GG — Grey Cast Iron 灰铸铁
- Material groups Ms — Brass 黄铜
- Material groups MU — Multi-Purpose 多功能

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Certificate
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# HOLEMAKING TOOLS


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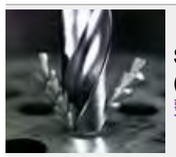
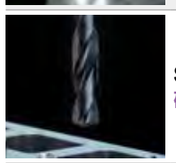
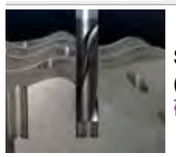
|---|---|---|
| **i-ONE DRILLS, CARBIDE INSERTS & HOLDERS**<br>i-One钻，硬质合金刀片&刀柄 | High Performance Exchangeable for General Steels and Cast Iron<br>钢 铸铁用高性能可换 钻头 | **A21** |
| **i-DREAM DRILLS, CARBIDE INSERTS & HOLDERS**<br>i-梦幻钻，硬质合金刀片&刀柄 | For General Steels and Stainless Steels<br>适用于普通钢和不锈钢 | **A39** |
| **SOLID CARBIDE DREAM DRILLS - PRO**<br>硬质合金, 梦幻钻头 - PRO | - For General Purpose (HRc30 to HRc50)<br>- Extremely high hardness and heat resistance due to YG-1 special Z-Coating technology<br>- 普通用途通常是HRc30 到 HRc50<br>- 采用YG-1特殊的 Z 涂层技术，具有超高的硬度和耐热性 | **A61** |
|  **SOLID CARBIDE DREAM DRILLS - GENERAL (with & without Coolant Holes)**<br>整体硬质合金梦幻钻头 - 普通 | For General Purpose (HRc30 to HRc50)<br>普通用途通常是HRc30 ~ HRc50 | **A77** |
|  **SOLID CARBIDE DREAM DRILLS - SOFT**<br>硬质合金, 梦幻钻头 - 软材质用 | For Steels, up to Medium Hardness<br>用于中等硬度钢 | **A101** |
| **SOLID CARBIDE DREAM DRILLS - HIGH FEED (with Coolant holes)**<br>硬质合金, 梦幻钻头 - 高进给 (带油孔) | 1.5 to 2 Times Faster Feeding Speed than 2-Flute Drill for Carbon Steels, Alloy Steels(up to HRc35) and Cast Iron<br>比2刃钻头进给量1.5到2倍<br>用于碳钢, 合金钢(硬度35以下)和铸铁 | **A111** |
|  **SOLID CARBIDE DREAM DRILLS - FLAT BOTTOM (with & without Coolant Holes)**<br>硬质合金梦幻钻头一平底钻 | For Holes on Various Angled Surfaces<br>用于倾斜孔加工 | **A119** |
| **SOLID CARBIDE DREAM DRILLS - INOX (with Coolant Holes)**<br>硬质合金, 梦幻钻头 - INOX (带油孔) | For Tough Materials like Stainless Steels<br>镍合金和钛等硬质材料 | **A131** |
| **SOLID CARBIDE DREAM DRILLS - ALU (with Coolant Holes)**<br>硬质合金, 梦幻钻头 - ALU (带油孔) | For Aluminum and Aluminum Alloys<br>铝和铝合金加工用 | **A143** |





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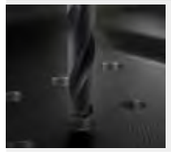
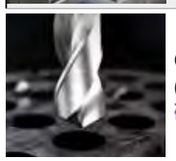
|  **SOLID CARBIDE DREAM DRILLS - CFRP (without Coolant Holes)**<br>硬质合金, 梦幻钻头 - CFRP (带油孔) | For Composite Materials including CFRP and GFRP<br>用于复合材料，含CFRP与GFRP | **A155** |
| **SOLID CARBIDE DREAM DRILLS - MQL TYPE (with Coolant Holes)**<br>油孔硬质合金 梦幻钻头 - MQL类型 (带油孔) | Minimum Quantity Lubrication Drilling Deep Holes (10×D ~ 40×D)<br>MQL (用少量的润滑油)<br>钻深孔 (10D到40D) | **A159** |
| **SOLID CARBIDE DREAM DRILLS for HIGH HARDENED STEELS (without Coolant Holes)**<br>高硬度钢 (HRc50~HRc70) 用硬质合金钻头 | For High Hardened Steels (HRc50 to HRc70)<br>用于硬质合金 (硬度50到70) | **A169** |
|  **GENERAL SOLID CARBIDE DRILLS (JOBBER & STUB LENGTH)**<br>硬质合金钻头 | For General Purpose<br>普通用途 | **A173** |
| **HSS-PM MULTI-1 DRILLS**<br>粉末高速钢 MULTI-1 钻头 | For Wide Range of Applications Particularly Stainless Steels and Titanium<br>广泛用途特别是不锈钢和钛 | **A179** |
| **HSS & HSSCo8 GOLD-P DRILLS**<br>高速钢GOLD-P钻头 | Same Performance as Full TiN-coated Drills<br>与整个TIN涂层钻头相同的性能 | **A189** |
| **SUPER HSS SUPER-GP DRILLS**<br>高级高速钢，SUPER-GP钻头 | All Applications Regardless of Machining Conditions; Good or Poor<br>广泛使用无论加工条件: 好或差 | **A203** |
| **HSS-E WORM PATTERN DRILLS**<br>深孔用直柄麻花钻头 | DH100<br>For Deep hole drilling in general steels<br>DH100-为了在普通钢上深孔 | **A209** |
| **HSS & HSSCo8 STRAIGHT SHANK DRILLS**<br>高速钢直柄钻头 | For General Purpose (Soft &Tough Materials)<br>一般用途 (软&硬材料) | **A215** |

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| **HSS, HSS-E & HSSCo8 MORSE TAPER SHANK DRILLS**<br>莫氏锥柄麻花钻头 | Morse Taper Shank Drills for Wide Applications<br>莫氏锥柄麻花钻头 | **A231** |
| **HSSCo8 NC-SPOTTING DRILLS**<br>定心钻头 | For Centering and Chamfering of Holes<br>定中心和倒角 | **A247** |
| **HSS-E CENTER DRILLS**<br>中心钻 | General Purpose<br>普通用途 | **A253** |
| **SPADE DRILLS, INSERTS & HOLDERS**<br>硬质合金&粉末高速钢铲钻 | For General Machines and Drilling Large Diameters Longer Tool Life and High Productivity<br>普通机械和钻头用直径，工具寿命延长及高生产率 | **A259** |
| **CARBIDE, HSS & HSS-E REAMERS**<br>硬质合金机用铰刀 | Carbide NC Machine Reamers, HSS Hand Reamers, HSS-E Chucking Reamers<br>硬质合金机用铰刀<br>HSS手用铰刀，HSS-E机夹铰刀 | **A373** |
| **HSS & HSSCo8 COUNTERSINKS**<br>高速钢沉孔刀 | For Deburring, Chamfering and Countersinking<br>去毛刺, 倒角和深孔 | **A401** |
| **HSS-E COUNTERBORES**<br>HSS-E 锪刀 | For Machining Screw Head Seats<br>用于加工螺钉头座 | **A411** |



# THREADING TOOLS

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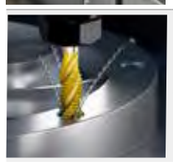
| **SOLID CARBIDE THREAD MILLS (with & without Coolant Holes)**<br>整体硬质合金螺纹铣刀<br>(带&不带内冷孔) | Threading Large Diameter in High Quality Available with Chamfer<br>大直径高质量螺纹加工<br>倒角功能可选 | **B17** |
| **HSS-PM SYNCHRO TAPS**<br>粉末高速钢同步丝锥 | For High Speed Tapping on Rigid CNC Machine<br>刚性数控机床高速攻丝 | **B39** |
| **HSS-E COMBO TAP**<br>HSS-E Combo 丝锥 | For Multi Purpose Tapping<br>多用途丝锥 | **B45** |
|  **HSS & HSS-E YG TAP GENERAL**<br>YG 普通用途HSS&HSS-E丝锥 | Suitable for Tapping Blind / Through Holes due to Flute Geometry and Excellent Chip Evacuation<br>独特的槽形设计和排屑能力，适合通，盲孔加工 | **B61** |
| **HSS-E YG STEEL**<br>YG 钢用HSS-E丝锥 | For Steel Materials but also other Long Chip Forming Materials<br>适合钢及其它长屑材料 | **B131** |
| **HSS-PM YG TAP HARDENED**<br>YG 高硬度钢用粉末高速钢丝锥 | For Hardened Steels Applications to Control the Continuo us and Red-glowing Chipse<br>淬硬钢用丝锥 | **B137** |
| **HSS-E YG TAP INOX**<br>YG 不锈钢用HSS-E丝锥 | For Stainless Steels with Lamellar, Irregular Chip Formation where the Cutting Forces are Higher<br>不锈钢专用丝锥 | **B141** |
| **SOLID CARBIDE & HSS-E YG TAP CAST IRON**<br>YG 铸铁用硬质合金&HSS-E丝锥 | For Cast Iron or Similar Work Materials<br>对于铸铁或类似材料 | **B155** |
| **SOLID CARBIDE & HSS-E YG TAP ALU (with Coolant Holes)**<br>YG 铝用硬质合金&HSS-E丝锥<br>(带内冷孔) | For long-chipping Aluminum Wrought Alloys with Large Chip Gullets to Avoid Clogging in the Threading Operations<br>采用大排屑槽设计, 适合长屑铝合金攻丝, 避免缠屑 | **B163** |

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| **HSS-PM YG TAP Ti Ni**<br>**YG钛镍用粉末高速钢丝锥** | For Heat Resistent Super Alloys and Titanium Alloys Applied with Cutting Edge Rake Angles and Thread Relief<br>耐热超合金和钛合金用丝锥 | **B177** |
| **HSS-E YG TAP FORMING**<br>**YG HSS-E 挤压丝锥** | Tapping by Forming Soft Materials<br>软材料挤压成形攻丝 | **B181** |
| **HSS-E & HSS SCREW THREAD INSERT TAPS**<br>**HSS-E& HSS 嵌套丝锥** | Tapping STI Threads of Soft Materials<br>软材料加工嵌套螺纹 | **B193** |
| **HSS-E & HSS PIPE TAPS**<br>**HSS-E&HSS 管用丝锥** | Tapping Whitworth Pipe threads<br>惠氏管用螺纹加工 | **B199** |
| **SKS21 HAND TAPS**<br>**SKS21手用丝锥** | To Achieve High Strength.<br>Easy Assembling.<br>实现高强度加工，易装配 | **B211** |
| **SKS21 PIPE TAPS**<br>**SKS21管用丝锥** | To Achieve High Strength.<br>Easy Assembling.<br>实现高强度加工，易装配 | **B221** |



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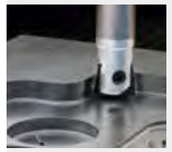
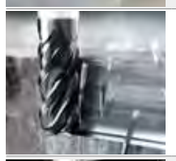
| **CBN END MILLS**<br>**CBN 铣刀** | CBN(Cubic Boron Nitride) Machining High Hardened Steels up to HRc70 Mirror Finish<br>适用于加工高硬钢(~HRc70)，镜面处理的CBN(立方氮化硼)铣刀 | **C23** |
|  **i-Xmills, CARBIDE INSERT END MILLS**<br>**i-Xmill, 硬质合金刀片铣刀** | Various Applications Type of Inserts Available for General Steels, Pre-Hardened Steels, High Hardened Steels, Stainless Steels and Graphite<br>多样类型刀片可用在加工普通钢，预硬钢，高硬钢，不锈钢，石墨 | **C29** |
| **i-SMART, CARBIDE MODULAR HEAD END MILLS**<br>**i-Smart，硬质合金模块铣刀** | For General Steels, Hardened Steels and Cast Iron<br>适用于普通钢，高硬钢和铸铁 | **C55** |
| **X5070 NANO SOLID CARBIDE END MILLS**<br>**X5070 纳米硬质合金铣刀** | For High Hardened Steels (HRc45 to HRc70) High Speed Machining and Dry Cutting<br>用于加工高硬钢 (HRc45 to HRc70), 高速切削和干切 | **C75** |
| **4G Mill SOLID CARBIDE END MILLS**<br>**4G 硬质合金铣刀** | High Speed Cutting for Pre-Hardened Steels up to HRc55<br>适用于HRc55的预硬钢高速加工 | **C135** |
| **X-POWER PRO SOLID CARBIDE END MILLS**<br>**X-POWER PRO 硬质合金铣刀** | For Pre-Hardened Steels up to HRc55<br>适用于硬度低于HRc55的预硬钢 | **C321** |
|  **TitaNox-POWER SOLID CARBIDE END MILLS**<br>**TitaNox 硬质合金铣刀** | High Speed Machining for Exotic Materials: Titanium and Stainless Steels<br>实现难切材料的高速加工 钛合金和不锈钢 | **C349** |
| **SUS-CUT SOLID CARBIDE END MILLS**<br>**SUS-CUT 硬质合金铣刀** | For Exotic materials like Stainless Steels, Nickel Alloys and Titanium<br>加工不锈钢，镍合金和钛合金 | **C365** |
| **V7 PLUS SOLID CARBIDE END MILLS**<br>**V7 PLUS 硬质合金铣刀** | High Performance Carbide End Mills for Steels, Cast Iron and Stainless Steels<br>高性能 硬质合金 立铣刀<br>适用于钢件,铸铁和不锈钢 | **C381** |
| **ALU-POWER HPC SOLID CARBIDE END MILLS**<br>**ALU-POWER HPC 硬质合金铣刀** | For Aluminium, Aluminum Die Cast, Non-ferrous Alloys and Plastics<br>适用于加工铝，铝合金，非铁金属和塑料 | **C399** |

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| | **ALU-CUT SOLID CARBIDE END MILLS**<br>ALU-CUT 硬质合金铣刀 | For Aluminium Alloys<br>and Silent Cutting<br>适用于加工铝合金而无声切削 | **C413** |
| | **G-CUT SOLID CARBIDE END MILLS**<br>G-CUT 硬质合金铣刀 | High performance on graphite<br>高性能加工石墨 | **C429** |
| | **CRX S SOLID CARBIDE END MILLS**<br>CRX 硬质合金铣刀 | DLC Coated End Mills<br>for Copper<br>加工铜的DLC涂层铣刀 | **C447** |
| | **K-2 Plus SOLID CARBIDE END MILLS**<br>K-2 Plus 硬质合金铣刀 | General Purpose<br>Conventional or High Speed Milling<br>Wet & Dry Cutting<br>适用于普通加工 / 普通或高速铣削 /<br>湿切&干切削 | **C459** |
| | **GENERAL CARBIDE END MILLS**<br>普通硬质合金铣刀 | General Purposes,<br>Non-coated, Any Coating Available<br>适用于普通加工，<br>非涂层及任何涂层都可以提供 | **C505** |
| | **ONLY ONE COATED PM60 END MILLS**<br>ONLY ONE 粉末高速钢铣刀 | Perfect Solution of Carbide Chipping<br>under Vibrations<br>在振动工况硬质合金崩刃的完美解决方案 | **C505** |
| | **TANK-POWER HSS-PM END MILLS**<br>TANK-POWER 粉末高速钢铣刀 | High Toughness for Stainless Steels,<br>Carbon steels and Alloy Steels<br>for General Application, Roughing<br>& Finishing<br>适用于不锈钢，碳钢，合金钢<br>可用于普通加工，粗&精加工的高韧性铣刀 | **C545** |
| | **GENERAL HSS END MILLS**<br>普通高速钢铣刀 | General Purpose<br>Coating Available<br>普通加工 / 可以提供涂层 | **C579** |
| | **HSS MILLING CUTTERS**<br>高速钢铣刀 | General Works.<br>Available Dovetail,<br>Woodruff Keyseat,<br>T-slot, Side Milling Cutters and<br>HSS(8% Cobalt) Corner Rounding,<br>Shell End Mills<br>普通加工，可提供燕尾槽铣刀，<br>月牙键槽铣刀，T型铣刀，三面刃铣刀，<br>含钴8%的圆角铣刀和圆筒形端铣刀 | **C621** |



# PRODUCT FEATURES 产品优点

## *i* - ONE DRILLS

Reference page : A21 - A38

**Micro Grain Carbide Inserts and Premium Tool Steel Holder with Coolant Holes**
**微晶硬质合金刀片和带冷却孔的优质工具钢刀体**

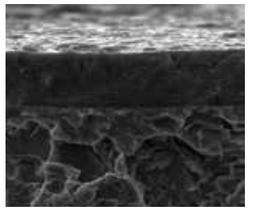
***COST EFFICIENT HIGH PERFORMANCE* 性价比高性价**

***EXCHANGEABLE DRILLING TOOLS* 比机夹式钻头**

- **Secure & Quick clamping system**
  - **安全&快速夹持系统**
- **Multi layered 'H'-coating**
  - **"H"复合涂层**

  reduces the cracking and provides higher shear strength while achieving excellent oxidation resistance and hot hardness

  降低断裂，提高的剪切强度，同时获得优异的抗 氧化性和热硬性



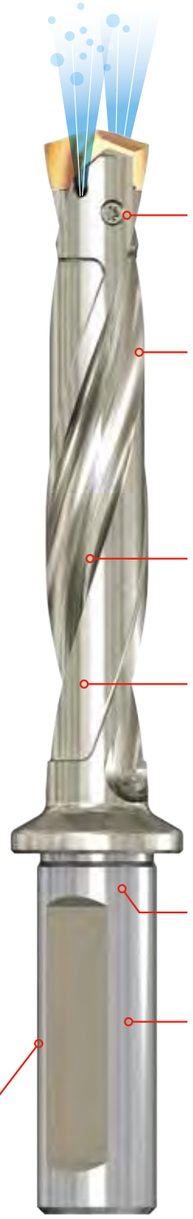
- **Optimized point geometry**

  of i-ONE Drills ensures centering ability and smoother cutting
  - 最佳的i-ONE钻尖形状确保定心能力和平顺切削
- **Self Centering and Chip Breaking**

  by Radius Thinning
  - 自定心，R型横刃修磨保证断屑
- **Ground Negative land**

  on cutting edge for Reliable Tool Life
  - 切削刃研磨负倒棱，保证刀具寿命

**Cylindrical shank with a parallel flat**
**可根据客户要求提供**
according to ISO9766 Plain shank and Whistle notch shank are available on request
符合ISO9766标准的圆柱柄和平头柄



**Torx Plus Screw 加强型六角螺钉**
for clamping insert / 夹持刀片

**Optimized flute shape 最佳的槽型**
for better chip evacuation / 保证排屑

**Nickel-plated Steel holder 镀镍钢制刀体**
for corrosion resistance and wear resistance / 耐腐蚀，耐磨

**Body Clearance 刀体间隙**
for elimination of undesirable contact with work piece / 用于消除与工件的不良接触

**Internal cooling channel 内部冷却通道**
for higher drilling performance
提高钻孔性能

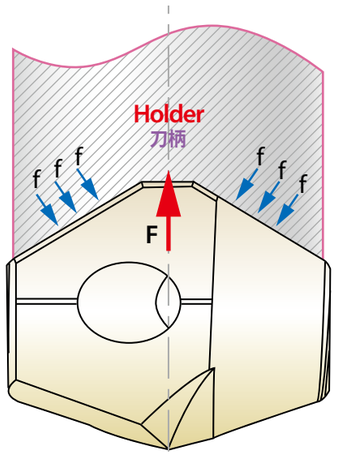
**Ground bright finished shank**
for more precise clamping
磨削刀柄更精确的夹紧

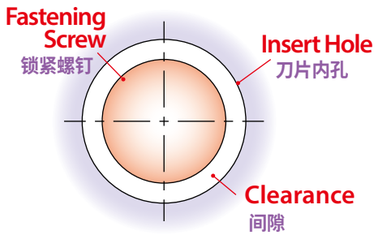
## i - DREAM DRILLS

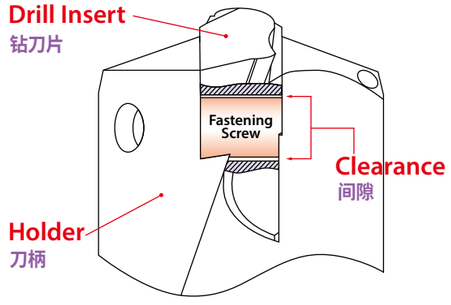
Reference page : A39 - A60

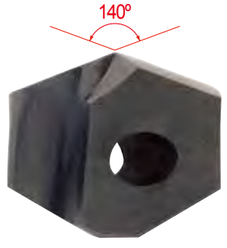
### Stable Insert locking System

- V type locking system allowed for stabilized drilling
  - V型锁定系统保证稳定钻孔加工
- Design that fastening screw doesn't touch insert to protect the insert locking system from the vibration during the drilling cycle
  - 采用紧固螺钉不接触刀片的设计，以保护刀片锁紧系统免受钻削周期性的振动




### Self-Centering 140° Point & Helical Thinning
### 140°P自定心顶角&螺旋横刃修磨

- Excellent Centering
  - 优秀的自定心
- Minimized cutting resistance
  - 减少切削阻力
- Design for maximum toughness, hardness and chip evacuation
  - 采用最大的韧性，硬度和切屑排出设计
- High penetration rate. - Reduced heat from cutting edge processing to allow long tool life - Lower required torque and horsepower
  - 高进给率--减少切削刃加工产生的热量，延长刀具寿命-降低所需的扭矩和马力





## i - DREAM DRILLS

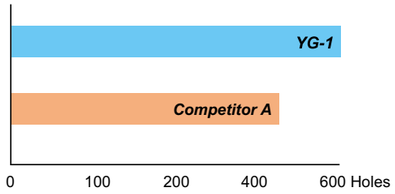
Reference page : A39 - A60

### TEST I GENERAL

**Cutting Condition 加工条件**

| | |
|---|---|
| HOLDER 刀杆 | ZH14505020 |
| INSERT / 刀片 | YB1A1450 / Ø14.5 |
| Work Material 工件 | ASTM : A36<br>DIN : St37-2<br>JIS : SS400 |
| Cutting Speed 切削速度 | 80 m/min |
| Feed / 进给 | 0.24 mm/rev. |
| Feedrate 进给速度 | 421 mm/min. |
| RPM / 转速 | 1,756 rev./min. |
| Drilling Depth 钻孔深度 | 48.0 mm |
| Coolant / 冷却 | Internal / 内部 |
| Machine type 机器类型 | Vertical Machining Center 立式加工中心 |

**RESULT 结果**




▶ YG-1 (Total Drilling 600 Holes)
YG-1 (总钻孔600 孔)

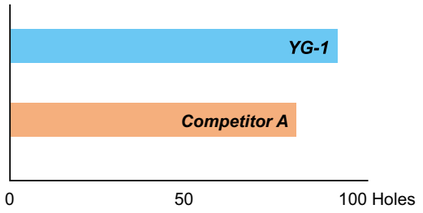
▶ Competitor A (Total Drilling 470 Holes)
竞争社 (总钻孔470 孔)

### TEST II INOX

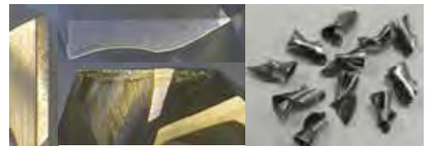
**Cutting Condition 加工条件**

| | |
|---|---|
| HOLDER 刀杆 | ZH14005020 |
| INSERT / 刀片 | YB2C1400 / Ø14.0 |
| Work Material 工件 | AISI : 304<br>DIN : X5CrNi189<br>JIS : SUS304 |
| Cutting Speed 切削速度 | 55 m/min |
| Feed / 进给 | 0.15 mm/rev. |
| Feedrate 进给速度 | 188 mm/min. |
| RPM / 转速 | 1,250 rev./min. |
| Drilling Depth 钻孔深度 | 50.0 mm |
| Coolant / 冷却 | Internal / 内部 |
| Machine type 机器类型 | Vertical Machining Center 立式加工中心 |

**RESULT 结果**



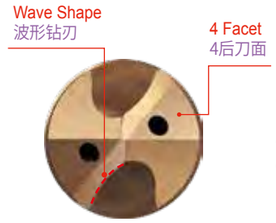

▶ YG-1 (Total Drilling 100 Holes)
YG-1 (总钻孔100 孔)



▶ Competitor A (Total Drilling 80 Holes)
竞争社(总钻孔80 孔)

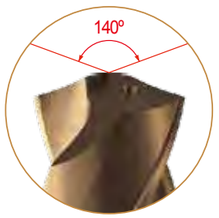
## DREAM DRILLS PRO

Reference page : A61 - A76




### Wave Shape Cutting Edge 波形钻刃

- Improve chip formation 改善切屑形状
- Low Cutting Force 降低切削力

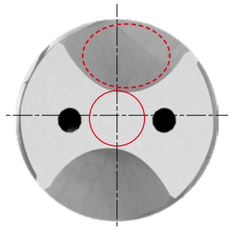



### 140 Degree Point Angle 140°钻顶角

- Provides edge strength and Exceptional tool life
  高刃口强度和特殊的刀具寿命
- Good Self Centering 良好的自定心
- Low Torque 低扭矩

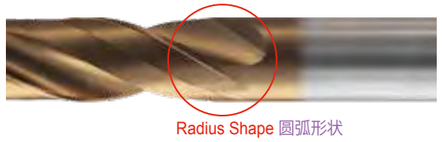
### Micro-grained Carbide 微晶颗粒硬质合金

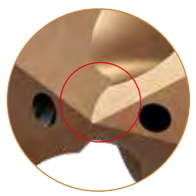
- Achieving Excellent Wear Resistance 优异的耐磨性
- Maximum Tool Life and High Performance
  最大的刀具寿命和性能



### Optimized wide flute design 最佳的槽型设计

The unique flute structure provides good surface finish, longer tool life and requires less cutting force
独特的槽型设计保证良好的加工表面光洁度，刀具寿命长，切削力小



### Helical Thinning 螺旋型横刃修磨

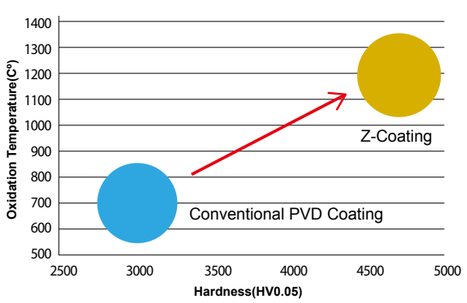
- Low Thrust 低止推力
- Stable Torque 稳定的扭矩
- Good Chip Breakage 良好的断屑效果

**Performance Upgrade with Faster Cutting Speed**
**更高的切削速度，性能提升**

### Higher & Improved cutting conditions due to 采用YG-1 独特的Z涂层技术 YG-1 Special Z-Coating Technology 可以获得更高的切削速度

(YG-1's Unique Silicon Based Coating: Nano-Layer Coating YG-1独特的硅基涂层:纳米涂层)

- Extremely High Hardness and Heat Resistance 极高的硬度和耐热性





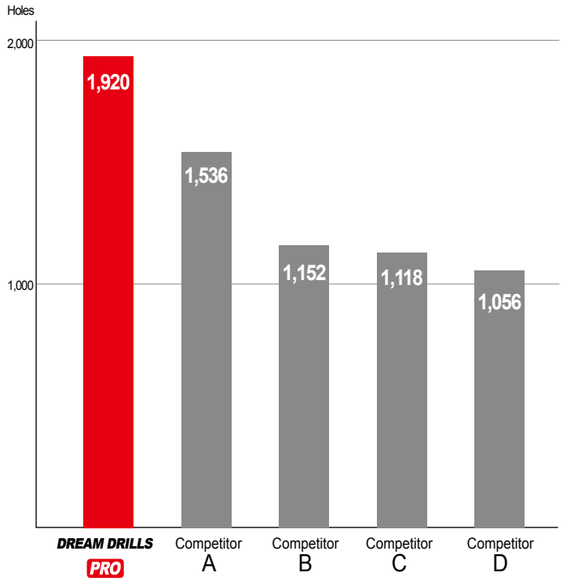



## DREAM DRILLS PRO

Reference page : A61 - A76

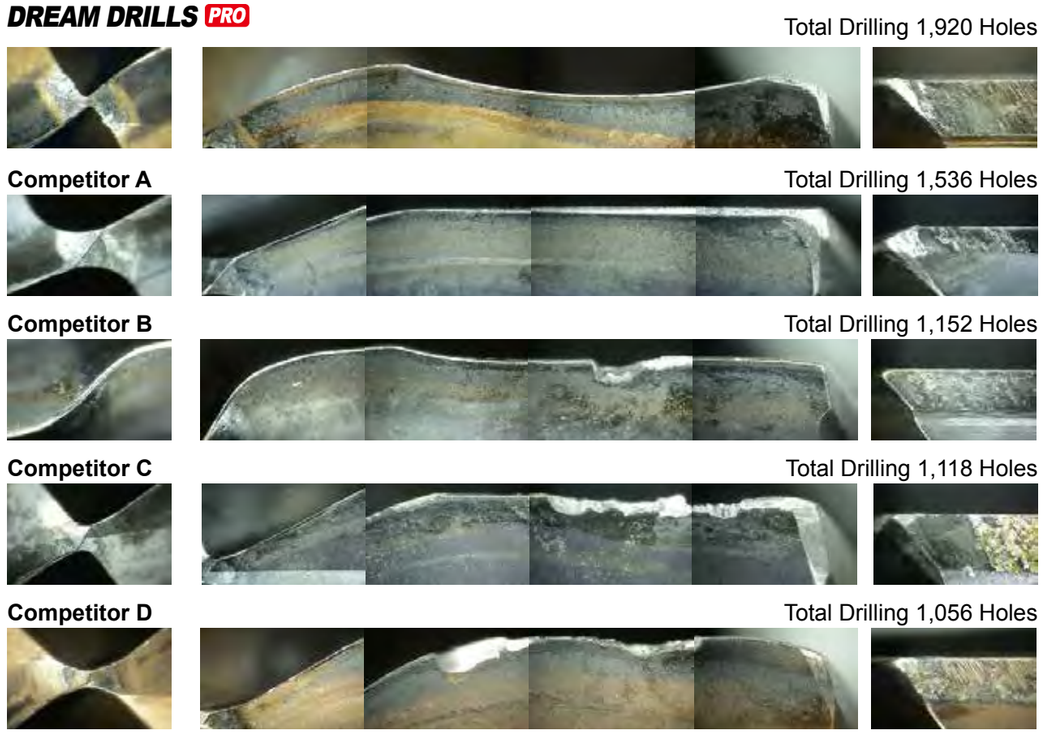
### ▶ SOLID CARBIDE DREAM DRILLS - PRO with Coolant Holes

硬质合金梦幻钻头-PRO带内冷



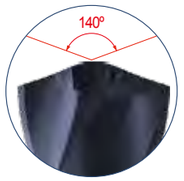

**Cutting Condition 加工条件**

| | |
|---|---|
| Work Material 工件材质 | DIN: 42CrMo4 ANSI: 4140<br>JIS: SCM440<br>Hardness: HRc30 (HB286) |
| O.D Size / 刃径 | Ø10.0 (.3937 inch) |
| RPM 转速 | 14,856 rev./min. |
| Cutting Speed 切削速度 | 140 m/min |
| Feed / 进给 | 0.30 mm/rev |
| Drilling Depth 钻孔深度 | 45.0 mm |
| Coolant / 冷却 | Internal Cooling (20 bar)<br>内冷（20帕）<br>Water Soluble (9% Emulsion)<br>水溶性（9%乳化液） |
| Machine / 设备 | Machining Center<br>加工中心 |

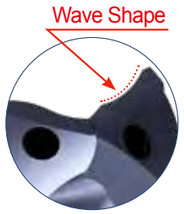


# DREAM DRILLS - GENERAL

Reference page : A77 - A100

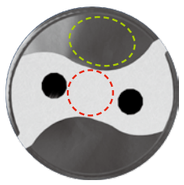



**140 Degree Point Angle** 140°钻顶角
**for good centering and low thrust** 定心和低止推力

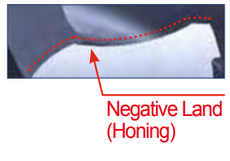



**Wave shape Cutting Edge** 波形切削刃
**will allow low thrust , stable torque and long tool life**
止推力小，扭矩稳定，使用寿命长

**Radius Thinning** 圆弧横刃修磨
**for Self Centering and Chip Breaking** 自定心和断屑



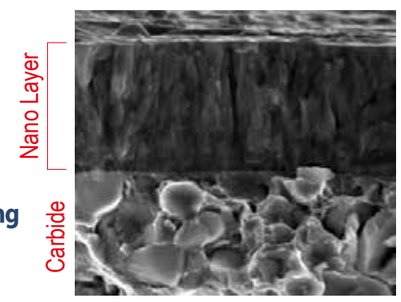
**Optimized flute shape** 最佳的槽型
**for strength of drill and smooth chip evacuation**
钻头强度高，排屑顺畅




**Negative land** on the cutting edge 切削刃负倒棱
**for Reliable Tool Life** 刀具寿命稳定

**TiAlN Coating** (Upgraded **Ti**tanium **Al**uminum **N**itride : **nano-Layer coating**)
TiAlN涂层 (升级后的氮铝钛化涂层:纳米涂层)

- Higher wear resistance and Lower friction
  更高的耐磨性和更低的摩擦
- Higher Cutting Speed and Feed
  更高的切削速度和进给量
- Improved drill Hole Quality
  提高钻孔质量




**Special surface treatment after coating**
涂层后特殊表面处理
**to reduce friction and better chip flow.**
以减少摩擦和更好的切屑流动。

**Micro-grained carbide for wear resistance and longer tool life**
微晶颗粒的硬质合金，耐磨，延长刀具使用寿命





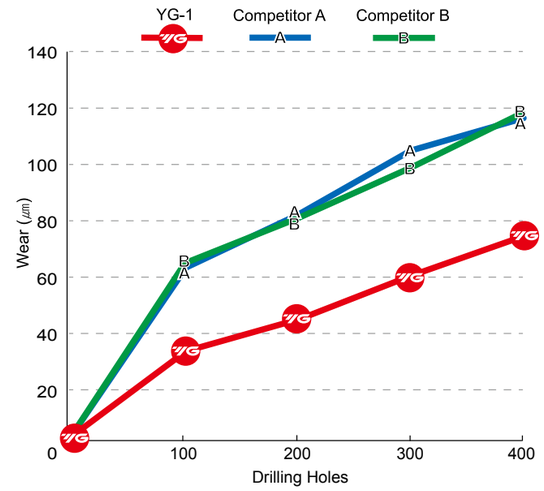
# DREAM DRILLS - GENERAL

Reference page : A77 - A100

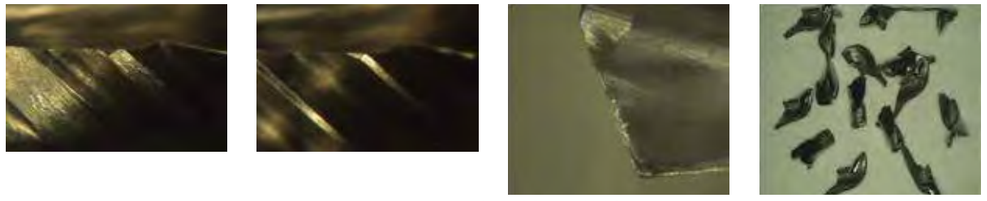
## ▶ SOLID CARBIDE DREAM DRILLS - GENERAL with Coolant Holes
硬质合金梦幻钻头-通用性带内冷

**Cutting Condition** 加工条件

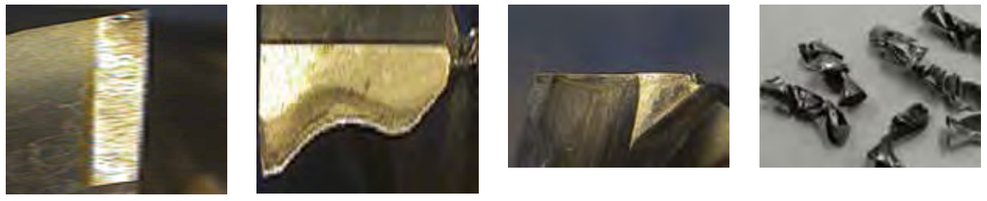
| | |
|---|---|
| Tool / 刀具 | DH408015 (Dream Drill with Coolant Holes) |
| Size / 尺寸 | Ø1.5 × 3 × 15 × 55 |
| Work Material 工件材质 | DIN : X40GrMoV51<br>WR : 1.2344<br>JIS : SKD61 (HRc30) |
| RPM / 转速 | 14,856 rev./min. |
| Feed / 进给 | 0.05 mm/rev. |
| Drilling Depth 钻孔深度 | 7.5 mm |
| Coolant / 冷却 | Wet Cut |



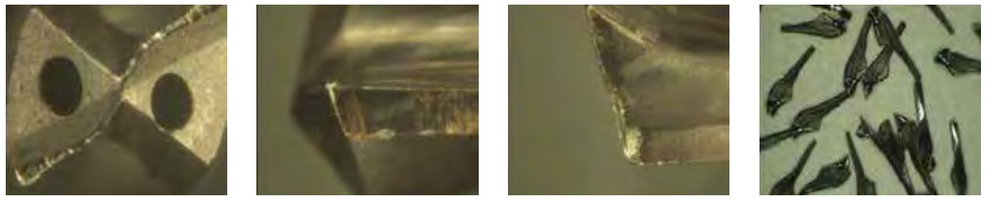

▶ YG-1 (Totarilling 400 Holes) YG-1 (总钻孔400 孔)



▶ Competitor A (Total Drilling 400 Holes) 竞争社 A (总钻孔400 孔)

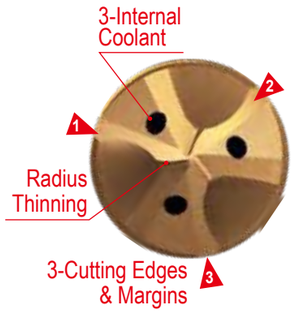


▶ Competitor B (Total Drilling 400 Holes) 竞争社 B (总钻孔400 孔)



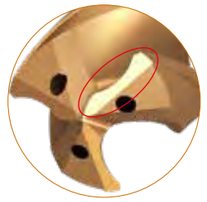
# DREAM DRILLS - HIGH FEED

Reference page : A111 - A118



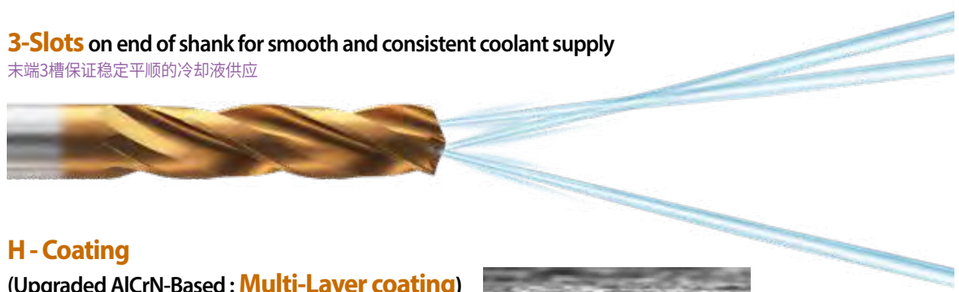

**3-Cutting Edges & Margins** will allow
high penetration rate, accurate holelocation and good surface finish
**3-刃&韧带** 确保高进给率

Radius Thinning for
**Self Centering and Chip Breaking**
圆弧横刃修磨 **自定心和断屑**



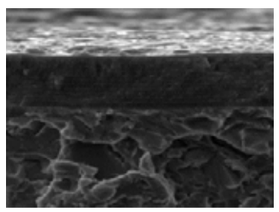
**Ground Negative land**
on cutting edge for Reliable Tool Life
**切削刃负倒棱** 刀具寿命稳定

**3-Slots** on end of shank for smooth and consistent coolant supply
末端3槽保证稳定平顺的冷却液供应

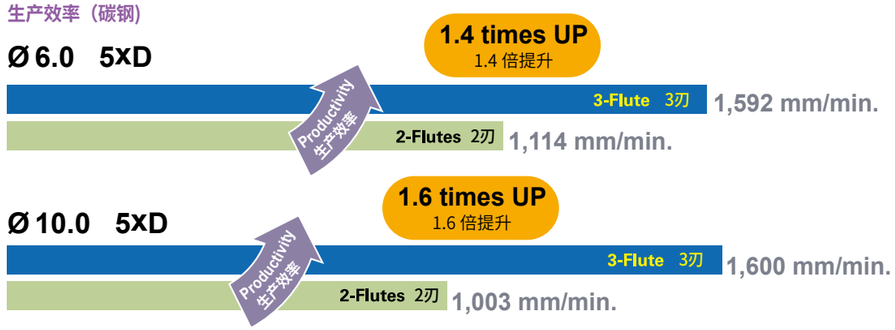


**1.5 ~ 2 times Faster in drilling compared to two flute carbide drills**
比两刃硬质合金钻头快1.5 ~ 2倍

**H - Coating**
(Upgraded AlCrN-Based : **Multi-Layer coating**)
**H -涂层(升级AlCrN基涂层:复合涂层)**
- Higher worn-out resistance and Lower friction
  较高的耐磨性和较低的摩擦
- Higher Cutting Speed and Feed
  更高的切削速度和进给量
- Improved drill Hole Quality
  提高钻孔质量




## Productivity (Carbon Steel)
生产效率（碳钢）








DREAM DRILLS - HIGH FEED

Reference page : A111 - A118

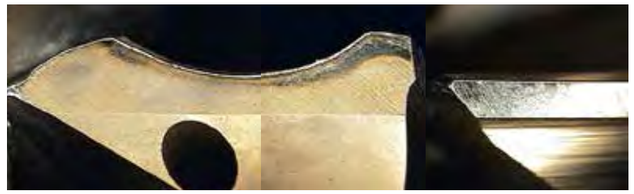
Dream Drills-High Feed offers 1.5 to 2 times higher feeding speed compared to conventional 2-flute drills. The unique flute design and exceptional surface finish promise extraordinary chip evacuation.
相比传统的两刃钻头，梦幻钻头高进给系列可以提供1.5到2倍的进给速度。
独特的槽型设计和非凡的表面光洁度保证出色的排屑能力

## ▶ SOLID CARBIDE DREAM DRILLS - HIGH FEED with Coolant Holes
**硬质合金梦幻钻头_高进给，带内冷**

**Cutting Condition 加工条件**

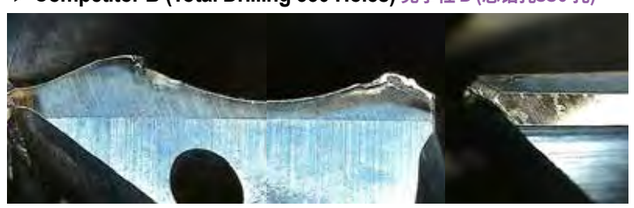
| | |
|---|---|
| Tool / 刀具 | DGR495100 (Dream Drills High Feed) |
| Size / 尺寸 | Ø10 × Ø10 × 61 × 103 |
| Work Material 工件材质 | DIN : C45<br>AISI : 1045<br>JIS : S45C (HRc20) |
| RPM / 转速 | 3,200 rev./min. |
| Feed / 进给 | 0.5 mm/rev. |
| Drilling Depth 钻孔深度 | 50 mm (5xD) |
| Drilling Method 盲孔 | Blind Hole |
| Coolant / 冷却 | Wet Cut |
| Machine / 设备 | Machining Center 加工中心 |

**▶ YG-1 (Total Drilling 330 Holes)** YG-1 (钻孔后330 孔)



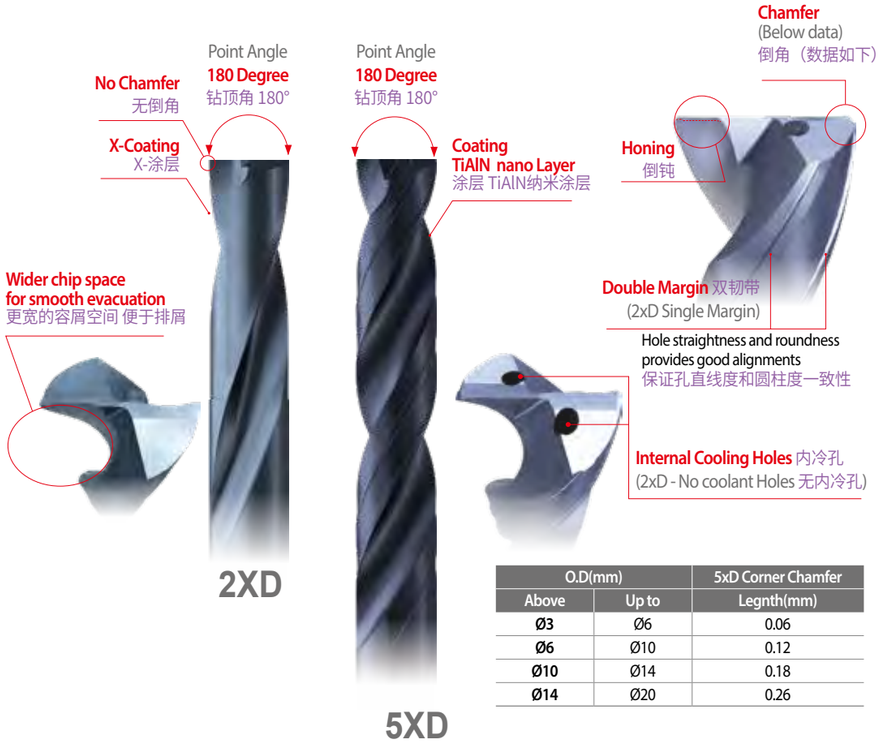
**▶ Competitor A (Total Drilling 330 Holes)** 竞争社 A (总钻孔330 孔)

**▶ Competitor B (Total Drilling 330 Holes)** 竞争社 B (总钻孔330 孔)



# DREAM DRILLS - FLAT BOTTOM

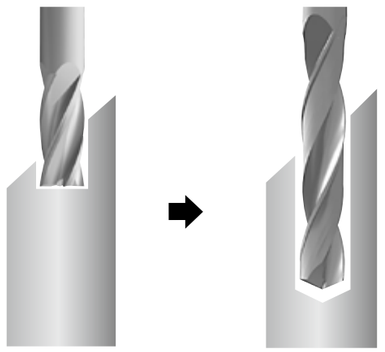
Reference page : A119 - A130




| O.D(mm) | | 5xD Corner Chamfer |
|---|---|---|
| Above | Up to | Legnth(mm) |
| Ø3 | Ø6 | 0.06 |
| Ø6 | Ø10 | 0.12 |
| Ø10 | Ø14 | 0.18 |
| Ø14 | Ø20 | 0.26 |

## Only One Operation for Angled Surface
## 一步操作，完成有角度面孔加工

**For angled surfaces, two operations are required to drill in a conventional Process**
对于有角度的表面，常规工艺钻孔需要两步



**1st operation(End mill)**
**第一步（立铣刀）**
Counter boring to make flat surface and guide hole
锪孔,加工平面和导向孔

**2nd operation(Drill)**
**第二步（钻头）**
Drilling to required depth of hole
钻到要求的孔深

**For angled surfaces, only one operation can complete the drilling with Dream Drill Flat Bottom**
对于有角度的表面，
只需一次操作就可以用梦幻钻头_平底钻完成钻孔

**One operation(Dream Drill Flat Bottom)**
**One Drill does it all**
**一步完成（梦幻钻头 平底钻）**
**一把钻头完成所有工作**
without using both an end mill and a drill
不用同时使用立铣刀和钻头





# DREAM DRILLS - FLAT BOTTOM

Reference page : A119 - A130

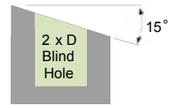
## TEST I ▶ SOLID CARBIDE DREAM DRILLS - FLAT BOTTOM without Coolant Holes
硬质合金梦幻钻头_平底钻无内冷

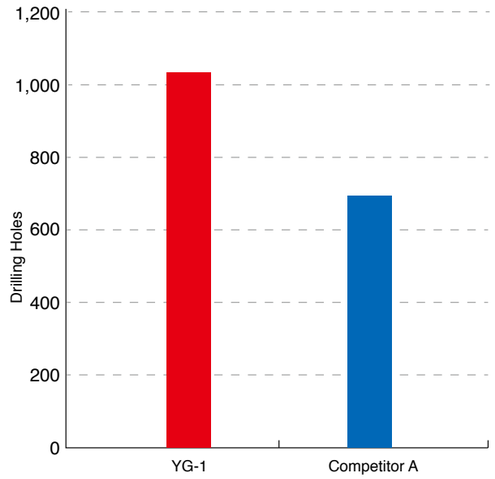
**Cutting Condition 加工条件**

| | |
|---|---|
| Drill Diameter (mm) 钻头直径 | Ø6.0 |
| Work Material 工件材质 | DIN : C45<br>AISI : 1045<br>JIS : S45C (HRc20) |
| Cutting Speed 切削速度 | 75.4 m/min |
| RPM (rev./min) 转速 | 4,000 rev/min |
| Feed(mm/min) 进给 | 0.1 mm/rev |
| Drilling Depth 钻孔深度 | 12.0 mm (2XD)<br>Blind Hole / without Pecking |
| Coolant / 冷却 | External Cooling / 外冷<br>Water Soluble ( 9% Emulsion)<br>水溶性（9%乳化液） |
| Machine / 设备 | Machining Center/ 加工中心 |

◀YG-1
Small Chipping
小崩刃

◀Competitor A
Big Chipping
大崩刃



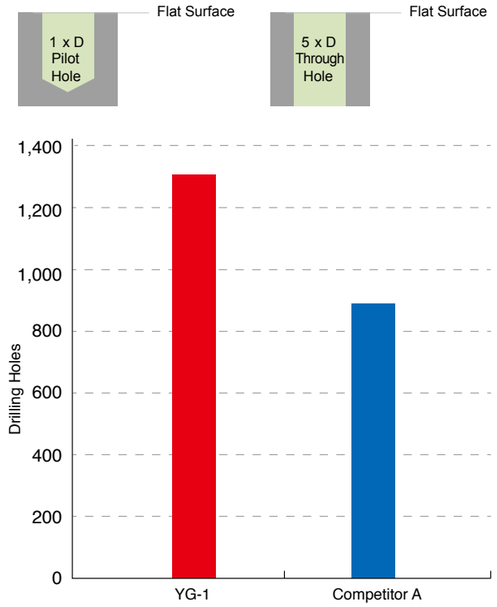

## TEST II ▶ SOLID CARBIDE DREAM DRILLS - FLAT BOTTOM with Coolant Holes
硬质合金梦幻钻头_平底钻带内冷

**Cutting Condition 加工条件**

| | |
|---|---|
| Drill Diameter (mm) 钻头直径 | Ø6.0 |
| Work Material 工件材质 | DIN : 42CrMo4<br>AISI : 4140<br>JIS : SCM440 (HRc30) |
| Cutting Speed 切削速度 | 100.0 m/min |
| RPM (rev./min) 转速 | 5,300 rev/min |
| Feed(mm/min) 进给 | 0.12 mm/rev |
| Drilling Depth 钻孔深度 | Pilot Drill / 预加工- 6.0 mm (1XD)<br>Total depth / 总深度 - 30.0 mm (5XD)<br>Through Hole/without Pecking / 通孔/无啄钻 |
| Coolant / 冷却 | Internal cooling / 内冷<br>Water Soluble ( 9% Emulsion)<br>水溶性（9%乳化液） |
| Machine / 设备 | Machining Center/ 加工中心 |

◀YG-1
Small Chipping
小崩刃

◀Competitor A
Big Chipping
大崩刃

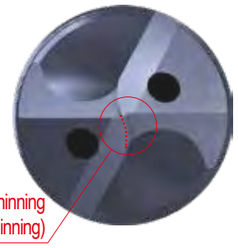


# DREAM DRILLS - INOX

Reference page : A131 - A142

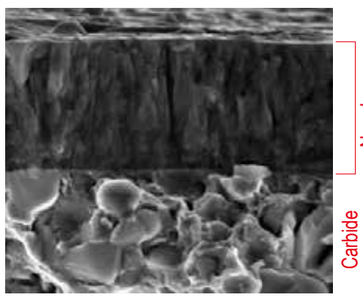
CONVENTIONAL

- Special Flute geometry and Chip pocket to help Chip evacuation and proper Chip Curl.
  特殊的槽型设计和容屑槽帮助排屑和切屑卷曲
- strong rigidity from **Cutting Edge**
  高刚性的切削刃
- high Performance on Stainless Steel and pre hardend Steel
  高性能不锈钢和预硬钢用钻头



R-Thinning
(Radius Thinning)
圆弧横刃修磨

- Positive Axial **Rake Angle** and cutting force, with **R-Thinning** enhance centering and Chip Breaking.
  采用圆弧横刃修磨，具有轴向正前角和切削力，提高定心和断屑能力



Nano Layer

Carbide

**TiAlN Coating** (Upgraded **Ti**tanium **Al**uminum **N**itride : **nano-Layer coating)**
TiAlN涂层 (升级后的氮铝钛化涂层:纳米涂层)

- Higher wear resistance and Lower friction
  更高的耐磨性和更低的摩擦
- Higher Cutting Speed and Feed
  更高的切削速度和进给量
- Improved drill Hole Quality
  提高钻孔质量

**Special surface treatment after coating**
涂层后特殊表面处理
**to reduce friction and better chip flow.**
以减少摩擦和更好的切屑流动。





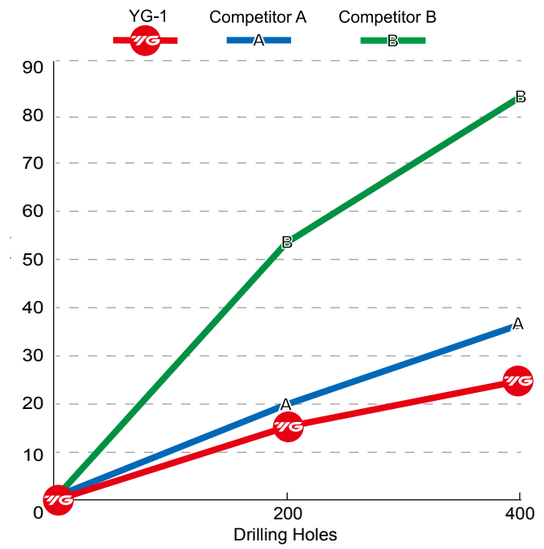
# DREAM DRILLS - INOX

Reference page : A131 - A142

## ▶ SOLID CARBIDE DREAM DRILLS - INOX with Coolant Holes
硬质合金梦幻钻头-INOX 带内冷

**Cutting Condition 加工条件**

| | |
|---|---|
| Tool / 刀具 | DH452060 (DREAM DRILL-INOX) |
| Size / 尺寸 | Ø6 × Ø6 × 44 × 82 |
| Work Material 工件材质 | DIN : X5CrNi1810 (X4CrNi18-10)<br>WR : 1.4301<br>JIS : SUS304 |
| RPM (rev./min) 转速 | 3,700 rev./min. |
| Feed(mm/min) 进给 | 0.07 mm/rev. |
| Drilling Depth 钻孔深度 | 24 mm |
| Coolant / 冷却 | Wet Cut / 湿切 |




## ▶ YG-1 (Total Drilling 400 Holes) YG-1 (总钻孔400 孔)

## ▶ Competitor A (Total Drilling 400 Holes) 竞争社 A (总钻孔400 孔)

## ▶ Competitor B (Total Drilling 400 Holes) 竞争社 B (总钻孔400 孔)

# DREAM DRILLS - ALU

Reference page : A143 - A154

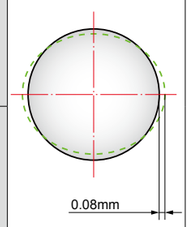
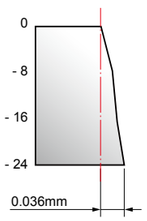
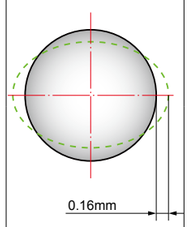
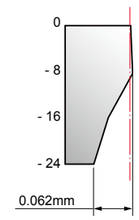
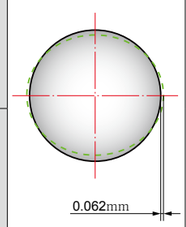
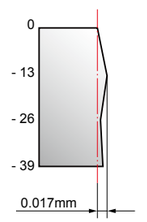
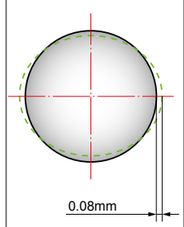
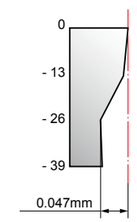
Design that optimized flute shape and geometry suitable **for Aluminum, Aluminum alloy.**
采用最佳的适用于铝、铝合金的槽型和设计

Optimized point thinning to prevent any **chip-clogging from chip welding.**
最佳的钻尖横刃修磨，防止切屑堵塞和粘结。

Polished flutes improve **chip control and evacuation.**
槽内抛光改善切屑形状和排出

The Drilling of High Speed is possible while maintaining **the excellent surface roughness of workpiece.**
保持孔表面圆度的同时，实现高速加工

## Ø6.0 & Ø10.0 TEST, Aluminum(6061)

| CUTTING CONDITION 加工条件 | DREAM DRILL-ALU 梦幻钻头_铝用 | | COMPETITOR A 竞争社A | |
|---|---|---|---|---|
| | Roundness 圆度 | Straightness 直线度 | Roundness 圆度 | Straightness 直线度 |
| SIZE 尺寸 Ø 6.0<br>Drilling Holes 钻孔数 1200 Holes |  |  |  |  |
| SIZE 尺寸 Ø10.0<br>Drilling Holes 钻孔数 820 Holes |  |  |  |  |





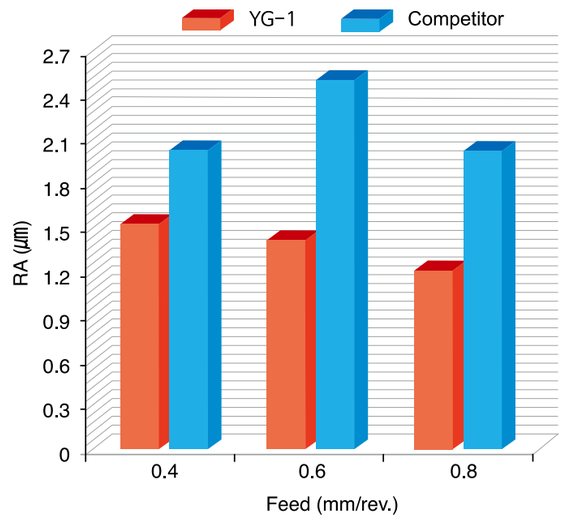
# DREAM DRILLS - ALU

Reference page : A143 - A154

## ▶ SOLID CARBIDE DREAM DRILLS - ALU with Coolant Holes
硬质合金梦幻钻头 铝用-带内冷孔

Cutting Condition 加工条件

| | |
|---|---|
| Tool / 刀具 | D5433100 (DREAM DRILLS-ALU) |
| Size / 尺寸 | Ø10.0×Ø10×61×103 |
| Work Material 工件材质 | DIN : AlMgSiCu<br>AISI : 6061<br>JIS : A6061 |
| RPM (rev./min) 转速 | 6,367 rev./min. |
| Feed(mm/min) 进给 | 0.4 ~ 0.8 mm/rev. |
| Drilling Depth 钻孔深度 | 45 mm |
| Coolant / 冷却 | Wet Cut / 湿切 |




**Surface Roughness of Work Piece**
被加工材料的表面粗糙度

### ▶ YG-1 (Total Drilling 820 Holes)
YG-1 (总钻孔820 孔)

### ▶ Competitor A (Total Drilling 820 Holes)
竞争社 A (总钻孔820 孔)

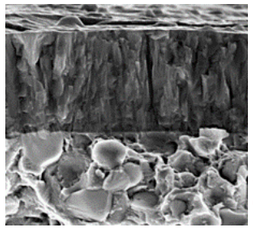
# DREAM DRILLS - MQL TYPE

Reference page : A159 - A168

**4-Facet** point for good **centering capability**
4面钻尖，良好的定心能力

**Polished** flute for enhanced **chip evacuation**
槽内抛光，增强排屑

**Optimized** special **flutes** are ideal for removing chips and for productive drilling 最佳的槽型是排屑和钻孔加工的理想选择




Upgraded **TiAlN nano Layer**
**Full Coating**
升级的TIALN纳米全涂层

**Compatible with the MQL** 与MQL兼容
**( Minimum Quantity Lubrication) system.** (微小润滑)系统。
- **Reduction** of **Cooling Cost** 降低冷却成本
- **Reduce** generation of **dioxin** for human **[ Eco-Friendly ]** 为人类减少二恶英的产生[生态友好]

## Compare with Gun drills 与枪钻比较

- Used on conventional machining center **(MQL Drills)**
  用于传统加工中心(MQL钻头)
- **Higher productivity** than conventional HSS deep hole drills and Gun drills
  比传统的高速钢深孔钻和枪钻生产率更高

**Gun drill**

Gun drilling Machine
枪钻设备

Productivity 生产率

Up to 10 times
Drilling Feedrate
钻孔速度提升10倍

**MQL Drill**

Vertical & Horizontal Machining Center
立式&卧式加工中心

- Size Range 尺寸范围 : Ø2~Ø25
- Drilling Depth 钻孔深度 : 25xD ~ over 100xD

* Need Gun drilling machine 需要枪钻设备

- Size Range 尺寸范围 : Ø3~Ø14
- Drilling Depth 钻孔深度 : 10xD ~ 40xD

* Need enough machine stroke on machining center
加工中心需要足够的行程





DREAM DRILLS - MQL TYPE

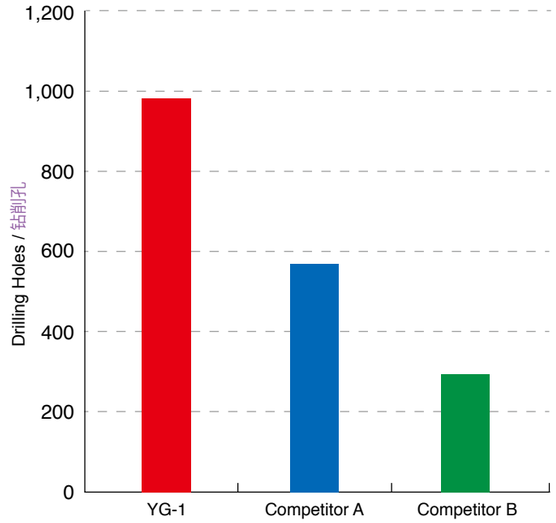
Reference page : A159 - A168

- Flute Shape and Point Shape allowing better chip evacuation in deep hole drilling
- Excellent Coating and Surface Treatment for better performance and chip evacuation
- 槽型和钻尖形状,在深孔钻削中保证更好的排屑
- 出色的涂层和表面处理，保证更佳的性能和排屑

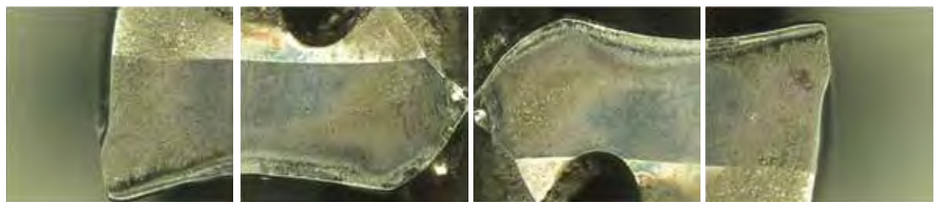
## ▶ SOLID CARBIDE DREAM DRILLS - MQL Type with Coolant Holes
硬质合金梦幻钻头_MQL 带内冷孔

**Cutting Condition 加工条件**

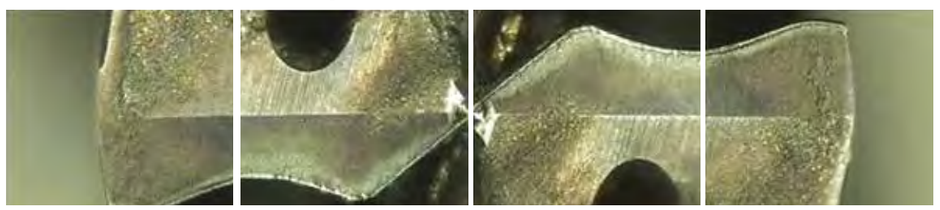
| | |
|---|---|
| Tool / 刀具 | DH520060 (DREAM DRILL- MQL TYPE, 20×D) |
| Size / 尺寸 | Ø6×Ø6×138×193 |
| Work Material 工件材质 | DIN : C45<br>WR : 1.0503<br>JIS : S45C(HRc25) |
| RPM (rev./min) 转速 | 3,528 rev./min. |
| Feed(mm/min) 进给 | 0.19 mm/rev. |
| Drilling Depth 钻孔深度 | 80 mm |
| Coolant / 冷却 | Oil Mist (MQL Techniques) |




## ▶ YG-1 (After Drilling 1,000 Holes) YG-1 (钻孔后1,000 孔)



## ▶ Competitor A (After Drilling 546 Holes) 竞争社 A (钻孔后546 孔)



# DREAM DRILLS - CFRP

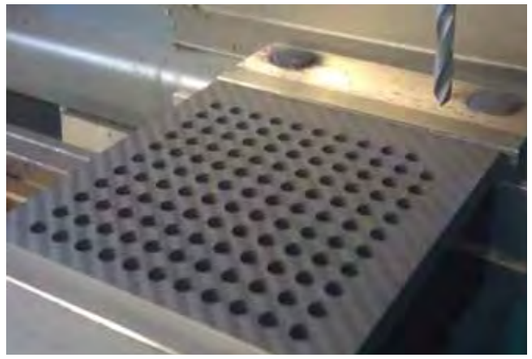
Reference page : A155 - A158

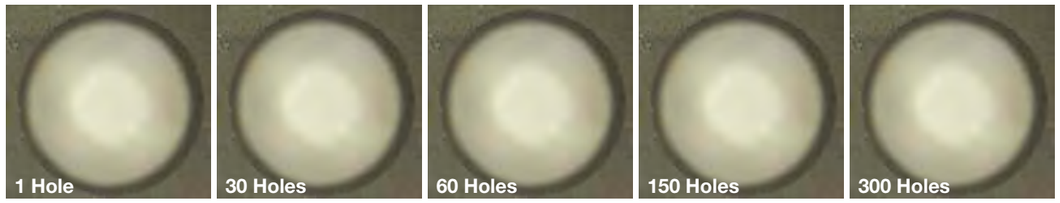
## ▶ SOLID CARBIDE DREAM DRILLS - CFRP without Coolant Holes

硬质合金梦幻钻头-CRRP 系列，无内冷孔

Cutting Condition 加工条件

| | |
|---|---|
| Tool / 刀具 | DI473060 (DREAM DRILLS - CFRP) |
| Size / 尺寸 | Ø6×Ø6×44×82 |
| Work Material 工件材质 | CFRP |
| RPM (rev./min) 转速 | 6,366 rev./min. |
| Feed(mm/min) 进给 | 254.64 mm/min. |
| Drilling Depth 钻孔深度 | 6 mm, Through Hole |
| Coolant / 冷却 | Dry Cut |





# DREAM DRILLS for HIGH HARDENED STEEL

Reference page : A169 - A172

- Low Helix Angle to maximize tools' rigidity
- Special Point Thinning to improve chip evacuation
- Excellent Coating and Surface Treatment for improved surface and better chip evacuation

- 采用低螺旋角,最大限度地提高钻头刚性。
- 特殊横刃修磨,提高排屑能力。
- 出色的涂层和表面处理，改善表面提升排屑。

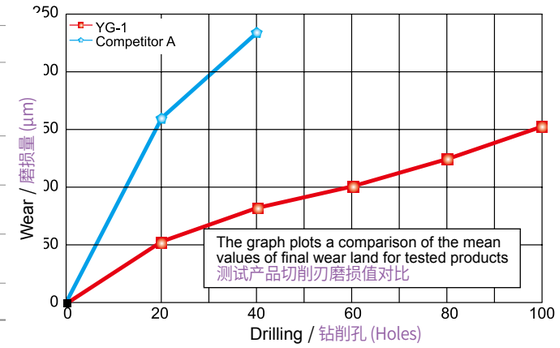
## ▶ SOLID CARBIDE DREAM DRILLS for HIGH HARDENED STEELS (HRc50-70)

梦幻钻头-高硬钢（HRc50~70）

Cutting Condition 加工条件

| | |
|---|---|
| Tool / 刀具 | DH500100 (Dream Drills for High Hardened Steels) |
| Size / 尺寸 | Ø10×Ø10×63×111 |
| Work Material 工件材质 | DIN : X155CrV-Mo12-1<br>WR : 1.2379<br>JIS : SKD11(HRc60) |
| RPM (rev./min) 转速 | 380 rev./min.. |
| Feed(mm/min) 进给 | 0.04 mm/rev. |
| Drilling Depth 钻孔深度 | 25 mm(2.5xD) |
| Coolant / 冷却 | Wet Cut / 湿切 |

TEST REPORT 测试报告




### ▶ YG-1 (After Drilling 100 Holes) YG-1 (钻孔后100 孔)

### ▶ Competitor A (After Drilling 40 Holes) 竞争社 A (钻孔后40 孔)

## MULTI-1 DRILLS

Reference page : A179 - A188

### Wide range of work materials;
广泛的工件材质;

P M K N S

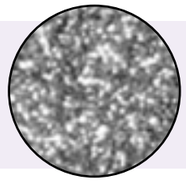
Carbon Steels, Alloy Steels, Structural Steels, Hardened Steels(up to HRc45), Cast Iron, Stainless Steels, Aluminum and Titanium
碳钢，合金钢，结构钢，淬火钢(HRc45以下)，铸铁，不锈钢，铝合金和钛合金

### Point Shape to Mazimize Self-centering
钻顶形状最大化自定心

▶Excellent positioning - bush is not necessary
▶出色的定心-不需要定位套

### Flute Design for the Best Chip Evacuation
槽型设计确保最佳的排屑效果

▶Prevent chip clogging and reduce axial thrust
▶防止切屑堵塞，减少轴向推力

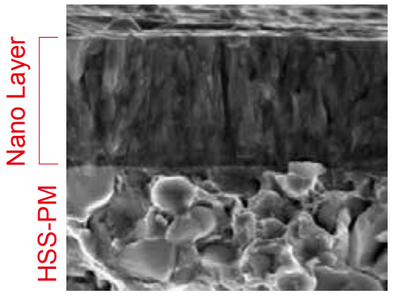


### Premium Powder Material with Excellent Toughness
高级粉末高速钢出色的韧性

▶Improve cutting edge strength with higher stability and rigidity
▶提高刃口强度，提高稳定性和刚度

### TiAlN Coating TIALN 涂层
(Upgraded Titanium Aluminum Nitride : nano-Layer coating)
(升级后的氮铝化钛涂层纳米涂层)

- Higher wear resistance and Lower friction
  - 更高的耐磨性和更低的摩擦
- Higher Cutting Speed and Feed
  - 更高的切削速度和进给量
- Improved drill Hole Quality
  - 提高钻孔质量




### Special surface treatment after coating
涂装后特殊表面处理
to reduce friction and better chip flow.
以减少摩擦和更好的切屑流动。

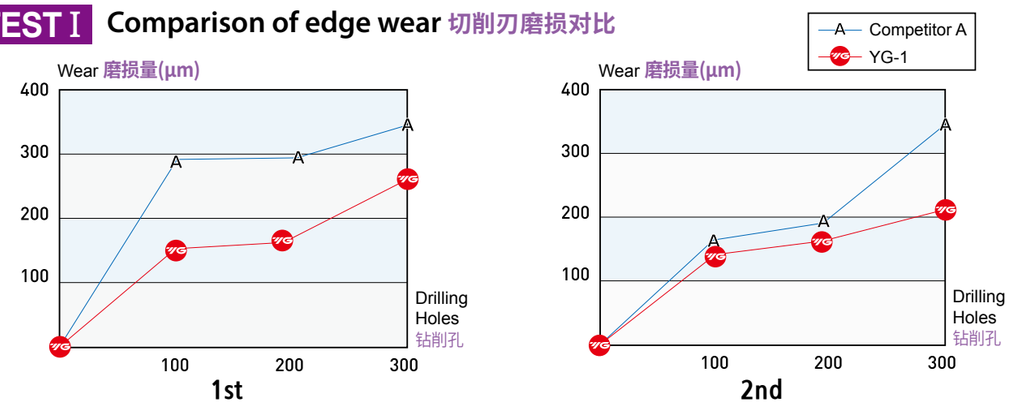




## MULTI-1 DRILLS

Reference page : A179 - A188

### TEST Ⅰ Comparison of edge wear 切削刃磨损对比

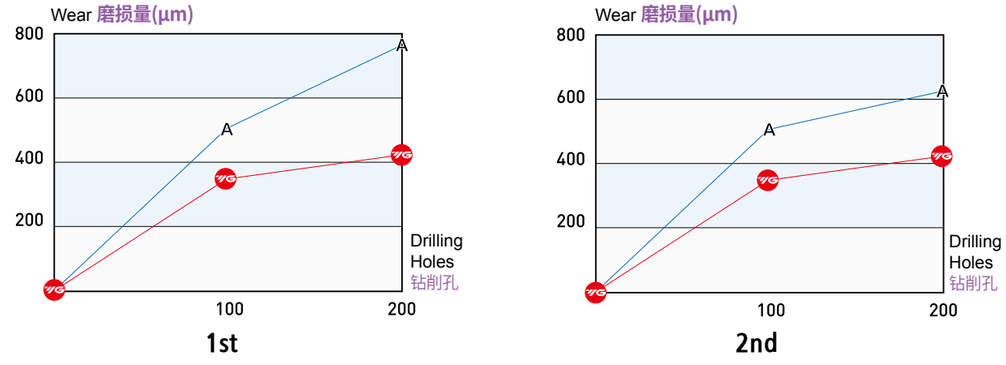



Cutting Condition 加工条件

| | |
|---|---|
| Work Material 工件材质 | JIS : SUS316<br>DIN : X3CrNiMo17-13-3<br>WR : 1.4436 |

| | |
|---|---|
| Drilling Depth / 钻孔深度 | 24mm |
| Total Drilling (hole) 总钻孔(孔) | 300 Holes |
| RPM (rev./min) / 转速 | 600 rev./min. |
| Feed(mm/min) / 进给 | 110 mm/min. |

### TEST Ⅱ Comparison of edge wear 切削刃磨损对比




Cutting Condition 加工条件

| | |
|---|---|
| Work Material 工件材质 | JIS : SKD11<br>DIN : X155CrVMo12-1<br>WR : 1.4436 |

| | |
|---|---|
| Drilling Depth / 钻孔深度 | 24mm |
| Total Drilling (hole) 总钻孔(孔) | 200 Holes |
| RPM (rev./min) / 转速 | 600 rev./min. |
| Feed(mm/min) / 进给 | 110 mm/min. |

▶YG-1

▶Competitor A

## SPADE DRILLS (Standard, SM-Point, SV-Point)

Reference page : A259 - A372

### SM-Point SM钻尖

Multiple Web Thinning for and Radius Back Face for Increased Cutting Speed and Feed / 复合横刃修磨，圆弧后刀面 增加切削速度和进给

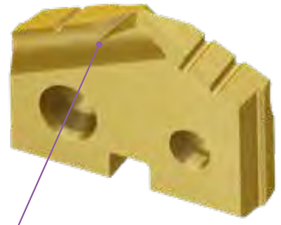
**Wide Chip Space** / 容屑空间大
**Good Self-Centering** / 自定心强
**Less Tool Lead-off** / 减少脱落
**Reduction in bell mouthing** / 减少喇叭孔

### Standard-Point 标准钻尖

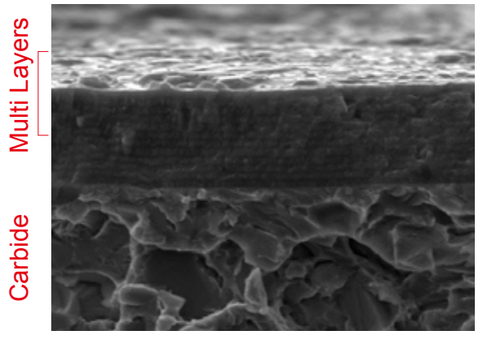
Standard Point and Neutral Rake Angle for 标准钻尖和正常前角
**Stable Cutting** 平稳加工
**Self Centering** 自定心
**Chip Breaking** 断屑
**Rigidity on Center** 中心刚性

*New Series*

### SV-Point SV 钻尖



Sinusoidal Thinning Edge and Positive Rake Angle for Improved stability and hole straightness
正弦横刃修磨正前角提高稳定性和孔直线度平稳加工
**Smoother Cutting** 断屑
**Chip Breaking Less thrust**
优秀的自定心更稳定的扭矩
**Excellent Self Centering** 优秀的自动定心
**More Stable torque and long tool life**
更稳定的扭矩使用寿命长




### Multi layered 'H'-coating 复合涂层 “H”
### Micro Grain Carbide Insert 微晶硬质合金刀片

Outstanding Productivity & Reliability
卓越的生产力和可靠性

**H - Coating H 涂层**
(Upgraded AlCrN-Based : **Multi-Layer coating**)
(升级AlCrN基涂层:复合涂层)

- Higher worn-out resistance and Lower friction
  - 较高的耐磨性和较低的摩擦
- Higher Cutting Speed and Feed
  - 更高的切削速度和进给量
- Improved drill Hole Quality
  - 提高钻孔质量



PRODUCT FEATURES 产品优点

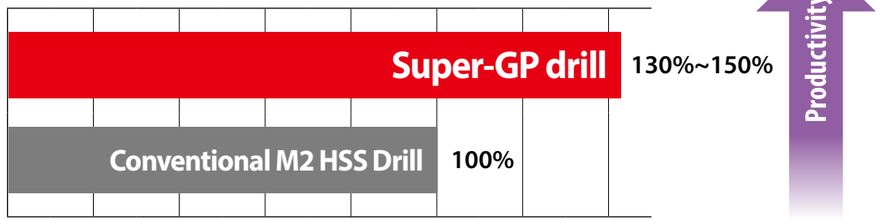
## SUPER-GP DRILLS

Reference page : A203 - A208

**Super-GP drill** was **designed** to **improve** the performance of the Conventional **HSS M2 drill.**
Super-GP钻头是为了提高传统高速钢(M2)钻头的性能而设计的。

- Super HSS will Improve Toughness and Wear Resistance.
  - 采用超级高速钢将提高韧性和耐磨性。
- Rigid structure allows excellent performance for poor machining condition.
  - 刚性结构在不良加工条件也表现出出色的性能。
- Minimized interference will reduce drilling force and friction .
  - 尽可能减少干扰，减少钻孔阻力和摩擦力。
- Uniform helix angle will help chip formation and evacuation.
  - 均匀螺旋角有利于切屑形成和排屑。

### Increase Tool Life at same cutting conditions
在相同切削条件下提高刀具寿命



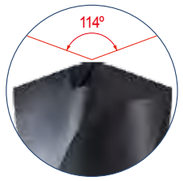
**Just One-type of drill for all Applications Regardless of Machining Conditions; Good or Poor**
只用一种类型的钻头适用于所有应用
无论加工条件如何;好还是差

Rigid Machining Condition
稳定加工工况

Unstable Machining Condition
不稳定加工工况

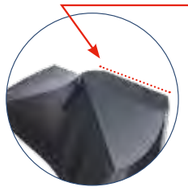
## Dream Drills Soft

Reference page : A101 - A110



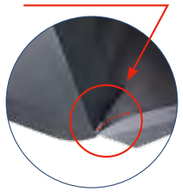

**140 Degree Point Angle**
for good centering and low thrust
**140°钻顶角**
良好的定心和低止推力

Lip Straight shape
直线型切削刃

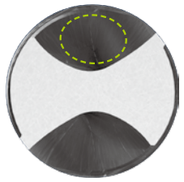


**Lip Straight shape Cutting Edge**
will allow low thrust, strong rigidity and stable torque
**直线型切削刃**
低止推力，高刚性和稳定的扭矩

Radius Thinning
圆弧横刃修磨

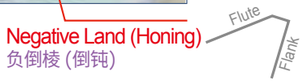


**Unique radius Thinning**
for Self Centering and Chip Breaking
**独特的圆弧横刃修磨**
自定心和断屑



**Optimized flute shape**
smooth chip evacuation
**最佳的槽型**
排屑顺畅

**Negative land** on the cutting edge
for Reliable Tool Life 切削刃负倒棱 可靠的刀具寿命




**X-Coating** X-涂层 **(AlCrN-Based Mono-Layer coating_Bright Grey)**
- Higher worn-out resistance and Lower Adhesion
  · 较高的耐磨性能和较低的附着力
- Higher Cutting Speed and Feed
  · 更高的切削速度和进给量
- Improved heat resistance and high-temperature oxidation resistance
  · 提高了耐热性和耐高温氧化性

**Special surface treatment after coating**
**涂装后特殊表面处理**
**to reduce friction and better chip flow.**
减少摩擦和更好的切屑流动。

Micro-grained carbide for wear resistance and longer tool life





## SYNCHRO TAP

Reference page : B39 - B44

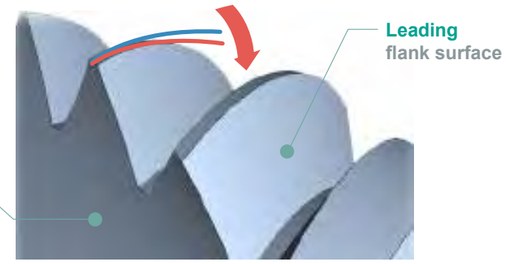
### FEATURES OF GEOMETRY / 设计特点

▶ **Shorter thread length** will reduce chip problems at higher speed tapping conditions
短螺纹设计: 减少高速攻丝中排屑问题

▶ **Shank Tolerance 'YH'** for precision clamping and rigid tapping
柄部公差 'YH: 保证精密夹紧和稳定攻丝

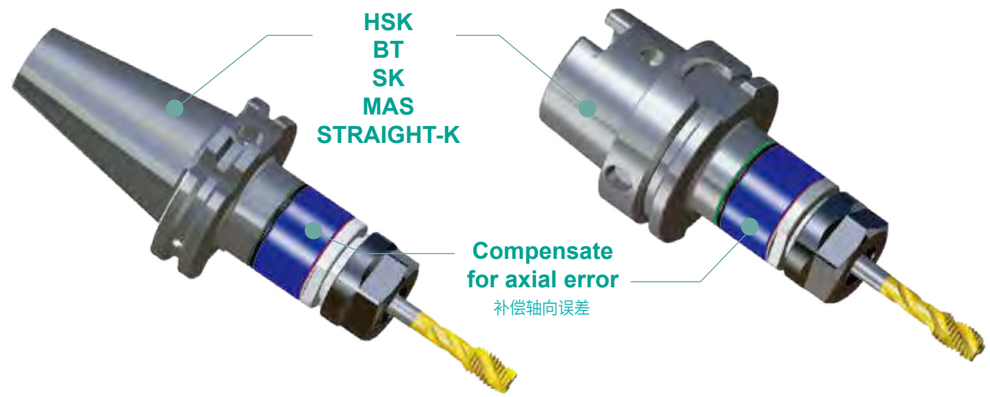
▶ **More thread relief**
allows high speed cutting
采用大后角:实现高速攻丝

▶ **HSS-PM (Powder Metallurgy)**
for more reliable performance
and wear resistance
**HSS-PM(粉末高速钢):**
实现性能稳定性和卓越耐磨性




### SYNCHRO TAPPING CHUCK (ER TYPE) / 同步攻丝刀柄 (ER型)

▶ When using Synchro taps, YG-1 strongly recommends SYNCHRO Tapping Chuck for the best thread quality and superior tool life
用同步丝锥时，YG-1推荐用同步攻丝刀柄，从而提高丝锥寿命和攻丝质量



# SYNCHRO TAP

Reference page : B39 - B44

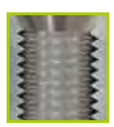
## ADVANTAGES / 优点

### ▶ PRODUCTIVITY 产率

**Up to 3 times Faster** in tapping compared to conventional taps (General Steel)

增加到3倍快速 比较普通丝锥（普通钢）

### ▶ 4 kinds of taps are available 具有4 种类型的丝锥

| Blind Hole 盲孔 | Through Hole 通孔 | | |
|---|---|---|---|
| | | | M3 - M20 Spiral Flute 螺旋 |
| | | | M3 - M20 Spiral Point 先端 |
| | | | M3 - M20 Straight Flute 直槽 |
| |  | | M3 - M12 Cold Forming 挤压 |





Reference page : B39 - B44

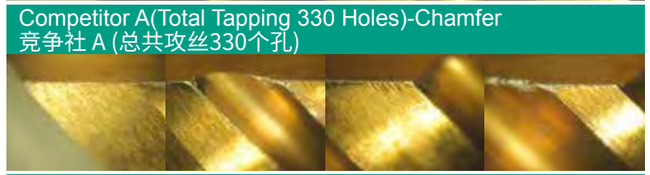
## TEST Ⅰ - SPIRAL FLUTE 螺旋

**Cutting Condition 加工条件**

| | |
|---|---|
| Tool / 刀具 | HSS-PM Synchro Spiral Flute Tap |
| Size / 尺寸 | M10×1.5 |
| Work Material 工件材质 | JIS : S45C(HRc35)<br>DIN : C45<br>WR : 1.0503 |
| Cutting Speed 切削速度 | 30 m/min. |
| RPM (rev./min) 转速 | 955 rev./min. |
| Feed(mm/min) 进给 | 1.5 mm/rev. |
| Tapping Depth 钻孔深度 | 25 mm |
| Tapping Method 攻丝方法 | Blind Hole Tapping |
| Coolant / 冷却 | Wet Cut |
| Machine / 机器 | Machining Center |

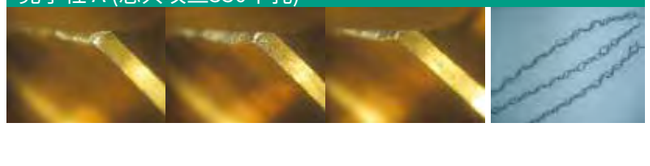
YG-1(Total Tapping 330 Holes)-Chamfer
YG-1 (总共攻丝330个孔)

Competitor A(Total Tapping 330 Holes)-Chamfer
竞争社 A (总共攻丝330个孔)



YG-1(Total Tapping 330 Holes)-Thread
YG-1 (总共攻丝330个孔)

Competitor A(Total Tapping 330 Holes)-Thread
竞争社 A (总共攻丝330个孔)



## TEST Ⅱ - SPIRAL FLUTE 螺旋

**Cutting Condition 加工条件**

| | |
|---|---|
| Tool / 工具 | HSS-PM Synchro Spiral Flute Tap |
| Size / 规格 | M6×1.0 |
| Work Material 工件材质 | JIS : S45C(HRc35)<br>DIN : C45<br>WR : 1.0503 |
| Cutting Speed 切削速度 | 30 m/min. |
| RPM (rev./min) 转速 | 1,592 rev./min. |
| Feed(mm/min) 进给 | 1.0 mm/rev. |
| Tapping Depth 钻孔深度 | 25 mm |
| Tapping Method 钻孔 | Blind Hole Tapping |
| Coolant / 冷却 | Wet Cut |
| Machine / 机器 | Machining Center |

YG-1(Total Tapping 490 Holes)-Chamfer
YG-1 (总共攻丝490个孔)

Competitor A(Total Tapping 490 Holes)-Chamfer
竞争社 A (总共攻丝490个孔)

YG-1(Total Tapping 490 Holes)-Thread
YG-1 (总共攻丝490个孔)

Competitor A(Total Tapping 490 Holes)-Thread
竞争社 A (总共攻丝490个孔)

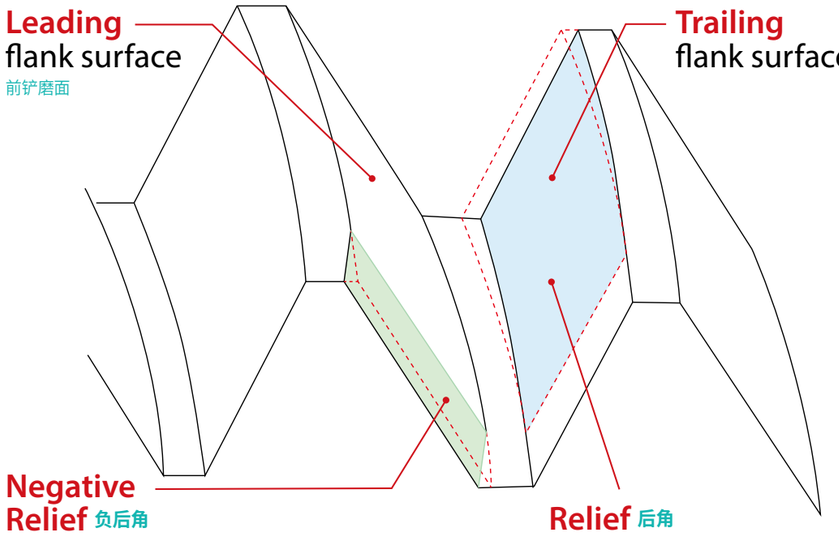
## Combo Tap

Reference page : B45 - B60

### General Use for Various Materials 满足各种材质的一般应用

Combo Tap's geometry provides enough flute space resulting in smooth chip evacuation and therefore a continuous production process. Guarantee a high level of process reliability even under unfavorable conditions.
Combo 丝锥的设计提供了足够的排屑空间，从而保证了平顺的排屑和稳定的加工过程。即使在各种加工条件下也能保证稳定的加工水平。

- ▶ For Steels, Stainless Steels, Cast Iron and Non-Ferrous Materials 适合钢件，不锈钢，铸铁和有色金属加工
- ▶ Prevents over & under feeding by its optimized flank geometry 最佳的铲背设计避免过攻丝或攻丝不足
- ▶ Constant threading quality preventing oversized threading 螺纹质量稳定防止中径过大




- **Optimized** flank **geometry** to **prevent over & under feeding**
  - 最佳的铲背形状，以防止过和攻丝不足
- Enables **smoother tapping** with better chip evacuation
  - 攻丝更平稳，排屑更顺畅
- **Compensation** of cutting force,
  which reduces tap wear and extends tool life.
  - 补偿切削力，减少丝锥磨损，延长刀具寿命。





## Combo Tap

Reference page : B45 - B60

### TEST Ⅰ - SPIRAL FLUTE 螺旋

Cutting Condition 切削条件

| | |
|---|---|
| Tool / 工具 | Combo Spiral Flute Tap |
| Size / 规格 | M8×1.25 |
| Work Material 工件材质 | JIS : S45C(HRc35)<br>DIN : C45<br>WR : 1.0503 |
| Tapping Depth 钻孔深度 | 20mm |
| Coolant / 冷却 | Water Soluble Oil |
| Vc (Tapping Speed) 螺纹速度 | 10.0m/min |

**YG-1(Total Tapping 204 Holes)**
**YG-1 (总共攻丝204个孔)**

Surface Roughness of Work Piece
工件表面质量

204 Holes ▶

**Competitor A (Total Tapping 159 Holes)**
**竞争社 A (总共攻丝159个孔)**

Surface Roughness of Work Piece
工件表面质量

159 Holes ▶

**Competitor B (Total Tapping 204 Holes)**
**竞争社 B (总共攻丝204个孔)**

Surface Roughness of Work Piece
工件表面质量

204 Holes ▶

### TEST Ⅱ - SPIRAL POINT 先端丝锥

Cutting Condition 切削条件

| | |
|---|---|
| Tool / 工具 | Combo Spiral Point Tap |
| Size / 规格 | M2×0.4 |
| Work Material 工件材质 | JIS : S45C(HRc35)<br>DIN : C45<br>WR : 1.0503 |
| Tapping Depth 钻孔深度 | 6mm |
| Coolant / 冷却 | Tapping Oil |
| Machine / 机器 | Machining Center |

**YG-1(Total Tapping 450 Holes)**
**YG-1 (总共攻丝450个孔)**

**Competitor A (Total Tapping 318 Holes)**
**竞争社 A (总共攻丝318个孔)**

Tool broke after tapping 318 holes
318孔丝锥折断

**Competitor B (Total Tapping 103 Holes)**
**竞争社 B (总共攻丝103个孔)**

Tool broke after tapping 103 holes
103孔丝锥折断

## Combo Tap

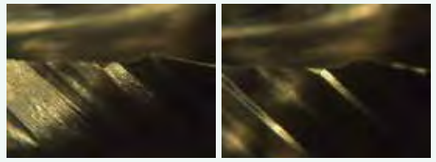
Reference page : B45 - B60

### TEST Ⅰ - SPIRAL FLUTE / 螺旋

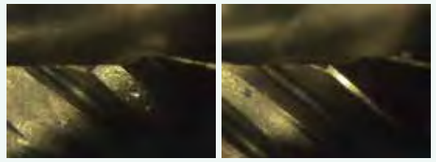
**Cutting Condition 切削条件**

| | |
|---|---|
| Tool / 工具 | Combo tap for Stainless Steels (TQ744246) |
| Size / 规格 | M4×0.7 |
| Work Material 工件材质 | JIS : SUS304<br>DIN : X5CrNi18 10(X 4 CrNi18-10)<br>WR : 1.4303 |
| Tapping Depth 钻孔深度 | 10mm |
| Coolant / 冷却 | Wet Cut |
| Vc (Tapping Speed) 螺纹速度 | 8m/min. |

**YG-1(Total Tapping 170 Holes)**
**YG-1 (总共攻丝170个孔)**



**Competitor A (Total Tapping 170 Holes)**
**竞争社 A (总共攻丝170个孔)**



**Competitor B 竞争社 B**

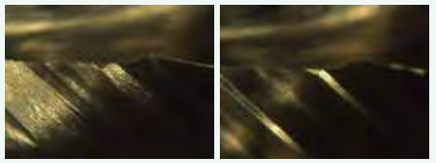
Tool broke after tapping 83 holes

### TEST Ⅱ - SPIRAL FLUTE 螺旋

**Cutting Condition 切削条件**

| | |
|---|---|
| Tool / 工具 | Combo tap for Stainless Steels (TQ744316) |
| Size / 规格 | M6×1.0 |
| Work Material 工件材质 | JIS : SUS304<br>DIN : X5CrNi18 10 (X 4 CrNi18-10)<br>WR : 1.4303 |
| Tapping Depth 钻孔深度 | 15mm |
| Coolant / 冷却 | Wet Cut |
| Vc (Tapping Speed) 螺纹速度 | 8m/min. |

**YG-1(Total Tapping 230 Holes)**
**YG-1 (总共攻丝230个孔)**



**Competitor A / 竞争社 A**

Tool broke after tapping 92 holes

**Competitor B / 竞争社 B**

Tool broke after tapping 98 holes

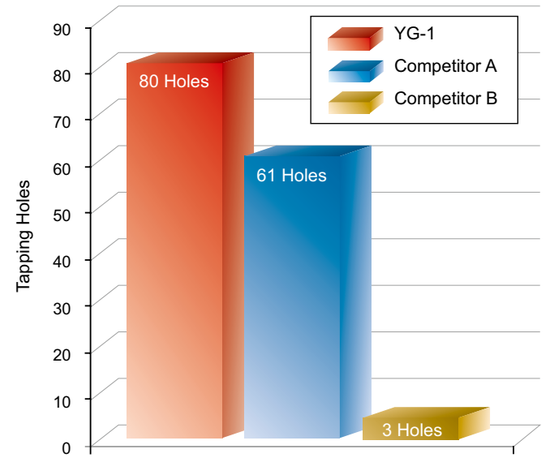


CASE STUDY 案例分析

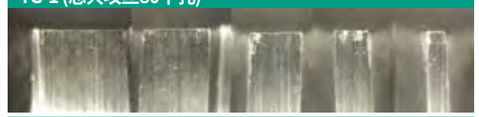
## Combo Tap

Reference page : B45 - B60

### TEST Ⅰ - STRAIGHT FLUTE TAPS 直槽




**YG-1(Total Tapping 80 Holes)**
**YG-1 (总共攻丝80个孔)**



**Competitor A (Total Tapping 61 Holes)**
**竞争社 A (总共攻丝61个孔)**

Tool broke after tapping 61 holes

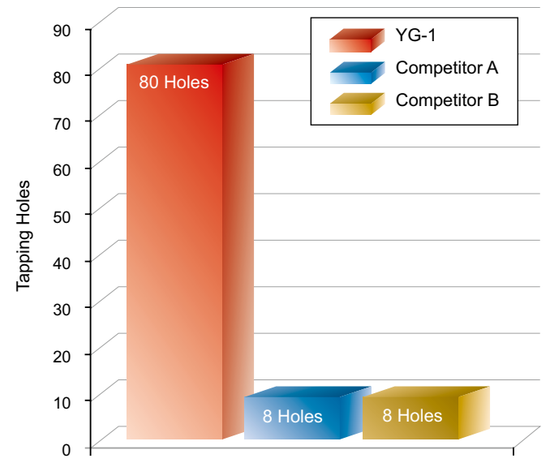
**Competitor B (Total Tapping 3 Holes)**
**竞争社 B (总共攻丝3个孔)**

Tool broke after tapping 3 holes

**Cutting Condition / 切削条件**

| | |
|---|---|
| Tool / 工具 | Straight flute tap |
| Size / 规格 | M6×1.0 |
| Work Material 工件材质 | JIS : SKD61 (HRc50)<br>DIN : X40GrMoV51(1.2344)<br>AISI : H13 |
| R.P.M. / 转速 | 120 rev./min. |
| Feed / 进给 | 1.0 mm/rev. |
| Tapping Depth 钻孔深度 | 9mm (1.5×D) |
| Coolant / 冷却 | Wet Cut |

### TEST Ⅱ - STRAIGHT FLUTE TAPS 直槽




**YG-1(Total Tapping 80 Holes)**
**YG-1 (总共攻丝80个孔)**

**Competitor A (Total Tapping 8 Holes)**
**竞争社 A (总共攻丝8个孔)**

**Competitor B (Total Tapping 8 Holes)**
**竞争社 B (总共攻丝8个孔)**

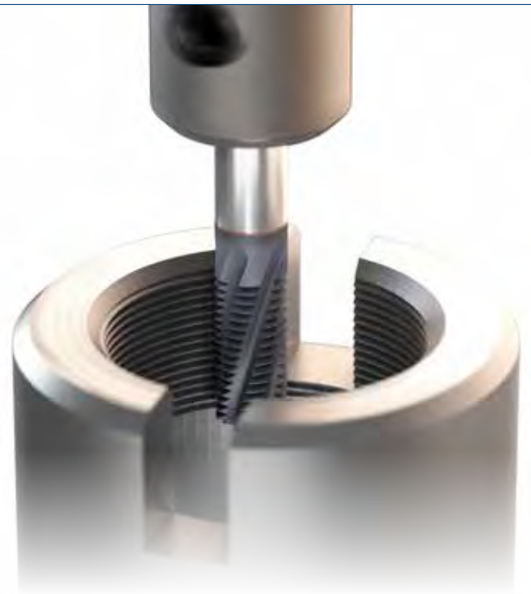
Tool broke after tapping 8 holes

**Cutting Condition 切削条件**

| | |
|---|---|
| Tool / 工具 | Straight flute tap |
| Size / 规格 | M6×1.0 |
| Work Material 工件材质 | JIS : SKD61 (HRc50)<br>DIN : X40GrMoV51(1.2344)<br>AISI : H13 |
| R.P.M. / 转速 | 120 rev./min. |
| Feed / 进给 | 1.0 mm/rev. |
| Tapping Depth 钻孔深度 | 9mm (1.5×D) |
| Coolant / 冷却 | Wet Cut |

## Thread Mills

Reference page : B17 - B38



**A Thread mill can produce various thread diameters with the same pitch.**

螺纹铣刀可以加工具有相同螺距的不同直径的螺纹

Disadvantage of tapping is that a different size tap is required for each size hole

攻丝的缺点是每个尺寸的孔都需要不同尺寸的丝锥

**One Thread mill for blind-holes and through-holes.**

螺纹铣刀可以同时加工盲孔和通孔

Thanks to short chips, No chip problems with tapping No problems removing broken tools from the workpiece.

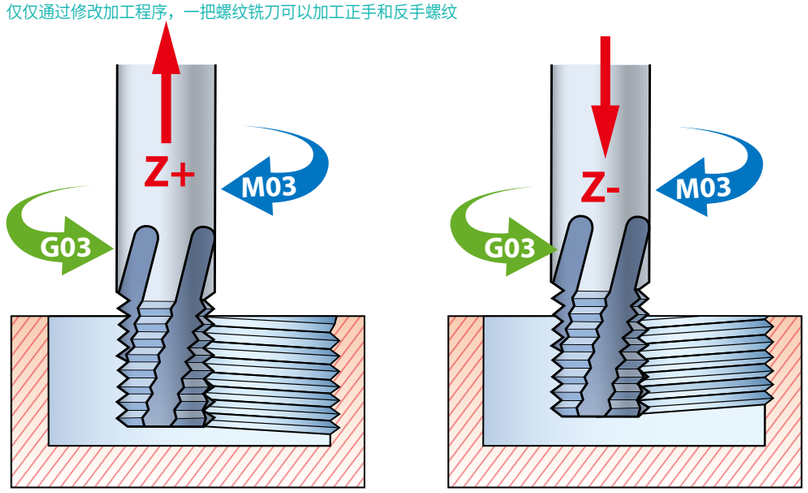
由于切屑短，攻丝过程钟没有切屑苦恼
也没有从工件去除断刀的苦恼

**One Thread mill for right- and left-hand threads.**

一把螺纹铣刀同时加工正手和反手螺纹

Right-hand and left-hand threads can be produce with the same tooling just by adjusting CNC commands.

仅仅通过修改加工程序，一把螺纹铣刀可以加工正手和反手螺纹




Right-hand thread　　left-hand thread

**Higher Cutting Speed than tapping.** 加工速度比攻丝更高

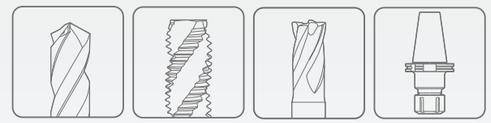
**Higher Reliable Process than tapping, because of short chips.**

因为切屑短，比攻丝更可靠

Thread Milling takes much less torque than tapping 螺纹铣削比攻丝需要更少的扭矩



Global Cutting Tool Leader **YG-1**

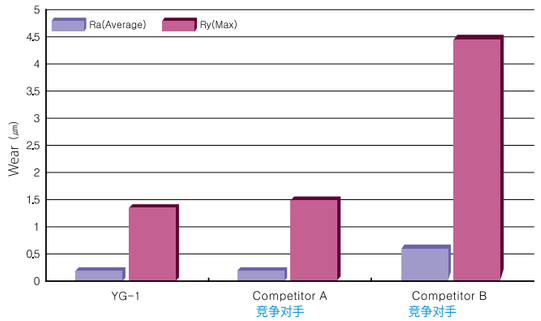


## CBN End mills

Reference page : p.C23 ~ C28

### TEST Ⅰ Total Milling Length (铣削长度) : 240mm

**Surface Roughness of Work Piece 工件表面粗糙度**

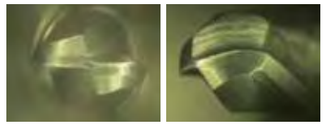



**Cutting Condition (加工参数) (Ø1 x R0.5)**

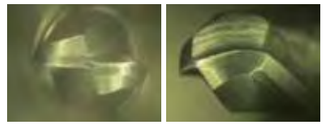
| | |
|---|---|
| Tool 刀具 | 2Flute, CBN Ball Nose End mill |
| Size 尺寸 | Ø1×Ø4×0.6×50 |
| Work Material 工件材料 | JIS : SKD11(HRc60)<br>DIN : X155CrV-Mo12-1<br>WR : 1.2379 |
| Vc (m/min) 切削速度 | 94.25 |
| RPM (rev./min) 转速 | 30,000 |
| Feed (mm/min) 进给量 | 1,500 |
| Milling Depth (mm) 铣削深度 | 0.01 |
| Coolant 冷却 | Oil Mist 油雾 |
| Machine 设备 | Machining Center 加工中心 |

**Maximum Wear 最大磨损 (㎛)**

**YG CBN (19.611㎛)**



**Competitor (竞争对手) A (32.249㎛)**

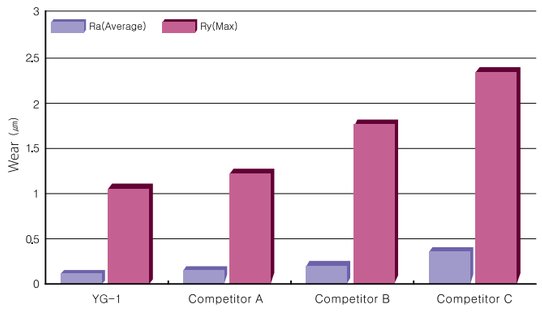


**Competitor (竞争对手) B**

Tool was broken after
100 meter milling
铣削100m以后刀具断了

### TEST Ⅱ Total Milling Length (铣削长度) : 750mm

**Surface Roughness of Work Piece 工件表面粗糙度**

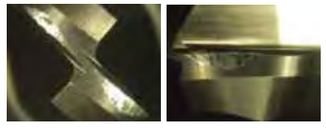



**Cutting Condition (加工参数) (Ø2 x R1.0)**

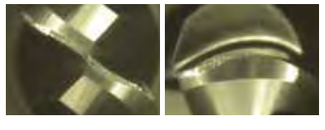
| | |
|---|---|
| Tool 刀具 | 2Flute, CBN Ball Nose End mill |
| Size 尺寸 | Ø2×Ø4×1.8×50 |
| Work Material 工件材料 | JIS : SKD11(HRc60)<br>DIN : X155CrV-Mo12-1<br>WR : 1.2379 |
| Vc (m/min) 切削速度 | 188.50 |
| RPM (rev./min) 转速 | 30,000 |
| Feed (mm/min) 进给量 | 2,000 |
| Milling Depth (mm) 铣削深度 | 0.01 |
| Coolant 冷却 | Oil Mist 油雾 |
| Machine 设备 | Machining Center 加工中心 |

**Maximum Wear (最大磨损) (㎛)**

**YG CBN**
**57.630㎛**



**Competitor A**
(竞争对手)
**100.314㎛**



**Competitor B**
(竞争对手)
**71.471㎛**

**Competitor C**
(竞争对手)
**170.200㎛**

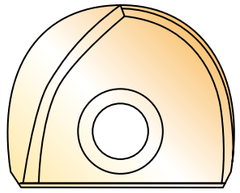




## i-Xmill End mills

Reference page : p.C29 ~ C54

### i-Xmill BALL INSERT 球头刀片

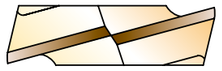


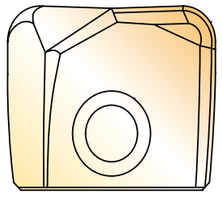
**1. Helical end gash ( "S" gash ) geometry 螺旋月牙槽（S型月牙槽)几何形状**
- Low milling torque 减少加工扭矩
- Prevents chattering 防止振动
- Improves chip ejection 有利排屑
- Prolong tool life 延长刀具寿命

**2. Polished cutting edges 刃线抛光**
- Better wear resistance and tool life 提高耐磨性和刀具寿命
- Improves repeatability in performance 提高稳定性能
- Improves surface roughness on work-piece 提高工件表面粗糙度
- Improves coating 优化涂层

**3. Special coating 特殊涂层**
- Combine high hardness with high thermal stability against oxidation
  高硬度和高耐热性，提高抗氧化性能
- Superior wear resistance 优秀耐磨性
- Faster feeds and speeds 高进给和速度

### i-Xmill CORNER RADIUS INSERT 圆鼻刀片

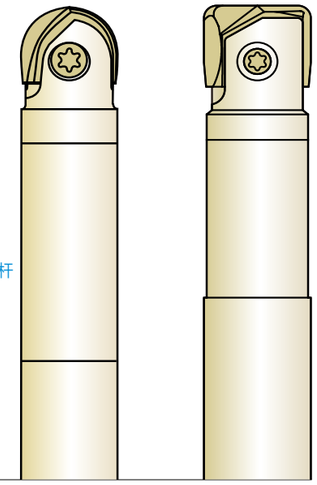




1. The optimized tool geometry achieves better reliability and reduces vibration and cutting load. 最佳的几何设计，实现切削稳定性，减少加工震动和负载
2. Corner radius insert can be used with the ball holder, but for a better precision in cutting. It is recommended to use the corner radius holder.
   圆鼻刀片可以跟球头刀杆通用，可是为了更高精度， 推荐使用圆鼻刀片专用刀杆
3. The various and wide cutting range allows machining in both roughing and finishing.
   具有多种规格，粗加工、精加工都可以
4. Special coating makes high hardness with high thermal stability against oxidation.
   独特涂层具有高硬度，高耐热性和抗氧化性能

### i-Xmill CARBIDE HOLDER 硬质合金刀杆

1. As rigid as a solid carbide end mill for stable machining with reduced vibration and enhanced finish 具有与整体合金一样的刚性，从而减小加工震动和提高加工质量
2. Allows a high quality of finishing even when machining the deeper part of a mold
   即使在加工模具较深部分时也可实现卓越的精加工
3. Longer tool life than a steel holder 比钢制刀杆更长的刀具寿命
4. Shrink Fit Holding system can be applied 可以适用于热缩夹持系统
5. Upon request, the broken holder is able to be regenerated 按需求，破损刀杆可以修磨
6. Your carbide holder can be regenerated as YG-1 type upon request 可提供订制硬质合金刀杆



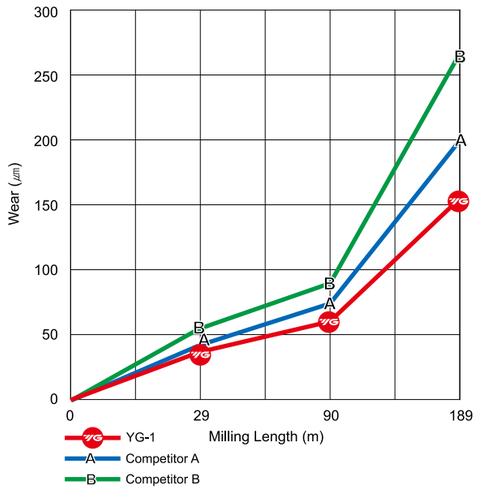
### i-Xmill STEEL HOLDER 钢制刀杆

1. Premium alloy steel with excellent strength 高强度的高级合金钢材质
2. Precise shank tolerance (h6) 高精度的柄径精度（h6)
3. Nickel plated, to prevent corrosion and improve lubricity 防止腐蚀并提高润滑性的镀镍

## i-Xmill End mills

Reference page : p.C29 ~ C54

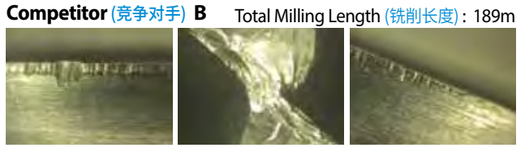
### TEST Ⅰ *i*-Xmill Ball Nose 球头




YG *i*-Xmill — Total Milling Length (铣削长度) : 189m

**Competitor** (竞争对手) **A** — Total Milling Length (铣削长度) : 189m

**Competitor** (竞争对手) **B** — Total Milling Length (铣削长度) : 189m



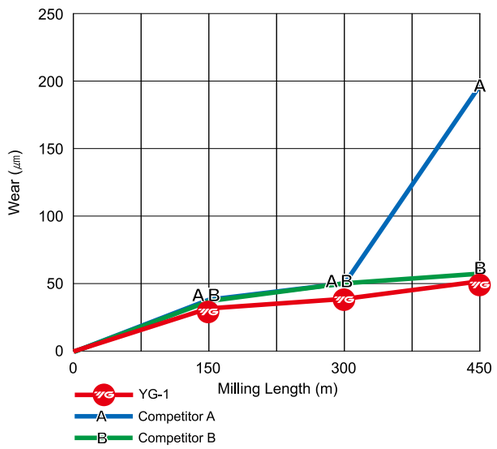
#### Cutting Condition (Side Cutting) 加工参数 (侧铣削)

| | |
|---|---|
| Tool 刀具 | i-Xmill Ball (XMB120C160) |
| Size 尺寸 | Ø16×R8.0 |
| Work Material 工件材料 | JIS : SKD61 (HRc50),<br>DIN : X40GrMoV51(1.2344)<br>AISI : H13 |

| | |
|---|---|
| Vc(m/min) 切削速度 | 80.42 |
| RPM (rev./min) 转速 | 1,600 |
| Feed(mm/min) 进给量 | 390 |
| Feed per tooth (mm/tooth) 每齿进给量 | 0.12 |

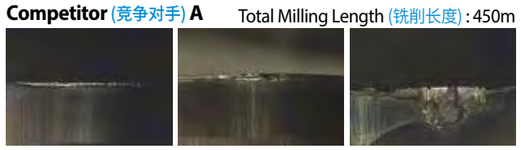
| | |
|---|---|
| Milling Depth(mm) 铣削深度 | Axial 轴向 : 0.8 mm<br>Radial 径向 : 1.6 mm |
| Coolant 冷却 | Oil Mist 油雾 |
| Overhang 悬伸 | YG-1, Competitor B : 48 / Competitor A : 56 |
| Machine 设备 | Machining Center 加工中心 |

### TEST Ⅱ *i*-Xmill Corner Radius 圆鼻

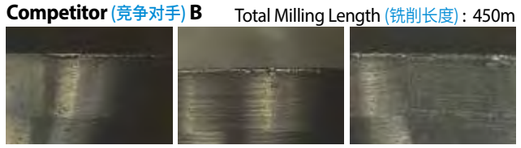



YG *i*-Xmill — Total Milling Length (铣削长度) : 450m

**Competitor** (竞争对手) **A** — Total Milling Length (铣削长度) : 450m



**Competitor** (竞争对手) **B** — Total Milling Length (铣削长度) : 450m



#### Cutting Condition (Side Cutting) 加工参数 (侧铣削)

| | |
|---|---|
| Tool 刀具 | i-Xmill Corner Radius (XMR110A16020) |
| Size 尺寸 | Ø16×R2.0 |
| Work Material 工件材料 | KS : KP4M (Mold steels HRc35)<br>DIN : 40CrMnNiMo8-6-4(1.2738)<br>AISI : P20+Ni |

| | |
|---|---|
| Vc(m/min) 切削速度 | 280 |
| RPM (rev./min) 转速 | 5,570 |
| Feed(mm/min) 进给量 | 2,230 |
| Feed per tooth (mm/tooth) 每齿进给量 | 0.2 |

| | |
|---|---|
| Milling Depth(mm) 铣削深度 | Axial 轴向 : 3.0<br>Radial 径向 : 0.2 |
| Coolant 冷却 | Oil Mist 油雾 |
| Overhang 悬伸 | 70 |
| Machine 设备 | Machining Center 加工中心 |

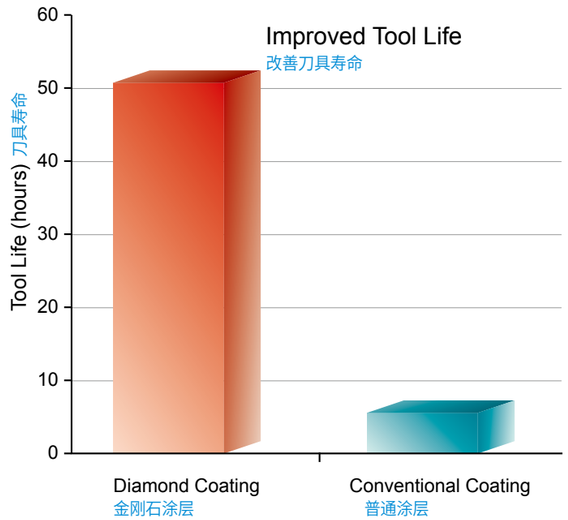




## i-Xmill End mills

Reference page : p.C29 ~ C54

### TEST Ⅲ *i*-Xmill with Diamond Coating 金刚石涂层




#### Cutting Condition (加工参数)

| | |
|---|---|
| Tool 刀具 | i-Xmill Corner Radius (XMR110D17010) |
| Size 尺寸 | Ø17 x R1.0 |
| Work Material 工件材料 | Graphite 石墨 |
| Vc (m/min) 切削速度 | 320 |
| RPM (rev./min) 转速 | 6,000 |
| Feed (mm/min) 进给量 | 2,800 |
| Feed per tooth (mm/tooth) 每齿进给量 | 0.23 |
| Milling Depth (mm) 铣削深度 | Axial 轴向 : 0.2 |
| Coolant 冷却 | Air 气冷 |

### Coating properties 涂层性能

This coating generation features a good crystalline structure. It protects tools perfectly against abrasive wear and is unsurpassed in graphite cutting.
这种涂层产生具有良好的晶体结构。
可以完美保护工具免受磨蚀，并且在石墨切削中无与伦比。

### Feature 特点

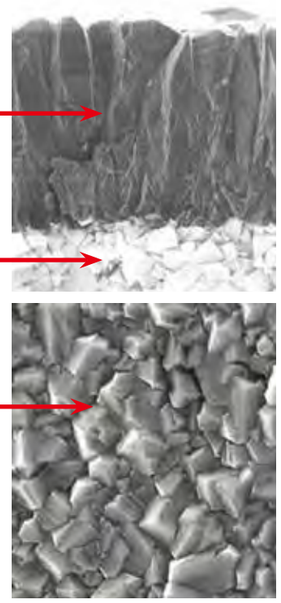
1. High Abrasive wear resistance.
2. Good Coefficient of friction.(against Al)
3. High Precision.
1. 高耐磨性
2. 优秀摩擦系数
3. 高精密

### Advantages 优点

Diamond coated i-Xmill possible to cut graphite workpieces with substantially greater speeds and in significantly better quality.
金刚石涂层i-Xmill可以加工高速度和更好的质量切削石墨工件。

### Applications 工况

1. Precision-structured graphite electrodes.
2. Micro-Electromechanical Systems. (MEMS)
3. Printed Circuit Boards. (PCBs)
4. Ceramics (greens, sintered) Dental, machinery.
1.精密结构的石墨电极
2.微机电系统（MEMS）
3.印刷电路板（PCB）
4.陶瓷（生坯，烧结）牙科，机械。



## i-SMART Modular Type End mills

Reference page : p.C55 ~ C74

### Modular Type, Y-Coated Exchangeable Carbide Heads for Pre-Hardened Steels with both Carbide & Steel Holders

**模块式刀头可装配于合金刀杆或钢制刀杆，**
**Y涂层可换式合金刀头适合加工预硬钢件。**

- Reduces 1/10 of the time spent to change tools than conventional solid tools
  相对于传统合金铣刀，降低到1/10的换刀时间
- Outstanding cutting abilities and wear resistance made from advanced coating and geometry
  杰出的切削性能和耐磨性，得益于先进的涂层和槽型结构
- Multiple helix applied to minimize vibration when cutting
  应用多螺旋角结构，降低切削过程的振动。

### Seven different selections of modular heads fit in two different shanks.

**7种可选的不同模块式刀头适合于两种不同形式的刀杆。**

### You can just change the modular head spending one tenth of which you spent before on conventional solid tools.

**您只需要更换模块化的刀头，花费的时间是之前在更换传统整体铣刀的十分之一。**

※Tool changing time may change depending on workers.

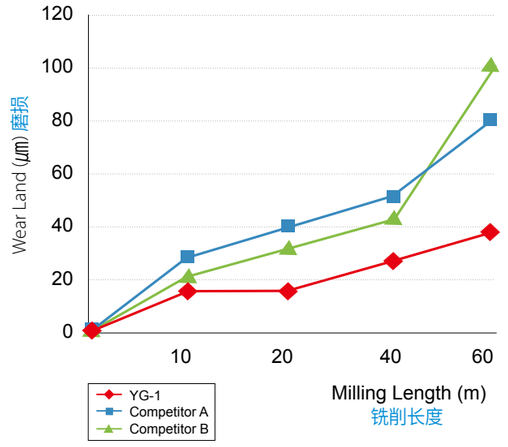




## i-SMART Modular Type End mills

Reference page : p.C55 ~ C74

**TEST** **Total Milling Length 铣削长度 : 60m**




**Cutting Condition (Down & Side Cutting)**
**加工参数(坡走&侧铣削)**

| | |
|---|---|
| Tool 刀具 | 4Flute Corner Radius |
| Size 尺寸 | Ø16 x R1.0 |
| Work Material 工件材料 | KP4M (HRc35)<br>AISI P20+Ni<br>DIN 1.2738 Improved |
| Vc (m/min) 切削速度 | 155.82 |
| RPM (rev./min) 转速 | 3,100 |
| Feed (mm/min) 进给量 | 280 |
| Feed per tooth (mm/tooth) 每齿进给量 | 0.02 |
| Milling Depth (mm) 铣削深度 | Axial 轴向 : 12<br>Radial 径向 : 0.8 |
| Overhang (mm) 悬伸 | 77 |
| Coolant 冷却 | Wet Cut 湿切 |
| Machine 设备 | Machining Center 加工中心 |

**i-SMART**

**Competitor (竞争对手) A**

**Competitor (竞争对手) B**

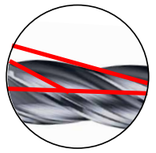
## 4G Mills End mills

Reference page : p.C135 ~ C320

### High Speed Cutting for Pre-Hardened Steels up to HRc55
高速加工预硬钢 (HRc55以下)

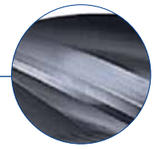
**Suitable for wide range of work material, specifically for increasing tool life when machining pre-hardened materials, low hardness materials and cast iron, etc.
High speed cutting, dry and wet cut recommended together.**

**适合多种工件材料, 尤其是加工预硬钢, 低硬钢及铸铁等时候增加刀具寿命
高速加工, 干切和湿切都推荐**



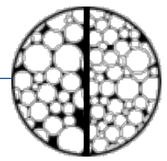
### Unequal Index & Multiple Helix 不等分度 & 不等螺旋
4G Mills, 4 Flute Multiple Helix End Mills exclusively designed to reduce vibration and also to achieve excellent chip evacuation

4G铣刀, 4刃不等螺旋设计减少震动及 提高排屑性能



### Optimal Edge Preparation 最佳刀尖保护
All 4G Mills products contain an Optimal Edge Preparation to prevent chipping, also obtaining an excellent surface finish with a longer tool life in High Speed Cutting

所有4G铣刀产品为了防止崩裂,采用最佳刀尖保护
高速加工情况下, 具有优秀的刀具寿命和卓越的工件表面粗糙度



### Ultra Micro Grain & Nano Grain Carbide
超微细颗粒 & 纳米颗粒

Premium Grade Carbide Substrate Materials
achieving exceptional wear resistance
making it possible for High Precision Machining

高级硬质合金基体具有优秀的耐磨性, 实现高精密加工

### High Technology Y-Coating 高科技Y涂层
AlCr Based, YG-1`s High Technology
In-house coating for maximum tool life and high performance
Excellent quality coating developed by YG-1

AlCr基础的YG-1高科技涂层
YG-1特殊涂层提供刀具寿命和高性能
YG-1开发的卓越品质涂层

### Holds a Large Variety of Product Range for Multiple Use
具有多种用途的多产品系列

Large Variety of Products
For Several Different Applications with Different Size and Lengths

多产品系列 针对各种不同工况具有多种尺寸和长度

▶ Size (尺寸范围) : Ø0.03mm~Ø25.0mm

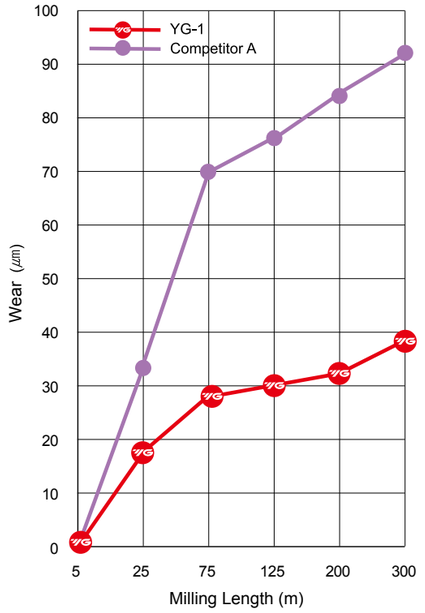




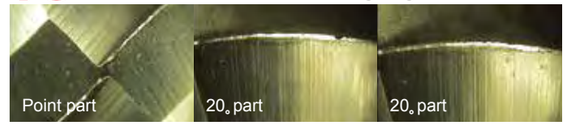
## 4G Mills End mills

Reference page : p.C135 ~ C320

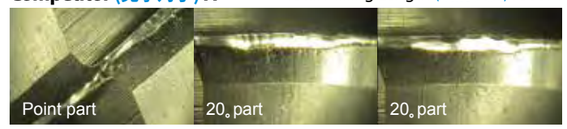
### TEST Ⅰ - Ball Nose 球头




YG 4G Mills — Total Milling Length (铣削长度) : 300m



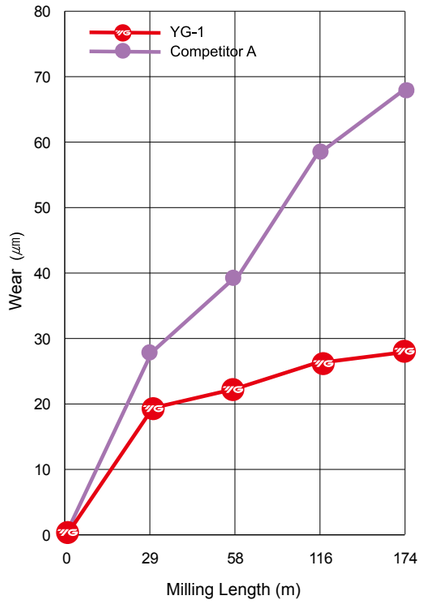

Competitor (竞争对手) A — Total Milling Length (铣削长度) : 300m




**Cutting Condition (Profile Cutting)**
**加工参数(仿形铣削)**

| | |
|---|---|
| Tool 刀具 | 2Flute, SEMD98060E |
| Size 尺寸 | Ø6×6×12×90 |
| Work Material 工件材料 | KP4M (HRc35 / DIN 1.2738 Improved) |
| Vc (m/min) 切削速度 | 130.061 |
| RPM (rev./min) 转速 | 6,900 |
| Feed (mm/min) 进给量 | 830 |
| Feed per tooth (mm/tooth) 每齿进给量 | 0.060 |
| Milling Depth (mm) 铣削深度 | Axial 轴向 : 0.2 / Radial 径向 : 1.2 |
| Coolant 冷却 | Oil Mist 油雾 |
| Overhang (mm) 悬伸 | 26 |
| Machine 设备 | Machining Center 加工中心 |

### TEST Ⅱ - Corner Radius 圆鼻




YG 4G Mills — Total Milling Length (铣削长度) : 174m

Competitor (竞争对手) A — Total Milling Length (铣削长度) : 174m

**Cutting Condition (Down & Side Cutting)**
**加工参数(坡走&侧铣削)**

| | |
|---|---|
| Tool 刀具 | 4Flute, SEME0110005E |
| Size 尺寸 | Ø10(R0.5)×10×25×100 |
| Work Material 工件材料 | KP4M (HRc35 / DIN 1.2738 Improved) |
| Vc (m/min) 切削速度 | 51.522 |
| RPM (rev./min) 转速 | 1,640 |
| Feed (mm/min) 进给量 | 180 |
| Feed per tooth (mm/tooth) 每齿进给量 | 0.027 |
| Milling Depth (mm) 铣削深度 | Axial 轴向 : 25 / Radial 径向 : 0.5 |
| Coolant 冷却 | Oil Mist 油雾 |
| Overhang (mm) 悬伸 | 41 |
| Machine 设备 | Machining Center 加工中心 |

# X-SPEED ROUGHER End mills

Reference page : p.C135 ~ C320

## Characteristics 特点

- Unique flute design for excellent chip evacuation and vibration reduction. 特殊沟槽设计提高排屑性能和减少振动
- Optimal roughing tooth profile to reduce cutting forces. 最佳粗加工用牙设计减少切削阻力
- Special tool geometry for high feed rate and heavy cutting. 特殊刀具设计可适用于高进给和重切削
- Strong end tooth design for plunge and pocket milling. 刚性底刃设计可用坡走铣削
- Custom engineered coating to allow long tool life and excellent chip evacuation. 最佳涂层提高刀具寿命和提高排屑性能

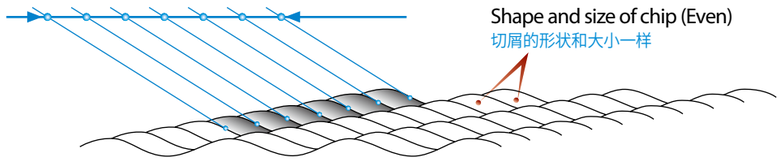
▶ 4 FLUTE (刃)

▶ 5 FLUTE (刃)

## Chip Thickness and Shape 切屑厚度和形状

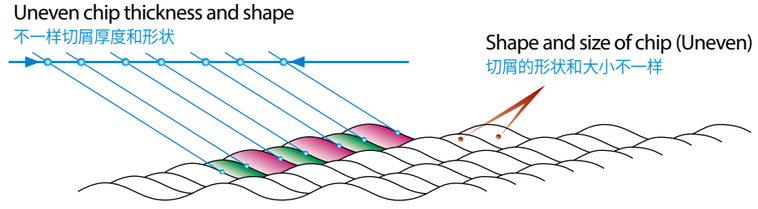
▶ Conventional Roughing End Mills 普通粗加工用铣刀

Even chip thickness and shape
一样切屑厚度和形状




▶ X-SPEED Rougher

Uneven chip thickness and shape
不一样切屑厚度和形状



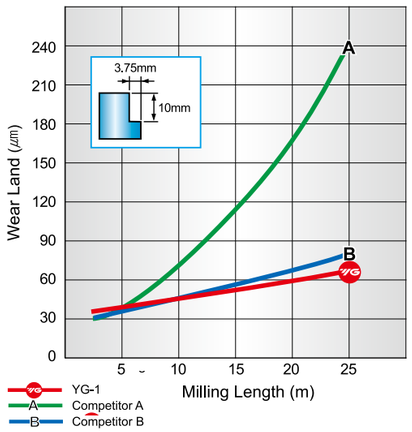





# X-SPEED ROUGHER End mills

Reference page : p.C135 ~ C320

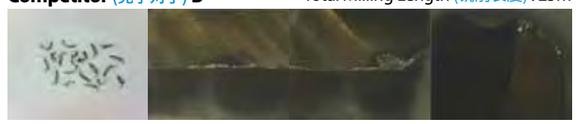
## TEST Ⅰ 4 Flute Multuple Helix 4刃 不等螺旋




YG X-SPEED ROUGHER Total Milling Length (铣削长度) : 25m

Competitor (竞争对手) A Total Milling Length (铣削长度) : 25m

Competitor (竞争对手) B Total Milling Length (铣削长度) : 25m

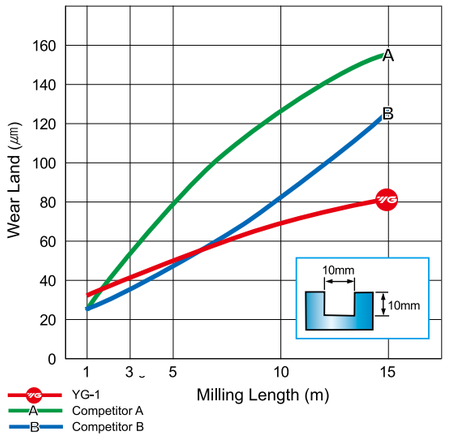


### Cutting Condition (Down & Side Cutting) 加工参数(坡走&侧铣削)

| | | |
|---|---|---|
| Size 尺寸 | X-SPEED ROUGHER | Ø10×10×15×72 |
| | Competitor A 竞争对手 A | Ø10×10×20×72 |
| | Competitor B 竞争对手 B | Ø10×10×15×80 |
| Work Material 工件材料 | | DIN : X40CrMoV51(1.2344)<br>JIS : SKD61 (HRc30)<br>AISI : H13 |

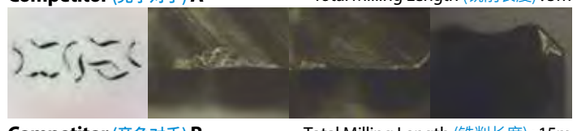
| | |
|---|---|
| RPM (rev./min) 转速 | 5,000 (157.08 m/min) |
| Feed (mm/min) 进给量 | 1,300 |
| Coolant 冷却 | Wet Cut 湿切 |
| Overhang (mm) 悬伸 | 32 |
| Machine 设备 | Machining Center 加工中心 |

## TEST Ⅱ 4 Flute Multuple Helix 4刃 不等螺旋

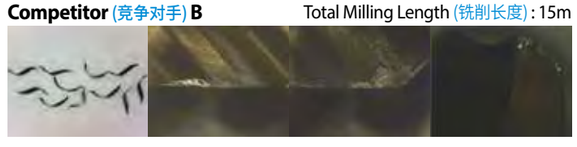



YG X-SPEED ROUGHER Total Milling Length (铣削长度) : 15m

Competitor (竞争对手) A Total Milling Length (铣削长度) : 5m



Competitor (竞争对手) B Total Milling Length (铣削长度) : 15m



### Cutting Condition (Down & Side Cutting) 加工参数(坡走&侧铣削)

| | | |
|---|---|---|
| Size 尺寸 | X-SPEED ROUGHER | Ø10×10×15×72 |
| | Competitor A 竞争对手 A | Ø10×10×20×72 |
| | Competitor B 竞争对手 B | Ø10×10×15×80 |
| Work Material 工件材料 | | DIN : X40CrMoV51(1.2344)<br>JIS : SKD61 (HRc30)<br>AISI : H13 |

| | |
|---|---|
| RPM (rev./min) 转速 | 4,000 (125.66 m/min) |
| Feed (mm/min) 进给量 | 1,000 |
| Coolant 冷却 | Wet Cut 湿切 |
| Overhang (mm) 悬伸 | 32 |
| Machine 设备 | Machining Center 加工中心 |

## X-POWER PRO End mills

Reference page : p.C321 ~ C348

### Performance Upgrade 升级性能

- Achieved from several tests to apply the most optimal technology
- New coating, raw material, honing technology
- 通过多测试,实现最优化技术
- 新的涂层,材质,钝化处理

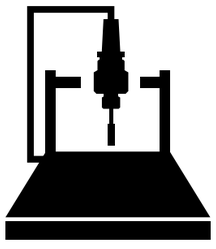
### Work Material 加工材料

- Pre-Hardened Steels up to HRc 55, and Cast Iron
- 预硬钢(~HRc 55)，铸铁

P K

### For Mold & Die Industries 用于模具产业

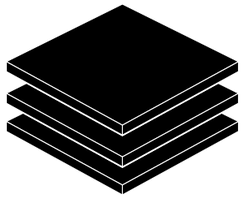
- Plastic injection, die casting, military parts, automotive parts, electronic parts, etc.
- 注塑，压铸，军用部件，汽车部件，电子部件等



**Honing**
**钝化处理**

Advanced honing technology system made from YG-1

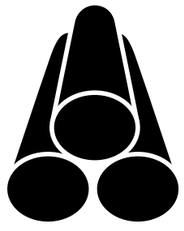
YG-1独特的
最佳钝化处理技术



**Coating**
**涂层**

The optimal coating applied, chosen by several tests of different coating technologies

经过多涂层，多测试的
最佳涂层技术



**Raw Material**
**材质**

Made from high performance raw material with better quality

高性能材质
实现卓越品质

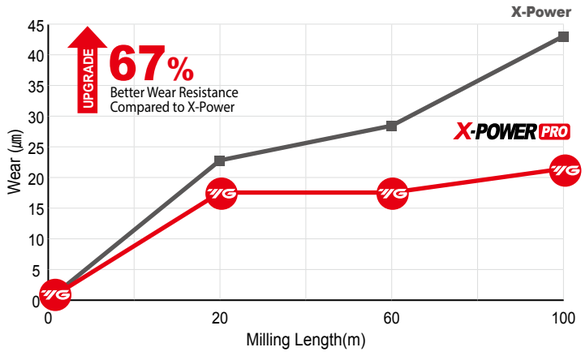




## X-POWER PRO End mills

Reference page : p.C321 ~ C348

### TEST I 2 Flute Square End mills
2刃 平头 铣刀



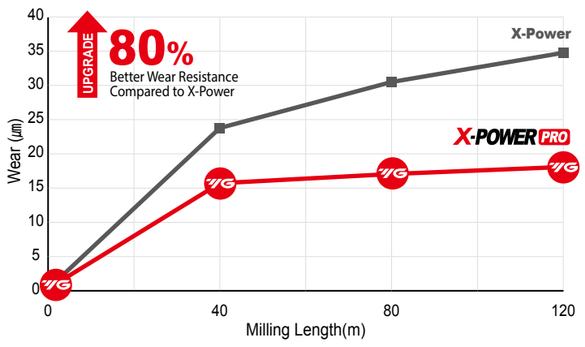

X-POWER PRO Milling Length (铣削长度) : 100m

X-Power Milling Length (铣削长度) : 100m

**Cutting Condition (Down & Side Cutting)**
**加工参数(坡走&侧铣削)**

| Tool 刀具 | X-POWER PRO | X-Power |
|---|---|---|
| Milling Length (m) 铣削长度 | 100 | |
| Size 尺寸 | Ø10.0 x Ø10.0 x 22 x 70 | |
| Work Material 工件材料 | KP4M(HRc35) / DIN 1.2311, ANSI P20+Ni | |
| Vc (m/min) 切削速度 | 63 | |
| Feed (mm/min) 进给量 | 300 | |
| Milling Depth (mm) 铣削深度 | Ap : 10, Ae : 0.5 | |
| Coolant 冷却 | Oil Mist 油雾 | |

### TEST II 2 Flute Ball End mills
2刃 球头 铣刀



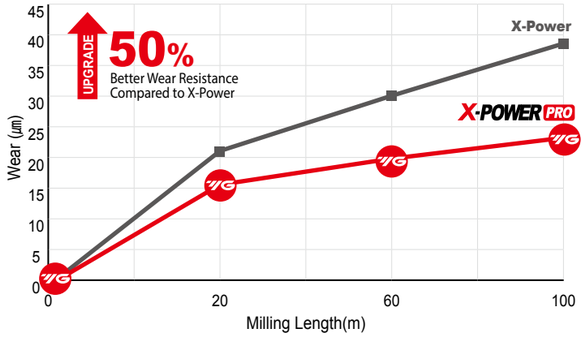

X-POWER PRO Milling Length (铣削长度) : 120m

X-Power Milling Length (铣削长度) : 120m

**Cutting Condition (Profile Cutting)**
**加工参数(仿形铣削)**

| Tool 刀具 | X-POWER PRO | X-Power |
|---|---|---|
| Milling Length (m) 铣削长度 | 120 | |
| Size 尺寸 | Ø6.0 x Ø6.0 x 12 x 90 | |
| Work Material 工件材料 | KP4M(HRc35) / DIN 1.2311, ANSI P20+Ni | |
| Vc (m/min) 切削速度 | 130 | |
| Feed (mm/min) 进给量 | 830 | |
| Milling Depth (mm) 铣削深度 | Ap : 0.2, Ae : 1.2 | |
| Coolant 冷却 | Oil Mist 油雾 | |

### TEST III 4 Flute Corner Radius End mills
4刃 圆鼻 铣刀




X-POWER PRO Milling Length (铣削长度) : 100m

X-Power Milling Length (铣削长度) : 100m

**Cutting Condition (Down & Side Cutting)**
**加工参数(坡走&侧铣削)**

| Tool 刀具 | X-POWER PRO | X-Power |
|---|---|---|
| Milling Length (m) 铣削长度 | 100 | |
| Size 尺寸 | Ø10.0(R0.5) x Ø10.0 x 30 x 90 | |
| Work Material 工件材料 | KP4M(HRc35) / DIN 1.2311, ANSI P20+Ni | |
| Vc (m/min) 切削速度 | 52 | |
| Feed (mm/min) 进给量 | 180 | |
| Milling Depth (mm) 铣削深度 | Ap : 25, Ae : 0.5 | |
| Coolant 冷却 | Oil Mist 油雾 | |

## TitaNox-POWER End mills

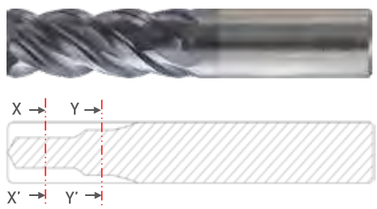
Reference page : p.C349 ~ C364

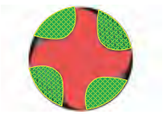
### High Speed Machining for Exotic Materials: Titanium and Stainless Steels
### 实现难切材料的高速加工 钛, 铬镍铁合金和不锈钢

- Excellent tools for Aerospace Industries, Energy & Power generations. 对于航空航天行业及发电行业优秀刀具
- For Roughing and Semi-finishing of universal use, also for Finishing difficult-to-machine materials.
  适用于通用的粗加工和半精加工,也用于精加工难切材料。
- YG-1's advanced coating technology makes it possible to maintain an excellent Wear resistance, Oxidation resistance and better Thermal stability. G-1独特涂层技术实现卓越耐磨性，抗氧性能及耐热性。

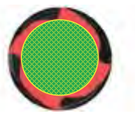
**Offers a high performance metal removal rate with secured and chatter free machining in semi-finishing and finishing.**
**具有安全和无震颤的加工在半精加工和精加工, 提供高产率的加工**

### I Y-Coated Solid Carbide 4 Flute End Mills with Double Core
### Y涂层 整体硬质合金 4刃 双芯厚 立铣刀



<SECTION X-X'>
Excellent chip evacuation
<X-X' 区间>
卓越排屑性能



<SECTION Y-Y'>
Higher rigidity
<Y-Y' 区间>
高刚性

- Double core geometry reduces tool deflection and improves dimensional stability.
  双芯厚形状实现减少刀具偏斜及提高尺寸稳定性
- Optimized edge preparation protects chipping problems in high speed machining.
  最佳化的刃线设计在高速加工情况下，保护崩刃问题
- Variable flute design brings out perfect performance in both slotting and side milling operations.
  可变沟槽设计实现完美性能在槽铣削

### II Y-Coated Solid Carbide 5 Flute End Mills with Multiple helix & TiAlN Coated Solid Carbide Roughing
### Y涂层 整体硬质合金 5刃 不等螺旋 & TiAlN涂层 整体硬质合金 粗加工用 铣刀

- Multiple helix geometry delivers silent cutting and reduces chattering.
  不等螺旋带来安静的加工及减少震颤
- Optimized edge preparation increases tool life and makes heavy cutting possible. 最佳化的刃线设计提高刀具寿命实现重切削
- 40° helix Corner radius is available with optimal roughing tooth profile.
  40°螺旋角圆鼻可提供最佳粗加工

Y-Coated / 5 Flutes

TiAlN Coated / Roughing

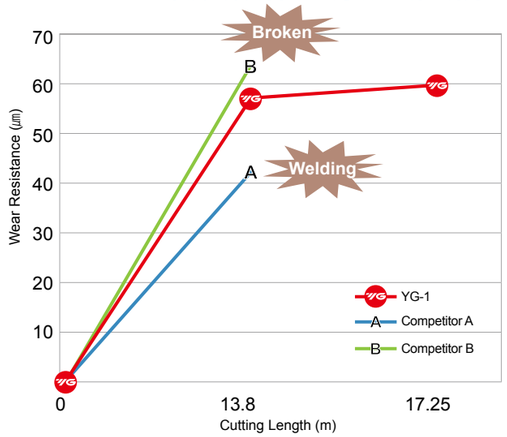




## TitaNox-POWER End mills

Reference page : p.C349 ~ C364

### TEST I Y-Coated Solid Carbide 4 Flutes with Double Core End mills
### Y-涂层 硬质合金 4刃 双芯厚 铣刀




Total Milling Length (铣削长度) : 17.25 m
TitaNox-POWER

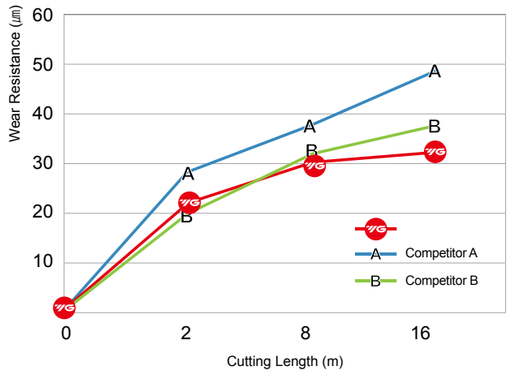
Total Milling Length (铣削长度) : 16.11 m
Competitor A
竞争对手 A

Total Milling Length (铣削长度) : 16.04 m
Competitor B
竞争对手 B

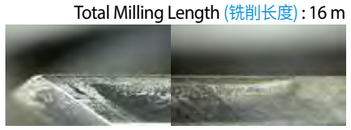
**Cutting Condition (Slotting) 加工参数(槽铣削)**

| | | | |
|---|---|---|---|
| Tool 刀具 | 4Flute, with Double Core | Feed (mm/min) 进给量 | 254 |
| Size 尺寸 | Ø12(R1) x Ø12 x 26 x 80 | Feed per tooth (mm/tooth) 每齿进给量 | 0.027 |
| Work Material 工件材料 | DIN : TiAV6V4 (Titanium) | Coolant 冷却 | Wet Cut 湿切 |
| Cutting Depth (mm) 切削深度 | 12 (Axial Depth) | Overhang (mm) 悬伸 | 36 |
| RPM (rev./min) 转速 | 1,591 | Machine 设备 | Machining Center 加工中心 |

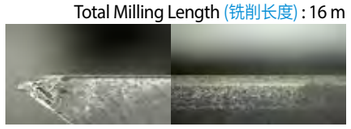
### TEST II Y-Coated Solid Carbide 5 Flutes End Mills
### Y-涂层 硬质合金 5刃 铣刀



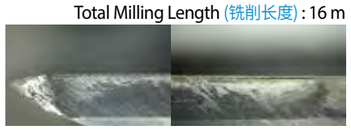

Total Milling Length (铣削长度) : 16 m
TitaNox-POWER



Total Milling Length (铣削长度) : 16 m
Competitor A
竞争对手 A



Total Milling Length (铣削长度) : 16 m
Competitor B
竞争对手 B



**Cutting Condition (Down & Side Cutting) 加工参数(坡走&侧铣削)**

| | | | |
|---|---|---|---|
| Tool 刀具 | 5Flute | Feed (mm/min) 进给量 | 398 |
| Size 尺寸 | Ø12 × Ø12 × 26 × 83 | Milling Depth (mm) 铣削深度 | Axial 轴向 : 18 / Radial 径向 : 3.6 |
| Work Material 工件材料 | DIN : TiAV6V4 (Titanium) | Coolant 冷却 | Wet Cut 湿切 |
| RPM (rev./min) 转速 | 1,591 | Machine 设备 | Machining Center 加工中心 |

# V7 PLUS End mills

Reference page : p.C381 ~ C398

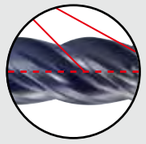
- **Chatter and Harmonics Reduced for Improved Stability and Better Finishing**
  由于改善稳定性和卓越表面处理，减少振动和加工噪音
- **Special Design of Flute Geometry for Optimal Chip Formation and Chip Evacuation**
  为了最佳排屑及断屑处理，采用特殊沟槽几何形状设计
- **Engineered Coating Technology to Reduced Wear and Increase Heat Resistance**
  先进涂层技术减少磨损而提高耐热性
- **Enhanced Corner Geometry for Longer Tool Life**
  增强刀尖几何形状提高刀具寿命

## Unequal Index 不等分度

Exclusively Designed Unique Geometry
applied to Reduce Vibration and also to achieve Excellent Chip Evacuation
with Better Surface Finish
独占的不等分度设计减少振动 而且提高排屑性能和工件表面粗糙度

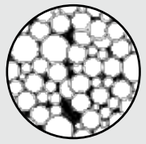
## Corner Geometries 刀尖设计

YG-1's High Performance Corner Geometries Including Corner Radius,
applied for Longer Tool Life with Higher Cutting Speed and Heavy Cutting
YG-1的高性能刀尖设计(包括圆鼻设计) 在高切削速度和重切削工况上发挥高寿命



## Multiple Helix 不等螺旋

Multiple Helix Designed for Optimal Chip Formation and Chip Evacuation
Concluding Faster and Heavier Cutting making Higher Productivity
不等螺旋设计使最佳断屑和排屑性能 快速和重切削上实现高生产率



## Ultra Micro grain Carbide 超微细颗粒硬质合金

Premium Carbide Substrate
Achieving Exceptional Wear Resistance
高级硬质合金基体具有优秀的耐磨性

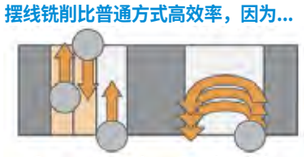
# V7 PLUS 6 FLUTE END MILLS V7 Plus 6刃 铣刀

## The Best Chatter Free Tool For High Speed 在高速加工上最好的抗振刀具

- Unique geometry of the variable pitch provides the best chatter free tool for high speed and also trochoidal milling
  独特的可变间距设计在高速和摆线铣削工况上，提供最好的抗振刀具
- Several slot widths can be used with the same tool diameter in an efficient way
  在不同槽宽工况上，可以用相同直径的刀具
- Provides longer tool life and higher productivity on most materials
  在大部分的工件材料上，提供长寿命和高生产率
- Trochoidal milling is a programming technique applying a small radial width of cut with also higher cutting speed and feed per tooth
  摆线铣削是一种编程技术，用较小的直径切削大宽度，同时可用更高切削速度和更高每齿进给量

## Trochoidal Milling performs better than conventional ways because it has..,

**摆线铣削比普通方式高效率，因为...**




- Lower Cutting Force from smaller arc engagement
  低切削阻力 更小的圆弧工作
- Longer Tool Life from more flutes, and deeper cutting depth
  长寿命 更多刃数和更大切深
- Higher Stability, Lower Vibration and Excellent Chip Evacuation
  高稳定性，低振动和卓越排屑性能

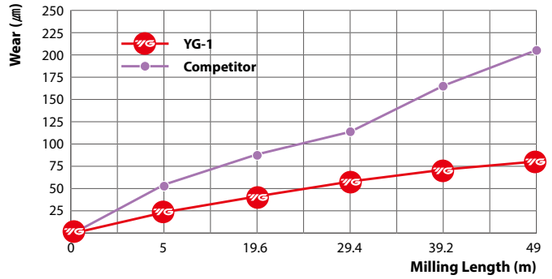




# V7 PLUS End mills

Reference page : p.C381 ~ C398

## TEST I 4 Flute 4刃



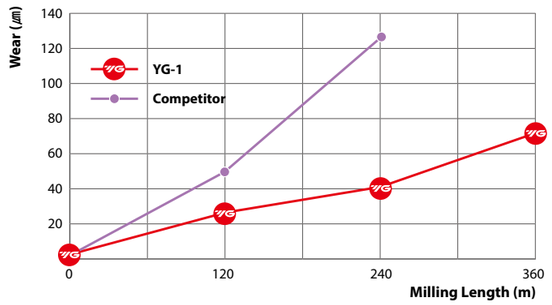

**V7 PLUS** Total Milling Length (铣削长度) : 49m

**Competitor (竞争对手)** Total Milling Length (铣削长度) : 49m

### Cutting Condition (Side Cutting)
### 加工参数(侧铣削)

| Tool 刀具 | V7 Plus | 4Flute |
|---|---|---|
| Size 尺寸 | Ø10 x Ø10 x 22 x 72 | |
| Work Material 工件材料 | - JIS : S45C(HRc30)<br>- DIN : C45<br>- WR : 1.0503 | |
| Vc (m/min) 切削速度 | 230.09 | |
| RPM (rev./min) 转速 | 7,324 | |
| Feed (mm/min) 进给量 | 1,464 | |
| Feed per tooth (mm/tooth) 每齿进给量 | 0.05 | |
| Milling Depth (mm) 铣削深度 | Axial 轴向 : 10 / Radial 径向 : 3 | |
| Coolant 冷却 | Wet Cut 湿切 | |
| Overhang (mm) 悬伸 | 34 | |
| Machine 设备 | Machining Center 加工中心 | |

## TEST II 6 Flute 6刃




**V7 PLUS** Total Milling Length (铣削长度) : 360m

**Competitor (竞争对手)** Total Milling Length (铣削长度) : 300m

### Cutting Condition (Trochoidal Cutting)
### 加工参数(摆线铣削)

| Tool 刀具 | V7 Plus | 6Flute |
|---|---|---|
| Size 尺寸 | Ø12(R1) x Ø12 x 26 x 83 | |
| Work Material 工件材料 | JIS : S45C(HRc30)<br>DIN : C45<br>WR : 1.0503 | |
| Vc (m/min) 切削速度 | 278.67 | |
| RPM (rev./min) 转速 | 7,392 | |
| Feed (mm/min) 进给量 | 7,495 | |
| Feed per tooth (mm/tooth) 每齿进给量 | 0.17 | |
| Milling Depth (mm) 铣削深度 | Axial 轴向 : 24(2D)<br>Radial 径向 : 0.6(0.05D) | |
| Coolant 冷却 | Wet Cut 湿切 | |
| Overhang (mm) 悬伸 | 36 | |
| Machine 设备 | Machining Center 加工中心 | |

# ALU-POWER HPC End mills

Reference page : p.C399 ~ C412

### Available in a Wide Variety of Sizes and Corner Radii Ideal Symmetrical Shape
### 可供多种尺寸和刀尖圆角的理想对称形状

- 3-flute design "to the center" (all 3 flutes come to center)
  3刃过中心设计（3刃都过中心）
- Designed with high spindle speeds in mind
  设计时考虑高主轴转速
- Highly effective in vertical ramping up to 20 degrees and step-over plunging applications
  高度有效的垂直上升20°跨越式插铣应用

### Specialized Design of Corner Gash 刀尖槽的特殊设计

- Unique flute design and superior corner protection enhance both tool life and protection against catastrophic failure in high feed applications
  独特的槽型设计和优越的刀尖保护，既提高了刀具寿命，也防止了高进给应用中的灾难性故障
- Polished flutes for excellent chip flow
  抛光容屑槽，使排屑顺畅。

### Cylindrical Land 圆柱刃带

- Increased performance in a variety of cutting conditions
  提高了在各种切削条件下的性能
- Helps reduce vibration and chatter
  有助于减少振动和颤振

### Engineered Flute Design 排屑槽设计

- Effective chip evacuation at high feed rates
  在高进给率也可以有效排屑
- with lower cutting forces than competitive products
  相比竞争对手有低的切削力

### DLC Diamond-Like Carbon 类金刚石涂层

- Excels in hard aluminum and high speeds
  优点是应用在硬铝和高速
- Provides edge strength and unsurpassed tool life
  提供刃口强度和无与伦比的刀具寿命

## From Side Cuts to Rough Cuts to Aggressive Ramping, No One Withstands Extreme Radial Forces Better-or Longer.

## 从侧铣到粗铣再到斜坡铣，没有对手能 承受更高的径向力或更长寿命。

▲ **Rough Cutting 粗铣**

Ultra-micrograin carbide supplies the rigidity to keep the chips flying. Highly polished 3-flute design ensures they'll keep flying – cut after cut.

超微细颗粒刚性碳化物提供了保持排屑顺畅。
高度抛光的3槽设计，
确保刀具排屑流畅并持续切削。

▲ **Ramping 斜坡铣**

In steep, aggressive ramping conditions, the ALU-POWER HPC holds its own to resist the torsional stress from extreme helical output.

在陡峭、陡峭的斜坡条件下，
ALU-POWER HPC有自己的
螺旋输出能力来抵抗极端的扭转应力

▲ **Side cutting 侧铣**

No one offers a cooler-running super high-speed End mill. While others melt down the materials they're cutting, ALU-POWER HPC keeps machining cool in aluminum and soft alloys, to boot.

没有对手可以提供冷运行的超高速立铣刀。
当其它公司熔化切削材料时，
ALU-POWER HPC保持铝和软合金的冷加工。



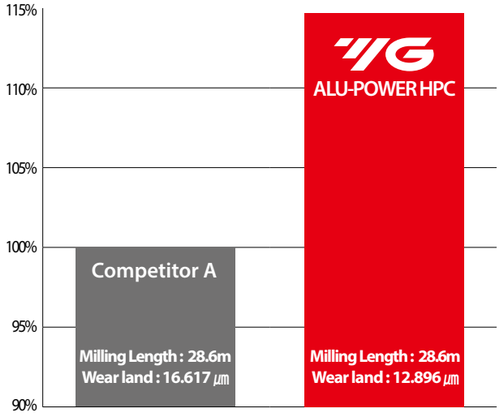


# ALU-POWER HPC End mills

Reference page : p.C399 ~ C412

## TEST I Slotting Application 槽铣工况

### Ø1/2(R.090) 3 Flute Corner radius End Mill, Alu-Power HPC
### Ø1/2(R.090) 3刃 圆鼻 铣刀, Alu-Power HPC



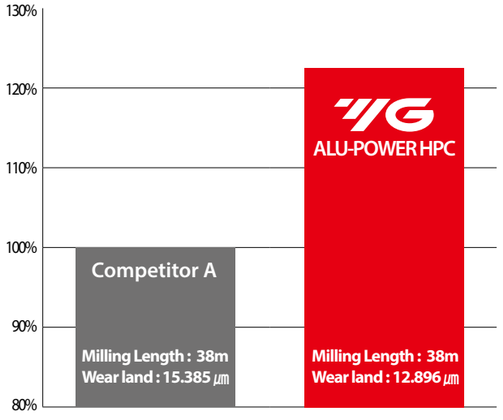

**Cutting Condition (Slotting) 加工参数(槽铣削)**

| | |
|---|---|
| Tool 刀具 | Ø1/2(R.090) x Ø1/2 x 1-1/4 x 3-1/2 |
| Work Material 工件材料 | AL7075 |
| R.P.M (rev./min.) 转速 | 12,224 |
| Feed (mm/min.) 进给量 | 5,588 |
| Cutting Depth (mm) 切削深度 | Axial 轴向 : 12.7 |
| Coolant 冷却 | Wet Cut 湿切(9% emulsion) |
| Overhang (mm) 悬伸 | 48 |
| Milling Method 铣削方式 | Slotting 槽铣削 |
| Machine 设备 | Machining Center 加工中心 |

Total Milling Length (铣削长度) : 38m

## TEST II Pocketing Application 型腔铣工况

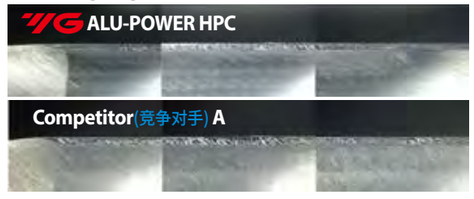
### Ø1/2(R.090) 3 Flute Corner radius End Mill, Alu-Power HPC
### Ø1/2(R.090) 3刃 圆鼻 铣刀, Alu-Power HPC

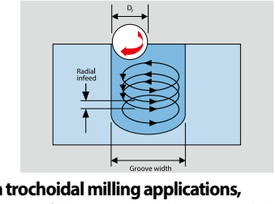



**Cutting Condition (Pocketing) 加工参数(型腔铣削)**

| | |
|---|---|
| Tool 刀具 | Ø1/2(R.090) x Ø1/2 x 1-1/4 x 3-1/2 |
| Work Material 工件材料 | AL7075 |
| R.P.M (rev./min.) 转速 | 12,224 |
| Feed (mm/min.) 进给量 | 5,588 |
| Cutting Depth (mm) 切削深度 | Axial 轴向 : 12.7<br>Radial 径向 : 12.2 |
| Coolant 冷却 | Wet Cut 湿切(9% emulsion) |
| Overhang (mm) 悬伸 | 48 |
| Milling Method 铣削方式 | Pocketing 型腔铣削 |
| Machine 设备 | Machining Center 加工中心 |

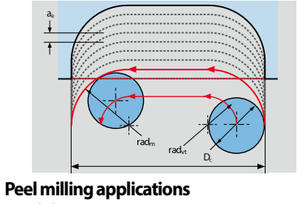
Total Milling Length (铣削长度) : 38m



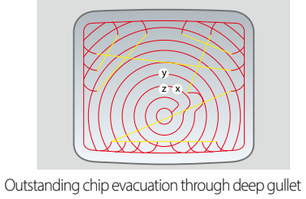

**In trochoidal milling applications,**
the cutter follows a spiral path by moving radially as it rotates providing faster machining times, lower tooling costs and reduced loads on machine components.

**在摆线铣削应用中，**
刀具在旋转时会沿径向移动，
从而沿着螺旋路径运动，从而缩短加工时间，降低成本，并减轻了机器部件的负荷。




**Peel milling applications**
benefit from ALU-POWER HPC's super sharp high-speed milling ability.

**剥皮铣削应用**
得益于ALU-POWER HPC的超锋利高速切削性能



Outstanding chip evacuation through deep gullet design coupled with high speed milling leaves **a well-defined clean cutter path.**

通过深齿沟设计与高速铣削实现出色的排屑效果，**为切削机定义了明确的路径**

## ONLY ONE Coated PM60 End Mills

Reference page : p.C523 ~ p.C544

### ADVANTAGES OF CARBIDE 合金的优点

**Exceptional**
**良好的耐磨性 Wear Resistance**

The ONLY ONE holds an Exceptional Wear Resistance
Which is an advantage of the micro-grain carbide tools.

ONLY ONE 具有不一般的耐磨性，
这是微晶粒硬质合金工具的优势。

The ONLY ONE performs better
without Causing chipping than
Normal coated carbide End mills
under the same carbide cutting conditions.

在相同的切削条件下，
ONLY ONE 相比普通涂层整硬铣
刀不会造成缠屑，
性能更好。

### ADVANTAGES OF HSS 高速钢的优点

**High Toughness 高韧性**

ONLY ONE is based on Powder Metallurgy that ensures
High Toughness which is one of the advantages of Cobalt HSS

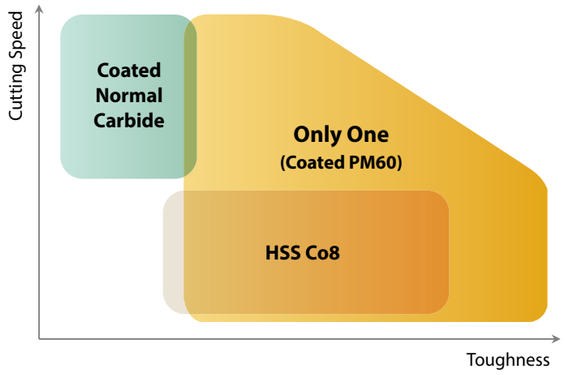
ONLY ONE基于粉末冶金，
具有高韧性是含钴高速钢的优点之一。

The ONLY ONE holds a very Strong Toughness
which can bring out Higher performances also on
Machines with unstable conditions
such as Vibration and irregular composition of materials

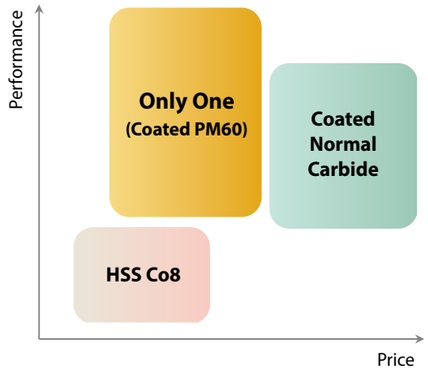
ONLY ONE具有较强的韧性，
在振动和材料成分不规则等不稳定条件
下也能具有较高的性能

### Both Advantages of Solid Carbide & HSS
兼具硬质合金和高速钢的优点

**To protect chipping problems**
**under the unstable machining conditions with vibration**
**在不稳定的且振动的加工条件下切削**




Higher Toughness than HSS Co8,
Cutting Speed (Vc) is as high as Coated Normal Carbide.
韧性高于HSS Co8高速钢，切削速度高于普通涂层硬质合金




Better performance than HSS Co8,
Better price than Coated Normal Carbide.
性能好于HSS Co8高速钢，
价格低于普通涂层硬质合金。

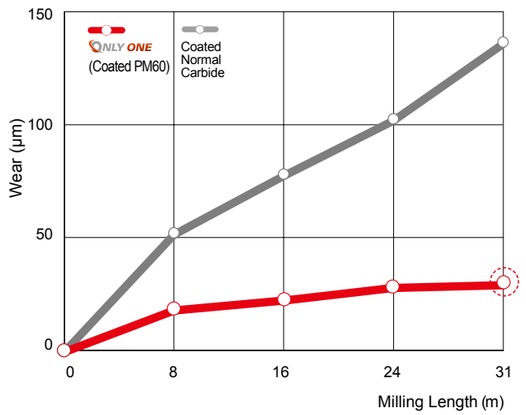




## ONLY ONE Coated PM60 End Mills

Reference page : p.C523 ~ C544

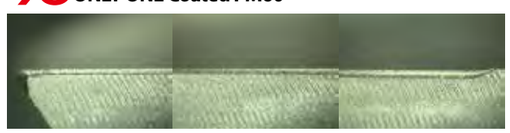
### TEST I 4 Flute Square End mill
4刃 平头 铣刀




**Cutting Condition (Down & Side Cutting)**
**加工参数(坡走&侧铣削)**

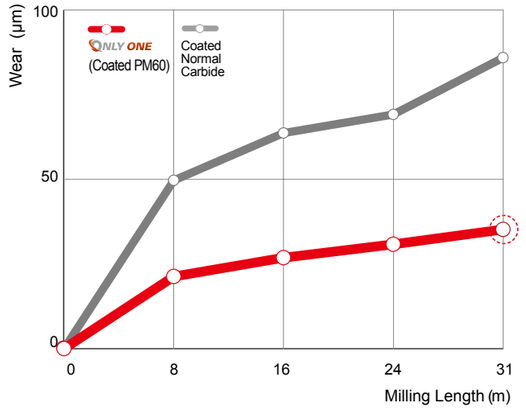
| | Only One Coated PM60 | Coated Normal Carbide |
|---|---|---|
| Tool 刀具 | | |
| Size 尺寸 | Ø10xØ10x22x72/Ø10xØ10x22x70 | |
| Work Material 工件材料 | JIS : S45C<br>KS : SM45C<br>DIN : C45<br>AISI : 1045 | |
| RPM (rev./min) 转速 | 2,750 | |
| Feed (mm/min) 进给量 | 520 | |
| Milling Method (mm) 铣削方式 | Axial 轴向 : 3 / Radial 径向 : 1 | |
| Coolant 冷却 | Wet Cut 湿切 | |
| Machine 设备 | Machining Center 加工中心 | |

**YG ONLY ONE Coated PM60**



**Coated Normal Carbide** 普通涂层硬质合金产品

### TEST II 4 Flute Square End mill
4刃 平头 铣刀




**Cutting Condition (Down & Side Cutting)**
**加工参数(坡走&侧铣削)**

| | Only One Coated PM60 | Coated Normal Carbide |
|---|---|---|
| Tool 刀具 | | |
| Size 尺寸 | Ø10xØ10x22x72/Ø10xØ10x22x70 | |
| Work Material 工件材料 | JIS : S45C<br>KS : SM45C<br>DIN : C45<br>AISI : 1045 | |
| RPM (rev./min) 转速 | 2,750 | |
| Feed (mm/min) 进给量 | 520 | |
| Milling Method (mm) 铣削方式 | Axial 轴向 : 10 / Radial 径向 : 1 | |
| Coolant 冷却 | Wet Cut 湿切 | |
| Machine 设备 | Machining Center 加工中心 | |

**YG ONLY ONE Coated PM60**

**Coated Normal Carbide** 普通涂层硬质合金产品

Global Cutting Tool Leader **YG-1**



# MATERIAL GROUPS 工件材料组

| ISO | VDI 3323 | Material Description 工件材料 | Composition / Structure / Heat Treatment 成分 / 结构 / 热处理 | | HB | HRc | Examples 例子 |
|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloyed steel 非合金钢 | About 0.15% C (含碳 0.15% 左右) | Annealed (热处理) | 125 | | S15C, C15, 1015 |
| | 2 | | About 0.45% C (含碳 0.45% 左右) | Annealed (热处理) | 190 | 13 | S45C, C45, 1045 |
| | 3 | | About 0.45% C (含碳 0.45% 左右) | Quenched & Tempered (淬火 & 回火) | 250 | 25 | |
| | 4 | | About 0.75% C (含碳 0.75% 左右) | Annealed (热处理) | 270 | 28 | SK5, Ck75, 1080 |
| | 5 | | About 0.75% C (含碳 0.75% 左右) | Quenched & Tempered (淬火 & 回火) | 300 | 32 | |
| | 6 | Low-alloyed Steel 低合金钢 | | Annealed (热处理) | 180 | 10 | SCM440, 42CrMo4, 410 |
| | 7 | | | Quenched & Tempered (淬火 & 回火) | 275 | 29 | |
| | 8 | | | Quenched & Tempered (淬火 & 回火) | 300 | 32 | |
| | 9 | | | Quenched & Tempered (淬火 & 回火) | 350 | 38 | |
| | 10 | High-alloyed steel, and tool steel 高合金钢，工具钢 | | Annealed (热处理) | 200 | 15 | SKD, D2 |
| | 11 | | | Quenched & Tempered (淬火 & 回火) | 325 | 35 | SKH, SUH, M42 |
| M | 12 | Stainless Steel 不锈钢 | Ferritic / Martensitic (珠光体 / 铁素体) | Annealed (热处理) | 200 | 15 | SUS 420, X40Cr13, 420 |
| | 13 | | Martensitic (马氏体) | Quenched & Tempered (淬火 & 回火) | 240 | 23 | |
| | 14 | | Austenitic (奥氏体) | | 180 | 10 | SUS 316, 316, X5CrNiMo 17 12 2 |
| K | 15 | Grey cast iron 灰铸铁 | Pearlitic / Ferritic (珠光体 / 铁素体) | | 180 | 10 | FC, GG, EN-GJL-250 |
| | 16 | | Pearlitic (Martensitic) (珠光体 (马氏体)) | | 260 | 26 | |
| | 17 | Nodular cast iron 球墨铸铁 | Ferritic (珠光体) | | 160 | 3 | FCD, GGG, EN-GJS-500-7 |
| | 18 | | Pearlitic (珠光体) | | 250 | 25 | |
| | 19 | Malleable cast iron 可锻铸铁 | Ferritic (珠光体) | | 130 | | FCMW, FCMP, GTS, GJMB350-10 |
| | 20 | | Pearlitic (珠光体) | | 230 | 21 | |
| N | 21 | Aluminum-wrought alloy 铝-加工用合金 | Not Curable (非硬化性) | | 60 | | SAE 1000, AlMg 1, 3.3315 |
| | 22 | | Curable (硬化性) | Hardened (硬化) | 100 | | SAE 7050, AlCuMg 1, 3.1325 |
| | 23 | Aluminum-cast, alloyed 铝-铸造合金 | ≤ 12% Si, Not Curable (≤ 12% Si, 非硬化性) | | 75 | | ADC12, G-AlSi12, 3.2581 |
| | 24 | | ≤ 12% Si, Curable (≤ 12% Si, 硬化性) | Hardened (硬化) | 90 | | C4BS, G-AlSi10Mg, 3.2381 |
| | 25 | | > 12% Si, Not Curable (> 12% Si, 非硬化性) | | 130 | | |
| | 26 | Copper and copper alloys (Bronze / Brass) 铜和铜合金 (青铜/黄铜) | Cutting Alloys, PB>1% (切削合金, PB>1%) | | 110 | | CuZn36Pb 3, 2.0375 |
| | 27 | | CuZn, CuSnZn (Brass 黄铜 ) | | 90 | | CuZn 15, 2.0240 |
| | 28 | | CuSn, lead-free copper and electrolytic copper (CuSn, 无铅铜及电解铜) | | 100 | | G-CuZn40Fe, 2.0590 |
| | 29 | Non-metallic materials 非铁金属 | Duroplastic, Fiber Reinforced Plastic (硬质塑料, 纤维增强塑料) | | | | CFRP |
| | 30 | | Rubber, Wood, etc. (橡胶, 木材, 等.) | | | | |
| S | 31 | Heat resistant super alloys 超耐热合金 | Fe Based (基于 Fe) | Annealed (热处理) | 200 | 15 | X12 NiCrSi 36-16, 1.4864 |
| | 32 | | | Aged (时效) | 280 | 30 | |
| | 33 | | Ni or Co Based (基于 Ni或Co) | Annealed (热处理) | 250 | 25 | Inconel 718, NiCr20TiAl, 2.4631 |
| | 34 | | | Aged (时效) | 350 | 38 | NiCu30Al, 2.4375 |
| | 35 | | | Cast (铸造) | 320 | 34 | G-X120Mn12, 1.3401 |
| | 36 | Titanium alloys 钛合金 | Pure Titanium (纯钛) | | 400 Rm | | |
| | 37 | | Alpha + Beta Alloys (A+β合金) | Hardened (硬化) | 1050 Rm | | TiAl6V4, 3.7165 |
| H | 38 | Hardened steel 硬化钢 | | Hardened (硬化) | 550 | 55 | SK3 |
| | 39 | | | Hardened (硬化) | 630 | 60 | |
| | 40 | Chilled cast iron 冷硬铸铁 | | Cast (铸造) | 400 | 42 | |
| | 41 | Hardened cast iron 硬化铸铁 | | Hardened (硬化) | 550 | 55 | |

## P — VDI 3323 1

Material Description 工件材料: Non-alloyed steel 非合金钢

Composition / Structure / Heat Treatment 成分 / 结构 / 热处理: About 0.15% C, Annealed 含碳 0.15% 左右, 热处理

HB: 125

HRc:

| Mat'l No. | JIS | DIN | AISI/ASTM/ SAE | BS | EN | AFNOR | SS | UNI | UNE / IHA | UNS | GOST | GB | Brands |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.0037 | STKM 12 C | St 37-2 | - | 4360 40 B | S235JR | E24-2 | 1311 | Fe 360 B | | | 16D | | |
| 1.0038 | STKM 12 A | St 37-3 | A570.36 | 4360 40 C | S275J2G3 | E28-3 | 1312 | Fe 360 D FF | | | ST14KP | | |
| 1.0045 | SM 490 YA | S 355 JR | - | - | S 1207 | E36-2 | - | Fe 510 BFN | | | | | |
| 1.0050 | SS 50 | St 50-2 | A570 Gr. 50 | 4360 50 B | E 295 | A50-2 | 2172 | Fe 490 | | | ST5PS | | |
| 1.0060 | SM 58 | St 60-2 | A572 Gr. 65 | 4360 55 E | - | A60-2 | 1650 | Fe 60-2 | | | ST6PS | | |
| 1.0114 | | S 235 J0 | - | En 40C | S 235 J0 | E24-3 | | Fe 360 CFN | | | | | |
| 1.0143 | | S 275 J0 | - | - | S 275 J0 | E28-3 | 1414 | Fe 430 C | | | | | |
| 1.0144 | SM41C, SM400 | St 44-3 N | A573 Gr. 81 | 4360 43C | S 275 J2 G3 | E28-3 | 1412 | Fe 430 D FF | | | ST14KP | | |
| 1.0149 | | Ro St 44-2 | - | 43C | S 275 J0 H | - | 1412 | Fe430C | | | | | |
| 1.0301 | S10C | C10 | 1010 | 045M10 | C10 | 34C10, XC10 | | C10 | F.1511 | G10100 | 10 | | |
| 1.0330 | SPCC | St 12 | - | DC 01 | Fe P01 | DC 01/Fe P01 | 1142 | Fe P01 | | | 15KP | | |
| 1.0335 | SPHE | D D 13 (StW 24) | A622(1008) | H S 3 | D D 13 | 3C | | FeP13 | | | 08KP | | |
| 1.0338 | SPCE | St 4 | A620(1008) | 14491CR | Fe P04 | Fe 14 | 1147 | DC04/FeP04 | | | 08JU | | |
| 1.0345 | SPV 50 | P 235 GH | A516 Gr. 65 | P 235 GH | P 235 GH | A 37 CP | 1330 | Fe E 235 | | K02503 | | | |
| 1.0401 | S15C | C15 | 1015 | 080M15 | - | C18RR, XC18 | 1350 | C15, C16 | F.1110 | G10170 | 15 | 15 | |
| 1.0402 | S20C | C22 | 1020 | 050 A 20 | 1 C 22 | C20 | 1450 | C 20 | F.1120 | G10200 | 20 | 20 | |
| 1.0425 | SPV315 | P265GH/HII | | | | A42CP | 1430 | Fe4101KW | | K02801 | 16K | | |
| 1.0443 | SC 450 | GS-45 | A2765-35 | A1 | | E23-45M | 1305 | | | | | | |
| 1.0539 | | S355NH | | | | TSE355-4 | 2134 | Fe510B | | | | | |
| 1.0545 | | S355N | | 4360-50E | | E355R | 2334 | FeE355KG | | | | | |
| 1.0546 | | S355NL | | 4360-50EE | | E355FP | 2135 | FeE355KT | | | | | |
| 1.0547 | | S355J0H | | 4360-50C | | TSE355-3 | 2172 | Fe510C | | | | | |
| 1.0549 | | S355NLH | | | | | 2135 | Fe510D | | | | | |
| 1.0553 | SM 520 M | St52-3U | A14880-40 | 4360-50C | | 320-560M | 1606 | Fe510C | | | | | |
| 1.0562 | SM490A | St E 355 | A633 Gr. C | P 355 N | | FeE355KGN | 2132 | Fe E 355 KG | | K12000 | 15GF | | |
| 1.0565 | | W St E 355 | | P 355 NH | | P 355 NH | 2106 | Fe E 355 KW | | K01600 | | | |
| 1.0566 | SLA 37 | T St E 355 | | P 355 NL1 | | P 355 NL1 | 2107 | Fe E 355 KT | | | | | |
| 1.0570 | SM 50 YA | St 52-3 | 1 | 4360-50 C | S355JR | E36-3 | 2172 | Fe 510 B | | | 17G1S | | |
| 1.0715 | SUM22 | 9SMn28 | 1213 | 230M07 | | S250 | 1912 | CFSMn28 | F.2111 | G12130 | | Y15 | |
| 1.0718 | SUM22L | 9SMnPb28 | 12L13 | | | S250Pb | 1914 | CF9SMnPb28 | F.2112 | G12134 | | | |
| 1.0721 | | 10S20 | 1108 | 10S20 | | 10S20 | | CF10S20 | F.2121 | G11080 | | | |
| 1.0722 | | 10SPb20 | 11L08 | | | 10PbF2 | | CF10SPb20 | | G11084 | | | |
| 1.0736 | SUM25 | 9SMn36 | 1215 | | | S300 | | CF9Mn36 | F.2113 | G12150 | | Y13 | |
| 1.0737 | | 9SMnPb36 | 12L14 | | | S300Pb | 1926 | CF9SMnPb36 | F.2114 | G12144 | | | |
| 1.0972 | | S315MC | | 1501-40F30 | | E315D | | | | | | | |
| 1.0976 | | S355MC | | 1501-43F35 | | E355D | 2642 | FeE355TM | | | | | |
| 1.0982 | | S460MC | | 1501-50F45 | | | | | | | | | |
| 1.0984 | | S500MC | | | | E490D | 2662 | FeE490TM | | | | | |
| 1.0986 | | S500MC | | 1501-60F55 | | E560D | | FeE560TM | | | | | |
| 1.1121 | S10C | Ck10 | 1010 | 040A10 | | XC10 | 1265 | C10 | F.1510 | G10100 | 10 | | |
| 1.1141 | S15 | Ck15 | 1015 | 040A15 | 32C | XC15 | 1370 | C15 | F.1110 | G10150 | 15 | 15 | |
| 1.1151 | S20C | C22E | 1020 | 055M15 | | 2C22 | 1450 | C20 | F.1120 | G10230 | 20 | | |
| 1.8900 | S25C | StE380 | A572-60 | 436055E | | | 2145 | FeE390KG | | | | | |
| | | St44-2 | A36 | 436043A | | NFA35-501E28 | 1411 | | | | | | |
| | | StE320-3Z | | 1501160 | | | 1421 | | | | | | |





## P — VDI 3323 2

Material Description 工件材料: Non-alloyed steel 非合金钢

Composition / Structure / Heat Treatment 成分 / 结构 / 热处理: About 0.45% C, Annealed 含碳 0.45% 左右, 热处理

HB: 190

HRc: 13

| Mat'l No. | JIS | DIN | AISI/ASTM/ SAE | BS | EN | AFNOR | SS | UNI | UNE / IHA | UNS | GOST | GB | Brands |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.0501 | S35C | C35 | 1035 | 080A32 | | 1C35 | 1572 | C35 | F.113 | G10350 | 35 | 35 | |
| 1.0503 | S45C | C45 | 1045 | 060A47 | | XC42H1TS | 1672 | C45 | F.114 | G10450 | 45 | 45 | |
| 1.0511 | S40C | C40 | 1040 | 080M40 | | 1C40 | | C40 | F.114.A | G10400 | 40 | | |
| 1.0540 | S 50 C | C50 | | | | | 1674 | C50 | | G10500 | | | |
| 1.0551 | | GS-52 | A2770-36 | A2 | | 280-480M | 1505 | | | | | | |
| 1.0553 | SM 520 M | St52-3U | A14880-40 | 4360-50C | | 320-560M | 1606 | Fe510C | | | | | |
| 1.0577 | | S 355 J 2 G 4 | A738 | Fe 510 D 2 FF | | A52FP | 2107 | | | | | | |
| 1.0726 | | 35S20 | 1140 | 212M36 | 8M | 35MF6 | 1957 | | | G11400 | 40 | | |
| 1.0727 | | 45S20 | 1146 | | | 45MF4 | 1973 | | | G11460 | | | |
| 1.1157 | | 40Mn4 | 1039 | 150M36 | 15 | 40M5 | | | | G10390 | 40G | 40Mn | |
| 1.1158 | S25C | C25E | 1025 | 070M25 | | XC25 | | C25 | F.1120 | G10250 | 25 | | |
| 1.1166 | SMn433H | 34Mn5 | 1536 | | | | | | TO.B | G15360 | | | |
| 1.1167 | SMn438(H) | 36Mn5 | 1335 | 150M36 | | 40M5 | 2120 | 36Mn6 | F.1203 | G13350 | 35G2 | 35Mn2 | |
| 1.1170 | SCMn1 | 28Mn6 | 1330 | 150M28 | 14A | 20M5 | | C28Mn | 28Mn6 | G13300 | 30G | 30Mn | |
| 1.1178 | S 30 C | C30E | | 080M30 | | XC32 | | C30 | 2C30 | G10300 | | | |
| 1.1180 | | C35R | 1035 | 080A35 | | 3C35 | 1572 | | F.1135 | G10350 | | | |
| 1.1181 | S35C | C35E | 1035 | 080A35 | | XC38 | 1572 | C36 | F.1130 | G10340 | 35 | | |
| 1.1191 | S45C | Ck45 | 1045 | 080A46 | | XC45 | 1672 | C45 | F.1140 | | 45 | | |
| 1.1206 | S 50 C | C50E | 1050 | 080M50 | | 2C50 | 1674 | C50 | | G10500 | 50 | | |
| 1.1213 | S50C | Cf53 | 1050 | 070M55 | | XC48HTS | 1674 | C53 | | G10500 | 50 | | |

## P — VDI 3323 3

Material Description 工件材料: Non-alloyed steel 非合金钢

Composition / Structure / Heat Treatment 成分 / 结构 / 热处理: About 0.45% C, Annealed 含碳 0.45% 左右, 热处理

HB: 250

HRc: 25

| Mat'l No. | JIS | DIN | AISI/ASTM/ SAE | BS | EN | AFNOR | SS | UNI | UNE / IHA | UNS | GOST | GB | Brands |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.0481 | SG365 | 17 Mn 4/P 295 GH | A516 Gr. 70 | 224-460B | P 295 GH | A 48 CP | 2102 | Fe E 295 | A47RCI | K03501 | 14G2 | | |
| 1.0501 | S35C | C35 | 1035 | 080A32 | | 1C35 | 1572 | C35 | F.1130 | G10350 | 35 | | |
| 1.0503 | S45C | C45 | 1045 | 060A47 | | XC42H1TS | 1672 | C45 | F.1140 | G10450 | 45 | | |
| 1.0614 | | C76D | 1074 | | | XC75 | | | | G10750 | | | |
| 1.0616 | | C86D | 1086 | | | XC80 | | C85 | | G10860 | | | |
| 1.0618 | | C92D | 1095 | | | XC90 | | | | G10950 | | | |
| 1.0726 | | 35S20 | 1140 | 212M36 | 8M | 35MF6 | 1957 | | | G11400 | 40 | | |
| 1.1157 | | 40Mn4 | 1039 | 150M36 | 15 | 40M5 | | | | G10390 | 40G | 40Mn | |
| 1.1165 | SMn433H | 30Mn5 | 1036 | 120M36 | | 35M5 | | 30Mn5 | F.8211 | K13300 | 30G2 | | |
| 1.1167 | SMn438(H) | 36Mn5 | 1335 | 150M36 | | 40M5 | 2120 | 36Mn6 | F.1203 | G13350 | 35G2 | 35Mn2 | |
| 1.1186 | S40C | C40E | 1040 | 060A40 | | 2C40 | | C40 | | G10400 | | | |
| 1.1191 | S45C | Ck45 | 1045 | 080M46 | | 2C45 | 1672 | C45 | F.1140 | | 45 | | |
| 1.1201 | S50C | C45R | 1049 | 080M46 | | 3C45 | 1660 | C45 | F.1145 | | 38HM | | |
| 1.1213 | S50C | Cf53 | 1050 | 070M55 | | XC48HTS | 1674 | C53 | | G10500 | 50 | | |
| 1.7242 | SCM 418 H | 18CrMo4 | | | | | | | | | | | |
| 1.7337 | | 16CrMo4-4 | A387 Gr.12 | | | | | A18CrMo45KW | | K11564 | 15C M | | |
| 1.7362 | SCMV 6 | 12CrMo195 | | 3606-625 | | Z10CD5-05 | | 16CrMo205 | | K41545 | | | |
| | | 17MnV6 | A572-60 | 436055E | | NFA35-501E36 | 2142 | | | | | | |

## P — VDI 3323: 4

Material Description 工件材料: Non-alloyed steel 非合金钢

Composition / Structure / Heat Treatment 成分 / 结构 / 热处理: About 0.75% C, Annealed 含碳 0.75% 左右, 热处理

HB: 270 | HRc: 28

| Mat'l No. | JIS | DIN | AISI/ASTM/ SAE | BS | EN | AFNOR | SS | UNI | UNE / IHA | UNS | GOST | GB | Brands |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.0535 | S55C | C55 | 1055 | 070M55 | | 1C55 | 1655 | C55 | C55K | J05000 | 55 | 55 | |
| 1.0601 | S58C | C60 | 1060 | 060A62 | 43D | 1C60 | | C60 | | G10600 | 60(G) | 60 | |
| 1.06303 | S 70 C -CSP | C67 | 107 | 080A67 | | XC65 | | C67 | | G10700 | | | |
| 1.0605 | | C75 | 1075 | 144980HS | | | | C75 | | G10740 | 75 | | |
| 1.1203 | S55C | Ck55 | 1055 | 060A57 | | 2C55 | 1655 | C55 | F.1150 | G10550 | 55 | 55 | |
| 1.1209 | | C55R | 1055 | 070M55 | | 3C55 | | C55 | F.1155 | G10550 | | | |
| 1.1221 | S58C | Ck60 | 1060 | 060A62 | 43D | 2C60 | 1678 | C60 | F.1150 | G10640 | 60 | 60Mn | |
| 1.1231 | S 70 C-CSP | C67E | 1070 | 060A67 | | XC68 | 1770 | C70 | F.5103 | G10700 | 65GA | | |
| 1.1248 | C 75 | C75E | 1074 | 060A78 | | XC75 | 1774 | C75 | F.5107 | G10800 | 75(A) | | |
| 1.1269 | SK 5 -CSP | C85E | 1086 | | | XC90 | | C90 | | G10900 | 85(A) | | |
| 1.1274 | SUP4 | Ck 101 | 1095 | 060 A 96 | C 100S | XC100 | 1870 | C100 | F.5117 | G10950 | | | |
| 1.1545 | SK 3 | C 105 W1 | W1 | BW 2 | C 105U | Y1 105 | 1880 | C 100 KU | F.5118 | | U10A | 90 | |
| 1.1663 | SK 2 | C125W | W112 | | | Y2120 | | | | | U13 | T12A | |

## P — VDI 3323: 5

Material Description 工件材料: Non-alloyed steel 非合金钢

Composition / Structure / Heat Treatment 成分 / 结构 / 热处理: About 0.75% C, Quenched & Tempered 含碳 0.75% 左右, 淬火 & 回火

HB: 300 | HRc: 32

| Mat'l No. | JIS | DIN | AISI/ASTM/ SAE | BS | EN | AFNOR | SS | UNI | UNE / IHA | UNS | GOST | GB | Brands |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.0070 | | St 70-2 | 1055 | Fe690-2FN | - | A70-2 | 1655 | Fe 690 | F.1150 | | 55 | | |
| 1.0535 | S55C | C55 | 1055 | 070M55 | | 1C55 | 1655 | C55 | | J05000 | 55 | | |
| 1.0601 | S58C | C60 | 1060 | 060A62 | 43D | 1C60 | | C60 | | G10600 | 60(G) | | |
| 1.1203 | S55C | Ck55 | 1055 | 060A57 | | 2C55 | 1655 | C55 | F.1150 | G10550 | 55 | 55 | |
| 1.1221 | S58C | Ck60 | 1060 | 060A62 | 43D | 2C60 | 1678 | C60 | F.1150 | G10640 | 60 | 60Mn | |
| 1.1274 | SUP4 | Ck 101 | 1095 | 060 A 96 | C 100S | XC100 | 1870 | C100 | F.5117 | G10950 | | | |
| 1.1545 | SK 3 | C 105 W1 | W1 | BW 2 | C 105U | Y1 105 | 1880 | C 100 KU | F.5118 | | U10A | 90 | |
| 1.1663 | SK 2 | C125W | W112 | | | Y2120 | | | | | U13 | T12A | |
| 1.5120 | | 38MnSi4 | | | | | | | | | | | |
| 1.5710 | SNC236 | 36NiCr6 | 3135 | 640A35 | 111A | 35NC6 | | | | | | | |
| 1.7701 | | 51CrMoV4 | | | | | | 51CrMoV4 | | | | | |





## P — VDI 3323: 6

Material Description 工件材料: Low-alloyed Steel 低合金钢

Composition / Structure / Heat Treatment 成分 / 结构 / 热处理: Annealed 热处理

HB: 180 | HRc: 10

| Mat'l No. | JIS | DIN | AISI/ASTM/ SAE | BS | EN | AFNOR | SS | UNI | UNE / IHA | UNS | GOST | GB | Brands |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.0116 | | St 37-3 | A570 Gr. 36 | 4360-40C | S 235 J2 G3 | E24-3 | 1312 | Fe 360 D1(2) | AE235D | | ST3KP | | |
| 1.0904 | SKH 1, SKT 4 | 55Si7 | 9255 | 250A53 | 45 | 55S7 | 2085 | 55Si8 | 56Si7 | G92550 | 55S2 | | |
| 1.0961 | SUP 7 | 60SiCr7 | 9262 | | | 60SC6 | | 60SiCr8 | 60SiCr8 | G92620 | | | |
| 1.2067 | | 100Cr6 | L3 | BL3 | | Y100C6 | | | 100Cr6 | | | Gr15,45Gr | |
| 1.2108 | | 90CrSi5 | L1 | | | | 2092 | 105WCR5 | | | | | |
| 1.2210 | | 115CrV3 | L2 | | | 100C3 | | 107CrV3KU | F.520L | | 11KHF | | |
| 1.2241 | | 51CrV4 | | | | | | | | | | | |
| 1.2330 | SCM435TK | 35CrMo4 | 4135 | 708A37 | | 34CD4 | 2234 | 35CrMo4 | | | 35KHM | | |
| 1.2419 | SKS31 | 105WCr6 | | 105WC13 | | 105WC13 | 2140 | 10WCr6 | | | C WG | CrWMo | |
| 1.2510 | SKS3 | 100MnCrW4 | O1 | BO1 | | 90 MWCV 5 | 2140 | 95 MnWCr 5 KU | F.5220 | | 9KHVG | | |
| 1.2542 | | 45WCrV7 | S1 | BS1 | | | 2710 | 45WCrV8KU | | | 5C W25F | 5CrNiMo | |
| 1.2550 | | 60WCrV7 | S1 | | | 55WC20 | 2710 | 58WCr9KU | | | 5KHV2SF | | |
| 1.2713 | SKT4 | 55NiCrMoV6 | L6 | | | 55NCDV7 | | | F.520S | | 5C NM | 5CrNiMo | |
| 1.2721 | | 50NiCr13 | L6 | | | 55NCV6 | 2550 | | F.528 | | | | |
| 1.2842 | | 90MnCrV8 | O2 | BO2 | | 90MV8 | | | | T31502 | 9G2F | | |
| 1.3501 | | 100Cr2 | E50100 | | | | | | | | | | |
| 1.3505 | SUJ2 | 100Cr6 | 52100 | 2S135 | 31 | 100C6 | 2258 | 100Cr6 | F.1310 | | SC C 15 | Gr15,45Gr | |
| 1.5024 | | 46Si7 | | | | 45S7 | | 46SI7 | F.1451 | | | | |
| 1.5025 | | 51Si7 | 9259H | | 50Si7 | 51S7 | 2090 | 50Si7 | F.1450 | | | | |
| 1.5026 | | 55Si7 | | | 56Si7 | 55S7 | 2085 | 55Si7 | F.1440 | G92550 | 55S2 | | |
| 1.5027 | | 60Si7 | 9260 | 251A60 | 60Si7 | 60S7 | | 60Si7 | F.1441 | G92600 | 60S2 | | |
| 1.5028 | SUP7 | 65Si7 | 9260H | | | | | | | | | | |
| 1.5415 | STFA 12 | 15Mo3 | A204Gr.A | 1503-243B | | 15D3 | 2912 | 16Mo3(KG) | F.2601 | K11820 | | | |
| 1.5419 | SCPH11 | 20Mo4 | 4419 | 1503-243-430 | | | 2512 | G20Mo5 | | G44190 | | | |
| 1.5423 | SB450M | 16Mo5 | 4520 | 1503-245-420 | | | | 16Mo5(KG) | F.2602 | K11522 | | | |
| 1.5622 | | 14Ni6 | A350-LF5 | | | 16N6 | | 14Ni6(KG) | F.2641 | | | | |
| 1.5732 | SNC415(H) | 14NiICr10 | 3415 | | | 14NC11 | | 16NiCr11 | | | | | |
| 1.5752 | SNC815(H) | 14NiCr14 | 3310 | 655M13 | 36A | 12NC15 | | | | | 20X2H4A | | |
| 1.6511 | SUP10 | 36CrNiMo4 | 9840 | 816M40 | 110 | 40NCD3 | | 36NiCrMo4(KB) | | | 40C N2MA | | |
| 1.6523 | SNCM220(H) | 21NiCrMo2 | 8620 | 805M20 | 362 | 20NCD2 | 2506 | 20NiCrMo2 | | | 20C GNM | | |
| 1.6546 | SNCM240 | 40NiCrMo2-2 | 8740 | 311-Tyre7 | | | | 40NiCrMo2(KB) | | | 38C GNM | | |
| 1.6566 | | 17NiCrMo6-4 | | | | | | | | | | | |
| 1.6587 | | 17CrNiMo6 | | 820A16 | | 18NCD6 | | 14NiCrMo13 | | | | | |
| 1.6657 | | 10NiCrMo13-4 | | | | | | 14NiCrMo131 | | | | | |
| 1.7015 | SCr415(H) | 10Cr3 | 5015 | 523M15 | | 12C3 | | | | G50150 | 15C | 15Cr | |
| 1.7033 | SCr430(H) | 34Cr4 | 5132 | 530A32 | 18B | 32C4 | | 34Cr4(KB) | | G51300 | 35C | 35Cr | |
| 1.7035 | SCr440(H) | 41Cr4 | 5140 | 530M40 | 18 | 42C4 | 2245 | 41Cr4 | | G51400 | 40H | 40Cr | |
| 1.7131 | SCR 415 | 16MnCr5 | 5115 | 527M17 | | 16MC5 | 2511 | 16MnCr5 | | G51150 | 12KHN2 | | |
| 1.7139 | | 16MnCrS5 | | | | | 2127 | | | | 18HG | | |
| 1.7176 | SUP9(A) | 55Cr3 | 5155 | 527A60 | 48 | 55C3 | 2253 | 55Cr3 | | | 50C GA | 20CrMn | |
| 1.7218 | SCM420 | 25CrMo4 | 4130 | CDS110 | | 25CD4 | 2225 | 25CrMo4(KB) | | | 20C M | | |
| 1.7220 | SCM432 | 34CrMo4 | 4135 | 708 A 37 | | 35CD4 | 2234 | 34CrMo4 | | | 35C M | 35CrMo | |
| 1.7223 | SNB22-1 | 41CrMo4 | 4142 | | | | | 41CrMo4 | | | 40C FA | 40CrMoA | |
| 1.7225 | SCM 440 (H) | 42CrMo4 | 4140 | 708 M 40 | 42 CrMo 4 | 42 CD 4 | 2244 | 42 CrMo 4 | F.1252 | | 38HM | 42CrMo, 42CrMnMo | |
| 1.7228 | | 55NiCrMoV6G | | 823M30 | 33 | | 2512 | 653M31 | | | | | |
| 1.7262 | SCM415(H) | 15CrMo5 | | | | 12CD4 | 2216 | 12CrMo4 | | | | | |
| 1.7321 | | 20mOcR4 | | | | | 2625 | | | | | | |
| 1.7335 | SCM415(H) | 13CrMo4-4 | A182-F11 | 1501-620 | | 15CD4-5 | 2216 | 14CrMo45 | | | 12C M | | |

## P — VDI 3323 6

Material Description 工件材料: Low-alloyed Steel 低合金钢
Composition / Structure / Heat Treatment 成分 / 结构 / 热处理: Annealed 热处理
HB: 180 HRc: 10

| Mat'l No. | JIS | DIN | AISI/ASTM/ SAE | BS | EN | AFNOR | SS | UNI | UNE / IHA | UNS | GOST | GB | Brands |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.7361 | | 32CrMo12 | | 722M24 | 40B | 30CD12 | 2240 | 30CrMo12 | F.124A | | | | |
| 1.7380 | | 10CrMo9-10 | A182F22 | 1501-622 | | 12CD9-10 | 2218 | 12CrMo9 | | | 12KH8 | | |
| 1.7715 | | 14MoV6-3 | | 1503-660-440 | | | | 13MoCrV6 | | | | | |
| 1.8159 | SUP 10 | 50CrV4 | 6150 | 735A50 | 47 | 50CrV4 | 2230 | 50CrV4 | | G61500 | 50C GFA | | |
| 1.8161 | | 58CrV4 | | | | | | | | | | | |
| 1.8509 | SACM 645 | 41CrAlMo7 | A355A | 905M39 | 41B | 40CAD6-12 | 2940 | 41CrAlMo7 | | | | | |
| 1.8523 | | 39CrMoV13-9 | | 897M39 | 40C | | | 36CrMoV12 | | | | | |

## P — VDI 3323 7

Material Description 工件材料: Low-alloyed Steel 低合金钢
Composition / Structure / Heat Treatment 成分 / 结构 / 热处理: Quenched & Tempered 淬火 & 回火
HB: 275 HRc: 29

| Mat'l No. | JIS | DIN | AISI/ASTM/ SAE | BS | EN | AFNOR | SS | UNI | UNE / IHA | UNS | GOST | GB | Brands |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.5415 | STFA 12 | 15Mo3 | A204Gr.A | 1503-243B | | 15D3 | 2912 | 16Mo3(KG) | F.2601 | K11820 | | | |
| 1.5423 | SB450M | 16Mo5 | 4520 | 1503-245-420 | | | | 16Mo5(KG) | F.2602 | K11522 | | | |
| 1.5622 | | 14Ni6 | A350-LF5 | | | 16N6 | | 14Ni6(KG) | F.2641 | | | | |
| 1.5732 | SNC415(H) | 14NiICr10 | 3415 | | | 14NC11 | | 16NiCr11 | | | | | |
| 1.5752 | SNC815(H) | 14NiCr14 | 3310 | 655M13 | 36A | 12NC15 | | | | | 20X2H4A | | |
| 1.5755 | SNC236 | 31NiCr14 | | 653M31 | | 18NC13 | 2534 | | F.1270 | | | | |
| 1.6565 | SNCM447 | 40NiCrMo6 | 4340 | 817M40 | 24 | 35NCD6 | 2541 | 35NiCrMo6(KB) | | | 38C 2N2MA | | |
| 1.6587 | | 17CrNiMo6 | | 820A16 | | 18NCD6 | | 14NiCrMo13 | | | | | |
| 1.6657 | | 10NiCrMo13-4 | | | | | | 14NiCrMo131 | | | | | |
| 1.6957 | | 26NiCrMoV14-5 | | | | | | | | | | | |
| 1.7218 | SCM420 | 25CrMo4 | 4130 | CDS110 | | 25CD4 | 2225 | 25CrMo4(KB) | 55Cr3 | | 20C M | 30CrMn | |
| 1.7015 | SCr415(H) | 10Cr3 | 5015 | 523M15 | | 12C3 | | | | G50150 | 15C | | |
| 1.7262 | SCM415(H) | 15CrMo5 | | | | 12CD4 | 2216 | 12CrMo4 | | | | | |
| 1.7335 | SCM415(H) | 13CrMo4-4 | A182-F11 | 1501-620 | | 15CD4-5 | 2216 | 14CrMo45 | | | 12C M | | |
| 1.7380 | | 10CrMo9-10 | A182F22 | 1501-622 | | 12CD9-10 | 2218 | 12CrMo9 | | | 12KH8 | | |
| 1.7715 | | 14MoV6-3 | | 1503-660-440 | | | | 13MoCrV6 | | | | | |
| 1.7733 | | 24CrMoV55 | | | | 20CDV6 | | 21CrMoV511 | | | | | |
| 1.7755 | | GS-45CrMoV10-4 | | | | | | | | | | | |
| 1.8070 | | 21CrMoV511 | | | | | | 35NiCr9 | | | | | |

## P — VDI 3323 8

Material Description 工件材料: Low-alloyed Steel 低合金钢
Composition / Structure / Heat Treatment 成分 / 结构 / 热处理: Quenched & Tempered 淬火 & 回火
HB: 300 HRc: 32

| Mat'l No. | JIS | DIN | AISI/ASTM/ SAE | BS | EN | AFNOR | SS | UNI | UNE / IHA | UNS | GOST | GB | Brands |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.1730 | | C45W3 | C45W | | | XC48 | | | | | | | |
| 1.2332 | SCM(440) | 47CrMo4 | 4142 | 708M40 | 19A | 42CD4 | 2244 | 42CrMo4 | | | | | |
| 1.5736 | SNC 631 (H) | 36NiCr10 | 3435 | | | 30NC11 | | | | | | | |
| 1.6523 | SNCM220(H) | 21NiCrMo2 | 8620 | 805M20 | 362 | 20NCD2 | 2506 | 20NiCrMo2 | | | 20C GNM | | |
| 1.7033 | SCr430(H) | 34Cr4 | 5132 | 530A32 | 18B | 32C4 | | 34Cr4(KB) | | G51300 | 35C | | |
| 1.7218 | SCM420 | 25CrMo4 | 4130 | CDS110 | | 25CD4 | 2225 | 25CrMo4(KB) | | | 20C M | | |
| 1.8159 | SUP 10 | 50CrV4 | 6150 | 735A50 | 47 | 50CrV4 | 2230 | 50CrV4 | 51CrV4 | G61500 | 50C GFA | 50CrVA | |
| 1.8515 | | 32CrMo12 | | 722M24 | 40B | 30CD12 | 2240 | 32CrMo12 | F.124A | | | | |





## P — VDI 3323 9

Material Description 工件材料: Low-alloyed Steel 低合金钢
Composition / Structure / Heat Treatment 成分 / 结构 / 热处理: Quenched & Tempered 淬火 & 回火
HB: 350 HRc: 38

| Mat'l No. | JIS | DIN | AISI/ASTM/ SAE | BS | EN | AFNOR | SS | UNI | UNE / IHA | UNS | GOST | GB | Brands |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.0904 | SKH 1, SKT 4 | 55Si7 | 9255 | 250A53 | 45 | 55S7 | 2085 | 55Si8 | | G92550 | 55S2 | | |
| 1.0961 | SUP 7 | 60SiCr7 | 9262 | | | 60SC6 | | 60SiCr8 | | G92620 | | | |
| 1.2067 | | 100Cr6 | L3 | BL3 | | Y100C6 | | 100Cr6 | | | | CrV, 9SiCr | |
| 1.2419 | SKS31 | 105WCr6 | | 105WC13 | | 105WC13 | 2140 | 10WCr6 | | | C WG | CrWMo | |
| 1.2542 | | 45WCrV7 | S1 | BS1 | | | 2710 | 45WCrV8KU | | | 5C W25F | 5CrNiMo | |
| 1.2713 | SKT4 | 55NiCrMoV6 | L6 | | | 55NCDV7 | | | F.520S | | 5C NM | 5CrNiMo | |
| 1.4882 | | X50CrMnNiNbN219 | | | | Z50CMNNb21-09 | | | | | | | |
| 1.5120 | | 38MnSi4 | | | | | | | | | | | |
| 1.5710 | SNC236 | 36NiCr6 | 3135 | 640A35 | 111A | 35NC6 | | | | | | | |
| 1.5755 | SNC236 | 31NiCr14 | | 830m31 | | 18NC13 | 2534 | | F.1270 | | | | |
| 1.6511 | SUP10 | 36CrNiMo4 | 9840 | 816M40 | 110 | 40NCD3 | | 36NiCrMo4(KB) | | | 40C N2MA | | |
| 1.6546 | SNCM240 | 40NiCrMo2-2 | 8740 | 311-Tyre7 | | | | 40NiCrMo2(KB) | | | 38C GNM | | |
| 1.7035 | SCr440(H) | 41Cr4 | 5140 | 530M40 | 18 | 42C4 | 2245 | 41Cr4 | | G51400 | 40H | 40Cr | |
| 1.7176 | SUP9(A) | 55Cr3 | 5155 | 527A60 | 48 | 55C3 | 2253 | 55Cr3 | | | 50C GA | 20CrMn | |
| 1.7220 | SCM432 | 34CrMo4 | 4135 | 708Aa37 | | 35CD4 | 2234 | 34CrMo4 | | | 35C M | 35CrMo | |
| 1.7223 | SNB22-1 | 41CrMo4 | 4142 | | | | | 41CrMo4 | | | 40C FA | 40CrMoA | |
| 1.7225 | SCM 440 (H) | 42CrMo4 | 4140 | 708 M 40 | 42 CrMo 4 | 42 CD 4 | 2244 | 42 CrMo 4 | F.1252 | | 38HM | 42CrMo, 42CrMnMo | |
| 1.7361 | | 32CrMo12 | | 722M24 | 40B | 30CD12 | 2240 | 30CrMo12 | F.124A | | | | |
| 1.8159 | SUP 10 | 50CrV4 | 6150 | 735A50 | 47 | 50CrV4 | 2230 | 50CrV4 | 51CrV4 | G61500 | 50C GFA | 50CrVA | |
| 1.8161 | | 58CrV4 | | | | | | | | | | | |
| 1.8509 | SACM 645 | 41CrAlMo7 | A355A | 905M39 | 41B | 40CAD6-12 | 2940 | 41CrAlMo7 | | | | | |
| 1.8523 | | 39CrMoV13-9 | | 897M39 | 40C | | | 36CrMoV12 | | | | | |

## P — VDI 3323 10

Material Description 工件材料: High-alloyed steel, and tool steel 高合金钢, 及刀具钢
Composition / Structure / Heat Treatment 成分 / 结构 / 热处理: Annealed 热处理
HB: 200 HRc: 15

| Mat'l No. | JIS | DIN | AISI/ASTM/ SAE | BS | EN | AFNOR | SS | UNI | UNE / IHA | UNS | GOST | GB | Brands |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.0347 | SPCD | RR St 3 | A619 | CR 3 | Fe P03 | F 13 | | DC03/FeP03 | | | 08JU | | |
| 1.0723 | SUM32 | 15S22 | | 210A15 | | | 1922 | | F.210F | | | | |
| 1.2080 | SKD1 | X210Cr12 | D3 | BD3 | X210Cr12 | Z200C12 | | X205Cr12KU | | T30403 | KH12 | Cr12 | |
| 1.2162 | SCR 420 H | 21MnCr5 | | | | 20MC5 | | | | | | | |
| 1.2311 | | 40CrMnMo7 | | | | 40CMD8 | | 35CrMnO8KU | | | | | |
| 1.2312 | | 40CrMnMoS8.6 | P20+S | | | 40CMD8S | | | | | | | |
| 1.2316 | | X36CrMo17 | | | X38CrMo16 | | | | | | | | |
| 1.2343 | SKD 6 | X38CrMoV5-1 | H11 | BH11 | | Z38CDV5 | | X37CrMoV51KU | | T20811 | 4C 5MFS | | |
| 1.2344 | SKD61 | X40CrMoV5-1 | H13 | BH13 | | Z40CDV5 | 2242 | X40CrMoV511KU | F.5318 | T20813 | 4C 5MF1S | 4Cr5MoVSi | |
| 1.2363 | SKD12 | X100CrMoV5-1 | A2 | BA2 | | Z100CDV5 | 2260 | X100CrMoV51KU | F.5227 | | 9KH5VF | Cr6WV | |
| 1.2379 | SKD11 | X155CrVMo121 | D2 | BD2 | | Z160CDV12 | 2310 | X165CrMoW12KU | | T30402 | KH12MF | | KRUPP2379 |
| 1.2436 | SKD 2 | X210CrW12 | D4(D6) | BD6 | | Z200CD12 | 2312 | X215CrW121KU | F.5213 | | KH12 | Cr12W | |

NEXT PAGE ▶

## P

VDI 3323: 10

Material Description 工件材料: High-alloyed steel, and tool steel 高合金钢, 及刀具钢

Composition / Structure / Heat Treatment 成分 / 结构 / 热处理: Annealed 热处理

HB: 200

HRc: 15

| Mat'l No. | JIS | DIN | AISI/ASTM/ SAE | BS | EN | AFNOR | SS | UNI | UNE / IHA | UNS | GOST | GB | Brands |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.2510 | SKS3 | 100MnCrW4 | O1 | BO1 | | 90 MWCV 5 | 2140 | 95 MnWCr 5 KU | F.5220 | | 9KHVG | | |
| 1.2581 | SKD5 | X30WCrV9-3 | H21 | BH21 | | Z30WCV9 | | X30WCrV93KU | F.526 | T20821 | 3C 2W8F | 3Cr2W8V | |
| 1.2601 | | X165CrMoV12 | | | | | 2310 | X160CrMoV12 | | | KH12MF | Cr12MoV | |
| 1.2606 | SKD 62 | X37CrMoW51 | H12 | BH12 | | Z35CWDV5 | | X35CrMoW05KU | F.537 | T20812 | 5C NM | | |
| 1.2764 | | X19NiCrMo4 | | | | | | | | | | | |
| 1.2767 | | X45NiCrMo4 | | | | 45NCD16 | | 40NiCrMoV8KU | | | | | |
| 1.2842 | | 90MnCrV8 | O2 | B02 | | 90MV8 | | 90MnVCr8KU | | T31502 | 9G2F | | |
| 1.3243 | SKH55 | S6-5-2-5 | T15 | | | KCV06-05-05-04-02 | 2723 | HS6-5-2-5 | | | R6M5K5 | W6Mo5Cr4V2Co5 | |
| 1.3249 | SKH 3 | S18-1-2-5 | T4 | BT4 | | Z80WKCV18-05-04 | | | | | R18K5F2 | W18Cr4VCo5 | |
| 1.3343 | SKH51, SKH9 | S6-5-2 | M2 | BM2 | | Z85WDCV | 2722 | HS652 | F.5604 | | R6M5 | W6Mo5Cr4V2 | |
| 1.3348 | SKH 58 | S2-9-2 | M7 | | | Z100DCWV09-04-02 | 2782 | HS292 | F.5607 | | | | |
| 1.3355 | SKH 2 | S18-0-1 | T1 | BT1 | | Z80WCV18-4-01 | | | | | R18 | W18Cr4V | |
| 1.4718 | SUH1 | X45CrSi9-3 | HNV3 | 401S45 | 52 | Z45CS9 | | X45CrSi8 | F.322 | | 40C 9S2 | 4Cr9Si2 | |
| 1.5662 | SL9N60(53) | X8Ni9 | ASMA353 | 502-650 | | 9Ni | | X10Ni9 | F.2645 | | | | |
| 1.5680 | | 12Ni19 | 2515 | 12Ni19 | | Z18N5 | | | | | | | |

## P

VDI 3323: 11

Material Description 工件材料: High-alloyed steel, and tool steel 高合金钢, 及刀具钢

Composition / Structure / Heat Treatment 成分 / 结构 / 热处理: Quenched & Tempered 淬火 & 回火

HB: 325

HRc: 35

| Mat'l No. | JIS | DIN | AISI/ASTM/ SAE | BS | EN | AFNOR | SS | UNI | UNE / IHA | UNS | GOST | GB | Brands |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.2080 | SKD1 | X210Cr12 | D3 | BD3 | X210Cr12 | Z200C12 | | X205Cr12KU | | T30403 | KH12 | Cr12 | |
| 1.2344 | SKD61 | X40CrMoV5-1 | H13 | BH13 | | Z40CDV5 | 2242 | X40CrMoV511KU | F.5318 | T20813 | 4C 5MF1S | 4Cr5MoVSi | |
| 1.2363 | SKD12 | X100CrMoV5-1 | A2 | BA2 | | Z100CDV5 | 2260 | X100CrMoV51KU | F.5227 | | 9KH5VF | Cr6WV | |
| 1.2436 | SKD 2 | X210CrW12 | D4(D6) | BD6 | | Z200CD12 | 2312 | X215CrW121KU | F.5213 | | KH12 | Cr12W | |
| 1.2581 | SKD5 | X30WCrV9-3 | H21 | BH21 | | Z30WCV9 | | X30WCrV93KU | F.526 | T20821 | 3C 2W8F | 3Cr2W8V | |
| 1.2601 | | X165CrMoV12 | | | | | 2310 | X160CrMoV12 | | | KH12MF | Cr12MoV | |
| 1.2714 | SKT 4 | 55NiCrMoV7 | 6F3/L6 | | | 55NiCrMoV7 | | | F.520S | | 5KHNV | | |
| 1.3202 | | S12-1-4-5 | | BT15 | | | | HS12-1-5-5 | | | | | |
| 1.3207 | | S10-4-3-10 | | BT42 | | Z130WKCDV | | | | | | | |
| 1.3243 | SKH55 | S6-5-2-5 | T15 | | | KCV06-05-05-04-02 | 2723 | HS6-5-2-5 | | | R6M5K5 | W6Mo5Cr4V2Co5 | |
| 1.3246 | | S7-4-2-5 | M35 | | | Z110WKCDV07-05-04 | | HS7-4-2-5 | | | | | |
| 1.3247 | SKH 51 | S2-10-1-8 | M42 | BM42 | | Z110DKCWV09-08-04 | | HS2-9-1-8 | | | R2AM9K5 | | |
| 1.3255 | SKH 3 | S18-1-2-5 | T4 | BT4 | | Z80WKCV18-05-04 | | | | | R18K5F2 | W18Cr4VCo5 | |
| 1.3343 | SKH51, SKH9 | S6-5-2 | M2 | BM2 | | Z85WDCV | 2722 | HS652 | F.5604 | | R6M5 | W6Mo5Cr4V2 | |
| 1.3348 | SKH 58 | S2-9-2 | M7 | | | Z100DCWV09-04-02 | 2782 | HS292 | F.5607 | | | | |
| 1.3355 | SKH 2 | S18-0-1 | T1 | BT1 | | Z80WCV18-4-01 | | | | | R18 | W18Cr4V | |
| 1.4718 | SUH1 | X45CrSi9-3 | HNV3 | 401S45 | 52 | Z45CS9 | | X45CrSi8 | F.322 | | 40C 9S2 | 4Cr9Si2 | |
| 1.4935 | SUH 616 | X20CrMoWV121 | 422 | | | | | | | S42200 | | | |
| 1.5680 | | 12Ni19 | 2515 | 12Ni19 | | Z18N5 | | | | | | | |





## M

VDI 3323: 12

Material Description 工件材料: Stainless steel 不锈钢

Composition / Structure / Heat Treatment 成分 / 结构 / 热处理: Ferritic / Martensitic, Annealed 铁素体 / 马氏体, 热处理

HB: 200

HRc: 15

| Mat'l No. | JIS | DIN | AISI/ASTM/ SAE | BS | EN | AFNOR | SS | UNI | UNE / IHA | UNS | GOST | GB | Brands |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.4000 | SUS403 | X6Cr13 | 403 | 403S17 | | Z6C13 | 2301 | X6Cr13 | F.3110 | S40300 | 08C 13 | 0Cr13;1Cr12 | ATI 410S |
| 1.4001 | | X7Cr14 | 410 S | 403S7 | | Z8C13 | 2301 | | F.8401 | | 08C 13 | | |
| 1.4002 | SUS 405 | X6CrAl13 | 405 | 405S17 | | Z6CA13 | 2302 | X6CrAl13 | | S40500 | | | |
| 1.4005 | SUS416 | X12CrS13 | 416 | 416S21 | | Z11CF13 | 2380 | X12CrSC13 | F.3411 | S41600 | | | ATI 416 |
| 1.4006 | SUS410 | X12Cr13 | 410 | 410S21 | 56A | Z10C13 | 2302 | X12Cr13 | F.3401 | S41000 | 12C 13 | | ATI 410 |
| 1.4016 | SUS430 | X6Cr17 | 430 | 430S15 | X8Cr17 | Z8C17 | 2320 | X8Cr17 | F3113 | S43000 | 12C 17 | 1Cr17 | ATI 430 |
| 1.4027 | SCS 2 | GX20Cr14 | | 420C29 | | Z20C13M | | | | | 20C 13L | | |
| 1.4028 | SUS420J2 | X30Cr13 | 420 | 420S45 | | Z30C13 | 2304 | | | S42020 | 20C 13 | | |
| 1.4034 | SUS420J2 | X46Cr13 | | 420S45 | | Z40C14 | | X40Cr14 | F.3405 | | | 4Cr13 | |
| 1.4057 | SUS431 | X19CrNi17-2 | 431 | 431S29 | 57 | Z15CN16-02 | 2321 | X16CrNi16 | F.3427 | S43100 | 20C 17N2 | | 431 (HT) |
| 1.4086 | | GX120Cr29 | | 452C11 | | | | | | | | | |
| 1.4104 | SUS430F | X12CrMoS17 | 430F | 420S37 | | Z10CF17 | 2383 | X10CrS17 | F.3117 | S43020 | | Y1Cr17 | |
| 1.4112 | SUS 440 B | X90CrMoV18 | 440B | | | | | | | S44003 | 95KH18 | | |
| 1.4113 | SUS434 | X6CrMo17 | 434 | 434S17 | | Z8CD17-01 | 2325 | X8CrMo17 | | S43400 | | | AL 434 |
| 1.4313 | SCS5 | X3CrNi13-4 | CA6-NM | 425C11 | | Z4CND13-04M | 2385 | (G)X6CrNi304 | | J91540 | | | |
| 1.4340 | | GX40CrNi274 | | | | | | | | J92615 | | | |
| 1.4417 | | X2CrNiM0Si195 | S31500 | | | | 2376 | | | S39215 | | | |
| 1.4418 | | X4CrNiMo165 | | | | Z6CND16-04-01 | 2387 | | | | | | APX4 |
| 1.4510 | SUS430LX | X6CrTi17 | XM8 | | | Z4CT17 | | X6CrTi17 | F.3115 | S43035 | 08C 17T | | 430 Ti |
| 1.4511 | SUS430LK | X6CrNb17 | | | | Z4CNb17 | | X6CrNb17 | F.3122 | | | | AXC525 |
| 1.4512 | SUH409 | X6CrTi12 | 409 | LW19 | | Z3CT12 | | X6CrTi12 | | S40900 | | | |
| 1.4720 | | X20CrMo13 | | | | | | | | | | | |
| 1.4724 | SUS 405 | X10CrA113 | 405 | 403S17 | | Z10C13 | | X10CrA112 | F.311 | | 10C 13SJU | 0Cr13Al | |
| 1.4742 | SUS430 | X10CrA118 | 430 | 439S15 | 60 | Z10CAS18 | | X8Cr17 | F.3113 | S43000 | 15C 13SJU | Cr17 | |
| 1.4747 | SUH4 | X80CrNiSi20 | HNV6 | 443S65 | 59 | Z80CSN20-02 | | X80CrSiNi20 | F.320B | S65006 | | 8Cr2OSi2Ni | |
| 1.4749 | | X18CrN28 | 446 | | | | | | | | 15KH28 | | |
| 1.4762 | SUH446 | X10CrA124 | 446 | | | Z10CAS24 | 2322 | X16Cr26 | | S44600 | | 2Cr25N | |
| 1.4871 | SUH35,SUH36 | X53CrMnNiN21-9 | EV8 | 349S54 | | Z52CMN21-09 | | X53CrMnNiN219 | | S63008 | 55C 20G9AN4 | 5Cr2Mn9Ni4N | |
| | | X10CrNi15 | 429 | | | | | | | | | | |
| | | X12CrNi18-9 | 302 | 302S31 | | Z10CN18-09 | 2330 | | | | | | |

## M

VDI 3323: 13

Material Description 工件材料: Stainless steel 不锈钢

Composition / Structure / Heat Treatment 成分 / 结构 / 热处理: Martensitic, Quenched & Tempered 马氏体, 淬火 & 回火

HB: 240

HRc: 23

| Mat'l No. | JIS | DIN | AISI/ASTM/ SAE | BS | EN | AFNOR | SS | UNI | UNE / IHA | UNS | GOST | GB | Brands |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.4021 | SUS 420J1 | X20Cr13 | 420 | 420S37 | | Z20C13 | 2303 | 14210 | F.5261 | S42000 | 20C 13 | 2Cr13 | ATI 420 |
| 1.4027 | SCS 2 | GX20Cr14 | | 420C29 | | Z20C13M | | | | | 20C 13L | | |
| 1.4031 | SUS 420 J2 | X40Cr13 | 420 | | | Z40C14 | -2304 | | F.3404 | S42080 | 40C 13 | | |
| 1.4034 | SUS420J2 | X46Cr13 | | 420S45 | | Z40C14 | | X40Cr14 | F.3405 | | | 4Cr13 | |
| 1.4057 | SUS431 | X19CrNi17-2 | 431 | 431S29 | 57 | Z15CN16-02 | 2321 | X16CrNi16 | F.3427 | S43100 | 20C 17N2 | 1Cr17Ni2 | 431 (HT) |
| 1.4104 | SUS430F | X12CrMoS17 | 430F | 420S37 | | Z10CF17 | 2383 | X10CrS17 | F.3117 | S43020 | | Y1Cr17 | |
| 1.4113 | SUS434 | X6CrMo17 | 434 | 434S17 | | Z8CD17-01 | 2325 | X8CrMo17 | | S43400 | | | AL 434 |
| 1.4313 | SCS5 | X3CrNi13-4 | CA6-NM | 425C11 | | Z4CND13-04M | 2385 | (G)X6CrNi304 | | J91540 | | | |
| 1.4544 | | A 700 | 321 | S.524 | | Z 10 CNT 1811 | | X6CrNiTi1811 | | J92630 | 08C 18N12T | | |
| 1.4546 | | X5CrNiNb18-10 | 348 | 347S31 | | | | X6CrNiNb1811 | | J92640 | | | ATI 348 |
| 1.4871 | SUH35,SUH36 | X53CrMnNiN21-9 | EV8 | 349S54 | | Z52CMN21-09 | | X53CrMnNiN219 | | S63008 | 55C 20G9AN4 | | |
| 1.4922 | | X20cRmV12-1 | | | | | 2317 | x20cRmOnl1201 | | | | | |
| 1.4923 | | X22CrMoV121 | | | | | | | | | | | Jethete X20 |

## M

VDI 3323: 14

Material Description 工件材料: Stainless steel 不锈钢

Composition / Structure / Heat Treatment 成分 / 结构 / 热处理: Austenitic 奥氏体

HB: 180

HRc: 10

| Mat'l No. | JIS | DIN | AISI/ ASTM/SAE | BS | EN | AFNOR | SS | UNI | UNE / IHA | UNS | GOST | GB | Brands |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.4301 | SUS 304 | X5CrNi18-10 | 304 | 304S15 | | Z5CN18-09 | 2332 | | F.3551 | S30409 | 08C 18N10 | | |
| 1.4305 | SUS303 | X10CrNiS18-10 | 303 | 303S21 | 58M | Z8CNF18-09 | 2346 | X10CrNiS18.09 | F.3508 | S30300 | 30C 18N11 | 1Cr18Ni9MoZr | ATI 303 |
| 1.4306 | SCS19 | X2CrNi1911 | 304L | 304C12 | X3CrNi1810KD | Z2CN18-09 | 2352 | GX2CrNi1910 | F.3503 | S30403 | 03KH18N11 | 0Cr19Ni10 | ATI 304L |
| 1.4308 | SUS304L | GX6CrNi18-9 | CF-8 | 304C15 | 58E | Z6CN18-10M | 2333 | | | | | | CF-8 |
| 1.4310 | SUS 301 | X10CrNi18-8 | 301 | 301S21 | | Z12CN17-07 | 2331 | X2CrNi1807 | F.3517 | S30100 | 07KH16N6 | Cr17Ni7 | ATI 301 |
| 1.4311 | SUS304LN | X2CrNiN18 10 | 304LN | 304S62 | | Z2CN18-10 | 2371 | X2CrNiN1810 | F.3541 | S30453 | 03KH18N11 | | |
| 1.4312 | SCS12 | GX10CrNi188 | 305 | 302C25 | | Z10CN18-9M | | | | | 10C 18N9L | | ATI 305 |
| 1.4350 | SUS304 | X5CrNi18-9 | 304 | 304S15 | 58E | Z6CN18-09 | 2332 | X5CrNi1810 | F.3551 | S30400 | | 0Cr18Ni9 | ATI 304 |
| 1.4362 | | X2CrNiN234 | S32304 | | | Z2CN23-04AZ | 2327 | | | S32304 | | | ATI 2304TM |
| 1.4371 | | X3CrMnNiN18887 | 202 | 284S16 | | Z8CMN18-08-05 | | | | | | | |
| 1.4401 | SUS316 | X5CrNiMo17-12-2 | 316 | 316S13 | | Z3CND17-11-01 | 2347 | X5CrNiMo17 12 2 | F.3534 | S31600 | 08KH17H13M2T | | ATI 316 |
| 1.4404 | SUS316L | X2CrNiMo17-13-2 | 316L | 316S11 | | Z2CND17-12 | 2348 | X2CrNiMo1712 | F.3533 | S31603 | | | ATI 316L |
| 1.4406 | SUS316LN | X2CrNiMoN17122 | 316LN | 316S61 | | Z2CND17-12AZ | | X2CrNiMoN1712 | F.3542 | S31653 | 07C 18N | | ATI 316LN |
| 1.4408 | SCS14 | GX6CrNiMo18-10 | CF-8M | 316C16 | | | 2343 | X7CrNiMo2010 | F.8414 | J92900 | 10G2S2MSL | | |
| 1.4410 | SCS 14 A | GX10CrNiMo18-9 | | | | Z5CND20-12M | 2328 | | | S32750 | | | |
| 1.4429 | SUS316LN | X2CrNiMoN17-13-3 | 316Ln | 316S62 | | Z2CND17-13AZ | 2375 | X2CrNiMoN17133 | F.3543 | | 03KH16N15M3 | 00Cr17Ni13Mo2 | |
| 1.4435 | SUS316L | X2CrNiMo18143 | 316L | 316S11 | | Z3CND17-12-03 | 2375 | X2CrNiMo17 13 2 | F.3533 | S31603 | O3C 17N14M3 | 0Cr27Ni12Mo3 | |
| 1.4436 | SUS316 | X3CrNiMo17-13-3 | 316 | 316S19 | | Z6CND18-12-03 | 2343 | X5CrNiMo17 12 2 | F.3543 | S31600 | | | |
| 1.4438 | SUS317L | X2CrNiMo18164 | 317L | 317S12 | | Z2CND19-15-04 | 2367 | X2CrNiMo18 16 4 | F.3539 | S31703 | | | ATI 317L |
| 1.4439 | | X2CrNiMoN17135 | (s31726) | | | Z3CND18-14-06AZ | | | | | | | |
| 1.4440 | | X2CrNiMo18-16 | | | | | | | | | | | |
| 1.4449 | SUS317 | X5CrNiMo17133 | 317 | 317S16 | | | | X5CrNiMo1815 | | S31700 | | | ATI 317 |
| 1.4460 | SUS 329 J1 | X8CrNiMo275 | 329 | | | | 2324 | | | S32900 | | | 10RE51 |
| 1.4462 | SUS329J3L | X2CrNiMoN2253 | | 318S13 | | Z3CND22-05Az | 2377 | | | S31803 | | | ATI 2205TM |
| 1.4500 | | X7NiCrMoCuNb2520 | | | | 23NCDU25-20M | | | | J95150 | | | |
| 1.4521 | SUS444 | X2CrMoTi18-2 | 443444 | | | | 2326 | X2CrMoTiNb18 2 | F.3123 | | | | |
| 1.4539 | | X1NiCrMoCuN25205 | | | | Z2NCDU25-20 | 2562 | | | N08904 | | | ATI 904L |
| 1.4541 | SUS321 | X14CrNiTi18-10 | 321 | 321S31 | | Z6CNT18-10 | 2337 | X6CrNiTi18 11 | F.3523 | S32100 | 06C 18N10T | | ATI 321 |
| 1.4542 | SUS630 | X5CrNiCuNb174 | 630 | | | Z7CNU15-05 | | | | | | | UGIMA 4542 |
| 1.4545 | | Z7CNU15.05 | 15-5PH | | | | | | | S15500 | | | ATI 15-5 |
| 1.4547 | | X1CrNiMoN20187 | S31254 | | | | 2378 | | | S31254 | | | Uranus B256Mo |
| 1.4550 | SUS347 | X6CrNiNb18-10 | 347 | 347S17 | 58F | Z6CNNb18-10 | 2338 | X6CrNiNb18 11 | F.3552 | S34700 | 08C 18N12B | 1Cr18Ni11Nb | ATI 347 |
| 1.4552 | SCS 21 | GX7CrNiNb18-9 | | | | Z4CNNb19-10M | | | | J92710 | | | |
| 1.4568 | SUS 631 | X 7 CrNiAl 17 7 | | 316S111 | | Z 9 CAN 17-7 | 2388 | Z8CNA17-07 | | S17700 | 09C 17NJU1 | | 17-7PH |
| 1.4571 | SUS 316Ti | X6CrNiMoTi17-12-2 | 316Ti | 320S31 | 58J | Z6NDT17-12 | 2350 | X6CrNiMoTi17 12 | F.3535 | | 10C 17N13M2T | Cr18Ni12Mo2Ti | ATI 316Ti |
| 1.4581 | SCS 22 | GX5CrNiMoNb18 | | 318C17 | | Z4CNDNb18-12M | | | | | | | |
| 1.4583 | | X6CrNiMoNB18-12 | 318 | 303S21 | | Z15CNS20-12 | | X15CrNiSi2 12 | | | | Cr17Ni12Mo3Nb | |
| 1.4585 | | GX7CrNiMoCuNb1818 | | | | | | X6CrNiMoTi17 12 | | J94651 | | | |
| 1.4821 | | X20CrNiSi254 | | | | Z20CNS25-04 | | | | S44635 | | | |
| 1.4823 | | GX40CrNiSi274 | | | | | | | | J92605 | | | |
| 1.4828 | SCS17 | X15CrNiSi20-12 | 309 | 309S24 | 58C | Z15CNS20-12 | | | F.8414 | S30900 | 20C 20N14S2 | 1Cr23Ni13 | ATI 309 |
| 1.4833 | SUS 309 S | X6CrNi2213 | 309S | 309S13 | | Z15CN24-13 | | | | J93400 | | | |
| 1.4845 | SUH310 | X12CrNi25-21 | 310S | 310S24 | | Z12CN25-20 | 2361 | X6CrNi2520 | F.331 | S31008 | 20C 23N18 | 0Cr25Ni20 | ATI 310S |
| 1.4878 | SUS321 | X12CrNiTi18-9 | 321 | 321S20 | 58B | Z6CNT18-12(B) | 2337 | X6CrNiTi1811 | F.3553 | S32100 | | 1Cr18Ni9Ti | ACX315 |
| 1.4891 | | X5CrNiNb18-10 | Ss30415 | | | | 2372 | | | | | | |
| 1.4893 | | X8CrNiNb11 | S30815 | | | | 2368 | | | | | | |
| 1.4948 | | X6CrNi1811 | 304H | 304S51 | | Z5CN18-09 | 2333 | | | S30480 | | | |
| 1.4980 | | X5NiCrTi2515 | 660 | | | | 2570 | | | S66286 | | | Incoloy A 286 |
| | | X5NiCrN3525 | | | | | | | | | | | |
| | | X2CrNiMoN18134 | S31753 | | | | | | | | | | |
| | | X2CrNiMoN25227 | | | | | | | | | | | |





## K

VDI 3323: 15

Material Description 工件材料: Grey cast iron 灰铸铁

Composition / Structure / Heat Treatment 成分 / 结构 / 热处理: Pearlitic / Ferritic 珠光体 / 铁素体

HB: 180

HRc: 10

| Mat'l No. | JIS | DIN | AISI/ASTM/ SAE | BS | EN | AFNOR | SS | UNI | UNE / IHA | UNS | GOST | GB | Brands |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.6010 | FC100 | GG10 | A48 20 B | Grade 100 | GJL-100 | Ft 10 D | 0100 | G10 | FG10 | | Sc 10 | | |
| 0.6015 | FC150 | GG15 | A48 25 B | Grade 150 | GJL-150 | Ft 15 D | 0115 | G15 | FG15 | | Sc 15 | HT150 | |
| 0.6020 | FC200 | GG20 | A48 30 B | Grade 220 | GJL-200 | Ft 20 D | 0120 | G20 | FG20 | W06020 | Sc 20 | HT200 | |
| 0.6025 | FC250 | GG25 | A48 40 B | Grade 260 | GJL-250 | Ft 25 D | 0125 | G25 | FG25 | | Sc 25 | | |
| 0.6660 | | GGL-NiCr 20 2 | 1050/700/7 | Grade F2 | GJLA-XNiCr 20-2 | L-NC 202 | 0523 | - | | F41002 | | | Ni-Resist 2 |
| 1.4449 | SUS317 | X5CrNiMo17133 | 317 | 317S16 | | | | X5CrNiMo1815 | | S31700 | | | ATI 317 |

## K

VDI 3323: 16

Material Description 工件材料: Grey cast iron 灰铸铁

Composition / Structure / Heat Treatment 成分 / 结构 / 热处理: Pearlitic (Martensitic) 珠光体 (马氏体)

HB: 260

HRc: 26

| Mat'l No. | JIS | DIN | AISI/ASTM/ SAE | BS | EN | AFNOR | SS | UNI | UNE / IHA | UNS | GOST | GB | Brands |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.6025 | FC250 | GG25 | A48 40 B | Grade 260 | GJL-250 | Ft 25 D | 0125 | G25 | FG25 | | Sc 25 | HT250 | |
| 0.6030 | FC300 | GG30 | A48 45 B | Grade 300 | GJL-300 | Ft 30 D | 0130 | G30 | FG30 | | Sc 30 | HT300 | |
| 0.6035 | FC350 | GG35 | A48 50 B | Grade 350 | GJL-350 | Ft 35 D | 0135 | G35 | FG35 | | Sc 35 | HT350 | |
| 0.6040 | FC400 | GG40 | A48 60 B | Grade 400 | GJL-400 | Ft 40 D | 0140 | G40 | FC40 | | Sc 40 | | |

## K

VDI 3323: 17

Material Description 工件材料: Nodular cast iron 球墨铸铁

Composition / Structure / Heat Treatment 成分 / 结构 / 热处理: Ferritic 铁素体

HB: 160

HRc: 3

| Mat'l No. | JIS | DIN | AISI/ASTM/ SAE | BS | EN | AFNOR | SS | UNI | UNE / IHA | UNS | GOST | GB | Brands |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.7033 | FCD350-22L | GGG35.3 | - | 350/22L40 | GJS-350-22-LT | FGS 370-17 | 0717-15 | - | | | | | |
| 0.7040 | FCD400 | GGG40 | 60-40-18 | SNG 420-12 | GJS-400-15 | FCS 400-12 | 0717-02 | GS 400-12 | FG E38-17 | F32800 | Vc 42-12 | QT400-18 | |
| 0.7043 | FCD 370 | GGG40.3 | 60-40-18 | SNG 370-17 | GJS-400-18-LT | FGS 370-17 | 0717-12 | GSO 42-17 | | | Vc 42-12 | | |
| 0.6040 | FC400 | GG40 | A48 60 B | Grade 400 | GJL-400 | Ft 40 D | 0140 | G40 | FC40 | | Sc 40 | QT500-7 | |

## K

VDI 3323: 18

Material Description 工件材料: Nodular cast iron 球墨铸铁

Composition / Structure / Heat Treatment 成分 / 结构 / 热处理: Pearlitic 珠光体

HB: 250

HRc: 25

| Mat'l No. | JIS | DIN | AISI/ASTM/ SAE | BS | EN | AFNOR | SS | UNI | UNE / IHA | UNS | GOST | GB | Brands |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.7050 | FCD500 | GGG50 | 80-55-06 | SNG 500-7 | GJS-500-7 | FGS 500-7 | 0727-02 | GS 500-7 | FG E50-7 | F33100 | Vc 50-2 | | |
| 0.7060 | FCD600 | GGG60 | 80-55-06 | SNG 600-3 | GJS-600-3 | FGS 600-3 | 0732-03 | GS 600-3 | FG E60-2 | | Vc 60-2 | QT600-3 | |
| 0.7070 | FCD700 | GGG70 | 100-70-03 | SNG 700-2 | GJS-700-2 | FGS 700-2 | 0737-01 | GS 700-2 | FG S70-2 | F34800 | Vc 70-2 | QT700-2 | |
| 0.7652 | FCDA-NiMn 13 7 | GGG NiMn 13-7 | - | Grade S6 | GJSA-XNiMn 13-7 | FGS Ni13 Mn7 | 0772 | - | | | | | Nodumag |
| 0.7660 | | GGG NiCr 20-2 | A436 D2 | Grade S2 | GJSA-XNiCr 20-2 | FGS Ni20 Cr2 | 0776 | - | | | | | Ni-Resist D-2 |

## K — VDI 3323 19

Material Description 工件材料: Malleable cast iron 可锻铸铁
Composition / Structure / Heat Treatment 成分 / 结构 / 热处理: Ferritic 铁素体
HB: 130
HRc:

| Mat'l No. | JIS | DIN | AISI/ASTM/ SAE | BS | EN | AFNOR | SS | UNI | UNE / IHA | UNS | GOST | GB | Brands |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.8135 | FCMW330 | GTS-35 | 32510 | B 340-12 | GJMB350-10 | MN 35-10 | 0815 | GMN 35 | GTS35 | | Kc 35-10 | | |

## K — VDI 3323 20

Material Description 工件材料: Malleable cast iron 可锻铸铁
Composition / Structure / Heat Treatment 成分 / 结构 / 热处理: Pearlitic 珠光体
HB: 230
HRc: 21

| Mat'l No. | JIS | DIN | AISI/ASTM/ SAE | BS | EN | AFNOR | SS | UNI | UNE / IHA | UNS | GOST | GB | Brands |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.8145 | FCMW370 | GTS-45 | A220-40010 | P 440-7 | GJMB450-6 | MN 450 | 0852 | GMN 45 | | | | | |
| 0.8155 | FCMP490 | GTS-55 | 50005 | P 510-4 | GJMB-550-4 | MP 50-5 | 0854 | GMN 55 | | | Kc 60-3 | | |
| 0.8165 | FCMP590 | GTS-65 | 70003 | P 570-3 | GJMB-650-2 | MN 650-3 | 0856 | GMN 65 | | | | | |
| 0.8170 | FCMP690 | GTS-70 | 90001 | P 690-2 | GJMB-700-2 | MN 700-2 | 0862 | GMN 70 | | | Kc 70-2 | | |





## N — VDI 3323 21

Material Description 工件材料: Aluminum-wrought alloy 铝-加工用合金
Composition / Structure / Heat Treatment 成分 / 结构 / 热处理: Not Curable 非硬化性
HB: 60
HRc:

| Mat'l No. | JIS | DIN | AISI/ASTM/ SAE | BS | EN | AFNOR | SS | UNI | UNE / IHA | UNS | GOST | GB | Brands |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3.0205 | | Al99 | Al99 | | | | | | | | | | |
| 3.0255 | (A1050) | Al99.5 | 1000 | L31 | | A59050C | | | | | D1 | | |
| 3.3315 | | AlMg1 | | | | | | | | | | | |

## N — VDI 3323 22

Material Description 工件材料: Aluminum-wrought alloy 铝-加工用合金
Composition / Structure / Heat Treatment 成分 / 结构 / 热处理: Curable, Hardened 硬化性, 硬化
HB: 100
HRc:

| Mat'l No. | JIS | DIN | AISI/ASTM/ SAE | BS | EN | AFNOR | SS | UNI | UNE / IHA | UNS | GOST | GB | Brands |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3.1325 | | AlCuMg1 | | | | | | | | | AD35 | | |
| 3.1655 | A2011 | AlCuSiPb | | | | | | | | | | | |
| 3.2315 | | AlMgSi1 | | | | | | | | | AK9 | | |
| 3.4345 | | AlZnMgCuO,5 | 7050 | L86 | | AZ4GU/9051 | | 811-04 | | | | | |
| 3.4365 | 7075 | AlZnMgCu1,5 | 7075 | 7075 | | 7075 | | AlZn5.8MgCuCr | | | B95 | | |

## N — VDI 3323 23

Material Description 工件材料: Aluminum-cast, alloyed 铝-铸造合金
Composition / Structure / Heat Treatment 成分 / 结构 / 热处理: ≤ 12% Si, Not Curable ≤ 12% Si, 非硬化性
HB: 75
HRc:

| Mat'l No. | JIS | DIN | AISI/ASTM/ SAE | BS | EN | AFNOR | SS | UNI | UNE / IHA | UNS | GOST | GB | Brands |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3.2163 | | G-AlSi9Cu3 | | | | | | | | | VAL8 | | |
| 3.2382 | | GD-AlSi10Mg | | | | | | | | | | | |
| 3.2383 | | G-AlSi0Mg(Cu) | A360.2 | LM9 | | | 4253 | | | | | | |
| 3.2581 | | G-AlSi12 | | | | | | | | | | | |
| 3.3561 | | G-AlMg5 | | | | | | | | | | | |
| 3.5101 | | G-MgZn4sE1Zr1 | ZE41 | MAG5 | | | | | | | | | |
| 3.5103 | | MgSE3Zn27r1 | EZ33 | MAG6 | | G-TR3Z2 | | | | | | | |
| 3.5812 | | G-MgAl8Zn1 | AZ81 | NMAG1 | | | | | | | | | |
| 3.5912 | | G-MgAl9Zn1 | AZ91 | MAG7 | | | | | | | | | |
| | | | A356-72 | 2789 | | NFA32-201 | | | | | | | |
| | A5052 | | 356.1 | LM25 | | | 4244 | | | | AK7 | | |
| | | G-AlSi12 | A413.2 | LM6 | | | 4261 | | | | | | |
| | ADC12 | G-AlSi12(Cu) | A413.1 | LM20 | | | 4260 | | | | AK12 | | |
| | A6061 | GD-AlSi12 | A413.0 | | | | 4247 | | | | | | |
| | A7075 | GD-AlSi8Cu3 | A380.1 | LM24 | | | 4250 | | | | | | |

## N — VDI 3323 24

Material Description 工件材料: Aluminum-cast, alloyed 铝-铸造合金
Composition / Structure / Heat Treatment 成分 / 结构 / 热处理: ≤ 12% Si, Curable, Hardened ≤ 12% Si, 硬化性, 硬化
HB: 90
HRc:

| Mat'l No. | JIS | DIN | AISI/ASTM/ SAE | BS | EN | AFNOR | SS | UNI | UNE / IHA | UNS | GOST | GB | Brands |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2.1871 | | G-AlCu4TiMg | | | | | | | | | | | |
| 3.1754 | | G-AlCu5Ni1,5 | | | | | | | | | | | |
| 3.2371 | | G-AlSi7Mg | 4218B | | | | | | | | AK8 | | |
| 3.2373 | C4BS | G-AlSi9MGWA | SC64D | | | A-S7G | 4251 | | | | AK9 | | |
| 3.2381 | | G-AlSi10Mg | | | | | | | | | AK12 | | |
| 3.5106 | | G-MgAg3SE2Zr1 | QE22 | mag12 | | | | | | | | | |
| | | G-ALMG5 | GD-AlSi12 | LM5 | | A-SU12 | 4252 | | | | | | |

## N — VDI 3323 26

Material Description 工件材料: Copper and Copper Alloys (Bronze / Brass) 铜和铜合金 (青铜/黄铜)
Composition / Structure / Heat Treatment 成分 / 结构 / 热处理: Cutting alloys, PB>1% 切削合金, PB>1%
HB: 110
HRc:

| Mat'l No. | JIS | DIN | AISI/ASTM/ SAE | BS | EN | AFNOR | SS | UNI | UNE / IHA | UNS | GOST | GB | Brands |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2.0375 | | CuZn36Pb3 | | | | | | | | | LS60-2 | | |
| 2.1090 | | G-CuSn75pb | C93200 | | | U-E7Z5pb4 | | | | | | | |
| 2.1096 | | G-CuSn5ZnPb | c83600 | LG2 | | | | | | | | | |
| 2.1098 | | G-CuSn2Znpb | C83600 | | | | | | | | | | |
| 2.1182 | | G-CuPb15Sn | C23000 | LB1 | | U-pb15E8 | | | | | | | |

## N — VDI 3323 27

Material Description 工件材料: Copper and Copper Alloys (Bronze / Brass) 铜和铜合金 (青铜/黄铜)
Composition / Structure / Heat Treatment 成分 / 结构 / 热处理: CuZn, CuSnZn (Brass 黄铜 )
HB: 90
HRc:

| Mat'l No. | JIS | DIN | AISI/ASTM/ SAE | BS | EN | AFNOR | SS | UNI | UNE / IHA | UNS | GOST | GB | Brands |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2.0240 | C2300 | CuZn15 | | | | | | | | | L90 | | |
| 2.0321 | | CuZn37 | C27200 | cz108 | | CuZn36,CuZn37 | | C2700 | | | L63 | | |
| 2.0590 | | G-CuZn40Fe | | | | | | | | | | | |
| 2.0592 | | G-CuZn35Al1 | C86500 | U-Z36N3 | | HTB1 | | | | | | | |
| 2.0596 | | G-CuZn34Al2 | C86200 | HTB1 | | U-Z36N3 | | | | | LTs23AD | | |
| 2.1293 | | CuCrZr | C18200 | CC102 | | U-Cr0-8Zr | | | | | | | |

## N — VDI 3323 28

Material Description 工件材料: Copper and Copper Alloys (Bronze / Brass) 铜和铜合金 (青铜/黄铜)
Composition / Structure / Heat Treatment 成分 / 结构 / 热处理: CuSn, lead-free copper and electrolytic copper CuSn, 无铅铜及电解铜
HB: 100
HRc:

| Mat'l No. | JIS | DIN | AISI/ASTM/ SAE | BS | EN | AFNOR | SS | UNI | UNE / IHA | UNS | GOST | GB | Brands |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2.0060 | | E-Cu57 | | | | | | | | | | | |
| 2.0966 | | CuAl10Ni5Fe4 | C63000 | Ca104 | | U-A10N | | | | | BrAD | | |
| 2.0975 | | G-CuAl10Ni | B-148-52 | | | | | | | | | | |
| 2.1050 | | G-CuSn10 | c90700 | CT1 | | | | | | | | | |
| 2.1052 | | G-CuSn12 | C90800 | pb2 | | UE12P | | | | | | | |
| 2.1292 | | G-CuCrF35 | C81500 | CC1-FF | | | | | | | | | |





## S — VDI 3323 31

Material Description 工件材料: Heat resistant super alloys 超耐热合金
Composition / Structure / Heat Treatment 成分 / 结构 / 热处理: Fe Based, Annealed 基于 Fe, 热处理
HB: 200
HRc: 15

| Mat'l No. | JIS | DIN | AISI/ASTM/ SAE | BS | EN | AFNOR | SS | UNI | UNE / IHA | UNS | GOST | GB | Brands |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.4558 | NCF 800TB | X2NiCrAlTi3220 | N08800 | NA15 | | | | | | | | | |
| 1.4562 | | X1NiCrMoCu32287 | N08031 | | | | | | | | | | |
| 1.4563 | | X1NiCrMoCuN31274 | N08028 | | | Z1NCDU31-27-03 | 2584 | | | | EK77 | | |
| 1.4864 | SUH330 | X12NiCrSi36-16 | 330 | NA17 | | Z12NCS37-18 | | | | N08330 | | Cr15Ni36W3Ti | |
| 1.4865 | SCH15 | GX40NiCrSi38-18 | | 330C40 | | | | XG50NiCr3919 | | J94605 | | | |
| 1.4958 | | X5NiCrAlTi3120 | | | | | | | | | | | |

## S — VDI 3323 32

Material Description 工件材料: Heat resistant super alloys 超耐热合金
Composition / Structure / Heat Treatment 成分 / 结构 / 热处理: Fe Based, Aged 基于 Fe, 时效
HB: 280
HRc: 30

| Mat'l No. | JIS | DIN | AISI/ASTM/ SAE | BS | EN | AFNOR | SS | UNI | UNE / IHA | UNS | GOST | GB | Brands |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.4977 | | X40CoCrNi2020 | | | | Z42CNKDWNb | | | | | | | |

## S — VDI 3323 33

Material Description 工件材料: Heat resistant super alloys 超耐热合金
Composition / Structure / Heat Treatment 成分 / 结构 / 热处理: Ni or Co Based, Annealed 基于 Ni或Co, 热处理
HB: 250
HRc: 25

| Mat'l No. | JIS | DIN | AISI/ASTM/ SAE | BS | EN | AFNOR | SS | UNI | UNE / IHA | UNS | GOST | GB | Brands |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2.4360 | | NiCu30Fe | | NA13 | | NU30 | | | | N04400 | | | Monel400 |
| 2.4603 | | NiCr 30 FeMo | 5390A | | | NC22FeD | | | | | | | Hastelloy G-30 |
| 2.4610 | | NiMo16cR16Ti | | | | | | | | N26455 | | | HastelloyC-4 |
| 2.4630 | | NiCr20Ti | | HR5,203-4 | | NC20T | | | | N06075 | | | Nimonic75 |
| 2.4631 | NCF 80A | NiCr20TiAl | | Hr40 | | NC20TA | | | | N07080 | KHN77TYuR | | Nimonic 80A |
| 2.4642 | NCF 690 | NiC29Fe | | | | Nnc30Fe | | | | N06690 | | | Inconel 690 |
| 2.4856 | | NiCr22Mo9Nb | | NA21 | | NC22FeDNb | | | | N06625 | | | Inconel 625 |
| 2.4858 | | NiCr21Mo | | NA16 | | NC21FeDU | | | | N08825 | KHN38VT | | Incoloy 825 |

## S — VDI 3323 34

Material Description 工件材料: Heat resistant super alloys 超耐热合金
Composition / Structure / Heat Treatment 成分 / 结构 / 热处理: Ni or Co Based, Aged 基于 Ni或Co, 时效
HB: 350
HRc: 38

| Mat'l No. | JIS | DIN | AISI/ASTM/ SAE | BS | EN | AFNOR | SS | UNI | UNE / IHA | UNS | GOST | GB | Brands |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2.4375 | | NiCu30Al | 4676 | NA18 | | NU30AT | | | | N05500 | | | Monelk500 |
| 2.4662 | | NiFe35Cr14MoTi | 5660 | | | ZSNCDT42 | | | | N09901 | | | Incoloy 901 |
| 2.4668 | | NiCr19Fe19NbMo | 5383 | HR8 | | NC19eNB | | | | N07718 | | | Inconel 718 |
| 2.4670 | | S-NiCr13A16MoNb | 5391 | Mar-46 | | NC12AD | | | | | | | Nimocast 713 |
| 2.4694 | | NiCr16fE7TiAl | | | | | | | | N07751 | | | Inconel 751 |
| 2.4955 | | NiFe25Cr20NbTi | | | | | | | | | | | |
| 2.4964 | | CoCr20W15Ni | 5772 | | | KC20WN | | | | | | | Haynes 25 |
| | | CoCr22W14Ni | AMS 5772 | | | KC22WN | | | | | | | |

## S — VDI 3323 35

Material Description 工件材料: Heat resistant super alloys 超耐热合金
Composition / Structure / Heat Treatment 成分 / 结构 / 热处理: Ni or Co Based, Cast 基于 Ni或Co, 铸造
HB: 320 HRc: 34

| Mat'l No. | JIS | DIN | AISI/ASTM/ SAE | BS | EN | AFNOR | SS | UNI | UNE / IHA | UNS | GOST | GB | Brands |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2.4669 | | NiCr15Fe7TiAl | | | | NC15TNbA | | | | N07750 | | | Inconel X750 |
| 2.4685 | | G-NiMo28 | | | | | | | | N10665 | | | Hastelloy B |
| 2.4810 | | G-NiMo30 | | | | | | | | | | | Hastelloy C |
| 2.4973 | | NiCr19Co11MoTi | AMS 5399 | | | NC19KDT | | | | | VT5-1 | | |
| 3.7115 | | TiAl5Sn2 | | | | | | | | R54520 | VT1-00 | | ATI Grade 6 |

## S — VDI 3323 36

Material Description 工件材料: Titanium alloys 钛合金
Composition / Structure / Heat Treatment 成分 / 结构 / 热处理: Pure Titanium 纯钛
HB: 400 Rm HRc:

| Mat'l No. | JIS | DIN | AISI/ASTM/ SAE | BS | EN | AFNOR | SS | UNI | UNE / IHA | UNS | GOST | GB | Brands |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2.4674 | | NiCo15Cr10MoAlTi | AMS 5397 | | | | | | | N13100 | | | IN 100 |
| 3.7025 | | Ti1 | R50250 | 2TA1 | | | | | | R50250 | | | ATI 30 CP Gr. 1 |
| 3.7225 | | Ti1pd | R52250 | TP1 | | | | | | R52250 | | | |

## S — VDI 3323 37

Material Description 工件材料: Titanium alloys 钛合金
Composition / Structure / Heat Treatment 成分 / 结构 / 热处理: Alpha + Beta Alloys, Hardened A+β合金, 硬化
HB: 1050 Rm HRc:

| Mat'l No. | JIS | DIN | AISI/ASTM/ SAE | BS | EN | AFNOR | SS | UNI | UNE / IHA | UNS | GOST | GB | Brands |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3.7124 | | TiCu2 | | 2TA21-24 | | | | | | | | | |
| 3.7145 | | TiAl6Sn2Zr4Mo2Si | R54620 | | | | | | | R54620 | | | |
| 3.7165 | | TiAl6V4 | AMS R56400 | TA10-13 | | T-A6V | | | | | VT6 | | |
| 3.7185 | | TiAl4Mo4Sn2 | | TA45-51 | | | | | | | | | |
| 3.7195 | | TiAl3V2.5 | | | | | | | | R56320 | | | ATI 3-2.5 |
| | | TiAl4Mo4Sn4Si0.5 | | | | | | | | | | | |
| | | TiAl5Sn2.5 | AMS R54520 | TA14/17 | | T-A5E | | | | | | | |
| | | Ti6Al4VELI | AMS R56401 | TA11 | | | | | | | | | |





## H — VDI 3323 38

Material Description 工件材料: Hardened steel 硬化钢
Composition / Structure / Heat Treatment 成分 / 结构 / 热处理: Hardened 硬化
HB: 550 HRc: 55

| Mat'l No. | JIS | DIN | AISI/ASTM/ SAE | BS | EN | AFNOR | SS | UNI | UNE / IHA | UNS | GOST | GB | Brands |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.1231 | S 70 C-CSP | Ck 67 | 1070 | 060 A 67 | C 67S | XC 68 | 1770 | C 70 | F.5103 | | 70 | | |
| 1.1248 | C 75 | Ck 75 | 1078, 1080 | 060 A 78 | C 75S | XC 75 | 1774 | C 75 | F.5107 | | 75 | | |
| 1.1274 | SUP 4 | Ck 101 | 1095 | 060 A 96 | C 100S | XC100 | 1870 | C100 | F.5117 | | | | |
| 1.1545 | SK 3 | C 105 W1 | W1 | BW 2 | C 105U | Y1 105 | 1880 | C 100 KU | F.5118 | | U10A | 90 | |
| 1.2762 | | 75CrMoNiW67 | - | - | - | - | - | - | | | | | |
| 1.3401 | SCMnH1 | GX120Mn12 | A128(A) | | | Z120M12 | 2183 | GX120Mn12 | F.8251 | | 110G13L | | |
| 1.4021 | SUS 420 J1 | X 20 Cr 13 | 420 | 420 S 37 | X 20 Cr 13 | Z 20 C 13 | 2303 | X 20 Cr 13 | F.5261 | | 20KH13 | | ATI 420 |
| 1.4109 | SUS 440 A | X 65 CrMo 14 | 440 A | - | X 70 CrMo 15 | Z 70 D 14 | - | - | | | | | ATI 440A |
| 1.4112 | SUS 440 B | X 90 CrMoV 18 | 440 B | 409 S 19 | X 90 CrMoV 18 | Z 2 CND 18 05 | 2327 | X CrTi 12 | | | | | |
| 1.4125 | SUS 440 C | X 105 CrMo 17 | 440 C | - | X 105 CrMo 17 | Z 100 CD 17 | - | X 105 CrMo 17 | | | 95KH18 | | ATI 440C |
| 1.6746 | | 32NiCrMo14-5 | - | 832M31 | 32nlcRmO145 | 35NCD14 | - | - | | | | | |
| 1.7176 | SUP9(A) | 55Cr3 | 5155 | 527A60 | 48 | 55C3 | 2253 | 55Cr3 | | | | | |
| 1.7225 | SCM 440 (H) | 42CrMo4 | 4140 | 708 M 40 | 42 CrMo 4 | 42 CD 4 | 2244 | 42 CrMo 4 | F.1252 | | 38HM | 42CrMo, 42CrMnMo | |

## H — VDI 3323 40

Material Description 工件材料: Chilled cast iron 冷硬铸铁
Composition / Structure / Heat Treatment 成分 / 结构 / 热处理: Cast 铸造
HB: 400 HRc: 42

| Mat'l No. | JIS | DIN | AISI/ASTM/ SAE | BS | EN | AFNOR | SS | UNI | UNE / IHA | UNS | GOST | GB | Brands |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.9620 | | GX260NiCr42 | A532 IB | Grade 2 A | GJN-HV520 | FB Ni4 Cr2 BC | 0512 | - | | F45001 | | | Ni-Hard2 |
| 0.9625 | | GX330NiCr42 | A532 IA | Grade 2 B | GJN-HV550 | FB Ni4 Cr2 HC | 0513 | - | | F45000 | | | Ni-Hard1 |
| 0.9630 | | GX300 CrNiSi 9 5 2 | A532 ID | Grade 2 C | GJN-HV600 | FB Cr9 Ni5 | 0457 | - | | F45003 | | | Ni-Hard 4 |
| 0.9640 | | GX300CrMoNi1521 | - | - | - | - | - | - | | F45005 | | | |
| 0.9650 | | GX260Cr27 | - | Grade 3 D | | - | 0466 | - | | | | | |
| 0.9655 | | GX300CrNMo271 | - | Grade 3 E | | - | - | - | | | 20C 25N20S2 | | |
| 1.4841 | SUH 310 | X15CrNiSi25-20 | 310 | 314S31 | X 15 CrNiSi 25 20 | Z15CNS25-20 | - | - | | S31400 | | | Cronifer 2520 |

## H — VDI 3323 41

Material Description 工件材料: Hardened cast iron 硬化铸铁
Composition / Structure / Heat Treatment 成分 / 结构 / 热处理: Hardened 硬化
HB: 550 HRc: 55

| Mat'l No. | JIS | DIN | AISI/ASTM/ SAE | BS | EN | AFNOR | SS | UNI | UNE / IHA | UNS | GOST | GB | Brands |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.9635 | | GX300 CrMo 15 3 | - | - | - | - | - | - | | | | | |
| 0.9645 | | GX260 CrMoNi 20 21 | - | - | - | - | - | - | | F45007 | | | |

## COMPARISON CHART SCALE FOR HARDNESS
## 硬度对照图

| Rockwell Hardness C Scale 150kg Brale (HRc) | Diamond Pyramid Hardness Number. Vickers (HV) | Brinell Hardness Standard 10mm Ball 29.42kN (HB) | Rockwell Hardness A Scale 60kg Brale (HRA) | Shore Scleroscope Hardness Number (HS) | Approx. Tensile Strength N/mm² |
|---|---|---|---|---|---|
| 68 | 940 | - | 85.6 | 97 | - |
| 67 | 900 | - | 85.5 | 95 | - |
| 66 | 865 | - | 84.5 | 92 | - |
| 65 | 832 | - | 83.9 | 91 | - |
| 64 | 800 | - | 83.4 | 88 | - |
| 63 | 772 | - | 82.8 | 87 | - |
| 62 | 746 | - | 82.3 | 85 | - |
| 61 | 720 | - | 81.8 | 83 | - |
| 60 | 697 | - | 81.2 | 81 | - |
| 59 | 674 | - | 80.7 | 80 | - |
| 58 | 653 | - | 80.1 | 78 | - |
| 57 | 633 | - | 79.6 | 76 | - |
| 56 | 613 | - | 79.0 | 75 | - |
| 55 | 595 | - | 78.5 | 74 | 2079 |
| 54 | 577 | - | 78.0 | 72 | 2010 |
| 53 | 560 | - | 77.4 | 71 | 1952 |
| 52 | 544 | 500 | 76.8 | 69 | 1883 |
| 51 | 528 | 487 | 76.3 | 68 | 1824 |
| 50 | 513 | 475 | 75.9 | 67 | 1755 |
| 49 | 498 | 464 | 75.2 | 66 | 1687 |
| 48 | 484 | 451 | 74.7 | 64 | 1639 |
| 47 | 471 | 442 | 74.1 | 63 | 1578 |
| 46 | 458 | 432 | 73.6 | 62 | 1530 |
| 45 | 446 | 421 | 73.1 | 60 | 1481 |
| 44 | 434 | 409 | 72.5 | 58 | 1432 |
| 43 | 423 | 400 | 72.0 | 57 | 1383 |
| 42 | 412 | 390 | 71.5 | 56 | 1334 |
| 41 | 402 | 381 | 70.9 | 55 | 1294 |
| 40 | 392 | 371 | 70.4 | 54 | 1245 |
| 39 | 382 | 362 | 69.9 | 52 | 1216 |
| 38 | 372 | 353 | 69.4 | 51 | 1177 |
| 37 | 363 | 344 | 68.9 | 50 | 1157 |
| 36 | 354 | 336 | 68.4 | 49 | 1118 |
| 35 | 345 | 327 | 67.9 | 48 | 1079 |
| 34 | 336 | 319 | 67.4 | 47 | 1059 |
| 33 | 327 | 311 | 66.8 | 46 | 1030 |
| 32 | 318 | 301 | 66.3 | 44 | 1000 |
| 31 | 310 | 294 | 65.8 | 43 | 981 |
| 30 | 302 | 286 | 65.3 | 42 | 952 |
| 29 | 294 | 279 | 64.7 | 41 | 932 |
| 28 | 285 | 271 | 64.3 | 41 | 912 |
| 27 | 279 | 264 | 63.8 | 40 | 883 |
| 26 | 272 | 258 | 63.3 | 38 | 863 |
| 25 | 266 | 253 | 62.8 | 38 | 843 |
| 24 | 260 | 247 | 62.4 | 37 | 824 |
| 23 | 254 | 243 | 62.0 | 36 | 804 |
| 22 | 248 | 237 | 61.5 | 35 | 785 |
| 21 | 243 | 231 | 61.0 | 35 | 775 |
| 20 | 238 | 226 | 60.5 | 34 | 755 |
| (18) | 230 | 219 | - | 33 | 736 |
| (16) | 222 | 212 | - | 32 | 706 |
| (14) | 213 | 203 | - | 31 | 677 |
| (12) | 204 | 194 | - | 29 | 647 |
| (10) | 196 | 187 | - | 28 | 618 |
| (8) | 188 | 179 | - | 27 | 598 |
| (6) | 180 | 171 | - | 26 | 579 |
| (4) | 173 | 165 | - | 25 | 549 |
| (2) | 166 | 158 | - | 24 | 530 |
| (0) | 160 | 152 | - | 24 | 520 |

# HOLEMAKING TOOLS


| | |
|---|---|
| i-One钻，硬质合金刀片&刀柄 | i-ONE DRILLS, CARBIDE INSERTS & HOLDERS |
| i-梦幻钻，硬质合金刀片&刀柄 | i-DREAM DRILLS, CARBIDE INSERTS & HOLDERS |
| 硬质合金, 梦幻钻头-PRO | SOLID CARBIDE DREAM DRILLS - PRO |
| 整体硬质合金梦幻钻头-普通 | SOLID CARBIDE DREAM DRILLS - GENERAL |
| 硬质合金, 梦幻钻头 - 软材质用 | SOLID CARBIDE DREAM DRILLS - SOFT |
| 硬质合金, 梦幻钻头 - 高进给 | SOLID CARBIDE DREAM DRILLS - HIGH FEED |
| 硬质合金, 梦幻钻头一平底钻 | SOLID CARBIDE DREAM DRILLS - FLAT BOTTOM |
| 硬质合金, 梦幻钻头 - INOX | SOLID CARBIDE  DREAM DRILLS - INOX |
| 硬质合金, 梦幻钻头 - ALU | SOLID CARBIDE DREAM DRILLS - ALU |
| 硬质合金, 梦幻钻头 - CFRP | SOLID CARBIDE DREAM DRILLS - CFRP |
| 油孔硬质合金 梦幻钻头 -MQL类型 | SOLID CARBIDE DREAM DRILLS - MQL TYPE |
| 高硬度钢 (HRc50~HRc70) 用硬质合金钻头 | SOLID CARBIDE DREAM DRILLS for HIGH HARDENED STEELS |
| 硬质合金钻头 | SOLID CARBIDE GENERAL CARBIDE DRILLS |
| 粉末高速钢 MULTI-1 钻头 | HSS-PM MULTI-1 DRILLS |
| 高速钢GOLD-P钻头 | HSS & HSSCo8 GOLD-P DRILLS |
| 高级高速钢，SUPER-GP钻头 | SUPER HSS SUPER-GP DRILLS |
| 深孔用直柄麻花钻头 | HSS-E WORM PATTERN DRILLS |
| 高速钢直柄钻头 | HSS & HSSCo8 STRAIGHT SHANK DRILLS |
| 莫氏锥柄麻花钻头 | HSS, HSS-E & HSSCo8 MORSE TAPER SHANK DRILLS |
| 定心钻头 | HSSCo8 NC-SPOTTING DRILLS |
| 中心钻 | HSS-E CENTER DRILLS |
| 硬质合金&粉末高速钢铲钻 | SPADE DRILLS, INSERTS & HOLDERS |
| 硬质合金机用铰刀 | CARBIDE, HSS & HSS-E REAMERS |
| 高速钢沉孔刀 | HSS & HSSCo8 COUNTERSINKS |
| HSS-E 锪刀 | HSS-E COUNTERBORES |
| 技术参数 | TECHNICAL DATA |


YG-1 CO., LTD.

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SOLID CARBIDE DRILLS

## 高速钢钻头
HSS DRILLS

## 硬质合金&粉末高速钢铲钻
CARBIDE & HSS-PM SPADE DRILLS

## 铰刀 REAMERS

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YG-1 CO., LTD.

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|---|---|---|
| i-One钻，硬质合金刀片&刀柄<br>钢 铸铁用高性能可换 钻头 | **i-ONE DRILLS**, CARBIDE INSERTS & HOLDERS<br>High Performance Exchangeable for General Steels and Cast Iron | i-ONE DRILLS |
| i-梦幻钻，硬质合金刀片&刀柄<br>适用于普通钢和不锈钢 | **i-DREAM DRILLS**, CARBIDE INSERTS & HOLDERS<br>For General Steels and Stainless Steels | i-DREAM DRILLS |
| 硬质合金, 梦幻钻头-PRO<br>普通用途通常是HRc30 到 HRc50<br>采用YG-1特殊的 Z 涂层技术，具有超高的硬度和耐热性 | SOLID CARBIDE **DREAM DRILLS - PRO**<br>For General Purpose (HRc30 to HRc50)<br>Extremely high hardness and heat resistance due to YG-1 special Z-Coating technology | DREAM DRILLS -PRO |
| 整体硬质合金梦幻钻头 - 普通<br>普通用途通常是HRc30 ~ HRc50 | SOLID CARBIDE **DREAM DRILLS - GENERAL**<br>For General Purpose (HRc30 to HRc50) | DREAM DRILLS -GENERAL |
| 硬质合金, 梦幻钻头 - 软材质用<br>用于中等硬度钢 | SOLID CARBIDE **DREAM DRILLS - SOFT**<br>For Steels, up to Medium Hardness | DREAM DRILLS -SOFT |
| 硬质合金, 梦幻钻头 - 高进给 (带油孔)<br>比2刃钻头进给量1.5到2倍<br>用于碳钢, 合金钢(硬度35以下)和铸铁 | SOLID CARBIDE **DREAM DRILLS - HIGH FEED** (with Coolant holes)<br>1.5 to 2 Times Faster Feeding Speed than 2-Flute Drill for Carbon Steels, Alloy Steels(up to HRc35) and Cast Iron | DREAM DRILLS -HIGH FEED |
| 硬质合金, 梦幻钻头一平底钻<br>用于倾斜孔加工 | SOLID CARBIDE **DREAM DRILLS - FLAT BOTTOM**<br>For Holes on Various Angled Surfaces | DREAM DRILLS -FLAT BOTTOM |
| 硬质合金, 梦幻钻头 - INOX (带油孔)<br>镍合金和钛等硬质材料 | SOLID CARBIDE - **INOX** (with Coolant Holes)<br>For Tough Materials like Stainless Steels | DREAM DRILLS -INOX |
| 硬质合金, 梦幻钻头 - ALU (带油孔)<br>铝和铝合金用带喷水孔硬质合金梦幻钻头 | SOLID CARBIDE **DREAM DRILLS - ALU**<br>(with Coolant Holes)<br>For Aluminum and Aluminum Alloys | DREAM DRILLS -ALU |
| 硬质合金, 梦幻钻头 - CFRP (带油孔)<br>用于复合材料，含CFRP与GFRP | SOLID CARBIDE **DREAM DRILLS - CFRP**<br>(without Coolant Holes)<br>For Composite Materials including CFRP and GFRP | DREAM DRILLS -CFRP |
| 油孔硬质合金 梦幻钻头 - MQL类型 (带油孔)<br>MQL (用少量的润滑油) 钻深孔 (10D到40D) | SOLID CARBIDE **DREAM DRILLS - MQL TYPE**<br>(with Coolant Holes)<br>Minimum Quantity Lubrication Drilling Deep Holes (10×D ~ 40×D) | DREAM DRILLS -MQL |
| 高硬度钢 (HRc50~HRc70) 用硬质合金钻头<br>用于硬质合金 (硬度50到70) | SOLID CARBIDE **DREAM DRILLS for HIGH HARDENED STEELS**<br>(HRc50~HRc70)<br>For High Hardened Steels (HRc50 to HRc70) | DREAM DRILLS for HIGH HARDENED STEELS |
| 硬质合金钻头<br>普通用途 | GENERAL SOLID **CARBIDE DRILLS**<br>For General Purpose | GENERAL CARBIDE DRILLS |
| 粉末高速钢 MULTI-1 钻头<br>广泛用途特别是不锈钢和钛 | HSS-PM **MULTI-1 DRILLS**<br>For Wide Range of Applications Particularly Stainless Steels and Titanium | MULTI-1 DRILLS |
| 高速钢 GOLD-P 钻头<br>与整个TIN涂层钻头相同的性能 | HSS & HSSCo8 **GOLD-P DRILLS**<br>Same Performance as Full TiN-coated Drills | GOLD-P DRILLS |
| 高级高速钢，SUPER-GP钻头<br>广泛使用无论加工条件: 好或差 | SUPER HSS **SUPER-GP DRILLS**<br>All Applications Regardless of Machining Conditions; Good or Poor | SUPER-GP DRILLS |
| 深孔用直柄麻花钻头<br>DH100-为了在普通钢上深孔 | HSS-E **WORM PATTERN DRILLS**<br>DH100-For Deep hole drilling in general steels | WORM PATTERN DRILLS |
| 高速钢直柄钻头<br>一般用途 (软&硬材料) | HSS & HSSCo8 **STRAIGHT SHANK DRILLS**<br>For General Purpose (Soft &Tough Materials) | STRAIGHT SHANK DRILLS |
| 莫氏锥柄麻花钻头<br>普通用途（HSS & HSS-E & 含钴8%) | HSS, HSS-E & HSSCo8 **MORSE TAPER SHANK DRILLS**<br>Morse Taper Shank Drills for Wide Applications | TAPER SHANK DRILLS |
| 定心钻头<br>定中心和倒角 | HSSCo8 **NC-SPOTTING DRILLS**<br>For Centering and Chamfering of Holes | NC-SPOTTING DRILLS |
| 中心钻<br>普通用途 | HSS-E **CENTER DRILLS**<br>General Purpose | CENTER DRILLS |
| 硬质合金&粉末高速钢铲钻<br>普通机械和钻头用直径，工具寿命延长及高生产率 | **SPADE DRILLS**, INSERTS & HOLDERS<br>For General Machines and Drilling Large Diameters<br>Longer Tool Life and High Productivity | SPADE DRILLS |
| 硬质合金机用铰刀<br>硬质合金机用铰刀<br>HSS手用铰刀, HSS-E机夹铰刀 | CARBIDE, HSS & HSS-E **REAMERS**<br>Carbide NC Machine Reamers<br>HSS Hand Reamers, HSS-E Chucking Reamers | REAMERS |
| 高速钢沉孔刀<br>去毛刺, 倒角和深孔 | HSS & HSSCo8 **COUNTERSINKS**<br>For Deburring, Chamfering and Countersinking | COUNTER SINKS |
| HSS-E 锪刀<br>用于加工螺钉头座 | HSS-E **COUNTERBORES**<br>For Machining Screw Head Seats | COUNTER BORES |
| 技术参数 | **TECHNICAL DATA** | TECHNICAL DATA |

# SELECTION GUIDE
## 选用指南

HOLEMAKING TOOLS

| SERIES 系列 | i-ONE DRILLS INSERTS | | | | | | | | | | | | i-ONE DRILLS HOLDERS | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Y101H | Y121H | Y141H | Y161H | Y181H | Y201H | Y221H | Y241H | Y261H | Y281H | Y301H | Y321H | ZD*3 | ZD*5 | ZD*8 |
| SIZE MIN 最小尺寸 | 10.00 | 12.00 | 14.00 | 16.00 | 18.00 | 20.00 | 22.00 | 24.00 | 26.00 | 28.00 | 30.00 | 32.00 | | | |
| SIZE MAX 最大尺寸 | 11.91 | 13.90 | 15.90 | 17.90 | 19.90 | 21.90 | 23.90 | 25.90 | 27.78 | 29.77 | 31.75 | 33.73 | | | |
| PAGE 页数 | A24 | A25 | A26 | A27 | A28 | A29 | A30 | A31 | A32 | A32 | A33 | A33 | | | |
| SURFACE TREATMENT 表面处理 | H-Coating | | | | | | H-Coating | | | | | | 3XD | 5XD | 8XD |

Please visit 请访问 globalyg1.com/mat for material search 查看产品材料

◎ : Excellent
○ : Good

| ISO 公制 | VDI 3323 | Material Description 材料描述 | HB 布氏硬度 | HRc 硬度 | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | 125 | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 1 P |
| | 2 | | 190 | 13 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 2 |
| | 3 | | 250 | 25 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 3 |
| | 4 | | 270 | 28 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 4 |
| | 5 | | 300 | 32 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 5 |
| | 6 | Low alloy steel | 180 | 10 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 6 |
| | 7 | | 275 | 29 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 7 |
| | 8 | | 300 | 32 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 8 |
| | 9 | | 350 | 38 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 9 |
| | 10 | High alloyed steel, and tool steel | 200 | 15 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 10 |
| | 11 | | 325 | 35 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 11 |
| M | 12 | Stainless steel | 200 | 15 | | | | | | | 12 |
| | 13 | | 240 | 23 | | | | | | | 13 M |
| | 14 | | 180 | 10 | | | | | | | 14 |
| K | 15 | Grey cast iron | 180 | 10 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 15 |
| | 16 | | 260 | 26 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 16 |
| | 17 | Nodular cast iron | 160 | 3 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 17 |
| | 18 | | 250 | 25 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 8 K |
| | 19 | Malleable cast iron | 130 | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 19 |
| | 20 | | 230 | 21 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 20 |
| N | 21 | Aluminum-wrought alloy | 60 | | | | | | | | 21 |
| | 22 | | 100 | | | | | | | | 22 |
| | 23 | Aluminum-cast, alloyed | 75 | | | | | | | | 23 |
| | 24 | | 90 | | | | | | | | 24 |
| | 25 | | 130 | | | | | | | | 25 |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | 110 | | | | | | | | 26 N |
| | 27 | | 90 | | | | | | | | 27 |
| | 28 | | 100 | | | | | | | | 28 |
| | 29 | Non Metallic Materials | | | | | | | | | 29 |
| | 30 | | | | | | | | | | 30 |
| S | 31 | Heat Resistant Super Alloys | 200 | 15 | | | | | | | 31 |
| | 32 | | 280 | 30 | | | | | | | 32 |
| | 33 | | 250 | 25 | | | | | | | 33 |
| | 34 | | 350 | 38 | | | | | | | 34 S |
| | 35 | | 320 | 34 | | | | | | | 35 |
| | 36 | Titanium Alloys | 400 Rm | | | | | | | | 36 |
| | 37 | | 1050 Rm | | | | | | | | 37 |
| H | 38 | Hardened steel | 550 | 55 | | | | | | | 38 |
| | 39 | | 630 | 60 | | | | | | | 39 H |
| | 40 | Chilled Cast Iron | 400 | 42 | | | | | | | 40 |
| | 41 | Hardened Cast Iron | 550 | 55 | | | | | | | 41 |





CARBIDE
HSS
i-ONE DRILLS
i-DREAM DRILLS
DREAM DRILLS -PRO
DREAM DRILLS -GENERAL
DREAM DRILLS -SOFT
DREAM DRILLS -HIGH FEED
DREAM DRILLS -FLAT BOTTOM
DREAM DRILLS -INOX
DREAM DRILLS -ALU
DREAM DRILLS -CFRP
DREAM DRILLS -MQL
DREAM DRILLS for HIGH HARDENED STEELS
GENERAL CARBIDE DRILLS
MULTI-1 DRILLS
GOLD-P DRILLS
SUPER-GP DRILLS
WORM PATTERN DRILLS
STRAIGHT SHANK DRILLS
TAPER SHANK DRILLS
NC-SPOTTING DRILLS
CENTER DRILLS
SPADE DRILLS
REAMERS
COUNTER SINKS
COUNTER BORES
TECHNICAL DATA

# SELECTION GUIDE
## 选用指南

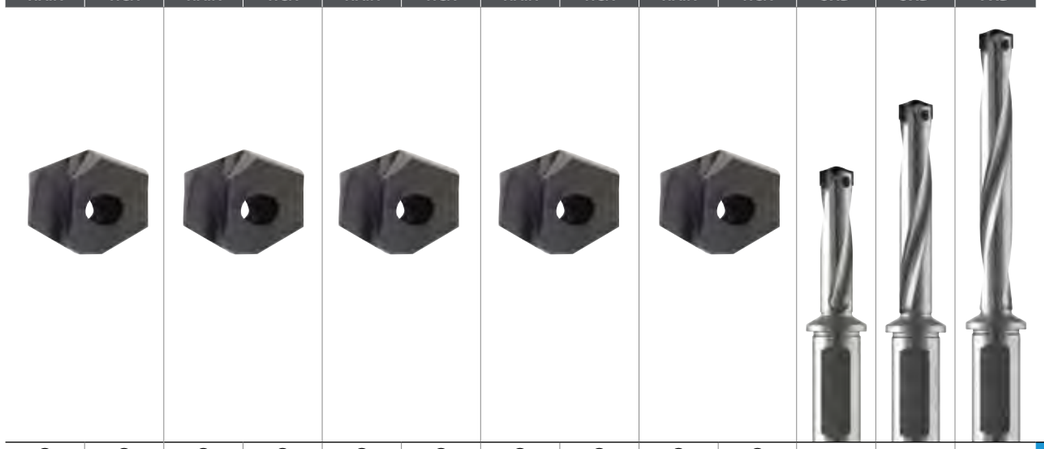
HOLEMAKING TOOLS

Please visit 请访问
globalyg1.com/mat
for material search 查看产品材料

◎ : Excellent
○ : Good

| ISO 公制 | VDI 3323 | Material Description 材料描述 | HB 布氏硬度 | HRc 硬度 | YA1A | YA2C | YB1A | YB2C | YC1A | YC2C | YD1A | YD2C | YE1A | YE2C |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | SERIES 系列 | | | YA1A | YA2C | YB1A | YB2C | YC1A | YC2C | YD1A | YD2C | YE1A | YE2C |
| | | TYPE 类型 | | | A | | B | | C | | D | | E | |
| | | SIZE MIN 最小尺寸 | | | 12.00 | | 14.00 | | 16.00 | | 18.00 | | 20.00 | |
| | | SIZE MAX 最大尺寸 | | | 13.89 | | 15.87 | | 17.86 | | 19.84 | | 21.83 | |
| | | PAGE 页数 | | | A44 | | A45 | | A46 | | A47 | | A48 | |
| | | SURFACE TREATMENT 表面处理 | | | TiAlN | TiCN | TiAlN | TiCN | TiAlN | TiCN | TiAlN | TiCN | TiAlN | TiCN |
| P | 1 | Non-alloy steel | 125 | | ◎ | ○ | ◎ | ○ | ◎ | ○ | ◎ | ○ | ◎ | ○ |
| | 2 | | 190 | 13 | ◎ | ○ | ◎ | ○ | ◎ | ○ | ◎ | ○ | ◎ | ○ |
| | 3 | | 250 | 25 | ◎ | ○ | ◎ | ○ | ◎ | ○ | ◎ | ○ | ◎ | ○ |
| | 4 | | 270 | 28 | ◎ | ○ | ◎ | ○ | ◎ | ○ | ◎ | ○ | ◎ | ○ |
| | 5 | | 300 | 32 | ◎ | | ◎ | | ◎ | | ◎ | | ◎ | |
| | 6 | Low alloy steel | 180 | 10 | ◎ | ○ | ◎ | ○ | ◎ | ○ | ◎ | ○ | ◎ | ○ |
| | 7 | | 275 | 29 | ◎ | ○ | ◎ | ○ | ◎ | ○ | ◎ | ○ | ◎ | ○ |
| | 8 | | 300 | 32 | ◎ | | ◎ | | ◎ | | ◎ | | ◎ | |
| | 9 | | 350 | 38 | ◎ | | ◎ | | ◎ | | ◎ | | ◎ | |
| | 10 | High alloyed steel, and tool steel | 200 | 15 | ◎ | ○ | ◎ | ○ | ◎ | ○ | ◎ | ○ | ◎ | ○ |
| | 11 | | 325 | 35 | ◎ | | ◎ | | ◎ | | ◎ | | ◎ | |
| M | 12 | Stainless steel | 200 | 15 | | ◎ | | ◎ | | ◎ | | ◎ | | ◎ |
| | 13 | | 240 | 23 | | ◎ | | ◎ | | ◎ | | ◎ | | ◎ |
| | 14 | | 180 | 10 | | ◎ | | ◎ | | ◎ | | ◎ | | ◎ |
| K | 15 | Grey cast iron | 180 | 10 | ◎ | | ◎ | | ◎ | | ◎ | | ◎ | |
| | 16 | | 260 | 26 | ◎ | | ◎ | | ◎ | | ◎ | | ◎ | |
| | 17 | Nodular cast iron | 160 | 3 | ◎ | | ◎ | | ◎ | | ◎ | | ◎ | |
| | 18 | | 250 | 25 | ◎ | | ◎ | | ◎ | | ◎ | | ◎ | |
| | 19 | Malleable cast iron | 130 | | ◎ | | ◎ | | ◎ | | ◎ | | ◎ | |
| | 20 | | 230 | 21 | ◎ | | ◎ | | ◎ | | ◎ | | ◎ | |
| N | 21 | Aluminum-wrought alloy | 60 | | | ○ | | ○ | | ○ | | ○ | | ○ |
| | 22 | | 100 | | | ○ | | ○ | | ○ | | ○ | | ○ |
| | 23 | Aluminum-cast, alloyed | 75 | | | ○ | | ○ | | ○ | | ○ | | ○ |
| | 24 | | 90 | | | ○ | | ○ | | ○ | | ○ | | ○ |
| | 25 | | 130 | | | ○ | | ○ | | ○ | | ○ | | ○ |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | 110 | | | ○ | | ○ | | ○ | | ○ | | ○ |
| | 27 | | 90 | | | ○ | | ○ | | ○ | | ○ | | ○ |
| | 28 | | 100 | | | ○ | | ○ | | ○ | | ○ | | ○ |
| | 29 | Non Metallic Materials | | | | | | | | | | | | |
| | 30 | | | | | | | | | | | | | |
| S | 31 | Heat Resistant Super Alloys | 200 | 15 | | | | | | | | | | |
| | 32 | | 280 | 30 | | | | | | | | | | |
| | 33 | | 250 | 25 | | | | | | | | | | |
| | 34 | | 350 | 38 | | | | | | | | | | |
| | 35 | | 320 | 34 | | | | | | | | | | |
| | 36 | Titanium Alloys | 400 Rm | | | | | | | | | | | |
| | 37 | | 1050 Rm | | | | | | | | | | | |
| H | 38 | Hardened steel | 550 | 55 | | | | | | | | | | |
| | 39 | | 630 | 60 | | | | | | | | | | |
| | 40 | Chilled Cast Iron | 400 | 42 | | | | | | | | | | |
| | 41 | Hardened Cast Iron | 550 | 55 | | | | | | | | | | |

| ISO 公制 | VDI 3323 | Material Description 材料描述 | HB 布氏硬度 | HRc 硬度 | YF1A | YF2C | YG1A | YG2C | YH1A | YH2C | YI1A | YI2C | YJ1A | YJ2C | ZH*3 | ZH*5 | ZH*7 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | SERIES 系列 | | | YF1A | YF2C | YG1A | YG2C | YH1A | YH2C | YI1A | YI2C | YJ1A | YJ2C | ZH*3 | ZH*5 | ZH*7 |
| | | TYPE 类型 | | | F | | G | | H | | I | | J | | | | |
| | | SIZE MIN 最小尺寸 | | | 22.00 | | 24.00 | | 26.00 | | 28.00 | | 30.00 | | | | |
| | | SIZE MAX 最大尺寸 | | | 23.81 | | 25.80 | | 27.78 | | 29.77 | | 31.75 | | | | |
| | | PAGE 页数 | | | A49 | | A50 | | A51 | | A52 | | A53 | | | | |
| | | SURFACE TREATMENT 表面处理 | | | TiAlN | TiCN | TiAlN | TiCN | TiAlN | TiCN | TiAlN | TiCN | TiAlN | TiCN | 3XD | 5XD | 7XD |
| P | 1 | Non-alloy steel | 125 | | ◎ | ○ | ◎ | ○ | ◎ | ○ | ◎ | ○ | ◎ | ○ | | | |
| | 2 | | 190 | 13 | ◎ | ○ | ◎ | ○ | ◎ | ○ | ◎ | ○ | ◎ | ○ | | | |
| | 3 | | 250 | 25 | ◎ | ○ | ◎ | ○ | ◎ | ○ | ◎ | ○ | ◎ | ○ | | | |
| | 4 | | 270 | 28 | ◎ | ○ | ◎ | ○ | ◎ | ○ | ◎ | ○ | ◎ | ○ | | | |
| | 5 | | 300 | 32 | ◎ | | ◎ | | ◎ | | ◎ | | ◎ | | | | |
| | 6 | Low alloy steel | 180 | 10 | ◎ | ○ | ◎ | ○ | ◎ | ○ | ◎ | ○ | ◎ | ○ | | | |
| | 7 | | 275 | 29 | ◎ | ○ | ◎ | ○ | ◎ | ○ | ◎ | ○ | ◎ | ○ | | | |
| | 8 | | 300 | 32 | ◎ | | ◎ | | ◎ | | ◎ | | ◎ | | | | |
| | 9 | | 350 | 38 | ◎ | | ◎ | | ◎ | | ◎ | | ◎ | | | | |
| | 10 | High alloyed steel, and tool steel | 200 | 15 | ◎ | ○ | ◎ | ○ | ◎ | ○ | ◎ | ○ | ◎ | ○ | | | |
| | 11 | | 325 | 35 | ◎ | | ◎ | | ◎ | | ◎ | | ◎ | | | | |
| M | 12 | Stainless steel | 200 | 15 | | ◎ | | ◎ | | ◎ | | ◎ | | ◎ | | | |
| | 13 | | 240 | 23 | | ◎ | | ◎ | | ◎ | | ◎ | | ◎ | | | |
| | 14 | | 180 | 10 | | ◎ | | ◎ | | ◎ | | ◎ | | ◎ | | | |
| K | 15 | Grey cast iron | 180 | 10 | ◎ | | ◎ | | ◎ | | ◎ | | ◎ | | | | |
| | 16 | | 260 | 26 | ◎ | | ◎ | | ◎ | | ◎ | | ◎ | | | | |
| | 17 | Nodular cast iron | 160 | 3 | ◎ | | ◎ | | ◎ | | ◎ | | ◎ | | | | |
| | 18 | | 250 | 25 | ◎ | | ◎ | | ◎ | | ◎ | | ◎ | | | | |
| | 19 | Malleable cast iron | 130 | | ◎ | | ◎ | | ◎ | | ◎ | | ◎ | | | | |
| | 20 | | 230 | 21 | ◎ | | ◎ | | ◎ | | ◎ | | ◎ | | | | |
| N | 21 | Aluminum-wrought alloy | 60 | | | ○ | | ○ | | ○ | | ○ | | ○ | | | |
| | 22 | | 100 | | | ○ | | ○ | | ○ | | ○ | | ○ | | | |
| | 23 | Aluminum-cast, alloyed | 75 | | | ○ | | ○ | | ○ | | ○ | | ○ | | | |
| | 24 | | 90 | | | ○ | | ○ | | ○ | | ○ | | ○ | | | |
| | 25 | | 130 | | | ○ | | ○ | | ○ | | ○ | | ○ | | | |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | 110 | | | ○ | | ○ | | ○ | | ○ | | ○ | | | |
| | 27 | | 90 | | | ○ | | ○ | | ○ | | ○ | | ○ | | | |
| | 28 | | 100 | | | ○ | | ○ | | ○ | | ○ | | ○ | | | |
| | 29 | Non Metallic Materials | | | | | | | | | | | | | | | |
| | 30 | | | | | | | | | | | | | | | | |
| S | 31 | Heat Resistant Super Alloys | 200 | 15 | | | | | | | | | | | | | |
| | 32 | | 280 | 30 | | | | | | | | | | | | | |
| | 33 | | 250 | 25 | | | | | | | | | | | | | |
| | 34 | | 350 | 38 | | | | | | | | | | | | | |
| | 35 | | 320 | 34 | | | | | | | | | | | | | |
| | 36 | Titanium Alloys | 400 Rm | | | | | | | | | | | | | | |
| | 37 | | 1050 Rm | | | | | | | | | | | | | | |
| H | 38 | Hardened steel | 550 | 55 | | | | | | | | | | | | | |
| | 39 | | 630 | 60 | | | | | | | | | | | | | |
| | 40 | Chilled Cast Iron | 400 | 42 | | | | | | | | | | | | | |
| | 41 | Hardened Cast Iron | 550 | 55 | | | | | | | | | | | | | |



# SELECTION GUIDE
## 选用指南

HOLEMAKING TOOLS

Please visit 请访问 globalyg1.com/mat for material search 查看产品材料

◎ : Excellent
○ : Good

## SPADE DRILLS INSERTS

| SERIES 系列 | 1~8 | Y,Z,0,1~4 | Y,Z,0,1,2 | Y,Z,0,1,2 | Y,Z,0,1~3 | Y,Z,0,1~3 |
|---|---|---|---|---|---|---|
| TOOL MATERIAL 刀具材料 | HSS M4 | SUPER HSS T15 | PREMIUM HSS M48 | CARBIDE K10 | CARBIDE K20 | CARBIDE P40 |
| LENGTH 长度 | STANDARD | STANDARD | STANDARD | STANDARD | STANDARD | STANDARD |
| SIZE MIN 最小尺寸 | Ø17.86(#1) | Ø9.5(#Y) | Ø9.5(#Y) | Ø9.5(#Y) | Ø9.5(#Y) | Ø9.5(#Y) |
| SIZE MAX 最大尺寸 | Ø114.3(#8) | Ø65.09(#4) | Ø35(#2) | Ø35(#2) | Ø47.63(#3) | Ø47.63(#3) |
| PAGE 页数 | A264 | A270 | A275 | A278 | A281 | A285 |
| SURFACE TREATMENT 表面处理 | TiN / TiCN / TiAlN | | | | | |

| ISO 公制 | VDI 3323 | Material Description 材料描述 | HB 布氏硬度 | HRc 硬度 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | 125 | | ○ | ◎ | ◎ | | ○ | ◎ |
| | 2 | | 190 | 13 | ○ | ◎ | ◎ | | ○ | ◎ |
| | 3 | | 250 | 25 | ○ | ◎ | ◎ | | ○ | ◎ |
| | 4 | | 270 | 28 | ○ | ◎ | ◎ | | ○ | ◎ |
| | 5 | | 300 | 32 | | | | | | |
| | 6 | Low alloy steel | 180 | 10 | ○ | ◎ | ◎ | | ○ | ◎ |
| | 7 | | 275 | 29 | ○ | ◎ | ◎ | | ○ | ◎ |
| | 8 | | 300 | 32 | | ○ | ◎ | | ○ | ◎ |
| | 9 | | 350 | 38 | | ○ | ◎ | | ○ | ◎ |
| | 10 | High alloyed steel, and tool steel | 200 | 15 | | ○ | ◎ | | ○ | ◎ |
| | 11 | | 325 | 35 | | ○ | ◎ | | ○ | ◎ |
| M | 12 | Stainless steel | 200 | 15 | ◎ | ○ | | | ◎ | ○ |
| | 13 | | 240 | 23 | ◎ | ○ | | | ◎ | ○ |
| | 14 | | 180 | 10 | ◎ | ○ | | | ◎ | ○ |
| K | 15 | Grey cast iron | 180 | 10 | ◎ | ○ | ○ | ◎ | ○ | ○ |
| | 16 | | 260 | 26 | ○ | ◎ | ◎ | ◎ | ○ | ○ |
| | 17 | Nodular cast iron | 160 | 3 | ◎ | ○ | ○ | ◎ | ○ | ○ |
| | 18 | | 250 | 25 | ○ | ◎ | ◎ | ◎ | ○ | ○ |
| | 19 | Malleable cast iron | 130 | | ◎ | ○ | ○ | ◎ | ○ | ○ |
| | 20 | | 230 | 21 | ○ | ◎ | ◎ | ◎ | ○ | ○ |
| N | 21 | Aluminum-wrought alloy | 60 | | ◎ | ○ | ○ | | ◎ | ○ |
| | 22 | | 100 | | ◎ | ○ | ○ | | ◎ | ○ |
| | 23 | Aluminum-cast, alloyed | 75 | | | | | | | |
| | 24 | | 90 | | | | | | | |
| | 25 | | 130 | | | | | | | |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | 110 | | | | | | | |
| | 27 | | 90 | | ◎ | ○ | ○ | | ◎ | ○ |
| | 28 | | 100 | | | | | | | |
| | 29 | Non Metallic Materials | | | | | | | | |
| | 30 | | | | | | | | | |
| S | 31 | Heat Resistant Super Alloys | 200 | 15 | | ◎ | ◎ | | ◎ | ○ |
| | 32 | | 280 | 30 | | ○ | ◎ | | ◎ | ○ |
| | 33 | | 250 | 25 | | ○ | ◎ | | ◎ | ○ |
| | 34 | | 350 | 38 | | ○ | ◎ | | ◎ | ○ |
| | 35 | | 320 | 34 | | ○ | ◎ | | ◎ | ○ |
| | 36 | Titanium Alloys | 400 Rm | | | | | | | |
| | 37 | | 1050 Rm | | | | | | | |
| H | 38 | Hardened steel | 550 | 55 | | ○ | ◎ | | ○ | ◎ |
| | 39 | | 630 | 60 | | | | | | |
| | 40 | Chilled Cast Iron | 400 | 42 | | | | | | |
| | 41 | Hardened Cast Iron | 550 | 55 | | | | | | |



## SPADE DRILLS INSERTS

| 1~3 | Y,Z,0,1~3 | Y,Z,0,1,2 | Y,Z,0,1,2 | Y,Z,0,1~3 | Y,Z,0,1~3 | Y,Z,0,1~8 | Y,Z,0,1~8 | Y,Z,0,1~3 | Y,Z,0,1,2 |
|---|---|---|---|---|---|---|---|---|---|
| HSS M4 | SUPER HSS T15 | PREMIUM HSS M48 | CARBIDE K10 | CARBIDE K20 | CARBIDE P40 | SUPER COBALT T15 | PREMIUM COBALT M48 | C5 P40 | SUPER COBALT T15 |
| SM-POINT | SM-POINT | SM-POINT | SM-POINT | SM-POINT | SM-POINT | SV-POINT | SV-POINT | SV-POINT | FALT BOTTOM |
| Ø17.86(#1) | Ø9.5(#Y) | Ø9.5(#Y) | Ø9.5(#Y) | Ø9.5(#Y) | Ø9.5(#Y) | Ø9.5(#Y) | Ø9.5(#Y) | Ø9.5(#Y) | Ø9.5(#Y) |
| Ø47.63(#3) | Ø47.63(#3) | Ø35(#2) | Ø35(#2) | Ø47.63(#3) | Ø47.63(#3) | Ø114.3(#3) | Ø114.3(#3) | Ø47.63(#2) | Ø35(#2) |
| A290 | A293 | A297 | A300 | A303 | A307 | A312 | A323 | A334 | A339 |
| TiN / TiCN / TiAlN | | | | | | Hardslick / H-Coating | | | TiN / Hardslick / TiAlN |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ○ | ◎ | ◎ | | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | 1 | P |
| ○ | ◎ | ◎ | | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | 2 | |
| ○ | ◎ | ◎ | | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | 3 | |
| ○ | ◎ | ◎ | | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | 4 | |
| | | | | | | | | | | 5 | |
| ○ | ◎ | ◎ | | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | 6 | |
| ○ | ◎ | ◎ | | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | 7 | |
| | ○ | ◎ | | ○ | ◎ | ○ | ○ | ○ | ○ | 8 | |
| | ○ | ◎ | | ○ | ◎ | ○ | ○ | ○ | ○ | 9 | |
| | ○ | ◎ | | ○ | ◎ | ○ | ○ | ○ | ○ | 10 | |
| | ○ | ◎ | | ○ | ◎ | ○ | ○ | ○ | ○ | 11 | |
| ◎ | ○ | | | ◎ | ○ | ○ | ○ | ○ | ○ | 12 | M |
| ◎ | ○ | | | ◎ | ○ | ○ | ○ | ○ | ○ | 13 | |
| ◎ | ○ | | | ◎ | ○ | ○ | ○ | ○ | ○ | 14 | |
| ◎ | ○ | ○ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | 15 | K |
| ○ | ◎ | ◎ | ◎ | ○ | ○ | ◎ | ◎ | ◎ | ◎ | 16 | |
| ◎ | ○ | ○ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | 17 | |
| ○ | ◎ | ◎ | ◎ | ○ | ○ | ◎ | ◎ | ◎ | ◎ | 18 | |
| ◎ | ○ | ○ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | 19 | |
| ○ | ◎ | ◎ | ◎ | ○ | ○ | ◎ | ◎ | ◎ | ◎ | 20 | |
| ◎ | ○ | ○ | | ◎ | ○ | ○ | ○ | ○ | ○ | 21 | N |
| ◎ | ○ | ○ | | ◎ | ○ | ○ | ○ | ○ | ○ | 22 | |
| | | | | | | | | | | 23 | |
| | | | | | | | | | | 24 | |
| | | | | | | | | | | 25 | |
| | | | | | | | | | | 26 | |
| ◎ | ○ | ○ | | ◎ | ○ | ○ | ○ | ○ | ○ | 27 | |
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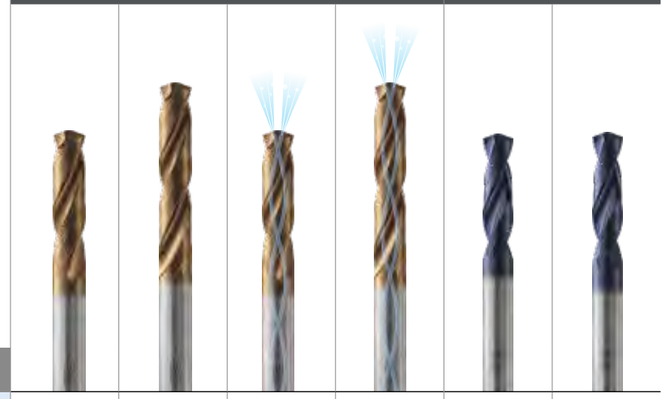
| | | | | | | | | | | 29 | |
| | | | | | | | | | | 30 | |
| | ◎ | ◎ | | ◎ | ○ | ◎ | ◎ | ◎ | ◎ | 31 | S |
| | ○ | ◎ | | ◎ | ○ | ○ | ○ | ○ | ○ | 32 | |
| | ○ | ◎ | | ◎ | ○ | ○ | ○ | ○ | ○ | 33 | |
| | ○ | ◎ | | ◎ | ○ | ○ | ○ | ○ | ○ | 34 | |
| | ○ | ◎ | | ◎ | ○ | ○ | ○ | ○ | ○ | 35 | |
| | | | | | | | | | | 36 | |
| | | | | | | | | | | 37 | |
| | ○ | ◎ | | ○ | ◎ | ○ | ○ | ○ | ○ | 38 | H |
| | | | | | | | | | | 39 | |
| | | | | | | | | | | 40 | |
| | | | | | | | | | | 41 | |

# SELECTION GUIDE
## 选用指南

HOLEMAKING TOOLS

| SERIES 系列 | DREAM DRILLS PRO | | | | DREAM DRILLS GENERAL | |
|---|---|---|---|---|---|---|
| | DGN523 | DGN526 | DGN506 | DGN508 | DH404 | DH423 |
| DRILLING DEPTH 钻销深度 | 3XD | 5XD | 3XD | 5XD | 3XD | 3XD |
| LENGTH 长度 | SHORT 短 | LONG 长 | SHORT 短 | LONG 长 | STUB 超短 | SHORT 短 |
| SIZE MIN 最小尺寸 | D3.0 | D1.0 | D3.0 | D1.0 | D3.0 | D3.0 |
| SIZE MAX 最大尺寸 | D20.0 | D20.0 | D20.0 | D20.0 | D20.0 | D20.0 |
| PAGE 页数 | A63 | A66 | A69 | A72 | A80 | A82 |
| SURFACE TREATMENT 表面处理 | X-Coating | | | | TiAlN | |



Please visit 请访问 globalyg1.com/mat for material search 查看产品材料

◎ : Excellent
○ : Good

| ISO 公制 | VDI 3323 | Material Description 材料描述 | HB 布氏硬度 | HRc 硬度 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | 125 | | | | | | | |
| | 2 | | 190 | 13 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 3 | | 250 | 25 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 4 | | 270 | 28 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 5 | | 300 | 32 | ○ | ○ | ○ | ○ | ○ | ○ |
| | 6 | Low alloy steel | 180 | 10 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 7 | | 275 | 29 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 8 | | 300 | 32 | ○ | ○ | ○ | ○ | ○ | ○ |
| | 9 | | 350 | 38 | ○ | ○ | ○ | ○ | ○ | ○ |
| | 10 | High alloyed steel, and tool steel | 200 | 15 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 11 | | 325 | 35 | ○ | ○ | ○ | ○ | ○ | ○ |
| M | 12 | Stainless steel | 200 | 15 | ○ | ○ | ○ | ○ | ○ | ○ |
| | 13 | | 240 | 23 | ○ | ○ | ○ | ○ | ○ | ○ |
| | 14 | | 180 | 10 | | | | | | |
| K | 15 | Grey cast iron | 180 | 10 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 16 | | 260 | 26 | ○ | ○ | ○ | ○ | ○ | ○ |
| | 17 | Nodular cast iron | 160 | 3 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 18 | | 250 | 25 | ○ | ○ | ○ | ○ | ○ | ○ |
| | 19 | Malleable cast iron | 130 | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 20 | | 230 | 21 | ○ | ○ | ○ | ○ | ○ | ○ |
| N | 21 | Aluminum-wrought alloy | 60 | | | | | | | |
| | 22 | | 100 | | | | | | | |
| | 23 | Aluminum-cast, alloyed | 75 | | | | | | | |
| | 24 | | 90 | | | | | | | |
| | 25 | | 130 | | | | | | | |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | 110 | | | | | | | |
| | 27 | | 90 | | | | | | | |
| | 28 | | 100 | | | | | | | |
| | 29 | Non Metallic Materials | | | | | | | | |
| | 30 | | | | | | | | | |
| S | 31 | Heat Resistant Super Alloys | 200 | 15 | | | | | | |
| | 32 | | 280 | 30 | | | | | | |
| | 33 | | 250 | 25 | | | | | | |
| | 34 | | 350 | 38 | | | | | | |
| | 35 | | 320 | 34 | | | | | | |
| | 36 | Titanium Alloys | 400 Rm | | | | | | | |
| | 37 | | 1050 Rm | | | | | | | |
| H | 38 | Hardened steel | 550 | 55 | ○ | ○ | ○ | ○ | ○ | ○ |
| | 39 | | 630 | 60 | | | | | | |
| | 40 | Chilled Cast Iron | 400 | 42 | | | | | | |
| | 41 | Hardened Cast Iron | 550 | 55 | | | | | | |

| SERIES 系列 | DREAM DRILLS GENERAL | | | | DREAM DRILLS SOFT | | DREAM DRILLS HIGH FEED | | DREAM DRILLS FLAT BOTTOM | |
|---|---|---|---|---|---|---|---|---|---|---|
| | DH424 | DH406 | DH408 | DH421 | DPPA01 | DPPA02 | DGR493 | DGR495 | DPP447 | DH450 |
| DRILLING DEPTH 钻销深度 | 5XD | 3XD | 5XD | 8XD | - | - | 3XD | 5XD | 2XD | 5XD |
| LENGTH 长度 | LONG 长 | SHORT 短 | LONG 长 | EXTRA LONG 超长 | REGULAR 常规 | LONG 长 | SHORT 短 | LONG 长 | SHORT 短 | LONG 长 |
| SIZE MIN 最小尺寸 | D1.0 | D3.0 | D1.0 | D3.0 | D1.0 | D3.0 | D5.0 | D5.0 | D3.0 | D3.0 |
| SIZE MAX 最大尺寸 | D20.0 | D20.0 | D20.0 | D14.0 | D20.0 | D20.0 | D20.0 | D20.0 | D20.0 | D20.0 |
| PAGE 页数 | A85 | A88 | A91 | A94 | A103 | A106 | A113 | A115 | A122 | A125 |
| SURFACE TREATMENT 表面处理 | TiAlN | | | | X-Coating | | H-Coating | | X-Coating | TiAlN |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | ◎ | ◎ | 1 |
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| ◎ | ◎ | ◎ | ◎ | | | ◎ | ◎ | ○ | ○ | 4 | |
| ○ | ○ | ○ | ○ | | | ○ | ○ | ○ | ○ | 5 | |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 6 | P |
| ◎ | ◎ | ◎ | ◎ | ○ | ○ | ◎ | ◎ | ○ | ○ | 7 | |
| ○ | ○ | ○ | ○ | | | ○ | ○ | ○ | ○ | 8 | |
| ○ | ○ | ○ | ○ | | | ○ | ○ | ○ | ○ | 9 | |
| ◎ | ◎ | ◎ | ◎ | ○ | ○ | ◎ | ◎ | | | 10 | |
| ○ | ○ | ○ | ○ | | | ○ | ○ | | | 11 | |
| ○ | ○ | ○ | ○ | ○ | ○ | | | ○ | ○ | 12 | |
| ○ | ○ | ○ | ○ | ○ | ○ | | | | | 13 | M |
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| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 15 | |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 16 | |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | | | 17 | K |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | 18 | |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | | | 19 | |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | 20 | |
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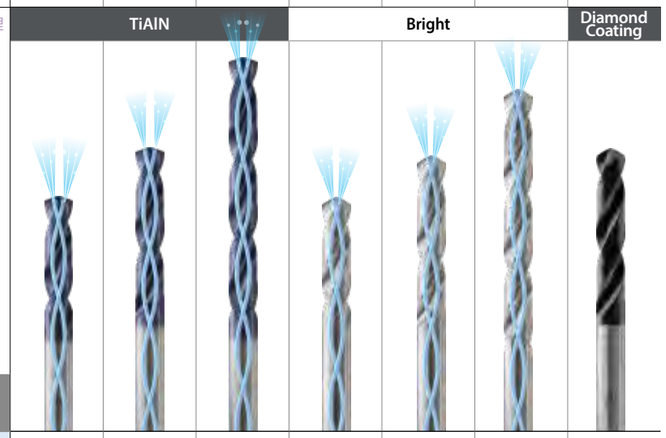
# SELECTION GUIDE
## 选用指南

HOLEMAKING TOOLS

| SERIES 系列 | DREAM DRILLS INOX | | | DREAM DRILLS ALU | | | DREAM DRILLS CFRP |
|---|---|---|---|---|---|---|---|
| | DH451 | DH452 | DH453 | D5432 | D5433 | D5434 | DI473 |
| DRILLING DEPTH 钻销深度 | 3XD | 5XD | 8XD | 3XD | 5XD | 8XD | 5XD |
| LENGTH 长度 | SHORT 短 | LONG 长 | EXTRA LONG 超长 | SHORT 短 | LONG 长 | EXTRA LONG 超长 | LONG 长 |
| SIZE MIN 最小尺寸 | D3.0 | D1.0 | D3.0 | D3.0 | D3.0 | D3.0 | D2.5 |
| SIZE MAX 最大尺寸 | D20.0 | D20.0 | D14.0 | D20.0 | D20.0 | D14.0 | D12.0 |
| PAGE 页数 | A133 | A136 | A139 | A145 | A148 | A151 | A157 |
| SURFACE TREATMENT 表面处理 | TiAlN | | | Bright | | | Diamond Coating |



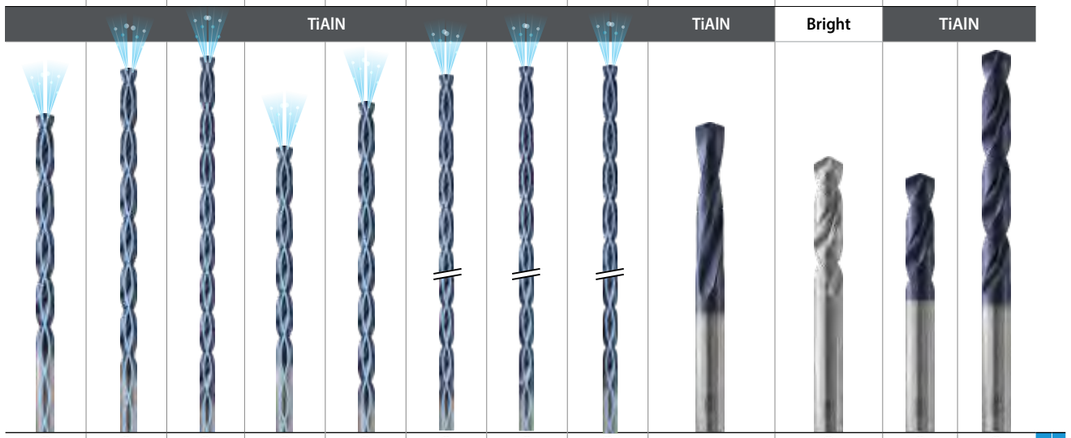
Please visit 请访问 globalyg1.com/mat for material search 查看产品材料

◎ : Excellent
○ : Good

| ISO 公制 | VDI 3323 | Material Description 材料描述 | HB 布氏硬度 | HRc 硬度 | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | 125 | | | | | | | | |
| | 2 | | 190 | 13 | ◎ | ◎ | ◎ | | | | |
| | 3 | | 250 | 25 | ○ | ○ | ○ | | | | |
| | 4 | | 270 | 28 | | | | | | | |
| | 5 | | 300 | 32 | | | | | | | |
| | 6 | Low alloy steel | 180 | 10 | ◎ | ◎ | ◎ | | | | |
| | 7 | | 275 | 29 | ○ | ○ | ○ | | | | |
| | 8 | | 300 | 32 | | | | | | | |
| | 9 | | 350 | 38 | | | | | | | |
| | 10 | High alloyed steel, and tool steel | 200 | 15 | | | | | | | |
| | 11 | | 325 | 35 | | | | | | | |
| M | 12 | Stainless steel | 200 | 15 | ◎ | ◎ | ◎ | | | | |
| | 13 | | 240 | 23 | ◎ | ◎ | ◎ | | | | |
| | 14 | | 180 | 10 | ◎ | ◎ | ◎ | | | | |
| K | 15 | Grey cast iron | 180 | 10 | | | | | | | |
| | 16 | | 260 | 26 | | | | | | | |
| | 17 | Nodular cast iron | 160 | 3 | | | | | | | |
| | 18 | | 250 | 25 | | | | | | | |
| | 19 | Malleable cast iron | 130 | | | | | | | | |
| | 20 | | 230 | 21 | | | | | | | |
| N | 21 | Aluminum-wrought alloy | 60 | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | |
| | 22 | | 100 | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | |
| | 23 | Aluminum-cast, alloyed | 75 | | ○ | ○ | ○ | ◎ | ◎ | ◎ | |
| | 24 | | 90 | | ○ | ○ | ○ | ◎ | ◎ | ◎ | |
| | 25 | | 130 | | ○ | ○ | ○ | | | | |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | 110 | | | | | | | | |
| | 27 | | 90 | | | | | | | | |
| | 28 | | 100 | | | | | | | | |
| | 29 | Non Metallic Materials | | | | | | | | | ◎ |
| | 30 | | | | | | | | | | |
| S | 31 | Heat Resistant Super Alloys | 200 | 15 | | | | | | | |
| | 32 | | 280 | 30 | | | | | | | |
| | 33 | | 250 | 25 | | | | | | | |
| | 34 | | 350 | 38 | | | | | | | |
| | 35 | | 320 | 34 | | | | | | | |
| | 36 | Titanium Alloys | 400 Rm | | | | | | | | |
| | 37 | | 1050 Rm | | ○ | ○ | ○ | | | | |
| H | 38 | Hardened steel | 550 | 55 | | | | | | | |
| | 39 | | 630 | 60 | | | | | | | |
| | 40 | Chilled Cast Iron | 400 | 42 | | | | | | | |
| | 41 | Hardened Cast Iron | 550 | 55 | | | | | | | |



| DREAM DRILLS - MQL TYPE | | | | | | | | DREAM DRILLS for HIGH HARDENED STEELS | GENERAL CARBIDE DRILLS | MULTI-1 DRILLS | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| DH510 | DH515 | DH520 | DHM10 | DHM15 | DHM20 | DHM25 | DHM30 | DH500 | D5401 | CDRA03 | CDRA04 |
| 10XD | 15XD | 20XD | 10XD | 15XD | 20XD | 25XD | 30XD | 3XD | - | HSS-PM | |
| EXTRA LONG 超长 | EXTRA LONG 超长 | EXTRA LONG 超长 | EXTRA LONG 超长 | EXTRA LONG 超长 | EXTRA LONG 超长 | EXTRA LONG 超长 | EXTRA LONG 超长 | SHORT 短 | REGULAR 常规 | STUB 超短 | JOBBER 细长 |
| D3.0 | D3.0 | D3.0 | D3.0 | D3.0 | D3.0 | D3.0 | D3.0 | D2.6 | D1.0 | D1.0 | D2.0 |
| D14.0 | D12.0 | D12.0 | D14.0 | D12.0 | D12.0 | D10.0 | D8.0 | D14.0 | D13.0 | D13.0 | D13.0 |
| A162 | A163 | A163 | A164 | A164 | A164 | A165 | A165 | A171 | A175 | A181 | A185 |
| TiAlN | | | | | | | | TiAlN | Bright | TiAlN | |



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| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | ○ | ○ | 7 | |
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| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | 11 | |
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| | | | | | | | | | | | | 13 | |
| | | | | | | | | | | ◎ | ◎ | 14 | |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | | ○ | ○ | ○ | 15 | K |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | 16 | |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | | | | | 17 | |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | 18 | |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | | | | | 19 | |
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| | | | | | | | | | | | | 41 | |

# SELECTION GUIDE
## 选用指南

YG HOLEMAKING TOOLS

Please visit 请访问 globalyg1.com/mat for material search 查看产品材料

◎ : Excellent
○ : Good

| | | | GOLD-P DRILLS | | | SUPER-GP DRILLS | WORM PATTERN DRILLS | |
|---|---|---|---|---|---|---|---|---|
| | | SERIES 系列 | D1GP103 | D1GP123 | D2GP191 | DSH101 | DL600 | DL126 |
| | | STANDARD 标准 | JIS | JIS | JIS | JIS | DIN1869/1 | - |
| | | LENGTH 长度 | REGULAR 常规 | REGULAR 常规 | REGULAR 常规 | REGULAR 常规 | EXTRA LONG 超长 | EXTRA LONG 超长 |
| | | SIZE MIN 最小尺寸 | D1.0 | D1.0 | D1.0 | D2.0 | D2.0 | D2.0 |
| | | SIZE MAX 最大尺寸 | D13.0 | D13.0 | D13.0 | D13.0 | D12.0 | D12.0 |
| | | PAGE 页数 | A192 | A195 | A198 | A205 | A211 | A212 |
| | | SURFACE TREATMENT 表面处理 | TiN | | | Steam Tempered | Bright | |
| ISO 公制 | VDI 3323 | Material Description 材料描述 | HB 布氏硬度 | HRc 硬度 | | | | |
| P | 1 | Non-alloy steel | 125 | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 2 | | 190 | 13 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 3 | | 250 | 25 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 4 | | 270 | 28 | ○ | ○ | ○ | ○ | ○ | ○ |
| | 5 | | 300 | 32 | | | | | | |
| | 6 | Low alloy steel | 180 | 10 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 7 | | 275 | 29 | ○ | ○ | ○ | ○ | ○ | ○ |
| | 8 | | 300 | 32 | ○ | ○ | ○ | ○ | ○ | ○ |
| | 9 | | 350 | 38 | | | | | | |
| | 10 | High alloyed steel, and tool steel | 200 | 15 | ○ | ○ | ○ | ○ | ○ | ○ |
| | 11 | | 325 | 35 | | | | | | |
| M | 12 | Stainless steel | 200 | 15 | ◎ | ◎ | ◎ | ○ | | |
| | 13 | | 240 | 23 | ○ | ○ | ○ | ○ | | |
| | 14 | | 180 | 10 | ○ | ○ | ○ | ○ | | |
| K | 15 | Grey cast iron | 180 | 10 | ○ | ○ | ○ | ○ | ○ | ○ |
| | 16 | | 260 | 26 | ○ | ○ | ○ | ○ | ○ | ○ |
| | 17 | Nodular cast iron | 160 | 3 | ○ | ○ | ○ | ○ | ○ | ○ |
| | 18 | | 250 | 25 | | | | | ○ | ○ |
| | 19 | Malleable cast iron | 130 | | ○ | ○ | ○ | ○ | ○ | ○ |
| | 20 | | 230 | 21 | | | | | ○ | ○ |
| N | 21 | Aluminum-wrought alloy | 60 | | ○ | ○ | ○ | ○ | | |
| | 22 | | 100 | | ○ | ○ | ○ | ○ | | |
| | 23 | Aluminum-cast, alloyed | 75 | | ○ | ○ | ○ | ○ | | |
| | 24 | | 90 | | | | | | | |
| | 25 | | 130 | | | | | | | |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | 110 | | | | | | | |
| | 27 | | 90 | | | | | | | |
| | 28 | | 100 | | | | | | | |
| | 29 | Non Metallic Materials | | | ○ | ○ | ○ | ○ | | |
| | 30 | | | | | | | | | |
| S | 31 | Heat Resistant Super Alloys | 200 | 15 | | | | | | |
| | 32 | | 280 | 30 | | | | | | |
| | 33 | | 250 | 25 | | | | | | |
| | 34 | | 350 | 38 | | | | | | |
| | 35 | | 320 | 34 | | | | | | |
| | 36 | Titanium Alloys | 400 Rm | | ○ | ○ | ○ | ○ | | |
| | 37 | | 1050 Rm | | | | | | | |
| H | 38 | Hardened steel | 550 | 55 | | | | | | |
| | 39 | | 630 | 60 | | | | | | |
| | 40 | Chilled Cast Iron | 400 | 42 | | | | | | |
| | 41 | Hardened Cast Iron | 550 | 55 | | | | | | |



| | STRAIGHT SHANK DRILLS | | | | MORSE TAPER SHANK DRILLS | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| SERIES 系列 | D2101 | D1101 | D1102 | D1104 | D1201 | D1203 | D1202 | D1204 | D1208 | D1207 | D2201 |
| STANDARD 标准 | JIS | JIS | - | DIN340 | KS | KS | KS | KS | KS | KS | KS |
| LENGTH 长度 | REGULAR 常规 | REGULAR 常规 | LONG 长 | LONG 长 | REGULAR 常规 | LONG 长 | LONG 长 | LONG 长 | LONG 长 | LONG 长 | REGULAR 常规 |
| SIZE MIN 最小尺寸 | D2.0 | D1.0 | D2.0 | D1.0 | D13.0 | D14.0 | D14.0 | D14.5 | D14.5 | D14.5 | D13.0 |
| SIZE MAX 最大尺寸 | D13.0 | D13.0 | D13.0 | D17.5 | D60.0 | D23.0 | D32.0 | D50.0 | D50.0 | D50.0 | D47.0 |
| PAGE 页数 | A217 | A219 | A221 | A227 | A234 | A236 | A237 | A238 | A239 | A240 | A241 |
| SURFACE TREATMENT 表面处理 | Gold Coloring | Steam Homo | | Bright | Steam Tempered | | | | | | |
| | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | | | | | | | | | | | |
| | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | | | | | | | | | | | |
| | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | | | ◎ | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | ○ | ○ | ○ | ○ | | | | | | | |
| | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
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| | ○ | ○ | | ○ | ○ | ○ | | | | | |
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CARBIDE
HSS
i-ONE DRILLS
i-DREAM DRILLS
DREAM DRILLS -PRO
DREAM DRILLS -GENERAL
DREAM DRILLS -SOFT
DREAM DRILLS -HIGH FEED
DREAM DRILLS -FLAT BOTTOM
DREAM DRILLS -INOX
DREAM DRILLS -ALU
DREAM DRILLS -CFRP
DREAM DRILLS -MQL
DREAM DRILLS for HIGH HARDENED STEELS
GENERAL CARBIDE DRILLS
MULTI-1 DRILLS
GOLD-P DRILLS
SUPER-GP DRILLS
WORM PATTERN DRILLS
STRAIGHT SHANK DRILLS
TAPER SHANK DRILLS
NC-SPOTTING DRILLS
CENTER DRILLS
SPADE DRILLS
REAMERS
COUNTER SINKS
COUNTER BORES
TECHNICAL DATA

# SELECTION GUIDE
## 选用指南

HOLEMAKING TOOLS

| SERIES 系列 | D2203 | D2202 | D2204 | D2208 | DN221 |
|---|---|---|---|---|---|
| STANDARD 标准 | KS | KS | KS | KS | - |
| LENGTH 长度 | LONG 长 | LONG 长 | LONG 长 | LONG 长 | SHORT 短 |
| SIZE MIN 最小尺寸 | D16.0 | D18.0 | D20.0 | D20.0 | D13.0 |
| SIZE MAX 最大尺寸 | D22.0 | D30.0 | D20.0 | D30.0 | D32.0 |
| PAGE 页数 | A242 | A242 | A242 | A242 | A243 |
| SURFACE TREATMENT 表面处理 | Steam Tempered | | | | TiN |

Please visit 请访问 globalyg1.com/mat for material search 查看产品材料

◎ : Excellent
○ : Good

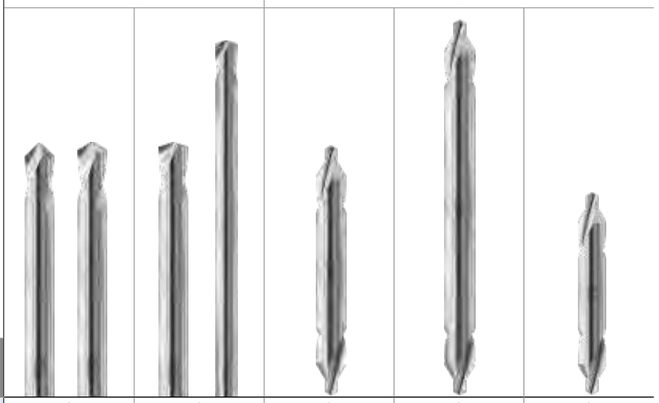
| ISO 公制 | VDI 3323 | Material Description 材料描述 | HB 布氏硬度 | HRc 硬度 | D2203 | D2202 | D2204 | D2208 | DN221 |
|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | 125 | | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 2 | | 190 | 13 | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 3 | | 250 | 25 | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 4 | | 270 | 28 | ○ | ○ | ○ | ○ | ○ |
| | 5 | | 300 | 32 | | | | | |
| | 6 | Low alloy steel | 180 | 10 | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 7 | | 275 | 29 | ○ | ○ | ○ | ○ | ○ |
| | 8 | | 300 | 32 | ○ | ○ | ○ | ○ | ○ |
| | 9 | | 350 | 38 | | | | | |
| | 10 | High alloyed steel, and tool steel | 200 | 15 | ○ | ○ | ○ | ○ | ○ |
| | 11 | | 325 | 35 | | | | | |
| M | 12 | Stainless steel | 200 | 15 | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 13 | | 240 | 23 | ○ | ○ | ○ | ○ | ○ |
| | 14 | | 180 | 10 | | | | | |
| K | 15 | Grey cast iron | 180 | 10 | ○ | ○ | ○ | ○ | ○ |
| | 16 | | 260 | 26 | ○ | ○ | ○ | ○ | ○ |
| | 17 | Nodular cast iron | 160 | 3 | ○ | ○ | ○ | ○ | ○ |
| | 18 | | 250 | 25 | ○ | ○ | ○ | ○ | ○ |
| | 19 | Malleable cast iron | 130 | | ○ | ○ | ○ | ○ | ○ |
| | 20 | | 230 | 21 | ○ | ○ | ○ | ○ | ○ |
| N | 21 | Aluminum-wrought alloy | 60 | | ○ | ○ | ○ | ○ | ○ |
| | 22 | | 100 | | ○ | ○ | ○ | ○ | ○ |
| | 23 | Aluminum-cast, alloyed | 75 | | ○ | ○ | ○ | ○ | ○ |
| | 24 | | 90 | | | | | | |
| | 25 | | 130 | | | | | | |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | 110 | | | | | | |
| | 27 | | 90 | | | | | | |
| | 28 | | 100 | | | | | | |
| | 29 | Non Metallic Materials | | | ○ | ○ | ○ | ○ | |
| | 30 | | | | | | | | |
| S | 31 | Heat Resistant Super Alloys | 200 | 15 | | | | | |
| | 32 | | 280 | 30 | | | | | |
| | 33 | | 250 | 25 | | | | | |
| | 34 | | 350 | 38 | | | | | |
| | 35 | | 320 | 34 | | | | | |
| | 36 | Titanium Alloys | 400 Rm | | ○ | ○ | ○ | ○ | ○ |
| | 37 | | 1050 Rm | | | | | | |
| H | 38 | Hardened steel | 550 | 55 | | | | | |
| | 39 | | 630 | 60 | | | | | |
| | 40 | Chilled Cast Iron | 400 | 42 | | | | | |
| | 41 | Hardened Cast Iron | 550 | 55 | | | | | |



# SELECTION GUIDE
## 选用指南

HOLEMAKING TOOLS

| SERIES 系列 | D2306 D2307 | D2320 D2323 | DV304 | DV305 | DV301 |
|---|---|---|---|---|---|
| DRILLING DEPTH 钻销深度 | - | - | - | - | - |
| LENGTH 长度 | 90°/120° | 142° | EXTRA LONG 超长 | EXTRA LONG 超长 | - |
| SIZE MIN 最小尺寸 | D3.0 | D3.0 / D6.0 | D1.0 | D1.5 | D1.0 |
| SIZE MAX 最大尺寸 | D20.0 | D20.0 /D12.0 | D5.0 | D5.0 | D6.0 |
| PAGE 页数 | A249 | A250 | A255 | A255 | A256 |
| SURFACE TREATMENT 表面处理 | Bright | | Bright | | |



Please visit 请访问 globalyg1.com/mat for material search 查看产品材料

◎ : Excellent
○ : Good

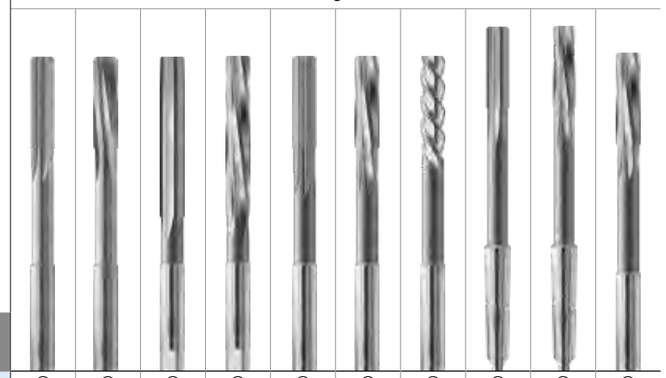
| ISO 公制 | VDI 3323 | Material Description 材料描述 | HB 布氏硬度 | HRc 硬度 | D2306 D2307 | D2320 D2323 | DV304 | DV305 | DV301 |
|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | 125 | | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 2 | | 190 | 13 | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 3 | | 250 | 25 | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 4 | | 270 | 28 | | | ○ | ○ | ○ |
| | 5 | | 300 | 32 | | | | | |
| | 6 | Low alloy steel | 180 | 10 | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 7 | | 275 | 29 | ○ | ○ | ○ | ○ | ○ |
| | 8 | | 300 | 32 | | | ○ | ○ | ○ |
| | 9 | | 350 | 38 | | | | | |
| | 10 | High alloyed steel, and tool steel | 200 | 15 | | | ○ | ○ | ○ |
| | 11 | | 325 | 35 | | | | | |
| M | 12 | Stainless steel | 200 | 15 | ○ | ○ | ◎ | ◎ | ◎ |
| | 13 | | 240 | 23 | | | ○ | ○ | ○ |
| | 14 | | 180 | 10 | | | | | |
| K | 15 | Grey cast iron | 180 | 10 | ◎ | ◎ | ○ | ○ | ○ |
| | 16 | | 260 | 26 | ○ | ○ | ○ | ○ | ○ |
| | 17 | Nodular cast iron | 160 | 3 | ○ | ○ | ○ | ○ | ○ |
| | 18 | | 250 | 25 | | | ○ | ○ | ○ |
| | 19 | Malleable cast iron | 130 | | ○ | ○ | ○ | ○ | ○ |
| | 20 | | 230 | 21 | | | ○ | ○ | ○ |
| N | 21 | Aluminum-wrought alloy | 60 | | ○ | ○ | ○ | ○ | ○ |
| | 22 | | 100 | | ○ | ○ | ○ | ○ | ○ |
| | 23 | Aluminum-cast, alloyed | 75 | | ○ | ○ | ○ | ○ | ○ |
| | 24 | | 90 | | | | | | |
| | 25 | | 130 | | | | | | |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | 110 | | | | | | |
| | 27 | | 90 | | | | | | |
| | 28 | | 100 | | | | | | |
| | 29 | Non Metallic Materials | | | | | ○ | ○ | ○ |
| | 30 | | | | | | | | |
| S | 31 | Heat Resistant Super Alloys | 200 | 15 | | | | | |
| | 32 | | 280 | 30 | | | | | |
| | 33 | | 250 | 25 | | | | | |
| | 34 | | 350 | 38 | | | | | |
| | 35 | | 320 | 34 | | | | | |
| | 36 | Titanium Alloys | 400 Rm | | | | ○ | ○ | ○ |
| | 37 | | 1050 Rm | | | | | | |
| H | 38 | Hardened steel | 550 | 55 | | | | | |
| | 39 | | 630 | 60 | | | | | |
| | 40 | Chilled Cast Iron | 400 | 42 | | | | | |
| | 41 | Hardened Cast Iron | 550 | 55 | | | | | |

# SELECTION GUIDE
## 选用指南

HOLEMAKING TOOLS

## REAMERS

| SERIES 系列 | K4101 | K4111 | K1143 | K1153 | K2101 | K2111 | K2121 | K2102 | K2112 | K21B1 |
|---|---|---|---|---|---|---|---|---|---|---|
| HOLE TYPE 孔类型 | | | | | | | | | | |
| FLUTE TYPE 槽型 | Straight | LH Spiral | Straight | LH Spiral | Straight | LH Spiral | LH Spiral (Quick Spiral) | Straight | LH Spiral | LH Spiral |
| SIZE MIN 最小尺寸 | D2.0 | D2.0 | D2.0 | D2.0 | D2.0 | D2.0 | D4.0 | D10.0 | D10.0 | D2.0 |
| SIZE MAX 最大尺寸 | D20.0 | D20.0 | D60.0 | D60.0 | D20.0 | D20.0 | D20.0 | D50.0 | D50.0 | D20.0 |
| PAGE 页数 | **A376** | **A377** | **A378** | **A380** | **A382** | **A384** | **A386** | **A387** | **A389** | **A391** |
| SURFACE TREATMENT 表面处理 | Bright | | | | | | | | | |



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◎ : Excellent
○ : Good

| ISO 公制 | VDI 3323 | Material Description 材料描述 | HB 布氏硬度 | HRc 硬度 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | 125 | | ◎ | ◎ | ○ | ○ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ |
| | 2 | | 190 | 13 | ◎ | ◎ | ○ | ○ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ |
| | 3 | | 250 | 25 | ◎ | ◎ | | | ○ | ○ | | ○ | ○ | ○ |
| | 4 | | 270 | 28 | ○ | ○ | | | ○ | ○ | | ○ | ○ | ○ |
| | 5 | | 300 | 32 | ○ | ○ | | | | | | | | |
| | 6 | Low alloy steel | 180 | 10 | ◎ | ◎ | ○ | ○ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ |
| | 7 | | 275 | 29 | ◎ | ◎ | | | ○ | ○ | | ○ | ○ | ○ |
| | 8 | | 300 | 32 | ○ | ○ | | | | | | | | |
| | 9 | | 350 | 38 | | | | | | | | | | |
| | 10 | High alloyed steel, and tool steel | 200 | 15 | ○ | ○ | | | ○ | ○ | | ○ | ○ | ○ |
| | 11 | | 325 | 35 | | | | | | | | | | |
| M | 12 | Stainless steel | 200 | 15 | ○ | ○ | | | ○ | ○ | | ○ | ○ | ○ |
| | 13 | | 240 | 23 | ○ | ○ | | | ○ | ○ | | ○ | ○ | ○ |
| | 14 | | 180 | 10 | ○ | ○ | | | ○ | ○ | | ○ | ○ | ○ |
| K | 15 | Grey cast iron | 180 | 10 | ◎ | ◎ | | | ○ | ○ | | ○ | ○ | ○ |
| | 16 | | 260 | 26 | ○ | ○ | | | ○ | ○ | | ○ | ○ | ○ |
| | 17 | Nodular cast iron | 160 | 3 | ◎ | ◎ | | | ○ | ○ | | ○ | ○ | ○ |
| | 18 | | 250 | 25 | ○ | ○ | | | ○ | ○ | | ○ | ○ | ○ |
| | 19 | Malleable cast iron | 130 | | ◎ | ◎ | | | ○ | ○ | | ○ | ○ | ○ |
| | 20 | | 230 | 21 | ○ | ○ | | | ○ | ○ | | ○ | ○ | ○ |
| N | 21 | Aluminum-wrought alloy | 60 | | ○ | ○ | ○ | ○ | ○ | ○ | ◎ | ○ | ○ | ○ |
| | 22 | | 100 | | ○ | ○ | ○ | ○ | ○ | ○ | ◎ | ○ | ○ | ○ |
| | 23 | Aluminum-cast, alloyed | 75 | | ○ | ○ | ○ | ○ | ○ | ○ | ◎ | ○ | ○ | ○ |
| | 24 | | 90 | | ○ | ○ | ○ | ○ | ○ | ○ | ◎ | ○ | ○ | ○ |
| | 25 | | 130 | | | | | | | | | | | |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | 110 | | ○ | ○ | ○ | ○ | ○ | ○ | ◎ | ○ | ○ | ○ |
| | 27 | | 90 | | ○ | ○ | ○ | ○ | ○ | ○ | ◎ | ○ | ○ | ○ |
| | 28 | | 100 | | ○ | ○ | ○ | ○ | ○ | ○ | ◎ | ○ | ○ | ○ |
| | 29 | Non Metallic Materials | | | | | | | | | | | | |
| | 30 | | | | | | | | | | | | | |
| S | 31 | Heat Resistant Super Alloys | 200 | 15 | | | | | | | | | | |
| | 32 | | 280 | 30 | | | | | | | | | | |
| | 33 | | 250 | 25 | | | | | | | | | | |
| | 34 | | 350 | 38 | | | | | | | | | | |
| | 35 | | 320 | 34 | | | | | | | | | | |
| | 36 | Titanium Alloys | 400 Rm | | | | | | | | | | | |
| | 37 | | 1050 Rm | | | | | | | | | | | |
| H | 38 | Hardened steel | 550 | 55 | | | | | | | | | | |
| | 39 | | 630 | 60 | | | | | | | | | | |
| | 40 | Chilled Cast Iron | 400 | 42 | | | | | | | | | | |
| | 41 | Hardened Cast Iron | 550 | 55 | | | | | | | | | | |



# SELECTION GUIDE
## 选用指南

HOLEMAKING TOOLS

## COUNTERSINKS

| SERIES 系列 | C1109 C3109 | C1119 C3119 | C1136 C3136 | C1139 C3139 | C1132 C3132 |
|---|---|---|---|---|---|
| STANDARD 标准 | YG STD | YG STD | DIN334C | DIN335C | YG STD |
| POINT ANGLE 钻尖角度 | 90° | 90° | 60° | 90° | 120° |
| SIZE MIN 最小尺寸 | D10.0 | D10.0 | D6.3 | D4.3 | D8.0 |
| SIZE MAX 最大尺寸 | D50.0 | D50.0 | D25.0 | D31.0 | D25.0 |
| PAGE 页数 | **A404** | **A405** | **A406** | **A407** | **A408** |
| SURFACE TREATMENT 表面处理 | Bright | | | | |

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◎ : Excellent
○ : Good

| ISO 公制 | VDI 3323 | Material Description 材料描述 | HB 布氏硬度 | HRc 硬度 | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | 125 | | ○ | ○ | ◎ | ◎ | ◎ |
| | 2 | | 190 | 13 | ○ | ○ | ◎ | ◎ | ◎ |
| | 3 | | 250 | 25 | ○ | ○ | ○ | ○ | ○ |
| | 4 | | 270 | 28 | ○ | ○ | ○ | ○ | ○ |
| | 5 | | 300 | 32 | ○ | ○ | ○ | ○ | ○ |
| | 6 | Low alloy steel | 180 | 10 | | | | | |
| | 7 | | 275 | 29 | | | | | |
| | 8 | | 300 | 32 | | | | | |
| | 9 | | 350 | 38 | | | | | |
| | 10 | High alloyed steel, and tool steel | 200 | 15 | | | | | |
| | 11 | | 325 | 35 | | | | | |
| M | 12 | Stainless steel | 200 | 15 | ○ | ○ | ○ | ○ | ○ |
| | 13 | | 240 | 23 | ○ | ○ | ○ | ○ | ○ |
| | 14 | | 180 | 10 | ○ | ○ | ○ | ○ | ○ |
| K | 15 | Grey cast iron | 180 | 10 | ○ | ○ | ◎ | ◎ | ◎ |
| | 16 | | 260 | 26 | ○ | ○ | ○ | ○ | ○ |
| | 17 | Nodular cast iron | 160 | 3 | ○ | ○ | ○ | ○ | ○ |
| | 18 | | 250 | 25 | ○ | ○ | ○ | ○ | ○ |
| | 19 | Malleable cast iron | 130 | | ○ | ○ | ○ | ○ | ○ |
| | 20 | | 230 | 21 | ○ | ○ | ○ | ○ | ○ |
| N | 21 | Aluminum-wrought alloy | 60 | | ○ | ○ | ◎ | ◎ | ◎ |
| | 22 | | 100 | | ○ | ○ | ○ | ○ | ○ |
| | 23 | Aluminum-cast, alloyed | 75 | | ○ | ○ | ○ | ○ | ○ |
| | 24 | | 90 | | ○ | ○ | ○ | ○ | ○ |
| | 25 | | 130 | | ○ | ○ | ○ | ○ | ○ |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | 110 | | ○ | ○ | ○ | ○ | ○ |
| | 27 | | 90 | | ○ | ○ | ○ | ○ | ○ |
| | 28 | | 100 | | ○ | ○ | ○ | ○ | ○ |
| | 29 | Non Metallic Materials | | | | | | | |
| | 30 | | | | | | | | |
| S | 31 | Heat Resistant Super Alloys | 200 | 15 | | | | | |
| | 32 | | 280 | 30 | | | | | |
| | 33 | | 250 | 25 | | | | | |
| | 34 | | 350 | 38 | | | | | |
| | 35 | | 320 | 34 | | | | | |
| | 36 | Titanium Alloys | 400 Rm | | | | | | |
| | 37 | | 1050 Rm | | | | | | |
| H | 38 | Hardened steel | 550 | 55 | | | | | |
| | 39 | | 630 | 60 | | | | | |
| | 40 | Chilled Cast Iron | 400 | 42 | | | | | |
| | 41 | Hardened Cast Iron | 550 | 55 | | | | | |



CARBIDE
HSS
i-ONE DRILLS
i-DREAM DRILLS
DREAM DRILLS -PRO
DREAM DRILLS -GENERAL
DREAM DRILLS -SOFT
DREAM DRILLS -HIGH FEED
DREAM DRILLS -FLAT BOTTOM
DREAM DRILLS -INOX
DREAM DRILLS -ALU
DREAM DRILLS -CFRP
DREAM DRILLS -MQL
DREAM DRILLS for HIGH HARDENED STEELS
GENERAL CARBIDE DRILLS
MULTI-1 DRILLS
GOLD-P DRILLS
SUPER-GP DRILLS
WORM PATTERN DRILLS
STRAIGHT SHANK DRILLS
TAPER SHANK DRILLS
NC-SPOTTING DRILLS
CENTER DRILLS
SPADE DRILLS
REAMERS
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TECHNICAL DATA

# SELECTION GUIDE
## 选用指南

HOLEMAKING TOOLS

## COUNTERBORES

**SERIES** 系列: **EL950**

| TYPE 类型 | MEDIUM | FINE | BEOFRE THREADING |
|---|---|---|---|
| PILOT DIA. 导柱直径 | 3.4~14.0 | 3.2~13.0 | 2.5~10.2 |
| CUTTER DIA. 刃部直径 | | 6.0~20.0 | |
| PAGE 页数 | | A413 | |
| SURFACE TREATMENT 表面处理 | | Bright | |

Please visit 请访问
globalyg1.com/mat
for material search 查看产品材料

◎ : Excellent
○ : Good

| ISO 公制 | VDI 3323 | Material Description 材料描述 | HB 布氏硬度 | HRc 硬度 | |
|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | 125 | | ◎ |
| | 2 | | 190 | 13 | ◎ |
| | 3 | | 250 | 25 | ◎ |
| | 4 | | 270 | 28 | ◎ |
| | 5 | | 300 | 32 | ◎ |
| | 6 | Low alloy steel | 180 | 10 | ◎ |
| | 7 | | 275 | 29 | ◎ |
| | 8 | | 300 | 32 | ◎ |
| | 9 | | 350 | 38 | ○ |
| | 10 | High alloyed steel, and tool steel | 200 | 15 | ◎ |
| | 11 | | 325 | 35 | ○ |
| M | 12 | Stainless steel | 200 | 15 | |
| | 13 | | 240 | 23 | |
| | 14 | | 180 | 10 | |
| K | 15 | Grey cast iron | 180 | 10 | |
| | 16 | | 260 | 26 | |
| | 17 | Nodular cast iron | 160 | 3 | |
| | 18 | | 250 | 25 | |
| | 19 | Malleable cast iron | 130 | | |
| | 20 | | 230 | 21 | |
| N | 21 | Aluminum-wrought alloy | 60 | | ○ |
| | 22 | | 100 | | ○ |
| | 23 | Aluminum-cast, alloyed | 75 | | ○ |
| | 24 | | 90 | | ○ |
| | 25 | | 130 | | |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | 110 | | |
| | 27 | | 90 | | |
| | 28 | | 100 | | |
| | 29 | Non Metallic Materials | | | |
| | 30 | | | | |
| S | 31 | Heat Resistant Super Alloys | 200 | 15 | |
| | 32 | | 280 | 30 | |
| | 33 | | 250 | 25 | |
| | 34 | | 350 | 38 | |
| | 35 | | 320 | 34 | |
| | 36 | Titanium Alloys | 400 Rm | | |
| | 37 | | 1050 Rm | | |
| H | 38 | Hardened steel | 550 | 55 | |
| | 39 | | 630 | 60 | |
| | 40 | Chilled Cast Iron | 400 | 42 | |
| | 41 | Hardened Cast Iron | 550 | 55 | |

YG

Leading Through Innovation

# CARBIDE INSERTS & HOLDERS

# *i*-ONE DRILLS

- High Performance Exchangeable for General Steels and Cast Iron
- 钢 铸铁用高性能可换 钻头

**SELECTION GUIDE** 选用指南

YG HOLEMAKING TOOLS

# CARBIDE INSERTS & HOLDERS

# i-ONE DRILLS

High Performance Exchangeable for General Steels and Cast Iron

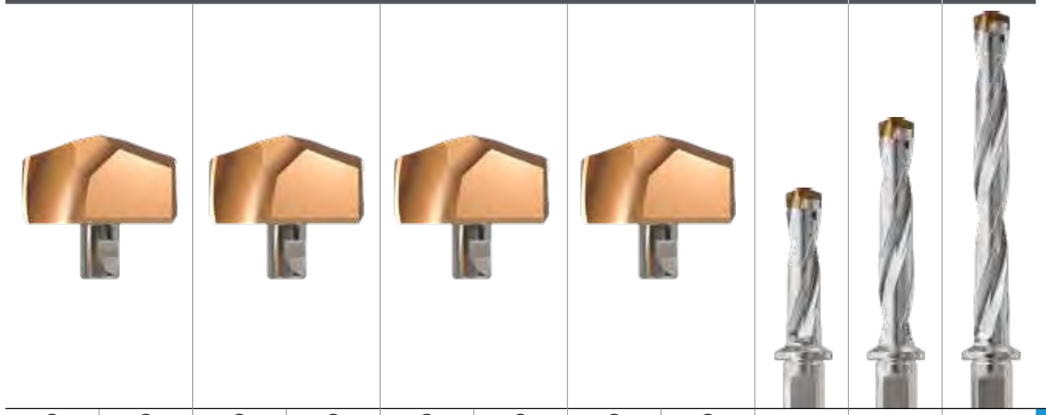
钢 铸铁用高性能可换 钻头

Please visit 请访问 globalyg1.com/mat for material search 查看产品材料

◎ : Excellent (优秀) ○ : Good (良好)

Recommended cutting conditions (推荐加工条件) : p. A34

| SERIES 系列 | Y101H | Y121H | Y141H | Y161H | Y181H | Y201H | Y221H | Y241H | Y261H | Y281H | Y301H | Y321H | ZD*3 | ZD*5 | ZD*8 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SIZE MIN 最小尺寸 | 10.00 | 12.00 | 14.00 | 16.00 | 18.00 | 20.00 | 22.00 | 24.00 | 26.00 | 28.00 | 30.00 | 32.00 | | | |
| SIZE MAX 最大尺寸 | 11.91 | 13.90 | 15.90 | 17.90 | 19.90 | 21.90 | 23.90 | 25.90 | 27.78 | 29.77 | 31.75 | 33.73 | | | |
| PAGE 页数 | A24 | A25 | A26 | A27 | A28 | A29 | A30 | A31 | A32 | A32 | A33 | A33 | | | |
| SURFACE TREATMENT 表面处理 | H-Coating | | | | H-Coating | | | | | | | | 3XD | 5XD | 8XD |



| ISO 公制 | VDI 3323 | Material Description 材料描述 | Composition / Structure / Heat Treatment 成分 / 组织 / 热处理 | | HB 布氏硬度 | HRc 硬度 | Y101H | Y121H | Y141H | Y161H | Y181H | Y201H | Y221H | Y241H | Y261H | Y281H | Y301H | Y321H | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | About 0.15% C | Annealed | 125 | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 1 |
| | 2 | | About 0.45% C | Annealed | 190 | 13 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 2 |
| | 3 | | About 0.45% C | Quenched & Tempered | 250 | 25 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 3 |
| | 4 | | About 0.75% C | Annealed | 270 | 28 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 4 |
| | 5 | | About 0.75% C | Quenched & Tempered | 300 | 32 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 5 |
| | 6 | Low alloy steel | | Annealed | 180 | 10 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 6 P |
| | 7 | | | Quenched & Tempered | 275 | 29 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 7 |
| | 8 | | | Quenched & Tempered | 300 | 32 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 8 |
| | 9 | | | Quenched & Tempered | 350 | 38 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 9 |
| | 10 | High alloyed steel, and tool steel | | Annealed | 200 | 15 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 10 |
| | 11 | | | Quenched & Tempered | 325 | 35 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 11 |
| M | 12 | Stainless steel | Ferritic / Martensitic | Annealed | 200 | 15 | | | | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 12 |
| | 13 | | Martensitic | Quenched & Tempered | 240 | 23 | | | | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 13 M |
| | 14 | | Austenitic10 | | 180 | 10 | | | | | | | | | | | | | 14 |
| K | 15 | Grey cast iron | Pearlitic / ferritic | | 180 | 10 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 15 |
| | 16 | | Pearlitic (Martensitic) | | 260 | 26 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 16 |
| | 17 | Nodular cast iron | Ferritic | | 160 | 3 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 17 |
| | 18 | | Pearlitic | | 250 | 25 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 18 K |
| | 19 | Malleable cast iron | Ferritic | | 130 | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 19 |
| | 20 | | Pearlitic | | 230 | 21 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 20 |
| N | 21 | Aluminum-wrought alloy | Not Curable | | 60 | | | | | | | | | | | | | | 21 |
| | 22 | | Curable | Hardened | 100 | | | | | | | | | | | | | | 22 |
| | 23 | Aluminum-cast, alloyed | ≤ 12% Si, Not Curable | | 75 | | | | | | | | | | | | | | 23 |
| | 24 | | ≤ 12% Si, Curable | Hardened | 90 | | | | | | | | | | | | | | 24 |
| | 25 | | > 12% Si, Not Curable | | 130 | | | | | | | | | | | | | | 25 |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | Cutting Alloys, PB>1% | | 110 | | | | | | | | | | | | | | 26 |
| | 27 | | CuZn, CuSnZn (Brass) | | 90 | | | | | | | | | | | | | | 27 |
| | 28 | | CuSn, lead-free copper and electrolytic copper | | 100 | | | | | | | | | | | | | | 28 |
| | 29 | Non Metallic Materials | Duroplastic, Fiber Reinforced Plastic | | | | | | | | | | | | | | | | 29 |
| | 30 | | Rubber, Wood, etc. | | | | | | | | | | | | | | | | 30 |
| S | 31 | Heat Resistant Super Alloys | Fe Based | Annealed | 200 | 15 | | | | | | | | | | | | | 31 |
| | 32 | | | Cured | 280 | 30 | | | | | | | | | | | | | 32 |
| | 33 | | Ni or Co Based | Annealed | 250 | 25 | | | | | | | | | | | | | 33 |
| | 34 | | | Cured | 350 | 38 | | | | | | | | | | | | | 34 S |
| | 35 | | | Cast | 320 | 34 | | | | | | | | | | | | | 35 |
| | 36 | Titanium Alloys | Pure Titanium | | 400 Rm | | | | | | | | | | | | | | 36 |
| | 37 | | Alpha + Beta Alloys | Hardened | 1050 Rm | | | | | | | | | | | | | | 37 |
| H | 38 | Hardened steel | | Hardened | 550 | 55 | | | | | | | | | | | | | 38 |
| | 39 | | | Hardened | 630 | 60 | | | | | | | | | | | | | 39 |
| | 40 | Chilled Cast Iron | | Cast | 400 | 42 | | | | | | | | | | | | | 40 H |
| | 41 | Hardened Cast Iron | | Hardened | 550 | 55 | | | | | | | | | | | | | 41 |



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HSS

i-ONE DRILLS

i-DREAM DRILLS

DREAM DRILLS -PRO

DREAM DRILLS -GENERAL

DREAM DRILLS -SOFT

DREAM DRILLS -HIGH FEED

DREAM DRILLS -FLAT BOTTOM

DREAM DRILLS -INOX

DREAM DRILLS -ALU

DREAM DRILLS -CFRP

DREAM DRILLS -MQL

DREAM DRILLS for HIGH HARDENED STEELS

GENERAL CARBIDE DRILLS

MULTI-1 DRILLS

GOLD-P DRILLS

SUPER-GP DRILLS

WORM PATTERN DRILLS

STRAIGHT SHANK DRILLS

TAPER SHANK DRILLS

NC-SPOTTING DRILLS

CENTER DRILLS

SPADE DRILLS

REAMERS

COUNTER SINKS

COUNTER BORES

TECHNICAL DATA

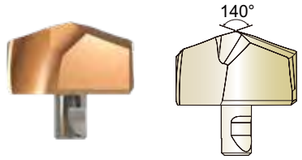
# i - ONE DRILLS

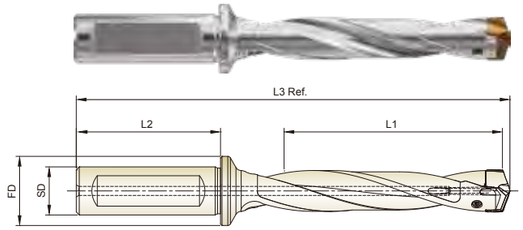
## Y101H SERIES

## i-ONE DRILL INSERTS & HOLDERS
## i-ONE 钻头 刀片 & 刀柄

- Applications
▶ For carbon steels, alloy steels and cast iron.
▶ Holder length: 3xD, 5xD, 8xD
- Benefits
▶ Secure and quick clamping system.
▶ High performance with cost efficiency.
▶ Multi-layered coating delivers outstanding productivity and reliability.

- 应用
▶ 适合碳钢，合金钢和铸铁.
▶ 刀柄长度：3xD, 5xD, 8xD
- 收益
▶ 安全快速的夹紧系统.
▶ 高性能，高性价比.
▶ 多层涂层提供卓越的生产率和可靠性.




CARBIDE | ISO 9766 | h7 | 140° | p. A34

Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| INDEXABLE DRILL HOLDER | D245 - 246 | - | - |
| ER COLLET CHUCK | D73 - 115 | | |

Unit(单位) : mm

| Series Range | Insert EDP No. | Insert O.D. | | | Holder EDP No. | Shank Dia. | Shank Length | Flange Dia. | Drilling Depth | | Overall Length | Screw No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (mm) | H-Coating | h7 | | | | SD | $L_2$ | FD | $L_1$ | | $L_3$ Ref. | |
| | | dec. | frac. | mm | | | | | | | | |
| S10 Ø10.00 to Ø11.99 | Y101H1000 | 0.3937 | - | 10.00 | ZD10003016 | 16 | 48 | 23 | 3D | 31.5 | 103.0 | TX1011P5 |
| | Y101H1010 | 0.3976 | - | 10.10 | ZD10005016 | | | | 5D | 52.5 | 123.0 | |
| | Y101H1020 | 0.4016 | - | 10.20 | ZD10008016 | | | | 8D | 84.0 | 153.0 | |
| | Y101H1030 | 0.4055 | - | 10.30 | | | | | | | | |
| | Y101H1032 | 0.4063 | 13/32 | 10.32 | | | | | | | | |
| | Y101H1040 | 0.4094 | - | 10.40 | | | | | | | | |
| | Y101H1050 | 0.4134 | - | 10.50 | ZD10503016 | 16 | 48 | 23 | 3D | 33.0 | 104.0 | |
| | Y101H1060 | 0.4173 | - | 10.60 | ZD10505016 | | | | 5D | 55.0 | 125.0 | |
| | Y101H1070 | 0.4213 | - | 10.70 | ZD10508016 | | | | 8D | 88.0 | 156.5 | |
| | Y101H1072 | 0.4219 | 27/64 | 10.72 | | | | | | | | |
| | Y101H1080 | 0.4252 | - | 10.80 | | | | | | | | |
| | Y101H1090 | 0.4291 | - | 10.90 | | | | | | | | |
| | Y101H1100 | 0.4331 | - | 11.00 | ZD11003016 | 16 | 48 | 23 | 3D | 34.5 | 105.0 | |
| | Y101H1110 | 0.4370 | - | 11.10 | ZD11005016 | | | | 5D | 57.5 | 127.0 | |
| | Y101H1111 | 0.4375 | 7/16 | 11.11 | ZD11008016 | | | | 8D | 92.0 | 160.0 | |
| | Y101H1120 | 0.4409 | - | 11.20 | | | | | | | | |
| | Y101H1130 | 0.4449 | - | 11.30 | | | | | | | | |
| | Y101H1140 | 0.4488 | - | 11.40 | | | | | | | | |
| | Y101H1150 | 0.4528 | - | 11.50 | ZD11503016 | 16 | 48 | 23 | 3D | 36.0 | 106.0 | |
| | Y101H1151 | 0.4531 | 29/64 | 11.51 | ZD11505016 | | | | 5D | 60.0 | 129.0 | |
| | Y101H1160 | 0.4567 | - | 11.60 | ZD11508016 | | | | 8D | 96.0 | 163.5 | |
| | Y101H1170 | 0.4606 | - | 11.70 | | | | | | | | |
| | Y101H1180 | 0.4646 | - | 11.80 | | | | | | | | |
| | Y101H1190 | 0.4685 | - | 11.90 | | | | | | | | |
| | Y101H1191 | 0.4688 | 15/32 | 11.91 | | | | | | | | |

▶ Other diameters of insert and shank types of holder are available upon request.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | | K | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Duplex | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | | | | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | | | | | | | | | | | | | | | | | | | | | |



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i-ONE DRILLS
i-DREAM DRILLS
DREAM DRILLS -PRO
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WORM PATTERN DRILLS
STRAIGHT SHANK DRILLS
TAPER SHANK DRILLS
NC-SPOTTING DRILLS
CENTER DRILLS
SPADE DRILLS
REAMERS
COUNTER SINKS
COUNTER BORES
TECHNICAL DATA

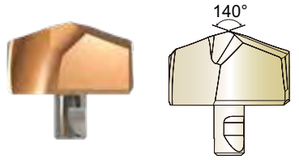
# i - ONE DRILLS

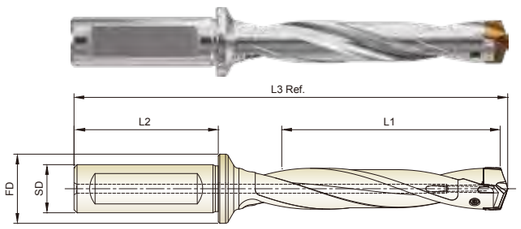
## Y121H SERIES

## i-ONE DRILL INSERTS & HOLDERS
## i-ONE 钻头 刀片 & 刀柄

- Applications
▶ For carbon steels, alloy steels and cast iron.
▶ Holder length: 3xD, 5xD, 8xD
- Benefits
▶ Secure and quick clamping system.
▶ High performance with cost efficiency.
▶ Multi-layered coating delivers outstanding productivity and reliability.

- 应用
▶ 适合碳钢，合金钢和铸铁.
▶ 刀柄长度：3xD, 5xD, 8xD
- 收益
▶ 安全快速的夹紧系统.
▶ 高性能，高性价比.
▶ 多层涂层提供卓越的生产率和可靠性.

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Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| INDEXABLE DRILL HOLDER | D245 - 246 | - | - |
| ER COLLET CHUCK | D73 - 115 | | |

Unit(单位) : mm

| Series Range | Insert EDP No. | Insert O.D. | | | Holder EDP No. | Shank Dia. | Shank Length | Flange Dia. | Drilling Depth | | Overall Length | Screw No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (mm) | H-Coating | h7 | | | | SD | $L_2$ | FD | $L_1$ | | $L_3$ Ref. | |
| | | dec. | frac. | mm | | | | | | | | |
| S12 Ø12.00 to Ø13.99 | Y121H1200 | 0.4724 | - | 12.00 | ZD12003016 | 16 | 48 | 23 | 3D | 37.5 | 109.8 | TX1213P5 |
| | Y121H1210 | 0.4764 | - | 12.10 | ZD12005016 | | | | 5D | 62.5 | 133.8 | |
| | Y121H1220 | 0.4803 | - | 12.20 | ZD12008016 | | | | 8D | 100.0 | 169.8 | |
| | Y121H1230 | 0.4844 | 31/64 | 12.30 | | | | | | | | |
| | Y121H1240 | 0.4882 | - | 12.40 | | | | | | | | |
| | Y121H1250 | 0.4921 | - | 12.50 | ZD12503016 | 16 | 48 | 23 | 3D | 39.0 | 110.8 | |
| | Y121H1260 | 0.4961 | - | 12.60 | ZD12505016 | | | | 5D | 65.0 | 135.8 | |
| | Y121H1270 | 0.5000 | 1/2 | 12.70 | ZD12508016 | | | | 8D | 104.0 | 173.3 | |
| | Y121H1280 | 0.5039 | - | 12.80 | | | | | | | | |
| | Y121H1290 | 0.5079 | - | 12.90 | | | | | | | | |
| | Y121H1300 | 0.5118 | - | 13.00 | ZD13003016 | 16 | 48 | 23 | 3D | 40.5 | 112.8 | |
| | Y121H1310 | 0.5156 | 33/64 | 13.10 | ZD13005016 | | | | 5D | 67.5 | 138.8 | |
| | Y121H1320 | 0.5197 | - | 13.20 | ZD13008016 | | | | 8D | 108.0 | 177.8 | |
| | Y121H1330 | 0.5236 | - | 13.30 | | | | | | | | |
| | Y121H1340 | 0.5276 | - | 13.40 | | | | | | | | |
| | Y121H1349 | 0.5313 | 17/32 | 13.49 | | | | | | | | |
| | Y121H1350 | 0.5315 | - | 13.50 | ZD13503016 | 16 | 48 | 23 | 3D | 42.0 | 113.8 | |
| | Y121H1360 | 0.5354 | - | 13.60 | ZD13505016 | | | | 5D | 70.0 | 140.8 | |
| | Y121H1370 | 0.5394 | - | 13.70 | ZD13508016 | | | | 8D | 112.0 | 181.3 | |
| | Y121H1380 | 0.5433 | - | 13.80 | | | | | | | | |
| | Y121H1389 | 0.5469 | 35/64 | 13.89 | | | | | | | | |
| | Y121H1390 | 0.5472 | - | 13.90 | | | | | | | | |

▶ Other diameters of insert and shank types of holder are available upon request.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | | K | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Duplex | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | | | | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | | | | | | | | | | | | | | | | | | | | | |

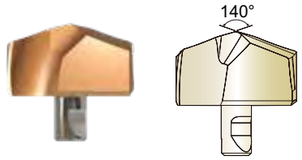
# i - ONE DRILLS

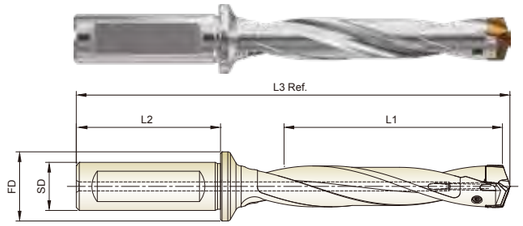
## Y141H SERIES

## i-ONE DRILL INSERTS & HOLDERS
## i-ONE 钻头 刀片 & 刀柄

- Applications
▶ For carbon steels, alloy steels and cast iron.
▶ Holder length: 3xD, 5xD, 8xD
- Benefits
▶ Secure and quick clamping system.
▶ High performance with cost efficiency.
▶ Multi-layered coating delivers outstanding productivity and reliability.

- 应用
▶ 适合碳钢，合金钢和铸铁.
▶ 刀柄长度：3xD, 5xD, 8xD
- 收益
▶ 安全快速的夹紧系统.
▶ 高性能，高性价比.
▶ 多层涂层提供卓越的生产率和可靠性.




CARBIDE | ISO 9766 | h7 | 140° | p. A34

Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| INDEXABLE DRILL HOLDER | D245 - 246 | - | - |
| ER COLLET CHUCK | D73 - 115 | | |

Unit(单位) : mm

| Series Range | Insert EDP No. | Insert O.D. | | | Holder EDP No. | Shank Dia. | Shank Length | Flange Dia. | Drilling Depth | Overall Length | Screw No. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | h7 | | | | | | | | | |
| (mm) | H-Coating | dec. | frac. | mm | | SD | $L_2$ | FD | $L_1$ | $L_3$ Ref. | |
| S14 Ø14.00 to Ø15.99 | Y141H1400 | 0.5512 | - | 14.00 | ZD14003016 | 16 | 48 | 23 | 3D | 43.5 | 116.3 | TX1415P7 |
| | Y141H1410 | 0.5551 | - | 14.10 | | | | | | | |
| | Y141H1420 | 0.5591 | - | 14.20 | | | | | | | |
| | Y141H1429 | 0.5625 | 9/16 | 14.29 | ZD14005016 | | | | 5D | 72.5 | 144.3 | |
| | Y141H1430 | 0.5630 | - | 14.30 | | | | | | | |
| | Y141H1440 | 0.5669 | - | 14.40 | ZD14008016 | | | | 8D | 116.0 | 186.3 | |
| | Y141H1450 | 0.5709 | - | 14.50 | ZD14503016 | 16 | 48 | 23 | 3D | 45.0 | 118.3 | |
| | Y141H1460 | 0.5748 | - | 14.60 | | | | | | | |
| | Y141H1468 | 0.5781 | 37/64 | 14.68 | ZD14505016 | | | | 5D | 75.0 | 147.3 | |
| | Y141H1470 | 0.5787 | - | 14.70 | | | | | | | |
| | Y141H1480 | 0.5827 | - | 14.80 | ZD14508016 | | | | 8D | 120.0 | 190.8 | |
| | Y141H1490 | 0.5866 | - | 14.90 | | | | | | | |
| | Y141H1500 | 0.5906 | - | 15.00 | ZD15003016 | 16 | 48 | 23 | 3D | 46.5 | 120.3 | |
| | Y141H1508 | 0.5938 | 19/32 | 15.08 | | | | | | | |
| | Y141H1510 | 0.5945 | - | 15.10 | | | | | | | |
| | Y141H1520 | 0.5984 | - | 15.20 | ZD15005016 | | | | 5D | 77.5 | 150.3 | |
| | Y141H1530 | 0.6024 | - | 15.30 | | | | | | | |
| | Y141H1540 | 0.6063 | - | 15.40 | ZD15008016 | | | | 8D | 124.0 | 195.3 | |
| | Y141H1548 | 0.6094 | 39/64 | 15.48 | | | | | | | |
| | Y141H1550 | 0.6102 | - | 15.50 | ZD15503016 | 16 | 48 | 23 | 3D | 48.0 | 121.3 | |
| | Y141H1560 | 0.6142 | - | 15.60 | | | | | | | |
| | Y141H1570 | 0.6181 | - | 15.70 | | | | | | | |
| | Y141H1580 | 0.6220 | - | 15.80 | ZD15505016 | | | | 5D | 80.0 | 152.3 | |
| | Y141H1588 | 0.6250 | 5/8 | 15.88 | | | | | | | |
| | Y141H1590 | 0.6260 | - | 15.90 | ZD15508016 | | | | 8D | 128.0 | 198.8 | |

▶ Other diameters of insert and shank types of holder are available upon request.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Duplex | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | | | | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | | | | | | | | | | | | | | | | | | | | | |



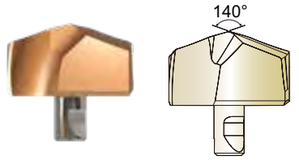
# i - ONE DRILLS

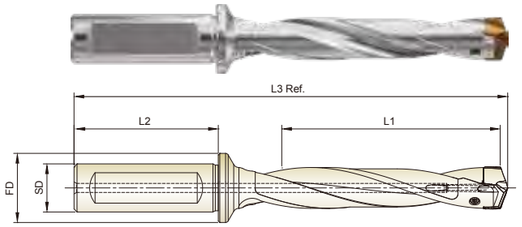
## Y161H SERIES

## i-ONE DRILL INSERTS & HOLDERS
## i-ONE 钻头 刀片 & 刀柄

- Applications
▶ For carbon steels, alloy steels and cast iron.
▶ Holder length: 3xD, 5xD, 8xD
- Benefits
▶ Secure and quick clamping system.
▶ High performance with cost efficiency.
▶ Multi-layered coating delivers outstanding productivity and reliability.

- 应用
▶ 适合碳钢，合金钢和铸铁.
▶ 刀柄长度：3xD, 5xD, 8xD
- 收益
▶ 安全快速的夹紧系统.
▶ 高性能，高性价比.
▶ 多层涂层提供卓越的生产率和可靠性.

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Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| INDEXABLE DRILL HOLDER | D245 - 246 | - | - |
| ER COLLET CHUCK | D73 - 115 | | |

Unit(单位) : mm

| Series Range | Insert EDP No. | Insert O.D. | | | Holder EDP No. | Shank Dia. | Shank Length | Flange Dia. | Drilling Depth | Overall Length | Screw No. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | h7 | | | | | | | | | |
| (mm) | H-Coating | dec. | frac. | mm | | SD | $L_2$ | FD | $L_1$ | $L_3$ Ref. | |
| S16 Ø16.00 to Ø17.99 | Y161H1600 | 0.6299 | - | 16.00 | ZD16003020 | 20 | 50 | 25 | 3D | 51.0 | 127.0 | TX1617P7 |
| | Y161H1609 | 0.6335 | - | 16.09 | | | | | | | |
| | Y161H1610 | 0.6339 | - | 16.10 | | | | | | | |
| | Y161H1620 | 0.6378 | - | 16.20 | | | | | | | |
| | Y161H1627 | 0.6406 | 41/64 | 16.27 | ZD16005020 | | | | 5D | 85.0 | 160.0 | |
| | Y161H1630 | 0.6417 | - | 16.30 | | | | | | | |
| | Y161H1640 | 0.6457 | - | 16.40 | | | | | | | |
| | Y161H1650 | 0.6496 | - | 16.50 | | | | | | | |
| | Y161H1660 | 0.6535 | - | 16.60 | ZD16008020 | | | | 8D | 136.0 | 209.5 | |
| | Y161H1667 | 0.6563 | 21/32 | 16.67 | | | | | | | |
| | Y161H1670 | 0.6575 | - | 16.70 | | | | | | | |
| | Y161H1680 | 0.6614 | - | 16.80 | | | | | | | |
| | Y161H1690 | 0.6654 | - | 16.90 | | | | | | | |
| | Y161H1700 | 0.6693 | - | 17.00 | ZD17003020 | 20 | 50 | 25 | 3D | 54.0 | 130.0 | TX1718P7 |
| | Y161H1707 | 0.6719 | 43/64 | 17.07 | | | | | | | |
| | Y161H1710 | 0.6732 | - | 17.10 | | | | | | | |
| | Y161H1720 | 0.6772 | - | 17.20 | | | | | | | |
| | Y161H1730 | 0.6811 | - | 17.30 | | | | | | | |
| | Y161H1740 | 0.6850 | - | 17.40 | | | | | | | |
| | Y161H1746 | 0.6875 | 11/16 | 17.46 | ZD17005020 | | | | 5D | 90.0 | 165.0 | |
| | Y161H1750 | 0.6890 | - | 17.50 | | | | | | | |
| | Y161H1760 | 0.6929 | - | 17.60 | | | | | | | |
| | Y161H1770 | 0.6969 | - | 17.70 | | | | | | | |
| | Y161H1780 | 0.7008 | - | 17.80 | ZD17008020 | | | | 8D | 144.0 | 217.5 | |
| | Y161H1786 | 0.7031 | 45/64 | 17.86 | | | | | | | |
| | Y161H1790 | 0.7047 | - | 17.90 | | | | | | | |

▶ Other diameters of insert and shank types of holder are available upon request.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Duplex | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | | | | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | | | | | | | | | | | | | | | | | | | | | |

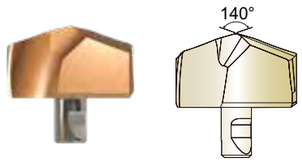
# i - ONE DRILLS

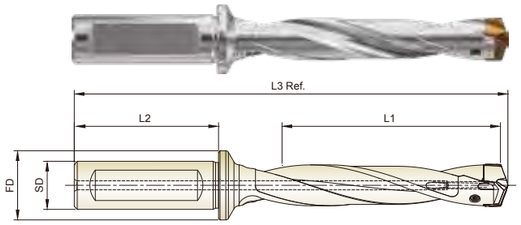
## Y181H SERIES

## i-ONE DRILL INSERTS & HOLDERS
## i-ONE 钻头 刀片 & 刀柄

- Applications
▶ For carbon steels, alloy steels and cast iron.
▶ Holder length: 3xD, 5xD, 8xD
- Benefits
▶ Secure and quick clamping system.
▶ High performance with cost efficiency.
▶ Multi-layered coating delivers outstanding productivity and reliability.

- 应用
▶ 适合碳钢，合金钢和铸铁.
▶ 刀柄长度：3xD, 5xD, 8xD
- 收益
▶ 安全快速的夹紧系统.
▶ 高性能，高性价比.
▶ 多层涂层提供卓越的生产率和可靠性.

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Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| INDEXABLE DRILL HOLDER | D245 - 246 | - | - |
| ER COLLET CHUCK | D73 - 115 | | |

Unit(单位) : mm

| Series Range | Insert EDP No. | Insert O.D. | | | Holder EDP No. | Shank Dia. | Shank Length | Flange Dia. | Drilling Depth | | Overall Length | Screw No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | h7 | | | | | | | | | | |
| (mm) | H-Coating | dec. | frac. | mm | | SD | $L_2$ | FD | $L_1$ | | $L_3$ Ref. | |
| S18<br>Ø18.00 to Ø19.99 | Y181H1800 | 0.7087 | - | 18.00 | ZD18003025 | 25 | 56 | 32 | 3D | 57.0 | 141.3 | TX1819P9 |
| | Y181H1810 | 0.7126 | - | 18.10 | | | | | | | | |
| | Y181H1820 | 0.7165 | - | 18.20 | | | | | | | | |
| | Y181H1826 | 0.7188 | 23/32 | 18.26 | | | | | | | | |
| | Y181H1830 | 0.7205 | - | 18.30 | | | | | | | | |
| | Y181H1840 | 0.7244 | - | 18.40 | ZD18005025 | | | | 5D | 95.0 | 178.3 | |
| | Y181H1850 | 0.7283 | - | 18.50 | | | | | | | | |
| | Y181H1860 | 0.7323 | - | 18.60 | | | | | | | | |
| | Y181H1865 | 0.7344 | 47/64 | 18.65 | | | | | | | | |
| | Y181H1870 | 0.7362 | - | 18.70 | ZD18008025 | | | | 8D | 152.0 | 233.8 | |
| | Y181H1880 | 0.7402 | - | 18.80 | | | | | | | | |
| | Y181H1890 | 0.7441 | - | 18.90 | | | | | | | | |
| | Y181H1900 | 0.7480 | - | 19.00 | ZD19003025 | 25 | 56 | 32 | 3D | 60.0 | 145.3 | TX1920P9 |
| | Y181H1905 | 0.7500 | 3/4 | 19.05 | | | | | | | | |
| | Y181H1910 | 0.7520 | - | 19.10 | | | | | | | | |
| | Y181H1920 | 0.7559 | - | 19.20 | | | | | | | | |
| | Y181H1927 | 0.7587 | - | 19.27 | | | | | | | | |
| | Y181H1930 | 0.7598 | - | 19.30 | | | | | | | | |
| | Y181H1940 | 0.7638 | - | 19.40 | ZD19005025 | | | | 5D | 100.0 | 184.3 | |
| | Y181H1945 | 0.7656 | 49/64 | 19.45 | | | | | | | | |
| | Y181H1950 | 0.7677 | - | 19.50 | | | | | | | | |
| | Y181H1960 | 0.7717 | - | 19.60 | | | | | | | | |
| | Y181H1970 | 0.7756 | - | 19.70 | | | | | | | | |
| | Y181H1980 | 0.7795 | - | 19.80 | ZD19008025 | | | | 8D | 160.0 | 242.8 | |
| | Y181H1984 | 0.7813 | 25/32 | 19.84 | | | | | | | | |
| | Y181H1990 | 0.7835 | - | 19.90 | | | | | | | | |

▶ Other diameters of insert and shank types of holder are available upon request.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Duplex | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | | | | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | | | | | | | | | | | | | | | | | | | | | |



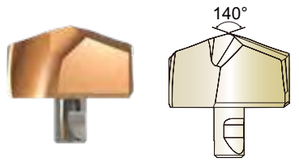
# i - ONE DRILLS

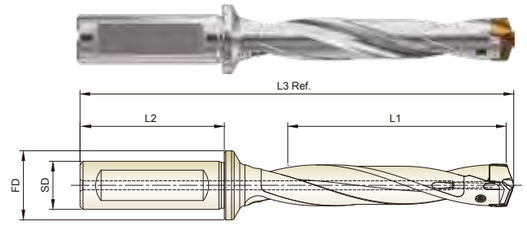
## Y201H SERIES

## i-ONE DRILL INSERTS & HOLDERS
## i-ONE 钻头 刀片 & 刀柄

- Applications
▶ For carbon steels, alloy steels and cast iron.
▶ Holder length: 3xD, 5xD, 8xD
- Benefits
▶ Secure and quick clamping system.
▶ High performance with cost efficiency.
▶ Multi-layered coating delivers outstanding productivity and reliability.

- 应用
▶ 适合碳钢，合金钢和铸铁.
▶ 刀柄长度：3xD, 5xD, 8xD
- 收益
▶ 安全快速的夹紧系统.
▶ 高性能，高性价比.
▶ 多层涂层提供卓越的生产率和可靠性.




CARBIDE | ISO 9766 | h7 | 140° | p. A34

Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| INDEXABLE DRILL HOLDER | D245 - 246 | - | - |
| ER COLLET CHUCK | D73 - 115 | | |

Unit(单位) : mm

| Series Range | Insert EDP No. | Insert O.D. | | | Holder EDP No. | Shank Dia. | Shank Length | Flange Dia. | Drilling Depth | | Overall Length | Screw No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | h7 | | | | | | | | | | |
| (mm) | H-Coating | dec. | frac. | mm | | SD | $L_2$ | FD | $L_1$ | | $L_3$ Ref. | |
| S20<br>Ø20.00 to Ø21.99 | Y201H2000 | 0.7874 | - | 20.00 | ZD20003025 | 25 | 56 | 32 | 3D | 63.0 | 147.5 | TX2021P9 |
| | Y201H2010 | 0.7913 | - | 20.10 | | | | | | | | |
| | Y201H2020 | 0.7953 | - | 20.20 | | | | | | | | |
| | Y201H2024 | 0.7969 | 51/64 | 20.24 | | | | | | | | |
| | Y201H2030 | 0.7992 | - | 20.30 | | | | | | | | |
| | Y201H2040 | 0.8031 | - | 20.40 | ZD20005025 | | | | 5D | 105.0 | 188.5 | |
| | Y201H2050 | 0.8071 | - | 20.50 | | | | | | | | |
| | Y201H2060 | 0.8110 | - | 20.60 | | | | | | | | |
| | Y201H2064 | 0.8125 | 13/16 | 20.64 | | | | | | | | |
| | Y201H2070 | 0.8150 | - | 20.70 | ZD20008025 | | | | 8D | 168.0 | 250.0 | |
| | Y201H2080 | 0.8189 | - | 20.80 | | | | | | | | |
| | Y201H2090 | 0.8228 | - | 20.90 | | | | | | | | |
| | Y201H2100 | 0.8268 | - | 21.00 | ZD21003025 | 25 | 56 | 32 | 3D | 66.0 | 150.5 | TX2122P9 |
| | Y201H2103 | 0.8281 | 53/64 | 21.03 | | | | | | | | |
| | Y201H2110 | 0.8307 | - | 21.10 | | | | | | | | |
| | Y201H2120 | 0.8346 | - | 21.20 | | | | | | | | |
| | Y201H2130 | 0.8386 | - | 21.30 | | | | | | | | |
| | Y201H2140 | 0.8425 | - | 21.40 | | | | | | | | |
| | Y201H2143 | 0.8438 | 27/32 | 21.43 | ZD21005025 | | | | 5D | 110.0 | 193.5 | |
| | Y201H2150 | 0.8465 | - | 21.50 | | | | | | | | |
| | Y201H2160 | 0.8504 | - | 21.60 | | | | | | | | |
| | Y201H2170 | 0.8543 | - | 21.70 | ZD21008025 | | | | 8D | 176.0 | 258.0 | |
| | Y201H2180 | 0.8583 | - | 21.80 | | | | | | | | |
| | Y201H2183 | 0.8594 | 55/64 | 21.83 | | | | | | | | |
| | Y201H2190 | 0.8622 | - | 21.90 | | | | | | | | |

▶ Other diameters of insert and shank types of holder are available upon request.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Duplex | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | | | | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | | | | | | | | | | | | | | | | | | | | | |

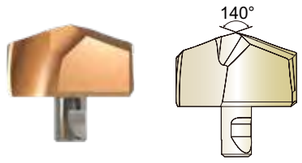
# i - ONE DRILLS

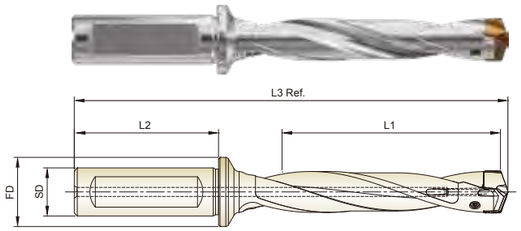
## Y221H SERIES

## i-ONE DRILL INSERTS & HOLDERS
## i-ONE 钻头 刀片 & 刀柄

- Applications
▶ For carbon steels, alloy steels and cast iron.
▶ Holder length: 3xD, 5xD, 8xD
- Benefits
▶ Secure and quick clamping system.
▶ High performance with cost efficiency.
▶ Multi-layered coating delivers outstanding productivity and reliability.

- 应用
▶ 适合碳钢，合金钢和铸铁.
▶ 刀柄长度：3xD, 5xD, 8xD
- 收益
▶ 安全快速的夹紧系统.
▶ 高性能，高性价比.
▶ 多层涂层提供卓越的生产率和可靠性.




CARBIDE | ISO 9766 | h7 | 140° | p. A34

| Recommended ToolHolder | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| | INDEXABLE DRILL HOLDER | D245 - 246 | - | - |
| | ER COLLET CHUCK | D73 - 115 | | |

Unit(单位) : mm

| Series Range | Insert EDP No. | Insert O.D. | | | Holder EDP No. | Shank Dia. | Shank Length | Flange Dia. | Drilling Depth | Overall Length | Screw No. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | h7 | | | | | | | | | |
| (mm) | H-Coating | dec. | frac. | mm | | SD | $L_2$ | FD | $L_1$ | $L_3$ Ref. | |
| S22<br>Ø22.00 to Ø23.99 | Y221H2200 | 0.8661 | - | 22.00 | ZD22003025 | 25 | 56 | 32 | 3D | 69.0 | 153.4 | TX2223P9 |
| | Y221H2210 | 0.8701 | - | 22.10 | | | | | | | | |
| | Y221H2220 | 0.8740 | - | 22.20 | | | | | | | | |
| | Y221H2223 | 0.8750 | 7/8 | 22.23 | | | | | | | | |
| | Y221H2230 | 0.8780 | - | 22.30 | | | | | | | | |
| | Y221H2240 | 0.8819 | - | 22.40 | ZD22005025 | | | | 5D | 115.0 | 198.4 | |
| | Y221H2250 | 0.8858 | - | 22.50 | | | | | | | | |
| | Y221H2260 | 0.8898 | - | 22.60 | | | | | | | | |
| | Y221H2262 | 0.8906 | 57/64 | 22.62 | ZD22008025 | | | | 8D | 184.0 | 265.9 | |
| | Y221H2270 | 0.8937 | - | 22.70 | | | | | | | | |
| | Y221H2280 | 0.8976 | - | 22.80 | | | | | | | | |
| | Y221H2290 | 0.9016 | - | 22.90 | | | | | | | | |
| | Y221H2300 | 0.9055 | - | 23.00 | ZD23003025 | 25 | 56 | 32 | 3D | 72.0 | 157.4 | TX2324P9 |
| | Y221H2302 | 0.9063 | 29/32 | 23.02 | | | | | | | | |
| | Y221H2310 | 0.9094 | - | 23.10 | | | | | | | | |
| | Y221H2320 | 0.9134 | - | 23.20 | | | | | | | | |
| | Y221H2330 | 0.9173 | - | 23.30 | | | | | | | | |
| | Y221H2340 | 0.9213 | - | 23.40 | ZD23005025 | | | | 5D | 120.0 | 204.4 | |
| | Y221H2342 | 0.9219 | 59/64 | 23.42 | | | | | | | | |
| | Y221H2350 | 0.9252 | - | 23.50 | | | | | | | | |
| | Y221H2360 | 0.9291 | - | 23.60 | | | | | | | | |
| | Y221H2370 | 0.9331 | - | 23.70 | ZD23008025 | | | | 8D | 192.0 | 274.9 | |
| | Y221H2380 | 0.9370 | - | 23.80 | | | | | | | | |
| | Y221H2381 | 0.9375 | 15/16 | 23.81 | | | | | | | | |
| | Y221H2390 | 0.9409 | - | 23.90 | | | | | | | | |

▶ Other diameters of insert and shank types of holder are available upon request.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Duplex | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | | | | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | | | | | | | | | | | | | | | | | | | | | |



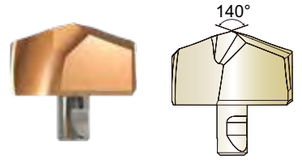
i - ONE DRILLS

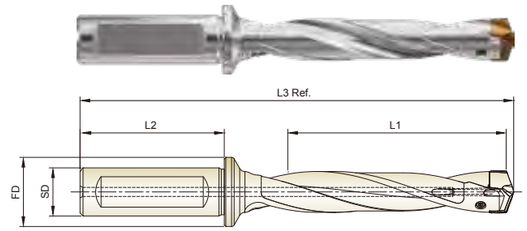
## Y241H SERIES

i-ONE DRILL INSERTS & HOLDERS
i-ONE 钻头 刀片 & 刀柄

- Applications
▶ For carbon steels, alloy steels and cast iron.
▶ Holder length: 3xD, 5xD, 8xD
- Benefits
▶ Secure and quick clamping system.
▶ High performance with cost efficiency.
▶ Multi-layered coating delivers outstanding productivity and reliability.

- 应用
▶ 适合碳钢，合金钢和铸铁.
▶ 刀柄长度：3xD, 5xD, 8xD
- 收益
▶ 安全快速的夹紧系统.
▶ 高性能，高性价比.
▶ 多层涂层提供卓越的生产率和可靠性.




CARBIDE | ISO 9766 | h7 | 140° | p. A34

| Recommended ToolHolder | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| | INDEXABLE DRILL HOLDER | D245 - 246 | - | - |
| | ER COLLET CHUCK | D73 - 115 | | |

Unit(单位) : mm

| Series Range | Insert EDP No. | Insert O.D. | | | Holder EDP No. | Shank Dia. | Shank Length | Flange Dia. | Drilling Depth | Overall Length | Screw No. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | h7 | | | | | | | | | |
| (mm) | H-Coating | dec. | frac. | mm | | SD | $L_2$ | FD | $L_1$ | $L_3$ Ref. | |
| S24<br>Ø24.00 to Ø25.99 | Y241H2400 | 0.9449 | - | 24.00 | ZD24003032 | 32 | 60 | 37 | 3D | 75.0 | 165.8 | TX2425P10 |
| | Y241H2410 | 0.9488 | - | 24.10 | | | | | | | | |
| | Y241H2420 | 0.9528 | - | 24.20 | | | | | | | | |
| | Y241H2421 | 0.9531 | 61/64 | 24.21 | | | | | | | | |
| | Y241H2430 | 0.9567 | - | 24.30 | | | | | | | | |
| | Y241H2440 | 0.9606 | - | 24.40 | ZD24005032 | | | | 5D | 125.0 | 214.8 | |
| | Y241H2450 | 0.9646 | - | 24.50 | | | | | | | | |
| | Y241H2460 | 0.9685 | - | 24.60 | | | | | | | | |
| | Y241H2461 | 0.9688 | 31/32 | 24.61 | ZD24008032 | | | | 8D | 200.0 | 288.3 | |
| | Y241H2470 | 0.9724 | - | 24.70 | | | | | | | | |
| | Y241H2480 | 0.9764 | - | 24.80 | | | | | | | | |
| | Y241H2490 | 0.9803 | - | 24.90 | | | | | | | | |
| | Y241H2500 | 0.9844 | 63/64 | 25.00 | ZD25003032 | 32 | 60 | 37 | 3D | 78.0 | 170.8 | TX2526P10 |
| | Y241H2510 | 0.9882 | - | 25.10 | | | | | | | | |
| | Y241H2520 | 0.9921 | - | 25.20 | | | | | | | | |
| | Y241H2530 | 0.9961 | - | 25.30 | | | | | | | | |
| | Y241H2540 | 1.0000 | 1 | 25.40 | ZD25005032 | | | | 5D | 130.0 | 221.8 | |
| | Y241H2550 | 1.0039 | - | 25.50 | | | | | | | | |
| | Y241H2560 | 1.0079 | - | 25.60 | | | | | | | | |
| | Y241H2567 | 1.0106 | - | 25.67 | | | | | | | | |
| | Y241H2570 | 1.0118 | - | 25.70 | ZD25008032 | | | | 8D | 208.0 | 298.3 | |
| | Y241H2580 | 1.0156 | 1-1/64 | 25.80 | | | | | | | | |
| | Y241H2590 | 1.0197 | - | 25.90 | | | | | | | | |

▶ Other diameters of insert and shank types of holder are available upon request.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Duplex | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | | | | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | | | | | | | | | | | | | | | | | | | | | |

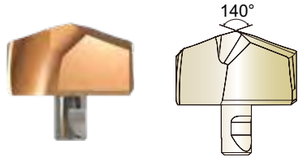
# i - ONE DRILLS

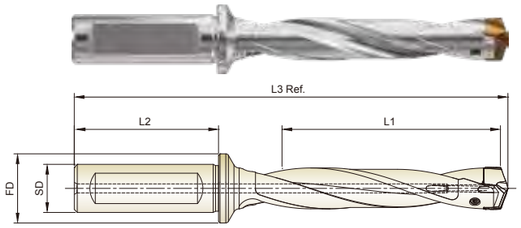
**Y261H SERIES**
**Y281H SERIES**

## i-ONE DRILL INSERTS & HOLDERS
## i-ONE 钻头 刀片 & 刀柄

- Applications
▶For carbon steels, alloy steels and cast iron.
▶Holder length: 3xD, 5xD, 8xD
- Benefits
▶Secure and quick clamping system.
▶High performance with cost efficiency.
▶Multi-layered coating delivers outstanding productivity and reliability.

- 应用
▶ 适合碳钢，合金钢和铸铁.
▶ 刀柄长度：3xD, 5xD, 8xD
- 收益
▶ 安全快速的夹紧系统.
▶ 高性能，高性价比.
▶ 多层涂层提供卓越的生产率和可靠性.

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Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| INDEXABLE DRILL HOLDER | D245 - 246 | - | - |
| ER COLLET CHUCK | D73 - 115 | | |

Unit(单位) : mm

| Series Range (mm) | Insert EDP No. H-Coating | Insert O.D. h7 dec. | frac. | mm | Holder EDP No. | Shank Dia. SD | Shank Length L2 | Flange Dia. FD | Drilling Depth | L1 | Overall Length L3 Ref. | Screw No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S26 Ø26.00 to Ø27.99 | Y261H2600 | 1.0236 | - | 26.00 | ZD26003032 | 32 | 60 | 37 | 3D | 81.0 | 172.2 | TX2627P10 |
| | Y261H2619 | 1.0313 | 1-1/32 | 26.19 | | | | | | | | |
| | Y261H2650 | 1.0433 | - | 26.50 | ZD26005032 | | | | 5D | 135.0 | 225.2 | |
| | Y261H2659 | 1.0469 | 1-3/64 | 26.59 | | | | | | | | |
| | Y261H2699 | 1.0625 | 1-1/16 | 26.99 | ZD26008032 | | | | 8D | 216.0 | 304. | |
| | Y261H2700 | 1.0630 | - | 27.00 | ZD27003032 | 32 | 60 | 37 | 3D | 84.0 | 175.2 | TX2728P10 |
| | Y261H2738 | 1.0781 | 1-5/64 | 27.38 | | | | | | | | |
| | Y261H2750 | 1.0827 | - | 27.50 | ZD27005032 | | | | 5D | 140.0 | 230.2 | |
| | Y261H2778 | 1.0938 | 1-3/32 | 27.78 | ZD27008032 | | | | 8D | 224.0 | 312.7 | |
| S28 Ø28.00 to Ø29.99 | Y281H2800 | 1.1024 | - | 28.00 | ZD28003032 | 32 | 60 | 37 | 3D | 87.0 | 179.2 | TX2829P10 |
| | Y281H2818 | 1.1094 | 1-7/64 | 28.18 | | | | | | | | |
| | Y281H2850 | 1.1220 | - | 28.50 | ZD28005032 | | | | 5D | 145.0 | 236.2 | |
| | Y281H2858 | 1.1250 | 1-1/8 | 28.58 | | | | | | | | |
| | Y281H2897 | 1.1406 | 1-9/64 | 28.97 | ZD28008032 | | | | 8D | 232.0 | 321.7 | |
| | Y281H2900 | 1.1417 | - | 29.00 | ZD29003032 | 32 | 60 | 37 | 3D | 90.0 | 183.2 | TX2930P10 |
| | Y281H2937 | 1.1563 | 1-5/32 | 29.37 | | | | | | | | |
| | Y281H2950 | 1.1614 | - | 29.50 | ZD29005032 | | | | 5D | 150.0 | 242.2 | |
| | Y281H2977 | 1.1719 | 1-11/64 | 29.77 | ZD29008032 | | | | 8D | 240.0 | 330.7 | |

▶ Other diameters of insert and shank types of holder are available upon request.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Duplex | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | | | | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | | | | | | | | | | | | | | | | | | | | | |



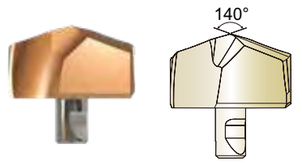
# i - ONE DRILLS

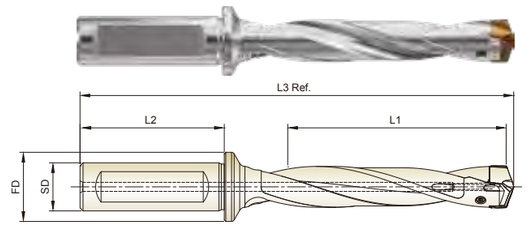
**Y301H SERIES**
**Y321H SERIES**

## i-ONE DRILL INSERTS & HOLDERS
## i-ONE 钻头 刀片 & 刀柄

- Applications
▶ For carbon steels, alloy steels and cast iron.
▶ Holder length: 3xD, 5xD, 8xD
- Benefits
▶ Secure and quick clamping system.
▶ High performance with cost efficiency.
▶ Multi-layered coating delivers outstanding productivity and reliability.

- 应用
▶ 适合碳钢，合金钢和铸铁.
▶ 刀柄长度：3xD, 5xD, 8xD
- 收益
▶ 安全快速的夹紧系统.
▶ 高性能，高性价比.
▶ 多层涂层提供卓越的生产率和可靠性.




CARBIDE | ISO 9766 | h7 | 140° | p. A34

Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| INDEXABLE DRILL HOLDER | D245 - 246 | - | - |
| ER COLLET CHUCK | D73 - 115 | | |

Unit(单位) : mm

| Series Range (mm) | Insert EDP No. H-Coating | Insert O.D. h7 dec. | frac. | mm | Holder EDP No. | Shank Dia. SD | Shank Length L2 | Flange Dia. FD | Drilling Depth | L1 | Overall Length L3 Ref. | Screw No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S30 Ø30.00 to Ø31.99 | Y301H3000 | 1.1811 | | 30.00 | ZD30003032 | 32 | 60 | 37 | 3D | 93.0 | 187.0 | TX3031P15 |
| | Y301H3016 | 1.1875 | 1-3/16 | 30.16 | | | | | | | | |
| | Y301H3050 | 1.2008 | | 30.50 | ZD30005032 | | | | 5D | 155.0 | 248.0 | |
| | Y301H3056 | 1.2031 | 1-13/64 | 30.56 | | | | | | | | |
| | Y301H3096 | 1.2188 | 1-7/32 | 30.96 | ZD30008032 | | | | 8D | 248.0 | 339.5 | |
| | Y301H3100 | 1.2205 | | 31.00 | ZD31003032 | 32 | 60 | 37 | 3D | 96.0 | 191.0 | TX3132P15 |
| | Y301H3135 | 1.2344 | 1-15/64 | 31.35 | | | | | | | | |
| | Y301H3150 | 1.2402 | | 31.50 | ZD31005032 | | | | 5D | 160.0 | 254.0 | |
| | Y301H3175 | 1.2500 | 1-1/4 | 31.75 | ZD31008032 | | | | 8D | 256.0 | 348.5 | |
| S32 Ø32.00 to Ø33.99 | Y321H3200 | 1.2598 | | 32.00 | ZD32003032 | 32 | 60 | 37 | 3D | 99.0 | 197.2 | TX3233P15 |
| | Y321H3215 | 1.2656 | 1-17/64 | 32.15 | | | | | | | | |
| | Y321H3250 | 1.2795 | | 32.50 | ZD32005032 | | | | 5D | 165.0 | 262.2 | |
| | Y321H3254 | 1.2813 | 1-9/32 | 32.54 | | | | | | | | |
| | Y321H3294 | 1.2969 | 1-19/64 | 32.94 | ZD32008032 | | | | 8D | 264.0 | 359.7 | |
| | Y321H3300 | 1.2992 | | 33.00 | ZD33003032 | 32 | 60 | 37 | 3D | 102.0 | 201.2 | TX3334P15 |
| | Y321H3334 | 1.3125 | 1-5/16 | 33.34 | | | | | | | | |
| | Y321H3350 | 1.3189 | | 33.50 | ZD33005032 | | | | 5D | 170.0 | 268.2 | |
| | Y321H3373 | 1.3281 | 1-21/64 | 33.73 | ZD33008032 | | | | 8D | 272.0 | 368.7 | |

▶ Other diameters of insert and shank types of holder are available upon request.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Duplex | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | | | | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | | | | | | | | | | | | | | | | | | | | | |

RPM (转速) = (rev./min.)
FEED (进给) = (mm/rev.)

| ISO 公制 | VDI 3323 | Material Description 材料描述 | Vc 钻削速度 (m/min) | Feed(mm/rev) | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Ø10.0-11.99 | Ø12.09-14.99 | Ø15.00-17.99 | Ø18.00-21.99 | Ø22.0-26.9 | Ø27.0-33.99 |
| P | 1 | Non-alloy steel | 100-126 | 0.14-0.24 | 0.18-0.31 | 0.23-0.39 | 0.30-0.44 | 0.37-0.57 | 0.41-0.61 |
| | 2 | | 84-110 | 0.12-0.21 | 0.15-0.26 | 0.23-0.39 | 0.30-0.44 | 0.37-0.57 | 0.41-0.61 |
| | 3 | | 63-84 | 0.11-0.18 | 0.13-0.22 | 0.19-0.31 | 0.24-0.35 | 0.33-0.51 | 0.36-0.54 |
| | 4 | | 58-74 | 0.09-0.14 | 0.11-0.18 | 0.17-0.28 | 0.23-0.33 | 0.28-0.42 | 0.32-0.47 |
| | 5 | | 58-74 | 0.09-0.14 | 0.11-0.18 | 0.17-0.28 | 0.23-0.33 | 0.28-0.42 | 0.32-0.47 |
| | 6 | Low alloy steel | 74-95 | 0.11-0.18 | 0.13-0.22 | 0.19-0.31 | 0.24-0.35 | 0.33-0.51 | 0.37-0.55 |
| | 7 | | 63-84 | 0.11-0.18 | 0.13-0.22 | 0.17-0.28 | 0.24-0.35 | 0.33-0.51 | 0.37-0.55 |
| | 8 | | 58-74 | 0.09-0.14 | 0.11-0.18 | 0.14-0.23 | 0.23-0.33 | 0.28-0.42 | 0.32-0.47 |
| | 9 | | 47-63 | 0.07-0.11 | 0.09-0.13 | 0.14-0.23 | 0.23-0.33 | 0.28-0.42 | 0.32-0.47 |
| | 10 | High alloyed steel, and tool steel | 53-68 | 0.09-0.14 | 0.11-0.18 | 0.14-0.23 | 0.20-0.29 | 0.22-0.34 | 0.26-0.39 |
| | 11 | | 42-58 | 0.09-0.14 | 0.11-0.18 | 0.12-0.20 | 0.23-0.33 | 0.22-0.34 | 0.26-0.39 |
| K | 15 | Grey cast iron | 105-131 | 0.13-0.23 | 0.17-0.29 | 0.22-0.41 | 0.30-0.46 | 0.40-0.56 | 0.44-0.61 |
| | 16 | | 79-100 | 0.10-0.18 | 0.12-0.22 | 0.18-0.32 | 0.22-0.33 | 0.28-0.39 | 0.32-0.44 |
| | 17 | Nodular cast iron | 100-126 | 0.11-0.20 | 0.14-0.24 | 0.19-0.34 | 0.23-0.35 | 0.31-0.44 | 0.35-0.48 |
| | 18 | | 79-100 | 0.10-0.18 | 0.12-0.22 | 0.15-0.29 | 0.21-0.32 | 0.28-0.39 | 0.32-0.44 |
| | 19 | Malleable cast iron | 105-131 | 0.11-0.20 | 0.14-0.24 | 0.19-0.34 | 0.23-0.35 | 0.31-0.44 | 0.35-0.48 |
| | 20 | | 79-100 | 0.10-0.15 | 0.12-0.20 | 0.15-0.29 | 0.21-0.32 | 0.28-0.39 | 0.32-0.44 |

▶The recommendations for speeds, feeds and other parameters presented in this chart are nominal recommendations and should be considered only as good starting points.
Speed and feed reductions (20% reduction in speed and 10% reduction in feed) are recommended.
▶Recommend you to reduce the feed rate to 85%, 70% when you use 5xD, 8xD holders.
▶For use of 8xD holder, we recommend to use a pilot drill with equal to or larger than 140° point angle (0.5xD ~ 1.5xD).
The use of the centering pre-hole improves hole location, roundness and surface finish.

▶表中推荐的速度, 进给率和其它参数只可用夹参考
推荐降低速度和进给量(速度降低20%和进给降低10%)
▶建议在使用5xD, 8xD的刀柄时把进给率降低到85%, 70%
▶在使用8xD刀柄时, 建议用等于或大于140度顶尖的钻头钻一个直径2/3以上的定位中心孔
定位中心孔的使用提高孔的定位, 圆度和表面粗糙度



i - ONE DRILLS
RECOMMENDED CUTTING CONDITIONS
推荐加工条件

## Comparison with Split Point Drill, Spade Drill & Dream Drill
普通钻，铲钻&梦幻钻对比

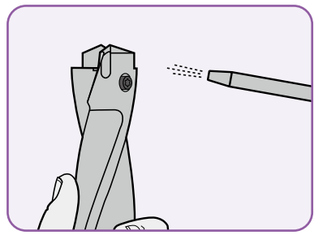
Normal Split Point Drill
普通钻

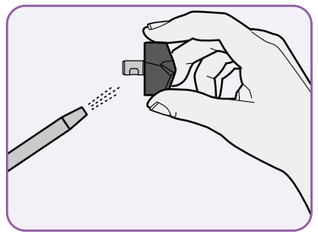
Dream Drill
梦幻钻

Spade Drill
铲钻

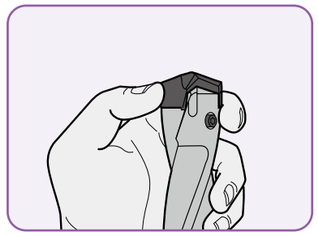
i-One Drill
i-One钻

## ASSEMBLY OF *i*-ONE DRILLS

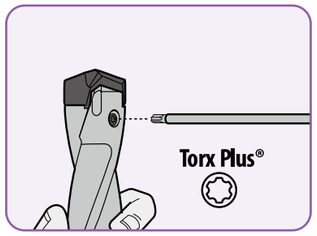




Make sure to clean the insert and insert seat.
定刀片及刀架的清洁.



Slide the drill insert into the slot of the holder and press down the insert to touch the bottom of the slot.
将钻头刀片滑至夹具的夹缝中并按下刀片至夹缝底部.




After confirming the insert is pressed down to the bottom of the slot, tighten the screw using anti-seize compound.
确定刀片按压至夹缝底部后用抓具扣紧螺丝使其进一步融合.

| WRENCH TYPE | PRODUCT NO. | SERIES (INSERT SIZE) | TORX PLUS® | TORQUE (N·m) |
|---|---|---|---|---|
| | TWFP05 | S10~S12 (10.00 ~ 13.90) | 5 IP | 0.6 |
| | TWDP07 | S14~S16 (14.00 ~ 17.90) | 7 IP | 1.0 |
| | TWDP09 | S18~S22 (18.00 ~ 23.90) | 9 IP | 1.5 |
| | TWDP10 | S24~S28 (24.00 ~ 29.77) | 10 IP | 2.2 |
| | TWDP15 | S30~S32 (30.00 ~ 33.73) | 15 IP | 3.2 |

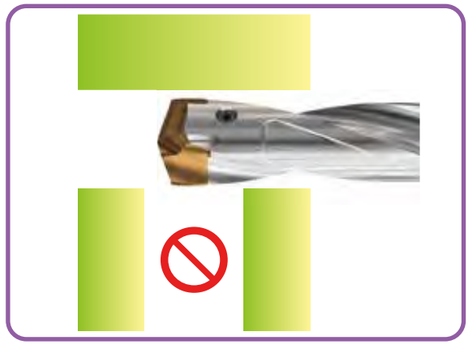
Use the Torx Plus wrench
用翼形或T形扳手

- ▶ Need to use appropriate wrenches and screws as indicated.
  根据指示，需要使用合适的扳手和螺钉.
- ▶ It's important to tighten up the screw properly.
  适当的拧紧螺钉是很重要的.

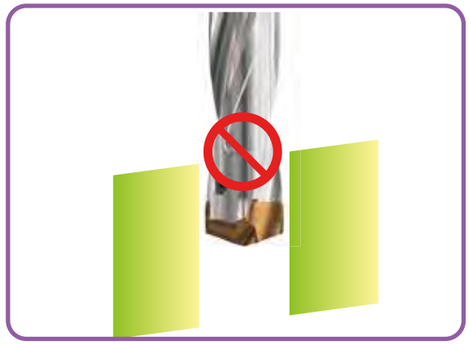




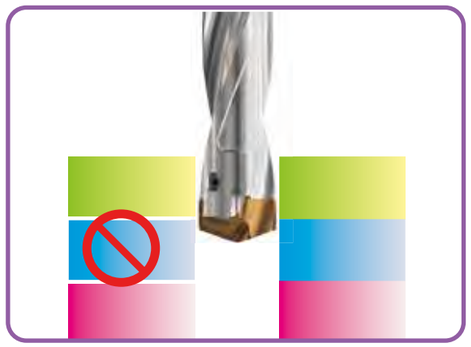
## CAUTION-NOT RECOMMENDABLE APPLICATION
## 注意-不推荐使用



**Intersecting cross hole is bigger than the drill insert's Margin Length.**
交叉孔比钻头刀片的钻边长度大.

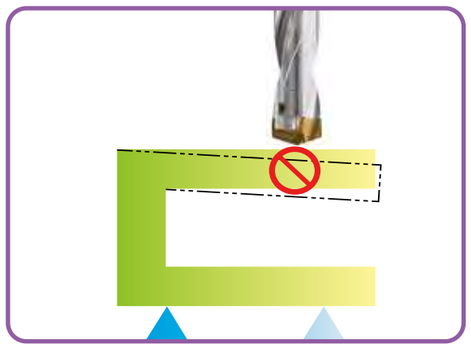


**Material with slanting entrance and exit over 7 degrees. (If drilling 7 degrees or under slanting surface, reduce the feed about 30-50%)**
倾斜进入的材料和超过7度的出口. (如果钻7度的孔或者在倾斜面下钻孔，可减少30~50%的进给)



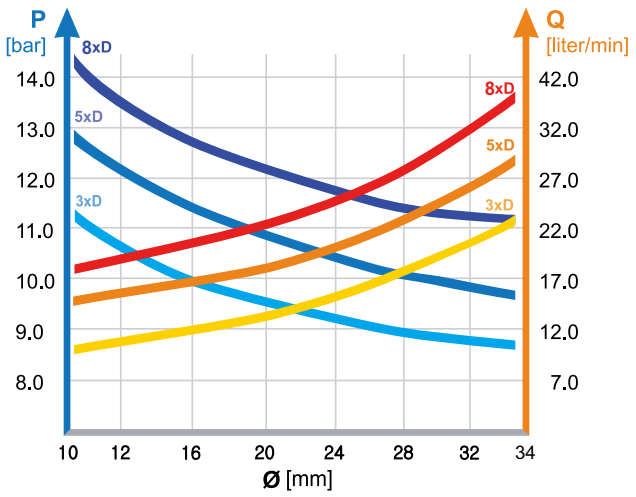
**For drilling stacked plates, minimize the space between the plates.**
对于钻一堆整齐的薄板，薄板之间的间隙减小到最低.

**The space between stacked plates can cause insert breakage or poor chip control.**
整齐的薄板间隔可导致刀片破损或铁屑不易排除.



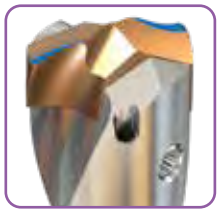
**The material needs to be fixtured securely before drilling.**
在钻削前材料需要进行安全固定.

## RECOMMENDED COOLANT PRESSURE AND FLOW RATE ON VERTICAL DRILLING
## 在立式钻孔中, 推荐使用的油压和流速




- Recommended emulsion mix is 6 - 8%.
  推荐使用6-8%的混合乳化液.
- For Drilling into Stainless and High Strength steels, a mix of 10% is recommended.
  钻孔加工不锈钢和高强度钢时, 推荐使用10%的 混合乳化液.
- For horizontal drilling, 30% reduction on the coolant pressure and flow rate is possible.
  对于水平钻孔, 油压和流速降低30%是可能的.
- Dry drilling is possible for 1-2xD drilling. But not recommended.
  干式钻孔可以用于 1-2xD钻削, 但是不推荐使用.

## TROUBLE SHOOTING
## 问题解答



**1) Heavy flank wear / Fast flank wear**
- Reduce cutting speed
- Increase feed

**巨大磨损/快速磨损**
- 降低切削速度
- 增加进给量

**2) Chipping on cutting edge**
- Reduce feed
- Check the rigidity of spindle and chuck
- Rigid clamping of workpiece

**切削刃崩刃**
- 减少进给量
- 检测主轴和刀夹刚性
- 工作件的强性夹持

**3) Build-up on cutting edge**
- Increase cutting speed
- Use a coated insert

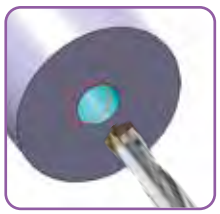
**刃边积瘤**
- 增加切削速度
- 使用涂层刀片

**4) Chipping or break down on outer corner**
- Reduce feed
- Rigid clamping of workpiece

**在转角处崩刃或破损**
- 减少进给量
- 增强工件夹持刚性

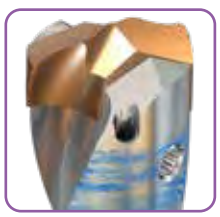
**5) Wear of land margin**
- Rigid clamping of workpiece
- Reduce cutting speed
- Increase coolant flow

**刀具刃带磨损**
- 增强工件夹持刚性
- 降低切削速度
- 增加油流量



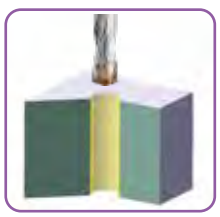
**6) Unsatisfactory positioning of the hole**
- Rigid clamping of workpiece
- Reduce feed during entrance or exit

**孔位置度不良**
- 增强工件夹持刚性
- 在进入和退出时降低速度



**7) Scratching on holder**
- Rigid clamping of workpiece
- Reduce feed
- Increase coolant flow

**刀体损伤**
- 增强工件夹持刚性
- 减少进给量
- 增加油流量



**8) Unsatisfactory surface finish**
- Rigid clamping of workpiece
- Increase coolant flow and pressure

**令人不满意的表面粗糙度**
- 增强工件夹持刚性
- 增加油流量和油压力

YG

Leading Through Innovation

# CARBIDE INSERTS & HOLDERS

# *i*-DREAM DRILLS

- For General Steels and Stainless Steels

- 适用于普通钢和不锈钢

# SELECTION GUIDE
## 选用指南

YG HOLEMAKING TOOLS

# CARBIDE INSERTS & HOLDERS
# i-DREAM DRILLS

For General Steels and Stainless Steels
适用于普通钢和不锈钢

Please visit 请访问 globalyg1.com/mat for material search 查看产品材料

◎ : Excellent (优秀) ○ : Good (良好)

Recommended cutting conditions (推荐加工条件) : p. A54, 56

| SERIES 系列 | YA1A | YA2C | YB1A | YB2C |
|---|---|---|---|---|
| TYPE 类型 | A | | B | |
| SIZE MIN 最小尺寸 | 12.00 | | 14.00 | |
| SIZE MAX 最大尺寸 | 13.89 | | 15.87 | |
| PAGE 页数 | A44 | | A45 | |
| SURFACE TREATMENT 表面处理 | TiAlN | TiCN | TiAlN | TiCN |

| ISO 公制 | VDI 3323 | Material Description 材料描述 | Composition / Structure / Heat Treatment 成分 / 组织 / 热处理 | | HB 布氏硬度 | HRc 硬度 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | About 0.15% C | Annealed | 125 | | ◎ | ○ | ◎ | ○ | |
| | 2 | | About 0.45% C | Annealed | 190 | 13 | ◎ | ○ | ◎ | ○ | |
| | 3 | | About 0.45% C | Quenched & Tempered | 250 | 25 | ◎ | ○ | ◎ | ○ | |
| | 4 | | About 0.75% C | Annealed | 270 | 28 | ◎ | ○ | ◎ | ○ | |
| | 5 | | About 0.75% C | Quenched & Tempered | 300 | 32 | ◎ | | ◎ | | |
| | 6 | Low alloy steel | | Annealed | 180 | 10 | ◎ | ○ | ◎ | ○ | |
| | 7 | | | Quenched & Tempered | 275 | 29 | ◎ | ○ | ◎ | ○ | |
| | 8 | | | Quenched & Tempered | 300 | 32 | ◎ | | ◎ | | |
| | 9 | | | Quenched & Tempered | 350 | 38 | ◎ | | ◎ | | |
| | 10 | High alloyed steel, and tool steel | | Annealed | 200 | 15 | ◎ | ○ | ◎ | ○ | |
| | 11 | | | Quenched & Tempered | 325 | 35 | ◎ | | ◎ | | |
| M | 12 | Stainless steel | Ferritic / Martensitic | Annealed | 200 | 15 | | ◎ | | ◎ | |
| | 13 | | Martensitic | Quenched & Tempered | 240 | 23 | | ◎ | | ◎ | |
| | 14 | | Austenitic | | 180 | 10 | | ◎ | | ◎ | |
| K | 15 | Grey cast iron | Pearlitic / ferritic | | 180 | 10 | ◎ | | ◎ | | |
| | 16 | | Pearlitic (Martensitic) | | 260 | 26 | ◎ | | ◎ | | |
| | 17 | Nodular cast iron | Ferritic | | 160 | 3 | ◎ | | ◎ | | |
| | 18 | | Pearlitic | | 250 | 25 | ◎ | | ◎ | | |
| | 19 | Malleable cast iron | Ferritic | | 130 | | ◎ | | ◎ | | |
| | 20 | | Pearlitic | | 230 | 21 | ◎ | | ◎ | | |
| N | 21 | Aluminum-wrought alloy | Not Curable | | 60 | | | ○ | | ○ | |
| | 22 | | Curable | Hardened | 100 | | | ○ | | ○ | |
| | 23 | Aluminum-cast, alloyed | ≤ 12% Si, Not Curable | | 75 | | | ○ | | ○ | |
| | 24 | | ≤ 12% Si, Curable | Hardened | 90 | | | ○ | | ○ | |
| | 25 | | > 12% Si, Not Curable | | 130 | | | ○ | | ○ | |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | Cutting Alloys, PB>1% | | 110 | | | ○ | | ○ | |
| | 27 | | CuZn, CuSnZn (Brass) | | 90 | | | ○ | | ○ | |
| | 28 | | CuSn, lead-free copper and electrolytic copper | | 100 | | | ○ | | ○ | |
| | 29 | Non Metallic Materials | Duroplastic, Fiber Reinforced Plastic | | | | | | | | |
| | 30 | | Rubber, Wood, etc. | | | | | | | | |
| S | 31 | Heat Resistant Super Alloys | Fe Based | Annealed | 200 | 15 | | | | | |
| | 32 | | | Cured | 280 | 30 | | | | | |
| | 33 | | Ni or Co Based | Annealed | 250 | 25 | | | | | |
| | 34 | | | Cured | 350 | 38 | | | | | |
| | 35 | | | Cast | 320 | 34 | | | | | |
| | 36 | Titanium Alloys | Pure Titanium | | 400 Rm | | | | | | |
| | 37 | | Alpha + Beta Alloys | Hardened | 1050 Rm | | | | | | |
| H | 38 | Hardened steel | | Hardened | 550 | 55 | | | | | |
| | 39 | | | Hardened | 630 | 60 | | | | | |
| | 40 | Chilled Cast Iron | | Cast | 400 | 42 | | | | | |
| | 41 | Hardened Cast Iron | | Hardened | 550 | 55 | | | | | |

| YC1A | YC2C | YD1A | YD2C | YE1A | YE2C | YF1A | YF2C | YG1A | YG2C |
|---|---|---|---|---|---|---|---|---|---|
| C | | D | | E | | F | | G | |
| 16.00 | | 18.00 | | 20.00 | | 22.00 | | 24.00 | |
| 17.86 | | 19.84 | | 21.83 | | 23.81 | | 25.80 | |
| A46 | | A47 | | A48 | | A49 | | A50 | |
| TiAlN | TiCN | TiAlN | TiCN | TiAlN | TiCN | TiAlN | TiCN | TiAlN | TiCN |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ◎ | ○ | ◎ | ○ | ◎ | ○ | ◎ | ○ | ◎ | ○ | 1 | |
| ◎ | ○ | ◎ | ○ | ◎ | ○ | ◎ | ○ | ◎ | ○ | 2 | |
| ◎ | ○ | ◎ | ○ | ◎ | ○ | ◎ | ○ | ◎ | ○ | 3 | |
| ◎ | ○ | ◎ | ○ | ◎ | ○ | ◎ | ○ | ◎ | ○ | 4 | |
| ◎ | | ◎ | | ◎ | | ◎ | | ◎ | | 5 | |
| ◎ | ○ | ◎ | ○ | ◎ | ○ | ◎ | ○ | ◎ | ○ | 6 | P |
| ◎ | ○ | ◎ | ○ | ◎ | ○ | ◎ | ○ | ◎ | ○ | 7 | |
| ◎ | | ◎ | | ◎ | | ◎ | | ◎ | | 8 | |
| ◎ | | ◎ | | ◎ | | ◎ | | ◎ | | 9 | |
| ◎ | ○ | ◎ | ○ | ◎ | ○ | ◎ | ○ | ◎ | ○ | 10 | |
| ◎ | | ◎ | | ◎ | | ◎ | | ◎ | | 11 | |
| | ◎ | | ◎ | | ◎ | | ◎ | | ◎ | 12 | |
| | ◎ | | ◎ | | ◎ | | ◎ | | ◎ | 13 | M |
| | ◎ | | ◎ | | ◎ | | ◎ | | ◎ | 14 | |
| ◎ | | ◎ | | ◎ | | ◎ | | ◎ | | 15 | |
| ◎ | | ◎ | | ◎ | | ◎ | | ◎ | | 16 | |
| ◎ | | ◎ | | ◎ | | ◎ | | ◎ | | 17 | |
| ◎ | | ◎ | | ◎ | | ◎ | | ◎ | | 18 | K |
| ◎ | | ◎ | | ◎ | | ◎ | | ◎ | | 19 | |
| ◎ | | ◎ | | ◎ | | ◎ | | ◎ | | 20 | |
| | ○ | | ○ | | ○ | | ○ | | ○ | 21 | |
| | ○ | | ○ | | ○ | | ○ | | ○ | 22 | |
| | ○ | | ○ | | ○ | | ○ | | ○ | 23 | |
| | ○ | | ○ | | ○ | | ○ | | ○ | 24 | |
| | ○ | | ○ | | ○ | | ○ | | ○ | 25 | |
| | ○ | | ○ | | ○ | | ○ | | ○ | 26 | |
| | ○ | | ○ | | ○ | | ○ | | ○ | 27 | N |
| | ○ | | ○ | | ○ | | ○ | | ○ | 28 | |
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CARBIDE
HSS
i-ONE DRILLS
i-DREAM DRILLS
DREAM DRILLS -PRO
DREAM DRILLS -GENERAL
DREAM DRILLS -SOFT
DREAM DRILLS -HIGH FEED
DREAM DRILLS -FLAT BOTTOM
DREAM DRILLS -INOX
DREAM DRILLS -ALU
DREAM DRILLS -CFRP
DREAM DRILLS -MQL
DREAM DRILLS for HIGH HARDENED STEELS
GENERAL CARBIDE DRILLS
MULTI-1 DRILLS
GOLD-P DRILLS
SUPER-GP DRILLS
WORM PATTERN DRILLS
STRAIGHT SHANK DRILLS
TAPER SHANK DRILLS
NC-SPOTTING DRILLS
CENTER DRILLS
SPADE DRILLS
REAMERS
COUNTER SINKS
COUNTER BORES
TECHNICAL DATA

# SELECTION GUIDE
## 选用指南

YG HOLEMAKING TOOLS

# CARBIDE INSERTS & HOLDERS
# i-DREAM DRILLS

For General Steels and Stainless Steels
适用于普通钢和不锈钢

Please visit globalyg1.com/mat for material search

◎ : Excellent (优秀) ○ : Good (良好)

Recommended cutting conditions (推荐加工条件) : p. A54, 56

| SERIES 系列 | YH1A | YH2C | YI1A | YI2C | YJ1A | YJ2C | ZH*3 | ZH*5 | ZH*7 |
|---|---|---|---|---|---|---|---|---|---|
| TYPE 类型 | H | | I | | J | | | | |
| SIZE MIN 最小尺寸 | 26.00 | | 28.00 | | 30.00 | | | | |
| SIZE MAX 最大尺寸 | 27.78 | | 29.77 | | 31.75 | | | | |
| PAGE 页数 | A51 | | A52 | | A53 | | | | |
| SURFACE TREATMENT 表面处理 | TiAlN | TiCN | TiAlN | TiCN | TiAlN | TiCN | 3XD | 5XD | 7XD |

| ISO 公制 | VDI 3323 | Material Description 材料描述 | Composition / Structure / Heat Treatment 成分 / 组织 / 热处理 | | HB 布氏硬度 | HRc 硬度 | YH1A | YH2C | YI1A | YI2C | YJ1A | YJ2C | ZH*3 | ZH*5 | ZH*7 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | About 0.15% C | Annealed | 125 | | ◎ | ○ | ◎ | ○ | ◎ | ○ | | | | 1 |
| | 2 | | About 0.45% C | Annealed | 190 | 13 | ◎ | ○ | ◎ | ○ | ◎ | ○ | | | | 2 |
| | 3 | | About 0.45% C | Quenched & Tempered | 250 | 25 | ◎ | ○ | ◎ | ○ | ◎ | ○ | | | | 3 |
| | 4 | | About 0.75% C | Annealed | 270 | 28 | ◎ | ○ | ◎ | ○ | ◎ | ○ | | | | 4 |
| | 5 | | About 0.75% C | Quenched & Tempered | 300 | 32 | ◎ | | ◎ | | ◎ | | | | | 5 |
| | 6 | Low alloy steel | | Annealed | 180 | 10 | ◎ | ○ | ◎ | ○ | ◎ | ○ | | | | 6 |
| | 7 | | | Quenched & Tempered | 275 | 29 | ◎ | ○ | ◎ | ○ | ◎ | ○ | | | | 7 |
| | 8 | | | Quenched & Tempered | 300 | 32 | ◎ | | ◎ | | ◎ | | | | | 8 |
| | 9 | | | Quenched & Tempered | 350 | 38 | ◎ | | ◎ | | ◎ | | | | | 9 |
| | 10 | High alloyed steel, and tool steel | | Annealed | 200 | 15 | ◎ | ○ | ◎ | ○ | ◎ | ○ | | | | 10 |
| | 11 | | | Quenched & Tempered | 325 | 35 | ◎ | | ◎ | | ◎ | | | | | 11 |
| M | 12 | Stainless steel | Ferritic / Martensitic | Annealed | 200 | 15 | | ◎ | | ◎ | | ◎ | | | | 12 |
| | 13 | | Martensitic | Quenched & Tempered | 240 | 23 | | ◎ | | ◎ | | ◎ | | | | 13 |
| | 14 | | Austenitic | | 180 | 10 | | ◎ | | ◎ | | ◎ | | | | 14 |
| K | 15 | Grey cast iron | Pearlitic / ferritic | | 180 | 10 | ◎ | | ◎ | | ◎ | | | | | 15 |
| | 16 | | Pearlitic (Martensitic) | | 260 | 26 | ◎ | | ◎ | | ◎ | | | | | 16 |
| | 17 | Nodular cast iron | Ferritic | | 160 | 3 | ◎ | | ◎ | | ◎ | | | | | 17 |
| | 18 | | Pearlitic | | 250 | 25 | ◎ | | ◎ | | ◎ | | | | | 18 |
| | 19 | Malleable cast iron | Ferritic | | 130 | | ◎ | | ◎ | | ◎ | | | | | 19 |
| | 20 | | Pearlitic | | 230 | 21 | ◎ | | ◎ | | ◎ | | | | | 20 |
| N | 21 | Aluminum-wrought alloy | Not Curable | | 60 | | | ○ | | ○ | | ○ | | | | 21 |
| | 22 | | Curable | Hardened | 100 | | | ○ | | ○ | | ○ | | | | 22 |
| | 23 | Aluminum-cast, alloyed | ≤ 12% Si, Not Curable | | 75 | | | ○ | | ○ | | ○ | | | | 23 |
| | 24 | | ≤ 12% Si, Curable | Hardened | 90 | | | ○ | | ○ | | ○ | | | | 24 |
| | 25 | | > 12% Si, Not Curable | | 130 | | | ○ | | ○ | | ○ | | | | 25 |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | Cutting Alloys, PB>1% | | 110 | | | ○ | | ○ | | ○ | | | | 26 |
| | 27 | | CuZn, CuSnZn (Brass) | | 90 | | | ○ | | ○ | | ○ | | | | 27 |
| | 28 | | CuSn, lead-free copper and electrolytic copper | | 100 | | | ○ | | ○ | | ○ | | | | 28 |
| | 29 | Non Metallic Materials | Duroplastic, Fiber Reinforced Plastic | | | | | | | | | | | | | 29 |
| | 30 | | Rubber, Wood, etc. | | | | | | | | | | | | | 30 |
| S | 31 | Heat Resistant Super Alloys | Fe Based | Annealed | 200 | 15 | | | | | | | | | | 31 |
| | 32 | | | Cured | 280 | 30 | | | | | | | | | | 32 |
| | 33 | | Ni or Co Based | Annealed | 250 | 25 | | | | | | | | | | 33 |
| | 34 | | | Cured | 350 | 38 | | | | | | | | | | 34 |
| | 35 | | | Cast | 320 | 34 | | | | | | | | | | 35 |
| | 36 | Titanium Alloys | Pure Titanium | | 400 Rm | | | | | | | | | | | 36 |
| | 37 | | Alpha + Beta Alloys | Hardened | 1050 Rm | | | | | | | | | | | 37 |
| H | 38 | Hardened steel | | Hardened | 550 | 55 | | | | | | | | | | 38 |
| | 39 | | | Hardened | 630 | 60 | | | | | | | | | | 39 |
| | 40 | Chilled Cast Iron | | Cast | 400 | 42 | | | | | | | | | | 40 |
| | 41 | Hardened Cast Iron | | Hardened | 550 | 55 | | | | | | | | | | 41 |



CARBIDE

HSS

i-ONE DRILLS

i-DREAM DRILLS

DREAM DRILLS -PRO

DREAM DRILLS -GENERAL

DREAM DRILLS -SOFT

DREAM DRILLS -HIGH FEED

DREAM DRILLS -FLAT BOTTOM

DREAM DRILLS -INOX

DREAM DRILLS -ALU

DREAM DRILLS -CFRP

DREAM DRILLS -MQL

DREAM DRILLS for HIGH HARDENED STEELS

GENERAL CARBIDE DRILLS

MULTI-1 DRILLS

GOLD-P DRILLS

SUPER-GP DRILLS

WORM PATTERN DRILLS

STRAIGHT SHANK DRILLS

TAPER SHANK DRILLS

NC-SPOTTING DRILLS

CENTER DRILLS

SPADE DRILLS

REAMERS

COUNTER SINKS

COUNTER BORES

TECHNICAL DATA

# YG *i* - DREAM DRILLS

**YA1A** SERIES
**YA2C** SERIES

## *i*-DREAM DRILL INSERTS & HOLDERS
## *i*-梦幻钻 刀片 & 刀柄

**- Features of *i*-*Dream Drill* Inserts-**
- i-梦幻钻刀片 优点 -

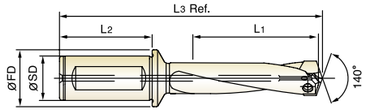
▶ Secure and accurate seating resulting in accurate repeatability and concentricity.
牢固精确的底座可以使产品重复使用而不影响精度.

*i-Dream Drill* ***General*** */* 一般i-梦幻钻
▶ For most steels materials / 适用于大多数钢材

*i-Dream Drill* ***INOX*** */* 不锈钢用的 i-梦幻钻
▶ For tough, ductile materials and stainless steels
适用于比较坚韧的材质和不锈钢
▶ Light, sharp cutting edge / 具有轻而锋利的切削刃
▶ Soft cutting action / 有软切削作用
▶ Minimize cutting forces / 可以减少切削力
▶ Reduce built-up edge / 减少积屑瘤

**- Features of *i*-*Dream Drill* Holders-**
- i-梦幻钻刀柄 优点-

▶ Special Alloy Steels maintain its hardness and toughness under high temperatures.
特殊的合金钢材质使产品在高温下仍能保持其硬度和韧性
▶ Innovative surface treatment improves wear resistance and reduces corrosion.
新开发的表面处理方式可以提高产品的耐磨性并减少腐蚀
▶ High Performance flute design allows maximum chip evacuation and minimum interference.
高性能的沟槽设计使排屑最大化和阻碍最小化




CARBIDE | ISO 9766 | h7 | 140° | p. A54, A56

Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| INDEXABLE DRILL HOLDER | D245 - 246 | - | - |
| ER COLLET CHUCK | D73 - 115 | | |

Unit(单位) : mm

| Series Range | Insert EDP No. | | Insert O.D. | | | Holder EDP No. | Shank Dia. | Shank Length | Flange Dia. | Drilling Depth | | Overall Length | Screw No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (mm) | General (TiAlN) | INOX (TiCN) | h7 dec. | h7 frac. | h7 mm | | SD | L2 | FD | L1 | | L3 Ref. | |
| A Ø12.00 to Ø13.99 | YA1A1200 | YA2C1200 | .4724 | - | 12.00 | ZH12003020 | 20 | 50 | 25 | 3D | 36 | 112.4 | TX1213T08 |
| | YA1A1210 | YA2C1210 | .4764 | - | 12.10 | | | | | | | | |
| | YA1A1220 | YA2C1220 | .4803 | - | 12.20 | ZH12005020 | | | | 5D | 60 | 136.4 | |
| | YA1A1230 | YA2C1230 | .4844 | 31/64 | 12.30 | ZH12007020 | | | | 7D | 84 | 160.4 | |
| | YA1A1250 | YA2C1250 | .4921 | - | 12.50 | ZH12503020 | 20 | 50 | 25 | 3D | 37.5 | 113.4 | |
| | YA1A1260 | YA2C1260 | .4961 | - | 12.60 | | | | | | | | |
| | YA1A1270 | YA2C1270 | .5000 | 1/2 | 12.70 | ZH12505020 | | | | 5D | 62.5 | 138.4 | |
| | YA1A1280 | YA2C1280 | .5039 | - | 12.80 | ZH12507020 | | | | 7D | 87.5 | 163.4 | |
| | YA1A1290 | YA2C1290 | .5079 | - | 12.90 | | | | | | | | |
| | YA1A1300 | YA2C1300 | .5118 | - | 13.00 | ZH13003020 | 20 | 50 | 25 | 3D | 39 | 115.4 | TX1314T08 |
| | YA1A1310 | YA2C1310 | .5156 | 33/64 | 13.10 | | | | | | | | |
| | YA1A1320 | YA2C1320 | .5197 | - | 13.20 | ZH13005020 | | | | 5D | 65 | 141.4 | |
| | YA1A1349 | YA2C1349 | .5312 | 17/32 | 13.49 | ZH13007020 | | | | 7D | 91 | 167.4 | |
| | YA1A1350 | YA2C1350 | .5315 | - | 13.50 | ZH13503020 | 20 | 50 | 25 | 3D | 40.5 | 116.4 | |
| | YA1A1360 | YA2C1360 | .5354 | - | 13.60 | | | | | | | | |
| | YA1A1370 | YA2C1370 | .5394 | - | 13.70 | ZH13505020 | | | | 5D | 67.5 | 143.4 | |
| | YA1A1380 | YA2C1380 | .5433 | - | 13.80 | ZH13507020 | | | | 7D | 94.5 | 170.4 | |
| | YA1A1389 | YA2C1389 | .5469 | 35/64 | 13.89 | | | | | | | | |

▶ Other diameters of insert and shank types of holder are available upon request.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| YA1A | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | | | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| YA2C | ○ | ○ | ○ | ○ | | ○ | ○ | | | ○ | | ◎ | ◎ | ◎ | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| YA1A | | | | | | | | | | | | | | | | | | | | | |
| YA2C | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | | |



# YG *i* - DREAM DRILLS

**YB1A** SERIES
**YB2C** SERIES

## *i*-DREAM DRILL INSERTS & HOLDERS
## *i*-梦幻钻 刀片 & 刀柄

**- Features of *i*-*Dream Drill* Inserts-**
- i-梦幻钻刀片 优点 -

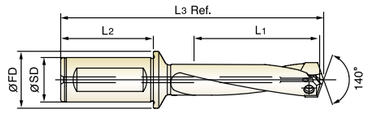
▶ Secure and accurate seating resulting in accurate repeatability and concentricity.
牢固精确的底座可以使产品重复使用而不影响精度.

*i-Dream Drill* ***General*** */* 一般i-梦幻钻
▶ For most steels materials / 适用于大多数钢材

*i-Dream Drill* ***INOX*** */* 不锈钢用的 i-梦幻钻
▶ For tough, ductile materials and stainless steels
适用于比较坚韧的材质和不锈钢
▶ Light, sharp cutting edge / 具有轻而锋利的切削刃
▶ Soft cutting action / 有软切削作用
▶ Minimize cutting forces / 可以减少切削力
▶ Reduce built-up edge / 减少积屑瘤

**- Features of *i*-*Dream Drill* Holders-**
- i-梦幻钻刀柄 优点-

▶ Special Alloy Steels maintain its hardness and toughness under high temperatures.
特殊的合金钢材质使产品在高温下仍能保持其硬度和韧性
▶ Innovative surface treatment improves wear resistance and reduces corrosion.
新开发的表面处理方式可以提高产品的耐磨性并减少腐蚀
▶ High Performance flute design allows maximum chip evacuation and minimum interference.
高性能的沟槽设计使排屑最大化和阻碍最小化




CARBIDE | ISO 9766 | h7 | 140° | p. A54, A56

Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| INDEXABLE DRILL HOLDER | D245 - 246 | - | - |
| ER COLLET CHUCK | D73 - 115 | | |

Unit(单位) : mm

| Series Range | Insert EDP No. | | Insert O.D. | | | Holder EDP No. | Shank Dia. | Shank Length | Flange Dia. | Drilling Depth | | Overall Length | Screw No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (mm) | General (TiAlN) | INOX (TiCN) | h7 dec. | h7 frac. | h7 mm | | SD | L2 | FD | L1 | | L3 Ref. | |
| B Ø14.00 to Ø15.99 | YB1A1400 | YB2C1400 | .5512 | - | 14.00 | ZH14003020 | 20 | 50 | 25 | 3D | 42 | 118.9 | TX1415T08 |
| | YB1A1410 | YB2C1410 | .5551 | - | 14.10 | | | | | | | | |
| | YB1A1420 | YB2C1420 | .5591 | - | 14.20 | ZH14005020 | | | | 5D | 70 | 146.9 | |
| | YB1A1429 | YB2C1429 | .5625 | 9/16 | 14.29 | ZH14007020 | | | | 7D | 98 | 174.9 | |
| | YB1A1430 | YB2C1430 | .5630 | - | 14.30 | | | | | | | | |
| | YB1A1440 | YB2C1440 | .5669 | - | 14.40 | | | | | | | | |
| | YB1A1450 | YB2C1450 | .5709 | - | 14.50 | ZH14503020 | 20 | 50 | 25 | 3D | 43.5 | 120.9 | |
| | YB1A1460 | YB2C1460 | .5748 | - | 14.60 | | | | | | | | |
| | YB1A1468 | YB2C1468 | .5781 | 37/64 | 14.68 | ZH14505020 | | | | 5D | 72.5 | 149.9 | |
| | YB1A1480 | YB2C1480 | .5827 | - | 14.80 | ZH14507020 | | | | 7D | 101.5 | 178.9 | |
| | YB1A1500 | YB2C1500 | .5906 | - | 15.00 | ZH15003020 | 20 | 50 | 25 | 3D | 45 | 122.9 | TX1516T08 |
| | YB1A1508 | YB2C1508 | .5938 | 19/32 | 15.08 | | | | | | | | |
| | YB1A1510 | YB2C1510 | .5945 | - | 15.10 | ZH15005020 | | | | 5D | 75 | 152.9 | |
| | YB1A1520 | YB2C1520 | .5984 | - | 15.20 | ZH15007020 | | | | 7D | 105 | 182.9 | |
| | YB1A1530 | YB2C1530 | .6024 | - | 15.30 | | | | | | | | |
| | YB1A1548 | YB2C1548 | .6094 | 39/64 | 15.48 | | | | | | | | |
| | YB1A1550 | YB2C1550 | .6102 | - | 15.50 | ZH15503020 | 20 | 50 | 25 | 3D | 46.5 | 123.9 | |
| | YB1A1560 | YB2C1560 | .6142 | - | 15.60 | | | | | | | | |
| | YB1A1570 | YB2C1570 | .6181 | - | 15.70 | ZH15505020 | | | | 5D | 77.5 | 154.9 | |
| | YB1A1580 | YB2C1580 | .6220 | - | 15.80 | ZH15507020 | | | | 7D | 108.5 | 185.9 | |
| | YB1A1587 | YB2C1587 | .6250 | 5/8 | 15.87 | | | | | | | | |

▶ Other diameters of insert and shank types of holder are available upon request.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| YB1A | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | | | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| YB2C | ○ | ○ | ○ | ○ | | ○ | ○ | | | ○ | | ◎ | ◎ | ◎ | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| YB1A | | | | | | | | | | | | | | | | | | | | | |
| YB2C | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | | |

# YG *i* - DREAM DRILLS

**YC1A** SERIES
**YC2C** SERIES

## *i*-DREAM DRILL INSERTS & HOLDERS
## *i*-梦幻钻 刀片 & 刀柄

**- Features of *i*-*Dream Drill* Inserts-**
- i-梦幻钻刀片 优点 -

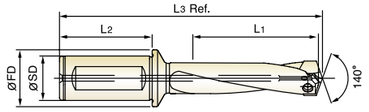
▶ Secure and accurate seating resulting in accurate repeatability and concentricity.
牢固精确的底座可以使产品重复使用而不影响精度.

*i-Dream Drill* ***General*** */* 一般i-梦幻钻
▶ For most steels materials / 适用于大多数钢材

*i-Dream Drill* ***INOX*** */* 不锈钢用的 i-梦幻钻
▶ For tough, ductile materials and stainless steels
适用于比较坚韧的材质和不锈钢
▶ Light, sharp cutting edge / 具有轻而锋利的切削刃
▶ Soft cutting action / 有软切削作用
▶ Minimize cutting forces / 可以减少切削力
▶ Reduce built-up edge / 减少积屑瘤

**- Features of *i*-*Dream Drill* Holders-**
- i-梦幻钻刀柄 优点-

▶ Special Alloy Steels maintain its hardness and toughness under high temperatures.
特殊的合金钢材质使产品在高温下仍能保持其硬度和韧性
▶ Innovative surface treatment improves wear resistance and reduces corrosion.
新开发的表面处理方式可以提高产品的耐磨性并减少腐蚀
▶ High Performance flute design allows maximum chip evacuation and minimum interference.
高性能的沟槽设计使排屑最大化和阻碍最小化




CARBIDE | ISO 9766 | h7 | 140°

p. A54, A56

Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| INDEXABLE DRILL HOLDER | D245 - 246 | - | - |
| ER COLLET CHUCK | D73 - 115 | | |

Unit(单位) : mm

| Series Range | Insert EDP No. | | Insert O.D. | | | Holder EDP No. | Shank Dia. | Shank Length | Flange Dia. | Drilling Depth | | Overall Length | Screw No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (mm) | General (TiAlN) | INOX (TiCN) | h7 dec. | h7 frac. | h7 mm | | SD | L2 | FD | L1 | | L3 Ref. | |
| C Ø16.00 to Ø17.99 | YC1A1600 | YC2C1600 | .6299 | - | 16.00 | ZH16003020 | 20 | 50 | 25 | 3D | 48 | 125.0 | TX1617T08 |
| | YC1A1609 | YC2C1609 | .6335 | - | 16.09 | | | | | | | | |
| | YC1A1620 | YC2C1620 | .6378 | - | 16.20 | ZH16005020 | | | | 5D | 80 | 157.0 | |
| | YC1A1627 | YC2C1627 | .6406 | 41/64 | 16.27 | | | | | | | | |
| | YC1A1630 | YC2C1630 | .6417 | - | 16.30 | ZH16007020 | | | | 7D | 112 | 189.0 | |
| | YC1A1650 | YC2C1650 | .6496 | - | 16.50 | ZH16503020 | 20 | 50 | 25 | 3D | 49.5 | 127.0 | |
| | YC1A1667 | YC2C1667 | .6562 | 21/32 | 16.67 | ZH16505020 | | | | 5D | 82.5 | 160.0 | |
| | YC1A1680 | YC2C1680 | .6614 | - | 16.80 | ZH16507020 | | | | 7D | 115.5 | 193.0 | |
| | YC1A1700 | YC2C1700 | .6693 | - | 17.00 | ZH17003020 | 20 | 50 | 25 | 3D | 51 | 128.0 | TX1718T08 |
| | YC1A1707 | YC2C1707 | .6719 | 43/64 | 17.07 | ZH17005020 | | | | 5D | 85 | 162.0 | |
| | YC1A1746 | YC2C1746 | .6875 | 11/16 | 17.46 | ZH17007020 | | | | 7D | 119 | 196.0 | |
| | YC1A1750 | YC2C1750 | .6890 | - | 17.50 | ZH17503020 | 20 | 50 | 25 | 3D | 52.5 | 130.0 | |
| | YC1A1780 | YC2C1780 | .7008 | - | 17.80 | ZH17505020 | | | | 5D | 87.5 | 165.0 | |
| | YC1A1786 | YC2C1786 | .7031 | 45/64 | 17.86 | ZH17507020 | | | | 7D | 122.5 | 200.0 | |

▶ Other diameters of insert and shank types of holder are available upon request.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| YC1A | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | | | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| YC2C | ○ | ○ | ○ | ○ | | ○ | ○ | | | ○ | | ◎ | ◎ | ◎ | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| YC1A | | | | | | | | | | | | | | | | | | | | | |
| YC2C | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | | |





# YG *i* - DREAM DRILLS

**YD1A** SERIES
**YD2C** SERIES

## *i*-DREAM DRILL INSERTS & HOLDERS
## *i*-梦幻钻 刀片 & 刀柄

**- Features of *i*-*Dream Drill* Inserts-**
- i-梦幻钻刀片 优点 -

▶ Secure and accurate seating resulting in accurate repeatability and concentricity.
牢固精确的底座可以使产品重复使用而不影响精度.

*i-Dream Drill* ***General*** */* 一般i-梦幻钻
▶ For most steels materials / 适用于大多数钢材

*i-Dream Drill* ***INOX*** */* 不锈钢用的 i-梦幻钻
▶ For tough, ductile materials and stainless steels
适用于比较坚韧的材质和不锈钢
▶ Light, sharp cutting edge / 具有轻而锋利的切削刃
▶ Soft cutting action / 有软切削作用
▶ Minimize cutting forces / 可以减少切削力
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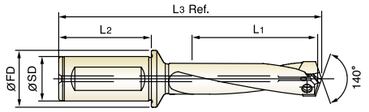
**- Features of *i*-*Dream Drill* Holders-**
- i-梦幻钻刀柄 优点-

▶ Special Alloy Steels maintain its hardness and toughness under high temperatures.
特殊的合金钢材质使产品在高温下仍能保持其硬度和韧性
▶ Innovative surface treatment improves wear resistance and reduces corrosion.
新开发的表面处理方式可以提高产品的耐磨性并减少腐蚀
▶ High Performance flute design allows maximum chip evacuation and minimum interference.
高性能的沟槽设计使排屑最大化和阻碍最小化




CARBIDE | ISO 9766 | h7 | 140°

p. A54, A56

Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| INDEXABLE DRILL HOLDER | D245 - 246 | - | - |
| ER COLLET CHUCK | D73 - 115 | | |

Unit(单位) : mm

| Series Range | Insert EDP No. | | Insert O.D. | | | Holder EDP No. | Shank Dia. | Shank Length | Flange Dia. | Drilling Depth | | Overall Length | Screw No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (mm) | General (TiAlN) | INOX (TiCN) | h7 dec. | h7 frac. | h7 mm | | SD | L2 | FD | L1 | | L3 Ref. | |
| D Ø18.00 to Ø19.99 | YD1A1800 | YD2C1800 | .7087 | - | 18.00 | ZH18003025 | 25 | 56 | 32 | 3D | 54 | 140.3 | TX1819T15 |
| | YD1A1826 | YD2C1826 | .7188 | 23/32 | 18.26 | ZH18005025 | | | | 5D | 90 | 176.3 | |
| | YD1A1850 | YD2C1850 | .7283 | - | 18.50 | ZH18007025 | | | | 7D | 126 | 212.3 | |
| | YD1A1865 | YD2C1865 | .7344 | 47/64 | 18.65 | ZH18503025 | 25 | 56 | 32 | 3D | 55.5 | 141.3 | |
| | YD1A1880 | YD2C1880 | .7402 | - | 18.80 | ZH18505025 | | | | 5D | 92.5 | 178.3 | |
| | YD1A1900 | YD2C1900 | .7480 | - | 19.00 | ZH18507025 | | | | 7D | 129.5 | 215.3 | |
| | YD1A1905 | YD2C1905 | .7500 | 3/4 | 19.05 | ZH19003025 | 25 | 56 | 32 | 3D | 57 | 144.3 | TX1920T15 |
| | YD1A1927 | YD2C1927 | .7587 | - | 19.27 | ZH19005025 | | | | 5D | 95 | 182.3 | |
| | YD1A1945 | YD2C1945 | .7656 | 49/64 | 19.45 | ZH19007025 | | | | 7D | 133 | 220.3 | |
| | YD1A1950 | YD2C1950 | .7677 | - | 19.50 | ZH19503025 | 25 | 56 | 32 | 3D | 58.5 | 145.3 | |
| | YD1A1980 | YD2C1980 | .7795 | - | 19.80 | ZH19505025 | | | | 5D | 97.5 | 184.3 | |
| | YD1A1984 | YD2C1984 | .7812 | 25/32 | 19.84 | ZH19507025 | | | | 7D | 136.5 | 223.3 | |

▶ Other diameters of insert and shank types of holder are available upon request.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| YD1A | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | | | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| YD2C | ○ | ○ | ○ | ○ | | ○ | ○ | | | ○ | | ◎ | ◎ | ◎ | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| YD1A | | | | | | | | | | | | | | | | | | | | | |
| YD2C | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | | |

# i - DREAM DRILLS

**YE1A** SERIES
**YE2C** SERIES

## *i*-DREAM DRILL INSERTS & HOLDERS
## *i*-梦幻钻 刀片 & 刀柄

**- Features of *i*-*Dream Drill* Inserts-**
- i-梦幻钻刀片 优点 -

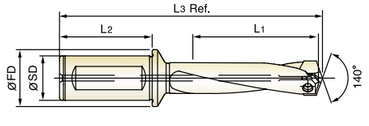
▶ Secure and accurate seating resulting in accurate repeatability and concentricity.
牢固精确的底座可以使产品重复使用而不影响精度.

*i-Dream Drill* ***General*** **/** 一般i-梦幻钻
▶ For most steels materials / 适用于大多数钢材

*i-Dream Drill* ***INOX*** **/** 不锈钢用的 i-梦幻钻
▶ For tough, ductile materials and stainless steels
适用于比较坚韧的材质和不锈钢
▶ Light, sharp cutting edge / 具有轻而锋利的切削刃
▶ Soft cutting action / 有软切削作用
▶ Minimize cutting forces / 可以减少切削力
▶ Reduce built-up edge / 减少积屑瘤

**- Features of *i*-*Dream Drill* Holders-**
- i-梦幻钻刀柄 优点-

▶ Special Alloy Steels maintain its hardness and toughness under high temperatures.
特殊的合金钢材质使产品在高温下仍能保持其硬度和韧性
▶ Innovative surface treatment improves wear resistance and reduces corrosion.
新开发的表面处理方式可以提高产品的耐磨性并减少腐蚀
▶ High Performance flute design allows maximum chip evacuation and minimum interference.
高性能的沟槽设计使排屑最大化和阻碍最小化






CARBIDE | ISO 9766 | h7 | 140° | p. A54, A56

Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| INDEXABLE DRILL HOLDER | D245 - 246 | - | - |
| ER COLLET CHUCK | D73 - 115 | | |

Unit(单位) : mm

| Series Range | Insert EDP No. | | Insert O.D. | | | Holder EDP No. | Shank Dia. | Shank Length | Flange Dia. | Drilling Depth | | Overall Length | Screw No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (mm) | General (TiAlN) | INOX (TiCN) | h7 dec. | h7 frac. | mm | | SD | L2 | FD | L1 | | L3 Ref. | |
| **E** Ø20.00 to Ø21.99 | YE1A2000 | YE2C2000 | .7874 | - | 20.00 | ZH20003025 | 25 | 56 | 32 | 3D | 60 | 145.5 | TX2021T20 |
| | YE1A2024 | YE2C2024 | .7969 | 51/64 | 20.24 | ZH20005025 | | | | 5D | 100 | 185.5 | |
| | | | | | | ZH20007025 | | | | 7D | 140 | 225.5 | |
| | YE1A2050 | YE2C2050 | .8071 | - | 20.50 | ZH20503025 | 25 | 56 | 32 | 3D | 61.5 | 147.5 | |
| | YE1A2064 | YE2C2064 | .8125 | 13/16 | 20.64 | ZH20505025 | | | | 5D | 102.5 | 188.5 | |
| | YE1A2070 | YE2C2070 | .8150 | - | 20.70 | ZH20507025 | | | | 7D | 143.5 | 229.5 | |
| | YE1A2100 | YE2C2100 | .8268 | - | 21.00 | ZH21003025 | 25 | 56 | 32 | 3D | 63 | 149.5 | TX2122T20 |
| | YE1A2103 | YE2C2103 | .8281 | 53/64 | 21.03 | ZH21005025 | | | | 5D | 105 | 191.5 | |
| | YE1A2143 | YE2C2143 | .8438 | 27/32 | 21.43 | ZH21007025 | | | | 7D | 147 | 233.5 | |
| | YE1A2150 | YE2C2150 | .8465 | - | 21.50 | ZH21503025 | 25 | 56 | 32 | 3D | 64.5 | 150.5 | |
| | YE1A2170 | YE2C2170 | .8543 | - | 21.70 | ZH21505025 | | | | 5D | 107.5 | 193.5 | |
| | YE1A2183 | YE2C2183 | .8594 | 55/64 | 21.83 | ZH21507025 | | | | 7D | 150.5 | 236.5 | |

▶ Other diameters of insert and shank types of holder are available upon request.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| YE1A | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | | | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| YE2C | ○ | ○ | ○ | ○ | | ○ | ○ | | | ○ | | ◎ | ◎ | ◎ | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| YE1A | | | | | | | | | | | | | | | | | | | | | |
| YE2C | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | | |



# i - DREAM DRILLS

**YF1A** SERIES
**YF2C** SERIES

## *i*-DREAM DRILL INSERTS & HOLDERS
## *i*-梦幻钻 刀片 & 刀柄

**- Features of *i*-*Dream Drill* Inserts-**
- i-梦幻钻刀片 优点 -

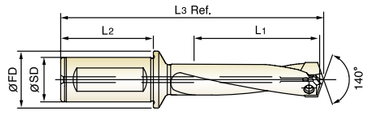
▶ Secure and accurate seating resulting in accurate repeatability and concentricity.
牢固精确的底座可以使产品重复使用而不影响精度.

*i-Dream Drill* ***General*** **/** 一般i-梦幻钻
▶ For most steels materials / 适用于大多数钢材

*i-Dream Drill* ***INOX*** **/** 不锈钢用的 i-梦幻钻
▶ For tough, ductile materials and stainless steels
适用于比较坚韧的材质和不锈钢
▶ Light, sharp cutting edge / 具有轻而锋利的切削刃
▶ Soft cutting action / 有软切削作用
▶ Minimize cutting forces / 可以减少切削力
▶ Reduce built-up edge / 减少积屑瘤

**- Features of *i*-*Dream Drill* Holders-**
- i-梦幻钻刀柄 优点-

▶ Special Alloy Steels maintain its hardness and toughness under high temperatures.
特殊的合金钢材质使产品在高温下仍能保持其硬度和韧性
▶ Innovative surface treatment improves wear resistance and reduces corrosion.
新开发的表面处理方式可以提高产品的耐磨性并减少腐蚀
▶ High Performance flute design allows maximum chip evacuation and minimum interference.
高性能的沟槽设计使排屑最大化和阻碍最小化






CARBIDE | ISO 9766 | h7 | 140° | p. A54, A56

Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| INDEXABLE DRILL HOLDER | D245 - 246 | - | - |
| ER COLLET CHUCK | D73 - 115 | | |

Unit(单位) : mm

| Series Range | Insert EDP No. | | Insert O.D. | | | Holder EDP No. | Shank Dia. | Shank Length | Flange Dia. | Drilling Depth | | Overall Length | Screw No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (mm) | General (TiAlN) | INOX (TiCN) | h7 dec. | h7 frac. | mm | | SD | L2 | FD | L1 | | L3 Ref. | |
| **F** Ø22.00 to Ø23.99 | YF1A2200 | YF2C2200 | .8661 | - | 22.00 | ZH22003025 | 25 | 56 | 32 | 3D | 66 | 152.4 | TX2223T20 |
| | YF1A2223 | YF2C2223 | .8750 | 7/8 | 22.23 | ZH22005025 | | | | 5D | 110 | 196.4 | |
| | | | | | | ZH22007025 | | | | 7D | 154 | 240.4 | |
| | YF1A2250 | YF2C2250 | .8858 | - | 22.50 | ZH22503025 | 25 | 56 | 32 | 3D | 67.5 | 153.4 | |
| | YF1A2262 | YF2C2262 | .8906 | 57/64 | 22.62 | ZH22505025 | | | | 5D | 112.5 | 198.4 | |
| | YF1A2270 | YF2C2270 | .8937 | - | 22.70 | ZH22507025 | | | | 7D | 157.5 | 243.4 | |
| | YF1A2300 | YF2C2300 | .9055 | - | 23.00 | ZH23003025 | 25 | 56 | 32 | 3D | 69 | 155.4 | TX2324T20 |
| | YF1A2302 | YF2C2302 | .9062 | 29/32 | 23.02 | ZH23005025 | | | | 5D | 115 | 201.4 | |
| | YF1A2342 | YF2C2342 | .9219 | 59/64 | 23.42 | ZH23007025 | | | | 7D | 161 | 247.4 | |
| | YF1A2350 | YF2C2350 | .9252 | - | 23.50 | ZH23503025 | 25 | 56 | 32 | 3D | 70.5 | 157.4 | |
| | YF1A2370 | YF2C2370 | .9331 | - | 23.70 | ZH23505025 | | | | 5D | 117.5 | 204.4 | |
| | YF1A2381 | YF2C2381 | .9375 | 15/16 | 23.81 | ZH23507025 | | | | 7D | 164.5 | 251.4 | |

▶ Other diameters of insert and shank types of holder are available upon request.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| YF1A | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | | | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| YF2C | ○ | ○ | ○ | ○ | | ○ | ○ | | | ○ | | ◎ | ◎ | ◎ | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| YF1A | | | | | | | | | | | | | | | | | | | | | |
| YF2C | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | | |

# i - DREAM DRILLS

**YG1A** SERIES
**YG2C** SERIES

## i-DREAM DRILL INSERTS & HOLDERS
## i-梦幻钻 刀片 & 刀柄

**- Features of *i-Dream Drill* Inserts-**
- i-梦幻钻刀片 优点 -

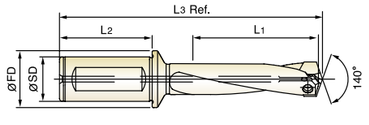
▶ Secure and accurate seating resulting in accurate repeatability and concentricity.
牢固精确的底座可以使产品重复使用而不影响精度.

*i-Dream Drill* ***General*** */* 一般i-梦幻钻
▶ For most steels materials / 适用于大多数钢材

*i-Dream Drill* ***INOX*** */* 不锈钢用的 i-梦幻钻
▶ For tough, ductile materials and stainless steels
适用于比较坚韧的材质和不锈钢
▶ Light, sharp cutting edge / 具有轻而锋利的切削刃
▶ Soft cutting action / 有软切削作用
▶ Minimize cutting forces / 可以减少切削力
▶ Reduce built-up edge / 减少积屑瘤

**- Features of *i-Dream Drill* Holders-**
- i-梦幻钻刀柄 优点-

▶ Special Alloy Steels maintain its hardness and toughness under high temperatures.
特殊的合金钢材质使产品在高温下仍能保持其硬度和韧性
▶ Innovative surface treatment improves wear resistance and reduces corrosion.
新开发的表面处理方式可以提高产品的耐磨性并减少腐蚀
▶ High Performance flute design allows maximum chip evacuation and minimum interference.
高性能的沟槽设计使排屑最大化和阻碍最小化






CARBIDE | ISO 9766 | h7 | 140° | p. A54, A56

Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| INDEXABLE DRILL HOLDER | D245 - 246 | - | - |
| ER COLLET CHUCK | D73 - 115 | | |

Unit(单位) : mm

| Series Range | Insert EDP No. | | Insert O.D. | | | Holder EDP No. | Shank Dia. | Shank Length | Flange Dia. | Drilling Depth | | Overall Length | Screw No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (mm) | General (TiAlN) | INOX (TiCN) | h7 dec. | h7 frac. | h7 mm | | SD | L2 | FD | L1 | | L3 Ref. | |
| G Ø24.00 to Ø25.99 | YG1A2400 | YG2C2400 | .9449 | - | 24.00 | ZH24003032 | 32 | 60 | 37 | 3D | 72 | 164.8 | TX2425T20 |
| | YG1A2421 | YG2C2421 | .9531 | 61/64 | 24.21 | ZH24005032 | | | | 5D | 120 | 212.8 | |
| | | | | | | ZH24007032 | | | | 7D | 168 | 260.8 | |
| | YG1A2450 | YG2C2450 | .9646 | - | 24.50 | ZH24503032 | 32 | 60 | 37 | 3D | 73.5 | 165.8 | |
| | YG1A2461 | YG2C2461 | .9688 | 31/32 | 24.61 | ZH24505032 | | | | 5D | 122.5 | 214.8 | |
| | YG1A2470 | YG2C2470 | .9724 | - | 24.70 | ZH24507032 | | | | 7D | 171.5 | 263.8 | |
| | YG1A2500 | YG2C2500 | .9843 | 63/64 | 25.00 | ZH25003032 | 32 | 60 | 37 | 3D | 75 | 167.8 | TX2526T20 |
| | YG1A2540 | YG2C2540 | 1.0000 | 1 | 25.40 | ZH25005032 | | | | 5D | 125 | 217.8 | |
| | | | | | | ZH25007032 | | | | 7D | 175 | 267.8 | |
| | YG1A2550 | YG2C2550 | 1.0039 | - | 25.50 | ZH25503032 | 32 | 60 | 37 | 3D | 76.5 | 170.8 | |
| | YG1A2567 | YG2C2567 | 1.0106 | - | 25.67 | ZH25505032 | | | | 5D | 127.5 | 221.8 | |
| | YG1A2570 | YG2C2570 | 1.0118 | - | 25.70 | ZH25507032 | | | | 7D | 178.5 | 272.8 | |
| | YG1A2580 | YG2C2580 | 1.0156 | 1-1/64 | 25.80 | | | | | | | | |

▶ Other diameters of insert and shank types of holder are available upon request.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| YG1A | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | | | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| YG2C | ○ | ○ | ○ | ○ | | ○ | ○ | | | ○ | | ◎ | ◎ | ◎ | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| YG1A | | | | | | | | | | | | | | | | | | | | | |
| YG2C | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | | |





# i - DREAM DRILLS

**YH1A** SERIES
**YH2C** SERIES

## i-DREAM DRILL INSERTS & HOLDERS
## i-梦幻钻 刀片 & 刀柄

**- Features of *i-Dream Drill* Inserts-**
- i-梦幻钻刀片 优点 -

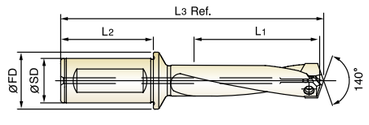
▶ Secure and accurate seating resulting in accurate repeatability and concentricity.
牢固精确的底座可以使产品重复使用而不影响精度.

*i-Dream Drill* ***General*** */* 一般i-梦幻钻
▶ For most steels materials / 适用于大多数钢材

*i-Dream Drill* ***INOX*** */* 不锈钢用的 i-梦幻钻
▶ For tough, ductile materials and stainless steels
适用于比较坚韧的材质和不锈钢
▶ Light, sharp cutting edge / 具有轻而锋利的切削刃
▶ Soft cutting action / 有软切削作用
▶ Minimize cutting forces / 可以减少切削力
▶ Reduce built-up edge / 减少积屑瘤

**- Features of *i-Dream Drill* Holders-**
- i-梦幻钻刀柄 优点-

▶ Special Alloy Steels maintain its hardness and toughness under high temperatures.
特殊的合金钢材质使产品在高温下仍能保持其硬度和韧性
▶ Innovative surface treatment improves wear resistance and reduces corrosion.
新开发的表面处理方式可以提高产品的耐磨性并减少腐蚀
▶ High Performance flute design allows maximum chip evacuation and minimum interference.
高性能的沟槽设计使排屑最大化和阻碍最小化






CARBIDE | ISO 9766 | h7 | 140° | p. A54, A56

Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| INDEXABLE DRILL HOLDER | D245 - 246 | - | - |
| ER COLLET CHUCK | D73 - 115 | | |

Unit(单位) : mm

| Series Range | Insert EDP No. | | Insert O.D. | | | Holder EDP No. | Shank Dia. | Shank Length | Flange Dia. | Drilling Depth | | Overall Length | Screw No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (mm) | General (TiAlN) | INOX (TiCN) | h7 dec. | h7 frac. | h7 mm | | SD | L2 | FD | L1 | | L3 Ref. | |
| H Ø26.00 to Ø27.99 | YH1A2600 | YH2C2600 | 1.0236 | - | 26.00 | ZH26003032 | 32 | 60 | 37 | 3D | 78 | 171.2 | TX2627T25 |
| | YH1A2619 | YH2C2619 | 1.0312 | 1-1/32 | 26.19 | ZH26005032 | | | | 5D | 130 | 223.2 | |
| | | | | | | ZH26007032 | | | | 7D | 182 | 275.2 | |
| | YH1A2650 | YH2C2650 | 1.0433 | | 26.50 | ZH26503032 | 32 | 60 | 37 | 3D | 79.5 | 172.2 | |
| | YH1A2659 | YH2C2659 | 1.0469 | 1-3/64 | 26.59 | ZH26505032 | | | | 5D | 132.5 | 225.2 | |
| | YH1A2699 | YH2C2699 | 1.0625 | 1-1/16 | 26.99 | ZH26507032 | | | | 7D | 185.5 | 278.2 | |
| | YH1A2700 | YH2C2700 | 1.0630 | - | 27.00 | ZH27003032 | 32 | 60 | 37 | 3D | 81 | 174.2 | TX2728T25 |
| | | | | | | ZH27005032 | | | | 5D | 135 | 228.2 | |
| | | | | | | ZH27007032 | | | | 7D | 189 | 282.2 | |
| | YH1A2750 | YH2C2750 | 1.0827 | - | 27.50 | ZH27503032 | 32 | 60 | 37 | 3D | 82.5 | 175.2 | |
| | YH1A2778 | YH2C2778 | 1.0938 | 1-3/32 | 27.78 | ZH27505032 | | | | 5D | 137.5 | 230.2 | |
| | | | | | | ZH27507032 | | | | 7D | 192.5 | 285.2 | |

▶ Other diameters of insert and shank types of holder are available upon request.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| YH1A | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | | | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| YH2C | ○ | ○ | ○ | ○ | | ○ | ○ | | | ○ | | ◎ | ◎ | ◎ | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| YH1A | | | | | | | | | | | | | | | | | | | | | |
| YH2C | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | | |

# YG i - DREAM DRILLS

**YI1A** SERIES
**YI2C** SERIES

## *i*-DREAM DRILL INSERTS & HOLDERS
## *i*-梦幻钻 刀片 & 刀柄

**- Features of *i*-*Dream Drill* Inserts-**
- i-梦幻钻刀片 优点 -

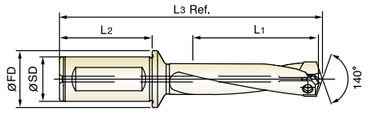
▶ Secure and accurate seating resulting in accurate repeatability and concentricity.
牢固精确的底座可以使产品重复使用而不影响精度.

*i-Dream Drill* ***General*** **/** 一般i-梦幻钻
▶ For most steels materials / 适用于大多数钢材

*i-Dream Drill* ***INOX*** **/** 不锈钢用的 i-梦幻钻
▶ For tough, ductile materials and stainless steels
适用于比较坚韧的材质和不锈钢
▶ Light, sharp cutting edge / 具有轻而锋利的切削刃
▶ Soft cutting action / 有软切削作用
▶ Minimize cutting forces / 可以减少切削力
▶ Reduce built-up edge / 减少积屑瘤

**- Features of *i*-*Dream Drill* Holders-**
- i-梦幻钻刀柄 优点-

▶ Special Alloy Steels maintain its hardness and toughness under high temperatures.
特殊的合金钢材质使产品在高温下仍能保持其硬度和韧性
▶ Innovative surface treatment improves wear resistance and reduces corrosion.
新开发的表面处理方式可以提高产品的耐磨性并减少腐蚀
▶ High Performance flute design allows maximum chip evacuation and minimum interference.
高性能的沟槽设计使排屑最大化和阻碍最小化






CARBIDE | ISO 9766 | h7 | 140° | p. A54, A56

Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| INDEXABLE DRILL HOLDER | D245 - 246 | - | - |
| ER COLLET CHUCK | D73 - 115 | | |

Unit(单位) : mm

| Series Range | Insert EDP No. | | Insert O.D. | | | Holder EDP No. | Shank Dia. | Shank Length | Flange Dia. | Drilling Depth | Overall Length | Screw No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (mm) | General (TiAlN) | INOX (TiCN) | h7 dec. | h7 frac. | h7 mm | | SD | L2 | FD | L1 | L3 Ref. | |
| I Ø28.00 to Ø29.99 | YI1A2800 | YI2C2800 | 1.1024 | - | 28.00 | ZH28003032 | 32 | 60 | 37 | 3D | 84 | 178.2 | TX2829T25 |
| | YI1A2818 | YI2C2818 | 1.1094 | 1-7/64 | 28.18 | ZH28005032 | | | | 5D | 140 | 234.2 | |
| | | | | | | ZH28007032 | | | | 7D | 196 | 290.2 | |
| | YI1A2850 | YI2C2850 | 1.1220 | - | 28.50 | ZH28503032 | 32 | 60 | 37 | 3D | 85.5 | 179.2 | |
| | YI1A2858 | YI2C2858 | 1.1250 | 1-1/8 | 28.58 | ZH28505032 | | | | 5D | 142.5 | 236.2 | |
| | | | | | | ZH28507032 | | | | 7D | 199.5 | 293.2 | |
| | YI1A2900 | YI2C2900 | 1.1417 | - | 29.00 | ZH29003032 | 32 | 60 | 37 | 3D | 87 | 182.2 | TX2930T25 |
| | YI1A2937 | YI2C2937 | 1.1562 | 1-5/32 | 29.37 | ZH29005032 | | | | 5D | 145 | 240.2 | |
| | | | | | | ZH29007032 | | | | 7D | 203 | 298.2 | |
| | YI1A2950 | YI2C2950 | 1.1614 | - | 29.50 | ZH29503032 | 32 | 60 | 37 | 3D | 88.5 | 183.2 | |
| | YI1A2977 | YI2C2977 | 1.1719 | 1-11/64 | 29.77 | ZH29505032 | | | | 5D | 147.5 | 242.2 | |
| | | | | | | ZH29507032 | | | | 7D | 206.5 | 301.2 | |

▶ Other diameters of insert and shank types of holder are available upon request.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| YI1A | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | | | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| YI2C | ○ | ○ | ○ | ○ | | ○ | ○ | | | ○ | | ◎ | ◎ | ◎ | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| YI1A | | | | | | | | | | | | | | | | | | | | | |
| YI2C | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | | |



# YG i - DREAM DRILLS

**YJ1A** SERIES
**YJ2C** SERIES

## *i*-DREAM DRILL INSERTS & HOLDERS
## *i*-梦幻钻 刀片 & 刀柄

**- Features of *i*-*Dream Drill* Inserts-**
- i-梦幻钻刀片 优点 -

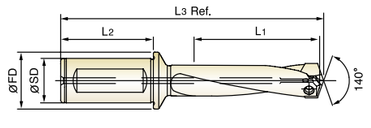
▶ Secure and accurate seating resulting in accurate repeatability and concentricity.
牢固精确的底座可以使产品重复使用而不影响精度.

*i-Dream Drill* ***General*** **/** 一般i-梦幻钻
▶ For most steels materials / 适用于大多数钢材

*i-Dream Drill* ***INOX*** **/** 不锈钢用的 i-梦幻钻
▶ For tough, ductile materials and stainless steels
适用于比较坚韧的材质和不锈钢
▶ Light, sharp cutting edge / 具有轻而锋利的切削刃
▶ Soft cutting action / 有软切削作用
▶ Minimize cutting forces / 可以减少切削力
▶ Reduce built-up edge / 减少积屑瘤

**- Features of *i*-*Dream Drill* Holders-**
- i-梦幻钻刀柄 优点-

▶ Special Alloy Steels maintain its hardness and toughness under high temperatures.
特殊的合金钢材质使产品在高温下仍能保持其硬度和韧性
▶ Innovative surface treatment improves wear resistance and reduces corrosion.
新开发的表面处理方式可以提高产品的耐磨性并减少腐蚀
▶ High Performance flute design allows maximum chip evacuation and minimum interference.
高性能的沟槽设计使排屑最大化和阻碍最小化






CARBIDE | ISO 9766 | h7 | 140° | p. A54, A56

Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| INDEXABLE DRILL HOLDER | D245 - 246 | - | - |
| ER COLLET CHUCK | D73 - 115 | | |

Unit(单位) : mm

| Series Range | Insert EDP No. | | Insert O.D. | | | Holder EDP No. | Shank Dia. | Shank Length | Flange Dia. | Drilling Depth | Overall Length | Screw No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (mm) | General (TiAlN) | INOX (TiCN) | h7 dec. | h7 frac. | h7 mm | | SD | L2 | FD | L1 | L3 Ref. | |
| J Ø30.00 to Ø31.99 | YJ1A3000 | YJ2C3000 | 1.1811 | | 30.00 | ZH30003032 | 32 | 60 | 37 | 3D | 90 | 186.0 | TX3031T25 |
| | YJ1A3016 | YJ2C3016 | 1.1875 | 1-3/16 | 30.16 | ZH30005032 | | | | 5D | 150 | 246.0 | |
| | | | | | | ZH30007032 | | | | 7D | 210 | 306.0 | |
| | YJ1A3050 | YJ2C3050 | 1.2008 | | 30.50 | ZH30503032 | 32 | 60 | 37 | 3D | 91.5 | 187.0 | |
| | YJ1A3056 | YJ2C3056 | 1.2031 | 1-13/64 | 30.56 | ZH30505032 | | | | 5D | 152.5 | 248.0 | |
| | YJ1A3096 | YJ2C3096 | 1.2188 | 1-7/32 | 30.96 | ZH30507032 | | | | 7D | 213.5 | 309.0 | |
| | YJ1A3100 | YJ2C3100 | 1.2205 | | 31.00 | ZH31003032 | 32 | 60 | 37 | 3D | 93 | 188.0 | TX3132T25 |
| | | | | | | ZH31005032 | | | | 5D | 155 | 250.0 | |
| | | | | | | ZH31007032 | | | | 7D | 217 | 312.0 | |
| | YJ1A3150 | YJ2C3150 | 1.2402 | | 31.50 | ZH31503032 | 32 | 60 | 37 | 3D | 94.5 | 191.0 | |
| | YJ1A3175 | YJ2C3175 | 1.2500 | 1-1/4 | 31.75 | ZH31505032 | | | | 5D | 157.5 | 254.0 | |
| | | | | | | ZH31507032 | | | | 7D | 220.5 | 317.0 | |

▶ Other diameters of insert and shank types of holder are available upon request.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| YJ1A | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | | | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| YJ2C | ○ | ○ | ○ | ○ | | ○ | ○ | | | ○ | | ◎ | ◎ | ◎ | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| YJ1A | | | | | | | | | | | | | | | | | | | | | |
| YJ2C | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | | |

# i - DREAM DRILLS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工条件

### YA1A, YB1A, YC1A, YD1A, YE1A, YF1A, YG1A, YH1A, YI1A, YJ1A SERIES

### i-DREAM DRILLS - GENERAL
### i-梦幻钻 - GENERAL

RPM (转速) = (rev./min.)
FEED (进给) = (mm/rev.)

| ISO 公制 | VDI 3323 | Material Description 材料描述 | Vc 钻削速度 (m/min) | Feed(mm/rev) | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | Ø12.00-14.99 | Ø15.00-17.99 | Ø18.00-21.99 | Ø22.00-26.99 | Ø27.00-31.99 |
| P | 1 | Non-alloy steel | 95-120 | 0.16-0.28 | 0.21-0.35 | 0.27-0.40 | 0.34-0.52 | 0.37-0.55 |
| | 2 | | 80-105 | 0.14-0.24 | 0.21-0.35 | 0.27-0.40 | 0.34-0.52 | 0.37-0.55 |
| | 3 | | 60-80 | 0.12-0.20 | 0.17-0.28 | 0.22-0.32 | 0.30-0.46 | 0.33-0.49 |
| | 4 | | 55-70 | 0.10-0.16 | 0.15-0.25 | 0.21-0.30 | 0.25-0.38 | 0.29-0.43 |
| | 5 | | 55-70 | 0.10-0.16 | 0.15-0.25 | 0.21-0.30 | 0.25-0.38 | 0.29-0.43 |
| | 6 | Low alloy steel | 70-90 | 0.12-0.20 | 0.17-0.28 | 0.22-0.32 | 0.30-0.46 | 0.34-0.50 |
| | 7 | | 60-80 | 0.12-0.20 | 0.15-0.25 | 0.22-0.32 | 0.30-0.46 | 0.34-0.50 |
| | 8 | | 55-70 | 0.10-0.16 | 0.13-0.21 | 0.21-0.30 | 0.25-0.38 | 0.29-0.43 |
| | 9 | | 45-60 | 0.08-0.12 | 0.13-0.21 | 0.21-0.30 | 0.25-0.38 | 0.29-0.43 |
| | 10 | High alloyed steel, and tool steel | 50-65 | 0.10-0.16 | 0.13-0.21 | 0.18-0.26 | 0.20-0.31 | 0.24-0.35 |
| | 11 | | 40-55 | 0.10-0.16 | 0.11-0.18 | 0.21-0.30 | 0.20-0.31 | 0.24-0.35 |
| K | 15 | Grey cast iron | 100-125 | 0.15-0.26 | 0.20-0.37 | 0.27-0.42 | 0.36-0.51 | 0.40-0.55 |
| | 16 | | 75-95 | 0.11-0.20 | 0.16-0.29 | 0.20-0.30 | 0.25-0.35 | 0.29-0.40 |
| | 17 | Nodular cast iron | 95-120 | 0.13-0.22 | 0.17-0.31 | 0.21-0.32 | 0.28-0.40 | 0.32-0.44 |
| | 18 | | 75-95 | 0.11-0.20 | 0.14-0.26 | 0.19-0.29 | 0.25-0.35 | 0.29-0.40 |
| | 19 | Malleable cast iron | 100-125 | 0.13-0.22 | 0.17-0.31 | 0.21-0.32 | 0.28-0.40 | 0.32-0.44 |
| | 20 | | 75-95 | 0.11-0.18 | 0.14-0.26 | 0.19-0.29 | 0.25-0.35 | 0.29-0.40 |

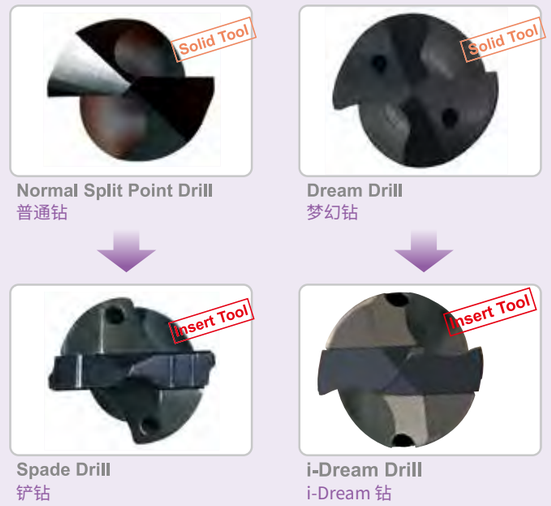
▶ The recommendations for speeds, feeds and other parameters presented in this chart are nominal recommendations and should be considered only as good starting points.
Speed and feed reductions (20% reduction in speed and 10% reduction in feed) are recommended.
▶ Recommend you to reduce the feed rate to 85%, 70% when you use 5xD, 7xD holders.
▶ For use of 7xD holder, we recommend to use a pilot drill with equal to or larger than 140° point angle (0.5xD - 1.5xD).
The use of the centering pre-hole improves hole location, roundness and surface finish.

▶ 表中推荐的速度, 进给率和其它参数只可用夹参考
推荐降低速度和进给量(速度降低20%和进给降低10%)
▶ 建议在使用5xD,7xD的刀柄时把进给率降低到85%, 70%
▶ 在使用7xD刀柄时，建议用等于或大于140度顶尖的钻头钻一个直径2/3以上的定位中心孔
定位中心孔的使用提高孔的定位，圆度和表面粗糙度



i - DREAM DRILLS
RECOMMENDED CUTTING CONDITIONS
推荐加工条件

### Comparison with Split Point Drill, Spade Drill & Dream Drill
普通钻，铲钻&梦幻钻对比




Normal Split Point Drill
普通钻

Dream Drill
梦幻钻

Spade Drill
铲钻

i-Dream Drill
i-Dream 钻

# i - DREAM DRILLS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工条件

### YA2C, YB2C, YC2C, YD2C, YE2C, YF2C, YG2C, YH2C, YI2C, YJ2C SERIES

### i-DREAM DRILLS - INOX
### i-梦幻钻 - INOX

RPM (转速) = (rev./min.)
FEED (进给) = (mm/rev.)

| ISO 公制 | VDI 3323 | Material Description 材料描述 | Vc 钻削速度 (m/min) | Feed(mm/rev) Ø12.00-14.99 | Ø15.00-17.99 | Ø18.00-21.90 | Ø22.00-26.99 | Ø27.00-31.99 |
|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | 95-120 | 0.16-0.28 | 0.21-0.35 | 0.27-0.40 | 0.34-0.52 | 0.37-0.55 |
| | 2 | | 80-105 | 0.14-0.24 | 0.21-0.35 | 0.27-0.40 | 0.34-0.52 | 0.37-0.55 |
| | 3 | | 60-80 | 0.12-0.20 | 0.17-0.28 | 0.22-0.32 | 0.30-0.46 | 0.33-0.49 |
| | 4 | | 55-70 | 0.10-0.16 | 0.15-0.25 | 0.21-0.30 | 0.25-0.38 | 0.29-0.43 |
| | 6 | Low alloy steel | 70-90 | 0.12-0.20 | 0.17-0.28 | 0.22-0.32 | 0.30-0.46 | 0.34-0.50 |
| | 7 | | 60-80 | 0.12-0.20 | 0.15-0.25 | 0.22-0.32 | 0.30-0.46 | 0.34-0.50 |
| | 10 | High alloyed steel, and tool steel | 50-65 | 0.10-0.16 | 0.13-0.21 | 0.18-0.26 | 0.20-0.31 | 0.24-0.35 |
| M | 12 | Stainless steel | 30-45 | 0.08-0.14 | 0.09-0.15 | 0.10-0.16 | 0.12-0.20 | 0.14-0.22 |
| | 13 | | 30-45 | 0.08-0.14 | 0.09-0.15 | 0.10-0.16 | 0.12-0.20 | 0.14-0.22 |
| | 14 | | 45-60 | 0.10-0.16 | 0.12-0.18 | 0.14-0.20 | 0.15-0.26 | 0.18-0.28 |
| N | 21 | Aluminum-wrought alloy | 250-330 | 0.30-0.40 | 0.35-0.45 | 0.40-0.50 | 0.45-0.55 | 0.50-0.60 |
| | 22 | | 200-250 | 0.30-0.40 | 0.35-0.45 | 0.40-0.50 | 0.45-0.55 | 0.50-0.60 |
| | 23 | Aluminum-cast, alloyed | 200-250 | 0.25-0.35 | 0.30-0.40 | 0.35-0.45 | 0.40-0.50 | 0.45-0.55 |
| | 24 | | 150-220 | 0.25-0.35 | 0.30-0.40 | 0.35-0.45 | 0.40-0.50 | 0.45-0.55 |
| | 25 | | 100-200 | 0.20-0.30 | 0.25-0.35 | 0.30-0.40 | 0.35-0.45 | 0.40-0.50 |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | 115-145 | 0.16-0.28 | 0.23-0.36 | 0.29-0.36 | 0.37-0.45 | 0.41-0.48 |
| | 27 | | 145-185 | 0.17-0.29 | 0.24-0.37 | 0.30-0.38 | 0.38-0.46 | 0.42-0.49 |
| | 28 | | 95-120 | 0.06-0.09 | 0.09-0.13 | 0.11-0.13 | 0.15-0.18 | 0.19-0.22 |

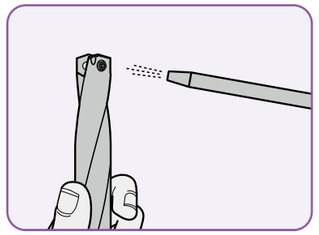
▶The recommendations for speeds, feeds and other parameters presented in this chart are nominal recommendations and should be considered only as good starting points.
Speed and feed reductions (20% reduction in speed and 10% reduction in feed) are recommended.
▶Recommend you to reduce the feed rate to 85%, 70% when you use 5xD, 7xD holders.
▶For use of 7xD holder, we recommend to use a pilot drill with equal to or larger than 140° point angle (0.5xD - 1.5xD). The use of the centering pre-hole improves hole location, roundness and surface finish.

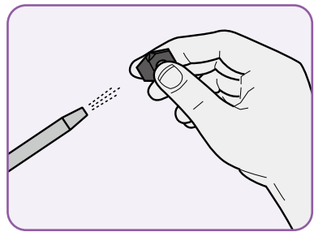
▶表中推荐的速度, 进给率和其它参数只可用夹参考
推荐降低速度和进给量(速度降低20%和进给降低10%)
▶建议在使用5xD,7xD的刀柄时把进给率降低到85%, 70%
▶在使用7xD刀柄时，建议用等于或大于140度顶尖的钻头钻一个直径2/3以上的定位中心孔
定位中心孔的使用提高孔的定位，圆度和表面粗糙度



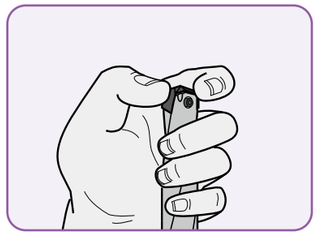
i - DREAM DRILLS
RECOMMENDED CUTTING CONDITIONS
推荐加工条件

## ASSEMBLY OF i-DREAM DRILLS
## i-梦幻钻的装配

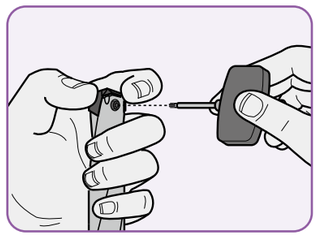




Make sure to clean the insert and insert seat.
确定刀片及刀架的清洁



Slide the drill insert into the slot of the holder and press down the insert to touch the bottom of the slot.
将钻头刀片滑至夹具的夹缝中并按下刀片至夹缝底部.



After confirming the insert is pressed down to the bottom of the slot, tighten the screw using anti-seize compound.
确定刀片按压至夹缝底部后用抓具扣紧螺丝使其进一步融合

| WRENCH TYPE | PRODUCT NO. | T-HANDLE No. | SERIES (SIZE) |
|---|---|---|---|
| WING TYPE | TWWT08 | — | A (Ø12.00-Ø13.99) |
| | | | B (Ø14.00-Ø15.99) |
| | | | C (Ø16.00-Ø17.99) |
| TORX BIT TYPE | TWBT15 | TWH600 | D (Ø18.00-Ø19.99) |
| | TWBT20 | | E, F, G (Ø20.00-Ø25.99) |
| | TWBT25 | | H, I, J (Ø26.00-Ø31.99) |

Use the wing type or T-type wrench.
用翼形或T形扳手

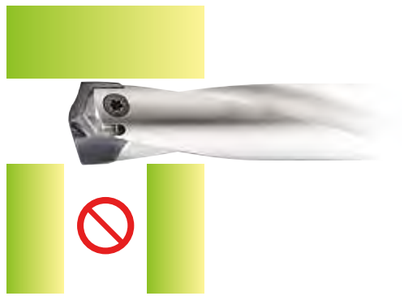
▶ Need to use appropriate wrenches and screws as indicated.
根据指示，需要使用合适的扳手和螺钉

▶ It's important to tighten up the screw properly.
适当的拧紧螺钉是很重要的

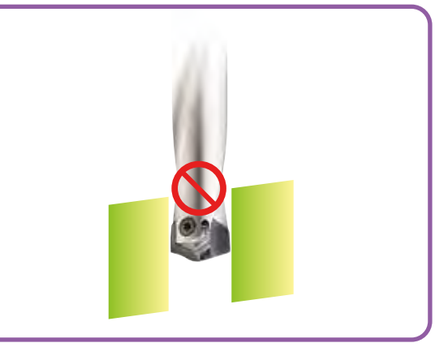


CARBIDE
HSS
i-ONE DRILLS
i-DREAM DRILLS
DREAM DRILLS -PRO
DREAM DRILLS -GENERAL
DREAM DRILLS -SOFT
DREAM DRILLS -HIGH FEED
DREAM DRILLS -FLAT BOTTOM
DREAM DRILLS -INOX
DREAM DRILLS -ALU
DREAM DRILLS -CFRP
DREAM DRILLS -MQL
DREAM DRILLS for HIGH HARDENED STEELS
GENERAL CARBIDE DRILLS
MULTI-1 DRILLS
GOLD-P DRILLS
SUPER-GP DRILLS
WORM PATTERN DRILLS
STRAIGHT SHANK DRILLS
TAPER SHANK DRILLS
NC-SPOTTING DRILLS
CENTER DRILLS
SPADE DRILLS
REAMERS
COUNTER SINKS
COUNTER BORES
TECHNICAL DATA

## CAUTION-NOT RECOMMENDABLE APPLICATION
## 注意-不推荐使用

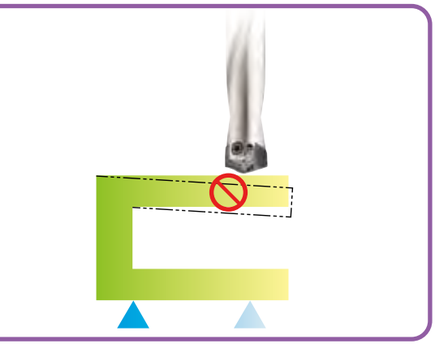


**Intersecting cross hole is bigger than the drill insert's Margin Length.**
交叉孔比钻头刀片的钻边长度大



**Material with slanting entrance and exit over 7 degrees. (If drilling 7 degrees or under slanting surface, reduce the feed about 30-50%)**
倾斜进入的材料和超过7度的出口(如果钻7度的孔或者在倾斜面下钻孔，可减少30~50%的进给)

**For drilling stacked plates, minimize the space between the plates.**
对于钻一堆整齐的薄板，薄板之间的间隙减小到最低
**The space between stacked plates can cause insert breakage or poor chip control.**
整齐的薄板间隔可导致刀片破损或铁屑不易排除



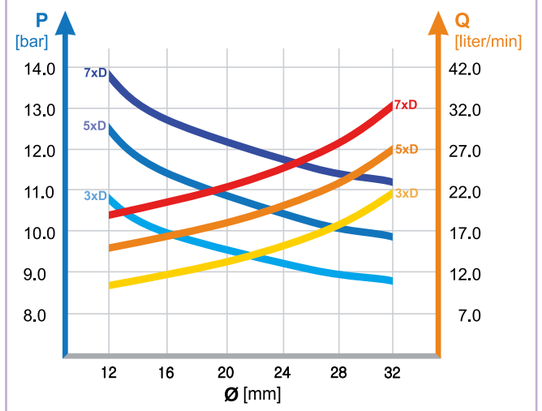
**The material needs to be fixtured securely before drilling.**
在钻削前材料需要进行安全固定







## RECOMMENDED COOLANT PRESSURE AND FLOW RATE ON VERTICAL DRILLING
## 在立式钻孔中, 推荐使用的油压和流速




- Recommended emulsion mix is 6 - 8%.
推荐使用6-8%的混合乳化液
- For Drilling into Stainless and High Strength steels, a mix of 10% is recommended.
钻孔加工不锈钢和高强度钢时, 推荐使用10%的混合乳化液
- For horizontal drilling, 30% reduction on the coolant pressure and flow rate is possible.
对于水平钻孔, 油压和流速降低30%是可能的
- Dry drilling is possible for 1-2xD drilling. But not recommended.
干式钻孔可以用于 1-2xD钻削，但是不推荐使用

## TROUBLE SHOOTING
## 问题解答

**1) Heavy flank wear / Fast flank wear**
- Reduce cutting speed
- Increase feed

**巨大磨损/快速磨损**
- 降低切削速度
- 增加进给量

**2) Chipping on cutting edge**
- Reduce feed
- Check the rigidity of spindle and chuck
- Rigid clamping of workpiece

**切削刃崩刃**
- 减少进给量
- 检测主轴和刀夹刚性
- 工作件的强性夹持

**3) Build-up on cutting edge**
- Increase cutting speed
- Use a coated insert

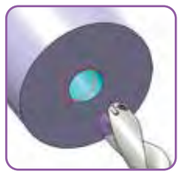
**刃边积瘤**
- 增加切削速度
- 使用涂层刀片

**4) Chipping or break down on outer corner**
- Reduce feed
- Rigid clamping of workpiece

**在转角处崩刃或破损**
- 减少进给量
- 增强工件夹持刚性

**5) Wear of land margin**
- Rigid clamping of workpiece
- Reduce cutting speed
- Increase coolant flow

**刀具刃带磨损**
- 增强工件夹持刚性
- 降低切削速度
- 增加油流量

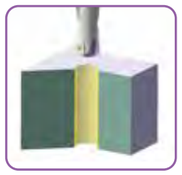


**6) Unsatisfactory positioning of the hole**
- Rigid clamping of workpiece
- Reduce feed during entrance or exit

**孔位置度不良**
- 增强工件夹持刚性
- 在进入和退出时降低速度

**7) Scratching on holder**
- Rigid clamping of workpiece
- Reduce feed
- Increase coolant flow

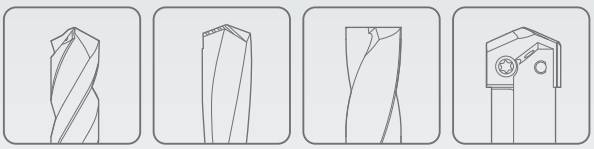
**刀体损伤**
- 增强工件夹持刚性
- 减少进给量
- 增加油流量



**8) Unsatisfactory surface finish**
- Rigid clamping of workpiece
- Increase coolant flow and pressure

**令人不满意的表面粗糙度**
- 增强工件夹持刚性
- 增加油流量和油压力

Global Cutting Tool Leader **YG-1**



# HOLEMAKING

Leading Through Innovation

# SOLID CARBIDE

# DREAM DRILLS - PRO

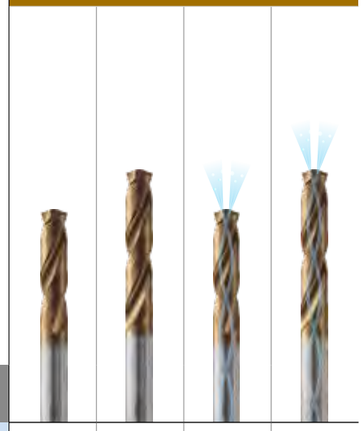
- For General Purpose (HRc30 to HRc50)
- Extremely high hardness and heat resistance due to YG-1 special Z-Coating technology

- 普通用途通常是HRc30 到 HRc50
- 采用YG-1特殊的 Z 涂层技术，具有超高的硬度和耐热性

# SELECTION GUIDE
## 选用指南

HOLEMAKING TOOLS

| SERIES 系列 | DGN523 | DGN526 | DGN506 | DGN508 |
|---|---|---|---|---|
| DRILLING DEPTH 钻销深度 | 3XD | 5XD | 3XD | 5XD |
| LENGTH 长度 | SHORT 短 | LONG 长 | SHORT 短 | LONG 长 |
| SIZE MIN 最小尺寸 | D3.0 | D1.0 | D3.0 | D1.0 |
| SIZE MAX 最大尺寸 | D20.0 | D20.0 | D20.0 | D20.0 |
| PAGE 页数 | A63 | A66 | A69 | A72 |
| SURFACE TREATMENT 表面处理 | Z-Coating | | | |



# SOLID CARBIDE DREAM DRILLS PRO

For General Purpose (HRc30 to HRc50)

Extremely high hardness and heat resistance due to YG-1 special Z-Coating technology

普通用途通常是HRc30 到 HRc50

采用YG-1特殊的 Z 涂层技术，具有超高的硬度和耐热性

Please visit 请访问 globalyg1.com/mat for material search 查看产品材料

◎ : Excellent (优秀) ○ : Good (良好)

Recommended cutting conditions (推荐加工条件) : p. A75

| ISO 公制 | VDI 3323 | Material Description 材料描述 | Composition / Structure / Heat Treatment 成分 / 组织 / 热处理 | | HB 布氏硬度 | HRc 硬度 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | About 0.15% C | Annealed | 125 | | | | | |
| | 2 | | About 0.45% C | Annealed | 190 | 13 | ◎ | ◎ | ◎ | ◎ |
| | 3 | | About 0.45% C | Quenched & Tempered | 250 | 25 | ◎ | ◎ | ◎ | ◎ |
| | 4 | | About 0.75% C | Annealed | 270 | 28 | ◎ | ◎ | ◎ | ◎ |
| | 5 | | About 0.75% C | Quenched & Tempered | 300 | 32 | ○ | ○ | ○ | ○ |
| | 6 | Low alloy steel | | Annealed | 180 | 10 | ◎ | ◎ | ◎ | ◎ |
| | 7 | | | Quenched & Tempered | 275 | 29 | ◎ | ◎ | ◎ | ◎ |
| | 8 | | | Quenched & Tempered | 300 | 32 | ○ | ○ | ○ | ○ |
| | 9 | | | Quenched & Tempered | 350 | 38 | ○ | ○ | ○ | ○ |
| | 10 | High alloyed steel, and tool steel | | Annealed | 200 | 15 | ◎ | ◎ | ◎ | ◎ |
| | 11 | | | Quenched & Tempered | 325 | 35 | ○ | ○ | ○ | ○ |
| M | 12 | Stainless steel | Ferritic / Martensitic | Annealed | 200 | 15 | ○ | ○ | ○ | ○ |
| | 13 | | Martensitic | Quenched & Tempered | 240 | 23 | ○ | ○ | ○ | ○ |
| | 14 | | Austenitic | | 180 | 10 | | | | |
| K | 15 | Grey cast iron | Pearlitic / ferritic | | 180 | 10 | ◎ | ◎ | ◎ | ◎ |
| | 16 | | Pearlitic (Martensitic) | | 260 | 26 | ○ | ○ | ○ | ○ |
| | 17 | Nodular cast iron | Ferritic | | 160 | 3 | ◎ | ◎ | ◎ | ◎ |
| | 18 | | Pearlitic | | 250 | 25 | ○ | ○ | ○ | ○ |
| | 19 | Malleable cast iron | Ferritic | | 130 | | ◎ | ◎ | ◎ | ◎ |
| | 20 | | Pearlitic | | 230 | 21 | ○ | ○ | ○ | ○ |
| N | 21 | Aluminum-wrought alloy | Not Curable | | 60 | | | | | |
| | 22 | | Curable | Hardened | 100 | | | | | |
| | 23 | Aluminum-cast, alloyed | ≤ 12% Si, Not Curable | | 75 | | | | | |
| | 24 | | ≤ 12% Si, Curable | Hardened | 90 | | | | | |
| | 25 | | > 12% Si, Not Curable | | 130 | | | | | |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | Cutting Alloys, PB>1% | | 110 | | | | | |
| | 27 | | CuZn, CuSnZn (Brass) | | 90 | | | | | |
| | 28 | | CuSn, lead-free copper and electrolytic copper | | 100 | | | | | |
| | 29 | Non Metallic Materials | Duroplastic, Fiber Reinforced Plastic | | | | | | | |
| | 30 | | Rubber, Wood, etc. | | | | | | | |
| S | 31 | Heat Resistant Super Alloys | Fe Based | Annealed | 200 | 15 | | | | |
| | 32 | | | Cured | 280 | 30 | | | | |
| | 33 | | Ni or Co Based | Annealed | 250 | 25 | | | | |
| | 34 | | | Cured | 350 | 38 | | | | |
| | 35 | | | Cast | 320 | 34 | | | | |
| | 36 | Titanium Alloys | Pure Titanium | | 400 Rm | | | | | |
| | 37 | | Alpha + Beta Alloys | Hardened | 1050 Rm | | | | | |
| H | 38 | Hardened steel | | Hardened | 550 | 55 | ○ | ○ | ○ | ○ |
| | 39 | | | Hardened | 630 | 60 | | | | |
| | 40 | Chilled Cast Iron | | Cast | 400 | 42 | | | | |
| | 41 | Hardened Cast Iron | | Hardened | 550 | 55 | | | | |





# DREAM DRILLS -PRO

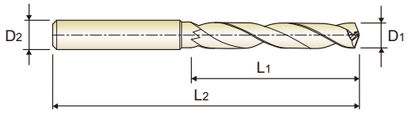
DGN523 SERIES

## CARBIDE, DREAM DRILLS PRO
## 硬质合金, 梦幻钻头-PRO

SHORT 短

- ▶ Drilling for Carbon Steels, Alloy Steels (HB225-325), Pre-hardened Steels (HRc30~50), Cast Iron
- ▶ Wave shape cutting edge to improve chip formation for low cutting force
- ▶ Helical thinning for low thrust, stable torque and good chip breakage
- ▶ Extremely high hardness and heat resistance due to YG-1 special Z-Coating technology

- ▶ 适合加工碳钢，合金钢 (HB225~325)，预硬钢 (HRc30~50)，铸铁
- ▶ 波形切削刃降低切削力，改善切屑形状
- ▶ 螺旋横刃处理，减下加工阻力，切削稳定，断屑良好
- ▶ 采用YG-1特殊的 Z 涂层技术，具有超高的硬度和耐热性




DIN 6537 | CARBIDE | 30° | h6 | m7 | 140° | p. A75

3 × D

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| SHRINK FIT HOLDER | D47 - 72 |
| HYDRAULIC CHUCK | D15 - 46 |
| ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. 型号 | Drill Diameter 刃径 | Shank Diameter 柄径 | Flute Length 槽长 | Overall Length 全长 | EDP No. 型号 | Drill Diameter 刃径 | Shank Diameter 柄径 | Flute Length 槽长 | Overall Length 全长 |
|---|---|---|---|---|---|---|---|---|---|
| Z-Coating | $D_1$ | $D_2$ | $L_1$ | $L_2$ | Z-Coating | $D_1$ | $D_2$ | $L_1$ | $L_2$ |
| DGN523030 | 3.0 | 6 | 20 | 62 | DGN523054 | 5.4 | 6 | 28 | 66 |
| DGN523031 | 3.1 | 6 | 20 | 62 | DGN523055 | 5.5 | 6 | 28 | 66 |
| DGN523032 | 3.2 | 6 | 20 | 62 | DGN523056 | 5.6 | 6 | 28 | 66 |
| DGN523033 | 3.3 | 6 | 20 | 62 | DGN523057 | 5.7 | 6 | 28 | 66 |
| DGN523034 | 3.4 | 6 | 20 | 62 | DGN523058 | 5.8 | 6 | 28 | 66 |
| DGN523035 | 3.5 | 6 | 20 | 62 | DGN523059 | 5.9 | 6 | 28 | 66 |
| DGN523036 | 3.6 | 6 | 20 | 62 | DGN523060 | 6.0 | 6 | 28 | 66 |
| DGN523037 | 3.7 | 6 | 20 | 62 | DGN523061 | 6.1 | 8 | 34 | 79 |
| DGN523038 | 3.8 | 6 | 24 | 66 | DGN523062 | 6.2 | 8 | 34 | 79 |
| DGN523039 | 3.9 | 6 | 24 | 66 | DGN523063 | 6.3 | 8 | 34 | 79 |
| DGN523040 | 4.0 | 6 | 24 | 66 | DGN523064 | 6.4 | 8 | 34 | 79 |
| DGN523041 | 4.1 | 6 | 24 | 66 | DGN523065 | 6.5 | 8 | 34 | 79 |
| DGN523042 | 4.2 | 6 | 24 | 66 | DGN523066 | 6.6 | 8 | 34 | 79 |
| DGN523043 | 4.3 | 6 | 24 | 66 | DGN523067 | 6.7 | 8 | 34 | 79 |
| DGN523044 | 4.4 | 6 | 24 | 66 | DGN523068 | 6.8 | 8 | 34 | 79 |
| DGN523045 | 4.5 | 6 | 24 | 66 | DGN523069 | 6.9 | 8 | 34 | 79 |
| DGN523046 | 4.6 | 6 | 24 | 66 | DGN523070 | 7.0 | 8 | 34 | 79 |
| DGN523047 | 4.7 | 6 | 24 | 66 | DGN523071 | 7.1 | 8 | 41 | 79 |
| DGN523048 | 4.8 | 6 | 28 | 66 | DGN523072 | 7.2 | 8 | 41 | 79 |
| DGN523049 | 4.9 | 6 | 28 | 66 | DGN523073 | 7.3 | 8 | 41 | 79 |
| DGN523050 | 5.0 | 6 | 28 | 66 | DGN523074 | 7.4 | 8 | 41 | 79 |
| DGN523051 | 5.1 | 6 | 28 | 66 | DGN523075 | 7.5 | 8 | 41 | 79 |
| DGN523052 | 5.2 | 6 | 28 | 66 | DGN523076 | 7.6 | 8 | 41 | 79 |
| DGN523053 | 5.3 | 6 | 28 | 66 | DGN523077 | 7.7 | 8 | 41 | 79 |

▶ Other shank types are available on your request. / 其他刀柄类型可根据客户需求提供.

▶ NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ○ | ○ | ◎ | ○ | ○ | ○ | | ◎ | ○ | ◎ | ○ | ◎ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | | | | | | | | | | | | | | | | | | ○ | | | |

# DREAM DRILLS -PRO

## DGN523 SERIES

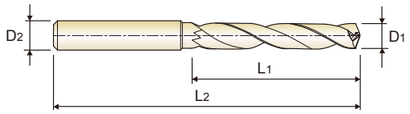
## CARBIDE, DREAM DRILLS PRO

## 硬质合金, 梦幻钻头-PRO

***SHORT***
**短**

- ▶ Drilling for Carbon Steels, Alloy Steels (HB225-325), Pre-hardened Steels (HRc30~50), Cast Iron
- ▶ Wave shape cutting edge to improve chip formation for low cutting force
- ▶ Helical thinning for low thrust, stable torque and good chip breakage
- ▶ Extremely high hardness and heat resistance due to YG-1 special Z-Coating technology

- ▶ 适合加工碳钢，合金钢 (HB225~325)，预硬钢 (HRc30~50)，铸铁
- ▶ 波形切削刃降低切削力，改善切屑形状
- ▶ 螺旋横刃处理，减下加工阻力，切削稳定，断屑良好
- ▶ 采用YG-1特殊的 Z 涂层技术，具有超高的硬度和耐热性




DIN 6537 | CARBIDE | 30° | h6 | m7 | 140° | p. A75

3 × D

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| SHRINK FIT HOLDER | D47 - 72 |
| HYDRAULIC CHUCK | D15 - 46 |
| ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. | Drill Diameter | Shank Diameter | Flute Length | Overall Length |
|---|---|---|---|---|
| 型号 | 刃径 | 柄径 | 槽长 | 全长 |
| Z-Coating | $D_1$ | $D_2$ | $L_1$ | $L_2$ |
| DGN523078 | 7.8 | 8 | 41 | 79 |
| DGN523079 | 7.9 | 8 | 41 | 79 |
| DGN523080 | 8.0 | 8 | 41 | 79 |
| DGN523081 | 8.1 | 10 | 47 | 89 |
| DGN523082 | 8.2 | 10 | 47 | 89 |
| DGN523083 | 8.3 | 10 | 47 | 89 |
| DGN523084 | 8.4 | 10 | 47 | 89 |
| DGN523085 | 8.5 | 10 | 47 | 89 |
| DGN523086 | 8.6 | 10 | 47 | 89 |
| DGN523087 | 8.7 | 10 | 47 | 89 |
| DGN523088 | 8.8 | 10 | 47 | 89 |
| DGN523089 | 8.9 | 10 | 47 | 89 |
| DGN523090 | 9.0 | 10 | 47 | 89 |
| DGN523091 | 9.1 | 10 | 47 | 89 |
| DGN523092 | 9.2 | 10 | 47 | 89 |
| DGN523093 | 9.3 | 10 | 47 | 89 |
| DGN523094 | 9.4 | 10 | 47 | 89 |
| DGN523095 | 9.5 | 10 | 47 | 89 |
| DGN523096 | 9.6 | 10 | 47 | 89 |
| DGN523097 | 9.7 | 10 | 47 | 89 |
| DGN523098 | 9.8 | 10 | 47 | 89 |
| DGN523099 | 9.9 | 10 | 47 | 89 |
| DGN523100 | 10.0 | 10 | 47 | 89 |
| DGN523101 | 10.1 | 12 | 55 | 102 |

| EDP No. | Drill Diameter | Shank Diameter | Flute Length | Overall Length |
|---|---|---|---|---|
| 型号 | 刃径 | 柄径 | 槽长 | 全长 |
| Z-Coating | $D_1$ | $D_2$ | $L_1$ | $L_2$ |
| DGN523102 | 10.2 | 12 | 55 | 102 |
| DGN523103 | 10.3 | 12 | 55 | 102 |
| DGN523104 | 10.4 | 12 | 55 | 102 |
| DGN523105 | 10.5 | 12 | 55 | 102 |
| DGN523106 | 10.6 | 12 | 55 | 102 |
| DGN523107 | 10.7 | 12 | 55 | 102 |
| DGN523108 | 10.8 | 12 | 55 | 102 |
| DGN523109 | 10.9 | 12 | 55 | 102 |
| DGN523110 | 11.0 | 12 | 55 | 102 |
| DGN523111 | 11.1 | 12 | 55 | 102 |
| DGN523112 | 11.2 | 12 | 55 | 102 |
| DGN523113 | 11.3 | 12 | 55 | 102 |
| DGN523114 | 11.4 | 12 | 55 | 102 |
| DGN523115 | 11.5 | 12 | 55 | 102 |
| DGN523116 | 11.6 | 12 | 55 | 102 |
| DGN523117 | 11.7 | 12 | 55 | 102 |
| DGN523118 | 11.8 | 12 | 55 | 102 |
| DGN523119 | 11.9 | 12 | 55 | 102 |
| DGN523120 | 12.0 | 12 | 55 | 102 |
| DGN523123 | 12.3 | 14 | 60 | 107 |
| DGN523125 | 12.5 | 14 | 60 | 107 |
| DGN523128 | 12.8 | 14 | 60 | 107 |
| DGN523130 | 13.0 | 14 | 60 | 107 |
| DGN523135 | 13.5 | 14 | 60 | 107 |

▶ Other shank types are available on your request. / 其他刀柄类型可根据客户需求提供.

▶ NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ○ | ○ | ◎ | ○ | ○ | ○ | | ◎ | ○ | ○ | ○ | ◎ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | | | | | | | | | | | | | | | | | | ○ | | | |



CARBIDE
HSS
i-ONE DRILLS
i-DREAM DRILLS
DREAM DRILLS -PRO
DREAM DRILLS -GENERAL
DREAM DRILLS -SOFT
DREAM DRILLS -HIGH FEED
DREAM DRILLS -FLAT BOTTOM
DREAM DRILLS -INOX
DREAM DRILLS -ALU
DREAM DRILLS -CFRP
DREAM DRILLS -MQL
DREAM DRILLS for HIGH HARDENED STEELS
GENERAL CARBIDE DRILLS
MULTI-1 DRILLS
GOLD-P DRILLS
SUPER-GP DRILLS
WORM PATTERN DRILLS
STRAIGHT SHANK DRILLS
TAPER SHANK DRILLS
NC-SPOTTING DRILLS
CENTER DRILLS
SPADE DRILLS
REAMERS
COUNTER SINKS
COUNTER BORES
TECHNICAL DATA

# DREAM DRILLS -PRO

## DGN523 SERIES

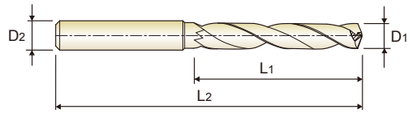
## CARBIDE, DREAM DRILLS PRO

## 硬质合金, 梦幻钻头-PRO

***SHORT***
**短**

- ▶ Drilling for Carbon Steels, Alloy Steels (HB225-325), Pre-hardened Steels (HRc30~50), Cast Iron
- ▶ Wave shape cutting edge to improve chip formation for low cutting force
- ▶ Helical thinning for low thrust, stable torque and good chip breakage
- ▶ Extremely high hardness and heat resistance due to YG-1 special Z-Coating technology

- ▶ 适合加工碳钢，合金钢 (HB225~325)，预硬钢 (HRc30~50)，铸铁
- ▶ 波形切削刃降低切削力，改善切屑形状
- ▶ 螺旋横刃处理，减下加工阻力，切削稳定，断屑良好
- ▶ 采用YG-1特殊的 Z 涂层技术，具有超高的硬度和耐热性




DIN 6537 | CARBIDE | 30° | h6 | m7 | 140° | p. A75

3 × D

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| SHRINK FIT HOLDER | D47 - 72 |
| HYDRAULIC CHUCK | D15 - 46 |
| ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. | Drill Diameter | Shank Diameter | Flute Length | Overall Length |
|---|---|---|---|---|
| 型号 | 刃径 | 柄径 | 槽长 | 全长 |
| Z-Coating | $D_1$ | $D_2$ | $L_1$ | $L_2$ |
| DGN523138 | 13.8 | 14 | 60 | 107 |
| DGN523140 | 14.0 | 14 | 60 | 107 |
| DGN523145 | 14.5 | 16 | 65 | 115 |
| DGN523148 | 14.8 | 16 | 65 | 115 |
| DGN523150 | 15.0 | 16 | 65 | 115 |
| DGN523155 | 15.5 | 16 | 65 | 115 |
| DGN523158 | 15.8 | 16 | 65 | 115 |
| DGN523160 | 16.0 | 16 | 65 | 115 |
| DGN523165 | 16.5 | 18 | 73 | 123 |
| DGN523168 | 16.8 | 18 | 73 | 123 |

| EDP No. | Drill Diameter | Shank Diameter | Flute Length | Overall Length |
|---|---|---|---|---|
| 型号 | 刃径 | 柄径 | 槽长 | 全长 |
| Z-Coating | $D_1$ | $D_2$ | $L_1$ | $L_2$ |
| DGN523170 | 17.0 | 18 | 73 | 123 |
| DGN523175 | 17.5 | 18 | 73 | 123 |
| DGN523178 | 17.8 | 18 | 73 | 123 |
| DGN523180 | 18.0 | 18 | 73 | 123 |
| DGN523185 | 18.5 | 20 | 79 | 131 |
| DGN523190 | 19.0 | 20 | 79 | 131 |
| DGN523195 | 19.5 | 20 | 79 | 131 |
| DGN523198 | 19.8 | 20 | 79 | 131 |
| DGN523200 | 20.0 | 20 | 79 | 131 |

▶ Other shank types are available on your request. / 其他刀柄类型可根据客户需求提供.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ○ | ○ | ◎ | ○ | ○ | ○ | | ◎ | ○ | ○ | ○ | ◎ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | | | | | | | | | | | | | | | | | | ○ | | | |

# DREAM DRILLS -PRO

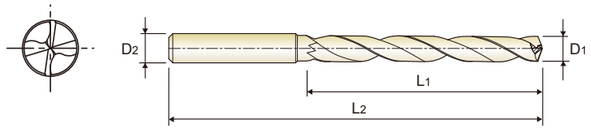
## DGN526 SERIES

## CARBIDE, DREAM DRILLS PRO
## 硬质合金, 梦幻钻头-PRO

*LONG*
长

- ▶ Drilling for Carbon Steels, Alloy Steels (HB225-325), Pre-hardened Steels (HRc30~50), Cast Iron
- ▶ Wave shape cutting edge to improve chip formation for low cutting force
- ▶ Helical thinning for low thrust, stable torque and good chip breakage
- ▶ Extremely high hardness and heat resistance due to YG-1 special Z-Coating technology

- ▶ 适合加工碳钢，合金钢 (HB225~325)，预硬钢 (HRc30~50)，铸铁
- ▶ 波形切削刃降低切削力，改善切屑形状
- ▶ 螺旋横刃处理，减下加工阻力，切削稳定，断屑良好
- ▶ 采用YG-1特殊的 Z 涂层技术，具有超高的硬度和耐热性




DIN 6537 | CARBIDE | 30° | h6 | m7 | 140° | p. A75

5 × D

| Recommended ToolHolder | Plain Shank | Page |
|---|---|---|
| | SHRINK FIT HOLDER | D47 - 72 |
| | HYDRAULIC CHUCK | D15 - 46 |
| | ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. | Drill Diameter | Shank Diameter | Flute Length | Overall Length |
|---|---|---|---|---|
| 型号 | 刃径 | 柄径 | 槽长 | 全长 |
| Z-Coating | $D_1$ | $D_2$ | $L_1$ | $L_2$ |
| DGN526010 | 1.0 | 3 | 8 | 55 |
| DGN526011 | 1.1 | 3 | 12 | 55 |
| DGN526012 | 1.2 | 3 | 12 | 55 |
| DGN526013 | 1.3 | 3 | 12 | 55 |
| DGN526014 | 1.4 | 3 | 12 | 55 |
| DGN526015 | 1.5 | 3 | 16 | 55 |
| DGN526016 | 1.6 | 3 | 16 | 55 |
| DGN526017 | 1.7 | 3 | 16 | 55 |
| DGN526018 | 1.8 | 3 | 16 | 55 |
| DGN526019 | 1.9 | 3 | 16 | 55 |
| DGN526020 | 2.0 | 4 | 21 | 57 |
| DGN526021 | 2.1 | 4 | 21 | 57 |
| DGN526022 | 2.2 | 4 | 21 | 57 |
| DGN526023 | 2.3 | 4 | 21 | 57 |
| DGN526024 | 2.4 | 4 | 21 | 57 |
| DGN526025 | 2.5 | 4 | 21 | 57 |
| DGN526026 | 2.6 | 4 | 21 | 57 |
| DGN526027 | 2.7 | 4 | 21 | 57 |
| DGN526028 | 2.8 | 4 | 21 | 57 |
| DGN526029 | 2.9 | 4 | 21 | 57 |
| DGN526030 | 3.0 | 6 | 28 | 66 |
| DGN526031 | 3.1 | 6 | 28 | 66 |
| DGN526032 | 3.2 | 6 | 28 | 66 |
| DGN526033 | 3.3 | 6 | 28 | 66 |

| EDP No. | Drill Diameter | Shank Diameter | Flute Length | Overall Length |
|---|---|---|---|---|
| 型号 | 刃径 | 柄径 | 槽长 | 全长 |
| Z-Coating | $D_1$ | $D_2$ | $L_1$ | $L_2$ |
| DGN526034 | 3.4 | 6 | 28 | 66 |
| DGN526035 | 3.5 | 6 | 28 | 66 |
| DGN526036 | 3.6 | 6 | 28 | 66 |
| DGN526037 | 3.7 | 6 | 28 | 66 |
| DGN526038 | 3.8 | 6 | 36 | 74 |
| DGN526039 | 3.9 | 6 | 36 | 74 |
| DGN526040 | 4.0 | 6 | 36 | 74 |
| DGN526041 | 4.1 | 6 | 36 | 74 |
| DGN526042 | 4.2 | 6 | 36 | 74 |
| DGN526043 | 4.3 | 6 | 36 | 74 |
| DGN526044 | 4.4 | 6 | 36 | 74 |
| DGN526045 | 4.5 | 6 | 36 | 74 |
| DGN526046 | 4.6 | 6 | 36 | 74 |
| DGN526047 | 4.7 | 6 | 36 | 74 |
| DGN526048 | 4.8 | 6 | 44 | 82 |
| DGN526049 | 4.9 | 6 | 44 | 82 |
| DGN526050 | 5.0 | 6 | 44 | 82 |
| DGN526051 | 5.1 | 6 | 44 | 82 |
| DGN526052 | 5.2 | 6 | 44 | 82 |
| DGN526053 | 5.3 | 6 | 44 | 82 |
| DGN526054 | 5.4 | 6 | 44 | 82 |
| DGN526055 | 5.5 | 6 | 44 | 82 |
| DGN526056 | 5.6 | 6 | 44 | 82 |
| DGN526057 | 5.7 | 6 | 44 | 82 |

▶ Other shank types are available on your request. / 其他刀柄类型可根据客户需求提供.

▶ NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ○ | ○ | ◎ | ○ | ○ | ○ | | ◎ | ○ | ○ | ◎ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | | | | | | | | | | | | | | | | | | ○ | | | |



CARBIDE
HSS
i-ONE DRILLS
i-DREAM DRILLS
DREAM DRILLS -PRO
DREAM DRILLS -GENERAL
DREAM DRILLS -SOFT
DREAM DRILLS -HIGH FEED
DREAM DRILLS -FLAT BOTTOM
DREAM DRILLS -INOX
DREAM DRILLS -ALU
DREAM DRILLS -CFRP
DREAM DRILLS -MQL
DREAM DRILLS for HIGH HARDENED STEELS
GENERAL CARBIDE DRILLS
MULTI-1 DRILLS
GOLD-P DRILLS
SUPER-GP DRILLS
WORM PATTERN DRILLS
STRAIGHT SHANK DRILLS
TAPER SHANK DRILLS
NC-SPOTTING DRILLS
CENTER DRILLS
SPADE DRILLS
REAMERS
COUNTER SINKS
COUNTER BORES
TECHNICAL DATA

# DREAM DRILLS -PRO

## DGN526 SERIES

## CARBIDE, DREAM DRILLS PRO
## 硬质合金, 梦幻钻头-PRO

*LONG*
长

- ▶ Drilling for Carbon Steels, Alloy Steels (HB225-325), Pre-hardened Steels (HRc30~50), Cast Iron
- ▶ Wave shape cutting edge to improve chip formation for low cutting force
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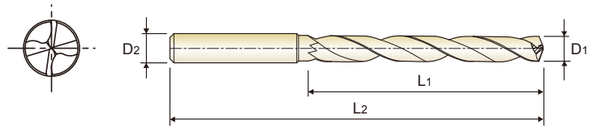
- ▶ Extremely high hardness and heat resistance due to YG-1 special Z-Coating technology

- ▶ 适合加工碳钢，合金钢 (HB225~325)，预硬钢 (HRc30~50)，铸铁
- ▶ 波形切削刃降低切削力，改善切屑形状
- ▶ 螺旋横刃处理，减下加工阻力，切削稳定，断屑良好
- ▶ 采用YG-1特殊的 Z 涂层技术，具有超高的硬度和耐热性




DIN 6537 | CARBIDE | 30° | h6 | m7 | 140° | p. A75

5 × D

| Recommended ToolHolder | Plain Shank | Page |
|---|---|---|
| | SHRINK FIT HOLDER | D47 - 72 |
| | HYDRAULIC CHUCK | D15 - 46 |
| | ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. | Drill Diameter | Shank Diameter | Flute Length | Overall Length |
|---|---|---|---|---|
| 型号 | 刃径 | 柄径 | 槽长 | 全长 |
| Z-Coating | $D_1$ | $D_2$ | $L_1$ | $L_2$ |
| DGN526058 | 5.8 | 6 | 44 | 82 |
| DGN526059 | 5.9 | 6 | 44 | 82 |
| DGN526060 | 6.0 | 6 | 44 | 82 |
| DGN526061 | 6.1 | 8 | 53 | 91 |
| DGN526062 | 6.2 | 8 | 53 | 91 |
| DGN526063 | 6.3 | 8 | 53 | 91 |
| DGN526064 | 6.4 | 8 | 53 | 91 |
| DGN526065 | 6.5 | 8 | 53 | 91 |
| DGN526066 | 6.6 | 8 | 53 | 91 |
| DGN526067 | 6.7 | 8 | 53 | 91 |
| DGN526068 | 6.8 | 8 | 53 | 91 |
| DGN526069 | 6.9 | 8 | 53 | 91 |
| DGN526070 | 7.0 | 8 | 53 | 91 |
| DGN526071 | 7.1 | 8 | 53 | 91 |
| DGN526072 | 7.2 | 8 | 53 | 91 |
| DGN526073 | 7.3 | 8 | 53 | 91 |
| DGN526074 | 7.4 | 8 | 53 | 91 |
| DGN526075 | 7.5 | 8 | 53 | 91 |
| DGN526076 | 7.6 | 8 | 53 | 91 |
| DGN526077 | 7.7 | 8 | 53 | 91 |
| DGN526078 | 7.8 | 8 | 53 | 91 |
| DGN526079 | 7.9 | 8 | 53 | 91 |
| DGN526080 | 8.0 | 8 | 53 | 91 |
| DGN526081 | 8.1 | 10 | 61 | 103 |

| EDP No. | Drill Diameter | Shank Diameter | Flute Length | Overall Length |
|---|---|---|---|---|
| 型号 | 刃径 | 柄径 | 槽长 | 全长 |
| Z-Coating | $D_1$ | $D_2$ | $L_1$ | $L_2$ |
| DGN526082 | 8.2 | 10 | 61 | 103 |
| DGN526083 | 8.3 | 10 | 61 | 103 |
| DGN526084 | 8.4 | 10 | 61 | 103 |
| DGN526085 | 8.5 | 10 | 61 | 103 |
| DGN526086 | 8.6 | 10 | 61 | 103 |
| DGN526087 | 8.7 | 10 | 61 | 103 |
| DGN526088 | 8.8 | 10 | 61 | 103 |
| DGN526089 | 8.9 | 10 | 61 | 103 |
| DGN526090 | 9.0 | 10 | 61 | 103 |
| DGN526091 | 9.1 | 10 | 61 | 103 |
| DGN526092 | 9.2 | 10 | 61 | 103 |
| DGN526093 | 9.3 | 10 | 61 | 103 |
| DGN526094 | 9.4 | 10 | 61 | 103 |
| DGN526095 | 9.5 | 10 | 61 | 103 |
| DGN526096 | 9.6 | 10 | 61 | 103 |
| DGN526097 | 9.7 | 10 | 61 | 103 |
| DGN526098 | 9.8 | 10 | 61 | 103 |
| DGN526099 | 9.9 | 10 | 61 | 103 |
| DGN526100 | 10.0 | 10 | 61 | 103 |
| DGN526101 | 10.1 | 12 | 71 | 118 |
| DGN526102 | 10.2 | 12 | 71 | 118 |
| DGN526103 | 10.3 | 12 | 71 | 118 |
| DGN526104 | 10.4 | 12 | 71 | 118 |
| DGN526105 | 10.5 | 12 | 71 | 118 |

▶ Other shank types are available on your request. / 其他刀柄类型可根据客户需求提供.

▶ NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ○ | ○ | ◎ | ○ | ○ | ○ | | ◎ | ○ | ○ | ◎ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | | | | | | | | | | | | | | | | | | ○ | | | |

# DREAM DRILLS -PRO

## DGN526 SERIES

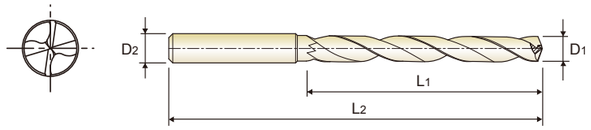
## CARBIDE, DREAM DRILLS PRO

## 硬质合金, 梦幻钻头-PRO

*LONG* 长

- ▶ Drilling for Carbon Steels, Alloy Steels (HB225-325), Pre-hardened Steels (HRc30~50), Cast Iron
- ▶ Wave shape cutting edge to improve chip formation for low cutting force
- ▶ Helical thinning for low thrust, stable torque and good chip breakage
- ▶ Extremely high hardness and heat resistance due to YG-1 special Z-Coating technology

- ▶ 适合加工碳钢，合金钢 (HB225~325)，预硬钢 (HRc30~50)，铸铁
- ▶ 波形切削刃降低切削力，改善切屑形状
- ▶ 螺旋横刃处理，减下加工阻力，切削稳定，断屑良好
- ▶ 采用YG-1特殊的 Z 涂层技术，具有超高的硬度和耐热性




DIN 6537 | CARBIDE | 30° | h6 | m7 | 140° | p. A75

5 × D

| Recommended ToolHolder | Plain Shank | Page |
|---|---|---|
| | SHRINK FIT HOLDER | D47 - 72 |
| | HYDRAULIC CHUCK | D15 - 46 |
| | ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. | Drill Diameter | Shank Diameter | Flute Length | Overall Length |
|---|---|---|---|---|
| 型号 | 刃径 | 柄径 | 槽长 | 全长 |
| Z-Coating | $D_1$ | $D_2$ | $L_1$ | $L_2$ |
| DGN526106 | 10.6 | 12 | 71 | 118 |
| DGN526107 | 10.7 | 12 | 71 | 118 |
| DGN526108 | 10.8 | 12 | 71 | 118 |
| DGN526109 | 10.9 | 12 | 71 | 118 |
| DGN526110 | 11.0 | 12 | 71 | 118 |
| DGN526111 | 11.1 | 12 | 71 | 118 |
| DGN526112 | 11.2 | 12 | 71 | 118 |
| DGN526113 | 11.3 | 12 | 71 | 118 |
| DGN526114 | 11.4 | 12 | 71 | 118 |
| DGN526115 | 11.5 | 12 | 71 | 118 |
| DGN526116 | 11.6 | 12 | 71 | 118 |
| DGN526117 | 11.7 | 12 | 71 | 118 |
| DGN526118 | 11.8 | 12 | 71 | 118 |
| DGN526119 | 11.9 | 12 | 71 | 118 |
| DGN526120 | 12.0 | 12 | 71 | 118 |
| DGN526122 | 12.2 | 14 | 77 | 124 |
| DGN526125 | 12.5 | 14 | 77 | 124 |
| DGN526128 | 12.8 | 14 | 77 | 124 |
| DGN526130 | 13.0 | 14 | 77 | 124 |
| DGN526135 | 13.5 | 14 | 77 | 124 |
| DGN526138 | 13.8 | 14 | 77 | 124 |

| EDP No. | Drill Diameter | Shank Diameter | Flute Length | Overall Length |
|---|---|---|---|---|
| 型号 | 刃径 | 柄径 | 槽长 | 全长 |
| Z-Coating | $D_1$ | $D_2$ | $L_1$ | $L_2$ |
| DGN526140 | 14.0 | 14 | 77 | 124 |
| DGN526142 | 14.2 | 16 | 83 | 133 |
| DGN526145 | 14.5 | 16 | 83 | 133 |
| DGN526148 | 14.8 | 16 | 83 | 133 |
| DGN526150 | 15.0 | 16 | 83 | 133 |
| DGN526151 | 15.1 | 16 | 83 | 133 |
| DGN526152 | 15.2 | 16 | 83 | 133 |
| DGN526155 | 15.5 | 16 | 83 | 133 |
| DGN526158 | 15.8 | 16 | 83 | 133 |
| DGN526160 | 16.0 | 16 | 83 | 133 |
| DGN526165 | 16.5 | 18 | 93 | 143 |
| DGN526170 | 17.0 | 18 | 93 | 143 |
| DGN526173 | 17.3 | 18 | 93 | 143 |
| DGN526175 | 17.5 | 18 | 93 | 143 |
| DGN526177 | 17.7 | 18 | 93 | 143 |
| DGN526180 | 18.0 | 18 | 93 | 143 |
| DGN526185 | 18.5 | 20 | 101 | 153 |
| DGN526190 | 19.0 | 20 | 101 | 153 |
| DGN526193 | 19.3 | 20 | 101 | 153 |
| DGN526195 | 19.5 | 20 | 101 | 153 |
| DGN526200 | 20.0 | 20 | 101 | 153 |

▶ Other shank types are available on your request. / 其他刀柄类型可根据客户需求提供.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ○ | ○ | ◎ | ○ | ○ | ○ | | ◎ | ○ | ◎ | ○ | ◎ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | | | | | | | | | | | | | | | | | | ○ | | | |



# DREAM DRILLS -PRO

## DGN506 SERIES

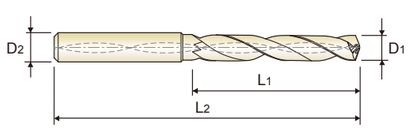
## CARBIDE, DREAM DRILLS PRO with COOLANT HOLES

## 硬质合金, 梦幻钻头-PRO 带内冷孔

*SHORT* 短

- ▶ Drilling for Carbon Steels, Alloy Steels (HB225-325), Pre-hardened Steels (HRc30~50), Cast Iron
- ▶ Wave shape cutting edge to improve chip formation for low cutting force
- ▶ Helical thinning for low thrust, stable torque and good chip breakage
- ▶ Extremely high hardness and heat resistance due to YG-1 special Z-Coating technology

- ▶ 适合加工碳钢，合金钢 (HB225~325)，预硬钢 (HRc30~50)，铸铁
- ▶ 波形切削刃降低切削力，改善切屑形状
- ▶ 螺旋横刃处理，减下加工阻力，切削稳定，断屑良好
- ▶ 采用YG-1特殊的 Z 涂层技术，具有超高的硬度和耐热性




DIN 6537 | CARBIDE | 30° | h6 | m7 | 140° | 20 bar | p. A76

3 × D

| Recommended ToolHolder | Plain Shank | Page |
|---|---|---|
| | SHRINK FIT HOLDER | D47 - 72 |
| | HYDRAULIC CHUCK | D15 - 46 |
| | ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. | Drill Diameter | Shank Diameter | Flute Length | Overall Length |
|---|---|---|---|---|
| 型号 | 刃径 | 柄径 | 槽长 | 全长 |
| Z-Coating | $D_1$ | $D_2$ | $L_1$ | $L_2$ |
| DGN506030 | 3.0 | 6 | 20 | 62 |
| DGN506031 | 3.1 | 6 | 20 | 62 |
| DGN506032 | 3.2 | 6 | 20 | 62 |
| DGN506033 | 3.3 | 6 | 20 | 62 |
| DGN506034 | 3.4 | 6 | 20 | 62 |
| DGN506035 | 3.5 | 6 | 20 | 62 |
| DGN506036 | 3.6 | 6 | 20 | 62 |
| DGN506037 | 3.7 | 6 | 20 | 62 |
| DGN506038 | 3.8 | 6 | 24 | 66 |
| DGN506039 | 3.9 | 6 | 24 | 66 |
| DGN506040 | 4.0 | 6 | 24 | 66 |
| DGN506041 | 4.1 | 6 | 24 | 66 |
| DGN506042 | 4.2 | 6 | 24 | 66 |
| DGN506043 | 4.3 | 6 | 24 | 66 |
| DGN506044 | 4.4 | 6 | 24 | 66 |
| DGN506045 | 4.5 | 6 | 24 | 66 |
| DGN506046 | 4.6 | 6 | 24 | 66 |
| DGN506047 | 4.7 | 6 | 24 | 66 |
| DGN506048 | 4.8 | 6 | 28 | 66 |
| DGN506049 | 4.9 | 6 | 28 | 66 |
| DGN506050 | 5.0 | 6 | 28 | 66 |
| DGN506051 | 5.1 | 6 | 28 | 66 |
| DGN506052 | 5.2 | 6 | 28 | 66 |
| DGN506053 | 5.3 | 6 | 28 | 66 |

| EDP No. | Drill Diameter | Shank Diameter | Flute Length | Overall Length |
|---|---|---|---|---|
| 型号 | 刃径 | 柄径 | 槽长 | 全长 |
| Z-Coating | $D_1$ | $D_2$ | $L_1$ | $L_2$ |
| DGN506054 | 5.4 | 6 | 28 | 66 |
| DGN506055 | 5.5 | 6 | 28 | 66 |
| DGN506056 | 5.6 | 6 | 28 | 66 |
| DGN506057 | 5.7 | 6 | 28 | 66 |
| DGN506058 | 5.8 | 6 | 28 | 66 |
| DGN506059 | 5.9 | 6 | 28 | 66 |
| DGN506060 | 6.0 | 6 | 28 | 66 |
| DGN506061 | 6.1 | 8 | 34 | 79 |
| DGN506062 | 6.2 | 8 | 34 | 79 |
| DGN506063 | 6.3 | 8 | 34 | 79 |
| DGN506064 | 6.4 | 8 | 34 | 79 |
| DGN506065 | 6.5 | 8 | 34 | 79 |
| DGN506066 | 6.6 | 8 | 34 | 79 |
| DGN506067 | 6.7 | 8 | 34 | 79 |
| DGN506068 | 6.8 | 8 | 34 | 79 |
| DGN506069 | 6.9 | 8 | 34 | 79 |
| DGN506070 | 7.0 | 8 | 34 | 79 |
| DGN506071 | 7.1 | 8 | 41 | 79 |
| DGN506072 | 7.2 | 8 | 41 | 79 |
| DGN506073 | 7.3 | 8 | 41 | 79 |
| DGN506074 | 7.4 | 8 | 41 | 79 |
| DGN506075 | 7.5 | 8 | 41 | 79 |
| DGN506076 | 7.6 | 8 | 41 | 79 |
| DGN506077 | 7.7 | 8 | 41 | 79 |

▶ Other shank types are available on your request. / 其他刀柄类型可根据客户需求提供.

▶ NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ○ | ○ | ◎ | ○ | ○ | ○ | | ◎ | ○ | ◎ | ○ | ◎ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | | | | | | | | | | | | | | | | | | ○ | | | |

# DREAM DRILLS -PRO

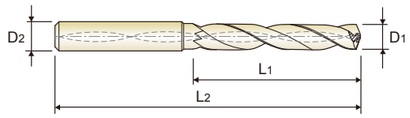
## DGN506 SERIES

## CARBIDE, DREAM DRILLS PRO with COOLANT HOLES — SHORT

## 硬质合金, 梦幻钻头-PRO 带内冷孔 — 短

- ▶ Drilling for Carbon Steels, Alloy Steels (HB225-325), Pre-hardened Steels (HRc30~50), Cast Iron
- ▶ Wave shape cutting edge to improve chip formation for low cutting force
- ▶ Helical thinning for low thrust, stable torque and good chip breakage
- ▶ Extremely high hardness and heat resistance due to YG-1 special Z-Coating technology

- ▶ 适合加工碳钢，合金钢 (HB225~325)，预硬钢 (HRc30~50)，铸铁
- ▶ 波形切削刃降低切削力，改善切屑形状
- ▶ 螺旋横刃处理，减下加工阻力，切削稳定，断屑良好
- ▶ 采用YG-1特殊的 Z 涂层技术，具有超高的硬度和耐热性




DIN 6537 | CARBIDE | 30° | h6 | m7 | 140° | 20 bar | p. A76 | 3 × D

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| SHRINK FIT HOLDER | D47 - 72 |
| HYDRAULIC CHUCK | D15 - 46 |
| ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. | Drill Diameter | Shank Diameter | Flute Length | Overall Length |
|---|---|---|---|---|
| 型号 | 刃径 | 柄径 | 槽长 | 全长 |
| Z-Coating | $D_1$ | $D_2$ | $L_1$ | $L_2$ |
| DGN506078 | 7.8 | 8 | 41 | 79 |
| DGN506079 | 7.9 | 8 | 41 | 79 |
| DGN506080 | 8.0 | 8 | 41 | 79 |
| DGN506081 | 8.1 | 10 | 47 | 89 |
| DGN506082 | 8.2 | 10 | 47 | 89 |
| DGN506083 | 8.3 | 10 | 47 | 89 |
| DGN506084 | 8.4 | 10 | 47 | 89 |
| DGN506085 | 8.5 | 10 | 47 | 89 |
| DGN506086 | 8.6 | 10 | 47 | 89 |
| DGN506087 | 8.7 | 10 | 47 | 89 |
| DGN506088 | 8.8 | 10 | 47 | 89 |
| DGN506089 | 8.9 | 10 | 47 | 89 |
| DGN506090 | 9.0 | 10 | 47 | 89 |
| DGN506091 | 9.1 | 10 | 47 | 89 |
| DGN506092 | 9.2 | 10 | 47 | 89 |
| DGN506093 | 9.3 | 10 | 47 | 89 |
| DGN506094 | 9.4 | 10 | 47 | 89 |
| DGN506095 | 9.5 | 10 | 47 | 89 |
| DGN506096 | 9.6 | 10 | 47 | 89 |
| DGN506097 | 9.7 | 10 | 47 | 89 |
| DGN506098 | 9.8 | 10 | 47 | 89 |
| DGN506099 | 9.9 | 10 | 47 | 89 |
| DGN506100 | 10.0 | 10 | 47 | 89 |
| DGN506101 | 10.1 | 12 | 55 | 102 |

| EDP No. | Drill Diameter | Shank Diameter | Flute Length | Overall Length |
|---|---|---|---|---|
| 型号 | 刃径 | 柄径 | 槽长 | 全长 |
| Z-Coating | $D_1$ | $D_2$ | $L_1$ | $L_2$ |
| DGN506102 | 10.2 | 12 | 55 | 102 |
| DGN506103 | 10.3 | 12 | 55 | 102 |
| DGN506104 | 10.4 | 12 | 55 | 102 |
| DGN506105 | 10.5 | 12 | 55 | 102 |
| DGN506106 | 10.6 | 12 | 55 | 102 |
| DGN506107 | 10.7 | 12 | 55 | 102 |
| DGN506108 | 10.8 | 12 | 55 | 102 |
| DGN506109 | 10.9 | 12 | 55 | 102 |
| DGN506110 | 11.0 | 12 | 55 | 102 |
| DGN506111 | 11.1 | 12 | 55 | 102 |
| DGN506112 | 11.2 | 12 | 55 | 102 |
| DGN506113 | 11.3 | 12 | 55 | 102 |
| DGN506114 | 11.4 | 12 | 55 | 102 |
| DGN506115 | 11.5 | 12 | 55 | 102 |
| DGN506116 | 11.6 | 12 | 55 | 102 |
| DGN506117 | 11.7 | 12 | 55 | 102 |
| DGN506118 | 11.8 | 12 | 55 | 102 |
| DGN506119 | 11.9 | 12 | 55 | 102 |
| DGN506120 | 12.0 | 12 | 55 | 102 |
| DGN506125 | 12.5 | 14 | 60 | 107 |
| DGN506130 | 13.0 | 14 | 60 | 107 |
| DGN506135 | 13.5 | 14 | 60 | 107 |
| DGN506140 | 14.0 | 14 | 60 | 107 |
| DGN506145 | 14.5 | 16 | 65 | 115 |

▶ Other shank types are available on your request. / 其他刀柄类型可根据客户需求提供.

▶ NEXT PAGE 下页

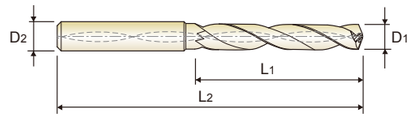
◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ○ | ○ | ◎ | ○ | ○ | ○ | | ◎ | ○ | ◎ | ○ | ◎ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | | | | | | | | | | | | | | | | | | ○ | | | |



DREAM DRILLS -PRO
DGN506 SERIES
CARBIDE, DREAM DRILLS PRO with COOLANT HOLES — SHORT
硬质合金, 梦幻钻头-PRO 带内冷孔 — 短
▶ Drilling for Carbon Steels, Alloy Steels (HB225-325), Pre-hardened Steels (HRc30~50), Cast Iron
▶ Wave shape cutting edge to improve chip formation for low cutting force
▶ Helical thinning for low thrust, stable torque and good chip breakage
▶ Extremely high hardness and heat resistance due to YG-1 special Z-Coating technology
▶ 适合加工碳钢，合金钢 (HB225~325)，预硬钢 (HRc30~50)，铸铁
▶ 波形切削刃降低切削力，改善切屑形状
▶ 螺旋横刃处理，减下加工阻力，切削稳定，断屑良好
▶ 采用YG-1特殊的 Z 涂层技术，具有超高的硬度和耐热性




DIN 6537 | CARBIDE | 30° | h6 | m7 | 140° | 20 bar | p. A76 | 3 × D
Recommended ToolHolder
Plain Shank | Page
SHRINK FIT HOLDER | D47 - 72
HYDRAULIC CHUCK | D15 - 46
ER COLLET CHUCK | D73 - 115
Unit(单位) : mm

| EDP No. | Drill Diameter | Shank Diameter | Flute Length | Overall Length |
|---|---|---|---|---|
| 型号 | 刃径 | 柄径 | 槽长 | 全长 |
| Z-Coating | $D_1$ | $D_2$ | $L_1$ | $L_2$ |
| DGN506150 | 15.0 | 16 | 65 | 115 |
| DGN506155 | 15.5 | 16 | 65 | 115 |
| DGN506160 | 16.0 | 16 | 65 | 115 |
| DGN506165 | 16.5 | 18 | 73 | 123 |
| DGN506170 | 17.0 | 18 | 73 | 123 |
| DGN506175 | 17.5 | 18 | 73 | 123 |

| EDP No. | Drill Diameter | Shank Diameter | Flute Length | Overall Length |
|---|---|---|---|---|
| 型号 | 刃径 | 柄径 | 槽长 | 全长 |
| Z-Coating | $D_1$ | $D_2$ | $L_1$ | $L_2$ |
| DGN506180 | 18.0 | 18 | 73 | 123 |
| DGN506185 | 18.5 | 20 | 79 | 131 |
| DGN506190 | 19.0 | 20 | 79 | 131 |
| DGN506195 | 19.5 | 20 | 79 | 131 |
| DGN506200 | 20.0 | 20 | 79 | 131 |

▶ Other shank types are available on your request. / 其他刀柄类型可根据客户需求提供.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ○ | ○ | ◎ | ○ | ○ | ○ | | ◎ | ○ | ◎ | ○ | ◎ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | | | | | | | | | | | | | | | | | | ○ | | | |

# DREAM DRILLS -PRO

## DGN508 SERIES

## CARBIDE, DREAM DRILLS PRO with COOLANT HOLES — LONG

## 硬质合金, 梦幻钻头-PRO 带内冷孔 — 长

- ▶ Drilling for Carbon Steels, Alloy Steels (HB225-325), Pre-hardened Steels (HRc30~50), Cast Iron
- ▶ Wave shape cutting edge to improve chip formation for low cutting force
- ▶ Helical thinning for low thrust, stable torque and good chip breakage
- ▶ Extremely high hardness and heat resistance due to YG-1 special Z-Coating technology

- ▶ 适合加工碳钢，合金钢 (HB225~325)，预硬钢 (HRc30~50)，铸铁
- ▶ 波形切削刃降低切削力，改善切屑形状
- ▶ 螺旋横刃处理，减下加工阻力，切削稳定，断屑良好
- ▶ 采用YG-1特殊的 Z 涂层技术，具有超高的硬度和耐热性

DIN 6537 | CARBIDE | 30° | h6 | m7 | 140° | 20 bar | p. A76 | 5 × D

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| ◎ | SHRINK FIT HOLDER | D47 - 72 |
| ◎ | HYDRAULIC CHUCK | D15 - 46 |
| ○ | ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. | Drill Diameter | Shank Diameter | Flute Length | Overall Length |
|---|---|---|---|---|
| 型号 | 刃径 | 柄径 | 槽长 | 全长 |
| Z-Coating | $D_1$ | $D_2$ | $L_1$ | $L_2$ |
| DGN508010 | 1.0 | 3 | 8 | 55 |
| DGN508011 | 1.1 | 3 | 12 | 55 |
| DGN508012 | 1.2 | 3 | 12 | 55 |
| DGN508013 | 1.3 | 3 | 12 | 55 |
| DGN508014 | 1.4 | 3 | 12 | 55 |
| DGN508015 | 1.5 | 3 | 16 | 55 |
| DGN508016 | 1.6 | 3 | 16 | 55 |
| DGN508017 | 1.7 | 3 | 16 | 55 |
| DGN508018 | 1.8 | 3 | 16 | 55 |
| DGN508019 | 1.9 | 3 | 16 | 55 |
| DGN508020 | 2.0 | 4 | 21 | 57 |
| DGN508021 | 2.1 | 4 | 21 | 57 |
| DGN508022 | 2.2 | 4 | 21 | 57 |
| DGN508023 | 2.3 | 4 | 21 | 57 |
| DGN508024 | 2.4 | 4 | 21 | 57 |
| DGN508025 | 2.5 | 4 | 21 | 57 |
| DGN508026 | 2.6 | 4 | 21 | 57 |
| DGN508027 | 2.7 | 4 | 21 | 57 |
| DGN508028 | 2.8 | 4 | 21 | 57 |
| DGN508029 | 2.9 | 4 | 21 | 57 |
| DGN508030 | 3.0 | 6 | 28 | 66 |
| DGN508031 | 3.1 | 6 | 28 | 66 |
| DGN508032 | 3.2 | 6 | 28 | 66 |
| DGN508033 | 3.3 | 6 | 28 | 66 |

| EDP No. | Drill Diameter | Shank Diameter | Flute Length | Overall Length |
|---|---|---|---|---|
| 型号 | 刃径 | 柄径 | 槽长 | 全长 |
| Z-Coating | $D_1$ | $D_2$ | $L_1$ | $L_2$ |
| DGN508034 | 3.4 | 6 | 28 | 66 |
| DGN508035 | 3.5 | 6 | 28 | 66 |
| DGN508036 | 3.6 | 6 | 28 | 66 |
| DGN508037 | 3.7 | 6 | 28 | 66 |
| DGN508038 | 3.8 | 6 | 36 | 74 |
| DGN508039 | 3.9 | 6 | 36 | 74 |
| DGN508040 | 4.0 | 6 | 36 | 74 |
| DGN508041 | 4.1 | 6 | 36 | 74 |
| DGN508042 | 4.2 | 6 | 36 | 74 |
| DGN508043 | 4.3 | 6 | 36 | 74 |
| DGN508044 | 4.4 | 6 | 36 | 74 |
| DGN508045 | 4.5 | 6 | 36 | 74 |
| DGN508046 | 4.6 | 6 | 36 | 74 |
| DGN508047 | 4.7 | 6 | 36 | 74 |
| DGN508048 | 4.8 | 6 | 44 | 82 |
| DGN508049 | 4.9 | 6 | 44 | 82 |
| DGN508050 | 5.0 | 6 | 44 | 82 |
| DGN508051 | 5.1 | 6 | 44 | 82 |
| DGN508052 | 5.2 | 6 | 44 | 82 |
| DGN508053 | 5.3 | 6 | 44 | 82 |
| DGN508054 | 5.4 | 6 | 44 | 82 |
| DGN508055 | 5.5 | 6 | 44 | 82 |
| DGN508056 | 5.6 | 6 | 44 | 82 |
| DGN508057 | 5.7 | 6 | 44 | 82 |

▶ Other shank types are available on your request. / 其他刀柄类型可根据客户需求提供.
▶ NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ○ | ○ | ◎ | ○ | ○ | ○ | | ◎ | ○ | ◎ | ○ | ◎ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | | | | | | | | | | | | | | | | | | ○ | | | |



DREAM DRILLS -PRO
DGN508 SERIES
CARBIDE, DREAM DRILLS PRO with COOLANT HOLES — LONG
硬质合金, 梦幻钻头-PRO 带内冷孔 — 长
▶ Drilling for Carbon Steels, Alloy Steels (HB225-325), Pre-hardened Steels (HRc30~50), Cast Iron
▶ Wave shape cutting edge to improve chip formation for low cutting force
▶ Helical thinning for low thrust, stable torque and good chip breakage
▶ Extremely high hardness and heat resistance due to YG-1 special Z-Coating technology
▶ 适合加工碳钢，合金钢 (HB225~325)，预硬钢 (HRc30~50)，铸铁
▶ 波形切削刃降低切削力，改善切屑形状
▶ 螺旋横刃处理，减下加工阻力，切削稳定，断屑良好
▶ 采用YG-1特殊的 Z 涂层技术，具有超高的硬度和耐热性

DIN 6537 | CARBIDE | 30° | h6 | m7 | 140° | 20 bar | p. A76 | 5 × D
Recommended ToolHolder
Plain Shank — Page
◎ SHRINK FIT HOLDER D47 - 72
◎ HYDRAULIC CHUCK D15 - 46
○ ER COLLET CHUCK D73 - 115
Unit(单位) : mm

| EDP No. | Drill Diameter | Shank Diameter | Flute Length | Overall Length |
|---|---|---|---|---|
| 型号 | 刃径 | 柄径 | 槽长 | 全长 |
| Z-Coating | $D_1$ | $D_2$ | $L_1$ | $L_2$ |
| DGN508058 | 5.8 | 6 | 44 | 82 |
| DGN508059 | 5.9 | 6 | 44 | 82 |
| DGN508060 | 6.0 | 6 | 44 | 82 |
| DGN508061 | 6.1 | 8 | 53 | 91 |
| DGN508062 | 6.2 | 8 | 53 | 91 |
| DGN508063 | 6.3 | 8 | 53 | 91 |
| DGN508064 | 6.4 | 8 | 53 | 91 |
| DGN508065 | 6.5 | 8 | 53 | 91 |
| DGN508066 | 6.6 | 8 | 53 | 91 |
| DGN508067 | 6.7 | 8 | 53 | 91 |
| DGN508068 | 6.8 | 8 | 53 | 91 |
| DGN508069 | 6.9 | 8 | 53 | 91 |
| DGN508070 | 7.0 | 8 | 53 | 91 |
| DGN508071 | 7.1 | 8 | 53 | 91 |
| DGN508072 | 7.2 | 8 | 53 | 91 |
| DGN508073 | 7.3 | 8 | 53 | 91 |
| DGN508074 | 7.4 | 8 | 53 | 91 |
| DGN508075 | 7.5 | 8 | 53 | 91 |
| DGN508076 | 7.6 | 8 | 53 | 91 |
| DGN508077 | 7.7 | 8 | 53 | 91 |
| DGN508078 | 7.8 | 8 | 53 | 91 |
| DGN508079 | 7.9 | 8 | 53 | 91 |
| DGN508080 | 8.0 | 8 | 53 | 91 |
| DGN508081 | 8.1 | 10 | 61 | 103 |

| EDP No. | Drill Diameter | Shank Diameter | Flute Length | Overall Length |
|---|---|---|---|---|
| 型号 | 刃径 | 柄径 | 槽长 | 全长 |
| Z-Coating | $D_1$ | $D_2$ | $L_1$ | $L_2$ |
| DGN508082 | 8.2 | 10 | 61 | 103 |
| DGN508083 | 8.3 | 10 | 61 | 103 |
| DGN508084 | 8.4 | 10 | 61 | 103 |
| DGN508085 | 8.5 | 10 | 61 | 103 |
| DGN508086 | 8.6 | 10 | 61 | 103 |
| DGN508087 | 8.7 | 10 | 61 | 103 |
| DGN508088 | 8.8 | 10 | 61 | 103 |
| DGN508089 | 8.9 | 10 | 61 | 103 |
| DGN508090 | 9.0 | 10 | 61 | 103 |
| DGN508091 | 9.1 | 10 | 61 | 103 |
| DGN508092 | 9.2 | 10 | 61 | 103 |
| DGN508093 | 9.3 | 10 | 61 | 103 |
| DGN508094 | 9.4 | 10 | 61 | 103 |
| DGN508095 | 9.5 | 10 | 61 | 103 |
| DGN508096 | 9.6 | 10 | 61 | 103 |
| DGN508097 | 9.7 | 10 | 61 | 103 |
| DGN508098 | 9.8 | 10 | 61 | 103 |
| DGN508099 | 9.9 | 10 | 61 | 103 |
| DGN508100 | 10.0 | 10 | 61 | 103 |
| DGN508101 | 10.1 | 12 | 71 | 118 |
| DGN508102 | 10.2 | 12 | 71 | 118 |
| DGN508103 | 10.3 | 12 | 71 | 118 |
| DGN508104 | 10.4 | 12 | 71 | 118 |
| DGN508105 | 10.5 | 12 | 71 | 118 |

▶ Other shank types are available on your request. / 其他刀柄类型可根据客户需求提供.
▶ NEXT PAGE 下页
◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ○ | ○ | ◎ | ○ | ○ | ○ | | ◎ | ○ | ◎ | ○ | ◎ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | | | | | | | | | | | | | | | | | | ○ | | | |

# DREAM DRILLS -PRO

## DGN508 SERIES

## CARBIDE, DREAM DRILLS PRO with COOLANT HOLES — LONG

## 硬质合金, 梦幻钻头-PRO 带内冷孔 — 长

- ▶ Drilling for Carbon Steels, Alloy Steels (HB225-325), Pre-hardened Steels (HRc30~50), Cast Iron
- ▶ Wave shape cutting edge to improve chip formation for low cutting force
- ▶ Helical thinning for low thrust, stable torque and good chip breakage
- ▶ Extremely high hardness and heat resistance due to YG-1 special Z-Coating technology

- ▶ 适合加工碳钢，合金钢 (HB225~325)，预硬钢 (HRc30~50)，铸铁
- ▶ 波形切削刃降低切削力，改善切屑形状
- ▶ 螺旋横刃处理，减下加工阻力，切削稳定，断屑良好
- ▶ 采用YG-1特殊的 Z 涂层技术，具有超高的硬度和耐热性

DIN 6537 | CARBIDE | 30° | h6 | m7 | 140° | 20 bar | p. A76

5 × D

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| SHRINK FIT HOLDER | D47 - 72 |
| HYDRAULIC CHUCK | D15 - 46 |
| ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. | Drill Diameter | Shank Diameter | Flute Length | Overall Length |
|---|---|---|---|---|
| 型号 | 刃径 | 柄径 | 槽长 | 全长 |
| Z-Coating | $D_1$ | $D_2$ | $L_1$ | $L_2$ |
| DGN508106 | 10.6 | 12 | 71 | 118 |
| DGN508107 | 10.7 | 12 | 71 | 118 |
| DGN508108 | 10.8 | 12 | 71 | 118 |
| DGN508109 | 10.9 | 12 | 71 | 118 |
| DGN508110 | 11.0 | 12 | 71 | 118 |
| DGN508111 | 11.1 | 12 | 71 | 118 |
| DGN508112 | 11.2 | 12 | 71 | 118 |
| DGN508113 | 11.3 | 12 | 71 | 118 |
| DGN508114 | 11.4 | 12 | 71 | 118 |
| DGN508115 | 11.5 | 12 | 71 | 118 |
| DGN508116 | 11.6 | 12 | 71 | 118 |
| DGN508117 | 11.7 | 12 | 71 | 118 |
| DGN508118 | 11.8 | 12 | 71 | 118 |
| DGN508119 | 11.9 | 12 | 71 | 118 |
| DGN508120 | 12.0 | 12 | 71 | 118 |
| DGN508125 | 12.5 | 14 | 77 | 124 |

| EDP No. | Drill Diameter | Shank Diameter | Flute Length | Overall Length |
|---|---|---|---|---|
| 型号 | 刃径 | 柄径 | 槽长 | 全长 |
| Z-Coating | $D_1$ | $D_2$ | $L_1$ | $L_2$ |
| DGN508130 | 13.0 | 14 | 77 | 124 |
| DGN508135 | 13.5 | 14 | 77 | 124 |
| DGN508140 | 14.0 | 14 | 77 | 124 |
| DGN508145 | 14.5 | 16 | 83 | 133 |
| DGN508150 | 15.0 | 16 | 83 | 133 |
| DGN508155 | 15.5 | 16 | 83 | 133 |
| DGN508160 | 16.0 | 16 | 83 | 133 |
| DGN508165 | 16.5 | 18 | 93 | 143 |
| DGN508170 | 17.0 | 18 | 93 | 143 |
| DGN508175 | 17.5 | 18 | 93 | 143 |
| DGN508180 | 18.0 | 18 | 93 | 143 |
| DGN508185 | 18.5 | 20 | 101 | 153 |
| DGN508190 | 19.0 | 20 | 101 | 153 |
| DGN508195 | 19.5 | 20 | 101 | 153 |
| DGN508200 | 20.0 | 20 | 101 | 153 |

▶ Other shank types are available on your request. / 其他刀柄类型可根据客户需求提供.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ○ | ○ | ◎ | ○ | ○ | ○ | | ◎ | ○ | ◎ | ○ | ◎ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | | | | | | | | | | | | | | | | | | ○ | | | |





# DREAM DRILLS -PRO

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工条件

## DGN523, DGN526 SERIES — without COOLANT HOLES
## 不带内冷孔

RPM (转速) = (rev./min.)
FEED (进给) = (mm/rev.)

| ISO 公制 | VDI 3323 | Material Description 材料描述 | Vc 钻削速度 (m/min) | Parameter 参数 | Drill Diameter 刃径 (mm) 1.0 | 2.0 | Vc 钻削速度 (m/min) | Parameter 参数 | Drill Diameter 刃径 (mm) 3.0 | 4.0 | 5.0 | 6.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 2 | Non-alloy steel | 85 | RPM | 27060 | 13530 | 120 | RPM | 12730 | 9550 | 7640 | 6370 |
| | | | | FEED | 0.03-0.05 | 0.05-0.07 | | FEED | 0.06-0.12 | 0.08-0.14 | 0.14-0.20 | 0.16-0.22 |
| | 3 | | 85 | RPM | 27060 | 13530 | 120 | RPM | 12730 | 9550 | 7640 | 6370 |
| | | | | FEED | 0.03-0.05 | 0.05-0.07 | | FEED | 0.06-0.12 | 0.08-0.14 | 0.14-0.20 | 0.16-0.22 |
| | 4 | | 85 | RPM | 27060 | 13530 | 120 | RPM | 12730 | 9550 | 7640 | 6370 |
| | | | | FEED | 0.03-0.05 | 0.05-0.07 | | FEED | 0.04-0.10 | 0.07-0.13 | 0.10-0.16 | 0.12-0.18 |
| | 5 | | 75 | RPM | 23870 | 11940 | 95 | RPM | 10080 | 7560 | 6050 | 5040 |
| | | | | FEED | 0.03-0.05 | 0.05-0.07 | | FEED | 0.04-0.10 | 0.07-0.13 | 0.10-0.16 | 0.12-0.18 |
| | 6 | Low alloy steel | 85 | RPM | 27060 | 13530 | 120 | RPM | 12730 | 9550 | 7640 | 6370 |
| | | | | FEED | 0.03-0.05 | 0.05-0.07 | | FEED | 0.06-0.12 | 0.08-0.14 | 0.14-0.20 | 0.16-0.22 |
| | 7 | | 75 | RPM | 23870 | 11940 | 95 | RPM | 10080 | 7560 | 6050 | 5040 |
| | | | | FEED | 0.03-0.05 | 0.05-0.07 | | FEED | 0.06-0.12 | 0.08-0.14 | 0.10-0.20 | 0.12-0.24 |
| | 8 | | 75 | RPM | 23870 | 11940 | 95 | RPM | 10080 | 7560 | 6050 | 5040 |
| | | | | FEED | 0.02-0.04 | 0.03-0.05 | | FEED | 0.04-0.10 | 0.07-0.13 | 0.10-0.16 | 0.12-0.18 |
| | 9 | | 36 | RPM | 11460 | 5730 | 50 | RPM | 5310 | 3980 | 3180 | 2650 |
| | | | | FEED | 0.02-0.04 | 0.03-0.05 | | FEED | 0.03-0.08 | 0.05-0.11 | 0.08-0.14 | 0.10-0.16 |
| | 10 | High alloyed steel, and tool steel | 60 | RPM | 19100 | 9550 | 80 | RPM | 8490 | 6370 | 5090 | 4240 |
| | | | | FEED | 0.03-0.05 | 0.05-0.07 | | FEED | 0.04-0.10 | 0.07-0.13 | 0.10-0.16 | 0.12-0.18 |
| | 11 | | 35 | RPM | 11140 | 5570 | 45 | RPM | 4770 | 3580 | 2860 | 2390 |
| | | | | FEED | 0.02-0.04 | 0.03-0.05 | | FEED | 0.03-0.08 | 0.05-0.11 | 0.08-0.14 | 0.10-0.16 |
| M | 12 | Stainless steel | 60 | RPM | 19100 | 9550 | 85 | RPM | 9020 | 6760 | 5410 | 4510 |
| | | | | FEED | 0.03-0.05 | 0.05-0.07 | | FEED | 0.06-0.12 | 0.08-0.14 | 0.14-0.20 | 0.16-0.22 |
| | 13 | | 45 | RPM | 14320 | 7160 | 55 | RPM | 5840 | 4380 | 3500 | 2920 |
| | | | | FEED | 0.02-0.04 | 0.03-0.05 | | FEED | 0.04-0.10 | 0.07-0.13 | 0.10-0.16 | 0.12-0.18 |
| K | 15 | Grey cast iron | 85 | RPM | 27060 | 13530 | 120 | RPM | 12730 | 9550 | 7640 | 6370 |
| | | | | FEED | 0.04-0.06 | 0.04-0.06 | | FEED | 0.08-0.14 | 0.12-0.18 | 0.15-0.22 | 0.20-0.26 |
| | 16 | | 80 | RPM | 25460 | 12730 | 95 | RPM | 10080 | 7560 | 6050 | 5040 |
| | | | | FEED | 0.04-0.06 | 0.04-0.06 | | FEED | 0.06-0.12 | 0.08-0.14 | 0.14-0.20 | 0.16-0.22 |
| | 17 | Nodular cast iron | 85 | RPM | 27060 | 13530 | 120 | RPM | 12730 | 9550 | 7640 | 6370 |
| | | | | FEED | 0.04-0.06 | 0.04-0.06 | | FEED | 0.08-0.14 | 0.12-0.18 | 0.15-0.22 | 0.20-0.26 |
| | 18 | | 60 | RPM | 19100 | 9550 | 85 | RPM | 9020 | 6760 | 5410 | 4510 |
| | | | | FEED | 0.04-0.06 | 0.04-0.06 | | FEED | 0.06-0.12 | 0.08-0.14 | 0.14-0.20 | 0.16-0.22 |
| | 19 | Malleable cast iron | 75 | RPM | 23870 | 11940 | 95 | RPM | 10080 | 7560 | 6050 | 5040 |
| | | | | FEED | 0.04-0.06 | 0.04-0.06 | | FEED | 0.08-0.14 | 0.12-0.18 | 0.15-0.22 | 0.20-0.26 |
| | 20 | | 60 | RPM | 19100 | 9550 | 85 | RPM | 9020 | 6760 | 5410 | 4510 |
| | | | | FEED | 0.03-0.05 | 0.05-0.07 | | FEED | 0.06-0.12 | 0.08-0.14 | 0.14-0.20 | 0.16-0.22 |
| H | 55 | Hardened steel | 25 | RPM | 7960 | 3980 | 30 | RPM | 3180 | 2390 | 1910 | 1590 |
| | | | | FEED | 0.01-0.02 | 0.01-0.03 | | FEED | 0.01-0.03 | 0.01-0.04 | 0.02-0.05 | 0.03-0.06 |

| ISO 公制 | VDI 3323 | Material Description 材料描述 | Vc 钻削速度 (m/min) | Parameter 参数 | Drill Diameter 刃径 (mm) 8.0 | 10.0 | 12.0 | 14.0 | 16.0 | 18.0 | 20.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 2 | Non-alloy steel | 120 | RPM | 4770 | 3820 | 3180 | 2730 | 2390 | 2120 | 1910 |
| | | | | FEED | 0.18-0.24 | 0.19-0.27 | 0.21-0.29 | 0.23-0.31 | 0.25-0.33 | 0.28-0.38 | 0.30-0.40 |
| | 3 | | 120 | RPM | 4770 | 3820 | 3180 | 2730 | 2390 | 2120 | 1910 |
| | | | | FEED | 0.18-0.24 | 0.19-0.27 | 0.21-0.29 | 0.23-0.31 | 0.25-0.33 | 0.28-0.38 | 0.30-0.40 |
| | 4 | | 120 | RPM | 4770 | 3820 | 3180 | 2730 | 2390 | 2120 | 1910 |
| | | | | FEED | 0.14-0.20 | 0.15-0.23 | 0.17-0.25 | 0.18-0.26 | 0.19-0.27 | 0.20-0.30 | 0.22-0.32 |
| | 5 | | 95 | RPM | 3780 | 3020 | 2520 | 2160 | 1890 | 1680 | 1510 |
| | | | | FEED | 0.14-0.20 | 0.15-0.23 | 0.17-0.25 | 0.18-0.26 | 0.19-0.27 | 0.20-0.30 | 0.22-0.32 |
| | 6 | Low alloy steel | 120 | RPM | 4770 | 3820 | 3180 | 2730 | 2390 | 2120 | 1910 |
| | | | | FEED | 0.18-0.24 | 0.19-0.27 | 0.21-0.29 | 0.23-0.31 | 0.25-0.33 | 0.28-0.38 | 0.30-0.40 |
| | 7 | | 95 | RPM | 3780 | 3020 | 2520 | 2160 | 1890 | 1680 | 1510 |
| | | | | FEED | 0.16-0.28 | 0.19-0.27 | 0.21-0.29 | 0.23-0.31 | 0.25-0.33 | 0.28-0.38 | 0.30-0.40 |
| | 8 | | 95 | RPM | 3780 | 3020 | 2520 | 2160 | 1890 | 1680 | 1510 |
| | | | | FEED | 0.14-0.20 | 0.15-0.23 | 0.17-0.25 | 0.18-0.26 | 0.19-0.27 | 0.20-0.30 | 0.22-0.32 |
| | 9 | | 50 | RPM | 1990 | 1590 | 1330 | 1140 | 990 | 880 | 800 |
| | | | | FEED | 0.12-0.18 | 0.13-0.19 | 0.14-0.20 | 0.15-0.21 | 0.16-0.22 | 0.17-0.25 | 0.18-0.28 |
| | 10 | High alloyed steel, and tool steel | 80 | RPM | 3180 | 2550 | 2120 | 1820 | 1590 | 1410 | 1270 |
| | | | | FEED | 0.14-0.20 | 0.15-0.23 | 0.17-0.25 | 0.18-0.26 | 0.19-0.27 | 0.20-0.30 | 0.22-0.32 |
| | 11 | | 45 | RPM | 1790 | 1430 | 1190 | 1020 | 900 | 800 | 720 |
| | | | | FEED | 0.12-0.18 | 0.13-0.19 | 0.14-0.20 | 0.15-0.21 | 0.16-0.22 | 0.17-0.25 | 0.18-0.28 |
| M | 12 | Stainless steel | 85 | RPM | 3380 | 2710 | 2250 | 1930 | 1690 | 1500 | 1350 |
| | | | | FEED | 0.18-0.24 | 0.19-0.27 | 0.21-0.29 | 0.23-0.31 | 0.25-0.33 | 0.28-0.38 | 0.30-0.40 |
| | 13 | | 55 | RPM | 2190 | 1750 | 1460 | 1250 | 1090 | 970 | 880 |
| | | | | FEED | 0.14-0.20 | 0.15-0.23 | 0.17-0.25 | 0.18-0.26 | 0.19-0.27 | 0.20-0.30 | 0.22-0.32 |
| K | 15 | Grey cast iron | 120 | RPM | 4770 | 3820 | 3180 | 2730 | 2390 | 2120 | 1910 |
| | | | | FEED | 0.22-0.28 | 0.25-0.33 | 0.27-0.35 | 0.29-0.37 | 0.31-0.39 | 0.32-0.42 | 0.34-0.44 |
| | 16 | | 95 | RPM | 3780 | 3020 | 2520 | 2160 | 1890 | 1680 | 1510 |
| | | | | FEED | 0.18-0.24 | 0.19-0.27 | 0.21-0.29 | 0.23-0.31 | 0.25-0.33 | 0.28-0.38 | 0.30-0.40 |
| | 17 | Nodular cast iron | 120 | RPM | 4770 | 3820 | 3180 | 2730 | 2390 | 2120 | 1910 |
| | | | | FEED | 0.22-0.28 | 0.25-0.33 | 0.27-0.35 | 0.29-0.37 | 0.31-0.39 | 0.32-0.42 | 0.34-0.44 |
| | 18 | | 85 | RPM | 3380 | 2710 | 2250 | 1930 | 1690 | 1500 | 1350 |
| | | | | FEED | 0.18-0.24 | 0.19-0.27 | 0.21-0.29 | 0.23-0.31 | 0.25-0.33 | 0.28-0.38 | 0.30-0.40 |
| | 19 | Malleable cast iron | 95 | RPM | 3780 | 3020 | 2520 | 2160 | 1890 | 1680 | 1510 |
| | | | | FEED | 0.22-0.28 | 0.25-0.33 | 0.27-0.35 | 0.29-0.37 | 0.31-0.39 | 0.32-0.42 | 0.34-0.44 |
| | 20 | | 85 | RPM | 3380 | 2710 | 2250 | 1930 | 1690 | 1500 | 1350 |
| | | | | FEED | 0.18-0.24 | 0.19-0.27 | 0.21-0.29 | 0.23-0.31 | 0.25-0.33 | 0.28-0.38 | 0.30-0.40 |
| H | 55 | Hardened steel | 30 | RPM | 1190 | 950 | 800 | 680 | 600 | 530 | 480 |
| | | | | FEED | 0.03-0.06 | 0.04-0.07 | 0.04-0.08 | 0.05-0.09 | 0.05-0.09 | 0.05-0.10 | 0.05-0.10 |

▶ Recommend to reduce the feed rate as following 推荐减少进给量如下
**Feed 进给 100%** : DGN523(3×D), DGN526(5×D)

# DREAM DRILLS -PRO

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工条件

## DGN506, DGN508 SERIES with COOLANT HOLES
## 带内冷孔

RPM (转速) = (rev./min.)
FEED (进给) = (mm/rev.)

| ISO 公制 | VDI 3323 | Material Description 材料描述 | Vc 钻削速度 (m/min) | Parameter 参数 | Drill Diameter 刃径 (mm) 1.0 | 2.0 | Vc 钻削速度 (m/min) | Parameter 参数 | Drill Diameter 刃径 (mm) 3.0 | 4.0 | 5.0 | 6.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 2 | Non-alloy steel | 95 | RPM | 30240 | 15120 | 130 | RPM | 13790 | 10350 | 8280 | 6900 |
| | | | | FEED | 0.03-0.05 | 0.05-0.07 | | FEED | 0.06-0.12 | 0.08-0.14 | 0.14-0.20 | 0.16-0.22 |
| | 3 | | 95 | RPM | 30240 | 15120 | 130 | RPM | 13790 | 10350 | 8280 | 6900 |
| | | | | FEED | 0.03-0.05 | 0.05-0.07 | | FEED | 0.06-0.12 | 0.08-0.14 | 0.14-0.20 | 0.16-0.22 |
| | 4 | | 95 | RPM | 30240 | 15120 | 130 | RPM | 13790 | 10350 | 8280 | 6900 |
| | | | | FEED | 0.03-0.05 | 0.05-0.07 | | FEED | 0.04-0.10 | 0.07-0.13 | 0.10-0.16 | 0.12-0.18 |
| | 5 | | 85 | RPM | 27060 | 13530 | 110 | RPM | 11670 | 8750 | 7000 | 5840 |
| | | | | FEED | 0.03-0.05 | 0.05-0.07 | | FEED | 0.04-0.10 | 0.07-0.13 | 0.10-0.16 | 0.12-0.18 |
| | 6 | Low alloy steel | 95 | RPM | 30240 | 15120 | 130 | RPM | 13790 | 10350 | 8280 | 6900 |
| | | | | FEED | 0.03-0.05 | 0.05-0.07 | | FEED | 0.06-0.12 | 0.08-0.14 | 0.14-0.20 | 0.16-0.22 |
| | 7 | | 85 | RPM | 27060 | 13530 | 110 | RPM | 11670 | 8750 | 7000 | 5840 |
| | | | | FEED | 0.03-0.05 | 0.05-0.07 | | FEED | 0.06-0.12 | 0.08-0.14 | 0.10-0.20 | 0.12-0.24 |
| | 8 | | 95 | RPM | 30240 | 15120 | 110 | RPM | 11670 | 8750 | 7000 | 5840 |
| | | | | FEED | 0.02-0.04 | 0.03-0.05 | | FEED | 0.04-0.10 | 0.07-0.13 | 0.10-0.16 | 0.12-0.18 |
| | 9 | | 50 | RPM | 15920 | 7960 | 60 | RPM | 6370 | 4770 | 3820 | 3180 |
| | | | | FEED | 0.02-0.04 | 0.03-0.05 | | FEED | 0.03-0.08 | 0.05-0.11 | 0.08-0.14 | 0.10-0.16 |
| | 10 | High alloyed steel, and tool steel | 70 | RPM | 22280 | 11140 | 90 | RPM | 9550 | 7160 | 5730 | 4770 |
| | | | | FEED | 0.03-0.05 | 0.05-0.07 | | FEED | 0.04-0.10 | 0.07-0.13 | 0.10-0.16 | 0.12-0.18 |
| | 11 | | 45 | RPM | 14320 | 7160 | 50 | RPM | 5310 | 3980 | 3180 | 2650 |
| | | | | FEED | 0.02-0.04 | 0.03-0.05 | | FEED | 0.03-0.08 | 0.05-0.11 | 0.08-0.14 | 0.10-0.16 |
| M | 12 | Stainless steel | 75 | RPM | 23870 | 11940 | 95 | RPM | 10080 | 7560 | 6050 | 5040 |
| | | | | FEED | 0.03-0.05 | 0.05-0.07 | | FEED | 0.06-0.12 | 0.08-0.14 | 0.14-0.20 | 0.16-0.22 |
| | 13 | | 55 | RPM | 17510 | 8750 | 65 | RPM | 6900 | 5170 | 4140 | 3450 |
| | | | | FEED | 0.02-0.04 | 0.03-0.05 | | FEED | 0.04-0.10 | 0.07-0.13 | 0.10-0.16 | 0.12-0.18 |
| K | 15 | Grey cast iron | 95 | RPM | 30240 | 15120 | 130 | RPM | 13790 | 10350 | 8280 | 6900 |
| | | | | FEED | 0.04-0.06 | 0.04-0.06 | | FEED | 0.08-0.14 | 0.12-0.18 | 0.15-0.22 | 0.20-0.26 |
| | 16 | | 90 | RPM | 28650 | 14320 | 115 | RPM | 12200 | 9150 | 7320 | 6100 |
| | | | | FEED | 0.04-0.06 | 0.04-0.06 | | FEED | 0.06-0.12 | 0.08-0.14 | 0.14-0.20 | 0.16-0.22 |
| | 17 | Nodular cast iron | 110 | RPM | 35010 | 17510 | 145 | RPM | 15380 | 11540 | 9230 | 7690 |
| | | | | FEED | 0.04-0.06 | 0.04-0.06 | | FEED | 0.08-0.14 | 0.12-0.18 | 0.15-0.22 | 0.20-0.26 |
| | 18 | | 75 | RPM | 23870 | 11940 | 95 | RPM | 10080 | 7560 | 6050 | 5040 |
| | | | | FEED | 0.04-0.06 | 0.04-0.06 | | FEED | 0.06-0.12 | 0.08-0.14 | 0.14-0.20 | 0.16-0.22 |
| | 19 | Malleable cast iron | 85 | RPM | 27060 | 13530 | 110 | RPM | 11670 | 8750 | 7000 | 5840 |
| | | | | FEED | 0.04-0.06 | 0.04-0.06 | | FEED | 0.08-0.14 | 0.12-0.18 | 0.15-0.22 | 0.20-0.26 |
| | 20 | | 75 | RPM | 23870 | 11940 | 95 | RPM | 10080 | 7560 | 6050 | 5040 |
| | | | | FEED | 0.03-0.05 | 0.05-0.07 | | FEED | 0.06-0.12 | 0.08-0.14 | 0.14-0.20 | 0.16-0.22 |
| H | 55 | Hardened steel | 30 | RPM | 9550 | 4770 | 35 | RPM | 3710 | 2790 | 2230 | 1860 |
| | | | | FEED | 0.01-0.02 | 0.01-0.03 | | FEED | 0.01-0.03 | 0.01-0.04 | 0.02-0.05 | 0.03-0.06 |

| ISO 公制 | VDI 3323 | Material Description 材料描述 | Vc 钻削速度 (m/min) | Parameter 参数 | Drill Diameter 刃径 (mm) 8.0 | 10.0 | 12.0 | 14.0 | 16.0 | 18.0 | 20.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 2 | Non-alloy steel | 130 | RPM | 5170 | 4140 | 3450 | 2960 | 2590 | 2300 | 2070 |
| | | | | FEED | 0.18-0.24 | 0.19-0.27 | 0.21-0.29 | 0.23-0.31 | 0.25-0.33 | 0.28-0.38 | 0.30-0.40 |
| | 3 | | 130 | RPM | 5170 | 4140 | 3450 | 2960 | 2590 | 2300 | 2070 |
| | | | | FEED | 0.18-0.24 | 0.19-0.27 | 0.21-0.29 | 0.23-0.31 | 0.25-0.33 | 0.28-0.38 | 0.30-0.40 |
| | 4 | | 130 | RPM | 5170 | 4140 | 3450 | 2960 | 2590 | 2300 | 2070 |
| | | | | FEED | 0.14-0.20 | 0.15-0.23 | 0.17-0.25 | 0.18-0.26 | 0.19-0.27 | 0.20-0.30 | 0.22-0.32 |
| | 5 | | 110 | RPM | 4380 | 3500 | 2920 | 2500 | 2190 | 1950 | 1750 |
| | | | | FEED | 0.14-0.20 | 0.15-0.23 | 0.17-0.25 | 0.18-0.26 | 0.19-0.27 | 0.20-0.30 | 0.22-0.32 |
| | 6 | Low alloy steel | 130 | RPM | 5170 | 4140 | 3450 | 2960 | 2590 | 2300 | 2070 |
| | | | | FEED | 0.18-0.24 | 0.19-0.27 | 0.21-0.29 | 0.23-0.31 | 0.25-0.33 | 0.28-0.38 | 0.30-0.40 |
| | 7 | | 110 | RPM | 4380 | 3500 | 2920 | 2500 | 2190 | 1950 | 1750 |
| | | | | FEED | 0.16-0.28 | 0.19-0.27 | 0.21-0.29 | 0.23-0.31 | 0.25-0.33 | 0.28-0.38 | 0.30-0.40 |
| | 8 | | 110 | RPM | 4380 | 3500 | 2920 | 2500 | 2190 | 1950 | 1750 |
| | | | | FEED | 0.14-0.20 | 0.15-0.23 | 0.17-0.25 | 0.18-0.26 | 0.19-0.27 | 0.20-0.30 | 0.22-0.32 |
| | 9 | | 60 | RPM | 2390 | 1910 | 1590 | 1360 | 1190 | 1060 | 950 |
| | | | | FEED | 0.12-0.18 | 0.13-0.19 | 0.14-0.20 | 0.15-0.21 | 0.16-0.22 | 0.17-0.25 | 0.18-0.28 |
| | 10 | High alloyed steel, and tool steel | 90 | RPM | 3580 | 2860 | 2390 | 2050 | 1790 | 1590 | 1430 |
| | | | | FEED | 0.14-0.20 | 0.15-0.23 | 0.17-0.25 | 0.18-0.26 | 0.19-0.27 | 0.20-0.30 | 0.22-0.32 |
| | 11 | | 50 | RPM | 1990 | 1590 | 1330 | 1140 | 990 | 880 | 800 |
| | | | | FEED | 0.12-0.18 | 0.13-0.19 | 0.14-0.20 | 0.15-0.21 | 0.16-0.22 | 0.17-0.25 | 0.18-0.28 |
| M | 12 | Stainless steel | 95 | RPM | 3780 | 3020 | 2520 | 2160 | 1890 | 1680 | 1510 |
| | | | | FEED | 0.18-0.24 | 0.19-0.27 | 0.21-0.29 | 0.23-0.31 | 0.25-0.33 | 0.28-0.38 | 0.30-0.40 |
| | 13 | | 65 | RPM | 2590 | 2070 | 1720 | 1480 | 1290 | 1150 | 1030 |
| | | | | FEED | 0.14-0.20 | 0.15-0.23 | 0.17-0.25 | 0.18-0.26 | 0.19-0.27 | 0.20-0.30 | 0.22-0.32 |
| K | 15 | Grey cast iron | 130 | RPM | 5170 | 4140 | 3450 | 2960 | 2590 | 2300 | 2070 |
| | | | | FEED | 0.22-0.28 | 0.25-0.33 | 0.27-0.35 | 0.29-0.37 | 0.31-0.39 | 0.32-0.42 | 0.34-0.44 |
| | 16 | | 115 | RPM | 4580 | 3660 | 3050 | 2610 | 2290 | 2030 | 1830 |
| | | | | FEED | 0.18-0.24 | 0.19-0.27 | 0.21-0.29 | 0.23-0.31 | 0.25-0.33 | 0.28-0.38 | 0.30-0.40 |
| | 17 | Nodular cast iron | 145 | RPM | 5770 | 4620 | 3850 | 3300 | 2880 | 2560 | 2310 |
| | | | | FEED | 0.22-0.28 | 0.25-0.33 | 0.27-0.35 | 0.29-0.37 | 0.31-0.39 | 0.32-0.42 | 0.34-0.44 |
| | 18 | | 95 | RPM | 3780 | 3020 | 2520 | 2160 | 1890 | 1680 | 1510 |
| | | | | FEED | 0.18-0.24 | 0.19-0.27 | 0.21-0.29 | 0.23-0.31 | 0.25-0.33 | 0.28-0.38 | 0.30-0.40 |
| | 19 | Malleable cast iron | 110 | RPM | 4380 | 3500 | 2920 | 2500 | 2190 | 1950 | 1750 |
| | | | | FEED | 0.22-0.28 | 0.25-0.33 | 0.27-0.35 | 0.29-0.37 | 0.31-0.39 | 0.32-0.42 | 0.34-0.44 |
| | 20 | | 95 | RPM | 3780 | 3020 | 2520 | 2160 | 1890 | 1680 | 1510 |
| | | | | FEED | 0.18-0.24 | 0.19-0.27 | 0.21-0.29 | 0.23-0.31 | 0.25-0.33 | 0.28-0.38 | 0.30-0.40 |
| H | 55 | Hardened steel | 35 | RPM | 1390 | 1110 | 930 | 800 | 700 | 620 | 560 |
| | | | | FEED | 0.03-0.06 | 0.04-0.07 | 0.04-0.08 | 0.05-0.09 | 0.05-0.09 | 0.05-0.10 | 0.05-0.10 |

▶ Recommend to reduce the feed rate as following 推荐减少进给量如下
**Feed 进给 100%** : DGN506(3×D), DGN508(5×D)

Leading Through Innovation

SOLID CARBIDE

# DREAM DRILLS -GENERAL

- For General Purpose (HRc30 to HRc50)
- 普通用途通常是HRc30 到 HRc50

# SELECTION GUIDE
## 选用指南

HOLEMAKING TOOLS

| SERIES 系列 | DH404 | DH423 |
|---|---|---|
| DRILLING DEPTH 钻销深度 | 3XD | 3XD |
| LENGTH 长度 | STUB 超短 | SHORT 短 |
| SIZE MIN 最小尺寸 | D3.0 | D3.0 |
| SIZE MAX 最大尺寸 | D20.0 | D20.0 |
| PAGE 页数 | A80 | A82 |
| SURFACE TREATMENT 表面处理 | TiAlN | |

# SOLID CARBIDE
# DREAM DRILLS
# GENERAL

For General Purpose (HRc30 to HRc50)
普通用途通常是HRc30 到 HRc50

Please visit 请访问
globalyg1.com/mat
for material search 查看产品材料

◎ : Excellent (优秀) ○ : Good (良好)

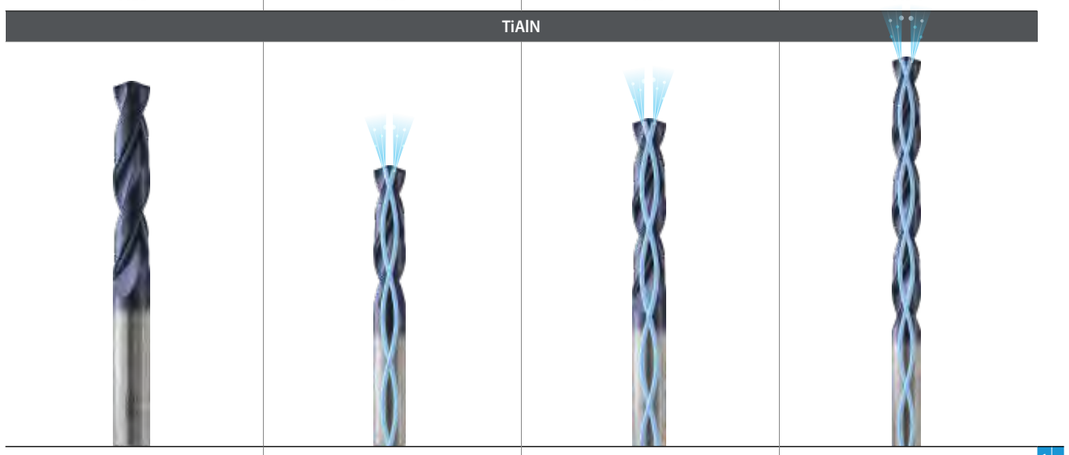
Recommended cutting conditions (推荐加工条件) : p. A96

| ISO 公制 | VDI 3323 | Material Description 材料描述 | Composition / Structure / Heat Treatment 成分 / 组织 / 热处理 | | HB 布氏硬度 | HRc 硬度 | DH404 | DH423 |
|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | About 0.15% C | Annealed | 125 | | | |
| | 2 | | About 0.45% C | Annealed | 190 | 13 | ◎ | ◎ |
| | 3 | | About 0.45% C | Quenched & Tempered | 250 | 25 | ◎ | ◎ |
| | 4 | | About 0.75% C | Annealed | 270 | 28 | ◎ | ◎ |
| | 5 | | About 0.75% C | Quenched & Tempered | 300 | 32 | ○ | ○ |
| | 6 | Low alloy steel | | Annealed | 180 | 10 | ◎ | ◎ |
| | 7 | | | Quenched & Tempered | 275 | 29 | ◎ | ◎ |
| | 8 | | | Quenched & Tempered | 300 | 32 | ○ | ○ |
| | 9 | | | Quenched & Tempered | 350 | 38 | ○ | ○ |
| | 10 | High alloyed steel, and tool steel | | Annealed | 200 | 15 | ◎ | ◎ |
| | 11 | | | Quenched & Tempered | 325 | 35 | ○ | ○ |
| M | 12 | Stainless steel | Ferritic / Martensitic | Annealed | 200 | 15 | ○ | ○ |
| | 13 | | Martensitic | Quenched & Tempered | 240 | 23 | ○ | ○ |
| | 14 | | Austenitic | | 180 | 10 | | |
| K | 15 | Grey cast iron | Pearlitic / ferritic | | 180 | 10 | ◎ | ◎ |
| | 16 | | Pearlitic (Martensitic) | | 260 | 26 | ○ | ○ |
| | 17 | Nodular cast iron | Ferritic | | 160 | 3 | ◎ | ◎ |
| | 18 | | Pearlitic | | 250 | 25 | ○ | ○ |
| | 19 | Malleable cast iron | Ferritic | | 130 | | ◎ | ◎ |
| | 20 | | Pearlitic | | 230 | 21 | ○ | ○ |
| N | 21 | Aluminum-wrought alloy | Not Curable | | 60 | | | |
| | 22 | | Curable | Hardened | 100 | | | |
| | 23 | Aluminum-cast, alloyed | ≤ 12% Si, Not Curable | | 75 | | | |
| | 24 | | ≤ 12% Si, Curable | Hardened | 90 | | | |
| | 25 | | > 12% Si, Not Curable | | 130 | | | |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | Cutting Alloys, PB>1% | | 110 | | | |
| | 27 | | CuZn, CuSnZn (Brass) | | 90 | | | |
| | 28 | | CuSn, lead-free copper and electrolytic copper | | 100 | | | |
| | 29 | Non Metallic Materials | Duroplastic, Fiber Reinforced Plastic | | | | | |
| | 30 | | Rubber, Wood, etc. | | | | | |
| S | 31 | Heat Resistant Super Alloys | Fe Based | Annealed | 200 | 15 | | |
| | 32 | | | Cured | 280 | 30 | | |
| | 33 | | Ni or Co Based | Annealed | 250 | 25 | | |
| | 34 | | | Cured | 350 | 38 | | |
| | 35 | | | Cast | 320 | 34 | | |
| | 36 | Titanium Alloys | Pure Titanium | | 400 Rm | | | |
| | 37 | | Alpha + Beta Alloys | Hardened | 1050 Rm | | | |
| H | 38 | Hardened steel | | Hardened | 550 | 55 | ○ | ○ |
| | 39 | | | Hardened | 630 | 60 | | |
| | 40 | Chilled Cast Iron | | Cast | 400 | 42 | | |
| | 41 | Hardened Cast Iron | | Hardened | 550 | 55 | | |



CARBIDE
HSS
i-ONE DRILLS
i-DREAM DRILLS
DREAM DRILLS -PRO
DREAM DRILLS -GENERAL
DREAM DRILLS -SOFT
DREAM DRILLS -HIGH FEED
DREAM DRILLS -FLAT BOTTOM
DREAM DRILLS -INOX
DREAM DRILLS -ALU
DREAM DRILLS -CFRP
DREAM DRILLS -MQL
DREAM DRILLS for HIGH HARDENED STEELS
GENERAL CARBIDE DRILLS
MULTI-1 DRILLS
GOLD-P DRILLS
SUPER-GP DRILLS
WORM PATTERN DRILLS
STRAIGHT SHANK DRILLS
TAPER SHANK DRILLS
NC-SPOTTING DRILLS
CENTER DRILLS
SPADE DRILLS
REAMERS
COUNTER SINKS
COUNTER BORES
TECHNICAL DATA

| DH424 | DH406 | DH408 | DH421 |
|---|---|---|---|
| 5XD | 3XD | 5XD | 8XD |
| LONG 长 | SHORT 短 | LONG 长 | EXTRA LONG 超长 |
| D1.0 | D3.0 | D1.0 | D3.0 |
| D20.0 | D20.0 | D20.0 | D14.0 |
| A85 | A88 | A91 | A94 |
| TiAlN | | | |



| DH424 | DH406 | DH408 | DH421 | |
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| ◎ | ◎ | ◎ | ◎ | 3 |
| ◎ | ◎ | ◎ | ◎ | 4 |
| ○ | ○ | ○ | ○ | 5 |
| ◎ | ◎ | ◎ | ◎ | 6 P |
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| ○ | ○ | ○ | ○ | 8 |
| ○ | ○ | ○ | ○ | 9 |
| ◎ | ◎ | ◎ | ◎ | 10 |
| ○ | ○ | ○ | ○ | 11 |
| ○ | ○ | ○ | ○ | 12 |
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| ○ | ○ | ○ | ○ | 16 |
| ◎ | ◎ | ◎ | ◎ | 17 |
| ○ | ○ | ○ | ○ | 18 K |
| ◎ | ◎ | ◎ | ◎ | 19 |
| ○ | ○ | ○ | ○ | 20 |
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| | | | | 40 H |
| | | | | 41 |

# DREAM DRILLS - GENERAL

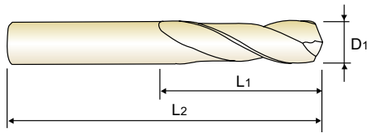
## DH404 SERIES

## CARBIDE, DREAM DRILLS GENERAL — STUB

## 硬质合金 梦幻钻头 — 超短

- ▶ Drilling for Steel, Cast Steel, Cast Iron, Malleable Cast Iron
- ▶ Self centering and chip breaking by R-thinning
- ▶ Wave shape and negative land on the cutting edge for low thrust, stable torque and long tool life
- ▶ Optimized flute shape for strength of drilling and smooth chip evacuation

- ▶ 钻孔 钢件，铸钢，铸铁，球墨铸铁
- ▶ 由于R型中心刃，卓越自定心，断屑
- ▶ 由于刃部的波形和负角设计，实现低阻力，稳定扭矩和提高刀具寿命
- ▶ 最佳沟槽设计使强力钻孔和顺畅排屑




DIN 6539 | CARBIDE | 30° | h6 | h7 | 140° | p. A96-A97

$D_1 = D_2$

3 × D

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| ◎ | SHRINK FIT HOLDER | D47 - 72 |
| ◎ | HYDRAULIC CHUCK | D15 - 46 |
| ○ | ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. | Drill Diameter | Flute Length | Overall Length |
|---|---|---|---|
| 型号 | 刃径 | 槽长 | 全长 |
| TiAlN | $D_1$ | $L_1$ | $L_2$ |
| DH404030 | 3.0 | 16 | 46 |
| DH404031 | 3.1 | 18 | 49 |
| DH404032 | 3.2 | 18 | 49 |
| DH404033 | 3.3 | 18 | 49 |
| DH404034 | 3.4 | 20 | 52 |
| DH404035 | 3.5 | 20 | 52 |
| DH404036 | 3.6 | 20 | 52 |
| DH404037 | 3.7 | 20 | 52 |
| DH404038 | 3.8 | 22 | 55 |
| DH404039 | 3.9 | 22 | 55 |
| DH404040 | 4.0 | 22 | 55 |
| DH404041 | 4.1 | 22 | 55 |
| DH404042 | 4.2 | 22 | 55 |
| DH404043 | 4.3 | 24 | 58 |
| DH404044 | 4.4 | 24 | 58 |
| DH404045 | 4.5 | 24 | 58 |
| DH404046 | 4.6 | 24 | 58 |
| DH404047 | 4.7 | 24 | 58 |
| DH404048 | 4.8 | 26 | 62 |
| DH404049 | 4.9 | 26 | 62 |
| DH404050 | 5.0 | 26 | 62 |
| DH404051 | 5.1 | 26 | 62 |
| DH404052 | 5.2 | 26 | 62 |
| DH404053 | 5.3 | 26 | 62 |

| EDP No. | Drill Diameter | Flute Length | Overall Length |
|---|---|---|---|
| 型号 | 刃径 | 槽长 | 全长 |
| TiAlN | $D_1$ | $L_1$ | $L_2$ |
| DH404054 | 5.4 | 28 | 66 |
| DH404055 | 5.5 | 28 | 66 |
| DH404056 | 5.6 | 28 | 66 |
| DH404057 | 5.7 | 28 | 66 |
| DH404058 | 5.8 | 28 | 66 |
| DH404059 | 5.9 | 28 | 66 |
| DH404060 | 6.0 | 28 | 66 |
| DH404061 | 6.1 | 31 | 70 |
| DH404062 | 6.2 | 31 | 70 |
| DH404063 | 6.3 | 31 | 70 |
| DH404064 | 6.4 | 31 | 70 |
| DH404065 | 6.5 | 31 | 70 |
| DH404066 | 6.6 | 31 | 70 |
| DH404067 | 6.7 | 31 | 70 |
| DH404068 | 6.8 | 34 | 74 |
| DH404069 | 6.9 | 34 | 74 |
| DH404070 | 7.0 | 34 | 74 |
| DH404071 | 7.1 | 34 | 74 |
| DH404072 | 7.2 | 34 | 74 |
| DH404073 | 7.3 | 34 | 74 |
| DH404074 | 7.4 | 34 | 74 |
| DH404075 | 7.5 | 34 | 74 |
| DH404076 | 7.6 | 37 | 79 |
| DH404077 | 7.7 | 37 | 79 |

▶ Other shank types are available on your request. / 其他的刀柄类型可以按照你的要求.

▶ NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ○ | ○ | ◎ | ○ | ○ | ○ | | ◎ | ○ | ◎ | ○ | ◎ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | | | | | | | | | | | | | | | | | | ○ | | | |



CARBIDE
HSS
i-ONE DRILLS
i-DREAM DRILLS
DREAM DRILLS -PRO
DREAM DRILLS -GENERAL
DREAM DRILLS -SOFT
DREAM DRILLS -HIGH FEED
DREAM DRILLS -FLAT BOTTOM
DREAM DRILLS -INOX
DREAM DRILLS -ALU
DREAM DRILLS -CFRP
DREAM DRILLS -MQL
DREAM DRILLS for HIGH HARDENED STEELS
GENERAL CARBIDE DRILLS
MULTI-1 DRILLS
GOLD-P DRILLS
SUPER-GP DRILLS
WORM PATTERN DRILLS
STRAIGHT SHANK DRILLS
TAPER SHANK DRILLS
NC-SPOTTING DRILLS
CENTER DRILLS
SPADE DRILLS
REAMERS
COUNTER SINKS
COUNTER BORES
TECHNICAL DATA

# DREAM DRILLS - GENERAL

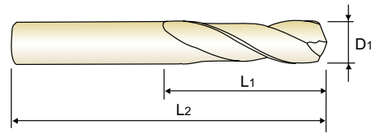
## DH404 SERIES

## CARBIDE, DREAM DRILLS GENERAL — STUB

## 硬质合金, 梦幻钻头 — 超短

- ▶ Drilling for Steel, Cast Steel, Cast Iron, Malleable Cast Iron
- ▶ Self centering and chip breaking by R-thinning
- ▶ Wave shape and negative land on the cutting edge for low thrust, stable torque and long tool life
- ▶ Optimized flute shape for strength of drilling and smooth chip evacuation

- ▶ 钻孔 钢件，铸钢，铸铁，球墨铸铁
- ▶ 由于R型中心刃，卓越自定心，断屑
- ▶ 由于刃部的波形和负角设计，实现低阻力，稳定扭矩和提高刀具寿命
- ▶ 最佳沟槽设计使强力钻孔和顺畅排屑




DIN 6539 | CARBIDE | 30° | h6 | h7 | 140° | p. A96-A97

$D_1 = D_2$

3 × D

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| ◎ | SHRINK FIT HOLDER | D47 - 72 |
| ◎ | HYDRAULIC CHUCK | D15 - 46 |
| ○ | ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. | Drill Diameter | Flute Length | Overall Length |
|---|---|---|---|
| 型号 | 刃径 | 槽长 | 全长 |
| TiAlN | $D_1$ | $L_1$ | $L_2$ |
| DH404078 | 7.8 | 37 | 79 |
| DH404079 | 7.9 | 37 | 79 |
| DH404080 | 8.0 | 37 | 79 |
| DH404081 | 8.1 | 37 | 79 |
| DH404082 | 8.2 | 37 | 79 |
| DH404083 | 8.3 | 37 | 79 |
| DH404084 | 8.4 | 37 | 79 |
| DH404085 | 8.5 | 37 | 79 |
| DH404086 | 8.6 | 40 | 84 |
| DH404087 | 8.7 | 40 | 84 |
| DH404088 | 8.8 | 40 | 84 |
| DH404089 | 8.9 | 40 | 84 |
| DH404090 | 9.0 | 40 | 84 |
| DH404091 | 9.1 | 40 | 84 |
| DH404092 | 9.2 | 40 | 84 |
| DH404093 | 9.3 | 40 | 84 |
| DH404094 | 9.4 | 40 | 84 |
| DH404095 | 9.5 | 40 | 84 |
| DH404096 | 9.6 | 43 | 89 |
| DH404097 | 9.7 | 43 | 89 |
| DH404098 | 9.8 | 43 | 89 |
| DH404099 | 9.9 | 43 | 89 |

| EDP No. | Drill Diameter | Flute Length | Overall Length |
|---|---|---|---|
| 型号 | 刃径 | 槽长 | 全长 |
| TiAlN | $D_1$ | $L_1$ | $L_2$ |
| DH404100 | 10.0 | 43 | 89 |
| DH404102 | 10.2 | 43 | 89 |
| DH404105 | 10.5 | 43 | 89 |
| DH404110 | 11.0 | 47 | 95 |
| DH404115 | 11.5 | 47 | 95 |
| DH404120 | 12.0 | 51 | 102 |
| DH404130 | 13.0 | 51 | 102 |
| DH404135 | 13.5 | 54 | 107 |
| DH404140 | 14.0 | 54 | 107 |
| DH404145 | 14.5 | 56 | 111 |
| DH404150 | 15.0 | 56 | 111 |
| DH404155 | 15.5 | 58 | 115 |
| DH404160 | 16.0 | 58 | 115 |
| DH404165 | 16.5 | 60 | 119 |
| DH404170 | 17.0 | 60 | 119 |
| DH404175 | 17.5 | 62 | 123 |
| DH404180 | 18.0 | 62 | 123 |
| DH404185 | 18.5 | 64 | 127 |
| DH404190 | 19.0 | 64 | 127 |
| DH404195 | 19.5 | 66 | 131 |
| DH404200 | 20.0 | 66 | 131 |

▶ Other shank types are available on your request. / 其他的刀柄类型可以按照你的要求.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ○ | ○ | ◎ | ○ | ○ | ○ | | ◎ | ○ | ◎ | ○ | ◎ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | | | | | | | | | | | | | | | | | | ○ | | | |

# DREAM DRILLS - GENERAL

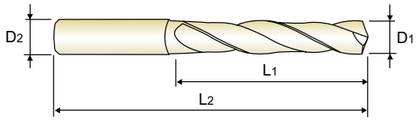
## DH423 SERIES

## CARBIDE, DREAM DRILLS GENERAL — SHORT

## 硬质合金, 梦幻钻头 — 短

- ▶ Drilling for Steel, Cast Steel, Cast Iron, Malleable Cast Iron
- ▶ Self centering and chip breaking by R-thinning
- ▶ Wave shape and negative land on the cutting edge for low thrust, stable torque and long tool life
- ▶ Optimized flute shape for strength of drilling and smooth chip evacuation

- ▶ 钻孔 钢件，铸钢，铸铁，球墨铸铁
- ▶ 由于R型中心刃，卓越自定心，断屑
- ▶ 由于刃部的波形和负角设计，实现低阻力，稳定扭矩和提高刀具寿命
- ▶ 最佳沟槽设计使强力钻孔和顺畅排屑




DIN 6539 | CARBIDE | 30° | h6 | h7 | 140° | p. A96-A97

3 × D

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| ◎ | SHRINK FIT HOLDER | D47 - 72 |
| ◎ | HYDRAULIC CHUCK | D15 - 46 |
| ○ | ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. | Drill Diameter | Shank Diameter | Flute Length | Overall Length |
|---|---|---|---|---|
| 型号 | 刃径 | 柄径 | 槽长 | 全长 |
| TiAlN | $D_1$ | $D_2$ | $L_1$ | $L_2$ |
| DH423030 | 3.0 | 6 | 20 | 62 |
| DH423031 | 3.1 | 6 | 20 | 62 |
| DH423032 | 3.2 | 6 | 20 | 62 |
| DH423033 | 3.3 | 6 | 20 | 62 |
| DH423034 | 3.4 | 6 | 20 | 62 |
| DH423035 | 3.5 | 6 | 20 | 62 |
| DH423036 | 3.6 | 6 | 20 | 62 |
| DH423037 | 3.7 | 6 | 20 | 62 |
| DH423038 | 3.8 | 6 | 24 | 66 |
| DH423039 | 3.9 | 6 | 24 | 66 |
| DH423040 | 4.0 | 6 | 24 | 66 |
| DH423041 | 4.1 | 6 | 24 | 66 |
| DH423042 | 4.2 | 6 | 24 | 66 |
| DH423043 | 4.3 | 6 | 24 | 66 |
| DH423044 | 4.4 | 6 | 24 | 66 |
| DH423045 | 4.5 | 6 | 24 | 66 |
| DH423046 | 4.6 | 6 | 24 | 66 |
| DH423047 | 4.7 | 6 | 24 | 66 |
| DH423048 | 4.8 | 6 | 28 | 66 |
| DH423049 | 4.9 | 6 | 28 | 66 |
| DH423050 | 5.0 | 6 | 28 | 66 |
| DH423051 | 5.1 | 6 | 28 | 66 |
| DH423052 | 5.2 | 6 | 28 | 66 |
| DH423053 | 5.3 | 6 | 28 | 66 |
| DH423054 | 5.4 | 6 | 28 | 66 |
| DH423055 | 5.5 | 6 | 28 | 66 |
| DH423056 | 5.6 | 6 | 28 | 66 |
| DH423057 | 5.7 | 6 | 28 | 66 |
| DH423058 | 5.8 | 6 | 28 | 66 |
| DH423059 | 5.9 | 6 | 28 | 66 |
| DH423060 | 6.0 | 6 | 28 | 66 |
| DH423061 | 6.1 | 8 | 34 | 79 |
| DH423062 | 6.2 | 8 | 34 | 79 |
| DH423063 | 6.3 | 8 | 34 | 79 |
| DH423064 | 6.4 | 8 | 34 | 79 |
| DH423065 | 6.5 | 8 | 34 | 79 |
| DH423066 | 6.6 | 8 | 34 | 79 |
| DH423067 | 6.7 | 8 | 34 | 79 |
| DH423068 | 6.8 | 8 | 34 | 79 |
| DH423069 | 6.9 | 8 | 34 | 79 |
| DH423070 | 7.0 | 8 | 34 | 79 |
| DH423071 | 7.1 | 8 | 41 | 79 |
| DH423072 | 7.2 | 8 | 41 | 79 |
| DH423073 | 7.3 | 8 | 41 | 79 |
| DH423074 | 7.4 | 8 | 41 | 79 |
| DH423075 | 7.5 | 8 | 41 | 79 |
| DH423076 | 7.6 | 8 | 41 | 79 |
| DH423077 | 7.7 | 8 | 41 | 79 |

▶ Other shank types are available on your request. / 其他的刀柄类型可以按照你的要求.

▶ NEXT PAGE 下页

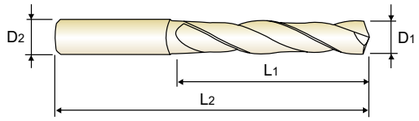
◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ○ | ○ | ◎ | ○ | ○ | ○ | | ◎ | ○ | ◎ | ○ | ◎ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | | | | | | | | | | | | | | | | | | ○ | | | |



DREAM DRILLS - GENERAL
DH423 SERIES
CARBIDE, DREAM DRILLS GENERAL — SHORT
硬质合金, 梦幻钻头 — 短
▶ Drilling for Steel, Cast Steel, Cast Iron, Malleable Cast Iron
▶ Self centering and chip breaking by R-thinning
▶ Wave shape and negative land on the cutting edge for low thrust, stable torque and long tool life
▶ Optimized flute shape for strength of drilling and smooth chip evacuation
▶ 钻孔 钢件，铸钢，铸铁，球墨铸铁
▶ 由于R型中心刃，卓越自定心，断屑
▶ 由于刃部的波形和负角设计，实现低阻力，稳定扭矩和提高刀具寿命
▶ 最佳沟槽设计使强力钻孔和顺畅排屑




DIN 6539 | CARBIDE | 30° | h6 | h7 | 140° | p. A96-A97
3 × D
Recommended ToolHolder
Plain Shank | Page
SHRINK FIT HOLDER | D47 - 72
HYDRAULIC CHUCK | D15 - 46
ER COLLET CHUCK | D73 - 115
Unit(单位) : mm

| EDP No. | Drill Diameter | Shank Diameter | Flute Length | Overall Length |
|---|---|---|---|---|
| 型号 | 刃径 | 柄径 | 槽长 | 全长 |
| TiAlN | $D_1$ | $D_2$ | $L_1$ | $L_2$ |
| DH423078 | 7.8 | 8 | 41 | 79 |
| DH423079 | 7.9 | 8 | 41 | 79 |
| DH423080 | 8.0 | 8 | 41 | 79 |
| DH423081 | 8.1 | 10 | 47 | 89 |
| DH423082 | 8.2 | 10 | 47 | 89 |
| DH423083 | 8.3 | 10 | 47 | 89 |
| DH423084 | 8.4 | 10 | 47 | 89 |
| DH423085 | 8.5 | 10 | 47 | 89 |
| DH423086 | 8.6 | 10 | 47 | 89 |
| DH423087 | 8.7 | 10 | 47 | 89 |
| DH423088 | 8.8 | 10 | 47 | 89 |
| DH423089 | 8.9 | 10 | 47 | 89 |
| DH423090 | 9.0 | 10 | 47 | 89 |
| DH423091 | 9.1 | 10 | 47 | 89 |
| DH423092 | 9.2 | 10 | 47 | 89 |
| DH423093 | 9.3 | 10 | 47 | 89 |
| DH423094 | 9.4 | 10 | 47 | 89 |
| DH423095 | 9.5 | 10 | 47 | 89 |
| DH423096 | 9.6 | 10 | 47 | 89 |
| DH423097 | 9.7 | 10 | 47 | 89 |
| DH423098 | 9.8 | 10 | 47 | 89 |
| DH423099 | 9.9 | 10 | 47 | 89 |
| DH423100 | 10.0 | 10 | 47 | 89 |
| DH423101 | 10.1 | 12 | 55 | 102 |
| DH423102 | 10.2 | 12 | 55 | 102 |
| DH423103 | 10.3 | 12 | 55 | 102 |
| DH423104 | 10.4 | 12 | 55 | 102 |
| DH423105 | 10.5 | 12 | 55 | 102 |
| DH423106 | 10.6 | 12 | 55 | 102 |
| DH423107 | 10.7 | 12 | 55 | 102 |
| DH423108 | 10.8 | 12 | 55 | 102 |
| DH423109 | 10.9 | 12 | 55 | 102 |
| DH423110 | 11.0 | 12 | 55 | 102 |
| DH423111 | 11.1 | 12 | 55 | 102 |
| DH423112 | 11.2 | 12 | 55 | 102 |
| DH423113 | 11.3 | 12 | 55 | 102 |
| DH423114 | 11.4 | 12 | 55 | 102 |
| DH423115 | 11.5 | 12 | 55 | 102 |
| DH423116 | 11.6 | 12 | 55 | 102 |
| DH423117 | 11.7 | 12 | 55 | 102 |
| DH423118 | 11.8 | 12 | 55 | 102 |
| DH423119 | 11.9 | 12 | 55 | 102 |
| DH423120 | 12.0 | 12 | 55 | 102 |
| DH423123 | 12.3 | 14 | 60 | 107 |
| DH423125 | 12.5 | 14 | 60 | 107 |
| DH423128 | 12.8 | 14 | 60 | 107 |
| DH423130 | 13.0 | 14 | 60 | 107 |
| DH423135 | 13.5 | 14 | 60 | 107 |

▶ Other shank types are available on your request. / 其他的刀柄类型可以按照你的要求.

▶ NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ○ | ○ | ◎ | ○ | ○ | ○ | | ◎ | ○ | ◎ | ○ | ◎ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | | | | | | | | | | | | | | | | | | ○ | | | |

# DREAM DRILLS - GENERAL

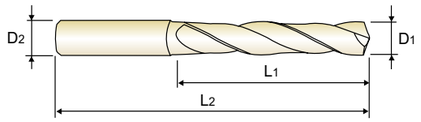
## DH423 SERIES

## CARBIDE, DREAM DRILLS GENERAL — SHORT

## 硬质合金, 梦幻钻头 — 短

- ▶ Drilling for Steel, Cast Steel, Cast Iron, Malleable Cast Iron
- ▶ Self centering and chip breaking by R-thinning
- ▶ Wave shape and negative land on the cutting edge for low thrust, stable torque and long tool life
- ▶ Optimized flute shape for strength of drilling and smooth chip evacuation

- ▶ 钻孔 钢件，铸钢，铸铁，球墨铸铁
- ▶ 由于R型中心刃，卓越自定心，断屑
- ▶ 由于刃部的波形和负角设计，实现低阻力，稳定扭矩和提高刀具寿命
- ▶ 最佳沟槽设计使强力钻孔和顺畅排屑




DIN 6539 | CARBIDE | 30° | h6 | h7 | 140° | p. A96-A97

3 × D

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| ◎ | SHRINK FIT HOLDER | D47 - 72 |
| ◎ | HYDRAULIC CHUCK | D15 - 46 |
| ○ | ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. | Drill Diameter | Shank Diameter | Flute Length | Overall Length |
|---|---|---|---|---|
| 型号 | 刃径 | 柄径 | 槽长 | 全长 |
| TiAlN | $D_1$ | $D_2$ | $L_1$ | $L_2$ |
| DH423138 | 13.8 | 14 | 60 | 107 |
| DH423140 | 14.0 | 14 | 60 | 107 |
| DH423145 | 14.5 | 16 | 65 | 115 |
| DH423148 | 14.8 | 16 | 65 | 115 |
| DH423150 | 15.0 | 16 | 65 | 115 |
| DH423155 | 15.5 | 16 | 65 | 115 |
| DH423158 | 15.8 | 16 | 65 | 115 |
| DH423160 | 16.0 | 16 | 65 | 115 |
| DH423165 | 16.5 | 18 | 73 | 123 |
| DH423168 | 16.8 | 18 | 73 | 123 |
| DH423170 | 17.0 | 18 | 73 | 123 |
| DH423175 | 17.5 | 18 | 73 | 123 |
| DH423178 | 17.8 | 18 | 73 | 123 |
| DH423180 | 18.0 | 18 | 73 | 123 |
| DH423185 | 18.5 | 20 | 79 | 131 |
| DH423190 | 19.0 | 20 | 79 | 131 |
| DH423195 | 19.5 | 20 | 79 | 131 |
| DH423198 | 19.8 | 20 | 79 | 131 |
| DH423200 | 20.0 | 20 | 79 | 131 |

▶ Other shank types are available on your request. / 其他的刀柄类型可以按照你的要求.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ○ | ○ | ◎ | ○ | ○ | ○ | | ◎ | ○ | ◎ | ○ | ◎ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | | | | | | | | | | | | | | | | | | ○ | | | |



# DREAM DRILLS - GENERAL

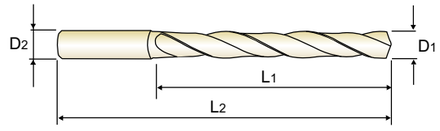
## DH424 SERIES

## CARBIDE, DREAM DRILLS GENERAL — LONG

## 硬质合金, 梦幻钻头 — 长

- ▶ Drilling for Steel, Cast Steel, Cast Iron, Malleable Cast Iron
- ▶ Self centering and chip breaking by R-thinning
- ▶ Wave shape and negative land on the cutting edge for low thrust, stable torque and long tool life
- ▶ Optimized flute shape for strength of drilling and smooth chip evacuation

- ▶ 钻孔 钢件，铸钢，铸铁，球墨铸铁
- ▶ 由于R型中心刃，卓越自定心，断屑
- ▶ 由于刃部的波形和负角设计，实现低阻力，稳定扭矩和提高刀具寿命
- ▶ 最佳沟槽设计使强力钻孔和顺畅排屑




DIN 6539 | CARBIDE | 30° | h6 | h7 | 140° | p. A96-A97

5 × D

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| ◎ | SHRINK FIT HOLDER | D47 - 72 |
| ◎ | HYDRAULIC CHUCK | D15 - 46 |
| ○ | ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. | Drill Diameter | Shank Diameter | Flute Length | Overall Length |
|---|---|---|---|---|
| 型号 | 刃径 | 柄径 | 槽长 | 全长 |
| TiAlN | $D_1$ | $D_2$ | $L_1$ | $L_2$ |
| DH424010 | 1.0 | 3 | 8 | 55 |
| DH424011 | 1.1 | 3 | 12 | 55 |
| DH424012 | 1.2 | 3 | 12 | 55 |
| DH424013 | 1.3 | 3 | 12 | 55 |
| DH424014 | 1.4 | 3 | 12 | 55 |
| DH424015 | 1.5 | 3 | 16 | 55 |
| DH424016 | 1.6 | 3 | 16 | 55 |
| DH424017 | 1.7 | 3 | 16 | 55 |
| DH424018 | 1.8 | 3 | 16 | 55 |
| DH424019 | 1.9 | 3 | 16 | 55 |
| DH424020 | 2.0 | 4 | 21 | 57 |
| DH424021 | 2.1 | 4 | 21 | 57 |
| DH424022 | 2.2 | 4 | 21 | 57 |
| DH424023 | 2.3 | 4 | 21 | 57 |
| DH424024 | 2.4 | 4 | 21 | 57 |
| DH424025 | 2.5 | 4 | 21 | 57 |
| DH424026 | 2.6 | 4 | 21 | 57 |
| DH424027 | 2.7 | 4 | 21 | 57 |
| DH424028 | 2.8 | 4 | 21 | 57 |
| DH424029 | 2.9 | 4 | 21 | 57 |
| DH424030 | 3.0 | 6 | 28 | 66 |
| DH424031 | 3.1 | 6 | 28 | 66 |
| DH424032 | 3.2 | 6 | 28 | 66 |
| DH424033 | 3.3 | 6 | 28 | 66 |
| DH424034 | 3.4 | 6 | 28 | 66 |
| DH424035 | 3.5 | 6 | 28 | 66 |
| DH424036 | 3.6 | 6 | 28 | 66 |
| DH424037 | 3.7 | 6 | 28 | 66 |
| DH424038 | 3.8 | 6 | 36 | 74 |
| DH424039 | 3.9 | 6 | 36 | 74 |
| DH424040 | 4.0 | 6 | 36 | 74 |
| DH424041 | 4.1 | 6 | 36 | 74 |
| DH424042 | 4.2 | 6 | 36 | 74 |
| DH424043 | 4.3 | 6 | 36 | 74 |
| DH424044 | 4.4 | 6 | 36 | 74 |
| DH424045 | 4.5 | 6 | 36 | 74 |
| DH424046 | 4.6 | 6 | 36 | 74 |
| DH424047 | 4.7 | 6 | 36 | 74 |
| DH424048 | 4.8 | 6 | 44 | 82 |
| DH424049 | 4.9 | 6 | 44 | 82 |
| DH424050 | 5.0 | 6 | 44 | 82 |
| DH424051 | 5.1 | 6 | 44 | 82 |
| DH424052 | 5.2 | 6 | 44 | 82 |
| DH424053 | 5.3 | 6 | 44 | 82 |
| DH424054 | 5.4 | 6 | 44 | 82 |
| DH424055 | 5.5 | 6 | 44 | 82 |
| DH424056 | 5.6 | 6 | 44 | 82 |
| DH424057 | 5.7 | 6 | 44 | 82 |

▶ Other shank types are available on your request. / 其他的刀柄类型可以按照你的要求.

▶ NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ○ | ○ | ◎ | ○ | ○ | ○ | | ◎ | ○ | ◎ | ○ | ◎ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | | | | | | | | | | | | | | | | | | ○ | | | |

# DREAM DRILLS - GENERAL

## DH424 SERIES

## CARBIDE, DREAM DRILLS GENERAL

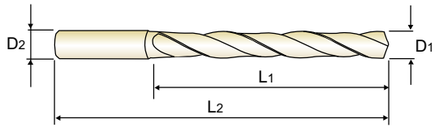
*LONG*

## 硬质合金, 梦幻钻头

长

- ▶ Drilling for Steel, Cast Steel, Cast Iron, Malleable Cast Iron
- ▶ Self centering and chip breaking by R-thinning
- ▶ Wave shape and negative land on the cutting edge for low thrust, stable torque and long tool life
- ▶ Optimized flute shape for strength of drilling and smooth chip evacuation

- ▶ 钻孔 钢件，铸钢，铸铁，球墨铸铁
- ▶ 由于R型中心刃，卓越自定心，断屑
- ▶ 由于刃部的波形和负角设计，实现低阻力，稳定扭矩和提高刀具寿命
- ▶ 最佳沟槽设计使强力钻孔和顺畅排屑




DIN 6539 | CARBIDE | 30° | h6 | h7 | 140°

p. A96-A97

5 × D

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| ◎ | SHRINK FIT HOLDER | D47 - 72 |
| ◎ | HYDRAULIC CHUCK | D15 - 46 |
| ○ | ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. | Drill Diameter | Shank Diameter | Flute Length | Overall Length |
|---|---|---|---|---|
| 型号 | 刃径 | 柄径 | 槽长 | 全长 |
| TiAlN | $D_1$ | $D_2$ | $L_1$ | $L_2$ |
| DH424058 | 5.8 | 6 | 44 | 82 |
| DH424059 | 5.9 | 6 | 44 | 82 |
| DH424060 | 6.0 | 6 | 44 | 82 |
| DH424061 | 6.1 | 8 | 53 | 91 |
| DH424062 | 6.2 | 8 | 53 | 91 |
| DH424063 | 6.3 | 8 | 53 | 91 |
| DH424064 | 6.4 | 8 | 53 | 91 |
| DH424065 | 6.5 | 8 | 53 | 91 |
| DH424066 | 6.6 | 8 | 53 | 91 |
| DH424067 | 6.7 | 8 | 53 | 91 |
| DH424068 | 6.8 | 8 | 53 | 91 |
| DH424069 | 6.9 | 8 | 53 | 91 |
| DH424070 | 7.0 | 8 | 53 | 91 |
| DH424071 | 7.1 | 8 | 53 | 91 |
| DH424072 | 7.2 | 8 | 53 | 91 |
| DH424073 | 7.3 | 8 | 53 | 91 |
| DH424074 | 7.4 | 8 | 53 | 91 |
| DH424075 | 7.5 | 8 | 53 | 91 |
| DH424076 | 7.6 | 8 | 53 | 91 |
| DH424077 | 7.7 | 8 | 53 | 91 |
| DH424078 | 7.8 | 8 | 53 | 91 |
| DH424079 | 7.9 | 8 | 53 | 91 |
| DH424080 | 8.0 | 8 | 53 | 91 |
| DH424081 | 8.1 | 10 | 61 | 103 |

| EDP No. | Drill Diameter | Shank Diameter | Flute Length | Overall Length |
|---|---|---|---|---|
| 型号 | 刃径 | 柄径 | 槽长 | 全长 |
| TiAlN | $D_1$ | $D_2$ | $L_1$ | $L_2$ |
| DH424082 | 8.2 | 10 | 61 | 103 |
| DH424083 | 8.3 | 10 | 61 | 103 |
| DH424084 | 8.4 | 10 | 61 | 103 |
| DH424085 | 8.5 | 10 | 61 | 103 |
| DH424086 | 8.6 | 10 | 61 | 103 |
| DH424087 | 8.7 | 10 | 61 | 103 |
| DH424088 | 8.8 | 10 | 61 | 103 |
| DH424089 | 8.9 | 10 | 61 | 103 |
| DH424090 | 9.0 | 10 | 61 | 103 |
| DH424091 | 9.1 | 10 | 61 | 103 |
| DH424092 | 9.2 | 10 | 61 | 103 |
| DH424093 | 9.3 | 10 | 61 | 103 |
| DH424094 | 9.4 | 10 | 61 | 103 |
| DH424095 | 9.5 | 10 | 61 | 103 |
| DH424096 | 9.6 | 10 | 61 | 103 |
| DH424097 | 9.7 | 10 | 61 | 103 |
| DH424098 | 9.8 | 10 | 61 | 103 |
| DH424099 | 9.9 | 10 | 61 | 103 |
| DH424100 | 10.0 | 10 | 61 | 103 |
| DH424101 | 10.1 | 12 | 71 | 118 |
| DH424102 | 10.2 | 12 | 71 | 118 |
| DH424103 | 10.3 | 12 | 71 | 118 |
| DH424104 | 10.4 | 12 | 71 | 118 |
| DH424105 | 10.5 | 12 | 71 | 118 |

▶ Other shank types are available on your request. / 其他的刀柄类型可以按照你的要求.

▶ NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ○ | ○ | ◎ | ○ | ○ | ○ | | ◎ | ○ | ◎ | ○ | ◎ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | | | | | | | | | | | | | | | | | | ○ | | | |



CARBIDE
HSS
i-ONE DRILLS
i-DREAM DRILLS
DREAM DRILLS -PRO
DREAM DRILLS -GENERAL
DREAM DRILLS -SOFT
DREAM DRILLS -HIGH FEED
DREAM DRILLS -FLAT BOTTOM
DREAM DRILLS -INOX
DREAM DRILLS -ALU
DREAM DRILLS -CFRP
DREAM DRILLS -MQL
DREAM DRILLS for HIGH HARDENED STEELS
GENERAL CARBIDE DRILLS
MULTI-1 DRILLS
GOLD-P DRILLS
SUPER-GP DRILLS
WORM PATTERN DRILLS
STRAIGHT SHANK DRILLS
TAPER SHANK DRILLS
NC-SPOTTING DRILLS
CENTER DRILLS
SPADE DRILLS
REAMERS
COUNTER SINKS
COUNTER BORES
TECHNICAL DATA

# DREAM DRILLS - GENERAL

## DH424 SERIES

## CARBIDE, DREAM DRILLS GENERAL

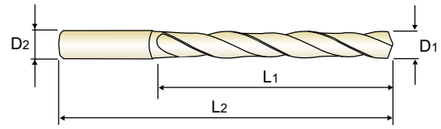
*LONG*

## 硬质合金, 梦幻钻头

长

- ▶ Drilling for Steel, Cast Steel, Cast Iron, Malleable Cast Iron
- ▶ Self centering and chip breaking by R-thinning
- ▶ Wave shape and negative land on the cutting edge for low thrust, stable torque and long tool life
- ▶ Optimized flute shape for strength of drilling and smooth chip evacuation

- ▶ 钻孔 钢件，铸钢，铸铁，球墨铸铁
- ▶ 由于R型中心刃，卓越自定心，断屑
- ▶ 由于刃部的波形和负角设计，实现低阻力，稳定扭矩和提高刀具寿命
- ▶ 最佳沟槽设计使强力钻孔和顺畅排屑




DIN 6539 | CARBIDE | 30° | h6 | h7 | 140°

p. A96-A97

5 × D

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| ◎ | SHRINK FIT HOLDER | D47 - 72 |
| ◎ | HYDRAULIC CHUCK | D15 - 46 |
| ○ | ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. | Drill Diameter | Shank Diameter | Flute Length | Overall Length |
|---|---|---|---|---|
| 型号 | 刃径 | 柄径 | 槽长 | 全长 |
| TiAlN | $D_1$ | $D_2$ | $L_1$ | $L_2$ |
| DH424106 | 10.6 | 12 | 71 | 118 |
| DH424107 | 10.7 | 12 | 71 | 118 |
| DH424108 | 10.8 | 12 | 71 | 118 |
| DH424109 | 10.9 | 12 | 71 | 118 |
| DH424110 | 11.0 | 12 | 71 | 118 |
| DH424111 | 11.1 | 12 | 71 | 118 |
| DH424112 | 11.2 | 12 | 71 | 118 |
| DH424113 | 11.3 | 12 | 71 | 118 |
| DH424114 | 11.4 | 12 | 71 | 118 |
| DH424115 | 11.5 | 12 | 71 | 118 |
| DH424116 | 11.6 | 12 | 71 | 118 |
| DH424117 | 11.7 | 12 | 71 | 118 |
| DH424118 | 11.8 | 12 | 71 | 118 |
| DH424119 | 11.9 | 12 | 71 | 118 |
| DH424120 | 12.0 | 12 | 71 | 118 |
| DH424125 | 12.5 | 14 | 77 | 124 |

| EDP No. | Drill Diameter | Shank Diameter | Flute Length | Overall Length |
|---|---|---|---|---|
| 型号 | 刃径 | 柄径 | 槽长 | 全长 |
| TiAlN | $D_1$ | $D_2$ | $L_1$ | $L_2$ |
| DH424130 | 13.0 | 14 | 77 | 124 |
| DH424135 | 13.5 | 14 | 77 | 124 |
| DH424140 | 14.0 | 14 | 77 | 124 |
| DH424145 | 14.5 | 16 | 83 | 133 |
| DH424150 | 15.0 | 16 | 83 | 133 |
| DH424155 | 15.5 | 16 | 83 | 133 |
| DH424160 | 16.0 | 16 | 83 | 133 |
| DH424165 | 16.5 | 18 | 93 | 143 |
| DH424170 | 17.0 | 18 | 93 | 143 |
| DH424175 | 17.5 | 18 | 93 | 143 |
| DH424180 | 18.0 | 18 | 93 | 143 |
| DH424185 | 18.5 | 20 | 101 | 153 |
| DH424190 | 19.0 | 20 | 101 | 153 |
| DH424195 | 19.5 | 20 | 101 | 153 |
| DH424200 | 20.0 | 20 | 101 | 153 |

▶ Other shank types are available on your request. / 其他的刀柄类型可以按照你的要求.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ○ | ○ | ◎ | ○ | ○ | ○ | | ◎ | ○ | ◎ | ○ | ◎ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | | | | | | | | | | | | | | | | | | ○ | | | |

# DREAM DRILLS - GENERAL

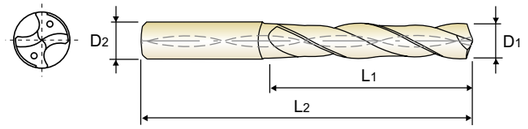
## DH406 SERIES

## CARBIDE, DREAM DRILLS GENERAL with COOLANT HOLES — SHORT

## 硬质合金, 梦幻钻头 带内冷孔 — 短

- ▶ Drilling for Steel, Cast Steel, Cast Iron, Malleable Cast Iron
- ▶ Self centering and chip breaking by R-thinning
- ▶ Wave shape and negative land on the cutting edge for low thrust, stable torque and long tool life
- ▶ Optimized flute shape for strength of drilling and smooth chip evacuation

- ▶ 钻孔 钢件，铸钢，铸铁，球墨铸铁
- ▶ 由于R型中心刃，卓越自定心，断屑
- ▶ 由于刃部的波形和负角设计，实现低阻力，稳定扭矩和提高刀具寿命
- ▶ 最佳沟槽设计使强力钻孔和顺畅排屑




DIN 6537 | CARBIDE | 30° | h6 | m7 | 140° | 20 bar | p. A98-A99 | 3 × D

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| ◎ | SHRINK FIT HOLDER | D47 - 72 |
| ◎ | HYDRAULIC CHUCK | D15 - 46 |
| ○ | ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. | Drill Diameter | Shank Diameter | Flute Length | Overall Length |
|---|---|---|---|---|
| 型号 | 刃径 | 柄径 | 槽长 | 全长 |
| TiAlN | $D_1$ | $D_2$ | $L_1$ | $L_2$ |
| DH406030 | 3.0 | 6 | 20 | 62 |
| DH406031 | 3.1 | 6 | 20 | 62 |
| DH406032 | 3.2 | 6 | 20 | 62 |
| DH406033 | 3.3 | 6 | 20 | 62 |
| DH406034 | 3.4 | 6 | 20 | 62 |
| DH406035 | 3.5 | 6 | 20 | 62 |
| DH406036 | 3.6 | 6 | 20 | 62 |
| DH406037 | 3.7 | 6 | 20 | 62 |
| DH406038 | 3.8 | 6 | 24 | 66 |
| DH406039 | 3.9 | 6 | 24 | 66 |
| DH406040 | 4.0 | 6 | 24 | 66 |
| DH406041 | 4.1 | 6 | 24 | 66 |
| DH406042 | 4.2 | 6 | 24 | 66 |
| DH406043 | 4.3 | 6 | 24 | 66 |
| DH406044 | 4.4 | 6 | 24 | 66 |
| DH406045 | 4.5 | 6 | 24 | 66 |
| DH406046 | 4.6 | 6 | 24 | 66 |
| DH406047 | 4.7 | 6 | 24 | 66 |
| DH406048 | 4.8 | 6 | 28 | 66 |
| DH406049 | 4.9 | 6 | 28 | 66 |
| DH406050 | 5.0 | 6 | 28 | 66 |
| DH406051 | 5.1 | 6 | 28 | 66 |
| DH406052 | 5.2 | 6 | 28 | 66 |
| DH406053 | 5.3 | 6 | 28 | 66 |
| DH406054 | 5.4 | 6 | 28 | 66 |
| DH406055 | 5.5 | 6 | 28 | 66 |
| DH406056 | 5.6 | 6 | 28 | 66 |
| DH406057 | 5.7 | 6 | 28 | 66 |
| DH406058 | 5.8 | 6 | 28 | 66 |
| DH406059 | 5.9 | 6 | 28 | 66 |
| DH406060 | 6.0 | 6 | 28 | 66 |
| DH406061 | 6.1 | 8 | 34 | 79 |
| DH406062 | 6.2 | 8 | 34 | 79 |
| DH406063 | 6.3 | 8 | 34 | 79 |
| DH406064 | 6.4 | 8 | 34 | 79 |
| DH406065 | 6.5 | 8 | 34 | 79 |
| DH406066 | 6.6 | 8 | 34 | 79 |
| DH406067 | 6.7 | 8 | 34 | 79 |
| DH406068 | 6.8 | 8 | 34 | 79 |
| DH406069 | 6.9 | 8 | 34 | 79 |
| DH406070 | 7.0 | 8 | 34 | 79 |
| DH406071 | 7.1 | 8 | 41 | 79 |
| DH406072 | 7.2 | 8 | 41 | 79 |
| DH406073 | 7.3 | 8 | 41 | 79 |
| DH406074 | 7.4 | 8 | 41 | 79 |
| DH406075 | 7.5 | 8 | 41 | 79 |
| DH406076 | 7.6 | 8 | 41 | 79 |
| DH406077 | 7.7 | 8 | 41 | 79 |

▶ Other shank types are available on your request. / 其他的刀柄类型可以按照你的要求.

▶ NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ○ | ○ | ◎ | ○ | ○ | ○ | | ◎ | ○ | ◎ | ○ | ◎ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | | | | | | | | | | | | | | | | | | ○ | | | |



CARBIDE
HSS
i-ONE DRILLS
i-DREAM DRILLS
DREAM DRILLS -PRO
DREAM DRILLS -GENERAL
DREAM DRILLS -SOFT
DREAM DRILLS -HIGH FEED
DREAM DRILLS -FLAT BOTTOM
DREAM DRILLS -INOX
DREAM DRILLS -ALU
DREAM DRILLS -CFRP
DREAM DRILLS -MQL
DREAM DRILLS for HIGH HARDENED STEELS
GENERAL CARBIDE DRILLS
MULTI-1 DRILLS
GOLD-P DRILLS
SUPER-GP DRILLS
WORM PATTERN DRILLS
STRAIGHT SHANK DRILLS
TAPER SHANK DRILLS
NC-SPOTTING DRILLS
CENTER DRILLS
SPADE DRILLS
REAMERS
COUNTER SINKS
COUNTER BORES
TECHNICAL DATA

# DREAM DRILLS - GENERAL

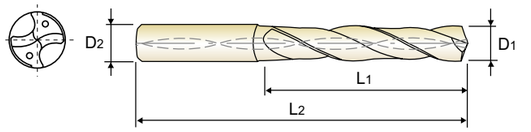
## DH406 SERIES

## CARBIDE, DREAM DRILLS GENERAL with COOLANT HOLES — SHORT

## 硬质合金, 梦幻钻头 带内冷孔 — 短

- ▶ Drilling for Steel, Cast Steel, Cast Iron, Malleable Cast Iron
- ▶ Self centering and chip breaking by R-thinning
- ▶ Wave shape and negative land on the cutting edge for low thrust, stable torque and long tool life
- ▶ Optimized flute shape for strength of drilling and smooth chip evacuation

- ▶ 钻孔 钢件，铸钢，铸铁，球墨铸铁
- ▶ 由于R型中心刃，卓越自定心，断屑
- ▶ 由于刃部的波形和负角设计，实现低阻力，稳定扭矩和提高刀具寿命
- ▶ 最佳沟槽设计使强力钻孔和顺畅排屑




DIN 6537 | CARBIDE | 30° | h6 | m7 | 140° | 20 bar | p. A98-A99 | 3 × D

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| ◎ | SHRINK FIT HOLDER | D47 - 72 |
| ◎ | HYDRAULIC CHUCK | D15 - 46 |
| ○ | ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. | Drill Diameter | Shank Diameter | Flute Length | Overall Length |
|---|---|---|---|---|
| 型号 | 刃径 | 柄径 | 槽长 | 全长 |
| TiAlN | $D_1$ | $D_2$ | $L_1$ | $L_2$ |
| DH406078 | 7.8 | 8 | 41 | 79 |
| DH406079 | 7.9 | 8 | 41 | 79 |
| DH406080 | 8.0 | 8 | 41 | 79 |
| DH406081 | 8.1 | 10 | 47 | 89 |
| DH406082 | 8.2 | 10 | 47 | 89 |
| DH406083 | 8.3 | 10 | 47 | 89 |
| DH406084 | 8.4 | 10 | 47 | 89 |
| DH406085 | 8.5 | 10 | 47 | 89 |
| DH406086 | 8.6 | 10 | 47 | 89 |
| DH406087 | 8.7 | 10 | 47 | 89 |
| DH406088 | 8.8 | 10 | 47 | 89 |
| DH406089 | 8.9 | 10 | 47 | 89 |
| DH406090 | 9.0 | 10 | 47 | 89 |
| DH406091 | 9.1 | 10 | 47 | 89 |
| DH406092 | 9.2 | 10 | 47 | 89 |
| DH406093 | 9.3 | 10 | 47 | 89 |
| DH406094 | 9.4 | 10 | 47 | 89 |
| DH406095 | 9.5 | 10 | 47 | 89 |
| DH406096 | 9.6 | 10 | 47 | 89 |
| DH406097 | 9.7 | 10 | 47 | 89 |
| DH406098 | 9.8 | 10 | 47 | 89 |
| DH406099 | 9.9 | 10 | 47 | 89 |
| DH406100 | 10.0 | 10 | 47 | 89 |
| DH406101 | 10.1 | 12 | 55 | 102 |
| DH406102 | 10.2 | 12 | 55 | 102 |
| DH406103 | 10.3 | 12 | 55 | 102 |
| DH406104 | 10.4 | 12 | 55 | 102 |
| DH406105 | 10.5 | 12 | 55 | 102 |
| DH406106 | 10.6 | 12 | 55 | 102 |
| DH406107 | 10.7 | 12 | 55 | 102 |
| DH406108 | 10.8 | 12 | 55 | 102 |
| DH406109 | 10.9 | 12 | 55 | 102 |
| DH406110 | 11.0 | 12 | 55 | 102 |
| DH406111 | 11.1 | 12 | 55 | 102 |
| DH406112 | 11.2 | 12 | 55 | 102 |
| DH406113 | 11.3 | 12 | 55 | 102 |
| DH406114 | 11.4 | 12 | 55 | 102 |
| DH406115 | 11.5 | 12 | 55 | 102 |
| DH406116 | 11.6 | 12 | 55 | 102 |
| DH406117 | 11.7 | 12 | 55 | 102 |
| DH406118 | 11.8 | 12 | 55 | 102 |
| DH406119 | 11.9 | 12 | 55 | 102 |
| DH406120 | 12.0 | 12 | 55 | 102 |
| DH406125 | 12.5 | 14 | 60 | 107 |
| DH406130 | 13.0 | 14 | 60 | 107 |
| DH406135 | 13.5 | 14 | 60 | 107 |
| DH406140 | 14.0 | 14 | 60 | 107 |
| DH406145 | 14.5 | 16 | 65 | 115 |

▶ Other shank types are available on your request. / 其他的刀柄类型可以按照你的要求.

▶ NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ○ | ○ | ◎ | ○ | ○ | ○ | | ◎ | ○ | ◎ | ○ | ◎ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | | | | | | | | | | | | | | | | | | ○ | | | |

# DREAM DRILLS - GENERAL

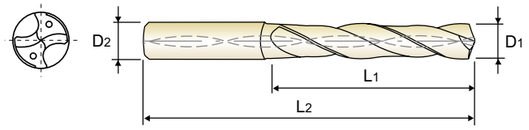
## DH406 SERIES

## CARBIDE, DREAM DRILLS GENERAL with COOLANT HOLES — SHORT

## 硬质合金, 梦幻钻头 带内冷孔 — 短

- ▶ Drilling for Steel, Cast Steel, Cast Iron, Malleable Cast Iron
- ▶ Self centering and chip breaking by R-thinning
- ▶ Wave shape and negative land on the cutting edge for low thrust, stable torque and long tool life
- ▶ Optimized flute shape for strength of drilling and smooth chip evacuation

- ▶ 钻孔 钢件，铸钢，铸铁，球墨铸铁
- ▶ 由于R型中心刃，卓越自定心，断屑
- ▶ 由于刃部的波形和负角设计，实现低阻力，稳定扭矩和提高刀具寿命
- ▶ 最佳沟槽设计使强力钻孔和顺畅排屑




DIN 6537 | CARBIDE | 30° | h6 | m7 | 140° | 20 bar

p. A98-A99

3 × D

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| ◎ | SHRINK FIT HOLDER | D47 - 72 |
| ◎ | HYDRAULIC CHUCK | D15 - 46 |
| ○ | ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. | Drill Diameter | Shank Diameter | Flute Length | Overall Length |
|---|---|---|---|---|
| 型号 | 刃径 | 柄径 | 槽长 | 全长 |
| TiAlN | D1 | D2 | L1 | L2 |
| DH406150 | 15.0 | 16 | 65 | 115 |
| DH406155 | 15.5 | 16 | 65 | 115 |
| DH406160 | 16.0 | 16 | 65 | 115 |
| DH406165 | 16.5 | 18 | 73 | 123 |
| DH406170 | 17.0 | 18 | 73 | 123 |
| DH406175 | 17.5 | 18 | 73 | 123 |

| EDP No. | Drill Diameter | Shank Diameter | Flute Length | Overall Length |
|---|---|---|---|---|
| 型号 | 刃径 | 柄径 | 槽长 | 全长 |
| TiAlN | D1 | D2 | L1 | L2 |
| DH406180 | 18.0 | 18 | 73 | 123 |
| DH406185 | 18.5 | 20 | 79 | 131 |
| DH406190 | 19.0 | 20 | 79 | 131 |
| DH406195 | 19.5 | 20 | 79 | 131 |
| DH406200 | 20.0 | 20 | 79 | 131 |

▶ Other shank types are available on your request. / 其他的刀柄类型可以按照你的要求.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ○ | ○ | ◎ | ○ | ○ | ○ | | ◎ | ○ | ◎ | ○ | ◎ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | | | | | | | | | | | | | | | | | | ○ | | | |



# DREAM DRILLS - GENERAL

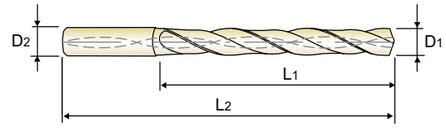
## DH408 SERIES

## CARBIDE, DREAM DRILLS GENERAL with COOLANT HOLES — LONG

## 硬质合金, 梦幻钻头 带内冷孔 — 长

- ▶ Drilling for Steel, Cast Steel, Cast Iron, Malleable Cast Iron
- ▶ Self centering and chip breaking by R-thinning
- ▶ Wave shape and negative land on the cutting edge for low thrust, stable torque and long tool life
- ▶ Optimized flute shape for strength of drilling and smooth chip evacuation

- ▶ 钻孔 钢件，铸钢，铸铁，球墨铸铁
- ▶ 由于R型中心刃，卓越自定心，断屑
- ▶ 由于刃部的波形和负角设计，实现低阻力，稳定扭矩和提高刀具寿命
- ▶ 最佳沟槽设计使强力钻孔和顺畅排屑




DIN 6537 | CARBIDE | 30° | h6 | m7 | 140° | 20 bar

p. A98-A99

5 × D

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| ◎ | SHRINK FIT HOLDER | D47 - 72 |
| ◎ | HYDRAULIC CHUCK | D15 - 46 |
| ○ | ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. | Drill Diameter | Shank Diameter | Flute Length | Overall Length |
|---|---|---|---|---|
| 型号 | 刃径 | 柄径 | 槽长 | 全长 |
| TiAlN | D1 | D2 | L1 | L2 |
| DH408010 | 1.0 | 3 | 8 | 55 |
| DH408011 | 1.1 | 3 | 12 | 55 |
| DH408012 | 1.2 | 3 | 12 | 55 |
| DH408013 | 1.3 | 3 | 12 | 55 |
| DH408014 | 1.4 | 3 | 12 | 55 |
| DH408015 | 1.5 | 3 | 16 | 55 |
| DH408016 | 1.6 | 3 | 16 | 55 |
| DH408017 | 1.7 | 3 | 16 | 55 |
| DH408018 | 1.8 | 3 | 16 | 55 |
| DH408019 | 1.9 | 3 | 16 | 55 |
| DH408020 | 2.0 | 4 | 21 | 57 |
| DH408021 | 2.1 | 4 | 21 | 57 |
| DH408022 | 2.2 | 4 | 21 | 57 |
| DH408023 | 2.3 | 4 | 21 | 57 |
| DH408024 | 2.4 | 4 | 21 | 57 |
| DH408025 | 2.5 | 4 | 21 | 57 |
| DH408026 | 2.6 | 4 | 21 | 57 |
| DH408027 | 2.7 | 4 | 21 | 57 |
| DH408028 | 2.8 | 4 | 21 | 57 |
| DH408029 | 2.9 | 4 | 21 | 57 |
| DH408030 | 3.0 | 6 | 28 | 66 |
| DH408031 | 3.1 | 6 | 28 | 66 |
| DH408032 | 3.2 | 6 | 28 | 66 |
| DH408033 | 3.3 | 6 | 28 | 66 |

| EDP No. | Drill Diameter | Shank Diameter | Flute Length | Overall Length |
|---|---|---|---|---|
| 型号 | 刃径 | 柄径 | 槽长 | 全长 |
| TiAlN | D1 | D2 | L1 | L2 |
| DH408034 | 3.4 | 6 | 28 | 66 |
| DH408035 | 3.5 | 6 | 28 | 66 |
| DH408036 | 3.6 | 6 | 28 | 66 |
| DH408037 | 3.7 | 6 | 28 | 66 |
| DH408038 | 3.8 | 6 | 36 | 74 |
| DH408039 | 3.9 | 6 | 36 | 74 |
| DH408040 | 4.0 | 6 | 36 | 74 |
| DH408041 | 4.1 | 6 | 36 | 74 |
| DH408042 | 4.2 | 6 | 36 | 74 |
| DH408043 | 4.3 | 6 | 36 | 74 |
| DH408044 | 4.4 | 6 | 36 | 74 |
| DH408045 | 4.5 | 6 | 36 | 74 |
| DH408046 | 4.6 | 6 | 36 | 74 |
| DH408047 | 4.7 | 6 | 36 | 74 |
| DH408048 | 4.8 | 6 | 44 | 82 |
| DH408049 | 4.9 | 6 | 44 | 82 |
| DH408050 | 5.0 | 6 | 44 | 82 |
| DH408051 | 5.1 | 6 | 44 | 82 |
| DH408052 | 5.2 | 6 | 44 | 82 |
| DH408053 | 5.3 | 6 | 44 | 82 |
| DH408054 | 5.4 | 6 | 44 | 82 |
| DH408055 | 5.5 | 6 | 44 | 82 |
| DH408056 | 5.6 | 6 | 44 | 82 |
| DH408057 | 5.7 | 6 | 44 | 82 |

▶ Other shank types are available on your request. / 其他的刀柄类型可以按照你的要求.

▶ NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ○ | ○ | ◎ | ○ | ○ | ○ | | ◎ | ○ | ◎ | ○ | ◎ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | | | | | | | | | | | | | | | | | | ○ | | | |

# DREAM DRILLS - GENERAL

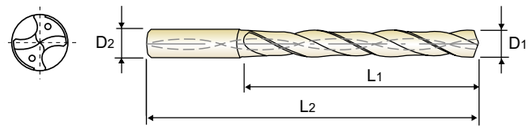
## DH408 SERIES

## CARBIDE, DREAM DRILLS GENERAL with COOLANT HOLES — LONG

## 硬质合金, 梦幻钻头 带内冷孔 — 长

- ▶ Drilling for Steel, Cast Steel, Cast Iron, Malleable Cast Iron
- ▶ Self centering and chip breaking by R-thinning
- ▶ Wave shape and negative land on the cutting edge for low thrust, stable torque and long tool life
- ▶ Optimized flute shape for strength of drilling and smooth chip evacuation

- ▶ 钻孔 钢件，铸钢，铸铁，球墨铸铁
- ▶ 由于R型中心刃，卓越自定心，断屑
- ▶ 由于刃部的波形和负角设计，实现低阻力，稳定扭矩和提高刀具寿命
- ▶ 最佳沟槽设计使强力钻孔和顺畅排屑




DIN 6537 | CARBIDE | 30° | h6 | m7 | 140° | 20 bar

p. A98-A99

5 × D

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| ◎ | SHRINK FIT HOLDER | D47 - 72 |
| ◎ | HYDRAULIC CHUCK | D15 - 46 |
| ○ | ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. | Drill Diameter | Shank Diameter | Flute Length | Overall Length |
|---|---|---|---|---|
| 型号 | 刃径 | 柄径 | 槽长 | 全长 |
| TiAlN | $D_1$ | $D_2$ | $L_1$ | $L_2$ |
| DH408058 | 5.8 | 6 | 44 | 82 |
| DH408059 | 5.9 | 6 | 44 | 82 |
| DH408060 | 6.0 | 6 | 44 | 82 |
| DH408061 | 6.1 | 8 | 53 | 91 |
| DH408062 | 6.2 | 8 | 53 | 91 |
| DH408063 | 6.3 | 8 | 53 | 91 |
| DH408064 | 6.4 | 8 | 53 | 91 |
| DH408065 | 6.5 | 8 | 53 | 91 |
| DH408066 | 6.6 | 8 | 53 | 91 |
| DH408067 | 6.7 | 8 | 53 | 91 |
| DH408068 | 6.8 | 8 | 53 | 91 |
| DH408069 | 6.9 | 8 | 53 | 91 |
| DH408070 | 7.0 | 8 | 53 | 91 |
| DH408071 | 7.1 | 8 | 53 | 91 |
| DH408072 | 7.2 | 8 | 53 | 91 |
| DH408073 | 7.3 | 8 | 53 | 91 |
| DH408074 | 7.4 | 8 | 53 | 91 |
| DH408075 | 7.5 | 8 | 53 | 91 |
| DH408076 | 7.6 | 8 | 53 | 91 |
| DH408077 | 7.7 | 8 | 53 | 91 |
| DH408078 | 7.8 | 8 | 53 | 91 |
| DH408079 | 7.9 | 8 | 53 | 91 |
| DH408080 | 8.0 | 8 | 53 | 91 |
| DH408081 | 8.1 | 10 | 61 | 103 |
| DH408082 | 8.2 | 10 | 61 | 103 |
| DH408083 | 8.3 | 10 | 61 | 103 |
| DH408084 | 8.4 | 10 | 61 | 103 |
| DH408085 | 8.5 | 10 | 61 | 103 |
| DH408086 | 8.6 | 10 | 61 | 103 |
| DH408087 | 8.7 | 10 | 61 | 103 |
| DH408088 | 8.8 | 10 | 61 | 103 |
| DH408089 | 8.9 | 10 | 61 | 103 |
| DH408090 | 9.0 | 10 | 61 | 103 |
| DH408091 | 9.1 | 10 | 61 | 103 |
| DH408092 | 9.2 | 10 | 61 | 103 |
| DH408093 | 9.3 | 10 | 61 | 103 |
| DH408094 | 9.4 | 10 | 61 | 103 |
| DH408095 | 9.5 | 10 | 61 | 103 |
| DH408096 | 9.6 | 10 | 61 | 103 |
| DH408097 | 9.7 | 10 | 61 | 103 |
| DH408098 | 9.8 | 10 | 61 | 103 |
| DH408099 | 9.9 | 10 | 61 | 103 |
| DH408100 | 10.0 | 10 | 61 | 103 |
| DH408101 | 10.1 | 12 | 71 | 118 |
| DH408102 | 10.2 | 12 | 71 | 118 |
| DH408103 | 10.3 | 12 | 71 | 118 |
| DH408104 | 10.4 | 12 | 71 | 118 |
| DH408105 | 10.5 | 12 | 71 | 118 |
| DH408106 | 10.6 | 12 | 71 | 118 |
| DH408107 | 10.7 | 12 | 71 | 118 |
| DH408108 | 10.8 | 12 | 71 | 118 |
| DH408109 | 10.9 | 12 | 71 | 118 |
| DH408110 | 11.0 | 12 | 71 | 118 |
| DH408111 | 11.1 | 12 | 71 | 118 |
| DH408112 | 11.2 | 12 | 71 | 118 |
| DH408113 | 11.3 | 12 | 71 | 118 |
| DH408114 | 11.4 | 12 | 71 | 118 |
| DH408115 | 11.5 | 12 | 71 | 118 |
| DH408116 | 11.6 | 12 | 71 | 118 |
| DH408117 | 11.7 | 12 | 71 | 118 |
| DH408118 | 11.8 | 12 | 71 | 118 |
| DH408119 | 11.9 | 12 | 71 | 118 |
| DH408120 | 12.0 | 12 | 71 | 118 |
| DH408125 | 12.5 | 14 | 77 | 124 |
| DH408130 | 13.0 | 14 | 77 | 124 |
| DH408135 | 13.5 | 14 | 77 | 124 |
| DH408140 | 14.0 | 14 | 77 | 124 |
| DH408145 | 14.5 | 16 | 83 | 133 |
| DH408150 | 15.0 | 16 | 83 | 133 |
| DH408155 | 15.5 | 16 | 83 | 133 |
| DH408160 | 16.0 | 16 | 83 | 133 |
| DH408165 | 16.5 | 18 | 93 | 143 |
| DH408170 | 17.0 | 18 | 93 | 143 |
| DH408175 | 17.5 | 18 | 93 | 143 |
| DH408180 | 18.0 | 18 | 93 | 143 |
| DH408185 | 18.5 | 20 | 101 | 153 |
| DH408190 | 19.0 | 20 | 101 | 153 |
| DH408195 | 19.5 | 20 | 101 | 153 |
| DH408200 | 20.0 | 20 | 101 | 153 |

▶ Other shank types are available on your request. / 其他的刀柄类型可以按照你的要求.

▶ NEXT PAGE 下页

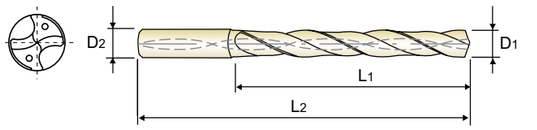
◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ○ | ○ | ◎ | ○ | ○ | ○ | | ◎ | ○ | ◎ | ○ | ◎ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | | | | | | | | | | | | | | | | | | ○ | | | |



DREAM DRILLS - GENERAL
DH408 SERIES
CARBIDE, DREAM DRILLS GENERAL with COOLANT HOLES — LONG
硬质合金, 梦幻钻头 带内冷孔 — 长
▶ Drilling for Steel, Cast Steel, Cast Iron, Malleable Cast Iron
▶ Self centering and chip breaking by R-thinning
▶ Wave shape and negative land on the cutting edge for low thrust, stable torque and long tool life
▶ Optimized flute shape for strength of drilling and smooth chip evacuation
▶ 钻孔 钢件，铸钢，铸铁，球墨铸铁
▶ 由于R型中心刃，卓越自定心，断屑
▶ 由于刃部的波形和负角设计，实现低阻力，稳定扭矩和提高刀具寿命
▶ 最佳沟槽设计使强力钻孔和顺畅排屑




DIN 6537 | CARBIDE | 30° | h6 | m7 | 140° | 20 bar
p. A98-A99
5 × D
Recommended ToolHolder
Plain Shank Page
SHRINK FIT HOLDER D47 - 72
HYDRAULIC CHUCK D15 - 46
ER COLLET CHUCK D73 - 115
Unit(单位) : mm

▶ Other shank types are available on your request. / 其他的刀柄类型可以按照你的要求.
◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ○ | ○ | ◎ | ○ | ○ | ○ | | ◎ | ○ | ◎ | ○ | ◎ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | | | | | | | | | | | | | | | | | | ○ | | | |

# DREAM DRILLS - GENERAL

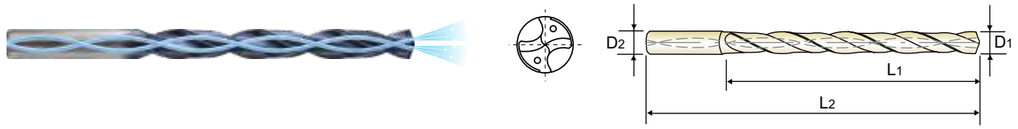
**DH421 SERIES**

## CARBIDE, DREAM DRILLS GENERAL with COOLANT HOLES *EXTRA LONG*

## 硬质合金, 梦幻钻头 带内冷孔 超长

- ▶ Drilling for Steel, Cast Steel, Cast Iron, Malleable Cast Iron
- ▶ Self centering and chip breaking by R-thinning
- ▶ Wave shape and negative land on the cutting edge for low thrust, stable torque and long tool life
- ▶ Optimized flute shape for strength of drilling and smooth chip evacuation

- ▶ 钻孔 钢件，铸钢，铸铁，球墨铸铁
- ▶ 由于R型中心刃，卓越自定心，断屑
- ▶ 由于刃部的波形和负角设计，实现低阻力，稳定扭矩和提高刀具寿命
- ▶ 最佳沟槽设计使强力钻孔和顺畅排屑




DIN 6537 | CARBIDE | 30° | h6 | m7 | 140° | 20 bar

p. A98-A99

8 × D

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| SHRINK FIT HOLDER | D47 - 72 |
| HYDRAULIC CHUCK | D15 - 46 |
| ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. | Drill Diameter | Shank Diameter | Flute Length | Overall Length |
|---|---|---|---|---|
| 型号 | 刃径 | 柄径 | 槽长 | 全长 |
| TiAlN | $D_1$ | $D_2$ | $L_1$ | $L_2$ |
| DH421030 | 3.0 | 6 | 34 | 72 |
| DH421031 | 3.1 | 6 | 34 | 72 |
| DH421032 | 3.2 | 6 | 34 | 72 |
| DH421033 | 3.3 | 6 | 34 | 72 |
| DH421034 | 3.4 | 6 | 34 | 72 |
| DH421035 | 3.5 | 6 | 34 | 72 |
| DH421036 | 3.6 | 6 | 34 | 72 |
| DH421037 | 3.7 | 6 | 34 | 72 |
| DH421038 | 3.8 | 6 | 43 | 81 |
| DH421039 | 3.9 | 6 | 43 | 81 |
| DH421040 | 4.0 | 6 | 43 | 81 |
| DH421041 | 4.1 | 6 | 43 | 81 |
| DH421042 | 4.2 | 6 | 43 | 81 |
| DH421043 | 4.3 | 6 | 43 | 81 |
| DH421044 | 4.4 | 6 | 43 | 81 |
| DH421045 | 4.5 | 6 | 43 | 81 |
| DH421046 | 4.6 | 6 | 43 | 81 |
| DH421047 | 4.7 | 6 | 43 | 81 |
| DH421048 | 4.8 | 6 | 57 | 95 |
| DH421049 | 4.9 | 6 | 57 | 95 |
| DH421050 | 5.0 | 6 | 57 | 95 |
| DH421051 | 5.1 | 6 | 57 | 95 |
| DH421052 | 5.2 | 6 | 57 | 95 |
| DH421053 | 5.3 | 6 | 57 | 95 |
| DH421054 | 5.4 | 6 | 57 | 95 |
| DH421055 | 5.5 | 6 | 57 | 95 |
| DH421056 | 5.6 | 6 | 57 | 95 |
| DH421057 | 5.7 | 6 | 57 | 95 |
| DH421058 | 5.8 | 6 | 57 | 95 |
| DH421059 | 5.9 | 6 | 57 | 95 |
| DH421060 | 6.0 | 6 | 57 | 95 |
| DH421061 | 6.1 | 8 | 76 | 114 |
| DH421062 | 6.2 | 8 | 76 | 114 |
| DH421063 | 6.3 | 8 | 76 | 114 |
| DH421064 | 6.4 | 8 | 76 | 114 |
| DH421065 | 6.5 | 8 | 76 | 114 |
| DH421066 | 6.6 | 8 | 76 | 114 |
| DH421067 | 6.7 | 8 | 76 | 114 |
| DH421068 | 6.8 | 8 | 76 | 114 |
| DH421069 | 6.9 | 8 | 76 | 114 |
| DH421070 | 7.0 | 8 | 76 | 114 |
| DH421071 | 7.1 | 8 | 76 | 114 |
| DH421072 | 7.2 | 8 | 76 | 114 |
| DH421073 | 7.3 | 8 | 76 | 114 |
| DH421074 | 7.4 | 8 | 76 | 114 |
| DH421075 | 7.5 | 8 | 76 | 114 |
| DH421076 | 7.6 | 8 | 76 | 114 |
| DH421077 | 7.7 | 8 | 76 | 114 |

▶ Other shank types are available on your request. / 其他的刀柄类型可以按照你的要求.

▶ NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ○ | ○ | ◎ | ○ | ○ | ○ | | ◎ | ○ | ◎ | ○ | ◎ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | | | | | | | | | | | | | | | | | | ○ | | | |



CARBIDE
HSS
i-ONE DRILLS
i-DREAM DRILLS
DREAM DRILLS -PRO
DREAM DRILLS -GENERAL
DREAM DRILLS -SOFT
DREAM DRILLS -HIGH FEED
DREAM DRILLS -FLAT BOTTOM
DREAM DRILLS -INOX
DREAM DRILLS -ALU
DREAM DRILLS -CFRP
DREAM DRILLS -MQL
DREAM DRILLS for HIGH HARDENED STEELS
GENERAL CARBIDE DRILLS
MULTI-1 DRILLS
GOLD-P DRILLS
SUPER-GP DRILLS
WORM PATTERN DRILLS
STRAIGHT SHANK DRILLS
TAPER SHANK DRILLS
NC-SPOTTING DRILLS
CENTER DRILLS
SPADE DRILLS
REAMERS
COUNTER SINKS
COUNTER BORES
TECHNICAL DATA

# DREAM DRILLS - GENERAL

**DH421 SERIES**

## CARBIDE, DREAM DRILLS GENERAL with COOLANT HOLES *EXTRA LONG*

## 硬质合金, 梦幻钻头 带内冷孔 超长

- ▶ Drilling for Steel, Cast Steel, Cast Iron, Malleable Cast Iron
- ▶ Self centering and chip breaking by R-thinning
- ▶ Wave shape and negative land on the cutting edge for low thrust, stable torque and long tool life
- ▶ Optimized flute shape for strength of drilling and smooth chip evacuation

- ▶ 钻孔 钢件，铸钢，铸铁，球墨铸铁
- ▶ 由于R型中心刃，卓越自定心，断屑
- ▶ 由于刃部的波形和负角设计，实现低阻力，稳定扭矩和提高刀具寿命
- ▶ 最佳沟槽设计使强力钻孔和顺畅排屑

DIN 6537 | CARBIDE | 30° | h6 | m7 | 140° | 20 bar

p. A98-A99

8 × D

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| SHRINK FIT HOLDER | D47 - 72 |
| HYDRAULIC CHUCK | D15 - 46 |
| ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. | Drill Diameter | Shank Diameter | Flute Length | Overall Length |
|---|---|---|---|---|
| 型号 | 刃径 | 柄径 | 槽长 | 全长 |
| TiAlN | $D_1$ | $D_2$ | $L_1$ | $L_2$ |
| DH421078 | 7.8 | 8 | 76 | 114 |
| DH421079 | 7.9 | 8 | 76 | 114 |
| DH421080 | 8.0 | 8 | 76 | 114 |
| DH421081 | 8.1 | 10 | 95 | 142 |
| DH421082 | 8.2 | 10 | 95 | 142 |
| DH421083 | 8.3 | 10 | 95 | 142 |
| DH421084 | 8.4 | 10 | 95 | 142 |
| DH421085 | 8.5 | 10 | 95 | 142 |
| DH421086 | 8.6 | 10 | 95 | 142 |
| DH421087 | 8.7 | 10 | 95 | 142 |
| DH421088 | 8.8 | 10 | 95 | 142 |
| DH421089 | 8.9 | 10 | 95 | 142 |
| DH421090 | 9.0 | 10 | 95 | 142 |
| DH421091 | 9.1 | 10 | 95 | 142 |
| DH421092 | 9.2 | 10 | 95 | 142 |
| DH421093 | 9.3 | 10 | 95 | 142 |
| DH421094 | 9.4 | 10 | 95 | 142 |
| DH421095 | 9.5 | 10 | 95 | 142 |
| DH421096 | 9.6 | 10 | 95 | 142 |
| DH421097 | 9.7 | 10 | 95 | 142 |
| DH421098 | 9.8 | 10 | 95 | 142 |
| DH421099 | 9.9 | 10 | 95 | 142 |
| DH421100 | 10.0 | 10 | 95 | 142 |
| DH421101 | 10.1 | 12 | 114 | 162 |
| DH421102 | 10.2 | 12 | 114 | 162 |
| DH421103 | 10.3 | 12 | 114 | 162 |
| DH421104 | 10.4 | 12 | 114 | 162 |
| DH421105 | 10.5 | 12 | 114 | 162 |
| DH421106 | 10.6 | 12 | 114 | 162 |
| DH421107 | 10.7 | 12 | 114 | 162 |
| DH421108 | 10.8 | 12 | 114 | 162 |
| DH421109 | 10.9 | 12 | 114 | 162 |
| DH421110 | 11.0 | 12 | 114 | 162 |
| DH421111 | 11.1 | 12 | 114 | 162 |
| DH421112 | 11.2 | 12 | 114 | 162 |
| DH421113 | 11.3 | 12 | 114 | 162 |
| DH421114 | 11.4 | 12 | 114 | 162 |
| DH421115 | 11.5 | 12 | 114 | 162 |
| DH421116 | 11.6 | 12 | 114 | 162 |
| DH421117 | 11.7 | 12 | 114 | 162 |
| DH421118 | 11.8 | 12 | 114 | 162 |
| DH421119 | 11.9 | 12 | 114 | 162 |
| DH421120 | 12.0 | 12 | 114 | 162 |
| DH421125 | 12.5 | 14 | 133 | 178 |
| DH421130 | 13.0 | 14 | 133 | 178 |
| DH421135 | 13.5 | 14 | 133 | 178 |
| DH421140 | 14.0 | 14 | 133 | 178 |

▶ Other shank types are available on your request. / 其他的刀柄类型可以按照你的要求.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ○ | ○ | ◎ | ○ | ○ | ○ | | ◎ | ○ | ◎ | ○ | ◎ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | | | | | | | | | | | | | | | | | | ○ | | | |

# DREAM DRILLS - GENERAL

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工条件

### DH404, DH423, DH424 SERIES — without COOLANT HOLES
### 不带内冷孔

RPM (转速) = (rev./min.)
FEED (进给) = (mm/rev.)

| ISO 公制 | VDI 3323 | Material Description 材料描述 | Vc 钻削速度 (m/min) | Parameter 参数 | Drill Diameter 刃径 (mm) 1.0 | 2.0 | Vc 钻削速度 (m/min) | Parameter 参数 | 3.0 | 4.0 | 5.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 2 | Non-alloy steel | 70 | RPM | 22280 | 11140 | 100 | RPM | 10610 | 7960 | 6370 |
| | | | | FEED | 0.03-0.05 | 0.05-0.07 | | FEED | 0.06-0.12 | 0.08-0.14 | 0.14-0.20 |
| | 3 | | 70 | RPM | 22280 | 11140 | 100 | RPM | 10610 | 7960 | 6370 |
| | | | | FEED | 0.03-0.05 | 0.05-0.07 | | FEED | 0.06-0.12 | 0.08-0.14 | 0.14-0.20 |
| | 4 | | 70 | RPM | 22280 | 11140 | 100 | RPM | 10610 | 7960 | 6370 |
| | | | | FEED | 0.03-0.05 | 0.05-0.07 | | FEED | 0.04-0.10 | 0.07-0.13 | 0.10-0.16 |
| | 5 | | 60 | RPM | 19100 | 9550 | 80 | RPM | 8490 | 6370 | 5090 |
| | | | | FEED | 0.03-0.05 | 0.05-0.07 | | FEED | 0.04-0.10 | 0.07-0.13 | 0.10-0.16 |
| | 6 | Low alloy steel | 70 | RPM | 22280 | 11140 | 100 | RPM | 10610 | 7960 | 6370 |
| | | | | FEED | 0.03-0.05 | 0.05-0.07 | | FEED | 0.06-0.12 | 0.08-0.14 | 0.14-0.20 |
| | 7 | | 60 | RPM | 19100 | 9550 | 80 | RPM | 8490 | 6370 | 5090 |
| | | | | FEED | 0.03-0.05 | 0.05-0.07 | | FEED | 0.06-0.12 | 0.08-0.14 | 0.10-0.20 |
| | 8 | | 60 | RPM | 19100 | 9550 | 80 | RPM | 8490 | 6370 | 5090 |
| | | | | FEED | 0.02-0.04 | 0.03-0.05 | | FEED | 0.04-0.10 | 0.07-0.13 | 0.10-0.16 |
| | 9 | | 30 | RPM | 9550 | 4770 | 40 | RPM | 4240 | 3180 | 2550 |
| | | | | FEED | 0.02-0.04 | 0.03-0.05 | | FEED | 0.03-0.08 | 0.05-0.11 | 0.08-0.14 |
| | 10 | High alloyed steel, and tool steel | 50 | RPM | 15920 | 7960 | 70 | RPM | 7430 | 5570 | 4460 |
| | | | | FEED | 0.03-0.05 | 0.05-0.07 | | FEED | 0.04-0.10 | 0.07-0.13 | 0.10-0.16 |
| | 11 | | 30 | RPM | 9550 | 4770 | 40 | RPM | 4240 | 3180 | 2550 |
| | | | | FEED | 0.02-0.04 | 0.03-0.05 | | FEED | 0.03-0.08 | 0.05-0.11 | 0.08-0.14 |
| M | 12 | Stainless steel | 50 | RPM | 15920 | 7960 | 70 | RPM | 7430 | 5570 | 4460 |
| | | | | FEED | 0.03-0.05 | 0.05-0.07 | | FEED | 0.06-0.12 | 0.08-0.14 | 0.14-0.20 |
| | 13 | | 35 | RPM | 11140 | 5570 | 45 | RPM | 4770 | 3580 | 2860 |
| | | | | FEED | 0.02-0.04 | 0.03-0.05 | | FEED | 0.04-0.10 | 0.07-0.13 | 0.10-0.16 |
| K | 15 | Grey cast iron | 70 | RPM | 22280 | 11140 | 100 | RPM | 10610 | 7960 | 6370 |
| | | | | FEED | 0.04-0.06 | 0.04-0.06 | | FEED | 0.08-0.14 | 0.12-0.18 | 0.15-0.22 |
| | 16 | | 65 | RPM | 20690 | 10350 | 80 | RPM | 8490 | 6370 | 5090 |
| | | | | FEED | 0.04-0.06 | 0.04-0.06 | | FEED | 0.06-0.12 | 0.08-0.14 | 0.14-0.20 |
| | 17 | Nodular cast iron | 70 | RPM | 22280 | 11140 | 100 | RPM | 10610 | 7960 | 6370 |
| | | | | FEED | 0.04-0.06 | 0.04-0.06 | | FEED | 0.08-0.14 | 0.12-0.18 | 0.15-0.22 |
| | 18 | | 50 | RPM | 15920 | 7960 | 70 | RPM | 7430 | 5570 | 4460 |
| | | | | FEED | 0.04-0.06 | 0.04-0.06 | | FEED | 0.06-0.12 | 0.08-0.14 | 0.14-0.20 |
| | 19 | Malleable cast iron | 60 | RPM | 19100 | 9550 | 80 | RPM | 8490 | 6370 | 5090 |
| | | | | FEED | 0.04-0.06 | 0.04-0.06 | | FEED | 0.08-0.14 | 0.12-0.18 | 0.15-0.22 |
| | 20 | | 50 | RPM | 15920 | 7960 | 70 | RPM | 7430 | 5570 | 4460 |
| | | | | FEED | 0.03-0.05 | 0.05-0.07 | | FEED | 0.06-0.12 | 0.08-0.14 | 0.14-0.20 |
| H | 55 | Hardened steel | 20 | RPM | 6370 | 3180 | 25 | RPM | 2650 | 1990 | 1590 |
| | | | | FEED | 0.01-0.02 | 0.01-0.03 | | FEED | 0.01-0.03 | 0.01-0.04 | 0.02-0.05 |

▶ Recommend to reduce the feed rate as following / 荐于按照下面减少进给速度

**Feed 100%** : DH404(3×D), DH423(3×D)

**Feed 85%** : DH424(5×D)



DREAM DRILLS - GENERAL
RECOMMENDED CUTTING CONDITIONS
推荐加工条件

RPM (转速) = (rev./min.)
FEED (进给) = (mm/rev.)

| VDI 3323 | Parameter 参数 | Drill Diameter 刃径 (mm) 6.0 | 8.0 | 10.0 | 12.0 | 14.0 | 16.0 | 18.0 | 20.0 |
|---|---|---|---|---|---|---|---|---|---|
| 2 | RPM | 5310 | 3980 | 3180 | 2650 | 2270 | 1990 | 1770 | 1590 |
| | FEED | 0.16-0.22 | 0.18-0.24 | 0.19-0.27 | 0.21-0.29 | 0.23-0.31 | 0.25-0.33 | 0.28-0.38 | 0.30-0.40 |
| 3 | RPM | 5310 | 3980 | 3180 | 2650 | 2270 | 1990 | 1770 | 1590 |
| | FEED | 0.16-0.22 | 0.18-0.24 | 0.19-0.27 | 0.21-0.29 | 0.23-0.31 | 0.25-0.33 | 0.28-0.38 | 0.30-0.40 |
| 4 | RPM | 5310 | 3980 | 3180 | 2650 | 2270 | 1990 | 1770 | 1590 |
| | FEED | 0.12-0.18 | 0.14-0.2 | 0.15-0.23 | 0.17-0.25 | 0.18-0.26 | 0.19-0.27 | 0.20-0.30 | 0.22-0.32 |
| 5 | RPM | 4240 | 3180 | 2550 | 2120 | 1820 | 1590 | 1410 | 1270 |
| | FEED | 0.12-0.18 | 0.14-0.2 | 0.15-0.23 | 0.17-0.25 | 0.18-0.26 | 0.19-0.27 | 0.20-0.30 | 0.22-0.32 |
| 6 | RPM | 5310 | 3980 | 3180 | 2650 | 2270 | 1990 | 1770 | 1590 |
| | FEED | 0.16-0.22 | 0.18-0.24 | 0.19-0.27 | 0.21-0.29 | 0.23-0.31 | 0.25-0.33 | 0.28-0.38 | 0.30-0.40 |
| 7 | RPM | 4240 | 3180 | 2550 | 2120 | 1820 | 1590 | 1410 | 1270 |
| | FEED | 0.12-0.24 | 0.16-0.28 | 0.19-0.27 | 0.21-0.29 | 0.23-0.31 | 0.25-0.33 | 0.28-0.38 | 0.30-0.40 |
| 8 | RPM | 4240 | 3180 | 2550 | 2120 | 1820 | 1590 | 1410 | 1270 |
| | FEED | 0.12-0.18 | 0.14-0.2 | 0.15-0.23 | 0.17-0.25 | 0.18-0.26 | 0.19-0.27 | 0.20-0.30 | 0.22-0.32 |
| 9 | RPM | 2120 | 1590 | 1270 | 1060 | 910 | 800 | 710 | 640 |
| | FEED | 0.10-0.16 | 0.12-0.18 | 0.13-0.19 | 0.14-0.20 | 0.15-0.21 | 0.16-0.22 | 0.17-0.25 | 0.18-0.28 |
| 10 | RPM | 3710 | 2790 | 2230 | 1860 | 1590 | 1390 | 1240 | 1110 |
| | FEED | 0.12-0.18 | 0.14-0.20 | 0.15-0.23 | 0.17-0.25 | 0.18-0.26 | 0.19-0.27 | 0.20-0.30 | 0.22-0.32 |
| 11 | RPM | 2120 | 1590 | 1270 | 1060 | 910 | 800 | 710 | 640 |
| | FEED | 0.10-0.16 | 0.12-0.18 | 0.13-0.19 | 0.14-0.20 | 0.15-0.21 | 0.16-0.22 | 0.17-0.25 | 0.18-0.28 |
| 12 | RPM | 3710 | 2790 | 2230 | 1860 | 1590 | 1390 | 1240 | 1110 |
| | FEED | 0.16-0.22 | 0.18-0.24 | 0.19-0.27 | 0.21-0.29 | 0.23-0.31 | 0.25-0.33 | 0.28-0.38 | 0.30-0.40 |
| 13 | RPM | 2390 | 1790 | 1430 | 1190 | 1020 | 900 | 800 | 720 |
| | FEED | 0.12-0.18 | 0.14-0.20 | 0.15-0.23 | 0.17-0.25 | 0.18-0.26 | 0.19-0.27 | 0.20-0.30 | 0.22-0.32 |
| 15 | RPM | 5310 | 3980 | 3180 | 2650 | 2270 | 1990 | 1770 | 1590 |
| | FEED | 0.20-0.26 | 0.22-0.28 | 0.25-0.33 | 0.27-0.35 | 0.29-0.37 | 0.31-0.39 | 0.32-0.42 | 0.34-0.44 |
| 16 | RPM | 4240 | 3180 | 2550 | 2120 | 1820 | 1590 | 1410 | 1270 |
| | FEED | 0.16-0.22 | 0.18-0.24 | 0.19-0.27 | 0.21-0.29 | 0.23-0.31 | 0.25-0.33 | 0.28-0.38 | 0.30-0.40 |
| 17 | RPM | 5310 | 3980 | 3180 | 2650 | 2270 | 1990 | 1770 | 1590 |
| | FEED | 0.20-0.26 | 0.22-0.28 | 0.25-0.33 | 0.27-0.35 | 0.29-0.37 | 0.31-0.39 | 0.32-0.42 | 0.34-0.44 |
| 18 | RPM | 3710 | 2790 | 2230 | 1860 | 1590 | 1390 | 1240 | 1110 |
| | FEED | 0.16-0.22 | 0.18-0.24 | 0.19-0.27 | 0.21-0.29 | 0.23-0.31 | 0.25-0.33 | 0.28-0.38 | 0.30-0.40 |
| 19 | RPM | 4240 | 3180 | 2550 | 2120 | 1820 | 1590 | 1410 | 1270 |
| | FEED | 0.20-0.26 | 0.22-0.28 | 0.25-0.33 | 0.27-0.35 | 0.29-0.37 | 0.31-0.39 | 0.32-0.42 | 0.34-0.44 |
| 20 | RPM | 3710 | 2790 | 2230 | 1860 | 1590 | 1390 | 1240 | 1110 |
| | FEED | 0.16-0.22 | 0.18-0.24 | 0.19-0.27 | 0.21-0.29 | 0.23-0.31 | 0.25-0.33 | 0.28-0.38 | 0.30-0.40 |
| 55 | RPM | 1,330 | 990 | 800 | 660 | 570 | 500 | 440 | 400 |
| | FEED | 0.03-0.06 | 0.03-0.06 | 0.04-0.07 | 0.04-0.08 | 0.05-0.09 | 0.05-0.09 | 0.05-0.10 | 0.05-0.10 |

# DREAM DRILLS - GENERAL

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工条件

### DH406, DH408, DH421 SERIES with COOLANT HOLES
### 带内冷孔

RPM (转速) = (rev./min.)
FEED (进给) = (mm/rev.)

| ISO 公制 | VDI 3323 | Material Description 材料描述 | Vc 钻削速度 (m/min) | Parameter 参数 | Drill Diameter 刃径 (mm) 1.0 | 2.0 | Vc 钻削速度 (m/min) | Parameter 参数 | Drill Diameter 刃径 (mm) 3.0 | 4.0 | 5.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 2 | Non-alloy steel | 80 | RPM | 25460 | 12730 | 110 | RPM | 11670 | 8750 | 7000 |
| | | | | FEED | 0.03-0.05 | 0.05-0.07 | | FEED | 0.06-0.12 | 0.08-0.14 | 0.14-0.20 |
| | 3 | | 80 | RPM | 25460 | 12730 | 110 | RPM | 11670 | 8750 | 7000 |
| | | | | FEED | 0.03-0.05 | 0.05-0.07 | | FEED | 0.06-0.12 | 0.08-0.14 | 0.14-0.20 |
| | 4 | | 80 | RPM | 25460 | 12730 | 110 | RPM | 11670 | 8750 | 7000 |
| | | | | FEED | 0.03-0.05 | 0.05-0.07 | | FEED | 0.04-0.10 | 0.07-0.13 | 0.10-0.16 |
| | 5 | | 70 | RPM | 22280 | 11140 | 90 | RPM | 9550 | 7160 | 5730 |
| | | | | FEED | 0.03-0.05 | 0.05-0.07 | | FEED | 0.04-0.10 | 0.07-0.13 | 0.10-0.16 |
| | 6 | Low alloy steel | 80 | RPM | 25460 | 12730 | 110 | RPM | 11670 | 8750 | 7000 |
| | | | | FEED | 0.03-0.05 | 0.05-0.07 | | FEED | 0.06-0.12 | 0.08-0.14 | 0.14-0.20 |
| | 7 | | 70 | RPM | 22280 | 11140 | 90 | RPM | 9550 | 7160 | 5730 |
| | | | | FEED | 0.03-0.05 | 0.05-0.07 | | FEED | 0.06-0.12 | 0.08-0.14 | 0.10-0.20 |
| | 8 | | 70 | RPM | 22280 | 11140 | 90 | RPM | 9550 | 7160 | 5730 |
| | | | | FEED | 0.02-0.04 | 0.03-0.05 | | FEED | 0.04-0.10 | 0.07-0.13 | 0.10-0.16 |
| | 9 | | 40 | RPM | 12730 | 6370 | 50 | RPM | 5310 | 3980 | 3180 |
| | | | | FEED | 0.02-0.04 | 0.03-0.05 | | FEED | 0.03-0.08 | 0.05-0.11 | 0.08-0.14 |
| | 10 | High alloyed steel, and tool steel | 60 | RPM | 19100 | 9550 | 80 | RPM | 8490 | 6370 | 5090 |
| | | | | FEED | 0.03-0.05 | 0.05-0.07 | | FEED | 0.04-0.10 | 0.07-0.13 | 0.10-0.16 |
| | 11 | | 40 | RPM | 12730 | 6370 | 45 | RPM | 4770 | 3580 | 2860 |
| | | | | FEED | 0.02-0.04 | 0.03-0.05 | | FEED | 0.03-0.08 | 0.05-0.11 | 0.08-0.14 |
| M | 12 | Stainless steel | 60 | RPM | 19100 | 9550 | 80 | RPM | 8490 | 6370 | 5090 |
| | | | | FEED | 0.03-0.05 | 0.05-0.07 | | FEED | 0.06-0.12 | 0.08-0.14 | 0.14-0.20 |
| | 13 | | 45 | RPM | 14320 | 7160 | 55 | RPM | 5840 | 4380 | 3500 |
| | | | | FEED | 0.02-0.04 | 0.03-0.05 | | FEED | 0.04-0.10 | 0.07-0.13 | 0.10-0.16 |
| K | 15 | Grey cast iron | 80 | RPM | 25460 | 12730 | 110 | RPM | 11670 | 8750 | 7,000 |
| | | | | FEED | 0.04-0.06 | 0.04-0.06 | | FEED | 0.08-0.14 | 0.12-0.18 | 0.15-0.22 |
| | 16 | | 75 | RPM | 23870 | 11940 | 95 | RPM | 10080 | 7560 | 6050 |
| | | | | FEED | 0.04-0.06 | 0.04-0.06 | | FEED | 0.06-0.12 | 0.08-0.14 | 0.14-0.20 |
| | 17 | Nodular cast iron | 90 | RPM | 28650 | 14320 | 120 | RPM | 12730 | 9550 | 7640 |
| | | | | FEED | 0.04-0.06 | 0.04-0.06 | | FEED | 0.08-0.14 | 0.12-0.18 | 0.15-0.22 |
| | 18 | | 60 | RPM | 19100 | 9550 | 80 | RPM | 8490 | 6370 | 5090 |
| | | | | FEED | 0.04-0.06 | 0.04-0.06 | | FEED | 0.06-0.12 | 0.08-0.14 | 0.14-0.20 |
| | 19 | Malleable cast iron | 70 | RPM | 22280 | 11140 | 90 | RPM | 9550 | 7160 | 5730 |
| | | | | FEED | 0.04-0.06 | 0.04-0.06 | | FEED | 0.08-0.14 | 0.12-0.18 | 0.15-0.22 |
| | 20 | | 60 | RPM | 19100 | 9550 | 80 | RPM | 8490 | 6370 | 5090 |
| | | | | FEED | 0.03-0.05 | 0.05-0.07 | | FEED | 0.06-0.12 | 0.08-0.14 | 0.14-0.20 |
| H | 55 | Hardened steel | 25 | RPM | 7960 | 3980 | 30 | RPM | 3180 | 2390 | 1910 |
| | | | | FEED | 0.01-0.02 | 0.01-0.03 | | FEED | 0.01-0.03 | 0.01-0.04 | 0.02-0.05 |

▶ Recommend to reduce the feed rate as following / 荐于按照下面减少进给速度

**Feed 100%** : DH406(3×D), DH408(5×D)

**Feed 75%** : DH421(8×D)



DREAM DRILLS - GENERAL
RECOMMENDED CUTTING CONDITIONS
推荐加工条件

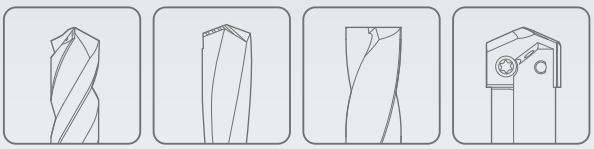
RPM (转速) = (rev./min.)
FEED (进给) = (mm/rev.)

| VDI 3323 | Parameter 参数 | Drill Diameter 刃径 (mm) 6.0 | 8.0 | 10.0 | 12.0 | 14.0 | 16.0 | 18.0 | 20.0 |
|---|---|---|---|---|---|---|---|---|---|
| 2 | RPM | 5840 | 4380 | 3500 | 2920 | 2500 | 2190 | 1950 | 1750 |
| | FEED | 0.16-0.22 | 0.18-0.24 | 0.19-0.27 | 0.21-0.29 | 0.23-0.31 | 0.25-0.33 | 0.28-0.38 | 0.30-0.40 |
| 3 | RPM | 5840 | 4380 | 3500 | 2920 | 2500 | 2190 | 1950 | 1750 |
| | FEED | 0.16-0.22 | 0.18-0.24 | 0.19-0.27 | 0.21-0.29 | 0.23-0.31 | 0.25-0.33 | 0.28-0.38 | 0.30-0.40 |
| 4 | RPM | 5840 | 4380 | 3500 | 2920 | 2500 | 2190 | 1950 | 1750 |
| | FEED | 0.12-0.18 | 0.14-0.20 | 0.15-0.23 | 0.17-0.25 | 0.18-0.26 | 0.19-0.27 | 0.20-0.30 | 0.22-0.32 |
| 5 | RPM | 4770 | 3580 | 2860 | 2390 | 2050 | 1790 | 1590 | 1430 |
| | FEED | 0.12-0.18 | 0.14-0.20 | 0.15-0.23 | 0.17-0.25 | 0.18-0.26 | 0.19-0.27 | 0.20-0.30 | 0.22-0.32 |
| 6 | RPM | 5840 | 4380 | 3500 | 2920 | 2500 | 2190 | 1950 | 1750 |
| | FEED | 0.16-0.22 | 0.18-0.24 | 0.19-0.27 | 0.21-0.29 | 0.23-0.31 | 0.25-0.33 | 0.28-0.38 | 0.30-0.40 |
| 7 | RPM | 4770 | 3580 | 2860 | 2390 | 2050 | 1790 | 1590 | 1430 |
| | FEED | 0.12-0.24 | 0.16-0.28 | 0.19-0.27 | 0.21-0.29 | 0.23-0.31 | 0.25-0.33 | 0.28-0.38 | 0.30-0.40 |
| 8 | RPM | 4770 | 3580 | 2860 | 2390 | 2050 | 1790 | 1590 | 1430 |
| | FEED | 0.12-0.18 | 0.14-0.20 | 0.15-0.23 | 0.17-0.25 | 0.18-0.26 | 0.19-0.27 | 0.20-0.30 | 0.22-0.32 |
| 9 | RPM | 2650 | 1990 | 1590 | 1330 | 1140 | 990 | 880 | 800 |
| | FEED | 0.10-0.16 | 0.12-0.18 | 0.13-0.19 | 0.14-0.20 | 0.15-0.21 | 0.16-0.22 | 0.17-0.25 | 0.18-0.28 |
| 10 | RPM | 4240 | 3180 | 2550 | 2120 | 1820 | 1590 | 1410 | 1270 |
| | FEED | 0.12-0.18 | 0.14-0.20 | 0.15-0.23 | 0.17-0.25 | 0.18-0.26 | 0.19-0.27 | 0.20-0.30 | 0.22-0.32 |
| 11 | RPM | 2390 | 1790 | 1430 | 1190 | 1020 | 900 | 800 | 720 |
| | FEED | 0.10-0.16 | 0.12-0.18 | 0.13-0.19 | 0.14-0.20 | 0.15-0.21 | 0.16-0.22 | 0.17-0.25 | 0.18-0.28 |
| 12 | RPM | 4240 | 3180 | 2550 | 2120 | 1820 | 1590 | 1410 | 1270 |
| | FEED | 0.16-0.22 | 0.18-0.24 | 0.19-0.27 | 0.21-0.29 | 0.23-0.31 | 0.25-0.33 | 0.28-0.38 | 0.30-0.40 |
| 13 | RPM | 2920 | 2190 | 1750 | 1460 | 1250 | 1090 | 970 | 880 |
| | FEED | 0.12-0.18 | 0.14-0.20 | 0.15-0.23 | 0.17-0.25 | 0.18-0.26 | 0.19-0.27 | 0.20-0.30 | 0.22-0.32 |
| 15 | RPM | 5840 | 4380 | 3500 | 2920 | 2500 | 2190 | 1950 | 1750 |
| | FEED | 0.20-0.26 | 0.22-0.28 | 0.25-0.33 | 0.27-0.35 | 0.29-0.37 | 0.31-0.39 | 0.32-0.42 | 0.34-0.44 |
| 16 | RPM | 5040 | 3780 | 3020 | 2520 | 2160 | 1890 | 1680 | 1510 |
| | FEED | 0.16-0.22 | 0.18-0.24 | 0.19-0.27 | 0.21-0.29 | 0.23-0.31 | 0.25-0.33 | 0.28-0.38 | 0.30-0.40 |
| 17 | RPM | 6370 | 4770 | 3820 | 3180 | 2730 | 2390 | 2120 | 1910 |
| | FEED | 0.20-0.26 | 0.22-0.28 | 0.25-0.33 | 0.27-0.35 | 0.29-0.37 | 0.31-0.39 | 0.32-0.42 | 0.34-0.44 |
| 18 | RPM | 4240 | 3180 | 2550 | 2120 | 1820 | 1590 | 1410 | 1270 |
| | FEED | 0.16-0.22 | 0.18-0.24 | 0.19-0.27 | 0.21-0.29 | 0.23-0.31 | 0.25-0.33 | 0.28-0.38 | 0.30-0.40 |
| 19 | RPM | 4770 | 3580 | 2860 | 2390 | 2050 | 1790 | 1590 | 1430 |
| | FEED | 0.20-0.26 | 0.22-0.28 | 0.25-0.33 | 0.27-0.35 | 0.29-0.37 | 0.31-0.39 | 0.32-0.42 | 0.34-0.44 |
| 20 | RPM | 4240 | 3180 | 2550 | 2120 | 1820 | 1590 | 1410 | 1270 |
| | FEED | 0.16-0.22 | 0.18-0.24 | 0.19-0.27 | 0.21-0.29 | 0.23-0.31 | 0.25-0.33 | 0.28-0.38 | 0.30-0.40 |
| 55 | RPM | 1590 | 1190 | 950 | 800 | 680 | 600 | 530 | 480 |
| | FEED | 0.03-0.06 | 0.03-0.06 | 0.04-0.07 | 0.04-0.08 | 0.05-0.09 | 0.05-0.09 | 0.05-0.10 | 0.05-0.10 |



CARBIDE
HSS
i-ONE DRILLS
i-DREAM DRILLS
DREAM DRILLS -PRO
DREAM DRILLS -GENERAL
DREAM DRILLS -SOFT
DREAM DRILLS -HIGH FEED
DREAM DRILLS -FLAT BOTTOM
DREAM DRILLS -INOX
DREAM DRILLS -ALU
DREAM DRILLS -CFRP
DREAM DRILLS -MQL
DREAM DRILLS for HIGH HARDENED STEELS
GENERAL CARBIDE DRILLS
MULTI-1 DRILLS
GOLD-P DRILLS
SUPER-GP DRILLS
WORM PATTERN DRILLS
STRAIGHT SHANK DRILLS
TAPER SHANK DRILLS
NC-SPOTTING DRILLS
CENTER DRILLS
SPADE DRILLS
REAMERS
COUNTER SINKS
COUNTER BORES
TECHNICAL DATA

Global Cutting Tool Leader **YG-1**



# HOLEMAKING

Leading Through Innovation

# SOLID CARBIDE

# DREAM DRILLS -SOFT

- For Steels, up to Medium Hardness

- 用于中等硬度钢

# SELECTION GUIDE
## 选用指南

HOLEMAKING TOOLS

| SERIES 系列 | DPPA01 | DPPA02 |
|---|---|---|
| DRILLING DEPTH 钻销深度 | - | - |
| LENGTH 长度 | REGULAR 常规 | LONG 长 |
| SIZE MIN 最小尺寸 | D1.0 | D3.0 |
| SIZE MAX 最大尺寸 | D20.0 | D20.0 |
| PAGE 页数 | A103 | A106 |
| SURFACE TREATMENT 表面处理 | X-Coating | |

# SOLID CARBIDE DREAM DRILLS SOFT

For Steels, up to Medium Hardness
用于中等硬度钢

Please visit 请访问 globalyg1.com/mat for material search 查看产品材料

◎ : Excellent (优秀) ○ : Good (良好)

Recommended cutting conditions (推荐加工条件) : p. A108

| ISO 公制 | VDI 3323 | Material Description 材料描述 | Composition / Structure / Heat Treatment 成分 / 组织 / 热处理 | | HB 布氏硬度 | HRc 硬度 | | |
|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | About 0.15% C | Annealed | 125 | | | |
| | 2 | | About 0.45% C | Annealed | 190 | 13 | ◎ | ◎ |
| | 3 | | About 0.45% C | Quenched & Tempered | 250 | 25 | ○ | ○ |
| | 4 | | About 0.75% C | Annealed | 270 | 28 | | |
| | 5 | | About 0.75% C | Quenched & Tempered | 300 | 32 | | |
| | 6 | Low alloy steel | | Annealed | 180 | 10 | ◎ | ◎ |
| | 7 | | | Quenched & Tempered | 275 | 29 | ○ | ○ |
| | 8 | | | Quenched & Tempered | 300 | 32 | | |
| | 9 | | | Quenched & Tempered | 350 | 38 | | |
| | 10 | High alloyed steel, and tool steel | | Annealed | 200 | 15 | ○ | ○ |
| | 11 | | | Quenched & Tempered | 325 | 35 | | |
| M | 12 | Stainless steel | Ferritic / Martensitic | Annealed | 200 | 15 | ○ | ○ |
| | 13 | | Martensitic | Quenched & Tempered | 240 | 23 | ○ | ○ |
| | 14 | | Austenitic | | 180 | 10 | | |
| K | 15 | Grey cast iron | Pearlitic / ferritic | | 180 | 10 | ◎ | ◎ |
| | 16 | | Pearlitic (Martensitic) | | 260 | 26 | ○ | ○ |
| | 17 | Nodular cast iron | Ferritic | | 160 | 3 | ◎ | ◎ |
| | 18 | | Pearlitic | | 250 | 25 | ○ | ○ |
| | 19 | Malleable cast iron | Ferritic | | 130 | | ◎ | ◎ |
| | 20 | | Pearlitic | | 230 | 21 | ○ | ○ |
| N | 21 | Aluminum-wrought alloy | Not Curable | | 60 | | | |
| | 22 | | Curable | Hardened | 100 | | | |
| | 23 | Aluminum-cast, alloyed | ≤ 12% Si, Not Curable | | 75 | | | |
| | 24 | | ≤ 12% Si, Curable | Hardened | 90 | | | |
| | 25 | | > 12% Si, Not Curable | | 130 | | | |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | Cutting Alloys, PB>1% | | 110 | | | |
| | 27 | | CuZn, CuSnZn (Brass) | | 90 | | | |
| | 28 | | CuSn, lead-free copper and electrolytic copper | | 100 | | | |
| | 29 | Non Metallic Materials | Duroplastic, Fiber Reinforced Plastic | | | | | |
| | 30 | | Rubber, Wood, etc. | | | | | |
| S | 31 | Heat Resistant Super Alloys | Fe Based | Annealed | 200 | 15 | | |
| | 32 | | | Cured | 280 | 30 | | |
| | 33 | | Ni or Co Based | Annealed | 250 | 25 | | |
| | 34 | | | Cured | 350 | 38 | | |
| | 35 | | | Cast | 320 | 34 | | |
| | 36 | Titanium Alloys | Pure Titanium | | 400 Rm | | | |
| | 37 | | Alpha + Beta Alloys | Hardened | 1050 Rm | | | |
| H | 38 | Hardened steel | | Hardened | 550 | 55 | | |
| | 39 | | | Hardened | 630 | 60 | | |
| | 40 | Chilled Cast Iron | | Cast | 400 | 42 | | |
| | 41 | Hardened Cast Iron | | Hardened | 550 | 55 | | |





# DREAM DRILLS -SOFT

DPPA01 SERIES

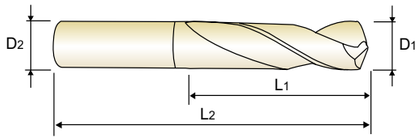
## CARBIDE, DREAM DRILLS - SOFT
## 硬质合金, 梦幻钻头 - 软材质用

REGULAR 常规

- Drilling for Non-alloy Steel, Low Alloy Steel and Cast Iron.
- Lip straight shape cutting edge will allow low thrust, strong rigidity and stable torque.
- Unique radius thinning for self-centering and chip breaking
- Negative land on the cutting edge for reliable tool life

- 为钻碳素钢，低合金钢，铸铁
- 唇形直刃，低推力，强刚性和稳定扭矩.
- 独特的薄圆弧形，自主定心，断屑
- 负片地的切削刃为可靠的刀具寿命

up to 1.5mm ø1.6~ø1.9 over 1.9mm




CARBIDE | 30° | h6 | h7 | 140°

p. A108-A109

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| SHRINK FIT HOLDER | D47 - 72 |
| HYDRAULIC CHUCK | D15 - 46 |
| ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. 型号 | Drill Diameter 刃径 D1 | Shank Diameter 柄径 D2 | Flute Length 槽长 L1 | Overall Length 全长 L2 | EDP No. 型号 | Drill Diameter 刃径 D1 | Shank Diameter 柄径 D2 | Flute Length 槽长 L1 | Overall Length 全长 L2 |
|---|---|---|---|---|---|---|---|---|---|
| X-Coating | | | | | X-Coating | | | | |
| DPPA01010 | 1.0 | 3 | 8 | 38 | DPPA01032 | 3.2 | 4 | 20 | 55 |
| DPPA01011 | 1.1 | 3 | 9 | 42 | DPPA01033 | 3.3 | 4 | 20 | 55 |
| DPPA01012 | 1.2 | 3 | 10 | 42 | DPPA01034 | 3.4 | 4 | 20 | 55 |
| DPPA01013 | 1.3 | 3 | 10 | 42 | DPPA01035 | 3.5 | 4 | 20 | 55 |
| DPPA01014 | 1.4 | 3 | 11 | 42 | DPPA01036 | 3.6 | 4 | 25 | 55 |
| DPPA01015 | 1.5 | 3 | 11 | 42 | DPPA01037 | 3.7 | 4 | 25 | 55 |
| DPPA01016 | 1.6 | 3 | 12 | 42 | DPPA01038 | 3.8 | 4 | 25 | 55 |
| DPPA01017 | 1.7 | 3 | 12 | 42 | DPPA01039 | 3.9 | 4 | 25 | 55 |
| DPPA01018 | 1.8 | 3 | 13 | 42 | DPPA01040 | 4.0 | 4 | 25 | 55 |
| DPPA01019 | 1.9 | 3 | 13 | 42 | DPPA01041 | 4.1 | 4 | 25 | 55 |
| DPPA01020 | 2.0 | 3 | 17 | 50 | DPPA01042 | 4.2 | 5 | 32 | 62 |
| DPPA01021 | 2.1 | 3 | 17 | 50 | DPPA01043 | 4.3 | 5 | 32 | 62 |
| DPPA01022 | 2.2 | 3 | 17 | 50 | DPPA01044 | 4.4 | 5 | 32 | 62 |
| DPPA01023 | 2.3 | 3 | 17 | 50 | DPPA01045 | 4.5 | 5 | 32 | 62 |
| DPPA01024 | 2.4 | 3 | 17 | 50 | DPPA01046 | 4.6 | 5 | 32 | 62 |
| DPPA01025 | 2.5 | 3 | 17 | 50 | DPPA01047 | 4.7 | 5 | 32 | 62 |
| DPPA01026 | 2.6 | 3 | 17 | 50 | DPPA01048 | 4.8 | 5 | 32 | 62 |
| DPPA01027 | 2.7 | 3 | 17 | 50 | DPPA01049 | 4.9 | 5 | 32 | 62 |
| DPPA01028 | 2.8 | 3 | 17 | 50 | DPPA01050 | 5.0 | 5 | 32 | 62 |
| DPPA01029 | 2.9 | 3 | 17 | 50 | DPPA01051 | 5.1 | 5 | 32 | 62 |
| DPPA01030 | 3.0 | 4 | 20 | 55 | DPPA01052 | 5.2 | 6 | 36 | 66 |
| DPPA01031 | 3.1 | 4 | 20 | 55 | DPPA01053 | 5.3 | 6 | 36 | 66 |

▶ Other shank types are available on your request. / 其他刀柄类型可根据客户需求提供.

▶ NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | | ◎ | ○ | | | ◎ | ○ | | | ○ | | ○ | ○ | | ◎ | ○ | ◎ | ○ | ◎ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | | | | | | | | | | | | | | | | | | | | | |

# DREAM DRILLS -SOFT

**DPPA01 SERIES**

## CARBIDE, DREAM DRILLS - SOFT

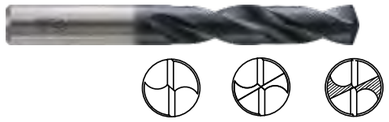
*REGULAR*

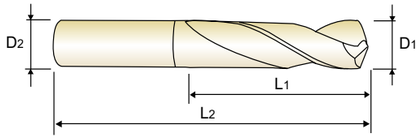
## 硬质合金, 梦幻钻头 - 软材质用

常规

- Drilling for Non-alloy Steel, Low Alloy Steel and Cast Iron.
- Lip straight shape cutting edge will allow low thrust, strong rigidity and stable torque.
- Unique radius thinning for self-centering and chip breaking
- Negative land on the cutting edge for reliable tool life

- 为钻碳素钢，低合金钢，铸铁
- 唇形直刃，低推力，强刚性和稳定扭矩.
- 独特的薄圆弧形，自主定心，断屑
- 负片地的切削刃为可靠的刀具寿命




CARBIDE | 30° | h6 | h7 | 140° | p. A108-A109

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| SHRINK FIT HOLDER | D47 - 72 |
| HYDRAULIC CHUCK | D15 - 46 |
| ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. | Drill Diameter | Shank Diameter | Flute Length | Overall Length |
|---|---|---|---|---|
| 型号 | 刃径 | 柄径 | 槽长 | 全长 |
| X-Coating | $D_1$ | $D_2$ | $L_1$ | $L_2$ |
| **DPPA01054** | **5.4** | 6 | 36 | 66 |
| **DPPA01055** | **5.5** | 6 | 36 | 66 |
| **DPPA01056** | **5.6** | 6 | 36 | 66 |
| **DPPA01057** | **5.7** | 6 | 36 | 66 |
| **DPPA01058** | **5.8** | 6 | 36 | 66 |
| **DPPA01059** | **5.9** | 6 | 36 | 66 |
| **DPPA01060** | **6.0** | 6 | 36 | 66 |
| **DPPA01061** | **6.1** | 6 | 36 | 66 |
| **DPPA01062** | **6.2** | 7 | 42 | 74 |
| **DPPA01063** | **6.3** | 7 | 42 | 74 |
| **DPPA01064** | **6.4** | 7 | 42 | 74 |
| **DPPA01065** | **6.5** | 7 | 42 | 74 |
| **DPPA01066** | **6.6** | 7 | 42 | 74 |
| **DPPA01067** | **6.7** | 7 | 42 | 74 |
| **DPPA01068** | **6.8** | 7 | 42 | 74 |
| **DPPA01069** | **6.9** | 7 | 42 | 74 |
| **DPPA01070** | **7.0** | 7 | 42 | 74 |
| **DPPA01071** | **7.1** | 7 | 42 | 74 |
| **DPPA01072** | **7.2** | 8 | 46 | 79 |
| **DPPA01073** | **7.3** | 8 | 46 | 79 |
| **DPPA01074** | **7.4** | 8 | 46 | 79 |
| **DPPA01075** | **7.5** | 8 | 46 | 79 |

| EDP No. | Drill Diameter | Shank Diameter | Flute Length | Overall Length |
|---|---|---|---|---|
| 型号 | 刃径 | 柄径 | 槽长 | 全长 |
| X-Coating | $D_1$ | $D_2$ | $L_1$ | $L_2$ |
| **DPPA01076** | **7.6** | 8 | 46 | 79 |
| **DPPA01077** | **7.7** | 8 | 46 | 79 |
| **DPPA01078** | **7.8** | 8 | 46 | 79 |
| **DPPA01079** | **7.9** | 8 | 46 | 79 |
| **DPPA01080** | **8.0** | 8 | 46 | 79 |
| **DPPA01081** | **8.1** | 8 | 46 | 79 |
| **DPPA01082** | **8.2** | 9 | 50 | 84 |
| **DPPA01083** | **8.3** | 9 | 50 | 84 |
| **DPPA01084** | **8.4** | 9 | 50 | 84 |
| **DPPA01085** | **8.5** | 9 | 50 | 84 |
| **DPPA01086** | **8.6** | 9 | 50 | 84 |
| **DPPA01087** | **8.7** | 9 | 50 | 84 |
| **DPPA01088** | **8.8** | 9 | 50 | 84 |
| **DPPA01089** | **8.9** | 9 | 50 | 84 |
| **DPPA01090** | **9.0** | 9 | 50 | 84 |
| **DPPA01091** | **9.1** | 9 | 50 | 84 |
| **DPPA01092** | **9.2** | 10 | 53 | 89 |
| **DPPA01093** | **9.3** | 10 | 53 | 89 |
| **DPPA01094** | **9.4** | 10 | 53 | 89 |
| **DPPA01095** | **9.5** | 10 | 53 | 89 |
| **DPPA01096** | **9.6** | 10 | 53 | 89 |
| **DPPA01097** | **9.7** | 10 | 53 | 89 |

▶ Other shank types are available on your request. / 其他刀柄类型可根据客户需求提供.

▶ NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | | ◎ | ○ | | | ◎ | ○ | | | ○ | | ○ | ○ | | ◎ | ○ | ◎ | ○ | ◎ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | | | | | | | | | | | | | | | | | | | | | |



DREAM DRILLS -SOFT

DPPA01 SERIES

CARBIDE, DREAM DRILLS - SOFT

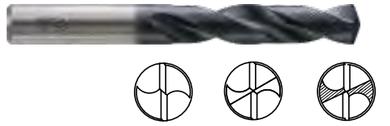
REGULAR

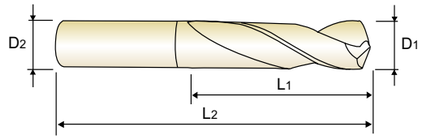
硬质合金, 梦幻钻头 - 软材质用

常规

- Drilling for Non-alloy Steel, Low Alloy Steel and Cast Iron.
- Lip straight shape cutting edge will allow low thrust, strong rigidity and stable torque.
- Unique radius thinning for self-centering and chip breaking
- Negative land on the cutting edge for reliable tool life

- 为钻碳素钢，低合金钢，铸铁
- 唇形直刃，低推力，强刚性和稳定扭矩.
- 独特的薄圆弧形，自主定心，断屑
- 负片地的切削刃为可靠的刀具寿命




CARBIDE | 30° | h6 | h7 | 140° | p. A108-A109

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| SHRINK FIT HOLDER | D47 - 72 |
| HYDRAULIC CHUCK | D15 - 46 |
| ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. | Drill Diameter | Shank Diameter | Flute Length | Overall Length |
|---|---|---|---|---|
| 型号 | 刃径 | 柄径 | 槽长 | 全长 |
| X-Coating | $D_1$ | $D_2$ | $L_1$ | $L_2$ |
| **DPPA01098** | **9.8** | 10 | 53 | 89 |
| **DPPA01099** | **9.9** | 10 | 53 | 89 |
| **DPPA01100** | **10.0** | 10 | 53 | 89 |
| **DPPA01101** | **10.1** | 10 | 53 | 89 |
| **DPPA01102** | **10.2** | 11 | 55 | 95 |
| **DPPA01103** | **10.3** | 11 | 55 | 95 |
| **DPPA01104** | **10.4** | 11 | 55 | 95 |
| **DPPA01105** | **10.5** | 11 | 55 | 95 |
| **DPPA01106** | **10.6** | 11 | 55 | 95 |
| **DPPA01107** | **10.7** | 11 | 55 | 95 |
| **DPPA01108** | **10.8** | 11 | 55 | 95 |
| **DPPA01109** | **10.9** | 11 | 55 | 95 |
| **DPPA01110** | **11.0** | 11 | 55 | 95 |
| **DPPA01111** | **11.1** | 11 | 55 | 95 |
| **DPPA01112** | **11.2** | 12 | 62 | 102 |
| **DPPA01113** | **11.3** | 12 | 62 | 102 |
| **DPPA01114** | **11.4** | 12 | 62 | 102 |
| **DPPA01115** | **11.5** | 12 | 62 | 102 |
| **DPPA01116** | **11.6** | 12 | 62 | 102 |
| **DPPA01117** | **11.7** | 12 | 62 | 102 |

| EDP No. | Drill Diameter | Shank Diameter | Flute Length | Overall Length |
|---|---|---|---|---|
| 型号 | 刃径 | 柄径 | 槽长 | 全长 |
| X-Coating | $D_1$ | $D_2$ | $L_1$ | $L_2$ |
| **DPPA01118** | **11.8** | 12 | 62 | 102 |
| **DPPA01119** | **11.9** | 12 | 62 | 102 |
| **DPPA01120** | **12.0** | 12 | 62 | 102 |
| **DPPA01125** | **12.5** | 13 | 62 | 102 |
| **DPPA01130** | **13.0** | 13 | 62 | 102 |
| **DPPA01135** | **13.5** | 14 | 64 | 107 |
| **DPPA01140** | **14.0** | 14 | 64 | 107 |
| **DPPA01145** | **14.5** | 15 | 67 | 111 |
| **DPPA01150** | **15.0** | 15 | 67 | 111 |
| **DPPA01155** | **15.5** | 16 | 69 | 115 |
| **DPPA01160** | **16.0** | 16 | 69 | 115 |
| **DPPA01165** | **16.5** | 17 | 71 | 119 |
| **DPPA01170** | **17.0** | 17 | 71 | 119 |
| **DPPA01175** | **17.5** | 18 | 74 | 123 |
| **DPPA01180** | **18.0** | 18 | 74 | 123 |
| **DPPA01185** | **18.5** | 19 | 76 | 127 |
| **DPPA01190** | **19.0** | 19 | 76 | 127 |
| **DPPA01195** | **19.5** | 20 | 80 | 131 |
| **DPPA01200** | **20.0** | 20 | 80 | 131 |

▶ Other shank types are available on your request. / 其他刀柄类型可根据客户需求提供.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | | ◎ | ○ | | | ◎ | ○ | | | ○ | | ○ | ○ | | ◎ | ○ | ◎ | ○ | ◎ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | | | | | | | | | | | | | | | | | | | | | |

# DREAM DRILLS -SOFT

**DPPA02 SERIES**

## CARBIDE, DREAM DRILLS - SOFT

*LONG*

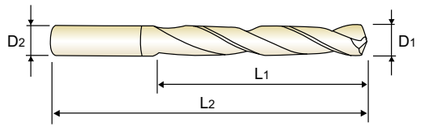
## 硬质合金, 梦幻钻头 - 软材质用

长

- Drilling for Non-alloy Steel, Low Alloy Steel and Cast Iron.
- Lip straight shape cutting edge will allow low thrust, strong rigidity and stable torque.
- Unique radius thinning for self-centering and chip breaking
- Negative land on the cutting edge for reliable tool life

- 为钻碳素钢，低合金钢，铸铁
- 唇形直刃，低推力，强刚性和稳定扭矩.
- 独特的薄圆弧形，自主定心，断屑
- 负片地的切削刃为可靠的刀具寿命

up to ø1.9mm over 1.9mm




CARBIDE 30° h6 h7 140°

p. A108-A109

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| SHRINK FIT HOLDER | D47 - 72 |
| HYDRAULIC CHUCK | D15 - 46 |
| ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. | Drill Diameter | Shank Diameter | Flute Length | Overall Length |
|---|---|---|---|---|
| 型号 | 刃径 | 柄径 | 槽长 | 全长 |
| X-Coating | D1 | D2 | L1 | L2 |
| DPPA02030 | 3.0 | 4 | 45 | 80 |
| DPPA02031 | 3.1 | 4 | 45 | 80 |
| DPPA02032 | 3.2 | 4 | 45 | 80 |
| DPPA02033 | 3.3 | 4 | 45 | 80 |
| DPPA02034 | 3.4 | 4 | 45 | 80 |
| DPPA02035 | 3.5 | 4 | 45 | 80 |
| DPPA02036 | 3.6 | 4 | 45 | 80 |
| DPPA02037 | 3.7 | 4 | 45 | 80 |
| DPPA02038 | 3.8 | 4 | 45 | 80 |
| DPPA02039 | 3.9 | 4 | 45 | 80 |
| DPPA02040 | 4.0 | 4 | 45 | 80 |
| DPPA02041 | 4.1 | 4 | 45 | 80 |
| DPPA02042 | 4.2 | 5 | 45 | 80 |
| DPPA02043 | 4.3 | 5 | 45 | 80 |
| DPPA02044 | 4.4 | 5 | 45 | 80 |
| DPPA02045 | 4.5 | 5 | 45 | 80 |
| DPPA02046 | 4.6 | 5 | 45 | 80 |
| DPPA02047 | 4.7 | 5 | 45 | 80 |
| DPPA02048 | 4.8 | 5 | 45 | 80 |
| DPPA02049 | 4.9 | 5 | 45 | 80 |
| DPPA02050 | 5.0 | 5 | 45 | 80 |
| DPPA02051 | 5.1 | 5 | 45 | 80 |
| DPPA02052 | 5.2 | 6 | 50 | 83 |
| DPPA02053 | 5.3 | 6 | 50 | 83 |
| DPPA02054 | 5.4 | 6 | 50 | 83 |
| DPPA02055 | 5.5 | 6 | 50 | 83 |
| DPPA02056 | 5.6 | 6 | 50 | 83 |

| EDP No. | Drill Diameter | Shank Diameter | Flute Length | Overall Length |
|---|---|---|---|---|
| 型号 | 刃径 | 柄径 | 槽长 | 全长 |
| X-Coating | D1 | D2 | L1 | L2 |
| DPPA02057 | 5.7 | 6 | 50 | 83 |
| DPPA02058 | 5.8 | 6 | 50 | 83 |
| DPPA02059 | 5.9 | 6 | 50 | 83 |
| DPPA02060 | 6.0 | 6 | 50 | 83 |
| DPPA02061 | 6.1 | 6 | 50 | 83 |
| DPPA02062 | 6.2 | 7 | 53 | 85 |
| DPPA02063 | 6.3 | 7 | 53 | 85 |
| DPPA02064 | 6.4 | 7 | 53 | 85 |
| DPPA02065 | 6.5 | 7 | 53 | 85 |
| DPPA02066 | 6.6 | 7 | 53 | 85 |
| DPPA02067 | 6.7 | 7 | 53 | 85 |
| DPPA02068 | 6.8 | 7 | 53 | 85 |
| DPPA02069 | 6.9 | 7 | 53 | 85 |
| DPPA02070 | 7.0 | 7 | 53 | 85 |
| DPPA02071 | 7.1 | 7 | 53 | 85 |
| DPPA02072 | 7.2 | 8 | 58 | 90 |
| DPPA02073 | 7.3 | 8 | 58 | 90 |
| DPPA02074 | 7.4 | 8 | 58 | 90 |
| DPPA02075 | 7.5 | 8 | 58 | 90 |
| DPPA02076 | 7.6 | 8 | 58 | 90 |
| DPPA02077 | 7.7 | 8 | 58 | 90 |
| DPPA02078 | 7.8 | 8 | 58 | 90 |
| DPPA02079 | 7.9 | 8 | 58 | 90 |
| DPPA02080 | 8.0 | 8 | 58 | 90 |
| DPPA02081 | 8.1 | 8 | 58 | 90 |
| DPPA02082 | 8.2 | 9 | 64 | 98 |
| DPPA02083 | 8.3 | 9 | 64 | 98 |

▶ Other shank types are available on your request. / 其他刀柄类型可根据客户需求提供.

▶ NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | | ◎ | ○ | | | ◎ | ○ | | | ○ | | ○ | ○ | | ◎ | ○ | ◎ | ○ | ◎ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | | | | | | | | | | | | | | | | | | | | | |



DREAM DRILLS -SOFT

DPPA02 SERIES

CARBIDE, DREAM DRILLS - SOFT

LONG

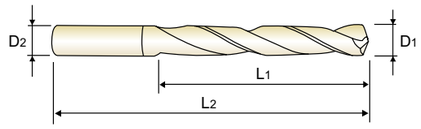
硬质合金, 梦幻钻头 - 软材质用

长

- Drilling for Non-alloy Steel, Low Alloy Steel and Cast Iron.
- Lip straight shape cutting edge will allow low thrust, strong rigidity and stable torque.
- Unique radius thinning for self-centering and chip breaking
- Negative land on the cutting edge for reliable tool life

- 为钻碳素钢，低合金钢，铸铁
- 唇形直刃，低推力，强刚性和稳定扭矩.
- 独特的薄圆弧形，自主定心，断屑
- 负片地的切削刃为可靠的刀具寿命

up to ø1.9mm over 1.9mm




CARBIDE 30° h6 h7 140°

p. A108-A109

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| SHRINK FIT HOLDER | D47 - 72 |
| HYDRAULIC CHUCK | D15 - 46 |
| ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. | Drill Diameter | Shank Diameter | Flute Length | Overall Length |
|---|---|---|---|---|
| 型号 | 刃径 | 柄径 | 槽长 | 全长 |
| X-Coating | D1 | D2 | L1 | L2 |
| DPPA02084 | 8.4 | 9 | 64 | 98 |
| DPPA02085 | 8.5 | 9 | 64 | 98 |
| DPPA02086 | 8.6 | 9 | 64 | 98 |
| DPPA02087 | 8.7 | 9 | 64 | 98 |
| DPPA02088 | 8.8 | 9 | 64 | 98 |
| DPPA02089 | 8.9 | 9 | 64 | 98 |
| DPPA02090 | 9.0 | 9 | 64 | 98 |
| DPPA02091 | 9.1 | 9 | 64 | 98 |
| DPPA02092 | 9.2 | 10 | 68 | 105 |
| DPPA02093 | 9.3 | 10 | 68 | 105 |
| DPPA02094 | 9.4 | 10 | 68 | 105 |
| DPPA02095 | 9.5 | 10 | 68 | 105 |
| DPPA02096 | 9.6 | 10 | 68 | 105 |
| DPPA02097 | 9.7 | 10 | 68 | 105 |
| DPPA02098 | 9.8 | 10 | 68 | 105 |
| DPPA02099 | 9.9 | 10 | 68 | 105 |
| DPPA02100 | 10.0 | 10 | 68 | 105 |
| DPPA02101 | 10.1 | 10 | 68 | 105 |
| DPPA02102 | 10.2 | 11 | 73 | 110 |
| DPPA02103 | 10.3 | 11 | 73 | 110 |
| DPPA02104 | 10.4 | 11 | 73 | 110 |
| DPPA02105 | 10.5 | 11 | 73 | 110 |
| DPPA02106 | 10.6 | 11 | 73 | 110 |
| DPPA02107 | 10.7 | 11 | 73 | 110 |
| DPPA02108 | 10.8 | 11 | 73 | 110 |
| DPPA02109 | 10.9 | 11 | 73 | 110 |
| DPPA02110 | 11.0 | 11 | 73 | 110 |

| EDP No. | Drill Diameter | Shank Diameter | Flute Length | Overall Length |
|---|---|---|---|---|
| 型号 | 刃径 | 柄径 | 槽长 | 全长 |
| X-Coating | D1 | D2 | L1 | L2 |
| DPPA02111 | 11.1 | 11 | 73 | 110 |
| DPPA02112 | 11.2 | 12 | 80 | 120 |
| DPPA02113 | 11.3 | 12 | 80 | 120 |
| DPPA02114 | 11.4 | 12 | 80 | 120 |
| DPPA02115 | 11.5 | 12 | 80 | 120 |
| DPPA02116 | 11.6 | 12 | 80 | 120 |
| DPPA02117 | 11.7 | 12 | 80 | 120 |
| DPPA02118 | 11.8 | 12 | 80 | 120 |
| DPPA02119 | 11.9 | 12 | 80 | 120 |
| DPPA02120 | 12.0 | 12 | 80 | 120 |
| DPPA02125 | 12.5 | 13 | 90 | 137 |
| DPPA02130 | 13.0 | 13 | 90 | 137 |
| DPPA02135 | 13.5 | 14 | 96 | 147 |
| DPPA02140 | 14.0 | 14 | 96 | 147 |
| DPPA02145 | 14.5 | 15 | 100 | 153 |
| DPPA02150 | 15.0 | 15 | 100 | 153 |
| DPPA02155 | 15.5 | 16 | 112 | 160 |
| DPPA02160 | 16.0 | 16 | 112 | 160 |
| DPPA02165 | 16.5 | 17 | 112 | 160 |
| DPPA02170 | 17.0 | 17 | 112 | 160 |
| DPPA02175 | 17.5 | 18 | 112 | 160 |
| DPPA02180 | 18.0 | 18 | 112 | 160 |
| DPPA02185 | 18.5 | 19 | 112 | 160 |
| DPPA02190 | 19.0 | 19 | 112 | 160 |
| DPPA02195 | 19.5 | 20 | 112 | 160 |
| DPPA02200 | 20.0 | 20 | 112 | 160 |

▶ Other shank types are available on your request. / 其他刀柄类型可根据客户需求提供.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | | ◎ | ○ | | | ◎ | ○ | | | ○ | | ○ | ○ | | ◎ | ○ | ◎ | ○ | ◎ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | | | | | | | | | | | | | | | | | | | | | |

# DREAM DRILLS -SOFT

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工条件

### DPPA01, DPPA02 SERIES

### without COOLANT HOLES
### 不带内冷孔

RPM (转速) = (rev./min.)
FEED (进给) = (mm/rev.)

| ISO 公制 | VDI 3323 | Material Description 材料描述 | Vc 钻削速度 (m/min) | Parameter 参数 | Drill Diameter 刃径 (mm) 1.0 | 2.0 | Vc 钻削速度 (m/min) | Parameter 参数 | Drill Diameter 刃径 (mm) 3.0 | 4.0 | 5.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 2 | Non-alloy steel | 60 | RPM | 19100 | 9550 | 80 | RPM | 8490 | 6370 | 5090 |
| | | | | FEED | 0.02-0.04 | 0.04-0.06 | | FEED | 0.04-0.10 | 0.06-0.12 | 0.12-0.18 |
| | 3 | | 60 | RPM | 19100 | 9550 | 80 | RPM | 8490 | 4770 | 3820 |
| | | | | FEED | 0.02-0.04 | 0.04-0.06 | | FEED | 0.04-0.10 | 0.06-0.12 | 0.12-0.18 |
| | 6 | Low alloy steel | 60 | RPM | 19100 | 9550 | 80 | RPM | 8490 | 6370 | 5090 |
| | | | | FEED | 0.02-0.04 | 0.04-0.06 | | FEED | 0.04-0.10 | 0.06-0.12 | 0.12-0.18 |
| | 7 | | 40 | RPM | 12730 | 6370 | 60 | RPM | 6370 | 4770 | 3820 |
| | | | | FEED | 0.02-0.04 | 0.04-0.06 | | FEED | 0.04-0.10 | 0.06-0.12 | 0.12-0.18 |
| | 10 | High alloyed steel, and tool steel | 35 | RPM | 11140 | 5570 | 55 | RPM | 5840 | 4380 | 3500 |
| | | | | FEED | 0.02-0.04 | 0.04-0.06 | | FEED | 0.04-0.10 | 0.06-0.12 | 0.12-0.18 |
| M | 12 | Stainless steel | 30 | RPM | 9550 | 4770 | 45 | RPM | 4770 | 3580 | 2860 |
| | | | | FEED | 0.02-0.04 | 0.02-0.04 | | FEED | 0.03-0.05 | 0.05-0.09 | 0.07-0.11 |
| | 13 | | 20 | RPM | 6370 | 3180 | 35 | RPM | 3710 | 2790 | 2230 |
| | | | | FEED | 0.02-0.04 | 0.02-0.04 | | FEED | 0.03-0.05 | 0.05-0.09 | 0.07-0.11 |
| K | 15 | Grey cast iron | 60 | RPM | 19100 | 9550 | 80 | RPM | 8490 | 6370 | 5090 |
| | | | | FEED | 0.03-0.05 | 0.05-0.07 | | FEED | 0.06-0.12 | 0.08-0.14 | 0.14-0.20 |
| | 16 | | 40 | RPM | 12730 | 6370 | 60 | RPM | 6370 | 4770 | 3820 |
| | | | | FEED | 0.02-0.04 | 0.04-0.06 | | FEED | 0.04-0.10 | 0.06-0.12 | 0.12-0.18 |
| | 17 | Nodular cast iron | 60 | RPM | 19100 | 9550 | 80 | RPM | 8490 | 6370 | 5090 |
| | | | | FEED | 0.03-0.05 | 0.05-0.07 | | FEED | 0.06-0.12 | 0.08-0.14 | 0.14-0.20 |
| | 18 | | 35 | RPM | 11140 | 5570 | 55 | RPM | 5840 | 4380 | 3500 |
| | | | | FEED | 0.02-0.04 | 0.04-0.06 | | FEED | 0.04-0.10 | 0.06-0.12 | 0.12-0.18 |
| | 19 | Malleable cast iron | 40 | RPM | 12730 | 6370 | 60 | RPM | 6370 | 4770 | 3820 |
| | | | | FEED | 0.03-0.05 | 0.05-0.07 | | FEED | 0.06-0.12 | 0.08-0.14 | 0.14-0.20 |
| | 20 | | 35 | RPM | 11140 | 5570 | 55 | RPM | 5840 | 4380 | 3500 |
| | | | | FEED | 0.02-0.04 | 0.04-0.06 | | FEED | 0.04-0.10 | 0.06-0.12 | 0.12-0.18 |

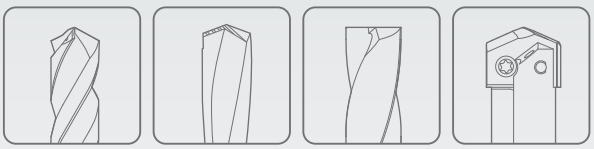


DREAM DRILLS -SOFT
RECOMMENDED CUTTING CONDITIONS
推荐加工条件

RPM (转速) = (rev./min.)
FEED (进给) = (mm/rev.)

| ISO 公制 | VDI 3323 | Material Description 材料描述 | Vc 钻削速度 (m/min) | Parameter 参数 | Drill Diameter 刃径 (mm) 6.0 | 8.0 | 10.0 | 12.0 | 14.0 | 16.0 | 18.0 | 20.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 2 | Non-alloy steel | 80 | RPM | 4240 | 3180 | 2550 | 2120 | 1820 | 1590 | 1410 | 1270 |
| | | | | FEED | 0.14-0.20 | 0.16-0.22 | 0.18-0.24 | 0.20-0.26 | 0.22-0.28 | 0.24-0.30 | 0.26-0.36 | 0.28-0.38 |
| | 3 | | 80 | RPM | 3180 | 2390 | 1910 | 1590 | 1360 | 1190 | 1060 | 950 |
| | | | | FEED | 0.14-0.20 | 0.16-0.22 | 0.18-0.24 | 0.20-0.26 | 0.22-0.28 | 0.24-0.30 | 0.26-0.36 | 0.28-0.38 |
| | 6 | Low alloy steel | 80 | RPM | 4240 | 3180 | 2550 | 2120 | 1820 | 1590 | 1410 | 1270 |
| | | | | FEED | 0.14-0.20 | 0.16-0.22 | 0.18-0.24 | 0.20-0.26 | 0.22-0.28 | 0.24-0.30 | 0.26-0.36 | 0.28-0.38 |
| | 7 | | 60 | RPM | 3180 | 2390 | 1910 | 1590 | 1360 | 1190 | 1060 | 950 |
| | | | | FEED | 0.14-0.20 | 0.16-0.22 | 0.18-0.24 | 0.20-0.26 | 0.22-0.28 | 0.24-0.30 | 0.26-0.36 | 0.28-0.38 |
| | 10 | High alloyed steel, and tool steel | 55 | RPM | 2920 | 2190 | 1750 | 1460 | 1250 | 1090 | 970 | 880 |
| | | | | FEED | 0.14-0.20 | 0.16-0.22 | 0.18-0.24 | 0.20-0.26 | 0.22-0.28 | 0.24-0.30 | 0.26-0.36 | 0.28-0.38 |
| M | 12 | Stainless steel | 45 | RPM | 2390 | 1790 | 1430 | 1190 | 1020 | 900 | 800 | 720 |
| | | | | FEED | 0.08-0.12 | 0.09-0.13 | 0.10-0.15 | 0.11-0.16 | 0.12-0.17 | 0.13-0.18 | 0.14-0.19 | 0.15-0.20 |
| | 13 | | 35 | RPM | 1860 | 1390 | 1110 | 930 | 800 | 700 | 620 | 560 |
| | | | | FEED | 0.08-0.12 | 0.09-0.13 | 0.10-0.15 | 0.11-0.16 | 0.12-0.17 | 0.13-0.18 | 0.14-0.19 | 0.15-0.20 |
| K | 15 | Grey cast iron | 80 | RPM | 4240 | 3180 | 2550 | 2120 | 1820 | 1590 | 1410 | 1270 |
| | | | | FEED | 0.16-0.22 | 0.18-0.24 | 0.20-0.26 | 0.22-0.28 | 0.24-0.30 | 0.26-0.32 | 0.28-0.38 | 0.30-0.40 |
| | 16 | | 60 | RPM | 3180 | 2390 | 1910 | 1590 | 1360 | 1190 | 1060 | 950 |
| | | | | FEED | 0.14-0.20 | 0.16-0.22 | 0.18-0.24 | 0.20-0.26 | 0.22-0.28 | 0.24-0.30 | 0.26-0.36 | 0.28-0.38 |
| | 17 | Nodular cast iron | 80 | RPM | 4240 | 3180 | 2550 | 2120 | 1820 | 1590 | 1410 | 1270 |
| | | | | FEED | 0.16-0.22 | 0.18-0.24 | 0.20-0.26 | 0.22-0.28 | 0.24-0.30 | 0.26-0.32 | 0.28-0.38 | 0.30-0.40 |
| | 18 | | 55 | RPM | 2920 | 2190 | 1750 | 1460 | 1250 | 1090 | 970 | 880 |
| | | | | FEED | 0.14-0.20 | 0.16-0.22 | 0.18-0.24 | 0.20-0.26 | 0.22-0.28 | 0.24-0.30 | 0.26-0.36 | 0.28-0.38 |
| | 19 | Malleable cast iron | 60 | RPM | 3180 | 2390 | 1910 | 1590 | 1360 | 1190 | 1060 | 950 |
| | | | | FEED | 0.16-0.22 | 0.18-0.24 | 0.20-0.26 | 0.22-0.28 | 0.24-0.30 | 0.26-0.32 | 0.28-0.38 | 0.30-0.40 |
| | 20 | | 55 | RPM | 2920 | 2190 | 1750 | 1460 | 1250 | 1090 | 970 | 880 |
| | | | | FEED | 0.14-0.20 | 0.16-0.22 | 0.18-0.24 | 0.20-0.26 | 0.22-0.28 | 0.24-0.30 | 0.26-0.36 | 0.28-0.38 |

Global Cutting Tool Leader **YG-1**



# HOLEMAKING

Leading Through Innovation

# SOLID CARBIDE

# DREAM DRILLS -HIGH FEED

- 1.5 to 2 Times Faster Feeding Speed than 2-Flute Drill
  For Carbon Steels, Alloy Steels(up to HRc35) and Cast Iron
- 比2刃钻头进给量1.5到2倍
  用于碳钢, 合金钢(硬度35以下)和铸铁

# SELECTION GUIDE
## 选用指南

HOLEMAKING TOOLS

| SERIES 系列 | DGR493 | DGR495 |
|---|---|---|
| DRILLING DEPTH 钻销深度 | 3XD | 5XD |
| LENGTH 长度 | SHORT 短 | LONG 长 |
| SIZE MIN 最小尺寸 | D5.0 | D5.0 |
| SIZE MAX 最大尺寸 | D20.0 | D20.0 |
| PAGE 页数 | A113 | A115 |
| SURFACE TREATMENT 表面处理 | H-Coating | |

# SOLID CARBIDE
# DREAM DRILLS
# HIGH FEED

1.5 to 2 Times Faster Feeding Speed than 2-Flute Drill
for Carbon Steels, Alloy Steels(up to HRc35) and Cast Iron
比2刃钻头进给量1.5到2倍
用于碳钢, 合金钢(硬度35以下)和铸铁

Please visit 请访问 globalyg1.com/mat for material search 查看产品材料

◎ : Excellent (优秀) ○ : Good (良好)

Recommended cutting conditions (推荐加工条件) : p. A117

| ISO 公制 | VDI 3323 | Material Description 材料描述 | Composition / Structure / Heat Treatment 成分 / 组织 / 热处理 | | HB 布氏硬度 | HRc 硬度 | DGR493 | DGR495 |
|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | About 0.15% C | Annealed | 125 | | | |
| | 2 | | About 0.45% C | Annealed | 190 | 13 | ◎ | ◎ |
| | 3 | | About 0.45% C | Quenched & Tempered | 250 | 25 | ◎ | ◎ |
| | 4 | | About 0.75% C | Annealed | 270 | 28 | ◎ | ◎ |
| | 5 | | About 0.75% C | Quenched & Tempered | 300 | 32 | ○ | ○ |
| | 6 | Low alloy steel | | Annealed | 180 | 10 | ◎ | ◎ |
| | 7 | | | Quenched & Tempered | 275 | 29 | ◎ | ◎ |
| | 8 | | | Quenched & Tempered | 300 | 32 | ○ | ○ |
| | 9 | | | Quenched & Tempered | 350 | 38 | ○ | ○ |
| | 10 | High alloyed steel, and tool steel | | Annealed | 200 | 15 | ◎ | ◎ |
| | 11 | | | Quenched & Tempered | 325 | 35 | ○ | ○ |
| M | 12 | Stainless steel | Ferritic / Martensitic | Annealed | 200 | 15 | | |
| | 13 | | Martensitic | Quenched & Tempered | 240 | 23 | | |
| | 14 | | Austenitic | | 180 | 10 | | |
| K | 15 | Grey cast iron | Pearlitic / ferritic | | 180 | 10 | ◎ | ◎ |
| | 16 | | Pearlitic (Martensitic) | | 260 | 26 | ○ | ○ |
| | 17 | Nodular cast iron | Ferritic | | 160 | 3 | ◎ | ◎ |
| | 18 | | Pearlitic | | 250 | 25 | ○ | ○ |
| | 19 | Malleable cast iron | Ferritic | | 130 | | ◎ | ◎ |
| | 20 | | Pearlitic | | 230 | 21 | ○ | ○ |
| N | 21 | Aluminum-wrought alloy | Not Curable | | 60 | | | |
| | 22 | | Curable | Hardened | 100 | | | |
| | 23 | Aluminum-cast, alloyed | ≤ 12% Si, Not Curable | | 75 | | | |
| | 24 | | ≤ 12% Si, Curable | Hardened | 90 | | | |
| | 25 | | > 12% Si, Not Curable | | 130 | | | |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | Cutting Alloys, PB>1% | | 110 | | | |
| | 27 | | CuZn, CuSnZn (Brass) | | 90 | | | |
| | 28 | | CuSn, lead-free copper and electrolytic copper | | 100 | | | |
| | 29 | Non Metallic Materials | Duroplastic, Fiber Reinforced Plastic | | | | | |
| | 30 | | Rubber, Wood, etc. | | | | | |
| S | 31 | Heat Resistant Super Alloys | Fe Based | Annealed | 200 | 15 | | |
| | 32 | | | Cured | 280 | 30 | | |
| | 33 | | Ni or Co Based | Annealed | 250 | 25 | | |
| | 34 | | | Cured | 350 | 38 | | |
| | 35 | | | Cast | 320 | 34 | | |
| | 36 | Titanium Alloys | Pure Titanium | | 400 Rm | | | |
| | 37 | | Alpha + Beta Alloys | Hardened | 1050 Rm | | | |
| H | 38 | Hardened steel | | Hardened | 550 | 55 | | |
| | 39 | | | Hardened | 630 | 60 | | |
| | 40 | Chilled Cast Iron | | Cast | 400 | 42 | | |
| | 41 | Hardened Cast Iron | | Hardened | 550 | 55 | | |





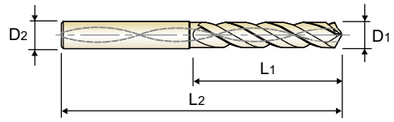
# DREAM DRILLS - HIGH FEED

**DGR493 SERIES**

## CARBIDE, DREAM DRILLS - HIGH FEED with COOLANT HOLES *SHORT*
## 硬质合金, 梦幻钻头 - 高进给 带内冷孔 短

- ▶ Drilling for Carbon Steels, Alloy Steels(-HRc35) and Cast Iron
- ▶ Higher productivity due to 1.5 to 2 times faster feeding speed than 2-flute drill
- ▶ Multi-Layer coating delivers much better productivity and reliability
- ▶ Self centering and chip breaking by R-thinning and coolant holes

- ▶ 加工碳钢,合金钢(硬度35以下)和铸铁
- ▶ 由于1.5~2倍进给量比2刃钻头，实现高产率
- ▶ 多层涂层带来更高产率和稳定性
- ▶ 由于R型中心刃和内冷，卓越自定心和断屑性能




DIN 6537 | CARBIDE | 30° | h6 | m7 | 140° | 20 bar

p. A117

3 × D

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| ◎ | SHRINK FIT HOLDER | D47 - 72 |
| ◎ | HYDRAULIC CHUCK | D15 - 46 |
| ○ | ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. 型号 | Drill Diameter 刃径 | Shank Diameter 柄径 | Flute Length 槽长 | Overall Length 全长 | EDP No. 型号 | Drill Diameter 刃径 | Shank Diameter 柄径 | Flute Length 槽长 | Overall Length 全长 |
|---|---|---|---|---|---|---|---|---|---|
| H-Coating | $D_1$ | $D_2$ | $L_1$ | $L_2$ | H-Coating | $D_1$ | $D_2$ | $L_1$ | $L_2$ |
| DGR493050 | 5.0 | 6 | 28 | 66 | DGR493074 | 7.4 | 8 | 41 | 79 |
| DGR493051 | 5.1 | 6 | 28 | 66 | DGR493075 | 7.5 | 8 | 41 | 79 |
| DGR493052 | 5.2 | 6 | 28 | 66 | DGR493076 | 7.6 | 8 | 41 | 79 |
| DGR493053 | 5.3 | 6 | 28 | 66 | DGR493077 | 7.7 | 8 | 41 | 79 |
| DGR493054 | 5.4 | 6 | 28 | 66 | DGR493078 | 7.8 | 8 | 41 | 79 |
| DGR493055 | 5.5 | 6 | 28 | 66 | DGR493079 | 7.9 | 8 | 41 | 79 |
| DGR493056 | 5.6 | 6 | 28 | 66 | DGR493080 | 8.0 | 8 | 41 | 79 |
| DGR493057 | 5.7 | 6 | 28 | 66 | DGR493081 | 8.1 | 10 | 47 | 89 |
| DGR493058 | 5.8 | 6 | 28 | 66 | DGR493082 | 8.2 | 10 | 47 | 89 |
| DGR493059 | 5.9 | 6 | 28 | 66 | DGR493083 | 8.3 | 10 | 47 | 89 |
| DGR493060 | 6.0 | 6 | 28 | 66 | DGR493084 | 8.4 | 10 | 47 | 89 |
| DGR493061 | 6.1 | 8 | 34 | 79 | DGR493085 | 8.5 | 10 | 47 | 89 |
| DGR493062 | 6.2 | 8 | 34 | 79 | DGR493086 | 8.6 | 10 | 47 | 89 |
| DGR493063 | 6.3 | 8 | 34 | 79 | DGR493087 | 8.7 | 10 | 47 | 89 |
| DGR493064 | 6.4 | 8 | 34 | 79 | DGR493088 | 8.8 | 10 | 47 | 89 |
| DGR493065 | 6.5 | 8 | 34 | 79 | DGR493089 | 8.9 | 10 | 47 | 89 |
| DGR493066 | 6.6 | 8 | 34 | 79 | DGR493090 | 9.0 | 10 | 47 | 89 |
| DGR493067 | 6.7 | 8 | 34 | 79 | DGR493091 | 9.1 | 10 | 47 | 89 |
| DGR493068 | 6.8 | 8 | 34 | 79 | DGR493092 | 9.2 | 10 | 47 | 89 |
| DGR493069 | 6.9 | 8 | 34 | 79 | DGR493093 | 9.3 | 10 | 47 | 89 |
| DGR493070 | 7.0 | 8 | 34 | 79 | DGR493094 | 9.4 | 10 | 47 | 89 |
| DGR493071 | 7.1 | 8 | 41 | 79 | DGR493095 | 9.5 | 10 | 47 | 89 |
| DGR493072 | 7.2 | 8 | 41 | 79 | DGR493096 | 9.6 | 10 | 47 | 89 |
| DGR493073 | 7.3 | 8 | 41 | 79 | DGR493097 | 9.7 | 10 | 47 | 89 |

▶ Other shank types are available on your request. / 其他刀柄类型可根据客户需求提供.

▶ NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ○ | ○ | ◎ | ○ | | | | ◎ | ○ | ◎ | ○ | ◎ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | | | | | | | | | | | | | | | | | | | | | |

# DREAM DRILLS - HIGH FEED

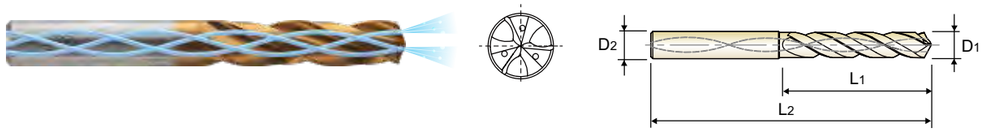
## DGR493 SERIES

## CARBIDE, DREAM DRILLS - HIGH FEED with COOLANT HOLES — SHORT

## 硬质合金, 梦幻钻头 - 高进给 带内冷孔 — 短

- ▶ Drilling for Carbon Steels, Alloy Steels(-HRc35) and Cast Iron
- ▶ Higher productivity due to 1.5 to 2 times faster feeding speed than 2-flute drill
- ▶ Multi-Layer coating delivers much better productivity and reliability
- ▶ Self centering and chip breaking by R-thinning and coolant holes

- ▶ 加工碳钢,合金钢(硬度35以下)和铸铁
- ▶ 由于1.5~2倍进给量比2刃钻头，实现高产率
- ▶ 多层涂层带来更高产率和稳定性
- ▶ 由于R型中心刃和内冷，卓越自定心和断屑性能




DIN 6537 | CARBIDE | 30° | h6 | m7 | 140° | 20 bar

p. A117

3 × D

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| ◎ | SHRINK FIT HOLDER | D47 - 72 |
| ◎ | HYDRAULIC CHUCK | D15 - 46 |
| ○ | ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. 型号 | Drill Diameter 刃径 D1 | Shank Diameter 柄径 D2 | Flute Length 槽长 L1 | Overall Length 全长 L2 |
|---|---|---|---|---|
| H-Coating | | | | |
| DGR493098 | 9.8 | 10 | 47 | 89 |
| DGR493099 | 9.9 | 10 | 47 | 89 |
| DGR493100 | 10.0 | 10 | 47 | 89 |
| DGR493101 | 10.1 | 12 | 55 | 102 |
| DGR493102 | 10.2 | 12 | 55 | 102 |
| DGR493103 | 10.3 | 12 | 55 | 102 |
| DGR493104 | 10.4 | 12 | 55 | 102 |
| DGR493105 | 10.5 | 12 | 55 | 102 |
| DGR493106 | 10.6 | 12 | 55 | 102 |
| DGR493107 | 10.7 | 12 | 55 | 102 |
| DGR493108 | 10.8 | 12 | 55 | 102 |
| DGR493109 | 10.9 | 12 | 55 | 102 |
| DGR493110 | 11.0 | 12 | 55 | 102 |
| DGR493111 | 11.1 | 12 | 55 | 102 |
| DGR493112 | 11.2 | 12 | 55 | 102 |
| DGR493113 | 11.3 | 12 | 55 | 102 |
| DGR493114 | 11.4 | 12 | 55 | 102 |
| DGR493115 | 11.5 | 12 | 55 | 102 |
| DGR493116 | 11.6 | 12 | 55 | 102 |
| DGR493117 | 11.7 | 12 | 55 | 102 |

| EDP No. 型号 | Drill Diameter 刃径 D1 | Shank Diameter 柄径 D2 | Flute Length 槽长 L1 | Overall Length 全长 L2 |
|---|---|---|---|---|
| H-Coating | | | | |
| DGR493118 | 11.8 | 12 | 55 | 102 |
| DGR493119 | 11.9 | 12 | 55 | 102 |
| DGR493120 | 12.0 | 12 | 55 | 102 |
| DGR493125 | 12.5 | 14 | 60 | 107 |
| DGR493130 | 13.0 | 14 | 60 | 107 |
| DGR493135 | 13.5 | 14 | 60 | 107 |
| DGR493140 | 14.0 | 14 | 60 | 107 |
| DGR493145 | 14.5 | 16 | 65 | 115 |
| DGR493150 | 15.0 | 16 | 65 | 115 |
| DGR493155 | 15.5 | 16 | 65 | 115 |
| DGR493160 | 16.0 | 16 | 65 | 115 |
| DGR493165 | 16.5 | 18 | 73 | 123 |
| DGR493170 | 17.0 | 18 | 73 | 123 |
| DGR493175 | 17.5 | 18 | 73 | 123 |
| DGR493180 | 18.0 | 18 | 73 | 123 |
| DGR493185 | 18.5 | 20 | 79 | 131 |
| DGR493190 | 19.0 | 20 | 79 | 131 |
| DGR493195 | 19.5 | 20 | 79 | 131 |
| DGR493200 | 20.0 | 20 | 79 | 131 |

▶ Other shank types are available on your request. / 其他刀柄类型可根据客户需求提供.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ○ | ○ | ◎ | ○ | | | | ◎ | ○ | ◎ | ○ | ◎ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | | | | | | | | | | | | | | | | | | | | | |



# DREAM DRILLS - HIGH FEED

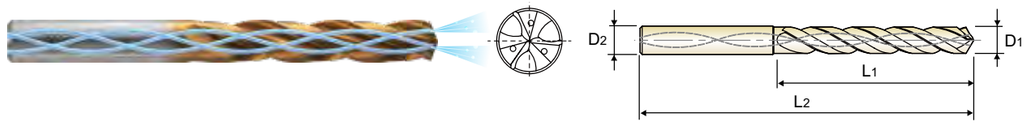
## DGR495 SERIES

## CARBIDE, DREAM DRILLS - HIGH FEED with COOLANT HOLES — LONG

## 硬质合金, 梦幻钻头 - 高进给 带内冷孔 — 长

- ▶ Drilling for Carbon Steels, Alloy Steels(-HRc35) and Cast Iron
- ▶ Higher productivity due to 1.5 to 2 times faster feeding speed than 2-flute drill
- ▶ Multi-Layer coating delivers much better productivity and reliability
- ▶ Self centering and chip breaking by R-thinning and coolant holes

- ▶ 加工碳钢,合金钢(硬度35以下)和铸铁
- ▶ 由于1.5~2倍进给量比2刃钻头，实现高产率
- ▶ 多层涂层带来更高产率和稳定性
- ▶ 由于R型中心刃和内冷，卓越自定心和断屑性能




DIN 6537 | CARBIDE | 30° | h6 | m7 | 140° | 20 bar

p. A117

5 × D

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| ◎ | SHRINK FIT HOLDER | D47 - 72 |
| ◎ | HYDRAULIC CHUCK | D15 - 46 |
| ○ | ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. 型号 | Drill Diameter 刃径 D1 | Shank Diameter 柄径 D2 | Flute Length 槽长 L1 | Overall Length 全长 L2 |
|---|---|---|---|---|
| H-Coating | | | | |
| DGR495050 | 5.0 | 6 | 44 | 82 |
| DGR495051 | 5.1 | 6 | 44 | 82 |
| DGR495052 | 5.2 | 6 | 44 | 82 |
| DGR495053 | 5.3 | 6 | 44 | 82 |
| DGR495054 | 5.4 | 6 | 44 | 82 |
| DGR495055 | 5.5 | 6 | 44 | 82 |
| DGR495056 | 5.6 | 6 | 44 | 82 |
| DGR495057 | 5.7 | 6 | 44 | 82 |
| DGR495058 | 5.8 | 6 | 44 | 82 |
| DGR495059 | 5.9 | 6 | 44 | 82 |
| DGR495060 | 6.0 | 6 | 44 | 82 |
| DGR495061 | 6.1 | 8 | 53 | 91 |
| DGR495062 | 6.2 | 8 | 53 | 91 |
| DGR495063 | 6.3 | 8 | 53 | 91 |
| DGR495064 | 6.4 | 8 | 53 | 91 |
| DGR495065 | 6.5 | 8 | 53 | 91 |
| DGR495066 | 6.6 | 8 | 53 | 91 |
| DGR495067 | 6.7 | 8 | 53 | 91 |
| DGR495068 | 6.8 | 8 | 53 | 91 |
| DGR495069 | 6.9 | 8 | 53 | 91 |
| DGR495070 | 7.0 | 8 | 53 | 91 |
| DGR495071 | 7.1 | 8 | 53 | 91 |
| DGR495072 | 7.2 | 8 | 53 | 91 |
| DGR495073 | 7.3 | 8 | 53 | 91 |

| EDP No. 型号 | Drill Diameter 刃径 D1 | Shank Diameter 柄径 D2 | Flute Length 槽长 L1 | Overall Length 全长 L2 |
|---|---|---|---|---|
| H-Coating | | | | |
| DGR495074 | 7.4 | 8 | 53 | 91 |
| DGR495075 | 7.5 | 8 | 53 | 91 |
| DGR495076 | 7.6 | 8 | 53 | 91 |
| DGR495077 | 7.7 | 8 | 53 | 91 |
| DGR495078 | 7.8 | 8 | 53 | 91 |
| DGR495079 | 7.9 | 8 | 53 | 91 |
| DGR495080 | 8.0 | 8 | 53 | 91 |
| DGR495081 | 8.1 | 10 | 61 | 103 |
| DGR495082 | 8.2 | 10 | 61 | 103 |
| DGR495083 | 8.3 | 10 | 61 | 103 |
| DGR495084 | 8.4 | 10 | 61 | 103 |
| DGR495085 | 8.5 | 10 | 61 | 103 |
| DGR495086 | 8.6 | 10 | 61 | 103 |
| DGR495087 | 8.7 | 10 | 61 | 103 |
| DGR495088 | 8.8 | 10 | 61 | 103 |
| DGR495089 | 8.9 | 10 | 61 | 103 |
| DGR495090 | 9.0 | 10 | 61 | 103 |
| DGR495091 | 9.1 | 10 | 61 | 103 |
| DGR495092 | 9.2 | 10 | 61 | 103 |
| DGR495093 | 9.3 | 10 | 61 | 103 |
| DGR495094 | 9.4 | 10 | 61 | 103 |
| DGR495095 | 9.5 | 10 | 61 | 103 |
| DGR495096 | 9.6 | 10 | 61 | 103 |
| DGR495097 | 9.7 | 10 | 61 | 103 |

▶ Other shank types are available on your request. / 其他刀柄类型可根据客户需求提供.

▶ NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ○ | ○ | ◎ | ○ | | | | ◎ | ○ | ◎ | ○ | ◎ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | | | | | | | | | | | | | | | | | | | | | |

# DREAM DRILLS - HIGH FEED

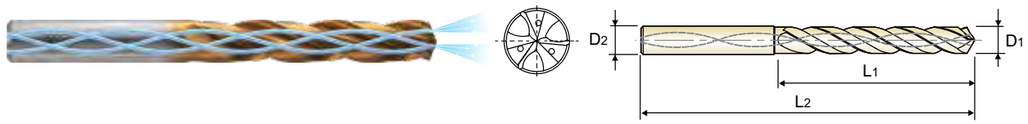
**DGR495** SERIES

## CARBIDE, DREAM DRILLS - HIGH FEED with COOLANT HOLES *LONG*

## 硬质合金, 梦幻钻头 - 高进给 带内冷孔 长

- ▶ Drilling for Carbon Steels, Alloy Steels(-HRc35) and Cast Iron
- ▶ Higher productivity due to 1.5 to 2 times faster feeding speed than 2-flute drill
- ▶ Multi-Layer coating delivers much better productivity and reliability
- ▶ Self centering and chip breaking by R-thinning and coolant holes

- ▶ 加工碳钢,合金钢(硬度35以下)和铸铁
- ▶ 由于1.5~2倍进给量比2刃钻头，实现高产率
- ▶ 多层涂层带来更高产率和稳定性
- ▶ 由于R型中心刃和内冷，卓越自定心和断屑性能




DIN 6537 | CARBIDE | 30° | h6 | m7 | 140° | 20 bar

p. A117

5 × D

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| ◎ | SHRINK FIT HOLDER | D47 - 72 |
| ◎ | HYDRAULIC CHUCK | D15 - 46 |
| ○ | ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. 型号 H-Coating | Drill Diameter 刃径 $D_1$ | Shank Diameter 柄径 $D_2$ | Flute Length 槽长 $L_1$ | Overall Length 全长 $L_2$ |
|---|---|---|---|---|
| DGR495098 | 9.8 | 10 | 61 | 103 |
| DGR495099 | 9.9 | 10 | 61 | 103 |
| DGR495100 | 10.0 | 10 | 61 | 103 |
| DGR495101 | 10.1 | 12 | 71 | 118 |
| DGR495102 | 10.2 | 12 | 71 | 118 |
| DGR495103 | 10.3 | 12 | 71 | 118 |
| DGR495104 | 10.4 | 12 | 71 | 118 |
| DGR495105 | 10.5 | 12 | 71 | 118 |
| DGR495106 | 10.6 | 12 | 71 | 118 |
| DGR495107 | 10.7 | 12 | 71 | 118 |
| DGR495108 | 10.8 | 12 | 71 | 118 |
| DGR495109 | 10.9 | 12 | 71 | 118 |
| DGR495110 | 11.0 | 12 | 71 | 118 |
| DGR495111 | 11.1 | 12 | 71 | 118 |
| DGR495112 | 11.2 | 12 | 71 | 118 |
| DGR495113 | 11.3 | 12 | 71 | 118 |
| DGR495114 | 11.4 | 12 | 71 | 118 |
| DGR495115 | 11.5 | 12 | 71 | 118 |
| DGR495116 | 11.6 | 12 | 71 | 118 |
| DGR495117 | 11.7 | 12 | 71 | 118 |

| EDP No. 型号 H-Coating | Drill Diameter 刃径 $D_1$ | Shank Diameter 柄径 $D_2$ | Flute Length 槽长 $L_1$ | Overall Length 全长 $L_2$ |
|---|---|---|---|---|
| DGR495118 | 11.8 | 12 | 71 | 118 |
| DGR495119 | 11.9 | 12 | 71 | 118 |
| DGR495120 | 12.0 | 12 | 71 | 118 |
| DGR495125 | 12.5 | 14 | 77 | 124 |
| DGR495130 | 13.0 | 14 | 77 | 124 |
| DGR495135 | 13.5 | 14 | 77 | 124 |
| DGR495140 | 14.0 | 14 | 77 | 124 |
| DGR495145 | 14.5 | 16 | 83 | 133 |
| DGR495150 | 15.0 | 16 | 83 | 133 |
| DGR495155 | 15.5 | 16 | 83 | 133 |
| DGR495160 | 16.0 | 16 | 83 | 133 |
| DGR495165 | 16.5 | 18 | 93 | 143 |
| DGR495170 | 17.0 | 18 | 93 | 143 |
| DGR495175 | 17.5 | 18 | 93 | 143 |
| DGR495180 | 18.0 | 18 | 93 | 143 |
| DGR495185 | 18.5 | 20 | 101 | 153 |
| DGR495190 | 19.0 | 20 | 101 | 153 |
| DGR495195 | 19.5 | 20 | 101 | 153 |
| DGR495200 | 20.0 | 20 | 101 | 153 |

▶ Other shank types are available on your request. / 其他刀柄类型可根据客户需求提供.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ○ | ○ | ◎ | ○ | | | | ◎ | ○ | ◎ | ○ | ◎ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | | | | | | | | | | | | | | | | | | | | | |



# DREAM DRILLS - HIGH FEED

## RECOMMENDED CUTTING CONDITIONS 推荐加工条件

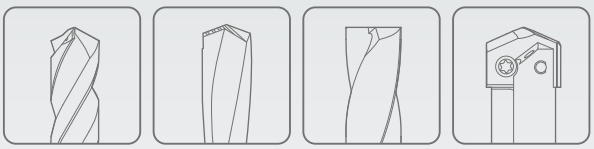
**DGR493, DGR495** SERIES

**with COOLANT HOLES** 带内冷孔

RPM (转速) = (rev./min.)
FEED (进给) = (mm/rev.)

| ISO 公制 | VDI 3323 | Material Description 材料描述 | Vc 钻削速度 (m/min) | Parameter 参数 | Drill Diameter 刃径 (mm) 5.0 | 6.0 | 8.0 | 10.0 | 12.0 | 14.0 | 16.0 | 18.0 | 20.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 2 | Non-alloy steel | 100 | RPM | 6370 | 5310 | 3980 | 3180 | 2650 | 2270 | 1990 | 1770 | 1590 |
| | | | | FEED | 0.2-0.25 | 0.24-0.3 | 0.32-0.4 | 0.4-0.5 | 0.48-0.6 | 0.56-0.7 | 0.56-0.72 | 0.63-0.81 | 0.7-0.88 |
| | 3 | | 100 | RPM | 6370 | 5310 | 3980 | 3180 | 2650 | 2270 | 1990 | 1770 | 1590 |
| | | | | FEED | 0.2-0.25 | 0.24-0.3 | 0.32-0.4 | 0.4-0.5 | 0.48-0.6 | 0.56-0.7 | 0.56-0.72 | 0.63-0.81 | 0.7-0.88 |
| | 4 | | 100 | RPM | 6370 | 5310 | 3980 | 3180 | 2650 | 2270 | 1990 | 1770 | 1590 |
| | | | | FEED | 0.16-0.21 | 0.2-0.26 | 0.26-0.34 | 0.34-0.42 | 0.41-0.47 | 0.47-0.54 | 0.47-0.55 | 0.5-0.59 | 0.54-0.67 |
| | 5 | | 80 | RPM | 5090 | 4240 | 3180 | 2550 | 2120 | 1820 | 1590 | 1410 | 1270 |
| | | | | FEED | 0.16-0.21 | 0.2-0.26 | 0.26-0.34 | 0.34-0.42 | 0.41-0.47 | 0.47-0.54 | 0.47-0.55 | 0.5-0.59 | 0.54-0.67 |
| | 6 | Low alloy steel | 100 | RPM | 6370 | 5310 | 3980 | 3180 | 2650 | 2270 | 1990 | 1770 | 1590 |
| | | | | FEED | 0.2-0.25 | 0.24-0.3 | 0.32-0.4 | 0.4-0.5 | 0.48-0.54 | 0.56-0.63 | 0.56-0.64 | 0.63-0.72 | 0.68-0.81 |
| | 7 | | 80 | RPM | 5090 | 4240 | 3180 | 2550 | 2120 | 1820 | 1590 | 1410 | 1270 |
| | | | | FEED | 0.2-0.25 | 0.24-0.3 | 0.32-0.4 | 0.4-0.5 | 0.48-0.54 | 0.56-0.63 | 0.56-0.64 | 0.63-0.72 | 0.68-0.81 |
| | 8 | | 80 | RPM | 5090 | 4240 | 3180 | 2550 | 2120 | 1820 | 1590 | 1410 | 1270 |
| | | | | FEED | 0.16-0.21 | 0.2-0.26 | 0.26-0.34 | 0.34-0.42 | 0.41-0.47 | 0.47-0.54 | 0.47-0.55 | 0.5-0.59 | 0.54-0.67 |
| | 9 | | 40 | RPM | 2550 | 2120 | 1590 | 1270 | 1060 | 910 | 800 | 710 | 640 |
| | | | | FEED | 0.13-0.18 | 0.16-0.22 | 0.21-0.29 | 0.26-0.36 | 0.32-0.38 | 0.36-0.43 | 0.36-0.45 | 0.38-0.47 | 0.41-0.54 |
| | 10 | High alloyed steel, and tool steel | 70 | RPM | 4460 | 3710 | 2790 | 2230 | 1860 | 1590 | 1390 | 1240 | 1110 |
| | | | | FEED | 0.16-0.21 | 0.2-0.26 | 0.26-0.34 | 0.34-0.42 | 0.41-0.47 | 0.47-0.54 | 0.47-0.55 | 0.5-0.59 | 0.54-0.67 |
| | 11 | | 40 | RPM | 2550 | 2120 | 1590 | 1270 | 1060 | 910 | 800 | 710 | 640 |
| | | | | FEED | 0.13-0.18 | 0.16-0.22 | 0.21-0.29 | 0.26-0.36 | 0.32-0.38 | 0.36-0.43 | 0.36-0.45 | 0.38-0.47 | 0.41-0.54 |
| K | 15 | Grey cast iron | 100 | RPM | 6370 | 5310 | 3980 | 3180 | 2650 | 2270 | 1990 | 1770 | 1590 |
| | | | | FEED | 0.23-0.30 | 0.27-0.36 | 0.36-0.48 | 0.45-0.60 | 0.54-0.72 | 0.63-0.84 | 0.64-0.80 | 0.72-0.90 | 0.80-0.98 |
| | 16 | | 80 | RPM | 5090 | 4240 | 3180 | 2550 | 2120 | 1820 | 1590 | 1410 | 1270 |
| | | | | FEED | 0.20-0.25 | 0.24-0.30 | 0.32-0.40 | 0.40-0.50 | 0.48-0.60 | 0.56-0.70 | 0.56-0.72 | 0.63-0.81 | 0.70-0.90 |
| | 17 | Nodular cast iron | 100 | RPM | 6370 | 5310 | 3980 | 3180 | 2650 | 2270 | 1990 | 1770 | 1590 |
| | | | | FEED | 0.23-0.30 | 0.27-0.36 | 0.36-0.48 | 0.45-0.60 | 0.54-0.72 | 0.63-0.84 | 0.64-0.80 | 0.72-0.90 | 0.80-0.98 |
| | 18 | | 70 | RPM | 4460 | 3710 | 2790 | 2230 | 1860 | 1590 | 1390 | 1240 | 1110 |
| | | | | FEED | 0.20-0.25 | 0.24-0.30 | 0.32-0.40 | 0.40-0.50 | 0.48-0.60 | 0.56-0.70 | 0.56-0.72 | 0.63-0.81 | 0.70-0.90 |
| | 19 | Malleable cast iron | 80 | RPM | 5090 | 4240 | 3180 | 2550 | 2120 | 1820 | 1590 | 1410 | 1270 |
| | | | | FEED | 0.23-0.30 | 0.27-0.36 | 0.36-0.48 | 0.45-0.60 | 0.54-0.72 | 0.63-0.84 | 0.64-0.80 | 0.72-0.90 | 0.80-0.98 |
| | 20 | | 70 | RPM | 4460 | 3710 | 2790 | 2230 | 1860 | 1590 | 1390 | 1240 | 1110 |
| | | | | FEED | 0.20-0.25 | 0.24-0.30 | 0.32-0.40 | 0.40-0.50 | 0.48-0.60 | 0.56-0.70 | 0.56-0.72 | 0.63-0.81 | 0.70-0.90 |

Global Cutting Tool Leader **YG-1**



# HOLEMAKING

Leading Through Innovation

# SOLID CARBIDE

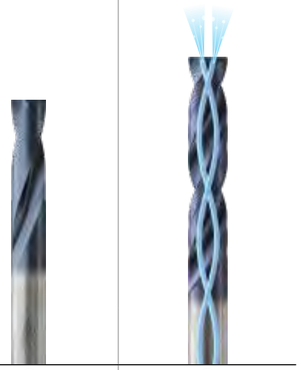
# DREAM DRILLS -FLAT BOTTOM

- For Holes on Various Angled Surfaces
- 用于倾斜孔加工

# SELECTION GUIDE
## 选用指南

HOLEMAKING TOOLS

| SERIES 系列 | DPP447 | DH450 |
|---|---|---|
| DRILLING DEPTH 钻销深度 | 2XD | 5XD |
| LENGTH 长度 | SHORT 短 | LONG 长 |
| SIZE MIN 最小尺寸 | D3.0 | D3.0 |
| SIZE MAX 最大尺寸 | D20.0 | D20.0 |
| PAGE 页数 | A122 | A125 |
| SURFACE TREATMENT 表面处理 | X-Coating | TiAlN |





# SOLID CARBIDE
# DREAM DRILLS
# FLAT BOTTOM

For Holes on Various Angled Surfaces
用于倾斜孔加工

Please visit 请访问 globalyg1.com/mat for material search 查看产品材料

◎ : Excellent (优秀) ○ : Good (良好)

Recommended cutting conditions (推荐加工条件) : p. A128

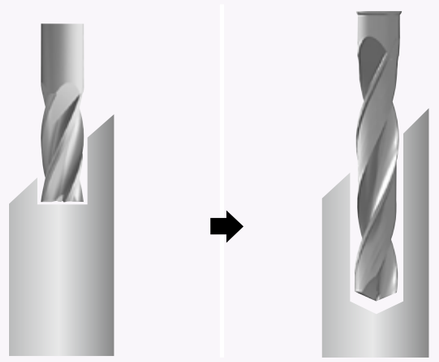
| ISO 公制 | VDI 3323 | Material Description 材料描述 | Composition / Structure / Heat Treatment 成分 / 组织 / 热处理 | | HB 布氏硬度 | HRc 硬度 | DPP447 | DH450 |
|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | About 0.15% C | Annealed | 125 | | ◎ | ◎ |
| | 2 | | About 0.45% C | Annealed | 190 | 13 | ◎ | ◎ |
| | 3 | | About 0.45% C | Quenched & Tempered | 250 | 25 | ◎ | ◎ |
| | 4 | | About 0.75% C | Annealed | 270 | 28 | ○ | ○ |
| | 5 | | About 0.75% C | Quenched & Tempered | 300 | 32 | ○ | ○ |
| | 6 | Low alloy steel | | Annealed | 180 | 10 | ◎ | ◎ |
| | 7 | | | Quenched & Tempered | 275 | 29 | ○ | ○ |
| | 8 | | | Quenched & Tempered | 300 | 32 | ○ | ○ |
| | 9 | | | Quenched & Tempered | 350 | 38 | ○ | ○ |
| | 10 | High alloyed steel, and tool steel | | Annealed | 200 | 15 | | |
| | 11 | | | Quenched & Tempered | 325 | 35 | | |
| M | 12 | Stainless steel | Ferritic / Martensitic | Annealed | 200 | 15 | ○ | ○ |
| | 13 | | Martensitic | Quenched & Tempered | 240 | 23 | | |
| | 14 | | Austenitic | | 180 | 10 | | |
| K | 15 | Grey cast iron | Pearlitic / ferritic | | 180 | 10 | ◎ | ◎ |
| | 16 | | Pearlitic (Martensitic) | | 260 | 26 | ○ | ○ |
| | 17 | Nodular cast iron | Ferritic | | 160 | 3 | | |
| | 18 | | Pearlitic | | 250 | 25 | | |
| | 19 | Malleable cast iron | Ferritic | | 130 | | | |
| | 20 | | Pearlitic | | 230 | 21 | | |
| N | 21 | Aluminum-wrought alloy | Not Curable | | 60 | | ○ | ○ |
| | 22 | | Curable | Hardened | 100 | | ○ | ○ |
| | 23 | Aluminum-cast, alloyed | ≤ 12% Si, Not Curable | | 75 | | | |
| | 24 | | ≤ 12% Si, Curable | Hardened | 90 | | | |
| | 25 | | > 12% Si, Not Curable | | 130 | | | |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | Cutting Alloys, PB>1% | | 110 | | | |
| | 27 | | CuZn, CuSnZn (Brass) | | 90 | | | |
| | 28 | | CuSn, lead-free copper and electrolytic copper | | 100 | | | |
| | 29 | Non Metallic Materials | Duroplastic, Fiber Reinforced Plastic | | | | | |
| | 30 | | Rubber, Wood, etc. | | | | | |
| S | 31 | Heat Resistant Super Alloys | Fe Based | Annealed | 200 | 15 | | |
| | 32 | | | Cured | 280 | 30 | | |
| | 33 | | Ni or Co Based | Annealed | 250 | 25 | | |
| | 34 | | | Cured | 350 | 38 | | |
| | 35 | | | Cast | 320 | 34 | | |
| | 36 | Titanium Alloys | Pure Titanium | | 400 Rm | | | |
| | 37 | | Alpha + Beta Alloys | Hardened | 1050 Rm | | | |
| H | 38 | Hardened steel | | Hardened | 550 | 55 | | |
| | 39 | | | Hardened | 630 | 60 | | |
| | 40 | Chilled Cast Iron | | Cast | 400 | 42 | | |
| | 41 | Hardened Cast Iron | | Hardened | 550 | 55 | | |



## Only One Operation for Angled Surface
## 在斜面一次钻孔

**For angled surfaces, two operations are required to drill in a conventional process**
有斜面钻孔, 按传统工艺需要两步操作

**For angled surfaces, only one operation can complete the drilling with Dream Drill Flat Bottom**
采用梦幻钻头一平底钻可一步完成在斜面上钻孔



**1st operation (End mill)**
第一步(铣刀)

Counter boring to make flat surface and guide hole
锪平面和钻导向孔

**2nd operation (Drill)**
第二步(钻头)

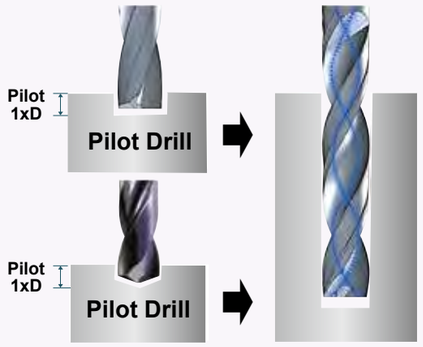
Drilling to required depth of hole
钻至要求孔深

**One operation (Dream Drill Flat Bottom)**
**One Drill does it all**
第一把梦幻钻头一平底钻可一步完成孔加工

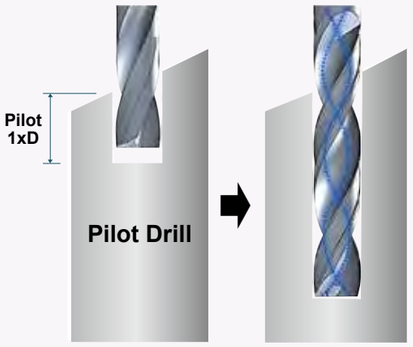
without using both an end mill and a drill
不需要同事使用铣刀

## Pilot Drilling for 5 X D
## 导向钻孔 : 约5XD

**1. FLAT SURFACE**




**2. INCLINED SURFACE**




▶For Flat bottom 5xD drilling depth, Slope surface needs Pilot Drilling with YG-1 Flat Bottom Drill (2XD) and Flat surface needs Pilot Drilling with YG-1 Dream Drill General.
对于钻深5XD, 斜面需要YG-1 平底钻加工导向孔, 平面需要YG -1通用性梦幻钻头加工导向孔

▶Pilot Drilling Depth : around 1XD
导向钻孔深度 : 约1XD

▶Pilot Drilling Diameter : same size diameter
导向钻孔直径 : 同尺寸直径

# DREAM DRILLS - FLAT BOTTOM

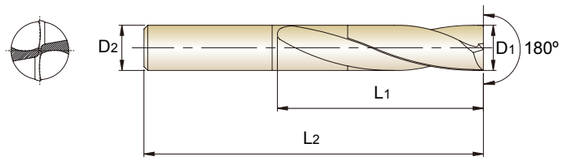
**DPP447 SERIES**

## CARBIDE, DREAM DRILLS - FLAT BOTTOM — *SHORT*

## 硬质合金，梦幻钻头一平底钻 — 短

- ▶ For holes on various angled surfaces.
- ▶ 180 degree point angle enables drilling of flat, inclined and curved surfaces.
- ▶ Optimized flute shape for excellent chip evacuation.
- ▶ High strength cutting edge to improve tool life and versatility drilling.
- ▶ For through holes, minimized burrs at entrance and exit when drilling thin plate.

- ▶ 适合各种斜面孔加工
- ▶ 采用180°钻顶角，可以在平面，斜面和曲面上钻孔加工
- ▶ 最佳的槽形设计，实现出色的排屑
- ▶ 高强度切削刃，提高刀具寿命和多功能性
- ▶ 对于通孔，钻孔薄板时，可以将入口和出口处的毛刺降至最低




CARBIDE | 20° | h6 | h7 | 180° | p. A128

2 × D

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| ◎ | SHRINK FIT HOLDER | D47 - 72 |
| ◎ | HYDRAULIC CHUCK | D15 - 46 |
| ○ | ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. | Drill Diameter | Shank Diameter | Flute Length | Overall Length |
|---|---|---|---|---|
| 型号 | 刃径 | 柄径 | 槽长 | 全长 |
| X-Coating | $D_1$ | $D_2$ | $L_1$ | $L_2$ |
| DPP447030 | 3.0 | 6 | 16 | 50 |
| DPP447031 | 3.1 | 6 | 16 | 50 |
| DPP447032 | 3.2 | 6 | 16 | 50 |
| DPP447033 | 3.3 | 6 | 16 | 50 |
| DPP447034 | 3.4 | 6 | 18 | 50 |
| DPP447035 | 3.5 | 6 | 18 | 50 |
| DPP447036 | 3.6 | 6 | 18 | 50 |
| DPP447037 | 3.7 | 6 | 18 | 50 |
| DPP447038 | 3.8 | 6 | 18 | 50 |
| DPP447039 | 3.9 | 6 | 18 | 50 |
| DPP447040 | 4.0 | 6 | 18 | 50 |
| DPP447041 | 4.1 | 6 | 20 | 60 |
| DPP447042 | 4.2 | 6 | 20 | 60 |
| DPP447043 | 4.3 | 6 | 20 | 60 |
| DPP447044 | 4.4 | 6 | 20 | 60 |
| DPP447045 | 4.5 | 6 | 22 | 60 |
| DPP447046 | 4.6 | 6 | 22 | 60 |
| DPP447047 | 4.7 | 6 | 22 | 60 |
| DPP447048 | 4.8 | 6 | 22 | 60 |
| DPP447049 | 4.9 | 6 | 22 | 60 |
| DPP447050 | 5.0 | 6 | 22 | 60 |
| DPP447051 | 5.1 | 6 | 24 | 60 |
| DPP447052 | 5.2 | 6 | 24 | 60 |
| DPP447053 | 5.3 | 6 | 24 | 60 |

| EDP No. | Drill Diameter | Shank Diameter | Flute Length | Overall Length |
|---|---|---|---|---|
| 型号 | 刃径 | 柄径 | 槽长 | 全长 |
| X-Coating | $D_1$ | $D_2$ | $L_1$ | $L_2$ |
| DPP447054 | 5.4 | 6 | 24 | 60 |
| DPP447055 | 5.5 | 6 | 24 | 60 |
| DPP447056 | 5.6 | 6 | 24 | 60 |
| DPP447057 | 5.7 | 6 | 26 | 60 |
| DPP447058 | 5.8 | 6 | 26 | 60 |
| DPP447059 | 5.9 | 6 | 26 | 60 |
| DPP447060 | 6.0 | 6 | 26 | 60 |
| DPP447061 | 6.1 | 8 | 28 | 70 |
| DPP447062 | 6.2 | 8 | 28 | 70 |
| DPP447063 | 6.3 | 8 | 28 | 70 |
| DPP447064 | 6.4 | 8 | 30 | 70 |
| DPP447065 | 6.5 | 8 | 30 | 70 |
| DPP447066 | 6.6 | 8 | 30 | 70 |
| DPP447067 | 6.7 | 8 | 30 | 70 |
| DPP447068 | 6.8 | 8 | 30 | 70 |
| DPP447069 | 6.9 | 8 | 30 | 70 |
| DPP447070 | 7.0 | 8 | 30 | 70 |
| DPP447071 | 7.1 | 8 | 34 | 70 |
| DPP447072 | 7.2 | 8 | 34 | 70 |
| DPP447073 | 7.3 | 8 | 34 | 70 |
| DPP447074 | 7.4 | 8 | 34 | 70 |
| DPP447075 | 7.5 | 8 | 34 | 70 |
| DPP447076 | 7.6 | 8 | 34 | 70 |
| DPP447077 | 7.7 | 8 | 34 | 70 |

▶ Other diameters and shank types are available upon request. / 其他直径与刀柄类型可根据您的要求提供

▶ NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ○ | ○ | ◎ | ○ | ○ | ○ | | | ○ | | | ◎ | ○ | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | | | | | | | | | | | | | | | | | | | |



# DREAM DRILLS - FLAT BOTTOM

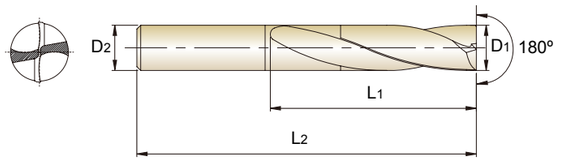
**DPP447 SERIES**

## CARBIDE, DREAM DRILLS - FLAT BOTTOM — *SHORT*

## 硬质合金，梦幻钻头一平底钻 — 短

- ▶ For holes on various angled surfaces.
- ▶ 180 degree point angle enables drilling of flat, inclined and curved surfaces.
- ▶ Optimized flute shape for excellent chip evacuation.
- ▶ High strength cutting edge to improve tool life and versatility drilling.
- ▶ For through holes, minimized burrs at entrance and exit when drilling thin plate.

- ▶ 适合各种斜面孔加工
- ▶ 采用180°钻顶角，可以在平面，斜面和曲面上钻孔加工
- ▶ 最佳的槽形设计，实现出色的排屑
- ▶ 高强度切削刃，提高刀具寿命和多功能性
- ▶ 对于通孔，钻孔薄板时，可以将入口和出口处的毛刺降至最低




CARBIDE | 20° | h6 | h7 | 180° | p. A128

2 × D

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| ◎ | SHRINK FIT HOLDER | D47 - 72 |
| ◎ | HYDRAULIC CHUCK | D15 - 46 |
| ○ | ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. | Drill Diameter | Shank Diameter | Flute Length | Overall Length |
|---|---|---|---|---|
| 型号 | 刃径 | 柄径 | 槽长 | 全长 |
| X-Coating | $D_1$ | $D_2$ | $L_1$ | $L_2$ |
| DPP447078 | 7.8 | 8 | 34 | 70 |
| DPP447079 | 7.9 | 8 | 34 | 70 |
| DPP447080 | 8.0 | 8 | 34 | 70 |
| DPP447081 | 8.1 | 10 | 38 | 80 |
| DPP447082 | 8.2 | 10 | 38 | 80 |
| DPP447083 | 8.3 | 10 | 38 | 80 |
| DPP447084 | 8.4 | 10 | 38 | 80 |
| DPP447085 | 8.5 | 10 | 38 | 80 |
| DPP447086 | 8.6 | 10 | 38 | 80 |
| DPP447087 | 8.7 | 10 | 40 | 80 |
| DPP447088 | 8.8 | 10 | 40 | 80 |
| DPP447089 | 8.9 | 10 | 40 | 80 |
| DPP447090 | 9.0 | 10 | 40 | 80 |
| DPP447091 | 9.1 | 10 | 42 | 80 |
| DPP447092 | 9.2 | 10 | 42 | 80 |
| DPP447093 | 9.3 | 10 | 42 | 80 |
| DPP447094 | 9.4 | 10 | 42 | 80 |
| DPP447095 | 9.5 | 10 | 42 | 80 |
| DPP447096 | 9.6 | 10 | 42 | 80 |
| DPP447097 | 9.7 | 10 | 45 | 80 |
| DPP447098 | 9.8 | 10 | 45 | 80 |
| DPP447099 | 9.9 | 10 | 45 | 80 |
| DPP447100 | 10.0 | 10 | 45 | 80 |
| DPP447101 | 10.1 | 12 | 46 | 90 |

| EDP No. | Drill Diameter | Shank Diameter | Flute Length | Overall Length |
|---|---|---|---|---|
| 型号 | 刃径 | 柄径 | 槽长 | 全长 |
| X-Coating | $D_1$ | $D_2$ | $L_1$ | $L_2$ |
| DPP447102 | 10.2 | 12 | 46 | 90 |
| DPP447103 | 10.3 | 12 | 46 | 90 |
| DPP447104 | 10.4 | 12 | 48 | 90 |
| DPP447105 | 10.5 | 12 | 48 | 90 |
| DPP447106 | 10.6 | 12 | 48 | 90 |
| DPP447107 | 10.7 | 12 | 48 | 90 |
| DPP447108 | 10.8 | 12 | 48 | 90 |
| DPP447109 | 10.9 | 12 | 48 | 90 |
| DPP447110 | 11.0 | 12 | 48 | 90 |
| DPP447111 | 11.1 | 12 | 50 | 90 |
| DPP447112 | 11.2 | 12 | 50 | 90 |
| DPP447113 | 11.3 | 12 | 50 | 90 |
| DPP447114 | 11.4 | 12 | 50 | 90 |
| DPP447115 | 11.5 | 12 | 50 | 90 |
| DPP447116 | 11.6 | 12 | 50 | 90 |
| DPP447117 | 11.7 | 12 | 52 | 90 |
| DPP447118 | 11.8 | 12 | 52 | 90 |
| DPP447119 | 11.9 | 12 | 52 | 90 |
| DPP447120 | 12.0 | 12 | 52 | 90 |
| DPP447125 | 12.5 | 14 | 54 | 100 |
| DPP447130 | 13.0 | 14 | 56 | 100 |
| DPP447135 | 13.5 | 14 | 58 | 100 |
| DPP447140 | 14.0 | 14 | 58 | 100 |
| DPP447145 | 14.5 | 16 | 62 | 105 |

▶ Other diameters and shank types are available upon request. / 其他直径与刀柄类型可根据您的要求提供

▶ NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ○ | ○ | ◎ | ○ | ○ | ○ | | | ○ | | | ◎ | ○ | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | | | | | | | | | | | | | | | | | | | |

# DREAM DRILLS - FLAT BOTTOM

**DPP447 SERIES**

## CARBIDE, DREAM DRILLS - FLAT BOTTOM

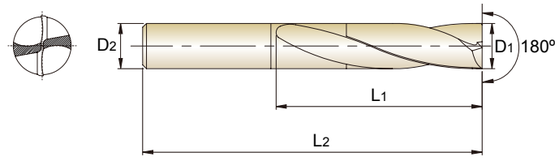
*SHORT*

## 硬质合金, 梦幻钻头一平底钻

短

- ▶ For holes on various angled surfaces.
- ▶ 180 degree point angle enables drilling of flat, inclined and curved surfaces.
- ▶ Optimized flute shape for excellent chip evacuation.
- ▶ High strength cutting edge to improve tool life and versatility drilling.
- ▶ For through holes, minimized burrs at entrance and exit when drilling thin plate.

- ▶ 适合各种斜面孔加工
- ▶ 采用180°钻顶角, 可以在平面, 斜面和曲面上钻孔加工
- ▶ 最佳的槽形设计, 实现出色的排屑
- ▶ 高强度切削刃, 提高刀具寿命和多功能性
- ▶ 对于通孔, 钻孔薄板时, 可以将入口和出口处的毛刺降至最低




CARBIDE | 20° | h6 | h7 | 180° | p. A128

2 × D

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| ◎ | SHRINK FIT HOLDER | D47 - 72 |
| ◎ | HYDRAULIC CHUCK | D15 - 46 |
| ○ | ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. | Drill Diameter | Shank Diameter | Flute Length | Overall Length |
|---|---|---|---|---|
| 型号 | 刃径 | 柄径 | 槽长 | 全长 |
| X-Coating | $D_1$ | $D_2$ | $L_1$ | $L_2$ |
| DPP447150 | 15.0 | 16 | 62 | 105 |
| DPP447155 | 15.5 | 16 | 64 | 115 |
| DPP447160 | 16.0 | 16 | 64 | 115 |
| DPP447165 | 16.5 | 18 | 70 | 125 |
| DPP447170 | 17.0 | 18 | 70 | 125 |
| DPP447175 | 17.5 | 18 | 70 | 125 |
| DPP447180 | 18.0 | 18 | 70 | 125 |
| DPP447185 | 18.5 | 20 | 75 | 135 |
| DPP447190 | 19.0 | 20 | 75 | 135 |
| DPP447195 | 19.5 | 20 | 75 | 145 |
| DPP447200 | 20.0 | 20 | 75 | 145 |

▶ Other diameters and shank types are available upon request. / 其他直径与刀柄类型可根据您的要求提供

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ○ | ○ | ◎ | ○ | ○ | ○ | | | ○ | | | ◎ | ○ | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | | | | | | | | | | | | | | | | | | | |



# DREAM DRILLS - FLAT BOTTOM

**DH450 SERIES**

## CARBIDE, DREAM DRILLS - FLAT BOTTOM with COOLANT HOLES

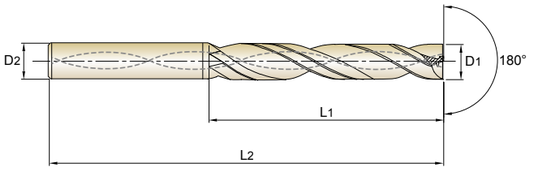
*LONG*

## 硬质合金, 梦幻钻头一平底钻带内冷孔

长

- ▶ For holes on various angled surfaces.
- ▶ 180 degree point angle enables drilling of flat, inclined and curved surfaces.
- ▶ Optimized flute shape for excellent chip evacuation.
- ▶ High strength cutting edge to improve tool life and versatility drilling.
- ▶ For through holes, minimized burrs at entrance and exit when drilling thin plate.
- ▶ Pilot Drilling for 5XD

- ▶ 加工多种角度的表面
- ▶ 180度钻顶角度可以加工平面,倾斜和弯曲的表面
- ▶ 最佳沟槽设计使卓越排屑
- ▶ 高强度刃部提高刀具寿命和多用途钻孔
- ▶ 加工通孔的薄工件时，入口和出口的毛刺最小化
- ▶ 双刃带设计提供稳定的孔直线度和圆度，以提高刀具寿命和多功能钻孔




CARBIDE | 30° | h6 | h7 | 180° | 20 bar | p. A129

5 × D

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| ◎ | SHRINK FIT HOLDER | D47 - 72 |
| ◎ | HYDRAULIC CHUCK | D15 - 46 |
| ○ | ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. | Drill Diameter | Shank Diameter | Flute Length | Overall Length |
|---|---|---|---|---|
| 型号 | 刃径 | 柄径 | 槽长 | 全长 |
| TiAlN | $D_1$ | $D_2$ | $L_1$ | $L_2$ |
| DH450030 | 3.0 | 6 | 28 | 66 |
| DH450031 | 3.1 | 6 | 28 | 66 |
| DH450032 | 3.2 | 6 | 28 | 66 |
| DH450033 | 3.3 | 6 | 28 | 66 |
| DH450034 | 3.4 | 6 | 28 | 66 |
| DH450035 | 3.5 | 6 | 28 | 66 |
| DH450036 | 3.6 | 6 | 28 | 66 |
| DH450037 | 3.7 | 6 | 28 | 66 |
| DH450038 | 3.8 | 6 | 36 | 74 |
| DH450039 | 3.9 | 6 | 36 | 74 |
| DH450040 | 4.0 | 6 | 36 | 74 |
| DH450041 | 4.1 | 6 | 36 | 74 |
| DH450042 | 4.2 | 6 | 36 | 74 |
| DH450043 | 4.3 | 6 | 36 | 74 |
| DH450044 | 4.4 | 6 | 36 | 74 |
| DH450045 | 4.5 | 6 | 36 | 74 |
| DH450046 | 4.6 | 6 | 36 | 74 |
| DH450047 | 4.7 | 6 | 36 | 74 |
| DH450048 | 4.8 | 6 | 44 | 82 |
| DH450049 | 4.9 | 6 | 44 | 82 |
| DH450050 | 5.0 | 6 | 44 | 82 |
| DH450051 | 5.1 | 6 | 44 | 82 |
| DH450052 | 5.2 | 6 | 44 | 82 |
| DH450053 | 5.3 | 6 | 44 | 82 |
| DH450054 | 5.4 | 6 | 44 | 82 |
| DH450055 | 5.5 | 6 | 44 | 82 |
| DH450056 | 5.6 | 6 | 44 | 82 |
| DH450057 | 5.7 | 6 | 44 | 82 |
| DH450058 | 5.8 | 6 | 44 | 82 |
| DH450059 | 5.9 | 6 | 44 | 82 |
| DH450060 | 6.0 | 6 | 44 | 82 |
| DH450061 | 6.1 | 8 | 53 | 91 |
| DH450062 | 6.2 | 8 | 53 | 91 |
| DH450063 | 6.3 | 8 | 53 | 91 |
| DH450064 | 6.4 | 8 | 53 | 91 |
| DH450065 | 6.5 | 8 | 53 | 91 |
| DH450066 | 6.6 | 8 | 53 | 91 |
| DH450067 | 6.7 | 8 | 53 | 91 |
| DH450068 | 6.8 | 8 | 53 | 91 |
| DH450069 | 6.9 | 8 | 53 | 91 |
| DH450070 | 7.0 | 8 | 53 | 91 |
| DH450071 | 7.1 | 8 | 53 | 91 |
| DH450072 | 7.2 | 8 | 53 | 91 |
| DH450073 | 7.3 | 8 | 53 | 91 |

▶ Other diameters and shank types are available upon request. / 其他直径与刀柄类型可根据您的要求提供

▶ NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ○ | ○ | ◎ | ○ | ○ | ○ | | | ○ | | | ◎ | ○ | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | | | | | | | | | | | | | | | | | | | |

# DREAM DRILLS - FLAT BOTTOM

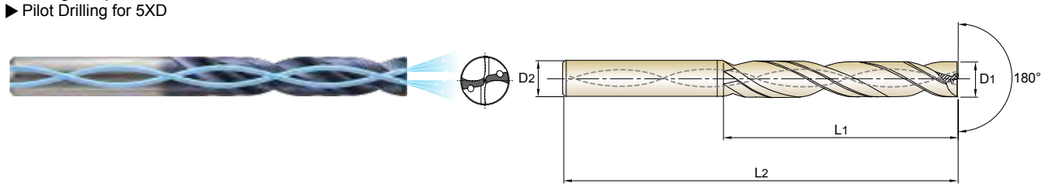
**DH450 SERIES**

## CARBIDE, DREAM DRILLS - FLAT BOTTOM with COOLANT HOLES *LONG*

## 硬质合金, 梦幻钻头一平底钻带内冷孔 长

- ▶ For holes on various angled surfaces.
- ▶ 180 degree point angle enables drilling of flat, inclined and curved surfaces.
- ▶ Optimized flute shape for excellent chip evacuation.
- ▶ High strength cutting edge to improve tool life and versatility drilling.
- ▶ For through holes, minimized burrs at entrance and exit when drilling thin plate.
- ▶ Pilot Drilling for 5XD

- ▶ 加工多种角度的表面
- ▶ 180度钻顶角度可以加工平面,倾斜和弯曲的表面
- ▶ 最佳沟槽设计使卓越排屑
- ▶ 高强度刃部提高刀具寿命和多用途钻孔
- ▶ 加工通孔的薄工件时，入口和出口的毛刺最小化
- ▶ 双刃带设计提供稳定的孔直线度和圆度，以提高刀具寿命和多功能钻孔




CARBIDE | 30° | h6 | h7 | 180° | 20 bar | p. A129 | 5 × D

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| ◎ | SHRINK FIT HOLDER | D47 - 72 |
| ◎ | HYDRAULIC CHUCK | D15 - 46 |
| ○ | ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. 型号 | Drill Diameter 刃径 D1 | Shank Diameter 柄径 D2 | Flute Length 槽长 L1 | Overall Length 全长 L2 |
|---|---|---|---|---|
| DH450074 | 7.4 | 8 | 53 | 91 |
| DH450075 | 7.5 | 8 | 53 | 91 |
| DH450076 | 7.6 | 8 | 53 | 91 |
| DH450077 | 7.7 | 8 | 53 | 91 |
| DH450078 | 7.8 | 8 | 53 | 91 |
| DH450079 | 7.9 | 8 | 53 | 91 |
| DH450080 | 8.0 | 8 | 53 | 91 |
| DH450081 | 8.1 | 10 | 61 | 103 |
| DH450082 | 8.2 | 10 | 61 | 103 |
| DH450083 | 8.3 | 10 | 61 | 103 |
| DH450084 | 8.4 | 10 | 61 | 103 |
| DH450085 | 8.5 | 10 | 61 | 103 |
| DH450086 | 8.6 | 10 | 61 | 103 |
| DH450087 | 8.7 | 10 | 61 | 103 |
| DH450088 | 8.8 | 10 | 61 | 103 |
| DH450089 | 8.9 | 10 | 61 | 103 |
| DH450090 | 9.0 | 10 | 61 | 103 |
| DH450091 | 9.1 | 10 | 61 | 103 |
| DH450092 | 9.2 | 10 | 61 | 103 |
| DH450093 | 9.3 | 10 | 61 | 103 |
| DH450094 | 9.4 | 10 | 61 | 103 |
| DH450095 | 9.5 | 10 | 61 | 103 |

| EDP No. 型号 | Drill Diameter 刃径 D1 | Shank Diameter 柄径 D2 | Flute Length 槽长 L1 | Overall Length 全长 L2 |
|---|---|---|---|---|
| DH450096 | 9.6 | 10 | 61 | 103 |
| DH450097 | 9.7 | 10 | 61 | 103 |
| DH450098 | 9.8 | 10 | 61 | 103 |
| DH450099 | 9.9 | 10 | 61 | 103 |
| DH450100 | 10.0 | 10 | 61 | 103 |
| DH450102 | 10.2 | 12 | 71 | 118 |
| DH450105 | 10.5 | 12 | 71 | 118 |
| DH450108 | 10.8 | 12 | 71 | 118 |
| DH450110 | 11.0 | 12 | 71 | 118 |
| DH450115 | 11.5 | 12 | 71 | 118 |
| DH450118 | 11.8 | 12 | 71 | 118 |
| DH450119 | 11.9 | 12 | 71 | 118 |
| DH450120 | 12.0 | 12 | 71 | 118 |
| DH450125 | 12.5 | 14 | 77 | 124 |
| DH450130 | 13.0 | 14 | 77 | 124 |
| DH450135 | 13.5 | 14 | 77 | 124 |
| DH450140 | 14.0 | 14 | 77 | 124 |
| DH450145 | 14.5 | 16 | 83 | 133 |
| DH450150 | 15.0 | 16 | 83 | 133 |
| DH450155 | 15.5 | 16 | 83 | 133 |
| DH450160 | 16.0 | 16 | 83 | 133 |
| DH450165 | 16.5 | 18 | 93 | 143 |

▶ Other diameters and shank types are available upon request. / 其他直径与刀柄类型可根据您的要求提供

▶ NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ○ | ○ | ◎ | ○ | ○ | ○ | | | ○ | | | ◎ | ○ | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | | | | | | | | | | | | | | | | | | | |



CARBIDE
HSS
i-ONE DRILLS
i-DREAM DRILLS
DREAM DRILLS -PRO
DREAM DRILLS -GENERAL
DREAM DRILLS -SOFT
DREAM DRILLS -HIGH FEED
DREAM DRILLS -FLAT BOTTOM
DREAM DRILLS -INOX
DREAM DRILLS -ALU
DREAM DRILLS -CFRP
DREAM DRILLS -MQL
DREAM DRILLS for HIGH HARDENED STEELS
GENERAL CARBIDE DRILLS
MULTI-1 DRILLS
GOLD-P DRILLS
SUPER-GP DRILLS
WORM PATTERN DRILLS
STRAIGHT SHANK DRILLS
TAPER SHANK DRILLS
NC-SPOTTING DRILLS
CENTER DRILLS
SPADE DRILLS
REAMERS
COUNTER SINKS
COUNTER BORES
TECHNICAL DATA

# DREAM DRILLS - FLAT BOTTOM

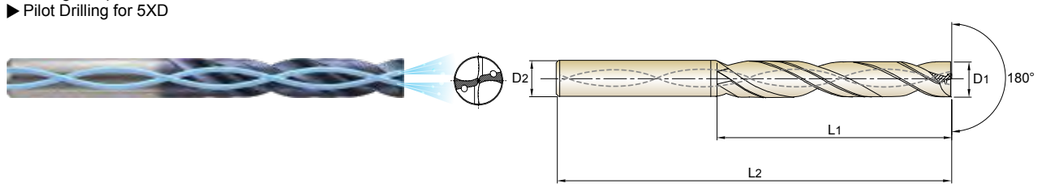
**DH450 SERIES**

## CARBIDE, DREAM DRILLS - FLAT BOTTOM with COOLANT HOLES *LONG*

## 硬质合金, 梦幻钻头一平底钻带内冷孔 长

- ▶ For holes on various angled surfaces.
- ▶ 180 degree point angle enables drilling of flat, inclined and curved surfaces.
- ▶ Optimized flute shape for excellent chip evacuation.
- ▶ High strength cutting edge to improve tool life and versatility drilling.
- ▶ For through holes, minimized burrs at entrance and exit when drilling thin plate.
- ▶ Pilot Drilling for 5XD

- ▶ 加工多种角度的表面
- ▶ 180度钻顶角度可以加工平面,倾斜和弯曲的表面
- ▶ 最佳沟槽设计使卓越排屑
- ▶ 高强度刃部提高刀具寿命和多用途钻孔
- ▶ 加工通孔的薄工件时，入口和出口的毛刺最小化
- ▶ 双刃带设计提供稳定的孔直线度和圆度，以提高刀具寿命和多功能钻孔




CARBIDE | 30° | h6 | h7 | 180° | 20 bar | p. A129 | 5 × D

Recommended ToolHolder

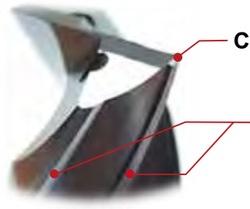
| | Plain Shank | Page |
|---|---|---|
| ◎ | SHRINK FIT HOLDER | D47 - 72 |
| ◎ | HYDRAULIC CHUCK | D15 - 46 |
| ○ | ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. 型号 | Drill Diameter 刃径 D1 | Shank Diameter 柄径 D2 | Flute Length 槽长 L1 | Overall Length 全长 L2 |
|---|---|---|---|---|
| DH450170 | 17.0 | 18 | 93 | 143 |
| DH450175 | 17.5 | 18 | 93 | 143 |
| DH450180 | 18.0 | 18 | 93 | 143 |
| DH450185 | 18.5 | 20 | 101 | 153 |

| EDP No. 型号 | Drill Diameter 刃径 D1 | Shank Diameter 柄径 D2 | Flute Length 槽长 L1 | Overall Length 全长 L2 |
|---|---|---|---|---|
| DH450190 | 19.0 | 20 | 101 | 153 |
| DH450195 | 19.5 | 20 | 101 | 153 |
| DH450200 | 20.0 | 20 | 101 | 153 |

▶ Other diameters and shank types are available upon request. / 其他直径与刀柄类型可根据您的要求提供



**Chamfer / 倒角 (Data as Below)**

**Double Margin / 双刃带 (2XD Single Margin)**
Hole Straightness and roundness provide good alignments
改善孔的直线度和圆度

| Drill Diameter / 刃径 (mm) | Corner Chamfer / 刀尖倒角 (mm) |
|---|---|
| Ø3.0 ~ Ø6.0 | 0.06 |
| Ø6.1 ~ Ø10.0 | 0.12 |
| Ø10.1 ~ Ø14.0 | 0.18 |
| Ø14.1 ~ Ø20.0 | 0.26 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ○ | ○ | ◎ | ○ | ○ | ○ | | | ○ | | | ◎ | ○ | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | | | | | | | | | | | | | | | | | | | |

# DREAM DRILLS - FLAT BOTTOM

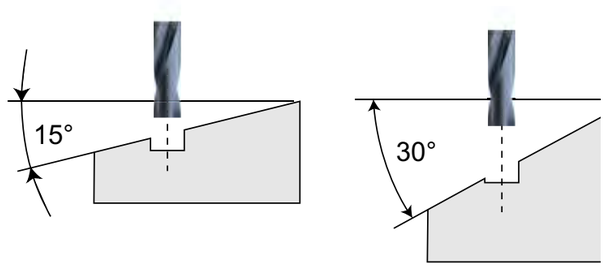
## RECOMMENDED CUTTING CONDITIONS
## 推荐加工条件

### DPP447 SERIES — without COOLANT HOLES (2XD)
### 不带内冷孔

RPM (转速) = (rev./min.)
FEED (进给) = (mm/rev.)

| ISO 公制 | VDI 3323 | Material Description 材料描述 | Vc 钻削速度 (m/min) | Parameter 参数 | Drill Diameter 刃径 (mm) 3.0 | 4.0 | 5.0 | 6.0 | 8.0 | 10.0 | 12.0 | 16.0 | 20.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | 80 | RPM | 8490 | 6370 | 5090 | 4240 | 3180 | 2550 | 2120 | 1590 | 1270 |
| | | | | FEED | 0.02-0.05 | 0.03-0.07 | 0.03-0.08 | 0.04-0.10 | 0.08-0.14 | 0.11-0.17 | 0.11-0.21 | 0.18-0.28 | 0.28-0.38 |
| | 2 | | 80 | RPM | 8490 | 6370 | 5090 | 4240 | 3180 | 2550 | 2120 | 1590 | 1270 |
| | | | | FEED | 0.02-0.05 | 0.03-0.07 | 0.03-0.08 | 0.04-0.10 | 0.08-0.14 | 0.11-0.17 | 0.11-0.21 | 0.18-0.28 | 0.28-0.38 |
| | 3 | | 70 | RPM | 7430 | 5570 | 4460 | 3710 | 2790 | 2230 | 1860 | 1390 | 1110 |
| | | | | FEED | 0.02-0.05 | 0.03-0.07 | 0.03-0.08 | 0.04-0.10 | 0.07-0.13 | 0.11-0.17 | 0.11-0.21 | 0.18-0.28 | 0.24-0.34 |
| | 4 | | 40 | RPM | 4240 | 3180 | 2550 | 2120 | 1590 | 1270 | 1060 | 800 | 640 |
| | | | | FEED | 0.02-0.05 | 0.03-0.07 | 0.03-0.08 | 0.04-0.10 | 0.07-0.13 | 0.11-0.17 | 0.11-0.21 | 0.18-0.28 | 0.24-0.34 |
| | 5 | | 38 | RPM | 4030 | 3020 | 2420 | 2020 | 1510 | 1210 | 1010 | 760 | 600 |
| | | | | FEED | 0.02-0.05 | 0.02-0.06 | 0.03-0.08 | 0.03-0.09 | 0.06-0.12 | 0.09-0.15 | 0.08-0.18 | 0.14-0.24 | 0.21-0.31 |
| | 6 | Low alloy steel | 45 | RPM | 4770 | 3580 | 2860 | 2390 | 1790 | 1430 | 1190 | 900 | 720 |
| | | | | FEED | 0.02-0.05 | 0.03-0.07 | 0.03-0.08 | 0.04-0.10 | 0.07-0.13 | 0.11-0.17 | 0.11-0.21 | 0.18-0.28 | 0.24-0.34 |
| | 7 | | 40 | RPM | 4240 | 3180 | 2550 | 2120 | 1590 | 1270 | 1060 | 800 | 640 |
| | | | | FEED | 0.02-0.05 | 0.03-0.07 | 0.03-0.08 | 0.04-0.10 | 0.07-0.13 | 0.11-0.17 | 0.11-0.21 | 0.18-0.28 | 0.24-0.34 |
| | 8 | | 38 | RPM | 4030 | 3020 | 2420 | 2020 | 1510 | 1210 | 1010 | 760 | 600 |
| | | | | FEED | 0.02-0.05 | 0.02-0.06 | 0.03-0.08 | 0.03-0.09 | 0.06-0.12 | 0.09-0.15 | 0.08-0.18 | 0.14-0.24 | 0.21-0.31 |
| | 9 | | 25 | RPM | 2650 | 1990 | 1590 | 1330 | 990 | 800 | 660 | 500 | 400 |
| | | | | FEED | 0.01-0.03 | 0.02-0.04 | 0.02-0.05 | 0.03-0.06 | 0.03-0.08 | 0.05-0.10 | 0.06-0.12 | 0.06-0.16 | 0.10-0.20 |
| M | 12 | Stainless steel | 30 | RPM | 3180 | 2390 | 1910 | 1590 | 1190 | 950 | 800 | 600 | 480 |
| | | | | FEED | 0.01-0.03 | 0.01-0.03 | 0.02-0.04 | 0.02-0.05 | 0.03-0.06 | 0.03-0.08 | 0.05-0.10 | 0.06-0.12 | 0.09-0.15 |
| K | 15 | Grey cast iron | 70 | RPM | 7430 | 5570 | 4460 | 3710 | 2790 | 2230 | 1860 | 1390 | 1110 |
| | | | | FEED | 0.02-0.05 | 0.02-0.06 | 0.03-0.08 | 0.03-0.09 | 0.06-0.12 | 0.09-0.15 | 0.08-0.18 | 0.14-0.24 | 0.20-0.30 |
| | 16 | | 60 | RPM | 6370 | 4770 | 3820 | 3180 | 2390 | 1910 | 1590 | 1190 | 950 |
| | | | | FEED | 0.02-0.05 | 0.02-0.05 | 0.03-0.06 | 0.03-0.07 | 0.04-0.10 | 0.07-0.13 | 0.06-0.16 | 0.11-0.21 | 0.15-0.25 |
| N | 21 | Aluminum-wrought alloy | 165 | RPM | 17510 | 13130 | 10500 | 8750 | 6570 | 5250 | 4380 | 3280 | 2630 |
| | | | | FEED | 0.02-0.05 | 0.04-0.08 | 0.04-0.10 | 0.06-0.12 | 0.10-0.16 | 0.14-0.20 | 0.14-0.24 | 0.22-0.32 | 0.30-0.40 |
| | 22 | | 165 | RPM | 17510 | 13130 | 10500 | 8750 | 6570 | 5250 | 4380 | 3280 | 2630 |
| | | | | FEED | 0.02-0.05 | 0.04-0.08 | 0.04-0.10 | 0.06-0.12 | 0.10-0.16 | 0.14-0.20 | 0.14-0.24 | 0.22-0.32 | 0.30-0.40 |

| Surface Angle 表面角 | Cutting Conditions / 加工条件 RPM / 转速 | FEED / 进给 |
|---|---|---|
| 0° ~ 15° | 100% | 100% |
| 15° ~ 30° | 100% | 50% |
| 30° ~ | 70% | 30% |




- ▶ The cutting conditions are for 2xD. / 基于2XD径钻头的加工参数.
- ▶ A rigid and precise machine and holder are required. / 需要高精度和刚性的设备和刀柄.
- ▶ The recommended depth of hole is measured from the highest point of the hole on drilling in inclined and angled surfaces.
  推荐的钻孔深度是从倾斜表面钻孔的最高点开始测量.
- ▶ The recommended cutting conditions are those for drilling on flat and horizontal surfaces.
  推荐的切削条件是在平面和水平钻孔时的参数.
- ▶ Please adjust feed rate according to the above surface angle when drilling on an inclined surface.
  在倾斜表面钻孔时, 请根据上述表面角度调整进给速度.
  - The recommended feed rate 50% or lower, in case of 15°~30° of the incline angle.
    在倾角为15° ~ 30°的情况下, 建议进给速度降为50%或更低.
  - The recommended feed rate 30% or lower and RPM 70%, in case of 30° ~ of the incline angle.
    在倾角为30°的情况下, 建议进给速度降到30%或更低, 转速降为70%.
- ▶ Please decrease cutting speed as material hardness increases. / 硬度增加时, 请降低加工速度.
- ▶ Only use drilling tools. Side milling, traversing, helical milling are not usable. / 仅适用于钻孔. 侧铣, 横铣, 螺旋铣不可用.



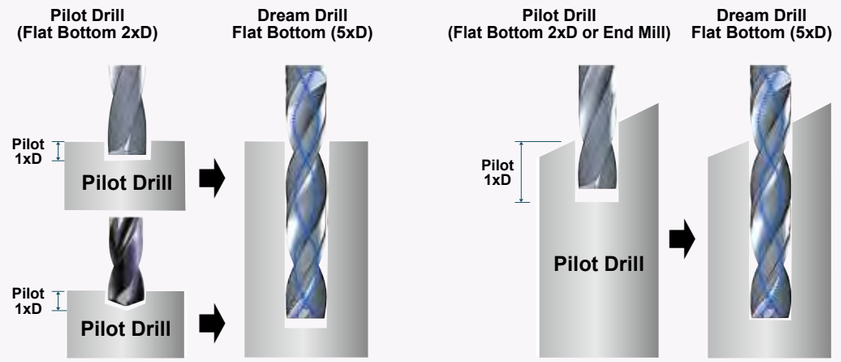
DREAM DRILLS - FLAT BOTTOM
RECOMMENDED CUTTING CONDITIONS
推荐加工条件

### DH450 SERIES — with COOLANT HOLES (5XD)
### 带内冷孔

RPM (转速) = (rev./min.)
FEED (进给) = (mm/rev.)

| ISO 公制 | VDI 3323 | Material Description 材料描述 | Vc 钻削速度 (m/min) | Parameter 参数 | Drill Diameter 刃径 (mm) 3.0 | 4.0 | 5.0 | 6.0 | 8.0 | 10.0 | 12.0 | 16.0 | 20.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | 100 | RPM | 10610 | 7960 | 6370 | 5310 | 3980 | 3180 | 2650 | 1990 | 1590 |
| | | | | FEED | 0.05-0.09 | 0.08-0.12 | 0.09-0.15 | 0.12-0.18 | 0.18-0.24 | 0.24-0.30 | 0.26-0.36 | 0.38-0.48 | 0.50-0.60 |
| | 2 | | 90 | RPM | 9550 | 7160 | 5730 | 4770 | 3580 | 2860 | 2390 | 1790 | 1430 |
| | | | | FEED | 0.02-0.05 | 0.04-0.08 | 0.04-0.10 | 0.06-0.12 | 0.10-0.16 | 0.14-0.20 | 0.14-0.24 | 0.22-0.32 | 0.30-0.40 |
| | 3 | | 90 | RPM | 9550 | 7160 | 5730 | 4770 | 3580 | 2860 | 2390 | 1790 | 1430 |
| | | | | FEED | 0.02-0.05 | 0.04-0.08 | 0.04-0.10 | 0.06-0.12 | 0.10-0.16 | 0.14-0.20 | 0.14-0.24 | 0.22-0.32 | 0.30-0.40 |
| | 4 | | 75 | RPM | 7960 | 5970 | 4770 | 3980 | 2980 | 2390 | 1990 | 1490 | 1190 |
| | | | | FEED | 0.02-0.04 | 0.03-0.06 | 0.05-0.08 | 0.05-0.09 | 0.06-0.12 | 0.09-0.15 | 0.08-0.18 | 0.14-0.24 | 0.20-0.30 |
| | 5 | | 75 | RPM | 7960 | 5970 | 4770 | 3980 | 2980 | 2390 | 1990 | 1490 | 1190 |
| | | | | FEED | 0.02-0.04 | 0.03-0.06 | 0.05-0.08 | 0.05-0.09 | 0.06-0.12 | 0.09-0.15 | 0.08-0.18 | 0.14-0.24 | 0.20-0.30 |
| | 6 | Low alloy steel | 85 | RPM | 9020 | 6760 | 5410 | 4510 | 3380 | 2710 | 2250 | 1690 | 1350 |
| | | | | FEED | 0.02-0.05 | 0.04-0.08 | 0.04-0.10 | 0.06-0.12 | 0.10-0.16 | 0.14-0.20 | 0.14-0.24 | 0.22-0.32 | 0.30-0.40 |
| | 7 | | 75 | RPM | 7960 | 5970 | 4770 | 3980 | 2980 | 2390 | 1990 | 1490 | 1190 |
| | | | | FEED | 0.02-0.05 | 0.04-0.08 | 0.04-0.10 | 0.06-0.12 | 0.10-0.16 | 0.14-0.20 | 0.14-0.24 | 0.22-0.32 | 0.30-0.40 |
| | 8 | | 75 | RPM | 7960 | 5970 | 4770 | 3980 | 2980 | 2390 | 1990 | 1490 | 1190 |
| | | | | FEED | 0.02-0.04 | 0.03-0.06 | 0.05-0.08 | 0.05-0.09 | 0.06-0.12 | 0.09-0.15 | 0.08-0.18 | 0.14-0.24 | 0.20-0.30 |
| | 9 | | 50 | RPM | 5310 | 3980 | 3180 | 2650 | 1990 | 1590 | 1330 | 990 | 800 |
| | | | | FEED | 0.02-0.04 | 0.03-0.06 | 0.05-0.08 | 0.05-0.09 | 0.06-0.12 | 0.09-0.15 | 0.08-0.18 | 0.14-0.24 | 0.20-0.30 |
| M | 12 | Stainless steel | 60 | RPM | 6370 | 4770 | 3820 | 3180 | 2390 | 1910 | 1590 | 1190 | 950 |
| | | | | FEED | 0.02-0.05 | 0.04-0.08 | 0.04-0.10 | 0.06-0.12 | 0.10-0.16 | 0.14-0.20 | 0.14-0.24 | 0.22-0.32 | 0.30-0.40 |
| K | 15 | Grey cast iron | 90 | RPM | 9550 | 7160 | 5730 | 4770 | 3580 | 2860 | 2390 | 1790 | 1430 |
| | | | | FEED | 0.02-0.05 | 0.03-0.06 | 0.05-0.08 | 0.05-0.09 | 0.06-0.12 | 0.09-0.15 | 0.08-0.18 | 0.14-0.24 | 0.20-0.30 |
| | 16 | | 75 | RPM | 7960 | 5970 | 4770 | 3980 | 2980 | 2390 | 1990 | 1490 | 1190 |
| | | | | FEED | 0.02-0.05 | 0.02-0.05 | 0.03-0.06 | 0.03-0.07 | 0.04-0.10 | 0.07-0.13 | 0.06-0.16 | 0.11-0.21 | 0.15-0.25 |
| N | 21 | Aluminum-wrought alloy | 160 | RPM | 16980 | 12730 | 10190 | 8490 | 6370 | 5090 | 4240 | 3180 | 2550 |
| | | | | FEED | 0.05-0.09 | 0.08-0.12 | 0.09-0.15 | 0.12-0.18 | 0.18-0.24 | 0.24-0.30 | 0.26-0.36 | 0.38-0.48 | 0.50-0.60 |
| | 22 | | 160 | RPM | 16980 | 12730 | 10190 | 8490 | 6370 | 5090 | 4240 | 3180 | 2550 |
| | | | | FEED | 0.05-0.09 | 0.08-0.12 | 0.09-0.15 | 0.12-0.18 | 0.18-0.24 | 0.24-0.30 | 0.26-0.36 | 0.38-0.48 | 0.50-0.60 |

### Pilot Drilling for 5 X D
### 导向钻孔 : 约5XD



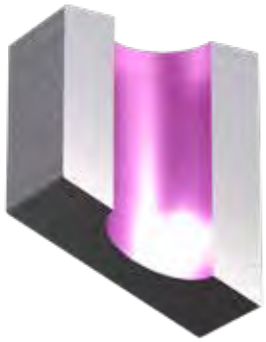

- ▶ For Flat bottom 5xD drilling depth, Slope surface needs Pilot Drilling with YG-1 Flat Bottom Drill (2XD) and Flat surface needs Pilot Drilling with YG-1 Dream Drill General. / 对于钻深5XD, 斜面需要YG-1 平底钻加工导向孔, 平面需要YG -1通用性梦幻钻头加工导向孔
- ▶ Pilot Drilling Depth : around 1XD / 导向钻孔深度 : 约1XD
- ▶ Pilot Drilling Diameter : same size diameter / 导向钻孔直径: 同尺寸直径

# DREAM DRILLS - FLAT BOTTOM

**RECOMMENDED CUTTING CONDITIONS**
**推荐加工条件**

## VARIETY OF DRILLING
## 钻削的多样性

Inclined Entry
倾斜入口

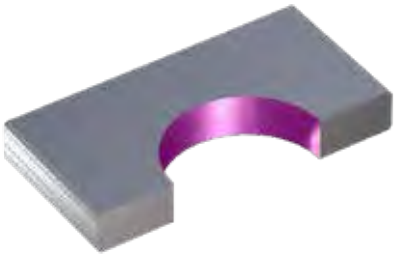


Inclined Exit
倾斜出口

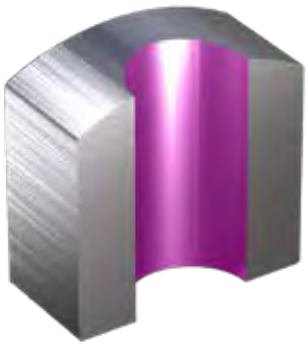
Counter Boring
沉孔

Guide Drilling
导向孔

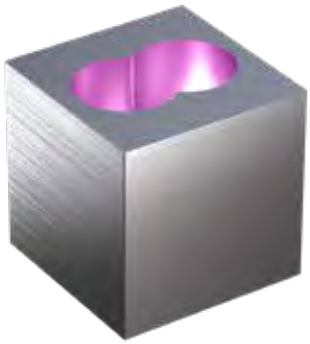
Cross Drilling
交叉孔



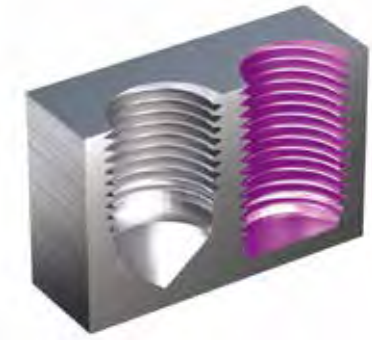
Thin Plate
薄板



Curved Surface
曲面



Chained Hole
链接孔



Blind Hole for Threading
螺纹底孔

YG

Leading Through Innovation

# SOLID CARBIDE

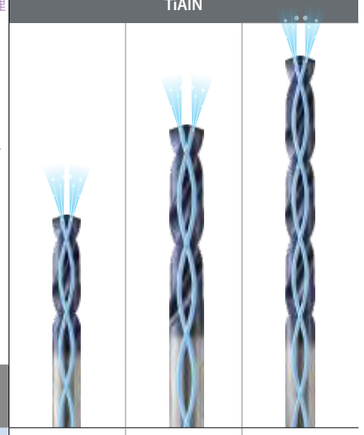
# DREAM DRILLS -INOX

- For Tough Materials like Stainless Steels
- 镍合金和钛等硬质材料

# SELECTION GUIDE
## 选用指南

HOLEMAKING TOOLS

| SERIES 系列 | DH451 | DH452 | DH453 |
|---|---|---|---|
| DRILLING DEPTH 钻销深度 | 3XD | 5XD | 8XD |
| LENGTH 长度 | SHORT 短 | LONG 长 | EXTRA LONG 超长 |
| SIZE MIN 最小尺寸 | D3.0 | D1.0 | D3.0 |
| SIZE MAX 最大尺寸 | D20.0 | D20.0 | D14.0 |
| PAGE 页数 | A133 | A136 | A139 |
| SURFACE TREATMENT 表面处理 | TiAlN | | |



# SOLID CARBIDE
# DREAM DRILLS INOX

For Tough Materials like Stainless Steels
镍合金和钛等硬质材料

Please visit 请访问 globalyg1.com/mat for material search 查看产品材料

◎ : Excellent (优秀) ○ : Good (良好)

Recommended cutting conditions (推荐加工条件) : p. A141

| ISO 公制 | VDI 3323 | Material Description 材料描述 | Composition / Structure / Heat Treatment 成分 / 组织 / 热处理 | | HB 布氏硬度 | HRc 硬度 | DH451 | DH452 | DH453 |
|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | About 0.15% C | Annealed | 125 | | | | |
| | 2 | | About 0.45% C | Annealed | 190 | 13 | ◎ | ◎ | ◎ |
| | 3 | | About 0.45% C | Quenched & Tempered | 250 | 25 | ○ | ○ | ○ |
| | 4 | | About 0.75% C | Annealed | 270 | 28 | | | |
| | 5 | | About 0.75% C | Quenched & Tempered | 300 | 32 | | | |
| | 6 | Low alloy steel | | Annealed | 180 | 10 | ◎ | ◎ | ◎ |
| | 7 | | | Quenched & Tempered | 275 | 29 | ○ | ○ | ○ |
| | 8 | | | Quenched & Tempered | 300 | 32 | | | |
| | 9 | | | Quenched & Tempered | 350 | 38 | | | |
| | 10 | High alloyed steel, and tool steel | | Annealed | 200 | 15 | | | |
| | 11 | | | Quenched & Tempered | 325 | 35 | | | |
| M | 12 | Stainless steel | Ferritic / Martensitic | Annealed | 200 | 15 | ◎ | ◎ | ◎ |
| | 13 | | Martensitic | Quenched & Tempered | 240 | 23 | ◎ | ◎ | ◎ |
| | 14 | | Austenitic | | 180 | 10 | ◎ | ◎ | ◎ |
| K | 15 | Grey cast iron | Pearlitic / ferritic | | 180 | 10 | | | |
| | 16 | | Pearlitic (Martensitic) | | 260 | 26 | | | |
| | 17 | Nodular cast iron | Ferritic | | 160 | 3 | | | |
| | 18 | | Pearlitic | | 250 | 25 | | | |
| | 19 | Malleable cast iron | Ferritic | | 130 | | | | |
| | 20 | | Pearlitic | | 230 | 21 | | | |
| N | 21 | Aluminum-wrought alloy | Not Curable | | 60 | | ◎ | ◎ | ◎ |
| | 22 | | Curable | Hardened | 100 | | ◎ | ◎ | ◎ |
| | 23 | Aluminum-cast, alloyed | ≤ 12% Si, Not Curable | | 75 | | ○ | ○ | ○ |
| | 24 | | ≤ 12% Si, Curable | Hardened | 90 | | ○ | ○ | ○ |
| | 25 | | > 12% Si, Not Curable | | 130 | | ○ | ○ | ○ |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | Cutting Alloys, PB>1% | | 110 | | | | |
| | 27 | | CuZn, CuSnZn (Brass) | | 90 | | | | |
| | 28 | | CuSn, lead-free copper and electrolytic copper | | 100 | | | | |
| | 29 | Non Metallic Materials | Duroplastic, Fiber Reinforced Plastic | | | | | | |
| | 30 | | Rubber, Wood, etc. | | | | | | |
| S | 31 | Heat Resistant Super Alloys | Fe Based | Annealed | 200 | 15 | | | |
| | 32 | | | Cured | 280 | 30 | | | |
| | 33 | | Ni or Co Based | Annealed | 250 | 25 | | | |
| | 34 | | | Cured | 350 | 38 | | | |
| | 35 | | | Cast | 320 | 34 | | | |
| | 36 | Titanium Alloys | Pure Titanium | | 400 Rm | | | | |
| | 37 | | Alpha + Beta Alloys | Hardened | 1050 Rm | | ○ | ○ | ○ |
| H | 38 | Hardened steel | | Hardened | 550 | 55 | | | |
| | 39 | | | Hardened | 630 | 60 | | | |
| | 40 | Chilled Cast Iron | | Cast | 400 | 42 | | | |
| | 41 | Hardened Cast Iron | | Hardened | 550 | 55 | | | |





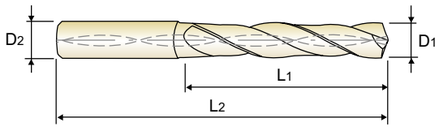
# DREAM DRILLS - INOX

DH451 SERIES

## CARBIDE, DREAM DRILLS - INOX with COOLANT HOLES — SHORT
## 硬质合金，梦幻钻头 - 不锈钢用 带内冷孔 — 短

- ▶ Special flute shape and geometry suitable for machining stainless steel
- ▶ Excellent chip evacuation from better surface treatment
- ▶ Point R-thinning achieves superior centering and chip curling
- ▶ TiAlN coating for better surface finishes and longer tool life

- ▶ 应用：沟槽的特殊几何形状使其适合加工不锈钢
- ▶ 更好的表面处理方式使其具有优秀的排屑性能
- ▶ 横刃修成R型使产品有较强的自定心能力和螺旋切削性
- ▶ 使用TiAlN涂层使被加工材料得到良好的表面粗糙度并且延长了钻头的使用寿命




DIN 6537 | CARBIDE | 30° | h6 | m7 | 140° | 20 bar

p. A141

3 × D

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| ◎ | SHRINK FIT HOLDER | D47 - 72 |
| ◎ | HYDRAULIC CHUCK | D15 - 46 |
| ○ | ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. 型号 | Drill Diameter 刃径 | Shank Diameter 柄径 | Flute Length 槽长 | Overall Length 全长 | EDP No. 型号 | Drill Diameter 刃径 | Shank Diameter 柄径 | Flute Length 槽长 | Overall Length 全长 |
|---|---|---|---|---|---|---|---|---|---|
| TiAlN | $D_1$ | $D_2$ | $L_1$ | $L_2$ | TiAlN | $D_1$ | $D_2$ | $L_1$ | $L_2$ |
| DH451030 | 3.0 | 6 | 20 | 62 | DH451050 | 5.0 | 6 | 28 | 66 |
| DH451031 | 3.1 | 6 | 20 | 62 | DH451051 | 5.1 | 6 | 28 | 66 |
| DH451032 | 3.2 | 6 | 20 | 62 | DH451052 | 5.2 | 6 | 28 | 66 |
| DH451033 | 3.3 | 6 | 20 | 62 | DH451053 | 5.3 | 6 | 28 | 66 |
| DH451034 | 3.4 | 6 | 20 | 62 | DH451054 | 5.4 | 6 | 28 | 66 |
| DH451035 | 3.5 | 6 | 20 | 62 | DH451055 | 5.5 | 6 | 28 | 66 |
| DH451036 | 3.6 | 6 | 20 | 62 | DH451056 | 5.6 | 6 | 28 | 66 |
| DH451037 | 3.7 | 6 | 20 | 62 | DH451057 | 5.7 | 6 | 28 | 66 |
| DH451038 | 3.8 | 6 | 24 | 66 | DH451058 | 5.8 | 6 | 28 | 66 |
| DH451039 | 3.9 | 6 | 24 | 66 | DH451059 | 5.9 | 6 | 28 | 66 |
| DH451040 | 4.0 | 6 | 24 | 66 | DH451060 | 6.0 | 6 | 28 | 66 |
| DH451041 | 4.1 | 6 | 24 | 66 | DH451061 | 6.1 | 8 | 34 | 79 |
| DH451042 | 4.2 | 6 | 24 | 66 | DH451062 | 6.2 | 8 | 34 | 79 |
| DH451043 | 4.3 | 6 | 24 | 66 | DH451063 | 6.3 | 8 | 34 | 79 |
| DH451044 | 4.4 | 6 | 24 | 66 | DH451064 | 6.4 | 8 | 34 | 79 |
| DH451045 | 4.5 | 6 | 24 | 66 | DH451065 | 6.5 | 8 | 34 | 79 |
| DH451046 | 4.6 | 6 | 24 | 66 | DH451066 | 6.6 | 8 | 34 | 79 |
| DH451047 | 4.7 | 6 | 24 | 66 | DH451067 | 6.7 | 8 | 34 | 79 |
| DH451048 | 4.8 | 6 | 28 | 66 | DH451068 | 6.8 | 8 | 34 | 79 |
| DH451049 | 4.9 | 6 | 28 | 66 | DH451069 | 6.9 | 8 | 34 | 79 |

▶ Other shank types are available on your request. / 其他刀柄类型可根据客户要求提供.

▶ NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | | ◎ | ○ | | | ◎ | ○ | | | | | ◎ | ◎ | ◎ | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | H | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ◎ | ◎ | ○ | ○ | ○ | | | | | | | | | | | | ○ | | | | |

# DREAM DRILLS - INOX

## DH451 SERIES

## CARBIDE, DREAM DRILLS - INOX with COOLANT HOLES — SHORT

## 硬质合金，梦幻钻头 - 不锈钢用 带内冷孔 — 短

- ▶ Special flute shape and geometry suitable for machining stainless steel
- ▶ Excellent chip evacuation from better surface treatment
- ▶ Point R-thinning achieves superior centering and chip curling
- ▶ TiAlN coating for better surface finishes and longer tool life

- ▶ 应用：沟槽的特殊几何形状使其适合加工不锈钢
- ▶ 更好的表面处理方式使其具有优秀的排屑性能
- ▶ 横刃修成R型使产品有较强的自定心能力和螺旋切削性
- ▶ 使用TiAlN涂层使被加工材料得到良好的表面粗糙度并且延长了钻头的使用寿命

DIN 6537 | CARBIDE | 30° | h6 | m7 | 140° | 20 bar

p. A141

3 × D

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| ◎ | SHRINK FIT HOLDER | D47 - 72 |
| ◎ | HYDRAULIC CHUCK | D15 - 46 |
| ○ | ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. | Drill Diameter | Shank Diameter | Flute Length | Overall Length |
|---|---|---|---|---|
| 型号 | 刃径 | 柄径 | 槽长 | 全长 |
| TiAlN | $D_1$ | $D_2$ | $L_1$ | $L_2$ |
| DH451070 | 7.0 | 8 | 34 | 79 |
| DH451071 | 7.1 | 8 | 41 | 79 |
| DH451072 | 7.2 | 8 | 41 | 79 |
| DH451073 | 7.3 | 8 | 41 | 79 |
| DH451074 | 7.4 | 8 | 41 | 79 |
| DH451075 | 7.5 | 8 | 41 | 79 |
| DH451076 | 7.6 | 8 | 41 | 79 |
| DH451077 | 7.7 | 8 | 41 | 79 |
| DH451078 | 7.8 | 8 | 41 | 79 |
| DH451079 | 7.9 | 8 | 41 | 79 |
| DH451080 | 8.0 | 8 | 41 | 79 |
| DH451081 | 8.1 | 10 | 47 | 89 |
| DH451082 | 8.2 | 10 | 47 | 89 |
| DH451083 | 8.3 | 10 | 47 | 89 |
| DH451084 | 8.4 | 10 | 47 | 89 |
| DH451085 | 8.5 | 10 | 47 | 89 |
| DH451086 | 8.6 | 10 | 47 | 89 |
| DH451087 | 8.7 | 10 | 47 | 89 |
| DH451088 | 8.8 | 10 | 47 | 89 |
| DH451089 | 8.9 | 10 | 47 | 89 |

| EDP No. | Drill Diameter | Shank Diameter | Flute Length | Overall Length |
|---|---|---|---|---|
| 型号 | 刃径 | 柄径 | 槽长 | 全长 |
| TiAlN | $D_1$ | $D_2$ | $L_1$ | $L_2$ |
| DH451090 | 9.0 | 10 | 47 | 89 |
| DH451091 | 9.1 | 10 | 47 | 89 |
| DH451092 | 9.2 | 10 | 47 | 89 |
| DH451093 | 9.3 | 10 | 47 | 89 |
| DH451094 | 9.4 | 10 | 47 | 89 |
| DH451095 | 9.5 | 10 | 47 | 89 |
| DH451096 | 9.6 | 10 | 47 | 89 |
| DH451097 | 9.7 | 10 | 47 | 89 |
| DH451098 | 9.8 | 10 | 47 | 89 |
| DH451099 | 9.9 | 10 | 47 | 89 |
| DH451100 | 10.0 | 10 | 47 | 89 |
| DH451101 | 10.1 | 12 | 55 | 102 |
| DH451102 | 10.2 | 12 | 55 | 102 |
| DH451103 | 10.3 | 12 | 55 | 102 |
| DH451104 | 10.4 | 12 | 55 | 102 |
| DH451105 | 10.5 | 12 | 55 | 102 |
| DH451106 | 10.6 | 12 | 55 | 102 |
| DH451107 | 10.7 | 12 | 55 | 102 |
| DH451108 | 10.8 | 12 | 55 | 102 |
| DH451109 | 10.9 | 12 | 55 | 102 |

▶ Other shank types are available on your request. / 其他刀柄类型可根据客户要求提供.

▶ NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | | High alloyed steel, and tool steel | | | | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | | ◎ | ○ | | | ◎ | ○ | | | | | ◎ | ◎ | ◎ | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ◎ | ◎ | ○ | ○ | ○ | | | | | | | | | | | | ○ | | | | |



DREAM DRILLS - INOX
DH451 SERIES
CARBIDE, DREAM DRILLS - INOX with COOLANT HOLES — SHORT
硬质合金，梦幻钻头 - 不锈钢用 带内冷孔 — 短
▶ Special flute shape and geometry suitable for machining stainless steel
▶ Excellent chip evacuation from better surface treatment
▶ Point R-thinning achieves superior centering and chip curling
▶ TiAlN coating for better surface finishes and longer tool life
▶ 应用：沟槽的特殊几何形状使其适合加工不锈钢
▶ 更好的表面处理方式使其具有优秀的排屑性能
▶ 横刃修成R型使产品有较强的自定心能力和螺旋切削性
▶ 使用TiAlN涂层使被加工材料得到良好的表面粗糙度并且延长了钻头的使用寿命

DIN 6537 | CARBIDE | 30° | h6 | m7 | 140° | 20 bar
3 × D
Recommended ToolHolder
Plain Shank — SHRINK FIT HOLDER — D47 - 72
HYDRAULIC CHUCK — D15 - 46
ER COLLET CHUCK — D73 - 115
Unit(单位) : mm

p. A141

| EDP No. | Drill Diameter | Shank Diameter | Flute Length | Overall Length |
|---|---|---|---|---|
| 型号 | 刃径 | 柄径 | 槽长 | 全长 |
| TiAlN | $D_1$ | $D_2$ | $L_1$ | $L_2$ |
| DH451110 | 11.0 | 12 | 55 | 102 |
| DH451111 | 11.1 | 12 | 55 | 102 |
| DH451112 | 11.2 | 12 | 55 | 102 |
| DH451113 | 11.3 | 12 | 55 | 102 |
| DH451114 | 11.4 | 12 | 55 | 102 |
| DH451115 | 11.5 | 12 | 55 | 102 |
| DH451116 | 11.6 | 12 | 55 | 102 |
| DH451117 | 11.7 | 12 | 55 | 102 |
| DH451118 | 11.8 | 12 | 55 | 102 |
| DH451119 | 11.9 | 12 | 55 | 102 |
| DH451120 | 12.0 | 12 | 55 | 102 |
| DH451125 | 12.5 | 14 | 60 | 107 |
| DH451130 | 13.0 | 14 | 60 | 107 |
| DH451135 | 13.5 | 14 | 60 | 107 |

| EDP No. | Drill Diameter | Shank Diameter | Flute Length | Overall Length |
|---|---|---|---|---|
| 型号 | 刃径 | 柄径 | 槽长 | 全长 |
| TiAlN | $D_1$ | $D_2$ | $L_1$ | $L_2$ |
| DH451140 | 14.0 | 14 | 60 | 107 |
| DH451145 | 14.5 | 16 | 65 | 115 |
| DH451150 | 15.0 | 16 | 65 | 115 |
| DH451155 | 15.5 | 16 | 65 | 115 |
| DH451160 | 16.0 | 16 | 65 | 115 |
| DH451165 | 16.5 | 18 | 73 | 123 |
| DH451170 | 17.0 | 18 | 73 | 123 |
| DH451175 | 17.5 | 18 | 73 | 123 |
| DH451180 | 18.0 | 18 | 73 | 123 |
| DH451185 | 18.5 | 20 | 79 | 131 |
| DH451190 | 19.0 | 20 | 79 | 131 |
| DH451195 | 19.5 | 20 | 79 | 131 |
| DH451200 | 20.0 | 20 | 79 | 131 |

▶ Other shank types are available on your request. / 其他刀柄类型可根据客户要求提供.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | | High alloyed steel, and tool steel | | | | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | | ◎ | ○ | | | ◎ | ○ | | | | | ◎ | ◎ | ◎ | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ◎ | ◎ | ○ | ○ | ○ | | | | | | | | | | | | ○ | | | | |

# DREAM DRILLS - INOX

## DH452 SERIES

## CARBIDE, DREAM DRILLS - INOX with COOLANT HOLES — LONG

## 硬质合金，梦幻钻头 - 不锈钢用 带内冷孔 — 长

- ▶ Special flute shape and geometry suitable for machining stainless steel
- ▶ Excellent chip evacuation from better surface treatment
- ▶ Point R-thinning achieves superior centering and chip curling
- ▶ TiAlN coating for better surface finishes and longer tool life

- ▶ 应用：沟槽的特殊几何形状使其适合加工不锈钢
- ▶ 更好的表面处理方式使其具有优秀的排屑性能
- ▶ 横刃修成R型使产品有较强的自定心能力和螺旋切削性
- ▶ 使用TiAlN涂层使被加工材料得到良好的表面粗糙度并且延长了钻头的使用寿命

DIN 6537 | CARBIDE | 30° | h6 | m7 | 140° | 20 bar

p. A141

5 × D

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| ◎ | SHRINK FIT HOLDER | D47 - 72 |
| ◎ | HYDRAULIC CHUCK | D15 - 46 |
| ○ | ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. | Drill Diameter | Shank Diameter | Flute Length | Overall Length |
|---|---|---|---|---|
| 型号 | 刃径 | 柄径 | 槽长 | 全长 |
| TiAlN | $D_1$ | $D_2$ | $L_1$ | $L_2$ |
| DH452010 | 1.0 | 3 | 8 | 55 |
| DH452011 | 1.1 | 3 | 12 | 55 |
| DH452012 | 1.2 | 3 | 12 | 55 |
| DH452013 | 1.3 | 3 | 12 | 55 |
| DH452014 | 1.4 | 3 | 12 | 55 |
| DH452015 | 1.5 | 3 | 16 | 55 |
| DH452016 | 1.6 | 3 | 16 | 55 |
| DH452017 | 1.7 | 3 | 16 | 55 |
| DH452018 | 1.8 | 3 | 16 | 55 |
| DH452019 | 1.9 | 3 | 16 | 55 |
| DH452020 | 2.0 | 4 | 21 | 57 |
| DH452021 | 2.1 | 4 | 21 | 57 |
| DH452022 | 2.2 | 4 | 21 | 57 |
| DH452023 | 2.3 | 4 | 21 | 57 |
| DH452024 | 2.4 | 4 | 21 | 57 |
| DH452025 | 2.5 | 4 | 21 | 57 |
| DH452026 | 2.6 | 4 | 21 | 57 |
| DH452027 | 2.7 | 4 | 21 | 57 |
| DH452028 | 2.8 | 4 | 21 | 57 |
| DH452029 | 2.9 | 4 | 21 | 57 |
| DH452030 | 3.0 | 6 | 28 | 66 |
| DH452031 | 3.1 | 6 | 28 | 66 |

| EDP No. | Drill Diameter | Shank Diameter | Flute Length | Overall Length |
|---|---|---|---|---|
| 型号 | 刃径 | 柄径 | 槽长 | 全长 |
| TiAlN | $D_1$ | $D_2$ | $L_1$ | $L_2$ |
| DH452032 | 3.2 | 6 | 28 | 66 |
| DH452033 | 3.3 | 6 | 28 | 66 |
| DH452034 | 3.4 | 6 | 28 | 66 |
| DH452035 | 3.5 | 6 | 28 | 66 |
| DH452036 | 3.6 | 6 | 28 | 66 |
| DH452037 | 3.7 | 6 | 28 | 66 |
| DH452038 | 3.8 | 6 | 36 | 74 |
| DH452039 | 3.9 | 6 | 36 | 74 |
| DH452040 | 4.0 | 6 | 36 | 74 |
| DH452041 | 4.1 | 6 | 36 | 74 |
| DH452042 | 4.2 | 6 | 36 | 74 |
| DH452043 | 4.3 | 6 | 36 | 74 |
| DH452044 | 4.4 | 6 | 36 | 74 |
| DH452045 | 4.5 | 6 | 36 | 74 |
| DH452046 | 4.6 | 6 | 36 | 74 |
| DH452047 | 4.7 | 6 | 36 | 74 |
| DH452048 | 4.8 | 6 | 44 | 82 |
| DH452049 | 4.9 | 6 | 44 | 82 |
| DH452050 | 5.0 | 6 | 44 | 82 |
| DH452051 | 5.1 | 6 | 44 | 82 |
| DH452052 | 5.2 | 6 | 44 | 82 |
| DH452053 | 5.3 | 6 | 44 | 82 |

▶ Other shank types are available on your request. / 其他刀柄类型可根据客户要求提供.
▶ NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | | | | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | | | |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 | | | |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 | | | |
| Recommended | | ◎ | ○ | | | ◎ | ○ | | | | | ◎ | ◎ | ◎ | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ◎ | ◎ | ○ | ○ | ○ | | | | | | | | | | | | ○ | | | | |



DREAM DRILLS - INOX
DH452 SERIES
CARBIDE, DREAM DRILLS - INOX with COOLANT HOLES — LONG
硬质合金，梦幻钻头 - 不锈钢用 带内冷孔 — 长
▶ Special flute shape and geometry suitable for machining stainless steel
▶ Excellent chip evacuation from better surface treatment
▶ Point R-thinning achieves superior centering and chip curling
▶ TiAlN coating for better surface finishes and longer tool life
▶ 应用：沟槽的特殊几何形状使其适合加工不锈钢
▶ 更好的表面处理方式使其具有优秀的排屑性能
▶ 横刃修成R型使产品有较强的自定心能力和螺旋切削性
▶ 使用TiAlN涂层使被加工材料得到良好的表面粗糙度并且延长了钻头的使用寿命

DIN 6537 | CARBIDE | 30° | h6 | m7 | 140° | 20 bar
p. A141
5 × D
Recommended ToolHolder
Plain Shank — Page
SHRINK FIT HOLDER — D47 - 72
HYDRAULIC CHUCK — D15 - 46
ER COLLET CHUCK — D73 - 115
Unit(单位) : mm

| EDP No. | Drill Diameter | Shank Diameter | Flute Length | Overall Length |
|---|---|---|---|---|
| 型号 | 刃径 | 柄径 | 槽长 | 全长 |
| TiAlN | $D_1$ | $D_2$ | $L_1$ | $L_2$ |
| DH452054 | 5.4 | 6 | 44 | 82 |
| DH452055 | 5.5 | 6 | 44 | 82 |
| DH452056 | 5.6 | 6 | 44 | 82 |
| DH452057 | 5.7 | 6 | 44 | 82 |
| DH452058 | 5.8 | 6 | 44 | 82 |
| DH452059 | 5.9 | 6 | 44 | 82 |
| DH452060 | 6.0 | 6 | 44 | 82 |
| DH452061 | 6.1 | 8 | 53 | 91 |
| DH452062 | 6.2 | 8 | 53 | 91 |
| DH452063 | 6.3 | 8 | 53 | 91 |
| DH452064 | 6.4 | 8 | 53 | 91 |
| DH452065 | 6.5 | 8 | 53 | 91 |
| DH452066 | 6.6 | 8 | 53 | 91 |
| DH452067 | 6.7 | 8 | 53 | 91 |
| DH452068 | 6.8 | 8 | 53 | 91 |
| DH452069 | 6.9 | 8 | 53 | 91 |
| DH452070 | 7.0 | 8 | 53 | 91 |
| DH452071 | 7.1 | 8 | 53 | 91 |
| DH452072 | 7.2 | 8 | 53 | 91 |
| DH452073 | 7.3 | 8 | 53 | 91 |
| DH452074 | 7.4 | 8 | 53 | 91 |
| DH452075 | 7.5 | 8 | 53 | 91 |

| EDP No. | Drill Diameter | Shank Diameter | Flute Length | Overall Length |
|---|---|---|---|---|
| 型号 | 刃径 | 柄径 | 槽长 | 全长 |
| TiAlN | $D_1$ | $D_2$ | $L_1$ | $L_2$ |
| DH452076 | 7.6 | 8 | 53 | 91 |
| DH452077 | 7.7 | 8 | 53 | 91 |
| DH452078 | 7.8 | 8 | 53 | 91 |
| DH452079 | 7.9 | 8 | 53 | 91 |
| DH452080 | 8.0 | 8 | 53 | 91 |
| DH452081 | 8.1 | 10 | 61 | 103 |
| DH452082 | 8.2 | 10 | 61 | 103 |
| DH452083 | 8.3 | 10 | 61 | 103 |
| DH452084 | 8.4 | 10 | 61 | 103 |
| DH452085 | 8.5 | 10 | 61 | 103 |
| DH452086 | 8.6 | 10 | 61 | 103 |
| DH452087 | 8.7 | 10 | 61 | 103 |
| DH452088 | 8.8 | 10 | 61 | 103 |
| DH452089 | 8.9 | 10 | 61 | 103 |
| DH452090 | 9.0 | 10 | 61 | 103 |
| DH452091 | 9.1 | 10 | 61 | 103 |
| DH452092 | 9.2 | 10 | 61 | 103 |
| DH452093 | 9.3 | 10 | 61 | 103 |
| DH452094 | 9.4 | 10 | 61 | 103 |
| DH452095 | 9.5 | 10 | 61 | 103 |
| DH452096 | 9.6 | 10 | 61 | 103 |
| DH452097 | 9.7 | 10 | 61 | 103 |

▶ Other shank types are available on your request. / 其他刀柄类型可根据客户要求提供.
▶ NEXT PAGE 下页
◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | | | | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | | | |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 | | | |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 | | | |
| Recommended | | ◎ | ○ | | | ◎ | ○ | | | | | ◎ | ◎ | ◎ | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ◎ | ◎ | ○ | ○ | ○ | | | | | | | | | | | | ○ | | | | |

# DREAM DRILLS - INOX

## DH452 SERIES

## CARBIDE, DREAM DRILLS - INOX with COOLANT HOLES — LONG

## 硬质合金，梦幻钻头 - 不锈钢用 带内冷孔 — 长

- ▶ Special flute shape and geometry suitable for machining stainless steel
- ▶ Excellent chip evacuation from better surface treatment
- ▶ Point R-thinning achieves superior centering and chip curling
- ▶ TiAlN coating for better surface finishes and longer tool life

- ▶ 应用：沟槽的特殊几何形状使其适合加工不锈钢
- ▶ 更好的表面处理方式使其具有优秀的排屑性能
- ▶ 横刃修成R型使产品有较强的自定心能力和螺旋切削性
- ▶ 使用TiAlN涂层使被加工材料得到良好的表面粗糙度并且延长了钻头的使用寿命

DIN 6537 | CARBIDE | 30° | h6 | m7 | 140° | 20 bar

p. A141

5 × D

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| ◎ | SHRINK FIT HOLDER | D47 - 72 |
| ◎ | HYDRAULIC CHUCK | D15 - 46 |
| ○ | ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. | Drill Diameter | Shank Diameter | Flute Length | Overall Length |
|---|---|---|---|---|
| 型号 | 刃径 | 柄径 | 槽长 | 全长 |
| TiAlN | $D_1$ | $D_2$ | $L_1$ | $L_2$ |
| DH452098 | 9.8 | 10 | 61 | 103 |
| DH452099 | 9.9 | 10 | 61 | 103 |
| DH452100 | 10.0 | 10 | 61 | 103 |
| DH452101 | 10.1 | 12 | 71 | 118 |
| DH452102 | 10.2 | 12 | 71 | 118 |
| DH452103 | 10.3 | 12 | 71 | 118 |
| DH452104 | 10.4 | 12 | 71 | 118 |
| DH452105 | 10.5 | 12 | 71 | 118 |
| DH452106 | 10.6 | 12 | 71 | 118 |
| DH452107 | 10.7 | 12 | 71 | 118 |
| DH452108 | 10.8 | 12 | 71 | 118 |
| DH452109 | 10.9 | 12 | 71 | 118 |
| DH452110 | 11.0 | 12 | 71 | 118 |
| DH452111 | 11.1 | 12 | 71 | 118 |
| DH452112 | 11.2 | 12 | 71 | 118 |
| DH452113 | 11.3 | 12 | 71 | 118 |
| DH452114 | 11.4 | 12 | 71 | 118 |
| DH452115 | 11.5 | 12 | 71 | 118 |
| DH452116 | 11.6 | 12 | 71 | 118 |
| DH452117 | 11.7 | 12 | 71 | 118 |

| EDP No. | Drill Diameter | Shank Diameter | Flute Length | Overall Length |
|---|---|---|---|---|
| 型号 | 刃径 | 柄径 | 槽长 | 全长 |
| TiAlN | $D_1$ | $D_2$ | $L_1$ | $L_2$ |
| DH452118 | 11.8 | 12 | 71 | 118 |
| DH452119 | 11.9 | 12 | 71 | 118 |
| DH452120 | 12.0 | 12 | 71 | 118 |
| DH452125 | 12.5 | 14 | 77 | 124 |
| DH452130 | 13.0 | 14 | 77 | 124 |
| DH452135 | 13.5 | 14 | 77 | 124 |
| DH452140 | 14.0 | 14 | 77 | 124 |
| DH452145 | 14.5 | 16 | 83 | 133 |
| DH452150 | 15.0 | 16 | 83 | 133 |
| DH452155 | 15.5 | 16 | 83 | 133 |
| DH452160 | 16.0 | 16 | 83 | 133 |
| DH452165 | 16.5 | 18 | 93 | 143 |
| DH452170 | 17.0 | 18 | 93 | 143 |
| DH452175 | 17.5 | 18 | 93 | 143 |
| DH452180 | 18.0 | 18 | 93 | 143 |
| DH452185 | 18.5 | 20 | 101 | 153 |
| DH452190 | 19.0 | 20 | 101 | 153 |
| DH452195 | 19.5 | 20 | 101 | 153 |
| DH452200 | 20.0 | 20 | 101 | 153 |

▶ Other shank types are available on your request. / 其他刀柄类型可根据客户要求提供.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | | ◎ | ○ | | | ◎ | ○ | | | | | ◎ | ◎ | ◎ | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ◎ | ◎ | ○ | ○ | ○ | | | | | | | | | | | | ○ | | | | |



# DREAM DRILLS - INOX

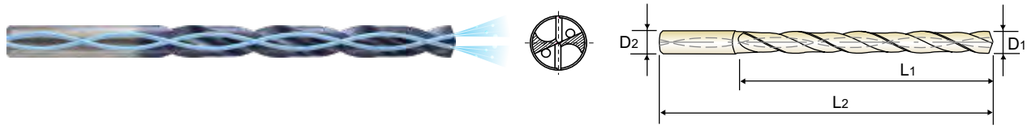
## DH453 SERIES

## CARBIDE, DREAM DRILLS - INOX with COOLANT HOLES — EXTRA LONG

## 硬质合金，梦幻钻头 - 不锈钢用 带内冷孔 — 超长

- ▶ Special flute shape and geometry suitable for machining stainless steel
- ▶ Excellent chip evacuation from better surface treatment
- ▶ Point R-thinning achieves superior centering and chip curling
- ▶ TiAlN coating for better surface finishes and longer tool life

- ▶ 应用：沟槽的特殊几何形状使其适合加工不锈钢
- ▶ 更好的表面处理方式使其具有优秀的排屑性能
- ▶ 横刃修成R型使产品有较强的自定心能力和螺旋切削性
- ▶ 使用TiAlN涂层使被加工材料得到良好的表面粗糙度并且延长了钻头的使用寿命




DIN 6537 | CARBIDE | 30° | h6 | m7 | 140° | 20 bar

p. A141

8 × D

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| ◎ | SHRINK FIT HOLDER | D47 - 72 |
| ◎ | HYDRAULIC CHUCK | D15 - 46 |
| ○ | ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. | Drill Diameter | Shank Diameter | Flute Length | Overall Length |
|---|---|---|---|---|
| 型号 | 刃径 | 柄径 | 槽长 | 全长 |
| TiAlN | $D_1$ | $D_2$ | $L_1$ | $L_2$ |
| DH453030 | 3.0 | 6 | 34 | 72 |
| DH453031 | 3.1 | 6 | 34 | 72 |
| DH453032 | 3.2 | 6 | 34 | 72 |
| DH453033 | 3.3 | 6 | 34 | 72 |
| DH453034 | 3.4 | 6 | 34 | 72 |
| DH453035 | 3.5 | 6 | 34 | 72 |
| DH453036 | 3.6 | 6 | 34 | 72 |
| DH453037 | 3.7 | 6 | 34 | 72 |
| DH453038 | 3.8 | 6 | 43 | 81 |
| DH453039 | 3.9 | 6 | 43 | 81 |
| DH453040 | 4.0 | 6 | 43 | 81 |
| DH453041 | 4.1 | 6 | 43 | 81 |
| DH453042 | 4.2 | 6 | 43 | 81 |
| DH453043 | 4.3 | 6 | 43 | 81 |
| DH453044 | 4.4 | 6 | 43 | 81 |
| DH453045 | 4.5 | 6 | 43 | 81 |
| DH453046 | 4.6 | 6 | 43 | 81 |
| DH453047 | 4.7 | 6 | 43 | 81 |
| DH453048 | 4.8 | 6 | 57 | 95 |
| DH453049 | 4.9 | 6 | 57 | 95 |
| DH453050 | 5.0 | 6 | 57 | 95 |
| DH453051 | 5.1 | 6 | 57 | 95 |
| DH453052 | 5.2 | 6 | 57 | 95 |
| DH453053 | 5.3 | 6 | 57 | 95 |

| EDP No. | Drill Diameter | Shank Diameter | Flute Length | Overall Length |
|---|---|---|---|---|
| 型号 | 刃径 | 柄径 | 槽长 | 全长 |
| TiAlN | $D_1$ | $D_2$ | $L_1$ | $L_2$ |
| DH453054 | 5.4 | 6 | 57 | 95 |
| DH453055 | 5.5 | 6 | 57 | 95 |
| DH453056 | 5.6 | 6 | 57 | 95 |
| DH453057 | 5.7 | 6 | 57 | 95 |
| DH453058 | 5.8 | 6 | 57 | 95 |
| DH453059 | 5.9 | 6 | 57 | 95 |
| DH453060 | 6.0 | 6 | 57 | 95 |
| DH453061 | 6.1 | 8 | 76 | 114 |
| DH453062 | 6.2 | 8 | 76 | 114 |
| DH453063 | 6.3 | 8 | 76 | 114 |
| DH453064 | 6.4 | 8 | 76 | 114 |
| DH453065 | 6.5 | 8 | 76 | 114 |
| DH453066 | 6.6 | 8 | 76 | 114 |
| DH453067 | 6.7 | 8 | 76 | 114 |
| DH453068 | 6.8 | 8 | 76 | 114 |
| DH453069 | 6.9 | 8 | 76 | 114 |
| DH453070 | 7.0 | 8 | 76 | 114 |
| DH453071 | 7.1 | 8 | 76 | 114 |
| DH453072 | 7.2 | 8 | 76 | 114 |
| DH453073 | 7.3 | 8 | 76 | 114 |
| DH453074 | 7.4 | 8 | 76 | 114 |
| DH453075 | 7.5 | 8 | 76 | 114 |
| DH453076 | 7.6 | 8 | 76 | 114 |
| DH453077 | 7.7 | 8 | 76 | 114 |

▶ Other shank types are available on your request. / 其他刀柄类型可根据客户要求提供.

▶ NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | | ◎ | ○ | | | ◎ | ○ | | | | | ◎ | ◎ | ◎ | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ◎ | ◎ | ○ | ○ | ○ | | | | | | | | | | | | ○ | | | | |

# DREAM DRILLS - INOX

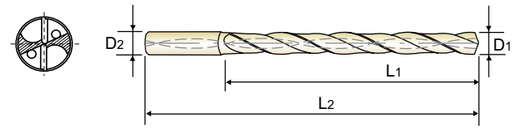
**DH453 SERIES**

## CARBIDE, DREAM DRILLS - INOX with COOLANT HOLES *EXTRA LONG*

## 硬质合金，梦幻钻头 - 不锈钢用 带内冷孔 超长

- ▶ Special flute shape and geometry suitable for machining stainless steel
- ▶ Excellent chip evacuation from better surface treatment
- ▶ Point R-thinning achieves superior centering and chip curling
- ▶ TiAlN coating for better surface finishes and longer tool life

- ▶应用：沟槽的特殊几何形状使其适合加工不锈钢
- ▶更好的表面处理方式使其具有优秀的排屑性能
- ▶横刃修成R型使产品有较强的自定心能力和螺旋切削性
- ▶使用TiAlN涂层使被加工材料得到良好的表面粗糙度并且延长了钻头的使用寿命




DIN 6537 | CARBIDE | 30° | h6 | m7 | 140° | 20 bar

p. A141

8 × D

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| SHRINK FIT HOLDER | D47 - 72 |
| HYDRAULIC CHUCK | D15 - 46 |
| ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. 型号 | Drill Diameter 刃径 | Shank Diameter 柄径 | Flute Length 槽长 | Overall Length 全长 |
|---|---|---|---|---|
| TiAlN | $D_1$ | $D_2$ | $L_1$ | $L_2$ |
| DH453078 | 7.8 | 8 | 76 | 114 |
| DH453079 | 7.9 | 8 | 76 | 114 |
| DH453080 | 8.0 | 8 | 76 | 114 |
| DH453081 | 8.1 | 10 | 95 | 142 |
| DH453082 | 8.2 | 10 | 95 | 142 |
| DH453083 | 8.3 | 10 | 95 | 142 |
| DH453084 | 8.4 | 10 | 95 | 142 |
| DH453085 | 8.5 | 10 | 95 | 142 |
| DH453086 | 8.6 | 10 | 95 | 142 |
| DH453087 | 8.7 | 10 | 95 | 142 |
| DH453088 | 8.8 | 10 | 95 | 142 |
| DH453089 | 8.9 | 10 | 95 | 142 |
| DH453090 | 9.0 | 10 | 95 | 142 |
| DH453091 | 9.1 | 10 | 95 | 142 |
| DH453092 | 9.2 | 10 | 95 | 142 |
| DH453093 | 9.3 | 10 | 95 | 142 |
| DH453094 | 9.4 | 10 | 95 | 142 |
| DH453095 | 9.5 | 10 | 95 | 142 |
| DH453096 | 9.6 | 10 | 95 | 142 |
| DH453097 | 9.7 | 10 | 95 | 142 |
| DH453098 | 9.8 | 10 | 95 | 142 |
| DH453099 | 9.9 | 10 | 95 | 142 |
| DH453100 | 10.0 | 10 | 95 | 142 |
| DH453101 | 10.1 | 12 | 114 | 162 |

| EDP No. 型号 | Drill Diameter 刃径 | Shank Diameter 柄径 | Flute Length 槽长 | Overall Length 全长 |
|---|---|---|---|---|
| TiAlN | $D_1$ | $D_2$ | $L_1$ | $L_2$ |
| DH453102 | 10.2 | 12 | 114 | 162 |
| DH453103 | 10.3 | 12 | 114 | 162 |
| DH453104 | 10.4 | 12 | 114 | 162 |
| DH453105 | 10.5 | 12 | 114 | 162 |
| DH453106 | 10.6 | 12 | 114 | 162 |
| DH453107 | 10.7 | 12 | 114 | 162 |
| DH453108 | 10.8 | 12 | 114 | 162 |
| DH453109 | 10.9 | 12 | 114 | 162 |
| DH453110 | 11.0 | 12 | 114 | 162 |
| DH453111 | 11.1 | 12 | 114 | 162 |
| DH453112 | 11.2 | 12 | 114 | 162 |
| DH453113 | 11.3 | 12 | 114 | 162 |
| DH453114 | 11.4 | 12 | 114 | 162 |
| DH453115 | 11.5 | 12 | 114 | 162 |
| DH453116 | 11.6 | 12 | 114 | 162 |
| DH453117 | 11.7 | 12 | 114 | 162 |
| DH453118 | 11.8 | 12 | 114 | 162 |
| DH453119 | 11.9 | 12 | 114 | 162 |
| DH453120 | 12.0 | 12 | 114 | 162 |
| DH453125 | 12.5 | 14 | 133 | 178 |
| DH453130 | 13.0 | 14 | 133 | 178 |
| DH453135 | 13.5 | 14 | 133 | 178 |
| DH453140 | 14.0 | 14 | 133 | 178 |

▶ Other shank types are available on your request. / 其他刀柄类型可根据客户要求提供.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | | ◎ | ○ | | | ◎ | ○ | | | | | ◎ | ◎ | ◎ | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ◎ | ◎ | ○ | ○ | ○ | | | | | | | | | | | | ○ | | | | |



DREAM DRILLS - INOX

## RECOMMENDED CUTTING CONDITIONS 推荐加工条件

## DH451, DH452, DH453 SERIES with COOLANT HOLES 带内冷孔

RPM (转速) = (rev./min.)
FEED (进给) = (mm/rev.)

| ISO 公制 | VDI 3323 | Material Description 材料描述 | Vc 钻削速度 (m/min) | Parameter 参数 | Drill Diameter 刃径 (mm) 1.0 | 2.0 | Vc 钻削速度 (m/min) | Parameter 参数 | Drill Diameter 刃径 (mm) 3.0 | 4.0 | 5.0 | 6.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 2 | Non-alloy steel | 70 | RPM | 22280 | 11140 | 100 | RPM | 10610 | 7960 | 6370 | 5310 |
| | | | | FEED | 0.02-0.04 | 0.04-0.06 | | FEED | 0.04-0.10 | 0.06-0.12 | 0.12-0.18 | 0.14-0.20 |
| | 3 | | 70 | RPM | 22280 | 11140 | 100 | RPM | 7430 | 5570 | 4460 | 3710 |
| | | | | FEED | 0.02-0.04 | 0.04-0.06 | | FEED | 0.04-0.10 | 0.06-0.12 | 0.12-0.18 | 0.14-0.20 |
| | 6 | Low alloy steel | 70 | RPM | 22280 | 11140 | 100 | RPM | 7430 | 5570 | 4460 | 3710 |
| | | | | FEED | 0.02-0.04 | 0.04-0.06 | | FEED | 0.04-0.10 | 0.06-0.12 | 0.12-0.18 | 0.14-0.20 |
| | 7 | | 50 | RPM | 15920 | 7960 | 70 | RPM | 5310 | 3980 | 3180 | 2650 |
| | | | | FEED | 0.02-0.04 | 0.04-0.06 | | FEED | 0.04-0.10 | 0.06-0.12 | 0.12-0.18 | 0.14-0.20 |
| M | 12 | Stainless steel | 40 | RPM | 12730 | 6370 | 50 | RPM | 5310 | 3980 | 3180 | 2650 |
| | | | | FEED | 0.02-0.04 | 0.02-0.04 | | FEED | 0.03-0.05 | 0.05-0.09 | 0.07-0.11 | 0.08-0.12 |
| | 13 | | 25 | RPM | 7960 | 3980 | 40 | RPM | 4240 | 3180 | 2550 | 2120 |
| | | | | FEED | 0.02-0.04 | 0.02-0.04 | | FEED | 0.03-0.05 | 0.05-0.09 | 0.07-0.11 | 0.08-0.12 |
| | 14 | | 45 | RPM | 14320 | 7160 | 60 | RPM | 6370 | 4770 | 3820 | 3180 |
| | | | | FEED | 0.02-0.04 | 0.02-0.04 | | FEED | 0.04-0.06 | 0.06-0.10 | 0.08-0.12 | 0.09-0.13 |
| N | 21 | Aluminum-wrought alloy | 130 | RPM | 41380 | 20690 | 180 | RPM | 19100 | 14320 | 11460 | 9550 |
| | | | | FEED | 0.04-0.10 | 0.08-0.14 | | FEED | 0.14~0.20 | 0.19~0.25 | 0.20~0.26 | 0.22~0.28 |
| | 22 | | 130 | RPM | 41380 | 20690 | 180 | RPM | 19100 | 14320 | 11460 | 9550 |
| | | | | FEED | 0.04-0.10 | 0.08-0.14 | | FEED | 0.14~0.20 | 0.19~0.25 | 0.20~0.26 | 0.22~0.28 |
| | 23 | Aluminum-cast, alloyed | 110 | RPM | 35010 | 17510 | 160 | RPM | 16980 | 12730 | 10190 | 8490 |
| | | | | FEED | 0.04-0.10 | 0.08-0.14 | | FEED | 0.14~0.20 | 0.19~0.25 | 0.20~0.26 | 0.22~0.28 |
| | 24 | | 110 | RPM | 35010 | 17510 | 160 | RPM | 16980 | 12730 | 10190 | 8490 |
| | | | | FEED | 0.04-0.10 | 0.08-0.14 | | FEED | 0.14~0.20 | 0.19~0.25 | 0.20~0.26 | 0.22~0.28 |
| | 25 | | 90 | RPM | 28650 | 14320 | 130 | RPM | 13790 | 10350 | 8280 | 6900 |
| | | | | FEED | 0.04-0.08 | 0.06-0.10 | | FEED | 0.12~0.18 | 0.16~0.22 | 0.17~0.23 | 0.19~0.25 |
| S | 37 | Titanium Alloys | 25 | RPM | 7960 | 3980 | 40 | RPM | 4240 | 3180 | 2550 | 2120 |
| | | | | FEED | 0.01-0.03 | 0.01-0.03 | | FEED | 0.02-0.04 | 0.04-0.08 | 0.06-0.10 | 0.07-0.11 |

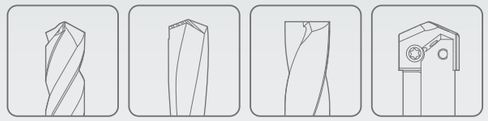
| ISO 公制 | VDI 3323 | Material Description 材料描述 | Vc 钻削速度 (m/min) | Parameter 参数 | Drill Diameter 刃径 (mm) 8.0 | 10.0 | 12.0 | 14.0 | 16.0 | 18.0 | 20.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 2 | Non-alloy steel | 100 | RPM | 3980 | 3180 | 2650 | 2270 | 1990 | 1770 | 1590 |
| | | | | FEED | 0.16-0.22 | 0.18-0.24 | 0.19-0.27 | 0.21-0.39 | 0.23-0.31 | 0.26-0.36 | 0.28-0.38 |
| | 3 | | 100 | RPM | 2790 | 2230 | 1860 | 1590 | 1390 | 1240 | 1110 |
| | | | | FEED | 0.16-0.22 | 0.18-0.24 | 0.19-0.27 | 0.21-0.39 | 0.23-0.31 | 0.26-0.36 | 0.28-0.38 |
| | 6 | Low alloy steel | 100 | RPM | 2790 | 2230 | 1860 | 1590 | 1390 | 1240 | 1110 |
| | | | | FEED | 0.16-0.22 | 0.18-0.24 | 0.19-0.27 | 0.21-0.39 | 0.23-0.31 | 0.26-0.36 | 0.28-0.38 |
| | 7 | | 70 | RPM | 1990 | 1590 | 1330 | 1140 | 990 | 880 | 800 |
| | | | | FEED | 0.16-0.22 | 0.18-0.24 | 0.19-0.27 | 0.21-0.39 | 0.23-0.31 | 0.26-0.36 | 0.28-0.38 |
| M | 12 | Stainless steel | 50 | RPM | 1990 | 1590 | 1330 | 1140 | 990 | 880 | 800 |
| | | | | FEED | 0.09-0.13 | 0.10-0.15 | 0.11-0.16 | 0.12-0.17 | 0.13-0.18 | 0.14-0.19 | 0.15-0.20 |
| | 13 | | 40 | RPM | 1590 | 1270 | 1060 | 910 | 800 | 710 | 640 |
| | | | | FEED | 0.09-0.13 | 0.10-0.15 | 0.11-0.16 | 0.12-0.17 | 0.13-0.18 | 0.14-0.19 | 0.15-0.20 |
| | 14 | | 60 | RPM | 2390 | 1910 | 1590 | 1360 | 1190 | 1060 | 950 |
| | | | | FEED | 0.10-0.14 | 0.11-0.16 | 0.12-0.17 | 0.13-0.18 | 0.14-0.19 | 0.15-0.20 | 0.16-0.21 |
| N | 21 | Aluminum-wrought alloy | 180 | RPM | 7160 | 5730 | 4770 | 4090 | 3580 | 3180 | 2860 |
| | | | | FEED | 0.24~0.30 | 0.26~0.32 | 0.28~0.34 | 0.30~0.46 | 0.32~0.38 | 0.33~0.43 | 0.35~0.45 |
| | 22 | | 180 | RPM | 7160 | 5730 | 4770 | 4090 | 3580 | 3180 | 2860 |
| | | | | FEED | 0.24~0.30 | 0.26~0.32 | 0.28~0.34 | 0.30~0.46 | 0.32~0.38 | 0.33~0.43 | 0.35~0.45 |
| | 23 | Aluminum-cast, alloyed | 160 | RPM | 6370 | 5090 | 4240 | 3640 | 3180 | 2830 | 2550 |
| | | | | FEED | 0.24~0.30 | 0.26~0.32 | 0.28~0.34 | 0.30~0.46 | 0.32~0.38 | 0.33~0.43 | 0.35~0.45 |
| | 24 | | 160 | RPM | 6370 | 5090 | 4240 | 3640 | 3180 | 2830 | 2550 |
| | | | | FEED | 0.24~0.30 | 0.26~0.32 | 0.28~0.34 | 0.30~0.46 | 0.32~0.38 | 0.33~0.43 | 0.35~0.45 |
| | 25 | | 130 | RPM | 5170 | 4140 | 3450 | 2960 | 2590 | 2300 | 2070 |
| | | | | FEED | 0.21~0.27 | 0.23~0.29 | 0.25~0.31 | 0.27~0.33 | 0.28~0.34 | 0.28~0.38 | 0.30~0.40 |
| S | 37 | Titanium Alloys | 40 | RPM | 1590 | 1270 | 1060 | 910 | 800 | 710 | 640 |
| | | | | FEED | 0.08-0.12 | 0.09-0.14 | 0.10-0.15 | 0.11-0.16 | 0.12-0.17 | 0.13-0.18 | 0.14-0.19 |

▶ Recommend to reduce the feed rate as following / 建议进给速度降低如下

**Feed 100%** : DH451(3xD), DH452(5xD)

**Feed 85%** : DH453(8xD)

Global Cutting Tool Leader **YG-1**



# HOLEMAKING

Leading Through Innovation

## SOLID CARBIDE

# DREAM DRILLS -ALU

- For Aluminum and Aluminum Alloys
- 铝和铝合金加工用

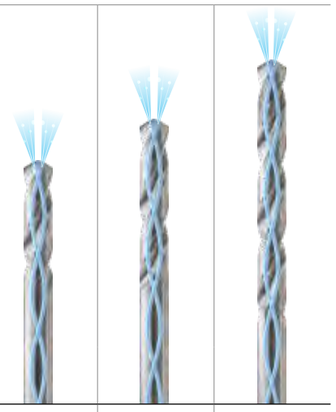
# SELECTION GUIDE
## 选用指南

HOLEMAKING TOOLS

| SERIES 系列 | D5432 | D5433 | D5434 |
|---|---|---|---|
| DRILLING DEPTH 钻销深度 | 3XD | 5XD | 8XD |
| LENGTH 长度 | SHORT 短 | LONG 长 | EXTRA LONG 超长 |
| SIZE MIN 最小尺寸 | D3.0 | D3.0 | D3.0 |
| SIZE MAX 最大尺寸 | D20.0 | D20.0 | D14.0 |
| PAGE 页数 | A145 | A148 | A151 |
| SURFACE TREATMENT 表面处理 | Bright | | |

# SOLID CARBIDE DREAM DRILLS ALU

For Aluminum and Aluminum Alloys
铝和铝合金加工用



Please visit 请访问 globalyg1.com/mat for material search 查看产品材料

◎ : Excellent (优秀) ○ : Good (良好)

Recommended cutting conditions (推荐加工条件) : p. A153

| ISO 公制 | VDI 3323 | Material Description 材料描述 | Composition / Structure / Heat Treatment 成分 / 组织 / 热处理 | | HB 布氏硬度 | HRc 硬度 | D5432 | D5433 | D5434 |
|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | About 0.15% C | Annealed | 125 | | | | |
| | 2 | | About 0.45% C | Annealed | 190 | 13 | | | |
| | 3 | | About 0.45% C | Quenched & Tempered | 250 | 25 | | | |
| | 4 | | About 0.75% C | Annealed | 270 | 28 | | | |
| | 5 | | About 0.75% C | Quenched & Tempered | 300 | 32 | | | |
| | 6 | Low alloy steel | | Annealed | 180 | 10 | | | |
| | 7 | | | Quenched & Tempered | 275 | 29 | | | |
| | 8 | | | Quenched & Tempered | 300 | 32 | | | |
| | 9 | | | Quenched & Tempered | 350 | 38 | | | |
| | 10 | High alloyed steel, and tool steel | | Annealed | 200 | 15 | | | |
| | 11 | | | Quenched & Tempered | 325 | 35 | | | |
| M | 12 | Stainless steel | Ferritic / Martensitic | Annealed | 200 | 15 | | | |
| | 13 | | Martensitic | Quenched & Tempered | 240 | 23 | | | |
| | 14 | | Austenitic | | 180 | 10 | | | |
| K | 15 | Grey cast iron | Pearlitic / ferritic | | 180 | 10 | | | |
| | 16 | | Pearlitic (Martensitic) | | 260 | 26 | | | |
| | 17 | Nodular cast iron | Ferritic | | 160 | 3 | | | |
| | 18 | | Pearlitic | | 250 | 25 | | | |
| | 19 | Malleable cast iron | Ferritic | | 130 | | | | |
| | 20 | | Pearlitic | | 230 | 21 | | | |
| N | 21 | Aluminum-wrought alloy | Not Curable | | 60 | | ◎ | ◎ | ◎ |
| | 22 | | Curable | Hardened | 100 | | ◎ | ◎ | ◎ |
| | 23 | Aluminum-cast, alloyed | ≤ 12% Si, Not Curable | | 75 | | ◎ | ◎ | ◎ |
| | 24 | | ≤ 12% Si, Curable | Hardened | 90 | | ◎ | ◎ | ◎ |
| | 25 | | > 12% Si, Not Curable | | 130 | | | | |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | Cutting Alloys, PB>1% | | 110 | | | | |
| | 27 | | CuZn, CuSnZn (Brass) | | 90 | | | | |
| | 28 | | CuSn, lead-free copper and electrolytic copper | | 100 | | | | |
| | 29 | Non Metallic Materials | Duroplastic, Fiber Reinforced Plastic | | | | | | |
| | 30 | | Rubber, Wood, etc. | | | | | | |
| S | 31 | Heat Resistant Super Alloys | Fe Based | Annealed | 200 | 15 | | | |
| | 32 | | | Cured | 280 | 30 | | | |
| | 33 | | Ni or Co Based | Annealed | 250 | 25 | | | |
| | 34 | | | Cured | 350 | 38 | | | |
| | 35 | | | Cast | 320 | 34 | | | |
| | 36 | Titanium Alloys | Pure Titanium | | 400 Rm | | | | |
| | 37 | | Alpha + Beta Alloys | Hardened | 1050 Rm | | | | |
| H | 38 | Hardened steel | | Hardened | 550 | 55 | | | |
| | 39 | | | Hardened | 630 | 60 | | | |
| | 40 | Chilled Cast Iron | | Cast | 400 | 42 | | | |
| | 41 | Hardened Cast Iron | | Hardened | 550 | 55 | | | |



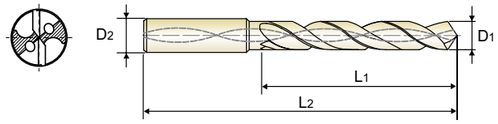
# DREAM DRILLS - ALU

D5432 SERIES

## CARBIDE, DREAM DRILLS - ALU with COOLANT HOLES — SHORT
## 硬质合金，梦幻钻头 - 不锈钢用 带内冷孔 — 短

- ▶ Optimized thinning for Aluminum & Aluminum Alloys to prevent any clogging from chip welding
- ▶ Wider and deeper flute gullets for maximum chip removal
- ▶ Special geometry and smooth coating reduces built up edge and improves finishes

- ▶ 铝&铝合金加工用最佳修磨设计预防屑堵塞问题
- ▶ 由于更宽更深的沟槽设计，提高排屑性能
- ▶ 特殊几何形状和顺畅涂层减少刀瘤




DIN 6537 | CARBIDE | 30° | h6 | m7 | 118° | 20 bar

p. A153

3 × D

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| SHRINK FIT HOLDER | D47 - 72 |
| HYDRAULIC CHUCK | D15 - 46 |
| ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. 型号 | Drill Diameter 刃径 | Shank Diameter 柄径 | Flute Length 槽长 | Overall Length 全长 |
|---|---|---|---|---|
| Bright | D1 | D2 | L1 | L2 |
| D5432030 | 3.0 | 6 | 20 | 62 |
| D5432031 | 3.1 | 6 | 20 | 62 |
| D5432032 | 3.2 | 6 | 20 | 62 |
| D5432033 | 3.3 | 6 | 20 | 62 |
| D5432034 | 3.4 | 6 | 20 | 62 |
| D5432035 | 3.5 | 6 | 20 | 62 |
| D5432036 | 3.6 | 6 | 20 | 62 |
| D5432037 | 3.7 | 6 | 20 | 62 |
| D5432038 | 3.8 | 6 | 24 | 66 |
| D5432039 | 3.9 | 6 | 24 | 66 |
| D5432040 | 4.0 | 6 | 24 | 66 |
| D5432041 | 4.1 | 6 | 24 | 66 |
| D5432042 | 4.2 | 6 | 24 | 66 |
| D5432043 | 4.3 | 6 | 24 | 66 |
| D5432044 | 4.4 | 6 | 24 | 66 |
| D5432045 | 4.5 | 6 | 24 | 66 |
| D5432046 | 4.6 | 6 | 24 | 66 |
| D5432047 | 4.7 | 6 | 24 | 66 |
| D5432048 | 4.8 | 6 | 28 | 66 |
| D5432049 | 4.9 | 6 | 28 | 66 |
| D5432050 | 5.0 | 6 | 28 | 66 |
| D5432051 | 5.1 | 6 | 28 | 66 |

| EDP No. 型号 | Drill Diameter 刃径 | Shank Diameter 柄径 | Flute Length 槽长 | Overall Length 全长 |
|---|---|---|---|---|
| Bright | D1 | D2 | L1 | L2 |
| D5432052 | 5.2 | 6 | 28 | 66 |
| D5432053 | 5.3 | 6 | 28 | 66 |
| D5432054 | 5.4 | 6 | 28 | 66 |
| D5432055 | 5.5 | 6 | 28 | 66 |
| D5432056 | 5.6 | 6 | 28 | 66 |
| D5432057 | 5.7 | 6 | 28 | 66 |
| D5432058 | 5.8 | 6 | 28 | 66 |
| D5432059 | 5.9 | 6 | 28 | 66 |
| D5432060 | 6.0 | 6 | 28 | 66 |
| D5432061 | 6.1 | 8 | 34 | 79 |
| D5432062 | 6.2 | 8 | 34 | 79 |
| D5432063 | 6.3 | 8 | 34 | 79 |
| D5432064 | 6.4 | 8 | 34 | 79 |
| D5432065 | 6.5 | 8 | 34 | 79 |
| D5432066 | 6.6 | 8 | 34 | 79 |
| D5432067 | 6.7 | 8 | 34 | 79 |
| D5432068 | 6.8 | 8 | 34 | 79 |
| D5432069 | 6.9 | 8 | 34 | 79 |
| D5432070 | 7.0 | 8 | 34 | 79 |
| D5432071 | 7.1 | 8 | 41 | 79 |
| D5432072 | 7.2 | 8 | 41 | 79 |
| D5432073 | 7.3 | 8 | 41 | 79 |

▶ DLC coating is available on your request. / DLC coating可根据客户要求进行加工
▶ Other shank types are available on your request. / 其他刀柄类型可根据客户要求提供.

▶ NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | | | | | | | | | | | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | Copper and Copper Alloys (Bronze / Brass) | | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ◎ | ◎ | ◎ | ◎ | | | | | | | | | | | | | | | | | |

# DREAM DRILLS - ALU

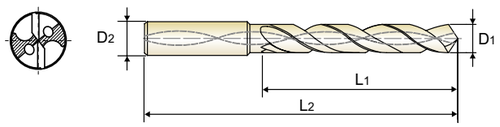
**D5432 SERIES**

## CARBIDE, DREAM DRILLS - ALU with COOLANT HOLES — *SHORT*

## 硬质合金，梦幻钻头 - 不锈钢用 带内冷孔 — 短

- ▶ Optimized thinning for Aluminum & Aluminum Alloys to prevent any clogging from chip welding
- ▶ Wider and deeper flute gullets for maximum chip removal
- ▶ Special geometry and smooth coating reduces built up edge and improves finishes

- ▶ 铝&铝合金加工用最佳修磨设计预防屑堵塞问题
- ▶ 由于更宽更深的沟槽设计，提高排屑性能
- ▶ 特殊几何形状和顺畅涂层减少刀瘤




DIN 6537 | CARBIDE | 30° | h6 | m7 | 118° | 20 bar | p. A153 | 3 × D

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| ◎ | SHRINK FIT HOLDER | D47 - 72 |
| ◎ | HYDRAULIC CHUCK | D15 - 46 |
| ○ | ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. | Drill Diameter | Shank Diameter | Flute Length | Overall Length |
|---|---|---|---|---|
| 型号 | 刃径 | 柄径 | 槽长 | 全长 |
| Bright | $D_1$ | $D_2$ | $L_1$ | $L_2$ |
| D5432074 | 7.4 | 8 | 41 | 79 |
| D5432075 | 7.5 | 8 | 41 | 79 |
| D5432076 | 7.6 | 8 | 41 | 79 |
| D5432077 | 7.7 | 8 | 41 | 79 |
| D5432078 | 7.8 | 8 | 41 | 79 |
| D5432079 | 7.9 | 8 | 41 | 79 |
| D5432080 | 8.0 | 8 | 41 | 79 |
| D5432081 | 8.1 | 10 | 47 | 89 |
| D5432082 | 8.2 | 10 | 47 | 89 |
| D5432083 | 8.3 | 10 | 47 | 89 |
| D5432084 | 8.4 | 10 | 47 | 89 |
| D5432085 | 8.5 | 10 | 47 | 89 |
| D5432086 | 8.6 | 10 | 47 | 89 |
| D5432087 | 8.7 | 10 | 47 | 89 |
| D5432088 | 8.8 | 10 | 47 | 89 |
| D5432089 | 8.9 | 10 | 47 | 89 |
| D5432090 | 9.0 | 10 | 47 | 89 |
| D5432091 | 9.1 | 10 | 47 | 89 |
| D5432092 | 9.2 | 10 | 47 | 89 |
| D5432093 | 9.3 | 10 | 47 | 89 |
| D5432094 | 9.4 | 10 | 47 | 89 |
| D5432095 | 9.5 | 10 | 47 | 89 |

| EDP No. | Drill Diameter | Shank Diameter | Flute Length | Overall Length |
|---|---|---|---|---|
| 型号 | 刃径 | 柄径 | 槽长 | 全长 |
| Bright | $D_1$ | $D_2$ | $L_1$ | $L_2$ |
| D5432096 | 9.6 | 10 | 47 | 89 |
| D5432097 | 9.7 | 10 | 47 | 89 |
| D5432098 | 9.8 | 10 | 47 | 89 |
| D5432099 | 9.9 | 10 | 47 | 89 |
| D5432100 | 10.0 | 10 | 47 | 89 |
| D5432101 | 10.1 | 12 | 55 | 102 |
| D5432102 | 10.2 | 12 | 55 | 102 |
| D5432103 | 10.3 | 12 | 55 | 102 |
| D5432104 | 10.4 | 12 | 55 | 102 |
| D5432105 | 10.5 | 12 | 55 | 102 |
| D5432106 | 10.6 | 12 | 55 | 102 |
| D5432107 | 10.7 | 12 | 55 | 102 |
| D5432108 | 10.8 | 12 | 55 | 102 |
| D5432109 | 10.9 | 12 | 55 | 102 |
| D5432110 | 11.0 | 12 | 55 | 102 |
| D5432111 | 11.1 | 12 | 55 | 102 |
| D5432112 | 11.2 | 12 | 55 | 102 |
| D5432113 | 11.3 | 12 | 55 | 102 |
| D5432114 | 11.4 | 12 | 55 | 102 |
| D5432115 | 11.5 | 12 | 55 | 102 |
| D5432116 | 11.6 | 12 | 55 | 102 |
| D5432117 | 11.7 | 12 | 55 | 102 |

▶ DLC coating is available on your request. / DLC coating可根据客户要求进行加工
▶ Other shank types are available on your request. / 其他刀柄类型可根据客户要求提供.

▶ NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | M | | | K | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | | | | | | | | | | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | | | | | | | | | |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 | | | | | | | | | |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 | | | | | | | | | |
| Recommended | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | | | | H | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron | | | | | | | | |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | | | | | | | | |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 | | | | | | | | |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 | | | | | | | | |
| Recommended | ◎ | ◎ | ◎ | ◎ | | | | | | | | | | | | | | | | | | | | | | | | | |



DREAM DRILLS - ALU

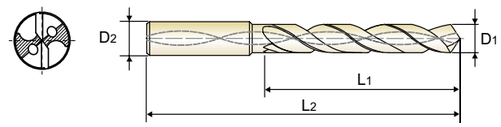
D5432 SERIES

CARBIDE, DREAM DRILLS - ALU with COOLANT HOLES — SHORT

硬质合金，梦幻钻头 - 不锈钢用 带内冷孔 — 短

▶ Optimized thinning for Aluminum & Aluminum Alloys to prevent any clogging from chip welding
▶ Wider and deeper flute gullets for maximum chip removal
▶ Special geometry and smooth coating reduces built up edge and improves finishes

▶ 铝&铝合金加工用最佳修磨设计预防屑堵塞问题
▶ 由于更宽更深的沟槽设计，提高排屑性能
▶ 特殊几何形状和顺畅涂层减少刀瘤




DIN 6537 | CARBIDE | 30° | h6 | m7 | 118° | 20 bar | p. A153 | 3 × D

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| ◎ | SHRINK FIT HOLDER | D47 - 72 |
| ◎ | HYDRAULIC CHUCK | D15 - 46 |
| ○ | ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. | Drill Diameter | Shank Diameter | Flute Length | Overall Length |
|---|---|---|---|---|
| 型号 | 刃径 | 柄径 | 槽长 | 全长 |
| Bright | $D_1$ | $D_2$ | $L_1$ | $L_2$ |
| D5432118 | 11.8 | 12 | 55 | 102 |
| D5432119 | 11.9 | 12 | 55 | 102 |
| D5432120 | 12.0 | 12 | 55 | 102 |
| D5432125 | 12.5 | 14 | 60 | 107 |
| D5432130 | 13.0 | 14 | 60 | 107 |
| D5432135 | 13.5 | 14 | 60 | 107 |
| D5432140 | 14.0 | 14 | 60 | 107 |
| D5432145 | 14.5 | 16 | 65 | 115 |
| D5432150 | 15.0 | 16 | 65 | 115 |
| D5432155 | 15.5 | 16 | 65 | 115 |

| EDP No. | Drill Diameter | Shank Diameter | Flute Length | Overall Length |
|---|---|---|---|---|
| 型号 | 刃径 | 柄径 | 槽长 | 全长 |
| Bright | $D_1$ | $D_2$ | $L_1$ | $L_2$ |
| D5432160 | 16.0 | 16 | 65 | 115 |
| D5432165 | 16.5 | 18 | 73 | 123 |
| D5432170 | 17.0 | 18 | 73 | 123 |
| D5432175 | 17.5 | 18 | 73 | 123 |
| D5432180 | 18.0 | 18 | 73 | 123 |
| D5432185 | 18.5 | 20 | 79 | 131 |
| D5432190 | 19.0 | 20 | 79 | 131 |
| D5432195 | 19.5 | 20 | 79 | 131 |
| D5432200 | 20.0 | 20 | 79 | 131 |

▶ DLC coating is available on your request. / DLC coating可根据客户要求进行加工
▶ Other shank types are available on your request. / 其他刀柄类型可根据客户要求提供.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | M | | | K | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | | | | | | | | | | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | | | | | | | | | |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 | | | | | | | | | |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 | | | | | | | | | |
| Recommended | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | | | | H | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron | | | | | | | | |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | | | | | | | | |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 | | | | | | | | |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 | | | | | | | | |
| Recommended | ◎ | ◎ | ◎ | ◎ | | | | | | | | | | | | | | | | | | | | | | | | | |

# DREAM DRILLS - ALU

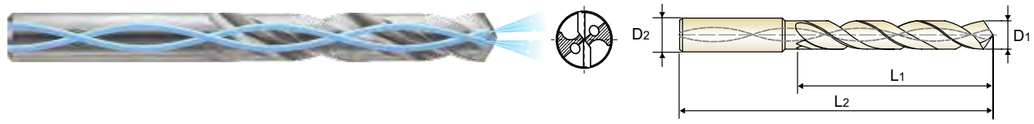
**D5433 SERIES**

## CARBIDE, DREAM DRILLS - ALU with COOLANT HOLES — *LONG*

## 硬质合金，梦幻钻头 - 不锈钢用 带内冷孔 — 长

- ▶ Optimized thinning for Aluminum & Aluminum Alloys to prevent any clogging from chip welding
- ▶ Wider and deeper flute gullets for maximum chip removal
- ▶ Special geometry and smooth coating reduces built up edge and improves finishes

- ▶ 铝&铝合金加工用最佳修磨设计预防屑堵塞问题
- ▶ 由于更宽更深的沟槽设计，提高排屑性能
- ▶ 特殊几何形状和顺畅涂层减少刀瘤




DIN 6537 | CARBIDE | 30° | h6 | m7 | 118° | 20 bar | p. A153 | 5 × D

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| ◎ | SHRINK FIT HOLDER | D47 - 72 |
| ◎ | HYDRAULIC CHUCK | D15 - 46 |
| ○ | ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. | Drill Diameter | Shank Diameter | Flute Length | Overall Length |
|---|---|---|---|---|
| 型号 | 刃径 | 柄径 | 槽长 | 全长 |
| Bright | $D_1$ | $D_2$ | $L_1$ | $L_2$ |
| D5433030 | 3.0 | 6 | 28 | 66 |
| D5433031 | 3.1 | 6 | 28 | 66 |
| D5433032 | 3.2 | 6 | 28 | 66 |
| D5433033 | 3.3 | 6 | 28 | 66 |
| D5433034 | 3.4 | 6 | 28 | 66 |
| D5433035 | 3.5 | 6 | 28 | 66 |
| D5433036 | 3.6 | 6 | 28 | 66 |
| D5433037 | 3.7 | 6 | 28 | 66 |
| D5433038 | 3.8 | 6 | 36 | 74 |
| D5433039 | 3.9 | 6 | 36 | 74 |
| D5433040 | 4.0 | 6 | 36 | 74 |
| D5433041 | 4.1 | 6 | 36 | 74 |
| D5433042 | 4.2 | 6 | 36 | 74 |
| D5433043 | 4.3 | 6 | 36 | 74 |
| D5433044 | 4.4 | 6 | 36 | 74 |
| D5433045 | 4.5 | 6 | 36 | 74 |
| D5433046 | 4.6 | 6 | 36 | 74 |
| D5433047 | 4.7 | 6 | 36 | 74 |
| D5433048 | 4.8 | 6 | 44 | 82 |
| D5433049 | 4.9 | 6 | 44 | 82 |
| D5433050 | 5.0 | 6 | 44 | 82 |
| D5433051 | 5.1 | 6 | 44 | 82 |
| D5433052 | 5.2 | 6 | 44 | 82 |
| D5433053 | 5.3 | 6 | 44 | 82 |
| D5433054 | 5.4 | 6 | 44 | 82 |
| D5433055 | 5.5 | 6 | 44 | 82 |
| D5433056 | 5.6 | 6 | 44 | 82 |
| D5433057 | 5.7 | 6 | 44 | 82 |
| D5433058 | 5.8 | 6 | 44 | 82 |
| D5433059 | 5.9 | 6 | 44 | 82 |
| D5433060 | 6.0 | 6 | 44 | 82 |
| D5433061 | 6.1 | 8 | 53 | 91 |
| D5433062 | 6.2 | 8 | 53 | 91 |
| D5433063 | 6.3 | 8 | 53 | 91 |
| D5433064 | 6.4 | 8 | 53 | 91 |
| D5433065 | 6.5 | 8 | 53 | 91 |
| D5433066 | 6.6 | 8 | 53 | 91 |
| D5433067 | 6.7 | 8 | 53 | 91 |
| D5433068 | 6.8 | 8 | 53 | 91 |
| D5433069 | 6.9 | 8 | 53 | 91 |
| D5433070 | 7.0 | 8 | 53 | 91 |
| D5433071 | 7.1 | 8 | 53 | 91 |
| D5433072 | 7.2 | 8 | 53 | 91 |
| D5433073 | 7.3 | 8 | 53 | 91 |

▶ NEXT PAGE 下页

▶ DLC coating is available on your request. / DLC coating可根据客户要求进行加工
▶ Other shank types are available on your request. / 其他刀柄类型可根据客户要求提供.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | | | | | | | | | | | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ◎ | ◎ | ◎ | ◎ | | | | | | | | | | | | | | | | | |



DREAM DRILLS - ALU
D5433 SERIES
CARBIDE, DREAM DRILLS - ALU with COOLANT HOLES — LONG
硬质合金，梦幻钻头 - 不锈钢用 带内冷孔 — 长
▶ Optimized thinning for Aluminum & Aluminum Alloys to prevent any clogging from chip welding
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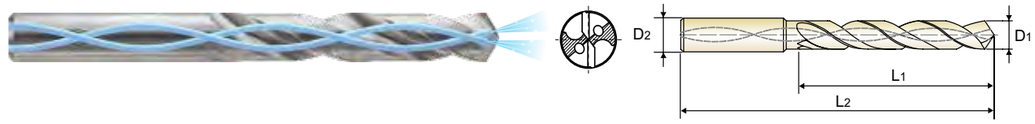
▶ 铝&铝合金加工用最佳修磨设计预防屑堵塞问题
▶ 由于更宽更深的沟槽设计，提高排屑性能
▶ 特殊几何形状和顺畅涂层减少刀瘤




DIN 6537 | CARBIDE | 30° | h6 | m7 | 118° | 20 bar | p. A153 | 5 × D
Recommended ToolHolder
Plain Shank — SHRINK FIT HOLDER D47 - 72; HYDRAULIC CHUCK D15 - 46; ER COLLET CHUCK D73 - 115
Unit(单位) : mm

| EDP No. | Drill Diameter | Shank Diameter | Flute Length | Overall Length |
|---|---|---|---|---|
| 型号 | 刃径 | 柄径 | 槽长 | 全长 |
| Bright | $D_1$ | $D_2$ | $L_1$ | $L_2$ |
| D5433074 | 7.4 | 8 | 53 | 91 |
| D5433075 | 7.5 | 8 | 53 | 91 |
| D5433076 | 7.6 | 8 | 53 | 91 |
| D5433077 | 7.7 | 8 | 53 | 91 |
| D5433078 | 7.8 | 8 | 53 | 91 |
| D5433079 | 7.9 | 8 | 53 | 91 |
| D5433080 | 8.0 | 8 | 53 | 91 |
| D5433081 | 8.1 | 10 | 61 | 103 |
| D5433082 | 8.2 | 10 | 61 | 103 |
| D5433083 | 8.3 | 10 | 61 | 103 |
| D5433084 | 8.4 | 10 | 61 | 103 |
| D5433085 | 8.5 | 10 | 61 | 103 |
| D5433086 | 8.6 | 10 | 61 | 103 |
| D5433087 | 8.7 | 10 | 61 | 103 |
| D5433088 | 8.8 | 10 | 61 | 103 |
| D5433089 | 8.9 | 10 | 61 | 103 |
| D5433090 | 9.0 | 10 | 61 | 103 |
| D5433091 | 9.1 | 10 | 61 | 103 |
| D5433092 | 9.2 | 10 | 61 | 103 |
| D5433093 | 9.3 | 10 | 61 | 103 |
| D5433094 | 9.4 | 10 | 61 | 103 |
| D5433095 | 9.5 | 10 | 61 | 103 |
| D5433096 | 9.6 | 10 | 61 | 103 |
| D5433097 | 9.7 | 10 | 61 | 103 |
| D5433098 | 9.8 | 10 | 61 | 103 |
| D5433099 | 9.9 | 10 | 61 | 103 |
| D5433100 | 10.0 | 10 | 61 | 103 |
| D5433101 | 10.1 | 12 | 71 | 118 |
| D5433102 | 10.2 | 12 | 71 | 118 |
| D5433103 | 10.3 | 12 | 71 | 118 |
| D5433104 | 10.4 | 12 | 71 | 118 |
| D5433105 | 10.5 | 12 | 71 | 118 |
| D5433106 | 10.6 | 12 | 71 | 118 |
| D5433107 | 10.7 | 12 | 71 | 118 |
| D5433108 | 10.8 | 12 | 71 | 118 |
| D5433109 | 10.9 | 12 | 71 | 118 |
| D5433110 | 11.0 | 12 | 71 | 118 |
| D5433111 | 11.1 | 12 | 71 | 118 |
| D5433112 | 11.2 | 12 | 71 | 118 |
| D5433113 | 11.3 | 12 | 71 | 118 |
| D5433114 | 11.4 | 12 | 71 | 118 |
| D5433115 | 11.5 | 12 | 71 | 118 |
| D5433116 | 11.6 | 12 | 71 | 118 |
| D5433117 | 11.7 | 12 | 71 | 118 |

▶ NEXT PAGE 下页
▶ DLC coating is available on your request. / DLC coating可根据客户要求进行加工
▶ Other shank types are available on your request. / 其他刀柄类型可根据客户要求提供.
◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | | | | | | | | | | | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ◎ | ◎ | ◎ | ◎ | | | | | | | | | | | | | | | | | |

# DREAM DRILLS - ALU

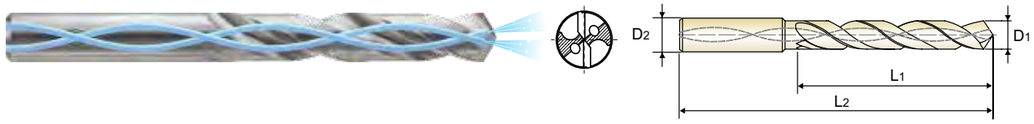
**D5433 SERIES**

## CARBIDE, DREAM DRILLS - ALU with COOLANT HOLES — *LONG*

## 硬质合金，梦幻钻头 - 不锈钢用 带内冷孔 — 长

- ▶ Optimized thinning for Aluminum & Aluminum Alloys to prevent any clogging from chip welding
- ▶ Wider and deeper flute gullets for maximum chip removal
- ▶ Special geometry and smooth coating reduces built up edge and improves finishes

- ▶ 铝&铝合金加工用最佳修磨设计预防屑堵塞问题
- ▶ 由于更宽更深的沟槽设计，提高排屑性能
- ▶ 特殊几何形状和顺畅涂层减少刀瘤




DIN 6537 | CARBIDE | 30° | h6 | m7 | 118° | 20 bar | p. A153 | 5 × D

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| ◎ | SHRINK FIT HOLDER | D47 - 72 |
| ◎ | HYDRAULIC CHUCK | D15 - 46 |
| ○ | ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. 型号 | Drill Diameter 刃径 D1 | Shank Diameter 柄径 D2 | Flute Length 槽长 L1 | Overall Length 全长 L2 |
|---|---|---|---|---|
| D5433118 | 11.8 | 12 | 71 | 118 |
| D5433119 | 11.9 | 12 | 71 | 118 |
| D5433120 | 12.0 | 12 | 71 | 118 |
| D5433125 | 12.5 | 14 | 77 | 124 |
| D5433130 | 13.0 | 14 | 77 | 124 |
| D5433135 | 13.5 | 14 | 77 | 124 |
| D5433140 | 14.0 | 14 | 77 | 124 |
| D5433145 | 14.5 | 16 | 83 | 133 |
| D5433150 | 15.0 | 16 | 83 | 133 |
| D5433155 | 15.5 | 16 | 83 | 133 |

| EDP No. 型号 | Drill Diameter 刃径 D1 | Shank Diameter 柄径 D2 | Flute Length 槽长 L1 | Overall Length 全长 L2 |
|---|---|---|---|---|
| D5433160 | 16.0 | 16 | 83 | 133 |
| D5433165 | 16.5 | 18 | 93 | 143 |
| D5433170 | 17.0 | 18 | 93 | 143 |
| D5433175 | 17.5 | 18 | 93 | 143 |
| D5433180 | 18.0 | 18 | 93 | 143 |
| D5433185 | 18.5 | 20 | 101 | 153 |
| D5433190 | 19.0 | 20 | 101 | 153 |
| D5433195 | 19.5 | 20 | 101 | 153 |
| D5433200 | 20.0 | 20 | 101 | 153 |

▶ DLC coating is available on your request. / DLC coating可根据客户要求进行加工
▶ Other shank types are available on your request. / 其他刀柄类型可根据客户要求提供.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | | | | | | | | | | | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ◎ | ◎ | ◎ | ◎ | | | | | | | | | | | | | | | | | |



# DREAM DRILLS - ALU

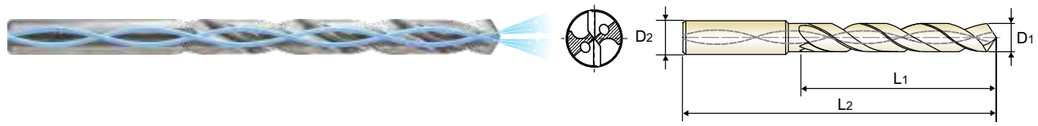
**D5434 SERIES**

## CARBIDE, DREAM DRILLS - ALU with COOLANT HOLES — *EXTRA LONG*

## 硬质合金，梦幻钻头 - 不锈钢用 带内冷孔 — 超长

- ▶ Optimized thinning for Aluminum & Aluminum Alloys to prevent any clogging from chip welding
- ▶ Wider and deeper flute gullets for maximum chip removal
- ▶ Special geometry and smooth coating reduces built up edge and improves finishes

- ▶ 铝&铝合金加工用最佳修磨设计预防屑堵塞问题
- ▶ 由于更宽更深的沟槽设计，提高排屑性能
- ▶ 特殊几何形状和顺畅涂层减少刀瘤




DIN 6537 | CARBIDE | 30° | h6 | m7 | 118° | 20 bar | p. A153 | 8 × D

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| ◎ | SHRINK FIT HOLDER | D47 - 72 |
| ◎ | HYDRAULIC CHUCK | D15 - 46 |
| ○ | ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. 型号 | Drill Diameter 刃径 D1 | Shank Diameter 柄径 D2 | Flute Length 槽长 L1 | Overall Length 全长 L2 |
|---|---|---|---|---|
| D5434030 | 3.0 | 6 | 34 | 72 |
| D5434031 | 3.1 | 6 | 34 | 72 |
| D5434032 | 3.2 | 6 | 34 | 72 |
| D5434033 | 3.3 | 6 | 34 | 72 |
| D5434034 | 3.4 | 6 | 34 | 72 |
| D5434035 | 3.5 | 6 | 34 | 72 |
| D5434036 | 3.6 | 6 | 34 | 72 |
| D5434037 | 3.7 | 6 | 34 | 72 |
| D5434038 | 3.8 | 6 | 43 | 81 |
| D5434039 | 3.9 | 6 | 43 | 81 |
| D5434040 | 4.0 | 6 | 43 | 81 |
| D5434041 | 4.1 | 6 | 43 | 81 |
| D5434042 | 4.2 | 6 | 43 | 81 |
| D5434043 | 4.3 | 6 | 43 | 81 |
| D5434044 | 4.4 | 6 | 43 | 81 |
| D5434045 | 4.5 | 6 | 43 | 81 |
| D5434046 | 4.6 | 6 | 43 | 81 |
| D5434047 | 4.7 | 6 | 43 | 81 |
| D5434048 | 4.8 | 6 | 57 | 95 |
| D5434049 | 4.9 | 6 | 57 | 95 |
| D5434050 | 5.0 | 6 | 57 | 95 |
| D5434051 | 5.1 | 6 | 57 | 95 |
| D5434052 | 5.2 | 6 | 57 | 95 |
| D5434053 | 5.3 | 6 | 57 | 95 |

| EDP No. 型号 | Drill Diameter 刃径 D1 | Shank Diameter 柄径 D2 | Flute Length 槽长 L1 | Overall Length 全长 L2 |
|---|---|---|---|---|
| D5434054 | 5.4 | 6 | 57 | 95 |
| D5434055 | 5.5 | 6 | 57 | 95 |
| D5434056 | 5.6 | 6 | 57 | 95 |
| D5434057 | 5.7 | 6 | 57 | 95 |
| D5434058 | 5.8 | 6 | 57 | 95 |
| D5434059 | 5.9 | 6 | 57 | 95 |
| D5434060 | 6.0 | 6 | 57 | 95 |
| D5434061 | 6.1 | 8 | 76 | 114 |
| D5434062 | 6.2 | 8 | 76 | 114 |
| D5434063 | 6.3 | 8 | 76 | 114 |
| D5434064 | 6.4 | 8 | 76 | 114 |
| D5434065 | 6.5 | 8 | 76 | 114 |
| D5434066 | 6.6 | 8 | 76 | 114 |
| D5434067 | 6.7 | 8 | 76 | 114 |
| D5434068 | 6.8 | 8 | 76 | 114 |
| D5434069 | 6.9 | 8 | 76 | 114 |
| D5434070 | 7.0 | 8 | 76 | 114 |
| D5434071 | 7.1 | 8 | 76 | 114 |
| D5434072 | 7.2 | 8 | 76 | 114 |
| D5434073 | 7.3 | 8 | 76 | 114 |
| D5434074 | 7.4 | 8 | 76 | 114 |
| D5434075 | 7.5 | 8 | 76 | 114 |
| D5434076 | 7.6 | 8 | 76 | 114 |
| D5434077 | 7.7 | 8 | 76 | 114 |

▶ DLC coating is available on your request. / DLC coating可根据客户要求进行加工
▶ Other shank types are available on your request. / 其他刀柄类型可根据客户要求提供.

▶ NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | | | | | | | | | | | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ◎ | ◎ | ◎ | ◎ | | | | | | | | | | | | | | | | | |

# DREAM DRILLS - ALU

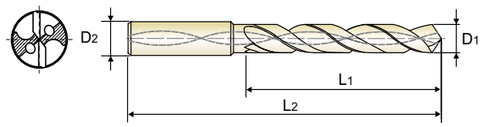
**D5434 SERIES**

## CARBIDE, DREAM DRILLS - ALU with COOLANT HOLES — *EXTRA LONG*

## 硬质合金，梦幻钻头 - 不锈钢用 带内冷孔 — 超长

- ▶ Optimized thinning for Aluminum & Aluminum Alloys to prevent any clogging from chip welding
- ▶ Wider and deeper flute gullets for maximum chip removal
- ▶ Special geometry and smooth coating reduces built up edge and improves finishes

- ▶ 铝&铝合金加工用最佳修磨设计预防屑堵塞问题
- ▶ 由于更宽更深的沟槽设计，提高排屑性能
- ▶ 特殊几何形状和顺畅涂层减少刀瘤




DIN 6537 | CARBIDE | 30° | h6 | m7 | 118° | 20 bar

p. A153

8 × D

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| SHRINK FIT HOLDER | D47 - 72 |
| HYDRAULIC CHUCK | D15 - 46 |
| ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. 型号 | Drill Diameter 刃径 | Shank Diameter 柄径 | Flute Length 槽长 | Overall Length 全长 |
|---|---|---|---|---|
| Bright | $D_1$ | $D_2$ | $L_1$ | $L_2$ |
| D5434078 | 7.8 | 8 | 76 | 114 |
| D5434079 | 7.9 | 8 | 76 | 114 |
| D5434080 | 8.0 | 8 | 76 | 114 |
| D5434081 | 8.1 | 10 | 95 | 142 |
| D5434082 | 8.2 | 10 | 95 | 142 |
| D5434083 | 8.3 | 10 | 95 | 142 |
| D5434084 | 8.4 | 10 | 95 | 142 |
| D5434085 | 8.5 | 10 | 95 | 142 |
| D5434086 | 8.6 | 10 | 95 | 142 |
| D5434087 | 8.7 | 10 | 95 | 142 |
| D5434088 | 8.8 | 10 | 95 | 142 |
| D5434089 | 8.9 | 10 | 95 | 142 |
| D5434090 | 9.0 | 10 | 95 | 142 |
| D5434091 | 9.1 | 10 | 95 | 142 |
| D5434092 | 9.2 | 10 | 95 | 142 |
| D5434093 | 9.3 | 10 | 95 | 142 |
| D5434094 | 9.4 | 10 | 95 | 142 |
| D5434095 | 9.5 | 10 | 95 | 142 |
| D5434096 | 9.6 | 10 | 95 | 142 |
| D5434097 | 9.7 | 10 | 95 | 142 |
| D5434098 | 9.8 | 10 | 95 | 142 |
| D5434099 | 9.9 | 10 | 95 | 142 |
| D5434100 | 10.0 | 10 | 95 | 142 |
| D5434101 | 10.1 | 12 | 114 | 162 |

| EDP No. 型号 | Drill Diameter 刃径 | Shank Diameter 柄径 | Flute Length 槽长 | Overall Length 全长 |
|---|---|---|---|---|
| Bright | $D_1$ | $D_2$ | $L_1$ | $L_2$ |
| D5434102 | 10.2 | 12 | 114 | 162 |
| D5434103 | 10.3 | 12 | 114 | 162 |
| D5434104 | 10.4 | 12 | 114 | 162 |
| D5434105 | 10.5 | 12 | 114 | 162 |
| D5434106 | 10.6 | 12 | 114 | 162 |
| D5434107 | 10.7 | 12 | 114 | 162 |
| D5434108 | 10.8 | 12 | 114 | 162 |
| D5434109 | 10.9 | 12 | 114 | 162 |
| D5434110 | 11.0 | 12 | 114 | 162 |
| D5434111 | 11.1 | 12 | 114 | 162 |
| D5434112 | 11.2 | 12 | 114 | 162 |
| D5434113 | 11.3 | 12 | 114 | 162 |
| D5434114 | 11.4 | 12 | 114 | 162 |
| D5434115 | 11.5 | 12 | 114 | 162 |
| D5434116 | 11.6 | 12 | 114 | 162 |
| D5434117 | 11.7 | 12 | 114 | 162 |
| D5434118 | 11.8 | 12 | 114 | 162 |
| D5434119 | 11.9 | 12 | 114 | 162 |
| D5434120 | 12.0 | 12 | 114 | 162 |
| D5434125 | 12.5 | 14 | 133 | 178 |
| D5434130 | 13.0 | 14 | 133 | 178 |
| D5434135 | 13.5 | 14 | 133 | 178 |
| D5434140 | 14.0 | 14 | 133 | 178 |

- ▶ DLC coating is available on your request. / DLC coating可根据客户要求进行加工
- ▶ Other shank types are available on your request. / 其他刀柄类型可根据客户要求提供.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | | | | | | | | | | | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ◎ | ◎ | ◎ | ◎ | | | | | | | | | | | | | | | | | |



# DREAM DRILLS - ALU

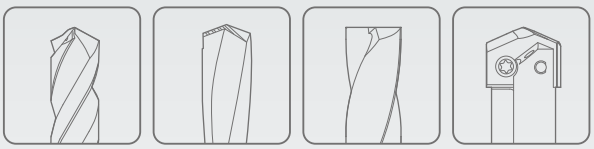
## RECOMMENDED CUTTING CONDITIONS
## 推荐加工条件

**D5432, D5433, D5434 SERIES** with COOLANT HOLES 带内冷孔

RPM (转速) = (rev./min.)
FEED (进给) = (mm/rev.)

| ISO 公制 | VDI 3323 | Material Description 材料描述 | Vc 切削速度 (m/min) | Parameter 参数 | Drill Diameter 刃径 (mm) 3.0 | 4.0 | 5.0 | 6.0 | 8.0 | 10.0 | 12.0 | 14.0 | 16.0 | 18.0 | 20.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N | 21 | Aluminum-wrought alloy | 200 | RPM | 21220 | 15920 | 12730 | 10610 | 7960 | 6370 | 5310 | 4550 | 3980 | 3540 | 3180 |
| | | | | FEED | 0.12-0.18 | 0.14-0.22 | 0.15-0.23 | 0.17-0.25 | 0.21-0.28 | 0.24-0.30 | 0.24-0.30 | 0.25-0.35 | 0.25-0.35 | 0.28-0.38 | 0.30-0.40 |
| | 22 | | 160 | RPM | 16980 | 12730 | 10190 | 8490 | 6370 | 5090 | 4240 | 3640 | 3180 | 2830 | 2550 |
| | | | | FEED | 0.12-0.18 | 0.14-0.22 | 0.15-0.23 | 0.17-0.25 | 0.21-0.28 | 0.24-0.30 | 0.24-0.30 | 0.25-0.35 | 0.25-0.35 | 0.28-0.38 | 0.30-0.40 |
| | 23 | Aluminum-cast, alloyed | 150 | RPM | 15920 | 11940 | 9550 | 7960 | 5970 | 4770 | 3980 | 3410 | 2980 | 2650 | 2390 |
| | | | | FEED | 0.15-0.21 | 0.17-0.25 | 0.19-0.27 | 0.21-0.28 | 0.24-0.31 | 0.29-0.45 | 0.33-0.55 | 0.35-0.60 | 0.35-0.60 | 0.39-0.73 | 0.39-0.85 |
| | 24 | | 140 | RPM | 14850 | 11140 | 8910 | 7430 | 5570 | 4460 | 3710 | 3180 | 2790 | 2480 | 2230 |
| | | | | FEED | 0.15-0.21 | 0.17-0.25 | 0.19-0.27 | 0.21-0.28 | 0.24-0.31 | 0.29-0.45 | 0.33-0.55 | 0.35-0.60 | 0.35-0.60 | 0.39-0.73 | 0.39-0.85 |

Global Cutting Tool Leader **YG-1**



# HOLEMAKING

Leading Through Innovation

SOLID CARBIDE

# DREAM DRILLS -CFRP

- For Composite Materials including CFRP and GFRP
- 用于复合材料，含CFRP与GFRP

# SELECTION GUIDE
## 选用指南

| | |
|---|---|
| SERIES 系列 | DI473 |
| DRILLING DEPTH 钻销深度 | 5XD |
| LENGTH 长度 | LONG 长 |
| SIZE MIN 最小尺寸 | D2.5 |
| SIZE MAX 最大尺寸 | D12.0 |
| PAGE 页数 | A157 |
| SURFACE TREATMENT 表面处理 | Diamond Coating |

HOLEMAKING TOOLS

# SOLID CARBIDE DREAM DRILLS CFRP

For Composite Materials including CFRP and GFRP
用于复合材料，含CFRP与GFRP

Please visit 请访问 globalyg1.com/mat for material search 查看产品材料

◎ : Excellent (优秀) ○ : Good (良好)

Recommended cutting conditions (推荐加工条件) : p. A158

| ISO 公制 | VDI 3323 | Material Description 材料描述 | Composition / Structure 成分 / 组织 | Heat Treatment 热处理 | HB 布氏硬度 | HRc 硬度 | |
|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | About 0.15% C | Annealed | 125 | | |
| | 2 | | About 0.45% C | Annealed | 190 | 13 | |
| | 3 | | About 0.45% C | Quenched & Tempered | 250 | 25 | |
| | 4 | | About 0.75% C | Annealed | 270 | 28 | |
| | 5 | | About 0.75% C | Quenched & Tempered | 300 | 32 | |
| | 6 | Low alloy steel | | Annealed | 180 | 10 | |
| | 7 | | | Quenched & Tempered | 275 | 29 | |
| | 8 | | | Quenched & Tempered | 300 | 32 | |
| | 9 | | | Quenched & Tempered | 350 | 38 | |
| | 10 | High alloyed steel, and tool steel | | Annealed | 200 | 15 | |
| | 11 | | | Quenched & Tempered | 325 | 35 | |
| M | 12 | Stainless steel | Ferritic / Martensitic | Annealed | 200 | 15 | |
| | 13 | | Martensitic | Quenched & Tempered | 240 | 23 | |
| | 14 | | Austenitic | | 180 | 10 | |
| K | 15 | Grey cast iron | Pearlitic / ferritic | | 180 | 10 | |
| | 16 | | Pearlitic (Martensitic) | | 260 | 26 | |
| | 17 | Nodular cast iron | Ferritic | | 160 | 3 | |
| | 18 | | Pearlitic | | 250 | 25 | |
| | 19 | Malleable cast iron | Ferritic | | 130 | | |
| | 20 | | Pearlitic | | 230 | 21 | |
| N | 21 | Aluminum-wrought alloy | Not Curable | | 60 | | |
| | 22 | | Curable | Hardened | 100 | | |
| | 23 | Aluminum-cast, alloyed | ≤ 12% Si, Not Curable | | 75 | | |
| | 24 | | ≤ 12% Si, Curable | Hardened | 90 | | |
| | 25 | | > 12% Si, Not Curable | | 130 | | |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | Cutting Alloys, PB>1% | | 110 | | |
| | 27 | | CuZn, CuSnZn (Brass) | | 90 | | |
| | 28 | | CuSn, lead-free copper and electrolytic copper | | 100 | | |
| | 29 | Non Metallic Materials | Duroplastic, Fiber Reinforced Plastic | | | | ◎ |
| | 30 | | Rubber, Wood, etc. | | | | |
| S | 31 | Heat Resistant Super Alloys | Fe Based | Annealed | 200 | 15 | |
| | 32 | | | Cured | 280 | 30 | |
| | 33 | | Ni or Co Based | Annealed | 250 | 25 | |
| | 34 | | | Cured | 350 | 38 | |
| | 35 | | | Cast | 320 | 34 | |
| | 36 | Titanium Alloys | Pure Titanium | | 400 Rm | | |
| | 37 | | Alpha + Beta Alloys | Hardened | 1050 Rm | | |
| H | 38 | Hardened steel | | Hardened | 550 | 55 | |
| | 39 | | | Hardened | 630 | 60 | |
| | 40 | Chilled Cast Iron | | Cast | 400 | 42 | |
| | 41 | Hardened Cast Iron | | Hardened | 550 | 55 | |

**Scan QR Code**
to See More Tools for COMPOSITE METERIALS
如想查看其它用于复合材料的工具，请扫描二维码

**Dream Drill CFRP is only available till stock runs out!**
梦幻钻头-CFRP，尽在库存用完之前可用



# DREAM DRILLS - CFRP

DI473 SERIES

## CARBIDE, DREAM DRILLS - CFRP
## 硬质合金，梦幻钻头 - CFRP

LONG 长

- ▶ Special point type to improve hole quality for Composite Materials
- ▶ Minimized burr and delamination at entry / exit hole
- ▶ Outstanding performance
- ▶ Long tool life and increased product by Diamond Coating

- ▶ 采用特殊钻顶类型，提高复合材料钻孔品质
- ▶ 钻孔入口和出口处的毛刺最小化
- ▶ 卓越性能
- ▶ 由于金刚石涂层，提高刀具寿命和产率

DIN 6537 | CARBIDE | 30° | h6 | m7 | 118° | p. A158

5 × D

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| SHRINK FIT HOLDER | D47 - 72 |
| HYDRAULIC CHUCK | D15 - 46 |
| ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. 型号 | Drill Diameter 刃径 D1 | Shank Diameter 柄径 D2 | Flute Length 槽长 L1 | Overall Length 全长 L2 |
|---|---|---|---|---|
| Diamond-Coating | | | | |
| ▲ DI473025 | 2.5 | 6 | 24 | 66 |
| ▲ DI473030 | 3.0 | 6 | 28 | 66 |
| ▲ DI473040 | 4.0 | 6 | 36 | 74 |
| ▲ DI473050 | 5.0 | 6 | 44 | 82 |
| ▲ DI473060 | 6.0 | 6 | 44 | 82 |
| ▲ DI473080 | 8.0 | 8 | 53 | 91 |
| ▲ DI473090 | 9.0 | 10 | 61 | 103 |
| ▲ DI473100 | 10.0 | 10 | 61 | 103 |
| ▲ DI473110 | 11.0 | 12 | 71 | 118 |
| ▲ DI473120 | 12.0 | 12 | 71 | 118 |

▲ : Only available till stock runs out 尽在库存用完之前可用

**Scan QR Code**
to See More Tools for COMPOSITE METERIALS
如想查看其它用于复合材料的工具，请扫描二维码

**Dream Drill CFRP is only available till stock runs out!**
梦幻钻头-CFRP，尽在库存用完之前可用

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | | | | | | | | | | | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39.1 | 39.3 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 70 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | | 400 | 550 |
| Recommended | | | | | | | | | ◎ | | | | | | | | | | | | | |

# DREAM DRILLS - CFRP

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工条件

### DI473 SERIES — without COOLANT HOLES
### 不带内冷孔

RPM (转速) = (rev./min.)
FEED (进给) = (mm/rev.)

| ISO 公制 | VDI 3323 | Material Description 材料描述 | Vc 钻削速度 (m/min) | Parameter 参数 | Drill Diameter 刃径 (mm) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | 3.0 | 4.0 | 5.0 | 6.0 | 8.0 | 10.0 | 20.0 |
| N | 29 | Non Metallic Materials | 120 | RPM | 12730 | 9550 | 7640 | 6370 | 4770 | 3820 | 3180 |
| | | | | FEED | 0.03-0.07 | 0.03-0.07 | 0.03-0.07 | 0.03-0.07 | 0.03-0.07 | 0.03-0.07 | 0.03-0.07 |



Leading Through Innovation

# SOLID CARBIDE

# DREAM DRILLS -MQL TYPE

- Minimum Quantity Lubrication
  Drilling Deep Holes (10×D ~ 40×D)
- MQL (用少量的润滑油)
  钻深孔 (10D到40D)

# SELECTION GUIDE
## 选用指南

HOLEMAKING TOOLS

# SOLID CARBIDE
# DREAM DRILLS
# MQL TYPE

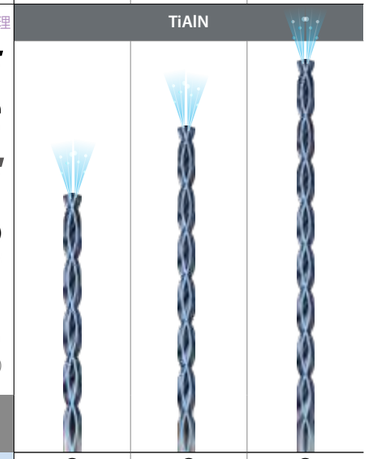
Minimum Quantity Lubrication, Drilling Deep Holes (10×D ~ 40×D)
MQL (用少量的润滑油) 钻深孔 (10D到40D)

Please visit 请访问 globalyg1.com/mat for material search 查看产品材料

◎ : Excellent (优秀) ○ : Good (良好)

Recommended cutting conditions (推荐加工条件) : p. A166

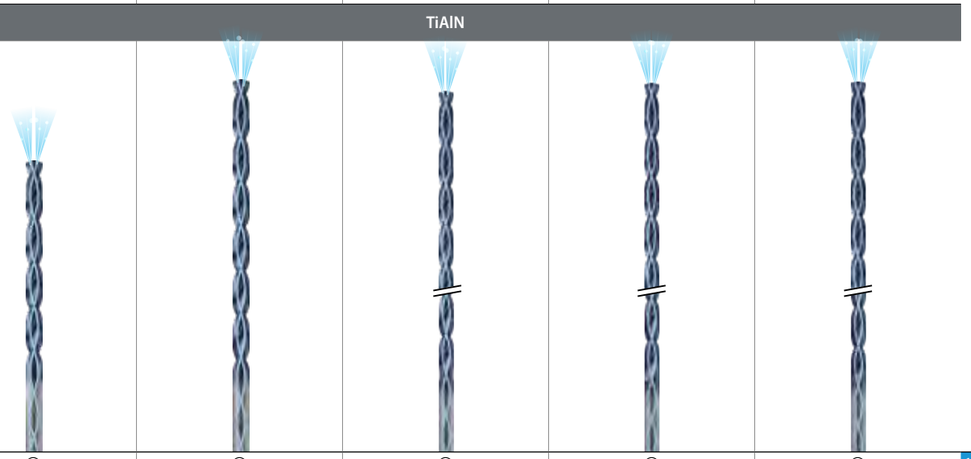
| SERIES 系列 | DH510 | DH515 | DH520 |
|---|---|---|---|
| DRILLING DEPTH 钻销深度 | 10XD | 15XD | 20XD |
| LENGTH 长度 | EXTRA LONG 超长 | EXTRA LONG 超长 | EXTRA LONG 超长 |
| SIZE MIN 最小尺寸 | D3.0 | D3.0 | D3.0 |
| SIZE MAX 最大尺寸 | D14.0 | D12.0 | D12.0 |
| PAGE 页数 | A162 | A163 | A163 |
| SURFACE TREATMENT 表面处理 | TiAlN | | |



| ISO 公制 | VDI 3323 | Material Description 材料描述 | Composition / Structure / Heat Treatment 成分 / 组织 / 热处理 | | HB 布氏硬度 | HRc 硬度 | DH510 | DH515 | DH520 |
|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | About 0.15% C | Annealed | 125 | | ◎ | ◎ | ◎ |
| | 2 | | About 0.45% C | Annealed | 190 | 13 | ◎ | ◎ | ◎ |
| | 3 | | About 0.45% C | Quenched & Tempered | 250 | 25 | ○ | ○ | ○ |
| | 4 | | About 0.75% C | Annealed | 270 | 28 | | | |
| | 5 | | About 0.75% C | Quenched & Tempered | 300 | 32 | | | |
| | 6 | Low alloy steel | | Annealed | 180 | 10 | ◎ | ◎ | ◎ |
| | 7 | | | Quenched & Tempered | 275 | 29 | ○ | ○ | ○ |
| | 8 | | | Quenched & Tempered | 300 | 32 | ○ | ○ | ○ |
| | 9 | | | Quenched & Tempered | 350 | 38 | | | |
| | 10 | High alloyed steel, and tool steel | | Annealed | 200 | 15 | ○ | ○ | ○ |
| | 11 | | | Quenched & Tempered | 325 | 35 | ○ | ○ | ○ |
| M | 12 | Stainless steel | Ferritic / Martensitic | Annealed | 200 | 15 | | | |
| | 13 | | Martensitic | Quenched & Tempered | 240 | 23 | | | |
| | 14 | | Austenitic | | 180 | 10 | | | |
| K | 15 | Grey cast iron | Pearlitic / ferritic | | 180 | 10 | ◎ | ◎ | ◎ |
| | 16 | | Pearlitic (Martensitic) | | 260 | 26 | ○ | ○ | ○ |
| | 17 | Nodular cast iron | Ferritic | | 160 | 3 | ◎ | ◎ | ◎ |
| | 18 | | Pearlitic | | 250 | 25 | ○ | ○ | ○ |
| | 19 | Malleable cast iron | Ferritic | | 130 | | ◎ | ◎ | ◎ |
| | 20 | | Pearlitic | | 230 | 21 | ○ | ○ | ○ |
| N | 21 | Aluminum-wrought alloy | Not Curable | | 60 | | | | |
| | 22 | | Curable | Hardened | 100 | | | | |
| | 23 | Aluminum-cast, alloyed | ≤ 12% Si, Not Curable | | 75 | | | | |
| | 24 | | ≤ 12% Si, Curable | Hardened | 90 | | | | |
| | 25 | | > 12% Si, Not Curable | | 130 | | | | |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | Cutting Alloys, PB>1% | | 110 | | | | |
| | 27 | | CuZn, CuSnZn (Brass) | | 90 | | | | |
| | 28 | | CuSn, lead-free copper and electrolytic copper | | 100 | | | | |
| | 29 | Non Metallic Materials | Duroplastic, Fiber Reinforced Plastic | | | | | | |
| | 30 | | Rubber, Wood, etc. | | | | | | |
| S | 31 | Heat Resistant Super Alloys | Fe Based | Annealed | 200 | 15 | | | |
| | 32 | | | Cured | 280 | 30 | | | |
| | 33 | | Ni or Co Based | Annealed | 250 | 25 | | | |
| | 34 | | | Cured | 350 | 38 | | | |
| | 35 | | | Cast | 320 | 34 | | | |
| | 36 | Titanium Alloys | Pure Titanium | | 400 Rm | | | | |
| | 37 | | Alpha + Beta Alloys | Hardened | 1050 Rm | | | | |
| H | 38 | Hardened steel | | Hardened | 550 | 55 | | | |
| | 39 | | | Hardened | 630 | 60 | | | |
| | 40 | Chilled Cast Iron | | Cast | 400 | 42 | | | |
| | 41 | Hardened Cast Iron | | Hardened | 550 | 55 | | | |



| SERIES 系列 | DHM10 | DHM15 | DHM20 | DHM25 | DHM30 |
|---|---|---|---|---|---|
| DRILLING DEPTH 钻销深度 | 10XD | 15XD | 20XD | 25XD | 30XD |
| LENGTH 长度 | EXTRA LONG 超长 | EXTRA LONG 超长 | EXTRA LONG 超长 | EXTRA LONG 超长 | EXTRA LONG 超长 |
| SIZE MIN 最小尺寸 | D3.0 | D3.0 | D3.0 | D3.0 | D3.0 |
| SIZE MAX 最大尺寸 | D14.0 | D12.0 | D12.0 | D10.0 | D8.0 |
| PAGE 页数 | A164 | A164 | A164 | A165 | A165 |
| SURFACE TREATMENT 表面处理 | TiAlN | | | | |



| DHM10 | DHM15 | DHM20 | DHM25 | DHM30 | | |
|---|---|---|---|---|---|---|
| ◎ | ◎ | ◎ | ◎ | ◎ | 1 | P |
| ◎ | ◎ | ◎ | ◎ | ◎ | 2 | |
| ○ | ○ | ○ | ○ | ○ | 3 | |
| | | | | | 4 | |
| | | | | | 5 | |
| ◎ | ◎ | ◎ | ◎ | ◎ | 6 | |
| ○ | ○ | ○ | ○ | ○ | 7 | |
| ○ | ○ | ○ | ○ | ○ | 8 | |
| | | | | | 9 | |
| ○ | ○ | ○ | ○ | ○ | 10 | |
| ○ | ○ | ○ | ○ | ○ | 11 | |
| | | | | | 12 | M |
| | | | | | 13 | |
| | | | | | 14 | |
| ◎ | ◎ | ◎ | ◎ | ◎ | 15 | K |
| ○ | ○ | ○ | ○ | ○ | 16 | |
| ◎ | ◎ | ◎ | ◎ | ◎ | 17 | |
| ○ | ○ | ○ | ○ | ○ | 18 | |
| ◎ | ◎ | ◎ | ◎ | ◎ | 19 | |
| ○ | ○ | ○ | ○ | ○ | 20 | |
| | | | | | 21 | N |
| | | | | | 22 | |
| | | | | | 23 | |
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| | | | | | 29 | |
| | | | | | 30 | |
| | | | | | 31 | S |
| | | | | | 32 | |
| | | | | | 33 | |
| | | | | | 34 | |
| | | | | | 35 | |
| | | | | | 36 | |
| | | | | | 37 | |
| | | | | | 38 | H |
| | | | | | 39 | |
| | | | | | 40 | |
| | | | | | 41 | |



CARBIDE
HSS
i-ONE DRILLS
i-DREAM DRILLS
DREAM DRILLS -PRO
DREAM DRILLS -GENERAL
DREAM DRILLS -SOFT
DREAM DRILLS -HIGH FEED
DREAM DRILLS -FLAT BOTTOM
DREAM DRILLS -INOX
DREAM DRILLS -ALU
DREAM DRILLS -CFRP
DREAM DRILLS -MQL
DREAM DRILLS for HIGH HARDENED STEELS
GENERAL CARBIDE DRILLS
MULTI-1 DRILLS
GOLD-P DRILLS
SUPER-GP DRILLS
WORM PATTERN DRILLS
STRAIGHT SHANK DRILLS
TAPER SHANK DRILLS
NC-SPOTTING DRILLS
CENTER DRILLS
SPADE DRILLS
REAMERS
COUNTER SINKS
COUNTER BORES
TECHNICAL DATA

# DREAM DRILLS - MQL TYPE

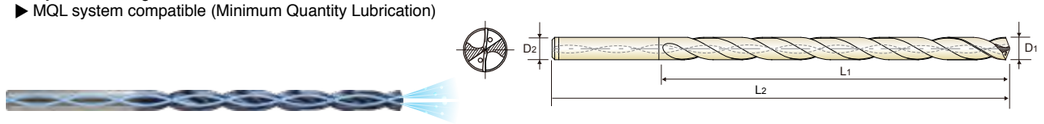
**DH510 SERIES**

## CARBIDE, DREAM DRILLS MQL TYPE with COOLANT HOLES *EXTRA LONG*

## 硬质合金，梦幻钻头-MQL类型 带内冷孔 超长

- ▶ 4-Facet Point for good centering capability
- ▶ Optimized special flutes are ideal for removing chips and for productive drilling
- ▶ Enhanced chip evacuation by polished flute upgraded TiAlN nano layer full coating
- ▶ MQL system compatible (Minimum Quantity Lubrication)

- ▶ 采用4-Facet钻顶提高定心性能
- ▶ 最佳独特沟槽设计提高排屑性能和可提供高产率钻孔
- ▶ 采用TiAlN纳米级涂层抛光沟槽
- ▶ MQL系统相容（Minimum Quantity Lubrication）




CARBIDE | 30° | h6 | h7 | 140° | 20 bar

p. A166-A167

10 × D

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| SHRINK FIT HOLDER | D47 - 72 |
| HYDRAULIC CHUCK | D15 - 46 |
| ER COLLET CHUCK | D73 - 115 |

**DH510** Unit(单位) : mm

| EDP No. 型号 TiAlN | Drill Diameter 刃径 $D_1$ | Shank Diameter 柄径 $D_2$ | Flute Length 槽长 $L_1$ | Overall Length 全长 $L_2$ |
|---|---|---|---|---|
| DH510030 | 3.0 | 3 | 39 | 90 |
| DH510033 | 3.3 | 4 | 46 | 97 |
| DH510035 | 3.5 | 4 | 46 | 97 |
| DH510040 | 4.0 | 4 | 52 | 103 |
| DH510042 | 4.2 | 5 | 59 | 112 |
| DH510045 | 4.5 | 5 | 59 | 112 |
| DH510050 | 5.0 | 5 | 65 | 118 |
| DH510055 | 5.5 | 6 | 72 | 127 |
| DH510060 | 6.0 | 6 | 78 | 133 |
| DH510065 | 6.5 | 7 | 85 | 141 |
| DH510068 | 6.8 | 7 | 91 | 147 |
| DH510070 | 7.0 | 7 | 91 | 147 |
| DH510075 | 7.5 | 8 | 98 | 155 |

| EDP No. 型号 TiAlN | Drill Diameter 刃径 $D_1$ | Shank Diameter 柄径 $D_2$ | Flute Length 槽长 $L_1$ | Overall Length 全长 $L_2$ |
|---|---|---|---|---|
| DH510080 | 8.0 | 8 | 104 | 161 |
| DH510085 | 8.5 | 9 | 111 | 169 |
| DH510090 | 9.0 | 9 | 117 | 175 |
| DH510095 | 9.5 | 10 | 124 | 182 |
| DH510100 | 10.0 | 10 | 130 | 188 |
| DH510105 | 10.5 | 11 | 137 | 201 |
| DH510110 | 11.0 | 11 | 143 | 207 |
| DH510115 | 11.5 | 12 | 150 | 215 |
| DH510120 | 12.0 | 12 | 156 | 221 |
| DH510125 | 12.5 | 13 | 163 | 229 |
| DH510130 | 13.0 | 13 | 169 | 235 |
| DH510135 | 13.5 | 14 | 176 | 243 |
| DH510140 | 14.0 | 14 | 182 | 249 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ○ | | | ◎ | ○ | ○ | | ○ | ○ | | | | ◎ | ○ | ◎ | ○ | ◎ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | | | | | | | | | | | | | | | | | | | | | |



# DREAM DRILLS - MQL TYPE

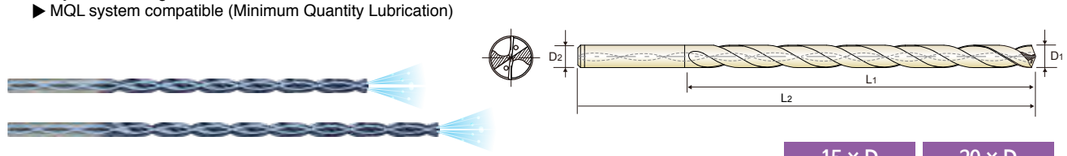
**DH515 SERIES**
**DH520 SERIES**

## CARBIDE, DREAM DRILLS MQL TYPE with COOLANT HOLES *EXTRA LONG*

## 硬质合金，梦幻钻头-MQL类型 带内冷孔 超长

- ▶ 4-Facet Point for good centering capability
- ▶ Optimized special flutes are ideal for removing chips and for productive drilling
- ▶ Enhanced chip evacuation by polished flute upgraded TiAlN nano layer full coating
- ▶ MQL system compatible (Minimum Quantity Lubrication)

- ▶ 采用4-Facet钻顶提高定心性能
- ▶ 最佳独特沟槽设计提高排屑性能和可提供高产率钻孔
- ▶ 采用TiAlN纳米级涂层抛光沟槽
- ▶ MQL系统相容（Minimum Quantity Lubrication）




15 × D (DH515) | 20 × D (DH520)

CARBIDE | 30° | h6 | h7 | 140° | 20 bar

p. A166-A167

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| SHRINK FIT HOLDER | D47 - 72 |
| HYDRAULIC CHUCK | D15 - 46 |
| ER COLLET CHUCK | D73 - 115 |

**DH515** Unit(单位) : mm

| EDP No. 型号 TiAlN | Drill Diameter 刃径 $D_1$ | Shank Diameter 柄径 $D_2$ | Flute Length 槽长 $L_1$ | Overall Length 全长 $L_2$ |
|---|---|---|---|---|
| DH515030 | 3.0 | 3 | 54 | 105 |
| DH515035 | 3.5 | 4 | 63 | 114 |
| DH515040 | 4.0 | 4 | 72 | 123 |
| DH515045 | 4.5 | 5 | 81 | 134 |
| DH515050 | 5.0 | 5 | 90 | 143 |
| DH515055 | 5.5 | 6 | 99 | 154 |
| DH515060 | 6.0 | 6 | 108 | 163 |
| DH515070 | 7.0 | 7 | 126 | 182 |
| DH515080 | 8.0 | 8 | 144 | 201 |
| DH515090 | 9.0 | 9 | 162 | 220 |
| DH515100 | 10.0 | 10 | 180 | 238 |
| DH515110 | 11.0 | 11 | 198 | 262 |
| DH515120 | 12.0 | 12 | 216 | 281 |

**DH520** Unit(单位) : mm

| EDP No. 型号 TiAlN | Drill Diameter 刃径 $D_1$ | Shank Diameter 柄径 $D_2$ | Flute Length 槽长 $L_1$ | Overall Length 全长 $L_2$ |
|---|---|---|---|---|
| DH520030 | 3.0 | 3 | 69 | 120 |
| DH520035 | 3.5 | 4 | 81 | 132 |
| DH520040 | 4.0 | 4 | 92 | 143 |
| DH520045 | 4.5 | 5 | 104 | 157 |
| DH520050 | 5.0 | 5 | 115 | 168 |
| DH520055 | 5.5 | 6 | 127 | 182 |
| DH520060 | 6.0 | 6 | 138 | 193 |
| DH520070 | 7.0 | 7 | 161 | 217 |
| DH520080 | 8.0 | 8 | 184 | 241 |
| DH520090 | 9.0 | 9 | 207 | 265 |
| DH520100 | 10.0 | 10 | 230 | 288 |
| DH520120 | 12.0 | 12 | 276 | 341 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ○ | | | ◎ | ○ | ○ | | ○ | ○ | | | | ◎ | ○ | ◎ | ○ | ◎ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | | | | | | | | | | | | | | | | | | | | | |

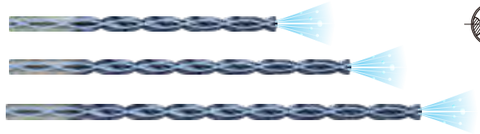
# DREAM DRILLS - MQL TYPE

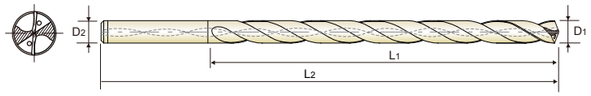
DHM10 SERIES | DHM15 SERIES | DHM20 SERIES

## CARBIDE, DREAM DRILL MQL TYPE END MILL SHANK with COOLANT HOLE — EXTRA LONG
## 硬质合金，梦幻钻头铣刀柄-MQL类型 带内冷孔 — 超长

- ▶ 4-Facet Point for good centering capability
- ▶ Optimized special flutes are ideal for removing chips and for productive drilling
- ▶ Enhanced chip evacuation by polished flute upgraded TiAlN nano layer full coating
- ▶ MQL system compatible (Minimum Quantity Lubrication)

- ▶ 采用4-Facet钻顶提高定心性能
- ▶ 最佳独特沟槽设计提高排屑性能和可提供高产率钻孔
- ▶ 采用TiAlN纳米级涂层抛光沟槽
- ▶ MQL系统相容（Minimum Quantity Lubrication）






10 × D (DHM10) | 15 × D (DHM15) | 20 × D (DHM20)

DHM10 DHM15 DHM20

CARBIDE | 30° | h6 | h7 | 140° | 20 bar | 45 bar

p. A166-A167

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| ◎ | SHRINK FIT HOLDER | D47 - 72 |
| ◎ | HYDRAULIC CHUCK | D15 - 46 |
| ○ | ER COLLET CHUCK | D73 - 115 |

### DHM10

Unit(单位) : mm

| EDP No. | Drill Diameter | Shank Diameter | Flute Length | Overall Length |
|---|---|---|---|---|
| 型号 | 刃径 | 柄径 | 槽长 | 全长 |
| TiAlN | $D_1$ | $D_2$ | $L_1$ | $L_2$ |
| DHM10030 | 3.0 | 6 | 40 | 80 |
| DHM10033 | 3.3 | 6 | 47 | 87 |
| DHM10035 | 3.5 | 6 | 47 | 87 |
| DHM10040 | 4.0 | 6 | 53 | 93 |
| DHM10042 | 4.2 | 6 | 60 | 100 |
| DHM10045 | 4.5 | 6 | 60 | 100 |
| DHM10050 | 5.0 | 6 | 66 | 106 |
| DHM10055 | 5.5 | 6 | 73 | 113 |
| DHM10060 | 6.0 | 6 | 79 | 119 |
| DHM10065 | 6.5 | 8 | 86 | 126 |
| DHM10068 | 6.8 | 8 | 92 | 132 |
| DHM10070 | 7.0 | 8 | 92 | 132 |
| DHM10075 | 7.5 | 8 | 99 | 139 |
| DHM10080 | 8.0 | 8 | 105 | 145 |
| DHM10085 | 8.5 | 10 | 112 | 156 |
| DHM10090 | 9.0 | 10 | 118 | 162 |
| DHM10095 | 9.5 | 10 | 126 | 170 |
| DHM10100 | 10.0 | 10 | 132 | 176 |
| DHM10105 | 10.5 | 12 | 139 | 188 |
| DHM10110 | 11.0 | 12 | 145 | 194 |
| DHM10115 | 11.5 | 12 | 152 | 201 |
| DHM10120 | 12.0 | 12 | 158 | 207 |
| DHM10125 | 12.5 | 14 | 165 | 214 |
| DHM10130 | 13.0 | 14 | 171 | 220 |
| DHM10135 | 13.5 | 14 | 178 | 227 |
| DHM10140 | 14.0 | 14 | 184 | 233 |

### DHM15

Unit(单位) : mm

| EDP No. | Drill Diameter | Shank Diameter | Flute Length | Overall Length |
|---|---|---|---|---|
| 型号 | 刃径 | 柄径 | 槽长 | 全长 |
| TiAlN | $D_1$ | $D_2$ | $L_1$ | $L_2$ |
| DHM15030 | 3.0 | 6 | 55 | 95 |
| DHM15035 | 3.5 | 6 | 64 | 104 |
| DHM15040 | 4.0 | 6 | 73 | 113 |
| DHM15045 | 4.5 | 6 | 82 | 122 |
| DHM15050 | 5.0 | 6 | 91 | 131 |
| DHM15055 | 5.5 | 6 | 100 | 140 |
| DHM15060 | 6.0 | 6 | 109 | 149 |
| DHM15070 | 7.0 | 8 | 127 | 167 |
| DHM15080 | 8.0 | 8 | 145 | 185 |
| DHM15090 | 9.0 | 10 | 163 | 207 |
| DHM15100 | 10.0 | 10 | 182 | 226 |
| DHM15110 | 11.0 | 12 | 200 | 249 |
| DHM15120 | 12.0 | 12 | 218 | 267 |

### DHM20

Unit(单位) : mm

| EDP No. | Drill Diameter | Shank Diameter | Flute Length | Overall Length |
|---|---|---|---|---|
| 型号 | 刃径 | 柄径 | 槽长 | 全长 |
| TiAlN | $D_1$ | $D_2$ | $L_1$ | $L_2$ |
| DHM20030 | 3.0 | 6 | 70 | 110 |
| DHM20035 | 3.5 | 6 | 82 | 122 |
| DHM20040 | 4.0 | 6 | 93 | 133 |
| DHM20045 | 4.5 | 6 | 105 | 145 |
| DHM20050 | 5.0 | 6 | 116 | 156 |
| DHM20055 | 5.5 | 6 | 128 | 168 |
| DHM20060 | 6.0 | 6 | 139 | 179 |
| DHM20070 | 7.0 | 8 | 162 | 202 |
| DHM20080 | 8.0 | 8 | 185 | 225 |
| DHM20090 | 9.0 | 10 | 208 | 252 |
| DHM20100 | 10.0 | 10 | 232 | 276 |
| DHM20110 | 11.0 | 12 | 255 | 304 |
| DHM20120 | 12.0 | 12 | 278 | 327 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | M | | | K | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | | | | | | | | | Stainless steel | | | Grey cast iron | | | Nodular cast iron | | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | | | | | | | | | | |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 | | | | | | | | | | |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 | | | | | | | | | | |
| Recommended | ◎ | ◎ | ○ | | | ◎ | ○ | ○ | | ○ | ○ | | | | ◎ | ○ | ◎ | ○ | ◎ | ○ | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | | | | | | | | | | | | | | | | | | | | | |





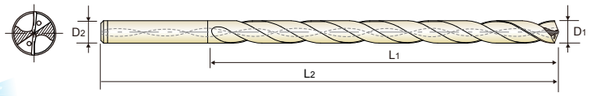
# DREAM DRILLS - MQL TYPE

DHM25 SERIES | DHM30 SERIES

## CARBIDE, DREAM DRILL MQL TYPE END MILL SHANK with COOLANT HOLE — EXTRA LONG
## 硬质合金，梦幻钻头铣刀柄-MQL类型 带内冷孔 — 超长

- ▶ 4-Facet Point for good centering capability
- ▶ Optimized special flutes are ideal for removing chips and for productive drilling
- ▶ Enhanced chip evacuation by polished flute upgraded TiAlN nano layer full coating
- ▶ MQL system compatible (Minimum Quantity Lubrication)

- ▶ 采用4-Facet钻顶提高定心性能
- ▶ 最佳独特沟槽设计提高排屑性能和可提供高产率钻孔
- ▶ 采用TiAlN纳米级涂层抛光沟槽
- ▶ MQL系统相容（Minimum Quantity Lubrication）




25 × D (DHM25) | 30 × D (DHM30)

CARBIDE | 30° | h6 | h7 | 140° | 45 bar

p. A166-A167

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| ◎ | SHRINK FIT HOLDER | D47 - 72 |
| ◎ | HYDRAULIC CHUCK | D15 - 46 |
| ○ | ER COLLET CHUCK | D73 - 115 |

### DHM25

Unit(单位) : mm

| EDP No. | Drill Diameter | Shank Diameter | Flute Length | Overall Length |
|---|---|---|---|---|
| 型号 | 刃径 | 柄径 | 槽长 | 全长 |
| TiAlN | $D_1$ | $D_2$ | $L_1$ | $L_2$ |
| DHM25030 | 3.0 | 6.0 | 85 | 125 |
| DHM25035 | 3.5 | 6.0 | 99 | 139 |
| DHM25040 | 4.0 | 6.0 | 113 | 153 |
| DHM25045 | 4.5 | 6.0 | 127 | 167 |
| DHM25050 | 5.0 | 6.0 | 141 | 181 |
| DHM25055 | 5.5 | 6.0 | 155 | 195 |
| DHM25060 | 6.0 | 6.0 | 169 | 209 |
| DHM25070 | 7.0 | 8.0 | 197 | 237 |
| DHM25080 | 8.0 | 8.0 | 225 | 265 |
| DHM25090 | 9.0 | 10.0 | 253 | 297 |
| DHM25100 | 10.0 | 10.0 | 282 | 326 |

▶ Made to order in depth 35xD & 40xD(Drill Dia. Ø3~6mm) / 其

### DHM30

Unit(单位) : mm

| EDP No. | Drill Diameter | Shank Diameter | Flute Length | Overall Length |
|---|---|---|---|---|
| 型号 | 刃径 | 柄径 | 槽长 | 全长 |
| TiAlN | $D_1$ | $D_2$ | $L_1$ | $L_2$ |
| DHM30030 | 3.0 | 6.0 | 100 | 140 |
| DHM30035 | 3.5 | 6.0 | 117 | 157 |
| DHM30040 | 4.0 | 6.0 | 133 | 173 |
| DHM30045 | 4.5 | 6.0 | 150 | 190 |
| DHM30050 | 5.0 | 6.0 | 166 | 206 |
| DHM30055 | 5.5 | 6.0 | 183 | 223 |
| DHM30060 | 6.0 | 6.0 | 199 | 239 |
| DHM30070 | 7.0 | 8.0 | 232 | 272 |
| DHM30080 | 8.0 | 8.0 | 265 | 305 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | M | | | K | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | | | | | | | | | Stainless steel | | | Grey cast iron | | | Nodular cast iron | | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | | | | | | | | | | |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 | | | | | | | | | | |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 | | | | | | | | | | |
| Recommended | ◎ | ◎ | ○ | | | ◎ | ○ | ○ | | ○ | ○ | | | | ◎ | ○ | ◎ | ○ | ◎ | ○ | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | | | | | | | | | | | | | | | | | | | | | |

# DREAM DRILLS - MQL TYPE

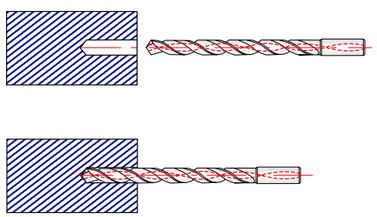
## RECOMMENDED CUTTING CONDITIONS
## 推荐加工条件

### DH510, DH515, DH520, DHM10, DHM15, DHM20, DHM25, DHM30 SERIES

with COOLANT HOLES
带内冷孔

RPM (转速) = (rev./min.)
FEED (进给) = (mm/rev.)

| ISO 公制 | VDI 3323 | Material Description 材料描述 | Vc 钻削速度 (m/min) 10xD ~ 20xD | Vc 钻削速度 (m/min) 25xD ~ 30xD | Parameter 参数 | Drill Diameter 刃径 (mm) 3.0 | 4.0 | 5.0 | 6.0 |
|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | 120 | 100 | RPM(10xD-20xD) | 12730 | 9550 | 7640 | 6370 |
| | | | | | RPM(25xD-30xD) | 10610 | 7960 | 6370 | 5310 |
| | | | | | FEED | 0.08-0.12 | 0.10-0.14 | 0.12-0.18 | 0.14-0.20 |
| | 2 | | 100 | 80 | RPM(10xD-20xD) | 10610 | 7960 | 6370 | 5310 |
| | | | | | RPM(25xD-30xD) | 8490 | 6370 | 5090 | 4240 |
| | | | | | FEED | 0.08-0.12 | 0.10-0.14 | 0.12-0.18 | 0.14-0.20 |
| | 3 | | 80 | 65 | RPM(10xD-20xD) | 8490 | 6370 | 5090 | 4240 |
| | | | | | RPM(25xD-30xD) | 6900 | 5170 | 4140 | 3450 |
| | | | | | FEED | 0.06-0.10 | 0.08-0.12 | 0.10-0.16 | 0.12-0.18 |
| | 6 | Low alloy steel | 100 | 100 | RPM(10xD-20xD) | 10610 | 7960 | 6370 | 5310 |
| | | | | | RPM(25xD-30xD) | 10610 | 7960 | 6370 | 5310 |
| | | | | | FEED | 0.08-0.12 | 0.10-0.14 | 0.12-0.18 | 0.14-0.20 |
| | 7 | | 70 | 60 | RPM(10xD-20xD) | 7430 | 5570 | 4460 | 3710 |
| | | | | | RPM(25xD-30xD) | 6370 | 4770 | 3820 | 3180 |
| | | | | | FEED | 0.06-0.10 | 0.08-0.12 | 0.10-0.16 | 0.12-0.18 |
| | 8 | | 55 | 50 | RPM(10xD-20xD) | 5840 | 4380 | 3500 | 2920 |
| | | | | | RPM(25xD-30xD) | 5310 | 3980 | 3180 | 2650 |
| | | | | | FEED | 0.06-0.10 | 0.08-0.12 | 0.10-0.16 | 0.12-0.18 |
| | 10 | High alloyed steel, and tool steel | 60 | 50 | RPM(10xD-20xD) | 6370 | 4770 | 3820 | 3180 |
| | | | | | RPM(25xD-30xD) | 5310 | 3980 | 3180 | 2650 |
| | | | | | FEED | 0.05-0.09 | 0.07-0.11 | 0.08-0.14 | 0.10-0.16 |
| | 11 | | 50 | 45 | RPM(10xD-20xD) | 5310 | 3980 | 3180 | 2650 |
| | | | | | RPM(25xD-30xD) | 4770 | 3580 | 2860 | 2390 |
| | | | | | FEED | 0.04-0.08 | 0.06-0.10 | 0.07-0.13 | 0.08-0.14 |
| K | 15 | Grey cast iron | 90 | 75 | RPM(10xD-20xD) | 9550 | 7160 | 5730 | 4770 |
| | | | | | RPM(25xD-30xD) | 7960 | 5970 | 4770 | 3980 |
| | | | | | FEED | 0.10-0.14 | 0.12-0.16 | 0.17-0.23 | 0.19-0.25 |
| | 16 | | 70 | 60 | RPM(10xD-20xD) | 7430 | 5570 | 4460 | 3710 |
| | | | | | RPM(25xD-30xD) | 6370 | 4770 | 3820 | 3180 |
| | | | | | FEED | 0.10-0.14 | 0.12-0.16 | 0.17-0.23 | 0.19-0.25 |
| | 17 | Nodular cast iron | 100 | 80 | RPM(10xD-20xD) | 10610 | 7960 | 6370 | 5310 |
| | | | | | RPM(25xD-30xD) | 8490 | 6370 | 5090 | 4240 |
| | | | | | FEED | 0.10-0.14 | 0.12-0.16 | 0.17-0.23 | 0.19-0.25 |
| | 18 | | 70 | 60 | RPM(10xD-20xD) | 7430 | 5570 | 4460 | 3710 |
| | | | | | RPM(25xD-30xD) | 6370 | 4770 | 3820 | 3180 |
| | | | | | FEED | 0.08-0.12 | 0.10-0.14 | 0.12-0.18 | 0.14-0.20 |
| | 19 | Malleable cast iron | 80 | 65 | RPM(10xD-20xD) | 8490 | 6370 | 5090 | 4240 |
| | | | | | RPM(25xD-30xD) | 6900 | 5170 | 4140 | 3450 |
| | | | | | FEED | 0.10-0.14 | 0.12-0.16 | 0.17-0.23 | 0.19-0.25 |
| | 20 | | 70 | 55 | RPM(10xD-20xD) | 7430 | 5570 | 4460 | 3710 |
| | | | | | RPM(25xD-30xD) | 5840 | 4380 | 3500 | 2920 |
| | | | | | FEED | 0.08-0.12 | 0.10-0.14 | 0.12-0.18 | 0.14-0.20 |



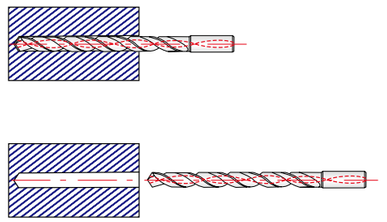
1. Guide Drilling should be done as Diameter +0.01~+0.1mm between 3xD and 5xD depth.
   导钻应该在3xD和5xD深度之间做在直径基础上 +0.01~+0.1mm的孔
2. For Main Drilling, proceed with low RPM at Guide Drilling segment.(RPM 300, FEED 400mm/min)
   对于主要钻孔, 应在导钻孔上使用低速进行 (钻速300, 进给400mm/min)
3. Just before the end of Guide Drilling segment, reduce feed to zero and increase the RPM according to Recommended Cutting Condition chart (See above).
   在加工完导孔时, 把进给降到, 同时根据提供的切削条件表增加钻速 (参考以上)



DREAM DRILLS - MQL TYPE
RECOMMENDED CUTTING CONDITIONS
推荐加工条件

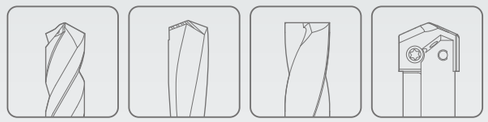
RPM (转速) = (rev./min.)
FEED (进给) = (mm/rev.)

| VDI 3323 | Parameter 参数 | Drill Diameter 刃径 (mm) 8.0 | 10.0 | 12.0 | 14.0 |
|---|---|---|---|---|---|
| 1 | RPM(10xD-20xD) | 4770 | 3820 | 3180 | 2730 |
| | RPM(25xD-30xD) | 3980 | 3180 | 2650 | 2270 |
| | FEED | 0.18-0.24 | 0.20-0.26 | 0.22-0.26 | 0.25-0.31 |
| 2 | RPM(10xD-20xD) | 3980 | 3180 | 2650 | 2270 |
| | RPM(25xD-30xD) | 3180 | 2550 | 2120 | 1820 |
| | FEED | 0.18-0.24 | 0.20-0.26 | 0.22-0.26 | 0.25-0.31 |
| 3 | RPM(10xD-20xD) | 3180 | 2550 | 2120 | 1820 |
| | RPM(25xD-30xD) | 2590 | 2070 | 1720 | 1480 |
| | FEED | 0.14-0.20 | 0.16-0.22 | 0.18-0.24 | 0.20-0.26 |
| 6 | RPM(10xD-20xD) | 3980 | 3180 | 2650 | 2270 |
| | RPM(25xD-30xD) | 3980 | 3180 | 2650 | 2270 |
| | FEED | 0.18-0.24 | 0.20-0.26 | 0.22-0.26 | 0.25-0.31 |
| 7 | RPM(10xD-20xD) | 2790 | 2230 | 1860 | 1590 |
| | RPM(25xD-30xD) | 2390 | 1910 | 1590 | 1360 |
| | FEED | 0.14-0.20 | 0.16-0.22 | 0.18-0.24 | 0.20-0.26 |
| 8 | RPM(10xD-20xD) | 2190 | 1750 | 1460 | 1250 |
| | RPM(25xD-30xD) | 1990 | 1590 | 1330 | 1140 |
| | FEED | 0.14-0.20 | 0.16-0.22 | 0.18-0.24 | 0.20-0.26 |
| 10 | RPM(10xD-20xD) | 2390 | 1910 | 1590 | 1360 |
| | RPM(25xD-30xD) | 1990 | 1590 | 1330 | 1140 |
| | FEED | 0.12-0.18 | 0.14-0.20 | 0.16-0.22 | 0.18-0.24 |
| 11 | RPM(10xD-20xD) | 1990 | 1590 | 1330 | 1140 |
| | RPM(25xD-30xD) | 1790 | 1430 | 1190 | 1020 |
| | FEED | 0.10-0.16 | 0.12-0.18 | 0.13-0.19 | 0.15-0.21 |
| 15 | RPM(10xD-20xD) | 3580 | 2860 | 2390 | 2050 |
| | RPM(25xD-30xD) | 2980 | 2390 | 1990 | 1710 |
| | FEED | 0.22-0.28 | 0.24-0.30 | 0.28-0.34 | 0.30-0.36 |
| 16 | RPM(10xD-20xD) | 2790 | 2230 | 1860 | 1590 |
| | RPM(25xD-30xD) | 2390 | 1910 | 1590 | 1360 |
| | FEED | 0.22-0.28 | 0.24-0.30 | 0.28-0.34 | 0.30-0.36 |
| 17 | RPM(10xD-20xD) | 3980 | 3180 | 2650 | 2270 |
| | RPM(25xD-30xD) | 3180 | 2550 | 2120 | 1820 |
| | FEED | 0.22-0.28 | 0.24-0.30 | 0.28-0.34 | 0.30-0.36 |
| 18 | RPM(10xD-20xD) | 2790 | 2230 | 1860 | 1590 |
| | RPM(25xD-30xD) | 2390 | 1910 | 1590 | 1360 |
| | FEED | 0.18-0.24 | 0.20-0.26 | 0.22-0.26 | 0.25-0.31 |
| 19 | RPM(10xD-20xD) | 3180 | 2550 | 2120 | 1820 |
| | RPM(25xD-30xD) | 2590 | 2070 | 1720 | 1480 |
| | FEED | 0.22-0.28 | 0.24-0.30 | 0.28-0.34 | 0.30-0.36 |
| 20 | RPM(10xD-20xD) | 2790 | 2230 | 1860 | 1590 |
| | RPM(25xD-30xD) | 2190 | 1750 | 1460 | 1250 |
| | FEED | 0.18-0.24 | 0.20-0.26 | 0.22-0.26 | 0.25-0.31 |



4. After then, proceed main drilling by increasing feed without step drilling.
   然后, 在没有阶梯孔的情况下增加进给进行主孔加工
5. When coming out from Guide Drilling start point after drilling, RPM should be reduced as 300 and feed should be 1000 mm/min.
   当钻完后从导孔的起始点出来时, 请把钻速降到300, 进给为 1000mm/min.
6. When coming out from Guide Drilling segment to the outside, the feed should be decreased as 50%.
   当从导孔段完全出来时, 进给应降到50%.

Global Cutting Tool Leader **YG-1**



# HOLEMAKING

Leading Through Innovation

## SOLID CARBIDE

# DREAM DRILLS
# - for HIGH HARDENED STEELS

- For High Hardened Steels (HRc50 to HRc70)
- 用于硬质合金 (硬度50到70)

## SELECTION GUIDE
## 选用指南

HOLEMAKING TOOLS

| | |
|---|---|
| SERIES 系列 | DH500 |
| DRILLING DEPTH 钻销深度 | 3XD |
| LENGTH 长度 | SHORT 短 |
| SIZE MIN 最小尺寸 | D2.6 |
| SIZE MAX 最大尺寸 | D14.0 |
| PAGE 页数 | A171 |
| SURFACE TREATMENT 表面处理 | TiAlN |

# SOLID CARBIDE
# DREAM DRILLS
# for HIGH HARDENED STEELS

For High Hardened Steels (HRc50 to HRc70)
用于硬质合金 (硬度50到70)

Please visit 请访问 globalyg1.com/mat for material search 查看产品材料

◎ : Excellent (优秀) ○ : Good (良好)

Recommended cutting conditions (推荐加工条件) : p. A172

| ISO 公制 | VDI 3323 | Material Description 材料描述 | Composition / Structure / Heat Treatment 成分 / 组织 / 热处理 | | HB 布氏硬度 | HRc 硬度 | |
|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | About 0.15% C | Annealed | 125 | | |
| | 2 | | About 0.45% C | Annealed | 190 | 13 | |
| | 3 | | About 0.45% C | Quenched & Tempered | 250 | 25 | |
| | 4 | | About 0.75% C | Annealed | 270 | 28 | |
| | 5 | | About 0.75% C | Quenched & Tempered | 300 | 32 | |
| | 6 | Low alloy steel | | Annealed | 180 | 10 | |
| | 7 | | | Quenched & Tempered | 275 | 29 | |
| | 8 | | | Quenched & Tempered | 300 | 32 | |
| | 9 | | | Quenched & Tempered | 350 | 38 | |
| | 10 | High alloyed steel, and tool steel | | Annealed | 200 | 15 | |
| | 11 | | | Quenched & Tempered | 325 | 35 | |
| M | 12 | Stainless steel | Ferritic / Martensitic | Annealed | 200 | 15 | |
| | 13 | | Martensitic | Quenched & Tempered | 240 | 23 | |
| | 14 | | Austenitic | | 180 | 10 | |
| K | 15 | Grey cast iron | Pearlitic / ferritic | | 180 | 10 | |
| | 16 | | Pearlitic (Martensitic) | | 260 | 26 | |
| | 17 | Nodular cast iron | Ferritic | | 160 | 3 | |
| | 18 | | Pearlitic | | 250 | 25 | |
| | 19 | Malleable cast iron | Ferritic | | 130 | | |
| | 20 | | Pearlitic | | 230 | 21 | |
| N | 21 | Aluminum-wrought alloy | Not Curable | | 60 | | |
| | 22 | | Curable | Hardened | 100 | | |
| | 23 | Aluminum-cast, alloyed | ≤ 12% Si, Not Curable | | 75 | | |
| | 24 | | ≤ 12% Si, Curable | Hardened | 90 | | |
| | 25 | | > 12% Si, Not Curable | | 130 | | |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | Cutting Alloys, PB>1% | | 110 | | |
| | 27 | | CuZn, CuSnZn (Brass) | | 90 | | |
| | 28 | | CuSn, lead-free copper and electrolytic copper | | 100 | | |
| | 29 | Non Metallic Materials | Duroplastic, Fiber Reinforced Plastic | | | | |
| | 30 | | Rubber, Wood, etc. | | | | |
| S | 31 | Heat Resistant Super Alloys | Fe Based | Annealed | 200 | 15 | |
| | 32 | | | Cured | 280 | 30 | |
| | 33 | | Ni or Co Based | Annealed | 250 | 25 | |
| | 34 | | | Cured | 350 | 38 | |
| | 35 | | | Cast | 320 | 34 | |
| | 36 | Titanium Alloys | Pure Titanium | | 400 Rm | | |
| | 37 | | Alpha + Beta Alloys | Hardened | 1050 Rm | | |
| H | 38 | Hardened steel | | Hardened | 550 | 55 | ◎ |
| | 39 | | | Hardened | 630 | 60 | ◎ |
| | 40 | Chilled Cast Iron | | Cast | 400 | 42 | |
| | 41 | Hardened Cast Iron | | Hardened | 550 | 55 | |



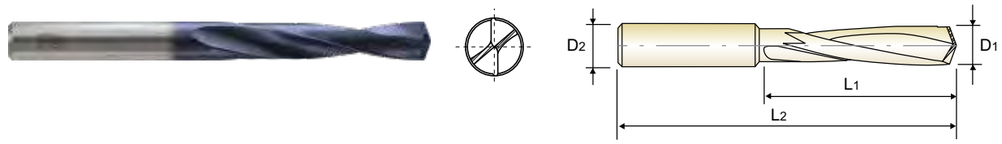
# DREAM DRILLS for HIGH HARDENED STEELS

DH500 SERIES

## CARBIDE, DREAM DRILLS for HIGH HARDENED STEELS (HRc50~HRc70) SHORT
## 硬质合金，梦幻钻头-高硬度钢(HRc50~70) 短

- ▶ Drilling for High Hardened Steels; Quenched Steels, Tempered Steels (under HRc70)
- ▶ Special geometry design for Hardened Steels
- ▶ Minimum of cutting load through special thinning
- ▶ Performing good chip removal and powerful drilling

- ▶ 加工高硬钢用；淬火钢，回火钢（~HRc70）
- ▶ 加工高硬钢用特殊几何形状设计
- ▶ 由于独特钻顶设计减少切削阻力
- ▶ 表现卓越排屑和强力钻孔




CARBIDE | 15° | h6 | h7 | 140° | p. A172

3 × D

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| SHRINK FIT HOLDER | D47 - 72 |
| HYDRAULIC CHUCK | D15 - 46 |
| ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. 型号 | Drill Diameter 刃径 | Shank Diameter 柄径 | Flute Length 槽长 | Overall Length 全长 | EDP No. 型号 | Drill Diameter 刃径 | Shank Diameter 柄径 | Flute Length 槽长 | Overall Length 全长 |
|---|---|---|---|---|---|---|---|---|---|
| TiAlN | $D_1$ | $D_2$ | $L_1$ | $L_2$ | TiAlN | $D_1$ | $D_2$ | $L_1$ | $L_2$ |
| DH500026 | 2.6 | 3 | 14 | 44 | DH500070 | 7.0 | 8 | 45 | 85 |
| DH500030 | 3.0 | 3 | 16 | 46 | DH500075 | 7.5 | 8 | 45 | 85 |
| DH500033 | 3.3 | 4 | 18 | 48 | DH500080 | 8.0 | 8 | 50 | 98 |
| DH500034 | 3.4 | 4 | 20 | 50 | DH500085 | 8.5 | 10 | 50 | 98 |
| DH500035 | 3.5 | 4 | 20 | 50 | DH500086 | 8.6 | 10 | 57 | 105 |
| DH500040 | 4.0 | 4 | 22 | 52 | DH500088 | 8.8 | 10 | 57 | 105 |
| DH500042 | 4.2 | 6 | 25 | 65 | DH500090 | 9.0 | 10 | 57 | 105 |
| DH500043 | 4.3 | 6 | 28 | 68 | DH500095 | 9.5 | 10 | 57 | 105 |
| DH500044 | 4.4 | 6 | 28 | 68 | DH500100 | 10.0 | 10 | 63 | 111 |
| DH500045 | 4.5 | 6 | 28 | 68 | DH500102 | 10.2 | 12 | 63 | 111 |
| DH500050 | 5.0 | 6 | 32 | 72 | DH500103 | 10.3 | 12 | 63 | 111 |
| DH500051 | 5.1 | 6 | 32 | 72 | DH500105 | 10.5 | 12 | 63 | 111 |
| DH500052 | 5.2 | 6 | 32 | 72 | DH500108 | 10.8 | 12 | 71 | 119 |
| DH500055 | 5.5 | 6 | 35 | 75 | DH500110 | 11.0 | 12 | 71 | 119 |
| DH500060 | 6.0 | 6 | 35 | 75 | DH500115 | 11.5 | 12 | 71 | 119 |
| DH500065 | 6.5 | 8 | 40 | 80 | DH500120 | 12.0 | 12 | 71 | 119 |
| DH500068 | 6.8 | 8 | 45 | 85 | DH500140 | 14.0 | 14 | 77 | 125 |
| DH500069 | 6.9 | 8 | 45 | 85 | | | | | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | 21 | |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | | | | | | | | | | | | | | | | | | | | |

| ISO | N | | | | | | | | S | | | | | | H | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39.1 | 39.3 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 70 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | | 400 | 550 |
| Recommended | | | | | | | | | | | | | | | | | | ◎ | ◎ | ◎ | | |

# DREAM DRILLS for HIGH HARDENED STEELS

## RECOMMENDED CUTTING CONDITIONS
推荐加工条件

## DH500 SERIES
without COOLANT HOLES
不带内冷孔

RPM (转速) = (rev./min.)
FEED (进给) = (mm/rev.)

| ISO 公制 | VDI 3323 | Material Description 材料描述 | Vc 钻削速度 (m/min) | Parameter 参数 | Drill Diameter 刃径 (mm) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | 2.5 | 3.0 | 4.0 | 5.0 | 6.0 | 8.0 | 10.0 | 12.0 | 14.0 |
| H | 38 | Hardened steel | 20 | RPM | 2550 | 2120 | 1590 | 1270 | 1060 | 800 | 640 | 530 | 450 |
| | | | | FEED | 0.01~0.03 | 0.01-0.03 | 0.01-0.04 | 0.01-0.04 | 0.01-0.05 | 0.01-0.05 | 0.01-0.05 | 0.01-0.06 | 0.01-0.06 |
| | 39.1 | | 15 | RPM | 1910 | 1590 | 1190 | 950 | 800 | 600 | 480 | 400 | 340 |
| | | | | FEED | 0.01~0.03 | 0.01-0.03 | 0.01-0.04 | 0.01-0.04 | 0.01-0.05 | 0.01-0.05 | 0.01-0.05 | 0.01-0.06 | 0.01-0.06 |
| | 39.3 | | 12 | RPM | 1530 | 1270 | 950 | 760 | 640 | 480 | 380 | 320 | 270 |
| | | | | FEED | 0.01~0.03 | 0.01-0.03 | 0.01-0.04 | 0.01-0.04 | 0.01-0.05 | 0.01-0.05 | 0.01-0.05 | 0.01-0.06 | 0.01-0.06 |

Leading Through Innovation

## SOLID CARBIDE

# GENERAL CARBIDE DRILLS

- For General Purpose
- 普通用途

# SELECTION GUIDE
## 选用指南

HOLEMAKING TOOLS

| SERIES 系列 | D5401 |
|---|---|
| STANDARD 标准 | - |
| LENGTH 长度 | REGULAR 常规 |
| SIZE MIN 最小尺寸 | D1.0 |
| SIZE MAX 最大尺寸 | D13.0 |
| PAGE 页数 | A175 |
| SURFACE TREATMENT 表面处理 | Bright |

# SOLID CARBIDE
# GENERAL CARBIDE DRILLS

For General Purpose
普通用途

Please visit 请访问 globalyg1.com/mat for material search 查看产品材料

◎ : Excellent (优秀) ○ : Good (良好)

Recommended cutting conditions (推荐加工条件) : p. A177

| ISO 公制 | VDI 3323 | Material Description 材料描述 | Composition / Structure / Heat Treatment 成分 / 组织 / 热处理 | | HB 布氏硬度 | HRc 硬度 | D5401 |
|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | About 0.15% C | Annealed | 125 | | ◎ |
| | 2 | | About 0.45% C | Annealed | 190 | 13 | ○ |
| | 3 | | About 0.45% C | Quenched & Tempered | 250 | 25 | |
| | 4 | | About 0.75% C | Annealed | 270 | 28 | |
| | 5 | | About 0.75% C | Quenched & Tempered | 300 | 32 | |
| | 6 | Low alloy steel | | Annealed | 180 | 10 | ○ |
| | 7 | | | Quenched & Tempered | 275 | 29 | |
| | 8 | | | Quenched & Tempered | 300 | 32 | |
| | 9 | | | Quenched & Tempered | 350 | 38 | |
| | 10 | High alloyed steel, and tool steel | | Annealed | 200 | 15 | |
| | 11 | | | Quenched & Tempered | 325 | 35 | |
| M | 12 | Stainless steel | Ferritic / Martensitic | Annealed | 200 | 15 | ○ |
| | 13 | | Martensitic | Quenched & Tempered | 240 | 23 | |
| | 14 | | Austenitic | | 180 | 10 | |
| K | 15 | Grey cast iron | Pearlitic / ferritic | | 180 | 10 | ○ |
| | 16 | | Pearlitic (Martensitic) | | 260 | 26 | |
| | 17 | Nodular cast iron | Ferritic | | 160 | 3 | |
| | 18 | | Pearlitic | | 250 | 25 | |
| | 19 | Malleable cast iron | Ferritic | | 130 | | |
| | 20 | | Pearlitic | | 230 | 21 | |
| N | 21 | Aluminum-wrought alloy | Not Curable | | 60 | | ◎ |
| | 22 | | Curable | Hardened | 100 | | ◎ |
| | 23 | Aluminum-cast, alloyed | ≤ 12% Si, Not Curable | | 75 | | ◎ |
| | 24 | | ≤ 12% Si, Curable | Hardened | 90 | | ◎ |
| | 25 | | > 12% Si, Not Curable | | 130 | | |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | Cutting Alloys, PB>1% | | 110 | | |
| | 27 | | CuZn, CuSnZn (Brass) | | 90 | | |
| | 28 | | CuSn, lead-free copper and electrolytic copper | | 100 | | |
| | 29 | Non Metallic Materials | Duroplastic, Fiber Reinforced Plastic | | | | |
| | 30 | | Rubber, Wood, etc. | | | | |
| S | 31 | Heat Resistant Super Alloys | Fe Based | Annealed | 200 | 15 | |
| | 32 | | | Cured | 280 | 30 | |
| | 33 | | Ni or Co Based | Annealed | 250 | 25 | |
| | 34 | | | Cured | 350 | 38 | |
| | 35 | | | Cast | 320 | 34 | |
| | 36 | Titanium Alloys | Pure Titanium | | 400 Rm | | ○ |
| | 37 | | Alpha + Beta Alloys | Hardened | 1050 Rm | | |
| H | 38 | Hardened steel | | Hardened | 550 | 55 | |
| | 39 | | | Hardened | 630 | 60 | |
| | 40 | Chilled Cast Iron | | Cast | 400 | 42 | |
| | 41 | Hardened Cast Iron | | Hardened | 550 | 55 | |



CARBIDE
HSS
i-ONE DRILLS
i-DREAM DRILLS
DREAM DRILLS -PRO
DREAM DRILLS -GENERAL
DREAM DRILLS -SOFT
DREAM DRILLS -HIGH FEED
DREAM DRILLS -FLAT BOTTOM
DREAM DRILLS -INOX
DREAM DRILLS -ALU
DREAM DRILLS -CFRP
DREAM DRILLS -MQL
DREAM DRILLS for HIGH HARDENED STEELS
GENERAL CARBIDE DRILLS
MULTI-1 DRILLS
GOLD-P DRILLS
SUPER-GP DRILLS
WORM PATTERN DRILLS
STRAIGHT SHANK DRILLS
TAPER SHANK DRILLS
NC-SPOTTING DRILLS
CENTER DRILLS
SPADE DRILLS
REAMERS
COUNTER SINKS
COUNTER BORES
TECHNICAL DATA

# GENERAL CARBIDE DRILLS

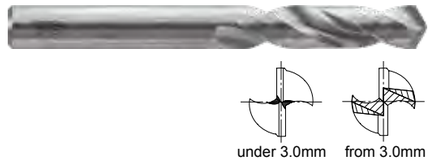
D5401 SERIES

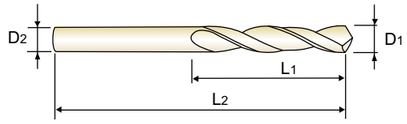
## CARBIDE DRILLS
## 硬质合金钻头

REGULAR
常规

►**Application** : Drilling into steel in general, cast steel, cast iron, chilled cast iron, malleable cast iron, nonferrous heavy metal, non-ferrous light metal, abrasive plastic.

▶ 应用：用于加工一般的钻件, 铸钢, 铸铁, 冷硬铸铁, 可锻铸铁, 非铁重金属, 非铁轻金属, 耐磨塑料等材料




$D_1=D_2$

CARBIDE | 30° | h6 | h8 | 118° | p. A177

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| SHRINK FIT HOLDER | D47 - 72 |
| HYDRAULIC CHUCK | D15 - 46 |
| ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No 型号 | Drill Diameter 刃径 | Flute Length 槽长 | Overall Length 全长 | EDP No 型号 | Drill Diameter 刃径 | Flute Length 槽长 | Overall Length 全长 |
|---|---|---|---|---|---|---|---|
| Bright | $D_1$ | $L_1$ | $L_2$ | Bright | $D_1$ | $L_1$ | $L_2$ |
| D5401010 | 1.0 | 10 | 32 | D5401041 | 4.1 | 34 | 60 |
| D5401011 | 1.1 | 10 | 32 | D5401042 | 4.2 | 34 | 60 |
| D5401012 | 1.2 | 10 | 32 | D5401043 | 4.3 | 34 | 60 |
| D5401013 | 1.3 | 10 | 32 | D5401044 | 4.4 | 34 | 60 |
| D5401014 | 1.4 | 10 | 32 | D5401045 | 4.5 | 34 | 60 |
| D5401015 | 1.5 | 13 | 35 | D5401046 | 4.6 | 38 | 65 |
| D5401016 | 1.6 | 13 | 35 | D5401047 | 4.7 | 38 | 65 |
| D5401017 | 1.7 | 13 | 35 | D5401048 | 4.8 | 38 | 65 |
| D5401018 | 1.8 | 13 | 35 | D5401049 | 4.9 | 38 | 65 |
| D5401019 | 1.9 | 13 | 35 | D5401050 | 5.0 | 38 | 65 |
| D5401020 | 2.0 | 18 | 40 | D5401051 | 5.1 | 38 | 65 |
| D5401021 | 2.1 | 18 | 40 | D5401052 | 5.2 | 38 | 65 |
| D5401022 | 2.2 | 18 | 40 | D5401053 | 5.3 | 38 | 65 |
| D5401023 | 2.3 | 18 | 40 | D5401054 | 5.4 | 38 | 65 |
| D5401024 | 2.4 | 18 | 40 | D5401055 | 5.5 | 38 | 65 |
| D5401025 | 2.5 | 22 | 45 | D5401056 | 5.6 | 40 | 75 |
| D5401026 | 2.6 | 22 | 45 | D5401057 | 5.7 | 40 | 75 |
| D5401027 | 2.7 | 22 | 45 | D5401058 | 5.8 | 40 | 75 |
| D5401028 | 2.8 | 22 | 45 | D5401059 | 5.9 | 40 | 75 |
| D5401029 | 2.9 | 22 | 45 | D5401060 | 6.0 | 40 | 75 |
| D5401030 | 3.0 | 25 | 50 | D5401061 | 6.1 | 40 | 75 |
| D5401031 | 3.1 | 25 | 50 | D5401062 | 6.2 | 40 | 75 |
| D5401032 | 3.2 | 25 | 50 | D5401063 | 6.3 | 40 | 75 |
| D5401033 | 3.3 | 28 | 50 | D5401064 | 6.4 | 40 | 75 |
| D5401034 | 3.4 | 28 | 50 | D5401065 | 6.5 | 40 | 75 |
| D5401035 | 3.5 | 28 | 50 | D5401066 | 6.6 | 46 | 80 |
| D5401036 | 3.6 | 30 | 55 | D5401067 | 6.7 | 46 | 80 |
| D5401037 | 3.7 | 30 | 55 | D5401068 | 6.8 | 46 | 80 |
| D5401038 | 3.8 | 30 | 55 | D5401069 | 6.9 | 46 | 80 |
| D5401039 | 3.9 | 30 | 55 | D5401070 | 7.0 | 46 | 80 |
| D5401040 | 4.0 | 30 | 55 | D5401071 | 7.1 | 46 | 80 |

▶ NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ○ | | | | ○ | | | | | | ○ | | | ○ | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ◎ | ◎ | ◎ | ◎ | | | | | | | | | | | | ○ | | | | | |

# GENERAL CARBIDE DRILLS

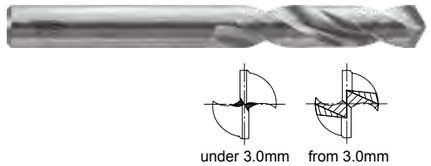
**D5401 SERIES**

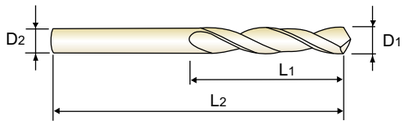
## CARBIDE DRILLS
## 硬质合金钻头

***REGULAR***
常规

►**Application** : Drilling into steel in general, cast steel, cast iron, chilled cast iron, malleable cast iron, nonferrous heavy metal, non-ferrous light metal, abrasive plastic.

▶ 应用：用于加工一般的钻件, 铸钢, 铸铁, 冷硬铸铁, 可锻铸铁, 非铁重金属, 非铁轻金属, 耐磨塑料等材料




$D_1=D_2$

CARBIDE | 30° | h6 | h8 | 118° | p. A177

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| SHRINK FIT HOLDER | D47 - 72 |
| HYDRAULIC CHUCK | D15 - 46 |
| ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No<br>型号<br>Bright | Drill Diameter<br>刃径<br>$D_1$ | Flute Length<br>槽长<br>$L_1$ | Overall Length<br>全长<br>$L_2$ |
|---|---|---|---|
| D5401072 | 7.2 | 46 | 80 |
| D5401073 | 7.3 | 46 | 80 |
| D5401074 | 7.4 | 46 | 80 |
| D5401075 | 7.5 | 46 | 80 |
| D5401076 | 7.6 | 50 | 85 |
| D5401077 | 7.7 | 50 | 85 |
| D5401078 | 7.8 | 50 | 85 |
| D5401079 | 7.9 | 50 | 85 |
| D5401080 | 8.0 | 50 | 85 |
| D5401081 | 8.1 | 50 | 85 |
| D5401082 | 8.2 | 50 | 85 |
| D5401083 | 8.3 | 50 | 85 |
| D5401084 | 8.4 | 50 | 85 |
| D5401085 | 8.5 | 50 | 85 |
| D5401086 | 8.6 | 50 | 95 |
| D5401087 | 8.7 | 50 | 95 |
| D5401088 | 8.8 | 50 | 95 |
| D5401089 | 8.9 | 50 | 95 |
| D5401090 | 9.0 | 50 | 95 |
| D5401091 | 9.1 | 50 | 95 |
| D5401092 | 9.2 | 50 | 95 |
| D5401093 | 9.3 | 50 | 95 |
| D5401094 | 9.4 | 50 | 95 |
| D5401095 | 9.5 | 50 | 95 |
| D5401096 | 9.6 | 50 | 100 |
| D5401097 | 9.7 | 50 | 100 |
| D5401098 | 9.8 | 50 | 100 |
| D5401099 | 9.9 | 50 | 100 |
| D5401100 | 10.0 | 50 | 100 |
| D5401101 | 10.1 | 60 | 115 |

| EDP No<br>型号<br>Bright | Drill Diameter<br>刃径<br>$D_1$ | Flute Length<br>槽长<br>$L_1$ | Overall Length<br>全长<br>$L_2$ |
|---|---|---|---|
| D5401102 | 10.2 | 60 | 115 |
| D5401103 | 10.3 | 60 | 115 |
| D5401104 | 10.4 | 60 | 115 |
| D5401105 | 10.5 | 60 | 115 |
| D5401106 | 10.6 | 60 | 115 |
| D5401107 | 10.7 | 60 | 115 |
| D5401108 | 10.8 | 60 | 115 |
| D5401109 | 10.9 | 60 | 115 |
| D5401110 | 11.0 | 60 | 115 |
| D5401111 | 11.1 | 65 | 120 |
| D5401112 | 11.2 | 65 | 120 |
| D5401113 | 11.3 | 65 | 120 |
| D5401114 | 11.4 | 65 | 120 |
| D5401115 | 11.5 | 65 | 120 |
| D5401116 | 11.6 | 65 | 120 |
| D5401117 | 11.7 | 65 | 120 |
| D5401118 | 11.8 | 65 | 120 |
| D5401119 | 11.9 | 65 | 120 |
| D5401120 | 12.0 | 65 | 120 |
| D5401121 | 12.1 | 65 | 125 |
| D5401122 | 12.2 | 65 | 125 |
| D5401123 | 12.3 | 65 | 125 |
| D5401124 | 12.4 | 65 | 125 |
| D5401125 | 12.5 | 65 | 125 |
| D5401126 | 12.6 | 65 | 125 |
| D5401127 | 12.7 | 65 | 125 |
| D5401128 | 12.8 | 65 | 125 |
| D5401129 | 12.9 | 65 | 125 |
| D5401130 | 13.0 | 65 | 125 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ○ | | | | ○ | | | | | | ○ | | | ○ | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ◎ | ◎ | ◎ | ◎ | | | | | | | | | | | | ○ | | | | | |



# GENERAL CARBIDE DRILLS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工条件

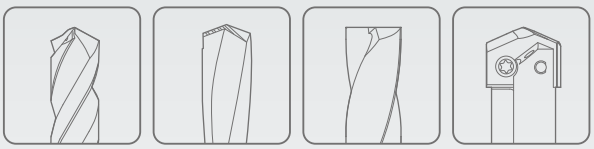
**D5401 SERIES**

## CARBIDE DRILLS
## 硬质合金钻头

RPM (转速) = (rev./min.)
FEED (进给) = (mm/rev.)

| ISO 公制 | VDI 3323 | Material Description 材料描述 | Vc 钻削速度 (m/min) | Parameter 参数 | Drill Diameter 刃径 (mm) 1.0 | 2.0 | Vc 钻削速度 (m/min) | Parameter 参数 | Drill Diameter 刃径 (mm) 3.0 | 4.0 | 5.0 | 6.0 | 8.0 | 10.0 | 12.0 | 13.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | 55 | RPM | 17510 | 8750 | 70 | RPM | 7,430 | 5,570 | 4,460 | 3,710 | 2,790 | 2,230 | 1,860 | 1,710 |
| | | | | FEED | 0.02-0.03 | 0.02-0.04 | | FEED | 0.03-0.05 | 0.03-0..06 | 0.04-0.07 | 0.05-0.08 | 0.07-0.10 | 0.08-0.12 | 0.10-0.14 | 0.12-0.16 |
| | 2 | | 45 | RPM | 14320 | 7160 | 60 | RPM | 6,370 | 4,770 | 3,820 | 3,180 | 2,390 | 1,910 | 1,590 | 1,470 |
| | | | | FEED | 0.02-0.03 | 0.02-0.04 | | FEED | 0.03-0.05 | 0.03-0..06 | 0.04-0.07 | 0.05-0.08 | 0.07-0.10 | 0.08-0.12 | 0.10-0.14 | 0.12-0.16 |
| | 6 | Low alloy steel | 35 | RPM | 11140 | 5570 | 50 | RPM | 5,310 | 3,980 | 3,180 | 2,650 | 1,990 | 1,590 | 1,330 | 1,220 |
| | | | | FEED | 0.02-0.03 | 0.02-0.04 | | FEED | 0.03-0.05 | 0.03-0..06 | 0.04-0.07 | 0.05-0.08 | 0.07-0.10 | 0.08-0.12 | 0.10-0.14 | 0.12-0.16 |
| M | 12 | Stainless steel | 15 | RPM | 4770 | 2390 | 25 | RPM | 2,650 | 1,990 | 1,590 | 1,330 | 990 | 800 | 660 | 610 |
| | | | | FEED | 0.01-0.02 | 0.01-0.03 | | FEED | 0.02-0.04 | 0.02-0.05 | 0.03-0.06 | 0.04-0.07 | 0.06-0.09 | 0.07-0.11 | 0.08-0.12 | 0.09-0.13 |
| K | 15 | Grey cast iron | 25 | RPM | 7960 | 3980 | 45 | RPM | 4,770 | 3,580 | 2,860 | 2,390 | 1,790 | 1,430 | 1,190 | 1,100 |
| | | | | FEED | 0.03-0.04 | 0.03-0.05 | | FEED | 0.04-0.06 | 0.04-0.07 | 0.05-0.08 | 0.06-0.09 | 0.09-0.12 | 0.12-0.16 | 0.14-0.18 | 0.16-0.20 |
| N | 21 | Aluminum-wrought alloy | 100 | RPM | 31830 | 15920 | 140 | RPM | 14,850 | 11,140 | 8,910 | 7,430 | 5,570 | 4,460 | 3,710 | 3,430 |
| | | | | FEED | 0.04-0.05 | 0.04-0.06 | | FEED | 0.05-0.07 | 0.05-0.08 | 0.06-0.09 | 0.08-0.11 | 0.12-0.15 | 0.15-0.19 | 0.19-0.23 | 0.21-0.25 |
| | 22 | | 90 | RPM | 28650 | 14320 | 120 | RPM | 12,730 | 9,550 | 7,640 | 6,370 | 4,770 | 3,820 | 3,180 | 2,940 |
| | | | | FEED | 0.04-0.05 | 0.04-0.06 | | FEED | 0.05-0.07 | 0.05-0.08 | 0.06-0.09 | 0.08-0.11 | 0.12-0.15 | 0.15-0.19 | 0.19-0.23 | 0.21-0.25 |
| | 23 | Aluminum-cast, alloyed | 70 | RPM | 22280 | 11140 | 100 | RPM | 10,610 | 7,960 | 6,370 | 5,310 | 3,980 | 3,180 | 2,650 | 2,450 |
| | | | | FEED | 0.04-0.05 | 0.04-0.06 | | FEED | 0.05-0.07 | 0.05-0.08 | 0.06-0.09 | 0.08-0.11 | 0.12-0.15 | 0.15-0.19 | 0.19-0.23 | 0.21-0.25 |
| | 24 | | 60 | RPM | 19100 | 9550 | 80 | RPM | 8,490 | 6,370 | 5,090 | 4,240 | 3,180 | 2,550 | 2,120 | 1,960 |
| | | | | FEED | 0.04-0.05 | 0.04-0.06 | | FEED | 0.05-0.07 | 0.05-0.08 | 0.06-0.09 | 0.08-0.11 | 0.12-0.15 | 0.15-0.19 | 0.19-0.23 | 0.21-0.25 |
| S | 36 | Titanium Alloys | 10 | RPM | 3180 | 1590 | 20 | RPM | 1,060 | 800 | 640 | 530 | 400 | 320 | 270 | 240 |
| | | | | FEED | 0.01-0.02 | 0.01-0.03 | | FEED | 0.02-0.04 | 0.02-0.05 | 0.03-0.06 | 0.04-0.07 | 0.06-0.09 | 0.07-0.11 | 0.08-0.12 | 0.09-0.13 |

Global Cutting Tool Leader **YG-1**



# HOLEMAKING

YG

Leading Through Innovation

## HSS-PM

# MULTI-1 DRILLS

- For Wide Range of Applications Particularly Stainless Steels and Titanium
- 广泛用途特别是不锈钢和钛

# SELECTION GUIDE
## 选用指南

HOLEMAKING TOOLS

| SERIES 系列 | CDRA03 | CDRA04 |
|---|---|---|
| TOOL MATERIAL 刀具材料 | HSS-PM | |
| LENGTH 长度 | STUB 超短 | JOBBER 细长 |
| SIZE MIN 最小尺寸 | D1.0 | D2.0 |
| SIZE MAX 最大尺寸 | D13.0 | D13.0 |
| PAGE 页数 | **A181** | **A185** |
| SURFACE TREATMENT 表面处理 | TiAlN | |

**HSS-PM**
**MULTI-1 DRILLS**

For Wide Range of Applications Particularly Stainless Steels and Titanium
广泛用途特别是不锈钢和钛

Please visit 请访问
globalyg1.com/mat
for material search 查看产品材料

◎ : Excellent (优秀) ○ : Good (良好)

Recommended cutting conditions (推荐加工条件) : p. A188

| ISO 公制 | VDI 3323 | Material Description 材料描述 | Composition / Structure / Heat Treatment 成分 / 组织 / 热处理 | | HB 布氏硬度 | HRc 硬度 | CDRA03 | CDRA04 |
|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | About 0.15% C | Annealed | 125 | | ◎ | ◎ |
| | 2 | | About 0.45% C | Annealed | 190 | 13 | ◎ | ◎ |
| | 3 | | About 0.45% C | Quenched & Tempered | 250 | 25 | ○ | ○ |
| | 4 | | About 0.75% C | Annealed | 270 | 28 | | |
| | 5 | | About 0.75% C | Quenched & Tempered | 300 | 32 | | |
| | 6 | Low alloy steel | | Annealed | 180 | 10 | ◎ | ◎ |
| | 7 | | | Quenched & Tempered | 275 | 29 | ○ | ○ |
| | 8 | | | Quenched & Tempered | 300 | 32 | | |
| | 9 | | | Quenched & Tempered | 350 | 38 | | |
| | 10 | High alloyed steel, and tool steel | | Annealed | 200 | 15 | | |
| | 11 | | | Quenched & Tempered | 325 | 35 | | |
| M | 12 | Stainless steel | Ferritic / Martensitic | Annealed | 200 | 15 | ○ | ○ |
| | 13 | | Martensitic | Quenched & Tempered | 240 | 23 | | |
| | 14 | | Austenitic | | 180 | 10 | ◎ | ◎ |
| K | 15 | Grey cast iron | Pearlitic / ferritic | | 180 | 10 | ○ | ○ |
| | 16 | | Pearlitic (Martensitic) | | 260 | 26 | | |
| | 17 | Nodular cast iron | Ferritic | | 160 | 3 | | |
| | 18 | | Pearlitic | | 250 | 25 | | |
| | 19 | Malleable cast iron | Ferritic | | 130 | | | |
| | 20 | | Pearlitic | | 230 | 21 | | |
| N | 21 | Aluminum-wrought alloy | Not Curable | | 60 | | ◎ | ◎ |
| | 22 | | Curable | Hardened | 100 | | ◎ | ◎ |
| | 23 | Aluminum-cast, alloyed | ≤ 12% Si, Not Curable | | 75 | | ○ | ○ |
| | 24 | | ≤ 12% Si, Curable | Hardened | 90 | | ○ | ○ |
| | 25 | | > 12% Si, Not Curable | | 130 | | | |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | Cutting Alloys, PB>1% | | 110 | | | |
| | 27 | | CuZn, CuSnZn (Brass) | | 90 | | | |
| | 28 | | CuSn, lead-free copper and electrolytic copper | | 100 | | | |
| | 29 | Non Metallic Materials | Duroplastic, Fiber Reinforced Plastic | | | | | |
| | 30 | | Rubber, Wood, etc. | | | | | |
| S | 31 | Heat Resistant Super Alloys | Fe Based | Annealed | 200 | 15 | | |
| | 32 | | | Cured | 280 | 30 | | |
| | 33 | | Ni or Co Based | Annealed | 250 | 25 | | |
| | 34 | | | Cured | 350 | 38 | | |
| | 35 | | | Cast | 320 | 34 | | |
| | 36 | Titanium Alloys | Pure Titanium | | 400 Rm | | ○ | ○ |
| | 37 | | Alpha + Beta Alloys | Hardened | 1050 Rm | | | |
| H | 38 | Hardened steel | | Hardened | 550 | 55 | | |
| | 39 | | | Hardened | 630 | 60 | | |
| | 40 | Chilled Cast Iron | | Cast | 400 | 42 | | |
| | 41 | Hardened Cast Iron | | Hardened | 550 | 55 | | |





# MULTI-1 DRILLS

**CDRA03 SERIES**

## HSS-PM, MULTI-1 DRILLS — *STUB*
## 粉末高速钢，MULTI-1钻头 — 超短

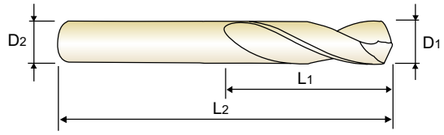
▶ **Application** : Structural steels, Carbon steels, Alloy steels, Pre-hardened steels, Mold steels, Stainless steels, Hardened steels(HRc30~45), Cast iron, Aluminum alloys, Nonferrous alloys, Titanium.

▶ **Advantage** : Point shape to maximize self-centering.
Flute design for the best chip evacuation.
Premium powder materials with excellent toughness.

▶应用：适用于结构钢, 碳素钢, 合金钢, 预硬化钢, 模具钢, 不锈钢, 淬火钢(HRc30~45), 铸铁, 铝合金, 非铁金属合金

▶优点：钻顶的形状使产品具有极佳的自定心能力.
沟槽的设计使产品的排削性能更高.
使用粉末高速钢制作使产品具有更优良的韧性.

up to 1.4mm over 1.4mm




HSS PM | 30° | h6 | h7 | 118° | 135° | p. A188

up to 1.9mm over 1.9mm

Recommended Toolholder — Plain Shank / ER COLLET CHUCK — Page D73-115

Unit(单位) : mm

| EDP No. 型号 | Drill Diameter 刃径 | Shank Diameter 柄径 | Flute Length 槽长 | Overall Length 全长 |
|---|---|---|---|---|
| TiAlN | D1 | D2 | L1 | L2 |
| CDRA03010 | 1.00 | 3 | 6 | 38 |
| CDRA03910 | 1.05 | 3 | 6 | 38 |
| CDRA03011 | 1.10 | 3 | 7 | 39 |
| CDRA03911 | 1.15 | 3 | 7 | 39 |
| CDRA03012 | 1.20 | 3 | 8 | 40 |
| CDRA03912 | 1.25 | 3 | 8 | 40 |
| CDRA03013 | 1.30 | 3 | 8 | 40 |
| CDRA03913 | 1.35 | 3 | 9 | 41 |
| CDRA03014 | 1.40 | 3 | 9 | 41 |
| CDRA03914 | 1.45 | 3 | 9 | 41 |
| CDRA03015 | 1.50 | 3 | 9 | 41 |
| CDRA03915 | 1.55 | 3 | 10 | 42 |
| CDRA03016 | 1.60 | 3 | 10 | 42 |
| CDRA03916 | 1.65 | 3 | 10 | 42 |
| CDRA03017 | 1.70 | 3 | 10 | 42 |
| CDRA03917 | 1.75 | 3 | 11 | 43 |
| CDRA03018 | 1.80 | 3 | 11 | 43 |
| CDRA03918 | 1.85 | 3 | 11 | 43 |
| CDRA03019 | 1.90 | 3 | 11 | 43 |
| CDRA03919 | 1.95 | 3 | 12 | 44 |
| CDRA03020 | 2.00 | 3 | 12 | 44 |
| CDRA03920 | 2.05 | 3 | 12 | 44 |
| CDRA03021 | 2.10 | 3 | 12 | 44 |
| CDRA03921 | 2.15 | 3 | 13 | 45 |

| EDP No. 型号 | Drill Diameter 刃径 | Shank Diameter 柄径 | Flute Length 槽长 | Overall Length 全长 |
|---|---|---|---|---|
| TiAlN | D1 | D2 | L1 | L2 |
| CDRA03022 | 2.20 | 3 | 13 | 45 |
| CDRA03922 | 2.25 | 3 | 13 | 45 |
| CDRA03023 | 2.30 | 3 | 13 | 45 |
| CDRA03923 | 2.35 | 3 | 13 | 45 |
| CDRA03024 | 2.40 | 3 | 14 | 46 |
| CDRA03924 | 2.45 | 3 | 14 | 46 |
| CDRA03025 | 2.50 | 3 | 14 | 46 |
| CDRA03925 | 2.55 | 3 | 14 | 46 |
| CDRA03026 | 2.60 | 3 | 14 | 46 |
| CDRA03926 | 2.65 | 3 | 14 | 46 |
| CDRA03027 | 2.70 | 3 | 16 | 48 |
| CDRA03927 | 2.75 | 3 | 16 | 48 |
| CDRA03028 | 2.80 | 3 | 16 | 48 |
| CDRA03928 | 2.85 | 3 | 16 | 48 |
| CDRA03029 | 2.90 | 3 | 16 | 48 |
| CDRA03929 | 2.95 | 3 | 16 | 48 |
| CDRA03030 | 3.00 | 3 | 16 | 48 |
| CDRA03930 | 3.05 | 4 | 18 | 50 |
| CDRA03031 | 3.10 | 4 | 18 | 50 |
| CDRA03931 | 3.15 | 4 | 18 | 50 |
| CDRA03032 | 3.20 | 4 | 18 | 50 |
| CDRA03932 | 3.25 | 4 | 18 | 50 |
| CDRA03033 | 3.30 | 4 | 18 | 50 |
| CDRA03933 | 3.35 | 4 | 18 | 50 |

▶ NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ○ | | | ◎ | ○ | | | | | ○ | | ◎ | ○ | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron | |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 | |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 | |
| Recommended | ◎ | ◎ | ○ | ○ | | | | | | | | | | | | ○ | | | | | | |

# MULTI-1 DRILLS

**CDRA03 SERIES**

## HSS-PM, MULTI-1 DRILLS

***STUB***

## 粉末高速钢，MULTI-1钻头

**超短**

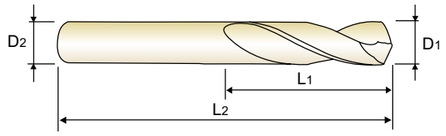
▶ **Application** : Structural steels, Carbon steels, Alloy steels, Pre-hardened steels, Mold steels, Stainless steels, Hardened steels(HRc30~45), Cast iron, Aluminum alloys, Nonferrous alloys, Titanium.

▶ **Advantage** : Point shape to maximize self-centering.
Flute design for the best chip evacuation.
Premium powder materials with excellent toughness.

▶应用： 适用于结构钢, 碳素钢, 合金钢, 预硬化钢, 模具钢, 不锈钢, 淬火钢(HRc30~45), 铸铁, 铝合金, 非铁金属合金

▶优点： 钻顶的形状使产品具有极佳的自定心能力.
沟槽的设计使产品的排削性能更高.
使用粉末高速钢制作使产品具有更优良的韧性.

up to 1.4mm over 1.4mm




HSS PM | 30° | h6 | h7 | 118° | 135°

up to 1.9mm over 1.9mm

p. A188

Recommended Toolholder — Plain Shank — ER COLLET CHUCK — Page D73-115

Unit(单位) : mm

| EDP No. 型号 | Drill Diameter 刃径 D1 | Shank Diameter 柄径 D2 | Flute Length 槽长 L1 | Overall Length 全长 L2 |
|---|---|---|---|---|
| TiAlN | | | | |
| CDRA03034 | 3.40 | 4 | 20 | 52 |
| CDRA03934 | 3.45 | 4 | 20 | 52 |
| CDRA03035 | 3.50 | 4 | 20 | 52 |
| CDRA03935 | 3.55 | 4 | 20 | 52 |
| CDRA03036 | 3.60 | 4 | 20 | 52 |
| CDRA03936 | 3.65 | 4 | 20 | 52 |
| CDRA03037 | 3.70 | 4 | 20 | 52 |
| CDRA03937 | 3.75 | 4 | 20 | 52 |
| CDRA03038 | 3.80 | 4 | 22 | 54 |
| CDRA03938 | 3.85 | 4 | 22 | 54 |
| CDRA03039 | 3.90 | 4 | 22 | 54 |
| CDRA03939 | 3.95 | 4 | 22 | 54 |
| CDRA03040 | 4.00 | 4 | 22 | 54 |
| CDRA03940 | 4.05 | 6 | 22 | 66 |
| CDRA03041 | 4.10 | 6 | 22 | 66 |
| CDRA03941 | 4.15 | 6 | 22 | 66 |
| CDRA03042 | 4.20 | 6 | 22 | 66 |
| CDRA03942 | 4.25 | 6 | 22 | 66 |
| CDRA03043 | 4.30 | 6 | 24 | 68 |
| CDRA03943 | 4.35 | 6 | 24 | 68 |
| CDRA03044 | 4.40 | 6 | 24 | 68 |
| CDRA03944 | 4.45 | 6 | 24 | 68 |
| CDRA03045 | 4.50 | 6 | 24 | 68 |
| CDRA03945 | 4.55 | 6 | 24 | 68 |

| EDP No. 型号 | Drill Diameter 刃径 D1 | Shank Diameter 柄径 D2 | Flute Length 槽长 L1 | Overall Length 全长 L2 |
|---|---|---|---|---|
| TiAlN | | | | |
| CDRA03046 | 4.60 | 6 | 24 | 68 |
| CDRA03946 | 4.65 | 6 | 24 | 68 |
| CDRA03047 | 4.70 | 6 | 24 | 68 |
| CDRA03947 | 4.75 | 6 | 24 | 68 |
| CDRA03048 | 4.80 | 6 | 26 | 70 |
| CDRA03948 | 4.85 | 6 | 26 | 70 |
| CDRA03049 | 4.90 | 6 | 26 | 70 |
| CDRA03949 | 4.95 | 6 | 26 | 70 |
| CDRA03050 | 5.00 | 6 | 26 | 70 |
| CDRA03950 | 5.05 | 6 | 26 | 70 |
| CDRA03051 | 5.10 | 6 | 26 | 70 |
| CDRA03951 | 5.15 | 6 | 26 | 70 |
| CDRA03052 | 5.20 | 6 | 26 | 70 |
| CDRA03952 | 5.25 | 6 | 26 | 70 |
| CDRA03053 | 5.30 | 6 | 26 | 70 |
| CDRA03953 | 5.35 | 6 | 28 | 72 |
| CDRA03054 | 5.40 | 6 | 28 | 72 |
| CDRA03954 | 5.45 | 6 | 28 | 72 |
| CDRA03055 | 5.50 | 6 | 28 | 72 |
| CDRA03955 | 5.55 | 6 | 28 | 72 |
| CDRA03056 | 5.60 | 6 | 28 | 72 |
| CDRA03956 | 5.65 | 6 | 28 | 72 |
| CDRA03057 | 5.70 | 6 | 28 | 72 |
| CDRA03957 | 5.75 | 6 | 28 | 72 |

▶ NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ○ | | | ◎ | ○ | | | | | ○ | | ◎ | ○ | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ◎ | ◎ | ○ | ○ | | | | | | | | | | | | ○ | | | | | |



MULTI-1 DRILLS

CDRA03 SERIES

HSS-PM, MULTI-1 DRILLS

STUB

粉末高速钢，MULTI-1钻头

超短

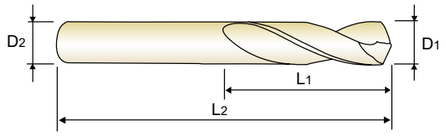
▶ Application : Structural steels, Carbon steels, Alloy steels, Pre-hardened steels, Mold steels, Stainless steels, Hardened steels(HRc30~45), Cast iron, Aluminum alloys, Nonferrous alloys, Titanium.

▶ Advantage : Point shape to maximize self-centering.
Flute design for the best chip evacuation.
Premium powder materials with excellent toughness.

▶应用： 适用于结构钢, 碳素钢, 合金钢, 预硬化钢, 模具钢, 不锈钢, 淬火钢(HRc30~45), 铸铁, 铝合金, 非铁金属合金

▶优点： 钻顶的形状使产品具有极佳的自定心能力.
沟槽的设计使产品的排削性能更高.
使用粉末高速钢制作使产品具有更优良的韧性.

up to 1.4mm over 1.4mm




HSS PM | 30° | h6 | h7 | 118° | 135°

up to 1.9mm over 1.9mm

p. A188

Recommended Toolholder — Plain Shank — ER COLLET CHUCK — Page D73-115

Unit(单位) : mm

| EDP No. 型号 | Drill Diameter 刃径 D1 | Shank Diameter 柄径 D2 | Flute Length 槽长 L1 | Overall Length 全长 L2 |
|---|---|---|---|---|
| TiAlN | | | | |
| CDRA03058 | 5.80 | 6 | 28 | 72 |
| CDRA03958 | 5.85 | 6 | 28 | 72 |
| CDRA03059 | 5.90 | 6 | 28 | 72 |
| CDRA03959 | 5.95 | 6 | 28 | 72 |
| CDRA03060 | 6.00 | 6 | 28 | 72 |
| CDRA03061 | 6.10 | 8 | 31 | 75 |
| CDRA03062 | 6.20 | 8 | 31 | 75 |
| CDRA03063 | 6.30 | 8 | 31 | 75 |
| CDRA03064 | 6.40 | 8 | 31 | 75 |
| CDRA03065 | 6.50 | 8 | 31 | 75 |
| CDRA03066 | 6.60 | 8 | 31 | 75 |
| CDRA03067 | 6.70 | 8 | 31 | 75 |
| CDRA03068 | 6.80 | 8 | 34 | 78 |
| CDRA03069 | 6.90 | 8 | 34 | 78 |
| CDRA03070 | 7.00 | 8 | 34 | 78 |
| CDRA03071 | 7.10 | 8 | 34 | 78 |
| CDRA03072 | 7.20 | 8 | 34 | 78 |
| CDRA03073 | 7.30 | 8 | 34 | 78 |
| CDRA03074 | 7.40 | 8 | 34 | 78 |
| CDRA03075 | 7.50 | 8 | 34 | 78 |
| CDRA03076 | 7.60 | 8 | 37 | 81 |
| CDRA03077 | 7.70 | 8 | 37 | 81 |
| CDRA03078 | 7.80 | 8 | 37 | 81 |
| CDRA03079 | 7.90 | 8 | 37 | 81 |

| EDP No. 型号 | Drill Diameter 刃径 D1 | Shank Diameter 柄径 D2 | Flute Length 槽长 L1 | Overall Length 全长 L2 |
|---|---|---|---|---|
| TiAlN | | | | |
| CDRA03080 | 8.00 | 8 | 37 | 81 |
| CDRA03081 | 8.10 | 10 | 37 | 87 |
| CDRA03082 | 8.20 | 10 | 37 | 87 |
| CDRA03083 | 8.30 | 10 | 37 | 87 |
| CDRA03084 | 8.40 | 10 | 37 | 87 |
| CDRA03085 | 8.50 | 10 | 37 | 87 |
| CDRA03086 | 8.60 | 10 | 40 | 90 |
| CDRA03087 | 8.70 | 10 | 40 | 90 |
| CDRA03088 | 8.80 | 10 | 40 | 90 |
| CDRA03089 | 8.90 | 10 | 40 | 90 |
| CDRA03090 | 9.00 | 10 | 40 | 90 |
| CDRA03091 | 9.10 | 10 | 40 | 90 |
| CDRA03092 | 9.20 | 10 | 40 | 90 |
| CDRA03093 | 9.30 | 10 | 40 | 90 |
| CDRA03094 | 9.40 | 10 | 40 | 90 |
| CDRA03095 | 9.50 | 10 | 40 | 90 |
| CDRA03096 | 9.60 | 10 | 43 | 93 |
| CDRA03097 | 9.70 | 10 | 43 | 93 |
| CDRA03098 | 9.80 | 10 | 43 | 93 |
| CDRA03099 | 9.90 | 10 | 43 | 93 |
| CDRA03100 | 10.00 | 10 | 43 | 93 |
| CDRA03101 | 10.10 | 12 | 43 | 100 |
| CDRA03102 | 10.20 | 12 | 43 | 100 |
| CDRA03103 | 10.30 | 12 | 43 | 100 |

▶ NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ○ | | | ◎ | ○ | | | | | ○ | | ◎ | ○ | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ◎ | ◎ | ○ | ○ | | | | | | | | | | | | ○ | | | | | |

# MULTI-1 DRILLS

## CDRA03 SERIES

## HSS-PM, MULTI-1 DRILLS

***STUB***

## 粉末高速钢，MULTI-1钻头

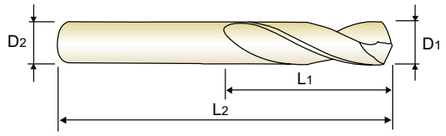
超短

▶ **Application** : Structural steels, Carbon steels, Alloy steels, Pre-hardened steels, Mold steels, Stainless steels, Hardened steels(HRc30~45), Cast iron, Aluminum alloys, Nonferrous alloys, Titanium.

▶ **Advantage** : Point shape to maximize self-centering.
Flute design for the best chip evacuation.
Premium powder materials with excellent toughness.

▶应用：适用于结构钢, 碳素钢, 合金钢, 预硬化钢, 模具钢, 不锈钢, 淬火钢(HRc30~45), 铸铁, 铝合金, 非铁金属合金

▶优点：钻顶的形状使产品具有极佳的自定心能力.
沟槽的设计使产品的排削性能更高.
使用粉末高速钢制作使产品具有更优良的韧性.




HSS PM | 30° | h6 | h7 | 118° | 135° | up to 1.9mm | over 1.9mm

p. A188

Recommended Toolholder — Plain Shank — ER COLLET CHUCK — Page D73-115

Unit(单位) : mm

| EDP No. 型号 | Drill Diameter 刃径 | Shank Diameter 柄径 | Flute Length 槽长 | Overall Length 全长 |
|---|---|---|---|---|
| | TiAlN | $D_1$ | $D_2$ | $L_1$ | $L_2$ |
| CDRA03104 | 10.40 | 12 | 43 | 100 |
| CDRA03105 | 10.50 | 12 | 43 | 100 |
| CDRA03106 | 10.60 | 12 | 43 | 100 |
| CDRA03107 | 10.70 | 12 | 47 | 104 |
| CDRA03108 | 10.80 | 12 | 47 | 104 |
| CDRA03109 | 10.90 | 12 | 47 | 104 |
| CDRA03110 | 11.00 | 12 | 47 | 104 |
| CDRA03111 | 11.10 | 12 | 47 | 104 |
| CDRA03112 | 11.20 | 12 | 47 | 104 |
| CDRA03113 | 11.30 | 12 | 47 | 104 |
| CDRA03114 | 11.40 | 12 | 47 | 104 |
| CDRA03115 | 11.50 | 12 | 47 | 104 |
| CDRA03116 | 11.60 | 12 | 47 | 104 |
| CDRA03117 | 11.70 | 12 | 47 | 104 |

| EDP No. 型号 | Drill Diameter 刃径 | Shank Diameter 柄径 | Flute Length 槽长 | Overall Length 全长 |
|---|---|---|---|---|
| | TiAlN | $D_1$ | $D_2$ | $L_1$ | $L_2$ |
| CDRA03118 | 11.80 | 12 | 47 | 104 |
| CDRA03119 | 11.90 | 12 | 51 | 108 |
| CDRA03120 | 12.00 | 12 | 51 | 108 |
| CDRA03121 | 12.10 | 12 | 51 | 108 |
| CDRA03122 | 12.20 | 12 | 51 | 108 |
| CDRA03123 | 12.30 | 12 | 51 | 108 |
| CDRA03124 | 12.40 | 12 | 51 | 108 |
| CDRA03125 | 12.50 | 12 | 51 | 108 |
| CDRA03126 | 12.60 | 12 | 51 | 108 |
| CDRA03127 | 12.70 | 12 | 51 | 108 |
| CDRA03128 | 12.80 | 12 | 51 | 108 |
| CDRA03129 | 12.90 | 12 | 51 | 108 |
| CDRA03130 | 13.00 | 12 | 51 | 108 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ○ | | | ◎ | ○ | | | | | ○ | | ◎ | ○ | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ◎ | ◎ | ○ | ○ | | | | | | | | | | | | ○ | | | | | |



# MULTI-1 DRILLS

## CDRA04 SERIES

## HSS-PM, MULTI-1 DRILLS

***JOBBER***

## 粉末高速钢，MULTI-1钻头

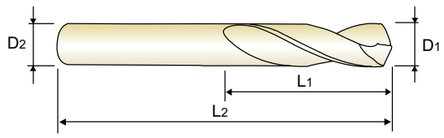
细长

▶ **Application** : Structural steels, Carbon steels, Alloy steels, Pre-hardened steels, Mold steels, Stainless steels, Hardened steels(HRc30~45), Cast iron, Aluminum alloys, Nonferrous alloys, Titanium.

▶ **Advantage** : Point shape to maximize self-centering.
Flute design for the best chip evacuation.
Premium powder materials with excellent toughness.

▶应用：适用于结构钢, 碳素钢, 合金钢, 预硬化钢, 模具钢, 不锈钢, 淬火钢(HRc30~45), 铸铁, 铝合金, 非铁金属合金

▶优点：钻顶的形状使产品具有极佳的自定心能力.
沟槽的设计使产品的排削性能更高.
使用粉末高速钢制作使产品具有更优良的韧性.




HSS PM | 30° | h6 | h7 | 135°

p. A188

Recommended Toolholder — Plain Shank — ER COLLET CHUCK — Page D73-115

Unit(单位) : mm

| EDP No. 型号 | Drill Diameter 刃径 | Shank Diameter 柄径 | Flute Length 槽长 | Overall Length 全长 |
|---|---|---|---|---|
| | TiAlN | $D_1$ | $D_2$ | $L_1$ | $L_2$ |
| CDRA04020 | 2.0 | 3 | 24 | 56 |
| CDRA04021 | 2.1 | 3 | 24 | 56 |
| CDRA04022 | 2.2 | 3 | 25 | 56 |
| CDRA04023 | 2.3 | 3 | 25 | 56 |
| CDRA04024 | 2.4 | 3 | 30 | 61 |
| CDRA04025 | 2.5 | 3 | 30 | 61 |
| CDRA04026 | 2.6 | 3 | 30 | 61 |
| CDRA04027 | 2.7 | 3 | 33 | 64 |
| CDRA04028 | 2.8 | 3 | 33 | 64 |
| CDRA04029 | 2.9 | 3 | 33 | 64 |
| CDRA04030 | 3.0 | 3 | 33 | 64 |
| CDRA04031 | 3.1 | 4 | 36 | 68 |
| CDRA04032 | 3.2 | 4 | 36 | 68 |
| CDRA04033 | 3.3 | 4 | 36 | 68 |
| CDRA04034 | 3.4 | 4 | 39 | 71 |
| CDRA04035 | 3.5 | 4 | 39 | 71 |
| CDRA04036 | 3.6 | 4 | 39 | 71 |
| CDRA04037 | 3.7 | 4 | 39 | 71 |
| CDRA04038 | 3.8 | 4 | 43 | 75 |
| CDRA04039 | 3.9 | 4 | 43 | 75 |
| CDRA04040 | 4.0 | 4 | 43 | 75 |
| CDRA04041 | 4.1 | 6 | 43 | 85 |
| CDRA04042 | 4.2 | 6 | 43 | 85 |
| CDRA04043 | 4.3 | 6 | 47 | 89 |

| EDP No. 型号 | Drill Diameter 刃径 | Shank Diameter 柄径 | Flute Length 槽长 | Overall Length 全长 |
|---|---|---|---|---|
| | TiAlN | $D_1$ | $D_2$ | $L_1$ | $L_2$ |
| CDRA04044 | 4.4 | 6 | 47 | 89 |
| CDRA04045 | 4.5 | 6 | 47 | 89 |
| CDRA04046 | 4.6 | 6 | 47 | 89 |
| CDRA04047 | 4.7 | 6 | 47 | 89 |
| CDRA04048 | 4.8 | 6 | 52 | 94 |
| CDRA04049 | 4.9 | 6 | 52 | 94 |
| CDRA04050 | 5.0 | 6 | 52 | 94 |
| CDRA04051 | 5.1 | 6 | 52 | 94 |
| CDRA04052 | 5.2 | 6 | 52 | 94 |
| CDRA04053 | 5.3 | 6 | 52 | 94 |
| CDRA04054 | 5.4 | 6 | 57 | 99 |
| CDRA04055 | 5.5 | 6 | 57 | 99 |
| CDRA04056 | 5.6 | 6 | 57 | 99 |
| CDRA04057 | 5.7 | 6 | 57 | 99 |
| CDRA04058 | 5.8 | 6 | 57 | 99 |
| CDRA04059 | 5.9 | 6 | 57 | 99 |
| CDRA04060 | 6.0 | 6 | 57 | 99 |
| CDRA04061 | 6.1 | 8 | 63 | 107 |
| CDRA04062 | 6.2 | 8 | 63 | 107 |
| CDRA04063 | 6.3 | 8 | 63 | 107 |
| CDRA04064 | 6.4 | 8 | 63 | 107 |
| CDRA04065 | 6.5 | 8 | 63 | 107 |
| CDRA04066 | 6.6 | 8 | 63 | 107 |
| CDRA04067 | 6.7 | 8 | 63 | 107 |

▶ NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ○ | | | ◎ | ○ | | | | | ○ | | ◎ | ○ | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ◎ | ◎ | ○ | ○ | | | | | | | | | | | | ○ | | | | | |

# MULTI-1 DRILLS

**CDRA04 SERIES**

## HSS-PM, MULTI-1 DRILLS

***JOBBER***

## 粉末高速钢，MULTI-1钻头

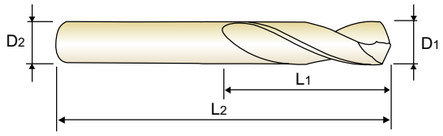
细长

▶ **Application** : Structural steels, Carbon steels, Alloy steels, Pre-hardened steels, Mold steels, Stainless steels, Hardened steels(HRc30~45), Cast iron, Aluminum alloys, Nonferrous alloys, Titanium.

▶ **Advantage** : Point shape to maximize self-centering.
Flute design for the best chip evacuation.
Premium powder materials with excellent toughness.

▶应用： 适用于结构钢, 碳素钢, 合金钢, 预硬化钢, 模具钢, 不锈钢, 淬火钢(HRc30~45), 铸铁, 铝合金, 非铁金属合金

▶优点： 钻顶的形状使产品具有极佳的自定心能力.
沟槽的设计使产品的排削性能更高.
使用粉末高速钢制作使产品具有更优良的韧性.




HSS PM | 30° | h6 | h7 | 135° | p. A188

Recommended Toolholder — Plain Shank — ER COLLET CHUCK — D73-115

Unit(单位) : mm

| EDP No. 型号 | Drill Diameter 刃径 D1 | Shank Diameter 柄径 D2 | Flute Length 槽长 L1 | Overall Length 全长 L2 |
|---|---|---|---|---|
| TiAlN | | | | |
| CDRA04068 | 6.8 | 8 | 69 | 113 |
| CDRA04069 | 6.9 | 8 | 69 | 113 |
| CDRA04070 | 7.0 | 8 | 69 | 113 |
| CDRA04071 | 7.1 | 8 | 69 | 113 |
| CDRA04072 | 7.2 | 8 | 69 | 113 |
| CDRA04073 | 7.3 | 8 | 69 | 113 |
| CDRA04074 | 7.4 | 8 | 69 | 113 |
| CDRA04075 | 7.5 | 8 | 69 | 113 |
| CDRA04076 | 7.6 | 8 | 75 | 119 |
| CDRA04077 | 7.7 | 8 | 75 | 119 |
| CDRA04078 | 7.8 | 8 | 75 | 119 |
| CDRA04079 | 7.9 | 8 | 75 | 119 |
| CDRA04080 | 8.0 | 8 | 75 | 119 |
| CDRA04081 | 8.1 | 10 | 75 | 125 |
| CDRA04082 | 8.2 | 10 | 75 | 125 |
| CDRA04083 | 8.3 | 10 | 75 | 125 |
| CDRA04084 | 8.4 | 10 | 75 | 125 |
| CDRA04085 | 8.5 | 10 | 75 | 125 |
| CDRA04086 | 8.6 | 10 | 81 | 131 |
| CDRA04087 | 8.7 | 10 | 81 | 131 |
| CDRA04088 | 8.8 | 10 | 81 | 131 |
| CDRA04089 | 8.9 | 10 | 81 | 131 |
| CDRA04090 | 9.0 | 10 | 81 | 131 |
| CDRA04091 | 9.1 | 10 | 81 | 131 |
| CDRA04092 | 9.2 | 10 | 81 | 131 |
| CDRA04093 | 9.3 | 10 | 81 | 131 |
| CDRA04094 | 9.4 | 10 | 81 | 131 |
| CDRA04095 | 9.5 | 10 | 81 | 131 |
| CDRA04096 | 9.6 | 10 | 87 | 137 |
| CDRA04097 | 9.7 | 10 | 87 | 137 |
| CDRA04098 | 9.8 | 10 | 87 | 137 |
| CDRA04099 | 9.9 | 10 | 87 | 137 |
| CDRA04100 | 10.0 | 10 | 87 | 137 |
| CDRA04101 | 10.1 | 12 | 87 | 144 |
| CDRA04102 | 10.2 | 12 | 87 | 144 |
| CDRA04103 | 10.3 | 12 | 87 | 144 |
| CDRA04104 | 10.4 | 12 | 87 | 144 |
| CDRA04105 | 10.5 | 12 | 87 | 144 |
| CDRA04106 | 10.6 | 12 | 87 | 144 |
| CDRA04107 | 10.7 | 12 | 94 | 151 |
| CDRA04108 | 10.8 | 12 | 94 | 151 |
| CDRA04109 | 10.9 | 12 | 94 | 151 |
| CDRA04110 | 11.0 | 12 | 94 | 151 |
| CDRA04111 | 11.1 | 12 | 94 | 151 |
| CDRA04112 | 11.2 | 12 | 94 | 151 |
| CDRA04113 | 11.3 | 12 | 94 | 151 |
| CDRA04114 | 11.4 | 12 | 94 | 151 |
| CDRA04115 | 11.5 | 12 | 94 | 151 |

▶ NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | M | | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ○ | | | ◎ | ○ | | | | | ○ | | ◎ | ○ | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ◎ | ◎ | ○ | ○ | | | | | | | | | | | | ○ | | | | | |



MULTI-1 DRILLS

CDRA04 SERIES

HSS-PM, MULTI-1 DRILLS

JOBBER

粉末高速钢，MULTI-1钻头

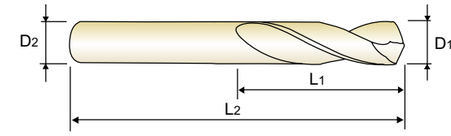
细长

▶ Application : Structural steels, Carbon steels, Alloy steels, Pre-hardened steels, Mold steels, Stainless steels, Hardened steels(HRc30~45), Cast iron, Aluminum alloys, Nonferrous alloys, Titanium.

▶ Advantage : Point shape to maximize self-centering.
Flute design for the best chip evacuation.
Premium powder materials with excellent toughness.

▶应用： 适用于结构钢, 碳素钢, 合金钢, 预硬化钢, 模具钢, 不锈钢, 淬火钢(HRc30~45), 铸铁, 铝合金, 非铁金属合金

▶优点： 钻顶的形状使产品具有极佳的自定心能力.
沟槽的设计使产品的排削性能更高.
使用粉末高速钢制作使产品具有更优良的韧性.




HSS PM | 30° | h6 | h7 | 135° | p. A188

Recommended Toolholder — Plain Shank — ER COLLET CHUCK — D73-115

Unit(单位) : mm

| EDP No. 型号 | Drill Diameter 刃径 D1 | Shank Diameter 柄径 D2 | Flute Length 槽长 L1 | Overall Length 全长 L2 |
|---|---|---|---|---|
| TiAlN | | | | |
| CDRA04116 | 11.6 | 12 | 94 | 151 |
| CDRA04117 | 11.7 | 12 | 94 | 151 |
| CDRA04118 | 11.8 | 12 | 94 | 151 |
| CDRA04119 | 11.9 | 12 | 101 | 158 |
| CDRA04120 | 12.0 | 12 | 101 | 158 |
| CDRA04121 | 12.1 | 12 | 101 | 158 |
| CDRA04122 | 12.2 | 12 | 101 | 158 |
| CDRA04123 | 12.3 | 12 | 101 | 158 |
| CDRA04124 | 12.4 | 12 | 101 | 158 |
| CDRA04125 | 12.5 | 12 | 101 | 158 |
| CDRA04126 | 12.6 | 12 | 101 | 158 |
| CDRA04127 | 12.7 | 12 | 101 | 158 |
| CDRA04128 | 12.8 | 12 | 101 | 158 |
| CDRA04129 | 12.9 | 12 | 101 | 158 |
| CDRA04130 | 13.0 | 12 | 101 | 158 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | M | | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ○ | | | ◎ | ○ | | | | | ○ | | ◎ | ○ | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ◎ | ◎ | ○ | ○ | | | | | | | | | | | | ○ | | | | | |

# MULTI-1 DRILLS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工条件

### CDRA03, CDRA04 SERIES

### MULTI-1 DRILLS
### MULTI-1 钻头

RPM (转速) = (rev./min.)
FEED (进给) = (mm/rev.)

| ISO 公制 | VDI 3323 | Material Description 材料描述 | Vc 钻削速度 (m/min) | Parameter 参数 | Drill Diameter (mm) 1.0 | Vc 钻削速度 (m/min) | Parameter 参数 | Drill Diameter (mm) 2.0 | 3.0 | 4.0 | 5.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | 30 | RPM | 9550 | 40 | RPM | 6370 | 4240 | 3180 | 2550 |
| | | | | FEED | 0.01~0.03 | | FEED | 0.03~0.06 | 0.08~0.12 | 0.09~0.15 | 0.12~0.18 |
| | 2 | | 28 | RPM | 8910 | 35 | RPM | 5570 | 3710 | 2790 | 2230 |
| | | | | FEED | 0.01~0.03 | | FEED | 0.03~0.06 | 0.08~0.12 | 0.09~0.15 | 0.12~0.18 |
| | 3 | | 28 | RPM | 8910 | 35 | RPM | 5570 | 3710 | 2790 | 2230 |
| | | | | FEED | 0.01~0.03 | | FEED | 0.03~0.06 | 0.08~0.12 | 0.09~0.15 | 0.12~0.18 |
| | 6 | Low alloy steel | 28 | RPM | 8910 | 35 | RPM | 5570 | 3710 | 2790 | 2230 |
| | | | | FEED | 0.01~0.03 | | FEED | 0.03~0.06 | 0.08~0.12 | 0.09~0.15 | 0.12~0.18 |
| | 7 | | 23 | RPM | 7320 | 30 | RPM | 4770 | 3180 | 2390 | 1910 |
| | | | | FEED | 0.01~0.03 | | FEED | 0.03~0.05 | 0.06~0.10 | 0.07~0.13 | 0.10~0.16 |
| | 8 | | 20 | RPM | 6370 | 25 | RPM | 3980 | 2650 | 1990 | 1590 |
| | | | | FEED | 0.01-0.02 | | FEED | 0.02-0.05 | 0.03-0.07 | 0.04-0.10 | 0.06-0.12 |
| | 9 | | 15 | RPM | 4770 | 20 | RPM | 3180 | 2120 | 1590 | 1270 |
| | | | | FEED | 0.01-0.02 | | FEED | 0.02-0.05 | 0.03-0.07 | 0.04-0.10 | 0.06-0.12 |
| M | 12 | Stainless steel | 15 | RPM | 4770 | 20 | RPM | 3180 | 2120 | 1590 | 1270 |
| | | | | FEED | 0.01~0.03 | | FEED | 0.03-0.07 | 0.05-0.09 | 0.06-0.12 | 0.09-0.15 |
| | 14 | | 13 | RPM | 4140 | 15 | RPM | 2390 | 1590 | 1190 | 950 |
| | | | | FEED | 0.01-0.02 | | FEED | 0.02-0.05 | 0.03-0.07 | 0.04-0.10 | 0.06-0.12 |
| K | 15 | Grey cast iron | 30 | RPM | 9550 | 40 | RPM | 6370 | 4240 | 3180 | 2550 |
| | | | | FEED | 0.02~0.04 | | FEED | 0.04~0.10 | 0.07~0.13 | 0.09~0.15 | 0.12~0.18 |
| N | 21 | Aluminum-wrought alloy | 68 | RPM | 21650 | 90 | RPM | 14320 | 9550 | 7160 | 5730 |
| | | | | FEED | 0.09~0.13 | | FEED | 0.13~0.17 | 0.23~0.27 | 0.27~0.33 | 0.33~0.39 |
| | 22 | | 68 | RPM | 21650 | 90 | RPM | 14320 | 9550 | 7160 | 5730 |
| | | | | FEED | 0.09~0.13 | | FEED | 0.13~0.17 | 0.23~0.27 | 0.27~0.33 | 0.33~0.39 |
| | 23 | Aluminum-cast, alloyed | 60 | RPM | 19100 | 80 | RPM | 12730 | 8490 | 6370 | 5090 |
| | | | | FEED | 0.09~0.13 | | FEED | 0.13~0.17 | 0.23~0.27 | 0.27~0.33 | 0.33~0.39 |
| | 24 | | 55 | RPM | 17510 | 70 | RPM | 11140 | 7430 | 5570 | 4460 |
| | | | | FEED | 0.06~0.10 | | FEED | 0.10~0.14 | 0.15~0.19 | 0.20~0.26 | 0.24~0.30 |
| S | 36 | Titanium Alloys | 5 | RPM | 1590 | 5 | RPM | 800 | 530 | 400 | 320 |
| | | | | FEED | 0.01~0.02 | | FEED | 0.02~0.05 | 0.03~0.07 | 0.04~0.08 | 0.06~0.12 |

| ISO 公制 | VDI 3323 | Material Description 材料描述 | Vc 钻削速度 (m/min) | Parameter 参数 | Drill Diameter (mm) 6.0 | 8.0 | 10.0 | 12.0 | 13.0 |
|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | 40 | RPM | 2120 | 1590 | 1270 | 1060 | 980 |
| | | | | FEED | 0.14~0.20 | 0.18~0.24 | 0.18~0.28 | 0.20~0.30 | 0.20~0.30 |
| | 2 | | 35 | RPM | 1860 | 1390 | 1110 | 930 | 860 |
| | | | | FEED | 0.14~0.20 | 0.18~0.24 | 0.18~0.28 | 0.20~0.30 | 0.20~0.30 |
| | 3 | | 35 | RPM | 1860 | 1390 | 1110 | 930 | 860 |
| | | | | FEED | 0.14~0.20 | 0.18~0.24 | 0.18~0.28 | 0.20~0.30 | 0.20~0.30 |
| | 6 | Low alloy steel | 35 | RPM | 1860 | 1390 | 1110 | 930 | 860 |
| | | | | FEED | 0.14~0.20 | 0.18~0.24 | 0.18~0.28 | 0.20~0.30 | 0.20~0.30 |
| | 7 | | 30 | RPM | 1590 | 1190 | 950 | 800 | 730 |
| | | | | FEED | 0.12~0.18 | 0.14~0.20 | 0.14~0.24 | 0.16~0.26 | 0.16~0.26 |
| | 8 | | 25 | RPM | 1330 | 990 | 800 | 660 | 610 |
| | | | | FEED | 0.07-0.13 | 0.10-0.20 | 0.12-0.22 | 0.14~0.24 | 0.14~0.24 |
| | 9 | | 20 | RPM | 1060 | 800 | 640 | 530 | 490 |
| | | | | FEED | 0.07-0.13 | 0.10-0.20 | 0.12-0.22 | 0.14~0.24 | 0.14~0.24 |
| M | 12 | Stainless steel | 20 | RPM | 1060 | 800 | 640 | 530 | 490 |
| | | | | FEED | 0.12-0.18 | 0.18-0.24 | 0.20-0.30 | 0.26-0.36 | 0.26-0.36 |
| | 14 | | 15 | RPM | 800 | 600 | 480 | 400 | 370 |
| | | | | FEED | 0.07-0.13 | 0.10-0.20 | 0.12-0.22 | 0.14~0.24 | 0.14~0.24 |
| K | 15 | Grey cast iron | 40 | RPM | 2120 | 1590 | 1270 | 1060 | 980 |
| | | | | FEED | 0.13~0.19 | 0.18~0.24 | 0.20~0.30 | 0.22~0.32 | 0.22~0.32 |
| N | 21 | Aluminum-wrought alloy | 90 | RPM | 4770 | 3580 | 2860 | 2390 | 2200 |
| | | | | FEED | 0.40~0.46 | 0.45~0.51 | 0.51~0.61 | 0.63~0.73 | 0.63~0.73 |
| | 22 | | 90 | RPM | 4770 | 3580 | 2860 | 2390 | 2200 |
| | | | | FEED | 0.40~0.46 | 0.45~0.51 | 0.51~0.61 | 0.63~0.73 | 0.63~0.73 |
| | 23 | Aluminum-cast, alloyed | 80 | RPM | 4240 | 3180 | 2550 | 2120 | 1960 |
| | | | | FEED | 0.40~0.46 | 0.45~0.51 | 0.51~0.61 | 0.63~0.73 | 0.63~0.73 |
| | 24 | | 70 | RPM | 3710 | 2790 | 2230 | 1860 | 1710 |
| | | | | FEED | 0.28~0.34 | 0.30~0.36 | 0.34~0.44 | 0.36~0.46 | 0.36~0.46 |
| S | 36 | Titanium Alloys | 5 | RPM | 270 | 200 | 160 | 130 | 120 |
| | | | | FEED | 0.07~0.13 | 0.09~0.15 | 0.12~0.22 | 0.14~0.24 | 0.14~0.24 |

Leading Through Innovation

## HSS & HSSCo8

# GOLD-P DRILLS

- Same Performance as Full TiN-coated Drills
- 与整个TIN涂层钻头相同的性能

# SELECTION GUIDE
## 选用指南

HOLEMAKING TOOLS

| SERIES 系列 | D1GP103 | D1GP123 | D2GP191 |
|---|---|---|---|
| STANDARD 标准 | JIS | JIS | JIS |
| LENGTH 长度 | REGULAR 细长 | REGULAR 细长 | REGULAR 细长 |
| SIZE MIN 最小尺寸 | D1.0 | D1.0 | D1.0 |
| SIZE MAX 最大尺寸 | D13.0 | D13.0 | D13.0 |
| PAGE 页数 | A192 | A195 | A198 |
| SURFACE TREATMENT 表面处理 | TiN | TiN | TiN |

# HSS & HSSCo8
# GOLD-P DRILLS

Same Performance as Full TiN-coated Drills
与整个TiN涂层钻头相同的性能

Please visit 请访问 globalyg1.com/mat for material search 查看产品材料

◎ : Excellent (优秀) ○ : Good (良好)

Recommended cutting conditions (推荐加工条件) : p. A202

| | ISO 公制 | VDI 3323 | Material Description 材料描述 | Composition / Structure / Heat Treatment 成分 / 组织 / 热处理 | | HB 布氏硬度 | HRc 硬度 | D1GP103 | D1GP123 | D2GP191 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | | Non-alloy steel | About 0.15% C | Annealed | 125 | | ◎ | ◎ | ◎ | 1 | P |
| | 2 | | | About 0.45% C | Annealed | 190 | 13 | ◎ | ◎ | ◎ | 2 | |
| | 3 | | | About 0.45% C | Quenched & Tempered | 250 | 25 | ◎ | ◎ | ◎ | 3 | |
| | 4 | | | About 0.75% C | Annealed | 270 | 28 | ○ | ○ | ○ | 4 | |
| | 5 | | | About 0.75% C | Quenched & Tempered | 300 | 32 | | | | 5 | |
| | 6 | | Low alloy steel | | Annealed | 180 | 10 | ◎ | ◎ | ◎ | 6 | |
| | 7 | | | | Quenched & Tempered | 275 | 29 | ○ | ○ | ○ | 7 | |
| | 8 | | | | Quenched & Tempered | 300 | 32 | ○ | ○ | ○ | 8 | |
| | 9 | | | | Quenched & Tempered | 350 | 38 | | | | 9 | |
| | 10 | | High alloyed steel, and tool steel | | Annealed | 200 | 15 | ○ | ○ | ○ | 10 | |
| | 11 | | | | Quenched & Tempered | 325 | 35 | | | | 11 | |
| M | 12 | | Stainless steel | Ferritic / Martensitic | Annealed | 200 | 15 | ◎ | ◎ | ◎ | 12 | M |
| | 13 | | | Martensitic | Quenched & Tempered | 240 | 23 | ○ | ○ | ○ | 13 | |
| | 14 | | | Austenitic | | 180 | 10 | ○ | ○ | ○ | 14 | |
| K | 15 | | Grey cast iron | Pearlitic / ferritic | | 180 | 10 | ○ | ○ | ○ | 15 | K |
| | 16 | | | Pearlitic (Martensitic) | | 260 | 26 | ○ | ○ | ○ | 16 | |
| | 17 | | Nodular cast iron | Ferritic | | 160 | 3 | ○ | ○ | ○ | 17 | |
| | 18 | | | Pearlitic | | 250 | 25 | | | | 18 | |
| | 19 | | Malleable cast iron | Ferritic | | 130 | | ○ | ○ | ○ | 19 | |
| | 20 | | | Pearlitic | | 230 | 21 | | | | 20 | |
| N | 21 | | Aluminum-wrought alloy | Not Curable | | 60 | | ○ | ○ | ○ | 21 | N |
| | 22 | | | Curable | Hardened | 100 | | ○ | ○ | ○ | 22 | |
| | 23 | | Aluminum-cast, alloyed | ≤ 12% Si, Not Curable | | 75 | | ○ | ○ | ○ | 23 | |
| | 24 | | | ≤ 12% Si, Curable | Hardened | 90 | | | | | 24 | |
| | 25 | | | > 12% Si, Not Curable | | 130 | | | | | 25 | |
| | 26 | | Copper and Copper Alloys (Bronze / Brass) | Cutting Alloys, PB>1% | | 110 | | | | | 26 | |
| | 27 | | | CuZn, CuSnZn (Brass) | | 90 | | | | | 27 | |
| | 28 | | | CuSn, lead-free copper and electrolytic copper | | 100 | | | | | 28 | |
| | 29 | | Non Metallic Materials | Duroplastic, Fiber Reinforced Plastic | | | | ○ | ○ | ○ | 29 | |
| | 30 | | | Rubber, Wood, etc. | | | | | | | 30 | |
| S | 31 | | Heat Resistant Super Alloys | Fe Based | Annealed | 200 | 15 | | | | 31 | S |
| | 32 | | | | Cured | 280 | 30 | | | | 32 | |
| | 33 | | | Ni or Co Based | Annealed | 250 | 25 | | | | 33 | |
| | 34 | | | | Cured | 350 | 38 | | | | 34 | |
| | 35 | | | | Cast | 320 | 34 | | | | 35 | |
| | 36 | | Titanium Alloys | Pure Titanium | | 400 Rm | | ○ | ○ | ○ | 36 | |
| | 37 | | | Alpha + Beta Alloys | Hardened | 1050 Rm | | | | | 37 | |
| H | 38 | | Hardened steel | | Hardened | 550 | 55 | | | | 38 | H |
| | 39 | | | | Hardened | 630 | 60 | | | | 39 | |
| | 40 | | Chilled Cast Iron | | Cast | 400 | 42 | | | | 40 | |
| | 41 | | Hardened Cast Iron | | Hardened | 550 | 55 | | | | 41 | |

## GOLD-P DRILL SETS

| SET EDP No. SET号 | D1GP103SET1 | D1GP103SET2 | D2GP191SET1 | D2GP191SET2 |
|---|---|---|---|---|
| SIZE 尺寸 | 1.0-10.0x0.5mm step | 1.0-13.0x0.5mm step | 1.0-10.0x0.5mm step | 1.0-13.0x0.5mm step |
| Q'TY 数量 | 19 pcs | 25 pcs | 19 pcs | 25 pcs |

CARBIDE
HSS
i-ONE DRILLS
i-DREAM DRILLS
DREAM DRILLS -PRO
DREAM DRILLS -GENERAL
DREAM DRILLS -SOFT
DREAM DRILLS -HIGH FEED
DREAM DRILLS -FLAT BOTTOM
DREAM DRILLS -INOX
DREAM DRILLS -ALU
DREAM DRILLS -CFRP
DREAM DRILLS -MQL
DREAM DRILLS for HIGH HARDENED STEELS
GENERAL CARBIDE DRILLS
MULTI-1 DRILLS
GOLD-P DRILLS
SUPER-GP DRILLS
WORM PATTERN DRILLS
STRAIGHT SHANK DRILLS
TAPER SHANK DRILLS
NC-SPOTTING DRILLS
CENTER DRILLS
SPADE DRILLS
REAMERS
COUNTER SINKS
COUNTER BORES
TECHNICAL DATA

# GOLD-P DRILLS

## D1GP103 SERIES

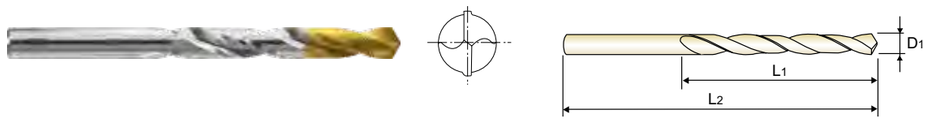
## HSS, STRAIGHT SHANK DRILLS GOLD-P COATED

*REGULAR* 细长

## HSS，直柄GOLD-P涂层钻头

- ▶**Flute Geometry** : Right hand helix
- ▶**Point Angle** : 118°, Normal point
- ▶**Surface Treatment** : TiN-tip coating
- ▶**Application** : Drilling in Steels, Cast Steels Alloyed and Non-Alloyed, Stainless Steels, Aluminum and Titanium

- ▶刃形：右螺旋形设计
- ▶钻顶角：118°, 一般钻顶
- ▶表面处理：光亮体但在实际作业的前端处使用TiN涂层.
- ▶应用：适用于钢，铸铁合金和非合金，灰铸铁，不锈钢，铝和钛




JIS | HSS | 20~30° | h8 | 118° | p. A202

Recommended ToolHolder — Plain Shank — ER COLLET CHUCK — Page D73-115

Unit(单位) : mm

| EDP No. 型号 | Drill Diameter 刃径 D1 | Flute Length 槽长 L1 | Overall Length 全长 L2 |
|---|---|---|---|
| D1GP103010 | 1.0 | 18 | 40 |
| D1GP103011 | 1.1 | 20 | 42 |
| D1GP103012 | 1.2 | 20 | 42 |
| D1GP103013 | 1.3 | 22 | 45 |
| D1GP103014 | 1.4 | 23 | 48 |
| D1GP103015 | 1.5 | 23 | 48 |
| D1GP103016 | 1.6 | 25 | 50 |
| D1GP103017 | 1.7 | 25 | 50 |
| D1GP103018 | 1.8 | 28 | 52 |
| D1GP103019 | 1.9 | 28 | 52 |
| D1GP103020 | 2.0 | 29 | 55 |
| D1GP103021 | 2.1 | 29 | 55 |
| D1GP103022 | 2.2 | 33 | 58 |
| D1GP103023 | 2.3 | 33 | 58 |
| D1GP103024 | 2.4 | 35 | 61 |
| D1GP103025 | 2.5 | 35 | 61 |
| D1GP103026 | 2.6 | 37 | 64 |
| D1GP103027 | 2.7 | 37 | 64 |
| D1GP103028 | 2.8 | 39 | 67 |
| D1GP103029 | 2.9 | 42 | 71 |
| D1GP103030 | 3.0 | 42 | 71 |
| D1GP103031 | 3.1 | 42 | 71 |
| D1GP103032 | 3.2 | 42 | 71 |
| D1GP103033 | 3.3 | 45 | 73 |
| D1GP103034 | 3.4 | 45 | 73 |
| D1GP103035 | 3.5 | 45 | 73 |

| EDP No. 型号 | Drill Diameter 刃径 D1 | Flute Length 槽长 L1 | Overall Length 全长 L2 |
|---|---|---|---|
| D1GP103036 | 3.6 | 48 | 76 |
| D1GP103037 | 3.7 | 48 | 76 |
| D1GP103038 | 3.8 | 48 | 76 |
| D1GP103039 | 3.9 | 51 | 79 |
| D1GP103040 | 4.0 | 54 | 83 |
| D1GP103041 | 4.1 | 54 | 83 |
| D1GP103042 | 4.2 | 54 | 83 |
| D1GP103043 | 4.3 | 54 | 83 |
| D1GP103044 | 4.4 | 56 | 86 |
| D1GP103045 | 4.5 | 56 | 86 |
| D1GP103046 | 4.6 | 56 | 86 |
| D1GP103047 | 4.7 | 59 | 89 |
| D1GP103048 | 4.8 | 59 | 89 |
| D1GP103049 | 4.9 | 62 | 92 |
| D1GP103050 | 5.0 | 62 | 92 |
| D1GP103051 | 5.1 | 62 | 92 |
| D1GP103052 | 5.2 | 64 | 95 |
| D1GP103053 | 5.3 | 64 | 95 |
| D1GP103054 | 5.4 | 64 | 95 |
| D1GP103055 | 5.5 | 64 | 95 |
| D1GP103056 | 5.6 | 67 | 98 |
| D1GP103057 | 5.7 | 67 | 98 |
| D1GP103058 | 5.8 | 67 | 98 |
| D1GP103059 | 5.9 | 67 | 98 |
| D1GP103060 | 6.0 | 70 | 102 |
| D1GP103061 | 6.1 | 70 | 102 |

▶ NEXT PAGE 下页

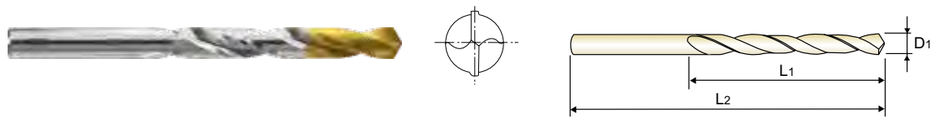
◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ○ | | ◎ | ○ | ○ | | ○ | | ◎ | ○ | ○ | ○ | ○ | ○ | | ○ | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | | | | ○ | | | | | | | ○ | | | | | |



GOLD-P DRILLS
D1GP103 SERIES
HSS, STRAIGHT SHANK DRILLS GOLD-P COATED
REGULAR 细长
HSS，直柄GOLD-P涂层钻头
▶Flute Geometry : Right hand helix
▶Point Angle : 118°, Normal point
▶Surface Treatment : TiN-tip coating
▶Application : Drilling in Steels, Cast Steels Alloyed and Non-Alloyed, Stainless Steels, Aluminum and Titanium
▶刃形：右螺旋形设计
▶钻顶角：118°, 一般钻顶
▶表面处理：光亮体但在实际作业的前端处使用TiN涂层.
▶应用：适用于钢，铸铁合金和非合金，灰铸铁，不锈钢，铝和钛




JIS | HSS | 20~30° | h8 | 118° | p. A202
Recommended ToolHolder — Plain Shank — ER COLLET CHUCK — Page D73-115
Unit(单位) : mm

| EDP No. 型号 | Drill Diameter 刃径 D1 | Flute Length 槽长 L1 | Overall Length 全长 L2 |
|---|---|---|---|
| D1GP103062 | 6.2 | 70 | 102 |
| D1GP103063 | 6.3 | 70 | 102 |
| D1GP103064 | 6.4 | 73 | 105 |
| D1GP103065 | 6.5 | 73 | 105 |
| D1GP103066 | 6.6 | 73 | 105 |
| D1GP103067 | 6.7 | 73 | 105 |
| D1GP103068 | 6.8 | 73 | 105 |
| D1GP103069 | 6.9 | 73 | 105 |
| D1GP103070 | 7.0 | 73 | 105 |
| D1GP103071 | 7.1 | 75 | 108 |
| D1GP103072 | 7.2 | 75 | 108 |
| D1GP103073 | 7.3 | 75 | 108 |
| D1GP103074 | 7.4 | 78 | 111 |
| D1GP103075 | 7.5 | 78 | 111 |
| D1GP103076 | 7.6 | 78 | 111 |
| D1GP103077 | 7.7 | 81 | 114 |
| D1GP103078 | 7.8 | 81 | 114 |
| D1GP103079 | 7.9 | 81 | 114 |
| D1GP103080 | 8.0 | 81 | 114 |
| D1GP103081 | 8.1 | 84 | 117 |
| D1GP103082 | 8.2 | 84 | 117 |
| D1GP103083 | 8.3 | 84 | 117 |
| D1GP103084 | 8.4 | 87 | 121 |
| D1GP103085 | 8.5 | 87 | 121 |
| D1GP103086 | 8.6 | 87 | 121 |
| D1GP103087 | 8.7 | 87 | 121 |

| EDP No. 型号 | Drill Diameter 刃径 D1 | Flute Length 槽长 L1 | Overall Length 全长 L2 |
|---|---|---|---|
| D1GP103088 | 8.8 | 89 | 124 |
| D1GP103089 | 8.9 | 89 | 124 |
| D1GP103090 | 9.0 | 89 | 124 |
| D1GP103091 | 9.1 | 89 | 124 |
| D1GP103092 | 9.2 | 92 | 127 |
| D1GP103093 | 9.3 | 92 | 127 |
| D1GP103094 | 9.4 | 92 | 127 |
| D1GP103095 | 9.5 | 92 | 127 |
| D1GP103096 | 9.6 | 95 | 130 |
| D1GP103097 | 9.7 | 95 | 130 |
| D1GP103098 | 9.8 | 95 | 130 |
| D1GP103099 | 9.9 | 95 | 130 |
| D1GP103100 | 10.0 | 95 | 130 |
| D1GP103101 | 10.1 | 98 | 133 |
| D1GP103102 | 10.2 | 98 | 133 |
| D1GP103103 | 10.3 | 98 | 133 |
| D1GP103104 | 10.4 | 98 | 133 |
| D1GP103105 | 10.5 | 100 | 137 |
| D1GP103106 | 10.6 | 100 | 137 |
| D1GP103107 | 10.7 | 100 | 137 |
| D1GP103108 | 10.8 | 103 | 140 |
| D1GP103109 | 10.9 | 103 | 140 |
| D1GP103110 | 11.0 | 103 | 140 |
| D1GP103111 | 11.1 | 103 | 140 |
| D1GP103112 | 11.2 | 106 | 143 |
| D1GP103113 | 11.3 | 106 | 143 |

▶ NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ○ | | ◎ | ○ | ○ | | ○ | | ◎ | ○ | ○ | ○ | ○ | ○ | | ○ | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | | | | ○ | | | | | | | ○ | | | | | |

# GOLD-P DRILLS

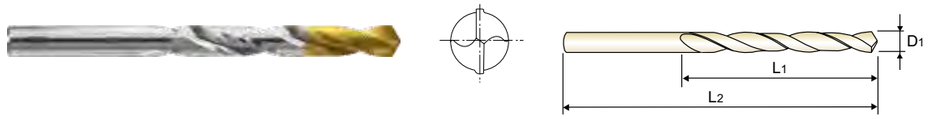
## D1GP103 SERIES

## HSS, STRAIGHT SHANK DRILLS GOLD-P COATED — REGULAR

## HSS，直柄GOLD-P涂层钻头 — 细长

▶**Flute Geometry** : Right hand helix
▶**Point Angle** : 118˚, Normal point
▶**Surface Treatment** : TiN-tip coating
▶**Application** : Drilling in Steels, Cast Steels Alloyed and Non-Alloyed, Stainless Steels, Aluminum and Titanium

▶刃形：右螺旋形设计
▶钻顶角：118°, 一般钻顶
▶表面处理：光亮体但在实际作业的前端处使用TiN涂层.
▶应用：适用于钢，铸铁合金和非合金，灰铸铁，不锈钢，铝和钛




JIS | HSS | 20~30° | h8 | 118° | p. A202

Recommended ToolHolder — Plain Shank — ER COLLET CHUCK — Page D73 - 115

Unit(单位) : mm

| EDP No. 型号 | Drill Diameter 刃径 D1 | Flute Length 槽长 L1 | Overall Length 全长 L2 |
|---|---|---|---|
| D1GP103114 | 11.4 | 106 | 143 |
| D1GP103115 | 11.5 | 106 | 143 |
| D1GP103116 | 11.6 | 109 | 146 |
| D1GP103117 | 11.7 | 109 | 146 |
| D1GP103118 | 11.8 | 109 | 146 |
| D1GP103119 | 11.9 | 109 | 146 |
| D1GP103120 | 12.0 | 111 | 149 |
| D1GP103121 | 12.1 | 111 | 149 |
| D1GP103122 | 12.2 | 111 | 149 |
| D1GP103123 | 12.3 | 111 | 149 |
| D1GP103124 | 12.4 | 114 | 152 |
| D1GP103125 | 12.5 | 114 | 152 |
| D1GP103126 | 12.6 | 114 | 152 |
| D1GP103127 | 12.7 | 114 | 152 |
| D1GP103128 | 12.8 | 114 | 152 |
| D1GP103129 | 12.9 | 114 | 152 |
| D1GP103130 | 13.0 | 114 | 152 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ○ | | ◎ | ○ | ○ | | ○ | | ◎ | ○ | ○ | ○ | ○ | ○ | | ○ | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | | | | ○ | | | | | | | ○ | | | | | |





# GOLD-P DRILLS

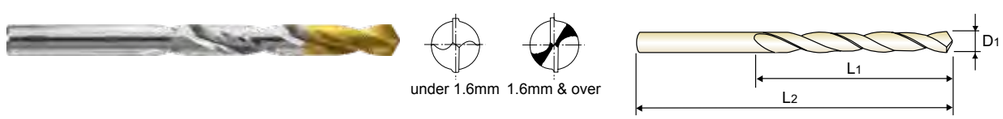
## D1GP123 SERIES

## HSS, STRAIGHT SHANK DRILLS GOLD-P COATED — REGULAR

## HSS，直柄GOLD-P涂层钻头 — 细长

▶**Flute Geometry** : Right hand helix
▶**Point Angle** : 118˚
Under 1.6mm : Normal point
1.6mm & over : Split point
▶**Surface Treatment** : TiN-tip coating
▶**Application** : Drilling in Steels, Cast Steels Alloyed and Non-Alloyed, Stainless Steels, Aluminum and Titanium

▶刃形：右螺旋形设计
▶钻顶角：118°
小于 1.6mm：一般钻顶
大于 1.6mm：分割点
▶表面处理：TiN-tip 涂层
▶应用：适用于钢，铸铁合金和非合金，灰铸铁，不锈钢，铝和钛




JIS | HSS | 20~30° | h8 | 118° | p. A202

Recommended ToolHolder — Plain Shank — ER COLLET CHUCK — Page D73 - 115

Unit(单位) : mm

| EDP No. 型号 | Drill Diameter 刃径 D1 | Flute Length 槽长 L1 | Overall Length 全长 L2 |
|---|---|---|---|
| D1GP123010 | 1.0 | 18 | 40 |
| D1GP123012 | 1.2 | 20 | 42 |
| D1GP123013 | 1.3 | 22 | 45 |
| D1GP123014 | 1.4 | 23 | 48 |
| D1GP123015 | 1.5 | 23 | 48 |
| D1GP123016 | 1.6 | 25 | 50 |
| D1GP123017 | 1.7 | 25 | 50 |
| D1GP123018 | 1.8 | 28 | 52 |
| D1GP123019 | 1.9 | 28 | 52 |
| D1GP123020 | 2.0 | 29 | 55 |
| D1GP123021 | 2.1 | 29 | 55 |
| D1GP123022 | 2.2 | 33 | 58 |
| D1GP123023 | 2.3 | 33 | 58 |
| D1GP123024 | 2.4 | 35 | 61 |
| D1GP123025 | 2.5 | 35 | 61 |
| D1GP123026 | 2.6 | 37 | 64 |
| D1GP123027 | 2.7 | 37 | 64 |
| D1GP123028 | 2.8 | 39 | 67 |
| D1GP123029 | 2.9 | 42 | 71 |
| D1GP123030 | 3.0 | 42 | 71 |
| D1GP123031 | 3.1 | 42 | 71 |
| D1GP123032 | 3.2 | 42 | 71 |
| D1GP123033 | 3.3 | 45 | 73 |
| D1GP123034 | 3.4 | 45 | 73 |
| D1GP123035 | 3.5 | 45 | 73 |
| D1GP123036 | 3.6 | 48 | 76 |
| D1GP123037 | 3.7 | 48 | 76 |
| D1GP123038 | 3.8 | 48 | 76 |
| D1GP123039 | 3.9 | 51 | 79 |
| D1GP123040 | 4.0 | 54 | 83 |
| D1GP123041 | 4.1 | 54 | 83 |
| D1GP123042 | 4.2 | 54 | 83 |
| D1GP123043 | 4.3 | 54 | 83 |
| D1GP123044 | 4.4 | 56 | 86 |
| D1GP123045 | 4.5 | 56 | 86 |
| D1GP123046 | 4.6 | 56 | 86 |
| D1GP123047 | 4.7 | 59 | 89 |
| D1GP123048 | 4.8 | 59 | 89 |
| D1GP123049 | 4.9 | 62 | 92 |
| D1GP123050 | 5.0 | 62 | 92 |
| D1GP123051 | 5.1 | 62 | 92 |
| D1GP123052 | 5.2 | 64 | 95 |
| D1GP123053 | 5.3 | 64 | 95 |
| D1GP123054 | 5.4 | 64 | 95 |
| D1GP123055 | 5.5 | 64 | 95 |
| D1GP123056 | 5.6 | 67 | 98 |
| D1GP123057 | 5.7 | 67 | 98 |
| D1GP123058 | 5.8 | 67 | 98 |
| D1GP123059 | 5.9 | 67 | 98 |
| D1GP123060 | 6.0 | 70 | 102 |
| D1GP123061 | 6.1 | 70 | 102 |
| D1GP123062 | 6.2 | 70 | 102 |

▶ NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ○ | | ◎ | ○ | ○ | | ○ | | ◎ | ○ | ○ | ○ | ○ | ○ | | ○ | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | | | | ○ | | | | | | | ○ | | | | | |

# GOLD-P DRILLS

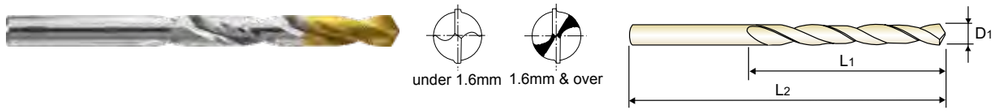
## D1GP123 SERIES

## HSS, STRAIGHT SHANK DRILLS GOLD-P COATED — *REGULAR*

## HSS，直柄GOLD-P涂层钻头 — 细长

▶**Flute Geometry** : Right hand helix
▶**Point Angle** : 118˚
Under 1.6mm : Normal point
1.6mm & over : Split point
▶**Surface Treatment** : TiN-tip coating
▶**Application** : Drilling in Steels, Cast Steels Alloyed and Non-Alloyed, Stainless Steels, Aluminum and Titanium

▶刃形：右螺旋形设计
▶钻顶角：118°
小于 1.6mm：一般钻顶
大于 1.6mm：分割点
▶表面处理：TiN-tip 涂层
▶应用：适用于钢，铸铁合金和非合金，灰铸铁，不锈钢，铝和钛




JIS | HSS | 20~30° | h8 | 118° | p. A202

Recommended ToolHolder — Plain Shank: ER COLLET CHUCK — Page: D73-115

Unit(单位) : mm

| EDP No. 型号 | Drill Diameter 刃径 D1 | Flute Length 槽长 L1 | Overall Length 全长 L2 |
|---|---|---|---|
| D1GP123063 | 6.3 | 70 | 102 |
| D1GP123064 | 6.4 | 73 | 105 |
| D1GP123065 | 6.5 | 73 | 105 |
| D1GP123066 | 6.6 | 73 | 105 |
| D1GP123067 | 6.7 | 73 | 105 |
| D1GP123068 | 6.8 | 73 | 105 |
| D1GP123069 | 6.9 | 73 | 105 |
| D1GP123070 | 7.0 | 73 | 105 |
| D1GP123071 | 7.1 | 75 | 108 |
| D1GP123072 | 7.2 | 75 | 108 |
| D1GP123073 | 7.3 | 75 | 108 |
| D1GP123074 | 7.4 | 78 | 111 |
| D1GP123075 | 7.5 | 78 | 111 |
| D1GP123076 | 7.6 | 78 | 111 |
| D1GP123077 | 7.7 | 81 | 114 |
| D1GP123078 | 7.8 | 81 | 114 |
| D1GP123079 | 7.9 | 81 | 114 |
| D1GP123080 | 8.0 | 81 | 114 |
| D1GP123081 | 8.1 | 84 | 117 |
| D1GP123082 | 8.2 | 84 | 117 |
| D1GP123083 | 8.3 | 84 | 117 |
| D1GP123084 | 8.4 | 87 | 121 |
| D1GP123085 | 8.5 | 87 | 121 |
| D1GP123086 | 8.6 | 87 | 121 |
| D1GP123087 | 8.7 | 87 | 121 |
| D1GP123088 | 8.8 | 89 | 124 |
| D1GP123089 | 8.9 | 89 | 124 |
| D1GP123090 | 9.0 | 89 | 124 |
| D1GP123091 | 9.1 | 89 | 124 |
| D1GP123092 | 9.2 | 92 | 127 |
| D1GP123093 | 9.3 | 92 | 127 |
| D1GP123094 | 9.4 | 92 | 127 |
| D1GP123095 | 9.5 | 92 | 127 |
| D1GP123096 | 9.6 | 95 | 130 |
| D1GP123097 | 9.7 | 95 | 130 |
| D1GP123098 | 9.8 | 95 | 130 |
| D1GP123099 | 9.9 | 95 | 130 |
| D1GP123100 | 10.0 | 95 | 130 |
| D1GP123101 | 10.1 | 98 | 133 |
| D1GP123102 | 10.2 | 98 | 133 |
| D1GP123103 | 10.3 | 98 | 133 |
| D1GP123104 | 10.4 | 98 | 133 |
| D1GP123105 | 10.5 | 100 | 137 |
| D1GP123106 | 10.6 | 100 | 137 |
| D1GP123107 | 10.7 | 100 | 137 |
| D1GP123108 | 10.8 | 103 | 140 |
| D1GP123109 | 10.9 | 103 | 140 |
| D1GP123110 | 11.0 | 103 | 140 |
| D1GP123111 | 11.1 | 103 | 140 |
| D1GP123112 | 11.2 | 106 | 143 |
| D1GP123113 | 11.3 | 106 | 143 |
| D1GP123114 | 11.4 | 106 | 143 |

▶ NEXT PAGE 下页

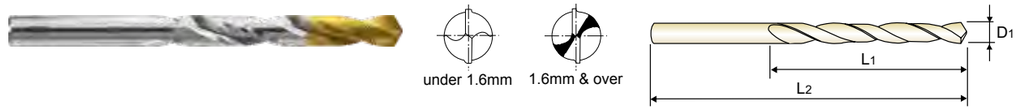
◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ○ | | ◎ | ○ | ○ | | ○ | | ◎ | ○ | ○ | ○ | ○ | ○ | | ○ | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | | | | ○ | | | | | | | ○ | | | | | |



GOLD-P DRILLS
D1GP123 SERIES
HSS, STRAIGHT SHANK DRILLS GOLD-P COATED — REGULAR
HSS，直柄GOLD-P涂层钻头 — 细长
▶Flute Geometry : Right hand helix
▶Point Angle : 118˚
Under 1.6mm : Normal point
1.6mm & over : Split point
▶Surface Treatment : TiN-tip coating
▶Application : Drilling in Steels, Cast Steels Alloyed and Non-Alloyed, Stainless Steels, Aluminum and Titanium
▶刃形：右螺旋形设计
▶钻顶角：118°
小于 1.6mm：一般钻顶
大于 1.6mm：分割点
▶表面处理：TiN-tip 涂层
▶应用：适用于钢，铸铁合金和非合金，灰铸铁，不锈钢，铝和钛




JIS | HSS | 20~30° | h8 | 118° | p. A202
Recommended ToolHolder — Plain Shank: ER COLLET CHUCK — Page: D73-115
Unit(单位) : mm

| EDP No. 型号 | Drill Diameter 刃径 D1 | Flute Length 槽长 L1 | Overall Length 全长 L2 |
|---|---|---|---|
| D1GP123115 | 11.5 | 106 | 143 |
| D1GP123116 | 11.6 | 109 | 146 |
| D1GP123117 | 11.7 | 109 | 146 |
| D1GP123118 | 11.8 | 109 | 146 |
| D1GP123119 | 11.9 | 109 | 146 |
| D1GP123120 | 12.0 | 111 | 149 |
| D1GP123121 | 12.1 | 111 | 149 |
| D1GP123122 | 12.2 | 111 | 149 |
| D1GP123123 | 12.3 | 111 | 149 |
| D1GP123124 | 12.4 | 114 | 152 |
| D1GP123125 | 12.5 | 114 | 152 |
| D1GP123126 | 12.6 | 114 | 152 |
| D1GP123127 | 12.7 | 114 | 152 |
| D1GP123128 | 12.8 | 114 | 152 |
| D1GP123129 | 12.9 | 114 | 152 |
| D1GP123130 | 13.0 | 114 | 152 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ○ | | ◎ | ○ | ○ | | ○ | | ◎ | ○ | ○ | ○ | ○ | ○ | | ○ | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | | | | ○ | | | | | | | ○ | | | | | |

# GOLD-P DRILLS

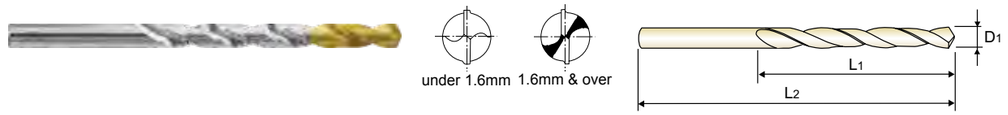
**D2GP191 SERIES**

## HSSCO8, STRAIGHT SHANK DRILLS, GOLD-P COATED — *REGULAR*

## HSSCo8，直柄GOLD-P涂层钻头 — 细长

▶**Flute Geometry** : Right hand helix
▶**Point Angle** : 135˚
under 1.6mm : Normal point
1.6mm & over : Split point
▶**Surface Treatment** : TiN-tip coating
▶**Application** : Drilling in Stainless Steels, Material of difficult machinability such as Titanium Alloy and Inconel

▶刃形：右螺旋形设计
▶钻顶角：135°
小于1.6mm：一般钻顶
大于1.6mm：静点
▶表面处理：光亮体但在实际作业的前端处使用TiN涂层
▶应用：适用于不锈钢和类钛合金和镍铬合金等难加工材料的钻削.




JIS | HSS Co8 | 33° | h8 | 135° | p. A202

Recommended ToolHolder — Plain Shank — ER COLLET CHUCK — Page D73-115

Unit(单位) : mm

| EDP No. 型号 | Drill Diameter 刃径 D1 | Flute Length 槽长 L1 | Overall Length 全长 L2 |
|---|---|---|---|
| D2GP191010 | 1.0 | 18 | 40 |
| D2GP191011 | 1.1 | 20 | 42 |
| D2GP191012 | 1.2 | 20 | 42 |
| D2GP191013 | 1.3 | 22 | 45 |
| D2GP191014 | 1.4 | 23 | 48 |
| D2GP191015 | 1.5 | 23 | 48 |
| D2GP191016 | 1.6 | 25 | 50 |
| D2GP191017 | 1.7 | 25 | 50 |
| D2GP191018 | 1.8 | 28 | 52 |
| D2GP191019 | 1.9 | 28 | 52 |
| D2GP191020 | 2.0 | 29 | 55 |
| D2GP191021 | 2.1 | 29 | 55 |
| D2GP191022 | 2.2 | 33 | 58 |
| D2GP191023 | 2.3 | 33 | 58 |
| D2GP191024 | 2.4 | 35 | 61 |
| D2GP191025 | 2.5 | 35 | 61 |
| D2GP191026 | 2.6 | 37 | 64 |
| D2GP191027 | 2.7 | 37 | 64 |
| D2GP191028 | 2.8 | 39 | 67 |
| D2GP191029 | 2.9 | 42 | 71 |
| D2GP191030 | 3.0 | 42 | 71 |
| D2GP191031 | 3.1 | 42 | 71 |
| D2GP191032 | 3.2 | 42 | 71 |
| D2GP191033 | 3.3 | 45 | 73 |
| D2GP191034 | 3.4 | 45 | 73 |
| D2GP191035 | 3.5 | 45 | 73 |

| EDP No. 型号 | Drill Diameter 刃径 D1 | Flute Length 槽长 L1 | Overall Length 全长 L2 |
|---|---|---|---|
| D2GP191036 | 3.6 | 48 | 76 |
| D2GP191037 | 3.7 | 48 | 76 |
| D2GP191038 | 3.8 | 48 | 76 |
| D2GP191039 | 3.9 | 51 | 79 |
| D2GP191040 | 4.0 | 54 | 83 |
| D2GP191041 | 4.1 | 54 | 83 |
| D2GP191042 | 4.2 | 54 | 83 |
| D2GP191043 | 4.3 | 54 | 83 |
| D2GP191044 | 4.4 | 56 | 86 |
| D2GP191045 | 4.5 | 56 | 86 |
| D2GP191046 | 4.6 | 56 | 86 |
| D2GP191047 | 4.7 | 59 | 89 |
| D2GP191048 | 4.8 | 59 | 89 |
| D2GP191049 | 4.9 | 62 | 92 |
| D2GP191050 | 5.0 | 62 | 92 |
| D2GP191051 | 5.1 | 62 | 92 |
| D2GP191052 | 5.2 | 64 | 95 |
| D2GP191053 | 5.3 | 64 | 95 |
| D2GP191054 | 5.4 | 64 | 95 |
| D2GP191055 | 5.5 | 64 | 95 |
| D2GP191056 | 5.6 | 67 | 98 |
| D2GP191057 | 5.7 | 67 | 98 |
| D2GP191058 | 5.8 | 67 | 98 |
| D2GP191059 | 5.9 | 67 | 98 |
| D2GP191060 | 6.0 | 70 | 102 |
| D2GP191061 | 6.1 | 70 | 102 |

▶ NEXT PAGE 下页

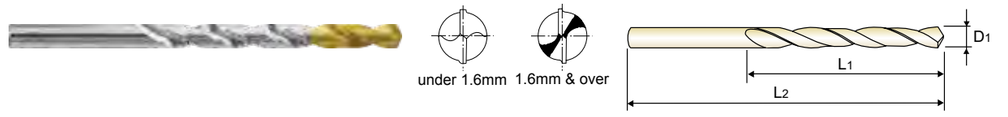
◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ○ | | ◎ | ○ | ○ | | ○ | | ◎ | ○ | ○ | ○ | ○ | ○ | | ○ | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | | | | ○ | | | | | | | ○ | | | | | |



GOLD-P DRILLS
D2GP191 SERIES
HSSCO8, STRAIGHT SHANK DRILLS, GOLD-P COATED — REGULAR
HSSCo8，直柄GOLD-P涂层钻头 — 细长
▶Flute Geometry : Right hand helix
▶Point Angle : 135˚
under 1.6mm : Normal point
1.6mm & over : Split point
▶Surface Treatment : TiN-tip coating
▶Application : Drilling in Stainless Steels, Material of difficult machinability such as Titanium Alloy and Inconel
▶刃形：右螺旋形设计
▶钻顶角：135°
小于1.6mm：一般钻顶
大于1.6mm：静点
▶表面处理：光亮体但在实际作业的前端处使用TiN涂层
▶应用：适用于不锈钢和类钛合金和镍铬合金等难加工材料的钻削.




JIS | HSS Co8 | 33° | h8 | 135° | p. A202
Recommended ToolHolder — Plain Shank — ER COLLET CHUCK — Page D73-115
Unit(单位) : mm

| EDP No. 型号 | Drill Diameter 刃径 D1 | Flute Length 槽长 L1 | Overall Length 全长 L2 |
|---|---|---|---|
| D2GP191062 | 6.2 | 70 | 102 |
| D2GP191063 | 6.3 | 70 | 102 |
| D2GP191064 | 6.4 | 73 | 105 |
| D2GP191065 | 6.5 | 73 | 105 |
| D2GP191066 | 6.6 | 73 | 105 |
| D2GP191067 | 6.7 | 73 | 105 |
| D2GP191068 | 6.8 | 73 | 105 |
| D2GP191069 | 6.9 | 73 | 105 |
| D2GP191070 | 7.0 | 73 | 105 |
| D2GP191071 | 7.1 | 75 | 108 |
| D2GP191072 | 7.2 | 75 | 108 |
| D2GP191073 | 7.3 | 75 | 108 |
| D2GP191074 | 7.4 | 78 | 111 |
| D2GP191075 | 7.5 | 78 | 111 |
| D2GP191076 | 7.6 | 78 | 111 |
| D2GP191077 | 7.7 | 81 | 114 |
| D2GP191078 | 7.8 | 81 | 114 |
| D2GP191079 | 7.9 | 81 | 114 |
| D2GP191080 | 8.0 | 81 | 114 |
| D2GP191081 | 8.1 | 84 | 117 |
| D2GP191082 | 8.2 | 84 | 117 |
| D2GP191083 | 8.3 | 84 | 117 |
| D2GP191084 | 8.4 | 87 | 121 |
| D2GP191085 | 8.5 | 87 | 121 |
| D2GP191086 | 8.6 | 87 | 121 |
| D2GP191087 | 8.7 | 87 | 121 |

| EDP No. 型号 | Drill Diameter 刃径 D1 | Flute Length 槽长 L1 | Overall Length 全长 L2 |
|---|---|---|---|
| D2GP191088 | 8.8 | 89 | 124 |
| D2GP191089 | 8.9 | 89 | 124 |
| D2GP191090 | 9.0 | 89 | 124 |
| D2GP191091 | 9.1 | 89 | 124 |
| D2GP191092 | 9.2 | 92 | 127 |
| D2GP191093 | 9.3 | 92 | 127 |
| D2GP191094 | 9.4 | 92 | 127 |
| D2GP191095 | 9.5 | 92 | 127 |
| D2GP191096 | 9.6 | 95 | 130 |
| D2GP191097 | 9.7 | 95 | 130 |
| D2GP191098 | 9.8 | 95 | 130 |
| D2GP191099 | 9.9 | 95 | 130 |
| D2GP191100 | 10.0 | 95 | 130 |
| D2GP191101 | 10.1 | 98 | 133 |
| D2GP191102 | 10.2 | 98 | 133 |
| D2GP191103 | 10.3 | 98 | 133 |
| D2GP191104 | 10.4 | 98 | 133 |
| D2GP191105 | 10.5 | 100 | 137 |
| D2GP191106 | 10.6 | 100 | 137 |
| D2GP191107 | 10.7 | 100 | 137 |
| D2GP191108 | 10.8 | 103 | 140 |
| D2GP191109 | 10.9 | 103 | 140 |
| D2GP191110 | 11.0 | 103 | 140 |
| D2GP191111 | 11.1 | 103 | 140 |
| D2GP191112 | 11.2 | 106 | 143 |
| D2GP191113 | 11.3 | 106 | 143 |

▶ NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ○ | | ◎ | ○ | ○ | | ○ | | ◎ | ○ | ○ | ○ | ○ | ○ | | ○ | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | | | | ○ | | | | | | | ○ | | | | | |

# GOLD-P DRILLS

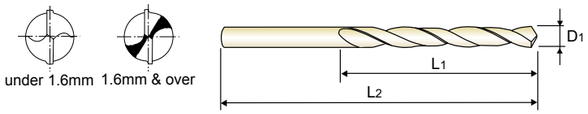
**D2GP191 SERIES**

## HSSCO8, STRAIGHT SHANK DRILLS, GOLD-P COATED — *REGULAR*

## HSSCo8，直柄GOLD-P涂层钻头 — 细长

▶**Flute Geometry** : Right hand helix
▶**Point Angle** : 135˚
under 1.6mm : Normal point
1.6mm & over : Split point
▶**Surface Treatment** : TiN-tip coating
▶**Application** : Drilling in Stainless Steels, Material of difficult machinability such as Titanium Alloy and Inconel

▶刃形：右螺旋形设计
▶钻顶角：135°
小于1.6mm：一般钻顶
大于1.6mm：静点
▶表面处理：光亮体但在实际作业的前端处使用TiN涂层
▶应用：适用于不锈钢和类钛合金和镍铬合金等难加工材料的钻削.




JIS | HSS Co8 | 33° | h8 | 135° | p. A202

Recommended ToolHolder — Plain Shank: ER COLLET CHUCK — Page: D73 - 115

Unit(单位) : mm

| EDP No. 型号 | Drill Diameter 刃径 D1 | Flute Length 槽长 L1 | Overall Length 全长 L2 |
|---|---|---|---|
| D2GP191114 | 11.4 | 106 | 143 |
| D2GP191115 | 11.5 | 106 | 143 |
| D2GP191116 | 11.6 | 109 | 146 |
| D2GP191117 | 11.7 | 109 | 146 |
| D2GP191118 | 11.8 | 109 | 146 |
| D2GP191119 | 11.9 | 109 | 146 |
| D2GP191120 | 12.0 | 111 | 149 |
| D2GP191121 | 12.1 | 111 | 149 |
| D2GP191122 | 12.2 | 111 | 149 |

| EDP No. 型号 | Drill Diameter 刃径 D1 | Flute Length 槽长 L1 | Overall Length 全长 L2 |
|---|---|---|---|
| D2GP191123 | 12.3 | 111 | 149 |
| D2GP191124 | 12.4 | 114 | 152 |
| D2GP191125 | 12.5 | 114 | 152 |
| D2GP191126 | 12.6 | 114 | 152 |
| D2GP191127 | 12.7 | 114 | 152 |
| D2GP191128 | 12.8 | 114 | 152 |
| D2GP191129 | 12.9 | 114 | 152 |
| D2GP191130 | 13.0 | 114 | 152 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ○ | | ◎ | ○ | ○ | | ○ | | ◎ | ○ | ○ | ○ | ○ | ○ | | ○ | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | | | | ○ | | | | | | | ○ | | | | | |



GOLD-P DRILLS

## GOLD-P COATED DRILL SETS

## 成套GOLD-P涂层钻头

## JIS DRILL SETS REGULAR LENGTH Gold-P coated Drills

## JIS成套GOLD-P涂层钻头普通长度

| SET EDP No. SET号 | DESCRIPTON 规格 | SIZE 尺寸 | Q'TY 数量 |
|---|---|---|---|
| D1GP103SET1 | HSS Straight Shank, Normal Point<br>高速钢直柄, 普通钻尖 | 1.0-10.0x0.5mm step | 19 pcs |
| D1GP103SET2 | HSS Straight Shank, Normal Point<br>高速钢直柄, 普通钻尖 | 1.0-13.0x0.5mm step | 25 pcs |
| D2GP191SET1 | HSSCo8 Straight Shank, Split Point (Ø1.0 &Ø1.5 : NORMAL point)<br>含钴高速钢直柄, 分离式钻尖(Ø1.0 & Ø1.5 : 普通钻尖) | 1.0-10.0x0.5mm step | 19 pcs |
| D2GP191SET2 | HSSCo8 Straight Shank, Split Point (Ø1.0 &Ø1.5 : NORMAL point)<br>含钴高速钢直柄, 分离式钻尖(Ø1.0 & Ø1.5 : 普通钻尖) | 1.0-13.0x0.5mm step | 25 pcs |

# GOLD-P DRILLS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工条件

## D1GP103, D1GP123, D2GP191 SERIES

### HSS & HSSCo8 GOLD-P DRILLS
### HSS & HSSCo8 GOLD-P 钻头

RPM (转速) = (rev./min.)
FEED (进给) = (mm/rev.)

| ISO 公制 | VDI 3323 | Material Description 材料描述 | Vc 钻削速度 (m/min) | Parameter 参数 | Drill Diameter 刃径 (mm) 1.0 | Vc 钻削速度 (m/min) | Parameter 参数 | Drill Diameter 刃径 (mm) 2.0 | 3.0 | 4.0 | 6.0 | 8.0 | 10.0 | 13.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | 28 | RPM | 8910 | 40 | RPM | 6370 | 4240 | 3180 | 2120 | 1590 | 1270 | 980 |
| | | | | FEED | 0.01-0.03 | | FEED | 0.04-0.08 | 0.06-0.10 | 0.08-0.12 | 0.12-0.16 | 0.12-0.18 | 0.16-0.22 | 0.18-0.24 |
| | 2 | | 25 | RPM | 7960 | 35 | RPM | 5570 | 3710 | 2790 | 1860 | 1390 | 1110 | 860 |
| | | | | FEED | 0.01-0.03 | | FEED | 0.04-0.08 | 0.06-0.10 | 0.08-0.12 | 0.12-0.16 | 0.12-0.18 | 0.16-0.22 | 0.18-0.24 |
| | 3 | | 20 | RPM | 6370 | 30 | RPM | 4770 | 3180 | 2390 | 1590 | 1190 | 950 | 730 |
| | | | | FEED | 0.01-0.03 | | FEED | 0.04-0.08 | 0.06-0.10 | 0.08-0.12 | 0.12-0.16 | 0.12-0.18 | 0.16-0.22 | 0.18-0.24 |
| | 4 | | 15 | RPM | 4770 | 20 | RPM | 3180 | 2120 | 1590 | 1060 | 800 | 640 | 490 |
| | | | | FEED | 0.01-0.02 | | FEED | 0.02-0.05 | 0.02-0.06 | 0.04-0.08 | 0.04-0.10 | 0.06-0.12 | 0.08-0.14 | 0.12-0.18 |
| | 6 | Low alloy steel | 25 | RPM | 7960 | 35 | RPM | 5570 | 3710 | 2790 | 1860 | 1390 | 1110 | 860 |
| | | | | FEED | 0.01-0.03 | | FEED | 0.04-0.08 | 0.06-0.10 | 0.08-0.12 | 0.12-0.16 | 0.12-0.18 | 0.16-0.22 | 0.18-0.24 |
| | 7 | | 20 | RPM | 6370 | 30 | RPM | 4770 | 3180 | 2390 | 1590 | 1190 | 950 | 730 |
| | | | | FEED | 0.01-0.03 | | FEED | 0.04-0.08 | 0.06-0.10 | 0.08-0.12 | 0.12-0.16 | 0.12-0.18 | 0.16-0.22 | 0.18-0.24 |
| | 8 | | 20 | RPM | 6370 | 30 | RPM | 4770 | 3180 | 2390 | 1590 | 1190 | 950 | 730 |
| | | | | FEED | 0.01-0.02 | | FEED | 0.02-0.05 | 0.02-0.06 | 0.04-0.08 | 0.04-0.10 | 0.06-0.12 | 0.08-0.14 | 0.12-0.18 |
| | 10 | High alloyed steel, and tool steel | 15 | RPM | 4770 | 20 | RPM | 3180 | 2120 | 1590 | 1060 | 800 | 640 | 490 |
| | | | | FEED | 0.01-0.03 | | FEED | 0.04-0.08 | 0.06-0.10 | 0.08-0.12 | 0.12-0.16 | 0.12-0.18 | 0.16-0.22 | 0.18-0.24 |
| M | 12 | Stainless steel | 18 | RPM | 5730 | 25 | RPM | 3980 | 2650 | 1990 | 1330 | 990 | 800 | 610 |
| | | | | FEED | 0.01-0.03 | | FEED | 0.04-0.08 | 0.06-0.10 | 0.08-0.12 | 0.12-0.16 | 0.12-0.18 | 0.16-0.22 | 0.18-0.24 |
| | 13 | | 15 | RPM | 4770 | 20 | RPM | 3180 | 2120 | 1590 | 1060 | 800 | 640 | 490 |
| | | | | FEED | 0.01-0.03 | | FEED | 0.04-0.08 | 0.06-0.10 | 0.08-0.12 | 0.12-0.16 | 0.12-0.18 | 0.16-0.22 | 0.18-0.24 |
| | 14 | | 10 | RPM | 3180 | 15 | RPM | 2390 | 1590 | 1190 | 800 | 600 | 480 | 370 |
| | | | | FEED | 0.01-0.02 | | FEED | 0.02-0.05 | 0.02-0.06 | 0.04-0.08 | 0.04-0.10 | 0.06-0.12 | 0.08-0.14 | 0.12-0.18 |
| K | 15 | Grey cast iron | 28 | RPM | 8910 | 40 | RPM | 6370 | 4240 | 3180 | 2120 | 1590 | 1270 | 980 |
| | | | | FEED | 0.01-0.03 | | FEED | 0.04-0.08 | 0.06-0.10 | 0.08-0.12 | 0.12-0.16 | 0.12-0.18 | 0.16-0.22 | 0.18-0.24 |
| | 16 | | 25 | RPM | 7960 | 35 | RPM | 5570 | 3710 | 2790 | 1860 | 1390 | 1110 | 860 |
| | | | | FEED | 0.01-0.02 | | FEED | 0.02-0.05 | 0.02-0.06 | 0.04-0.08 | 0.04-0.10 | 0.06-0.12 | 0.08-0.14 | 0.12-0.18 |
| | 17 | Nodular cast iron | 28 | RPM | 8910 | 40 | RPM | 6370 | 4240 | 3180 | 2120 | 1590 | 1270 | 980 |
| | | | | FEED | 0.01-0.03 | | FEED | 0.04-0.08 | 0.06-0.10 | 0.08-0.12 | 0.12-0.16 | 0.12-0.18 | 0.16-0.22 | 0.18-0.24 |
| | 18 | | 20 | RPM | 6370 | 30 | RPM | 4770 | 3180 | 2390 | 1590 | 1190 | 950 | 730 |
| | | | | FEED | 0.01-0.02 | | FEED | 0.02-0.05 | 0.02-0.06 | 0.04-0.08 | 0.04-0.10 | 0.06-0.12 | 0.08-0.14 | 0.12-0.18 |
| | 19 | Malleable cast iron | 25 | RPM | 7960 | 35 | RPM | 5570 | 3710 | 2790 | 1860 | 1390 | 1110 | 860 |
| | | | | FEED | 0.01-0.03 | | FEED | 0.04-0.08 | 0.06-0.10 | 0.08-0.12 | 0.12-0.16 | 0.12-0.18 | 0.16-0.22 | 0.18-0.24 |
| | 20 | | 20 | RPM | 6370 | 30 | RPM | 4770 | 3180 | 2390 | 1590 | 1190 | 950 | 730 |
| | | | | FEED | 0.01-0.02 | | FEED | 0.02-0.05 | 0.02-0.06 | 0.04-0.08 | 0.04-0.10 | 0.06-0.12 | 0.08-0.14 | 0.12-0.18 |
| N | 21 | Aluminum-wrought alloy | 45 | RPM | 14320 | 65 | RPM | 10350 | 6900 | 5170 | 3450 | 2590 | 2070 | 1590 |
| | | | | FEED | 0.02-0.05 | | FEED | 0.05-0.09 | 0.07-0.11 | 0.12-0.16 | 0.12-0.18 | 0.14-0.20 | 0.16-0.22 | 0.22-0.28 |
| | 22 | | 45 | RPM | 14320 | 65 | RPM | 10350 | 6900 | 5170 | 3450 | 2590 | 2070 | 1590 |
| | | | | FEED | 0.02-0.05 | | FEED | 0.05-0.09 | 0.07-0.11 | 0.12-0.16 | 0.12-0.18 | 0.14-0.20 | 0.16-0.22 | 0.22-0.28 |
| | 23 | Aluminum-cast, alloyed | 35 | RPM | 11140 | 50 | RPM | 7960 | 5310 | 3980 | 2650 | 1990 | 1590 | 1220 |
| | | | | FEED | 0.02-0.05 | | FEED | 0.05-0.09 | 0.07-0.11 | 0.12-0.16 | 0.12-0.18 | 0.14-0.20 | 0.16-0.22 | 0.22-0.28 |
| | 29 | Non Metallic Materials | 20 | RPM | 6370 | 30 | RPM | 4770 | 3180 | 2390 | 1590 | 1190 | 950 | 730 |
| | | | | FEED | 0.01-0.03 | | FEED | 0.04-0.08 | 0.06-0.10 | 0.08-0.12 | 0.12-0.16 | 0.12-0.18 | 0.16-0.22 | 0.18-0.24 |
| S | 36 | Titanium Alloys | 15 | RPM | 4770 | 20 | RPM | 3180 | 2120 | 1590 | 1060 | 800 | 640 | 490 |
| | | | | FEED | 0.01-0.02 | | FEED | 0.02-0.05 | 0.02-0.06 | 0.04-0.08 | 0.05-0.09 | 0.06-0.10 | 0.07-0.13 | 0.08-0.14 |

Leading Through Innovation

## SUPER HSS

# SUPER-GP DRILLS

- All Applications Regardless of Machining Conditions; Good or Poor
- 广泛使用无论加工条件: 好或差

# SELECTION GUIDE
## 选用指南

HOLEMAKING TOOLS

| SERIES 系列 | DSH101 |
|---|---|
| STANDARD 标准 | JIS |
| LENGTH 牙长 | REGULAR 常规 |
| SIZE MIN 最小尺寸 | D2.0 |
| SIZE MAX 最大尺寸 | D13.0 |
| PAGE 页数 | A205 |
| SURFACE TREATMENT 表面处理 | Steam Tempered |

# SUPER HSS
# SUPER-GP DRILLS

All Applications Regardless of Machining Conditions; Good or Poor

广泛使用无论加工条件: 好或差

Please visit 请访问 globalyg1.com/mat for material search 查看产品材料

◎ : Excellent (优秀) ○ : Good (良好)

Recommended cutting conditions (推荐加工条件) : p. A207

| ISO 公制 | VDI 3323 | Material Description 材料描述 | Composition / Structure / Heat Treatment 成分 / 组织 / 热处理 | | HB 布氏硬度 | HRc 硬度 | |
|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | About 0.15% C | Annealed | 125 | | ◎ |
| | 2 | | About 0.45% C | Annealed | 190 | 13 | ◎ |
| | 3 | | About 0.45% C | Quenched & Tempered | 250 | 25 | ◎ |
| | 4 | | About 0.75% C | Annealed | 270 | 28 | ○ |
| | 5 | | About 0.75% C | Quenched & Tempered | 300 | 32 | |
| | 6 | Low alloy steel | | Annealed | 180 | 10 | ◎ |
| | 7 | | | Quenched & Tempered | 275 | 29 | ○ |
| | 8 | | | Quenched & Tempered | 300 | 32 | ○ |
| | 9 | | | Quenched & Tempered | 350 | 38 | |
| | 10 | High alloyed steel, and tool steel | | Annealed | 200 | 15 | ○ |
| | 11 | | | Quenched & Tempered | 325 | 35 | |
| M | 12 | Stainless steel | Ferritic / Martensitic | Annealed | 200 | 15 | ○ |
| | 13 | | Martensitic | Quenched & Tempered | 240 | 23 | ○ |
| | 14 | | Austenitic | | 180 | 10 | ○ |
| K | 15 | Grey cast iron | Pearlitic / ferritic | | 180 | 10 | ○ |
| | 16 | | Pearlitic (Martensitic) | | 260 | 26 | ○ |
| | 17 | Nodular cast iron | Ferritic | | 160 | 3 | ○ |
| | 18 | | Pearlitic | | 250 | 25 | |
| | 19 | Malleable cast iron | Ferritic | | 130 | | ○ |
| | 20 | | Pearlitic | | 230 | 21 | |
| N | 21 | Aluminum-wrought alloy | Not Curable | | 60 | | ○ |
| | 22 | | Curable | Hardened | 100 | | ○ |
| | 23 | Aluminum-cast, alloyed | ≤ 12% Si, Not Curable | | 75 | | ○ |
| | 24 | | ≤ 12% Si, Curable | Hardened | 90 | | |
| | 25 | | > 12% Si, Not Curable | | 130 | | |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | Cutting Alloys, PB>1% | | 110 | | |
| | 27 | | CuZn, CuSnZn (Brass) | | 90 | | |
| | 28 | | CuSn, lead-free copper and electrolytic copper | | 100 | | |
| | 29 | Non Metallic Materials | Duroplastic, Fiber Reinforced Plastic | | | | ○ |
| | 30 | | Rubber, Wood, etc. | | | | |
| S | 31 | Heat Resistant Super Alloys | Fe Based | Annealed | 200 | 15 | |
| | 32 | | | Cured | 280 | 30 | |
| | 33 | | Ni or Co Based | Annealed | 250 | 25 | |
| | 34 | | | Cured | 350 | 38 | |
| | 35 | | | Cast | 320 | 34 | |
| | 36 | Titanium Alloys | Pure Titanium | | 400 Rm | | ○ |
| | 37 | | Alpha + Beta Alloys | Hardened | 1050 Rm | | |
| H | 38 | Hardened steel | | Hardened | 550 | 55 | |
| | 39 | | | Hardened | 630 | 60 | |
| | 40 | Chilled Cast Iron | | Cast | 400 | 42 | |
| | 41 | Hardened Cast Iron | | Hardened | 550 | 55 | |



# SUPER-GP DRILLS

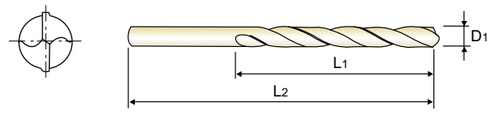
DSH101 SERIES

## SUPER HSS, SUPER-GP DRILLS
## 高级高速钢，SUPER-GP钻头

REGULAR 常规

- ▶ Surface treatment: Steam Tempered (Black Oxide Finish)
- ▶ Excellent tool performance in steels, cast iron, alloy steels and malleable cast iron.
- ▶ Special HSS improves toughness, wear resistance as well as extends dramatically the tool life.
- ▶ All applications regardless of machine condition: Good or Poor.

- ▶ 表面处理：氧化处理
- ▶ 在加工钢，铸铁，合金钢和可锻铸铁中具有优异的性能
- ▶ 特殊的高速钢改善了韧性，耐磨性，同时极大地提高了刀具寿命
- ▶ 各种加工条件下可广泛使用：好或坏




JIS | SUPER HSS | 30° | h8 | 118° | p. A207

Recommended ToolHolder — Plain Shank — ER COLLET CHUCK — Page D73 - 115

Unit(单位) : mm

| EDP No. 型号 | Drill Diameter 刃径 D1 | Flute Length 槽长 L1 | Overall Length 全长 L2 |
|---|---|---|---|
| *DSH101020 | 2.0 | 29 | 55 |
| *DSH101021 | 2.1 | 29 | 55 |
| *DSH101022 | 2.2 | 33 | 58 |
| *DSH101023 | 2.3 | 33 | 58 |
| *DSH101024 | 2.4 | 35 | 61 |
| *DSH101025 | 2.5 | 35 | 61 |
| *DSH101026 | 2.6 | 37 | 64 |
| *DSH101027 | 2.7 | 37 | 64 |
| *DSH101028 | 2.8 | 39 | 67 |
| *DSH101029 | 2.9 | 42 | 71 |
| *DSH101030 | 3.0 | 42 | 71 |
| *DSH101031 | 3.1 | 42 | 71 |
| *DSH101032 | 3.2 | 42 | 71 |
| *DSH101033 | 3.3 | 45 | 73 |
| *DSH101034 | 3.4 | 45 | 73 |
| *DSH101035 | 3.5 | 45 | 73 |
| *DSH101036 | 3.6 | 48 | 76 |
| *DSH101037 | 3.7 | 48 | 76 |
| *DSH101038 | 3.8 | 48 | 76 |
| *DSH101039 | 3.9 | 51 | 79 |
| *DSH101040 | 4.0 | 54 | 83 |
| *DSH101041 | 4.1 | 54 | 83 |
| *DSH101042 | 4.2 | 54 | 83 |
| *DSH101043 | 4.3 | 54 | 83 |
| *DSH101044 | 4.4 | 56 | 86 |
| *DSH101045 | 4.5 | 56 | 86 |
| *DSH101046 | 4.6 | 56 | 86 |
| *DSH101047 | 4.7 | 59 | 89 |

| EDP No. 型号 | Drill Diameter 刃径 D1 | Flute Length 槽长 L1 | Overall Length 全长 L2 |
|---|---|---|---|
| *DSH101048 | 4.8 | 59 | 89 |
| *DSH101049 | 4.9 | 62 | 92 |
| *DSH101050 | 5.0 | 62 | 92 |
| *DSH101051 | 5.1 | 62 | 92 |
| *DSH101052 | 5.2 | 64 | 95 |
| *DSH101053 | 5.3 | 64 | 95 |
| *DSH101054 | 5.4 | 64 | 95 |
| *DSH101055 | 5.5 | 64 | 95 |
| *DSH101056 | 5.6 | 67 | 98 |
| *DSH101057 | 5.7 | 67 | 98 |
| *DSH101058 | 5.8 | 67 | 98 |
| *DSH101059 | 5.9 | 67 | 98 |
| *DSH101060 | 6.0 | 70 | 102 |
| *DSH101061 | 6.1 | 70 | 102 |
| *DSH101062 | 6.2 | 70 | 102 |
| *DSH101063 | 6.3 | 70 | 102 |
| *DSH101064 | 6.4 | 73 | 105 |
| *DSH101065 | 6.5 | 73 | 105 |
| *DSH101066 | 6.6 | 73 | 105 |
| *DSH101067 | 6.7 | 73 | 105 |
| *DSH101068 | 6.8 | 73 | 105 |
| *DSH101069 | 6.9 | 73 | 105 |
| *DSH101070 | 7.0 | 73 | 105 |
| *DSH101071 | 7.1 | 75 | 108 |
| *DSH101072 | 7.2 | 75 | 108 |
| *DSH101073 | 7.3 | 75 | 108 |
| *DSH101074 | 7.4 | 78 | 111 |
| *DSH101075 | 7.5 | 78 | 111 |

*10pcs per package
**5pcs per package

▶ NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ○ | | ◎ | ○ | ○ | | ○ | | ○ | ○ | ○ | ○ | ○ | ○ | | ○ | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | | | | ○ | | | | | | | ○ | | | | | |

# SUPER-GP DRILLS

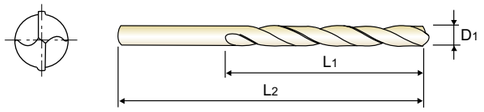
**DSH101 SERIES**

## SUPER HSS, SUPER-GP DRILLS
## 高级高速钢，SUPER-GP钻头

***REGULAR***
常规

- ▶ Surface treatment: Steam Tempered (Black Oxide Finish)
- ▶ Excellent tool performance in steels, cast iron, alloy steels and malleable cast iron.
- ▶ Special HSS improves toughness, wear resistance as well as extends dramatically the tool life.
- ▶ All applications regardless of machine condition: Good or Poor.

- ▶ 表面处理：氧化处理
- ▶ 在加工钢，铸铁，合金钢和可锻铸铁中具有优异的性能
- ▶ 特殊的高速钢改善了韧性，耐磨性，同时极大地提高了刀具寿命
- ▶ 各种加工条件下可广泛使用：好或坏




JIS | SUPER HSS | 30° | h8 | 118°

p. A207

Recommended ToolHolder — Plain Shank — ER COLLET CHUCK — Page D73 - 115

Unit(单位) : mm

| EDP No. 型号 | Drill Diameter 刃径 D1 | Flute Length 槽长 L1 | Overall Length 全长 L2 |
|---|---|---|---|
| *DSH101076 | 7.6 | 78 | 111 |
| *DSH101077 | 7.7 | 81 | 114 |
| *DSH101078 | 7.8 | 81 | 114 |
| *DSH101079 | 7.9 | 81 | 114 |
| *DSH101080 | 8.0 | 81 | 114 |
| *DSH101081 | 8.1 | 84 | 117 |
| *DSH101082 | 8.2 | 84 | 117 |
| *DSH101083 | 8.3 | 84 | 117 |
| **DSH101084 | 8.4 | 87 | 121 |
| **DSH101085 | 8.5 | 87 | 121 |
| **DSH101086 | 8.6 | 87 | 121 |
| **DSH101087 | 8.7 | 87 | 121 |
| **DSH101088 | 8.8 | 89 | 124 |
| **DSH101089 | 8.9 | 89 | 124 |
| **DSH101090 | 9.0 | 89 | 124 |
| **DSH101091 | 9.1 | 89 | 124 |
| **DSH101092 | 9.2 | 92 | 127 |
| **DSH101093 | 9.3 | 92 | 127 |
| **DSH101094 | 9.4 | 92 | 127 |
| **DSH101095 | 9.5 | 92 | 127 |
| **DSH101096 | 9.6 | 95 | 130 |
| **DSH101097 | 9.7 | 95 | 130 |
| **DSH101098 | 9.8 | 95 | 130 |
| **DSH101099 | 9.9 | 95 | 130 |
| **DSH101100 | 10.0 | 95 | 130 |
| **DSH101101 | 10.1 | 98 | 133 |
| **DSH101102 | 10.2 | 98 | 133 |
| **DSH101103 | 10.3 | 98 | 133 |

| EDP No. 型号 | Drill Diameter 刃径 D1 | Flute Length 槽长 L1 | Overall Length 全长 L2 |
|---|---|---|---|
| **DSH101104 | 10.4 | 98 | 133 |
| **DSH101105 | 10.5 | 100 | 137 |
| **DSH101106 | 10.6 | 100 | 137 |
| **DSH101107 | 10.7 | 100 | 137 |
| **DSH101108 | 10.8 | 103 | 140 |
| **DSH101109 | 10.9 | 103 | 140 |
| **DSH101110 | 11.0 | 103 | 140 |
| **DSH101111 | 11.1 | 103 | 140 |
| **DSH101112 | 11.2 | 106 | 143 |
| **DSH101113 | 11.3 | 106 | 143 |
| **DSH101114 | 11.4 | 106 | 143 |
| **DSH101115 | 11.5 | 106 | 143 |
| **DSH101116 | 11.6 | 109 | 146 |
| **DSH101117 | 11.7 | 109 | 146 |
| **DSH101118 | 11.8 | 109 | 146 |
| **DSH101119 | 11.9 | 109 | 146 |
| **DSH101120 | 12.0 | 111 | 149 |
| **DSH101121 | 12.1 | 111 | 149 |
| **DSH101122 | 12.2 | 111 | 149 |
| **DSH101123 | 12.3 | 111 | 149 |
| **DSH101124 | 12.4 | 114 | 152 |
| **DSH101125 | 12.5 | 114 | 152 |
| **DSH101126 | 12.6 | 114 | 152 |
| **DSH101127 | 12.7 | 114 | 152 |
| **DSH101128 | 12.8 | 114 | 152 |
| **DSH101129 | 12.9 | 114 | 152 |
| **DSH101130 | 13.0 | 114 | 152 |

*10pcs per package
** 5pcs per package

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ○ | | ◎ | ○ | ○ | | ○ | | ○ | ○ | ○ | ○ | ○ | ○ | | ○ | |

| ISO | N | | | | | | | | | | S | | | | | | H | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | | | | ○ | | | | | | | ○ | | | | | |



# SUPER-GP DRILLS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工条件

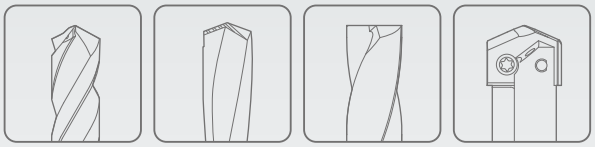
**DSH101 SERIES**

## SUPER HSS, SUPER-GP DRILLS
## 高级高速钢钻头-SUPE-GP

RPM (转速) = (rev./min.)
FEED (进给) = (mm/rev.)

| ISO 公制 | VDI 3323 | Material Description 材料描述 | Vc 钻削速度 (m/min) | Parameter 参数 | Drill Diameter 刃径 (mm) 2.0 | 3.0 | 4.0 | 6.0 | 8.0 | 10.0 | 13.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | 30 | RPM | 4770 | 3180 | 2390 | 1590 | 1190 | 950 | 730 |
| | | | | FEED | 0.02-0.04 | 0.03-0.05 | 0.04-0.06 | 0.05-0.08 | 0.10-0.13 | 0.11-0.15 | 0.11-0.17 |
| | 2 | | 25 | RPM | 3980 | 2650 | 1990 | 1330 | 990 | 800 | 610 |
| | | | | FEED | 0.02-0.04 | 0.03-0.05 | 0.04-0.06 | 0.05-0.08 | 0.10-0.13 | 0.11-0.15 | 0.11-0.17 |
| | 3 | | 20 | RPM | 3180 | 2120 | 1590 | 1060 | 800 | 640 | 490 |
| | | | | FEED | 0.02-0.04 | 0.03-0.05 | 0.04-0.06 | 0.05-0.08 | 0.10-0.13 | 0.11-0.15 | 0.11-0.17 |
| | 4 | | 20 | RPM | 3180 | 2120 | 1590 | 1060 | 800 | 640 | 490 |
| | | | | FEED | 0.01-0.02 | 0.01-0.03 | 0.02-0.04 | 0.02-0.05 | 0.03-0.06 | 0.03-0.06 | 0.04-0.10 |
| | 6 | Low alloy steel | 25 | RPM | 3980 | 2650 | 1990 | 1330 | 990 | 800 | 610 |
| | | | | FEED | 0.02-0.04 | 0.03-0.05 | 0.04-0.06 | 0.05-0.08 | 0.10-0.13 | 0.11-0.15 | 0.11-0.17 |
| | 7 | | 20 | RPM | 3180 | 2120 | 1590 | 1060 | 800 | 640 | 490 |
| | | | | FEED | 0.02-0.04 | 0.03-0.05 | 0.04-0.06 | 0.05-0.08 | 0.10-0.13 | 0.11-0.15 | 0.11-0.17 |
| | 8 | | 20 | RPM | 3180 | 2120 | 1590 | 1060 | 800 | 640 | 490 |
| | | | | FEED | 0.01-0.02 | 0.01-0.03 | 0.02-0.04 | 0.02-0.05 | 0.03-0.06 | 0.03-0.06 | 0.04-0.10 |
| | 10 | High alloyed steel, and tool steel | 15 | RPM | 2390 | 1590 | 1190 | 800 | 600 | 480 | 370 |
| | | | | FEED | 0.02-0.04 | 0.03-0.05 | 0.04-0.06 | 0.05-0.08 | 0.10-0.13 | 0.11-0.15 | 0.11-0.17 |
| M | 12 | Stainless steel | 20 | RPM | 3180 | 2120 | 1590 | 1060 | 800 | 640 | 490 |
| | | | | FEED | 0.02-0.04 | 0.03-0.05 | 0.04-0.06 | 0.05-0.08 | 0.10-0.13 | 0.11-0.15 | 0.11-0.17 |
| | 13 | | 15 | RPM | 2390 | 1590 | 1190 | 800 | 600 | 480 | 370 |
| | | | | FEED | 0.02-0.04 | 0.03-0.05 | 0.04-0.06 | 0.05-0.08 | 0.10-0.13 | 0.11-0.15 | 0.11-0.17 |
| | 14 | | 10 | RPM | 1590 | 1060 | 800 | 530 | 400 | 320 | 240 |
| | | | | FEED | 0.01-0.02 | 0.01-0.03 | 0.02-0.04 | 0.02-0.05 | 0.03-0.06 | 0.03-0.06 | 0.04-0.10 |
| K | 15 | Grey cast iron | 30 | RPM | 4770 | 3180 | 2390 | 1590 | 1190 | 950 | 730 |
| | | | | FEED | 0.02-0.04 | 0.03-0.05 | 0.04-0.06 | 0.05-0.08 | 0.10-0.13 | 0.11-0.15 | 0.11-0.17 |
| | 16 | | 25 | RPM | 3980 | 2650 | 1990 | 1330 | 990 | 800 | 610 |
| | | | | FEED | 0.01-0.02 | 0.01-0.03 | 0.02-0.04 | 0.02-0.05 | 0.03-0.06 | 0.03-0.06 | 0.04-0.10 |
| | 17 | Nodular cast iron | 30 | RPM | 4770 | 3180 | 2390 | 1590 | 1190 | 950 | 730 |
| | | | | FEED | 0.02-0.04 | 0.03-0.05 | 0.04-0.06 | 0.05-0.08 | 0.10-0.13 | 0.11-0.15 | 0.11-0.17 |
| | 19 | Malleable cast iron | 25 | RPM | 3980 | 2650 | 1990 | 1330 | 990 | 800 | 610 |
| | | | | FEED | 0.02-0.04 | 0.03-0.05 | 0.04-0.06 | 0.05-0.08 | 0.10-0.13 | 0.11-0.15 | 0.11-0.17 |
| N | 21 | Aluminum-wrought alloy | 55 | RPM | 8750 | 5840 | 4380 | 2920 | 2190 | 1750 | 1350 |
| | | | | FEED | 0.03-0.06 | 0.05-0.09 | 0.07-0.11 | 0.12-0.16 | 0.12-0.18 | 0.14-0.20 | 0.16-0.22 |
| | 22 | | 55 | RPM | 8750 | 5840 | 4380 | 2920 | 2190 | 1750 | 1350 |
| | | | | FEED | 0.03-0.06 | 0.05-0.09 | 0.07-0.11 | 0.12-0.16 | 0.12-0.18 | 0.14-0.20 | 0.16-0.22 |
| | 23 | Aluminum-cast, alloyed | 40 | RPM | 6370 | 4240 | 3180 | 2120 | 1590 | 1270 | 980 |
| | | | | FEED | 0.03-0.06 | 0.05-0.09 | 0.07-0.11 | 0.12-0.16 | 0.12-0.18 | 0.14-0.20 | 0.16-0.22 |
| | 29 | Non Metallic Materials | 20 | RPM | 3180 | 2120 | 1590 | 1060 | 800 | 640 | 490 |
| | | | | FEED | 0.02-0.04 | 0.03-0.05 | 0.04-0.06 | 0.05-0.08 | 0.10-0.13 | 0.11-0.15 | 0.11-0.17 |
| S | 36 | Titanium Alloys | 10 | RPM | 1590 | 1060 | 800 | 530 | 400 | 320 | 240 |
| | | | | FEED | 0.01-0.03 | 0.02-0.04 | 0.03-0.05 | 0.04-0.07 | 0.05-0.08 | 0.05-0.09 | 0.06-0.10 |

Global Cutting Tool Leader **YG-1**



# HOLEMAKING

Leading Through Innovation

## HSS-E

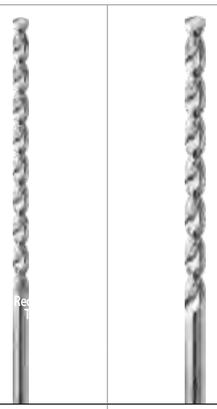
# WORM PATTERN DRILLS

- DH100-For Deep hole drilling in general steels
- DH100-为了在普通钢上深孔

# SELECTION GUIDE
## 选用指南

HOLEMAKING TOOLS

| SERIES 系列 | DL600 | DL126 |
|---|---|---|
| STANDARD 标准 | DIN1869/1 | - |
| LENGTH 长度 | EXTRA LONG 超长 | |
| SIZE MIN 最小尺寸 | D2.0 | D2.0 |
| SIZE MAX 最大尺寸 | D12.0 | D12.0 |
| PAGE 页数 | A211 | A212 |
| SURFACE TREATMENT 表面处理 | Bright | |



## HSS-E
# WORM PATTERN DRILLS

DH100-For Deep hole drilling in general steels
DH100-为了在普通钢上深孔

Please visit 请访问 globalyg1.com/mat for material search 查看产品材料

◎ : Excellent (优秀) ○ : Good (良好)

Recommended cutting conditions (推荐加工条件) : p. A213

| ISO 公制 | VDI 3323 | Material Description 材料描述 | Composition / Structure / Heat Treatment 成分 / 组织 / 热处理 | | HB 布氏硬度 | HRc 硬度 | DL600 | DL126 |
|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | About 0.15% C | Annealed | 125 | | ◎ | ◎ |
| | 2 | | About 0.45% C | Annealed | 190 | 13 | ◎ | ◎ |
| | 3 | | About 0.45% C | Quenched & Tempered | 250 | 25 | ◎ | ◎ |
| | 4 | | About 0.75% C | Annealed | 270 | 28 | ○ | ○ |
| | 5 | | About 0.75% C | Quenched & Tempered | 300 | 32 | | |
| | 6 | Low alloy steel | | Annealed | 180 | 10 | ◎ | ◎ |
| | 7 | | | Quenched & Tempered | 275 | 29 | ○ | ○ |
| | 8 | | | Quenched & Tempered | 300 | 32 | ○ | ○ |
| | 9 | | | Quenched & Tempered | 350 | 38 | | |
| | 10 | High alloyed steel, and tool steel | | Annealed | 200 | 15 | ○ | ○ |
| | 11 | | | Quenched & Tempered | 325 | 35 | | |
| M | 12 | Stainless steel | Ferritic / Martensitic | Annealed | 200 | 15 | | |
| | 13 | | Martensitic | Quenched & Tempered | 240 | 23 | | |
| | 14 | | Austenitic | | 180 | 10 | | |
| K | 15 | Grey cast iron | Pearlitic / ferritic | | 180 | 10 | ○ | ○ |
| | 16 | | Pearlitic (Martensitic) | | 260 | 26 | ○ | ○ |
| | 17 | Nodular cast iron | Ferritic | | 160 | 3 | ○ | ○ |
| | 18 | | Pearlitic | | 250 | 25 | ○ | ○ |
| | 19 | Malleable cast iron | Ferritic | | 130 | | ○ | ○ |
| | 20 | | Pearlitic | | 230 | 21 | ○ | ○ |
| N | 21 | Aluminum-wrought alloy | Not Curable | | 60 | | | |
| | 22 | | Curable | Hardened | 100 | | | |
| | 23 | Aluminum-cast, alloyed | ≤ 12% Si, Not Curable | | 75 | | | |
| | 24 | | ≤ 12% Si, Curable | Hardened | 90 | | | |
| | 25 | | > 12% Si, Not Curable | | 130 | | | |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | Cutting Alloys, PB>1% | | 110 | | | |
| | 27 | | CuZn, CuSnZn (Brass) | | 90 | | | |
| | 28 | | CuSn, lead-free copper and electrolytic copper | | 100 | | | |
| | 29 | Non Metallic Materials | Duroplastic, Fiber Reinforced Plastic | | | | | |
| | 30 | | Rubber, Wood, etc. | | | | | |
| S | 31 | Heat Resistant Super Alloys | Fe Based | Annealed | 200 | 15 | | |
| | 32 | | | Cured | 280 | 30 | | |
| | 33 | | Ni or Co Based | Annealed | 250 | 25 | | |
| | 34 | | | Cured | 350 | 38 | | |
| | 35 | | | Cast | 320 | 34 | | |
| | 36 | Titanium Alloys | Pure Titanium | | 400 Rm | | | |
| | 37 | | Alpha + Beta Alloys | Hardened | 1050 Rm | | | |
| H | 38 | Hardened steel | | Hardened | 550 | 55 | | |
| | 39 | | | Hardened | 630 | 60 | | |
| | 40 | Chilled Cast Iron | | Cast | 400 | 42 | | |
| | 41 | Hardened Cast Iron | | Hardened | 550 | 55 | | |





# WORM PATTERN DRILLS

DL600 SERIES

## HSS-E, STRAIGHT SHANK DRILLS for DEEP HOLES, FORM C — EXTRA LONG
## HSS-E, 深孔用直柄麻花钻头 — 超长

▶ **Application** : Drilling deep holes in non alloy steels, alloy steels, grey cast iron, malleable cast iron, special aluminum or magnesium alloys.

▶ 应用：适用于非合金钢, 合金钢, 灰铸铁, 可锻铸铁, 特殊铝和镁合金的深孔钻削.

Only available till stock runs out
尽在库存用完之前可用

## ▶ DH100
### worm pattern drills 蜗式钻头

DIN 1869/1 | HSS-E | 38° | h8 | 130° | p. A213

Recommended ToolHolder — Plain Shank: ER COLLET CHUCK — Page: D73-115

Unit(单位) : mm

| EDP No 型号 | Drill Diameter 刃径 D1 | Flute Length 槽长 L1 | Overall Length 全长 L2 |
|---|---|---|---|
| ▲ DL600020 | 2.0 | 85 | 125 |
| ▲ DL600922 | 2.25 | 90 | 135 |
| ▲ DL600025 | 2.5 | 95 | 140 |
| ▲ DL600927 | 2.75 | 100 | 150 |
| ▲ DL600030 | 3.0 | 100 | 150 |
| ▲ DL600035 | 3.5 | 115 | 165 |
| ▲ DL600040 | 4.0 | 120 | 175 |
| ▲ DL600942 | 4.25 | 120 | 175 |
| ▲ DL600045 | 4.5 | 125 | 185 |
| ▲ DL600947 | 4.75 | 125 | 185 |
| ▲ DL600050 | 5.0 | 135 | 195 |
| ▲ DL600952 | 5.25 | 135 | 195 |
| ▲ DL600055 | 5.5 | 140 | 205 |
| ▲ DL600060 | 6.0 | 140 | 205 |

| EDP No 型号 | Drill Diameter 刃径 D1 | Flute Length 槽长 L1 | Overall Length 全长 L2 |
|---|---|---|---|
| ▲ DL600065 | 6.5 | 150 | 215 |
| ▲ DL600972 | 7.25 | 155 | 225 |
| ▲ DL600075 | 7.5 | 155 | 225 |
| ▲ DL600080 | 8.0 | 165 | 240 |
| ▲ DL600982 | 8.25 | 165 | 240 |
| ▲ DL600085 | 8.5 | 165 | 240 |
| ▲ DL600987 | 8.75 | 175 | 250 |
| ▲ DL600090 | 9.0 | 175 | 250 |
| ▲ DL600992 | 9.25 | 175 | 250 |
| ▲ DL600095 | 9.5 | 175 | 250 |
| ▲ DL600997 | 9.75 | 185 | 265 |
| ▲ DL600110 | 11.0 | 195 | 280 |
| ▲ DL600115 | 11.5 | 195 | 280 |
| ▲ DL600120 | 12.0 | 205 | 295 |

▶ TiN(DN600), TiCN(DX600) and TiAlN(DT600) are available on your request.
TiN(DN600), TiCN(DX600), TiAlN(DT600) 可根据客户需求进行加工.

**▲ : Only available till stock runs out 尽在库存用完之前可用**

◎ : Excellent (优秀) ○ : Good (良好)

| ISO 公制 | P | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description 材料描述 | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc 硬度 | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB 布氏硬度 | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended 推荐 | ◎ | ◎ | ◎ | ○ | | ◎ | ○ | ○ | | ○ | | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO 公制 | N | | | | | | S | | | | | | | | H | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description 材料描述 | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | | Heat Resistant Super Alloys | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc 硬度 | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB 布氏硬度 | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended 推荐 | | | | | | | | | | | | | | | | | | | | | |

# WORM PATTERN DRILLS

**DL126** SERIES

## HSS-E, STRAIGHT SHANK DRILLS for DEEP HOLES, FORM C *EXTRA LONG*

## HSS-E, 深孔用直柄麻花钻头 超长

▶**Application** : Drilling deep holes in non alloy steels, alloy steels, grey cast iron, malleable cast iron or magnesium alloys.

▶ 应用：适用于非合金钢, 合金钢, 灰铸铁, 可锻铸铁, 和镁合金的深 孔钻削.

Only available till stock runs out
尽在库存用完之前可用

### ▶ DH100
**worm pattern drills** 蜗式钻头

HSS-E | 38° | h8 | 130° | p. A213

Recommended ToolHolder — Plain Shank: ER COLLET CHUCK — Page: D73 - 115

Unit(单位) : mm

| EDP No 型号 | Drill Diameter 刃径 D1 | Flute Length 槽长 L1 | Overall Length 全长 L2 |
|---|---|---|---|
| ▲ DL126220 | 2.0 | 75 | 100 |
| ▲ DL126230 | 3.0 | 75 | 100 |
| ▲ DL126335 | 3.5 | 100 | 150 |
| ▲ DL126340 | 4.0 | 100 | 150 |
| ▲ DL126350 | 5.0 | 100 | 150 |
| ▲ DL126360 | 6.0 | 100 | 150 |
| ▲ DL126460 | 6.0 | 150 | 200 |
| ▲ DL126462 | 6.2 | 150 | 200 |
| ▲ DL126475 | 7.5 | 150 | 200 |

| EDP No 型号 | Drill Diameter 刃径 D1 | Flute Length 槽长 L1 | Overall Length 全长 L2 |
|---|---|---|---|
| ▲ DL126540 | 4.0 | 200 | 250 |
| ▲ DL126555 | 5.5 | 200 | 250 |
| ▲ DL126585 | 8.5 | 200 | 250 |
| ▲ DL126655 | 5.5 | 200 | 300 |
| ▲ DL126660 | 6.0 | 200 | 300 |
| ▲ DL126595 | 9.5 | 200 | 250 |
| ▲ DL126805 | 10.5 | 200 | 250 |
| ▲ DL126820 | 12.0 | 200 | 250 |
| ▲ DL126665 | 6.5 | 200 | 300 |

▲ : Only available till stock runs out 尽在库存用完之前可用

◎ : Excellent (优秀) ○ : Good (良好)

| ISO 公制 | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description 材料描述 | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc 硬度 | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB 布氏硬度 | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended 推荐 | ◎ | ◎ | ◎ | ○ | | ◎ | ○ | ○ | | ○ | | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO 公制 | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description 材料描述 | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc 硬度 | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB 布氏硬度 | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended 推荐 | | | | | | | | | | | | | | | | | | | | | |



# WORM PATTERN DRILLS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工条件

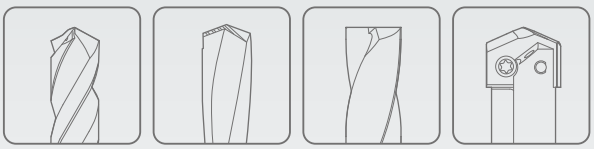
**DL600, DL126** SERIES

### HSS-E, STRAIGHT SHANK DRILL for DEEP HOLES
### HSS-E，深孔用直柄麻花钻头

RPM (转速) = (rev./min.)
FEED (进给) = (mm/rev.)

| ISO 公制 | VDI 3323 | Material Description 材料描述 | Vc 钻削速度 (m/min) | Parameter 参数 | Drill Diameter 刃径 (mm) 2.0 | 3.0 | 4.0 | 6.0 | 8.0 | 10.0 | 12.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | 30 | RPM | 4770 | 3180 | 2390 | 1590 | 1190 | 950 | 730 |
| | | | | FEED | 0.02-0.04 | 0.03-0.05 | 0.04-0.06 | 0.05-0.08 | 0.10-0.13 | 0.11-0.15 | 0.11-0.17 |
| | 2 | | 25 | RPM | 3980 | 2650 | 1990 | 1330 | 990 | 800 | 610 |
| | | | | FEED | 0.02-0.04 | 0.03-0.05 | 0.04-0.06 | 0.05-0.08 | 0.10-0.13 | 0.11-0.15 | 0.11-0.17 |
| | 3 | | 20 | RPM | 3180 | 2120 | 1590 | 1060 | 800 | 640 | 490 |
| | | | | FEED | 0.02-0.04 | 0.03-0.05 | 0.04-0.06 | 0.05-0.08 | 0.10-0.13 | 0.11-0.15 | 0.11-0.17 |
| | 4 | | 20 | RPM | 3180 | 2120 | 1590 | 1060 | 800 | 640 | 490 |
| | | | | FEED | 0.01-0.02 | 0.01-0.03 | 0.02-0.04 | 0.02-0.05 | 0.03-0.06 | 0.03-0.06 | 0.04-0.10 |
| | 6 | Low alloy steel | 25 | RPM | 3980 | 2650 | 1990 | 1330 | 990 | 800 | 610 |
| | | | | FEED | 0.02-0.04 | 0.03-0.05 | 0.04-0.06 | 0.05-0.08 | 0.10-0.13 | 0.11-0.15 | 0.11-0.17 |
| | 7 | | 20 | RPM | 3180 | 2120 | 1590 | 1060 | 800 | 640 | 490 |
| | | | | FEED | 0.02-0.04 | 0.03-0.05 | 0.04-0.06 | 0.05-0.08 | 0.10-0.13 | 0.11-0.15 | 0.11-0.17 |
| | 8 | | 20 | RPM | 3180 | 2120 | 1590 | 1060 | 800 | 640 | 490 |
| | | | | FEED | 0.01-0.02 | 0.01-0.03 | 0.02-0.04 | 0.02-0.05 | 0.03-0.06 | 0.03-0.06 | 0.04-0.10 |
| | 10 | High alloyed steel, and tool steel | 15 | RPM | 2390 | 1590 | 1190 | 800 | 600 | 480 | 370 |
| | | | | FEED | 0.02-0.04 | 0.03-0.05 | 0.04-0.06 | 0.05-0.08 | 0.10-0.13 | 0.11-0.15 | 0.11-0.17 |
| K | 15 | Grey cast iron | 30 | RPM | 4770 | 3180 | 2390 | 1590 | 1190 | 950 | 730 |
| | | | | FEED | 0.02-0.04 | 0.03-0.05 | 0.04-0.06 | 0.05-0.08 | 0.10-0.13 | 0.11-0.15 | 0.11-0.17 |
| | 16 | | 25 | RPM | 3980 | 2650 | 1990 | 1330 | 990 | 800 | 610 |
| | | | | FEED | 0.01-0.02 | 0.01-0.03 | 0.02-0.04 | 0.02-0.05 | 0.03-0.06 | 0.03-0.06 | 0.04-0.10 |
| | 17 | Nodular cast iron | 30 | RPM | 4770 | 3180 | 2390 | 1590 | 1190 | 950 | 730 |
| | | | | FEED | 0.02-0.04 | 0.03-0.05 | 0.04-0.06 | 0.05-0.08 | 0.10-0.13 | 0.11-0.15 | 0.11-0.17 |
| | 18 | | 20 | RPM | 3180 | 2120 | 1590 | 1060 | 800 | 640 | 490 |
| | | | | FEED | 0.01-0.02 | 0.01-0.03 | 0.02-0.04 | 0.02-0.05 | 0.03-0.06 | 0.03-0.06 | 0.04-0.10 |
| | 19 | Malleable cast iron | 25 | RPM | 3980 | 2650 | 1990 | 1330 | 990 | 800 | 610 |
| | | | | FEED | 0.02-0.04 | 0.03-0.05 | 0.04-0.06 | 0.05-0.08 | 0.10-0.13 | 0.11-0.15 | 0.11-0.17 |
| | 20 | | 20 | RPM | 3180 | 2120 | 1590 | 1060 | 800 | 640 | 490 |
| | | | | FEED | 0.01-0.02 | 0.01-0.03 | 0.02-0.04 | 0.02-0.05 | 0.03-0.06 | 0.03-0.06 | 0.04-0.10 |

Global Cutting Tool Leader **YG-1**



# HOLEMAKING

Leading Through Innovation

## HSS & HSSCo8

# STRAIGHT SHANK DRILLS

- For General Purpose (Soft &Tough Materials)
- 一般用途 (软&硬材料)

# SELECTION GUIDE
## 选用指南

HOLEMAKING TOOLS

| SERIES 系列 | D2101 | D1101 | D1102 | D1104 |
|---|---|---|---|---|
| STANDARD 标准 | JIS | JIS | - | DIN340 |
| LENGTH 长度 | REGULAR 常规 | REGULAR 常规 | LONG 长 | LONG 长 |
| SIZE MIN 最小尺寸 | D2.0 | D1.0 | D2.0 | D1.0 |
| SIZE MAX 最大尺寸 | D13.0 | D13.0 | D13.0 | D17.5 |
| PAGE 页数 | A217 | S219 | A221 | A227 |
| SURFACE TREATMENT 表面处理 | Gold Coloring | Steam | Homo | Bright |

# HSS & HSSCo8
# STRAIGHT SHANK DRILLS

For General Purpose (Soft &Tough Materials)
一般用途 (软&硬材料)

Please visit 请访问 globalyg1.com/mat for material search 查看产品材料

◎ : Excellent (优秀) ○ : Good (良好)

Recommended cutting conditions (推荐加工条件) : p. A229

| ISO 公制 | VDI 3323 | Material Description 材料描述 | Composition / Structure / Heat Treatment 成分 / 组织 / 热处理 | | HB 布氏硬度 | HRc 硬度 | D2101 | D1101 | D1102 | D1104 |
|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | About 0.15% C | Annealed | 125 | | ◎ | ◎ | ◎ | ◎ |
| | 2 | | About 0.45% C | Annealed | 190 | 13 | ◎ | ◎ | ◎ | ◎ |
| | 3 | | About 0.45% C | Quenched & Tempered | 250 | 25 | ◎ | ◎ | ◎ | ◎ |
| | 4 | | About 0.75% C | Annealed | 270 | 28 | ○ | ○ | ○ | ○ |
| | 5 | | About 0.75% C | Quenched & Tempered | 300 | 32 | | | | |
| | 6 | Low alloy steel | | Annealed | 180 | 10 | ◎ | ◎ | ◎ | ◎ |
| | 7 | | | Quenched & Tempered | 275 | 29 | ○ | ○ | ○ | ○ |
| | 8 | | | Quenched & Tempered | 300 | 32 | ○ | ○ | ○ | ○ |
| | 9 | | | Quenched & Tempered | 350 | 38 | | | | |
| | 10 | High alloyed steel, and tool steel | | Annealed | 200 | 15 | ○ | ○ | ○ | ○ |
| | 11 | | | Quenched & Tempered | 325 | 35 | | | | |
| M | 12 | Stainless steel | Ferritic / Martensitic | Annealed | 200 | 15 | ◎ | ○ | ○ | ○ |
| | 13 | | Martensitic | Quenched & Tempered | 240 | 23 | ○ | ○ | ○ | ○ |
| | 14 | | Austenitic | | 180 | 10 | ○ | ○ | ○ | ○ |
| K | 15 | Grey cast iron | Pearlitic / ferritic | | 180 | 10 | ○ | ○ | ○ | ○ |
| | 16 | | Pearlitic (Martensitic) | | 260 | 26 | ○ | ○ | ○ | ○ |
| | 17 | Nodular cast iron | Ferritic | | 160 | 3 | ○ | ○ | ○ | ○ |
| | 18 | | Pearlitic | | 250 | 25 | | | | |
| | 19 | Malleable cast iron | Ferritic | | 130 | | ○ | ○ | ○ | ○ |
| | 20 | | Pearlitic | | 230 | 21 | | | | |
| N | 21 | Aluminum-wrought alloy | Not Curable | | 60 | | ○ | ○ | ○ | ○ |
| | 22 | | Curable | Hardened | 100 | | ○ | ○ | ○ | ○ |
| | 23 | Aluminum-cast, alloyed | ≤ 12% Si, Not Curable | | 75 | | ○ | ○ | ○ | ○ |
| | 24 | | ≤ 12% Si, Curable | Hardened | 90 | | | | | |
| | 25 | | > 12% Si, Not Curable | | 130 | | | | | |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | Cutting Alloys, PB>1% | | 110 | | | | | |
| | 27 | | CuZn, CuSnZn (Brass) | | 90 | | | | | |
| | 28 | | CuSn, lead-free copper and electrolytic copper | | 100 | | | | | |
| | 29 | Non Metallic Materials | Duroplastic, Fiber Reinforced Plastic | | | | ○ | ○ | ○ | ○ |
| | 30 | | Rubber, Wood, etc. | | | | | | | |
| S | 31 | Heat Resistant Super Alloys | Fe Based | Annealed | 200 | 15 | | | | |
| | 32 | | | Cured | 280 | 30 | | | | |
| | 33 | | Ni or Co Based | Annealed | 250 | 25 | | | | |
| | 34 | | | Cured | 350 | 38 | | | | |
| | 35 | | | Cast | 320 | 34 | | | | |
| | 36 | Titanium Alloys | Pure Titanium | | 400 Rm | | ○ | ○ | ○ | ○ |
| | 37 | | Alpha + Beta Alloys | Hardened | 1050 Rm | | | | | |
| H | 38 | Hardened steel | | Hardened | 550 | 55 | | | | |
| | 39 | | | Hardened | 630 | 60 | | | | |
| | 40 | Chilled Cast Iron | | Cast | 400 | 42 | | | | |
| | 41 | Hardened Cast Iron | | Hardened | 550 | 55 | | | | |





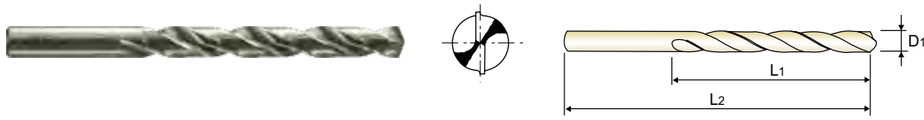
# STRAIGHT SHANK DRILLS

D2101 SERIES

## HSSCo8, STRAIGHT SHANK TWIST DRILLS — REGULAR
## HSSCo8, 直柄麻花钻头 — 常规

▶ **Surface treatment**: Coloring(Gold Color)
▶ **Application** : Drilling in stainless steels, materials of difficult machining.

▶ 表面处理：着色 (金黄色)
▶ 应用 ：适用于不锈钢, 钛和镍铬合金等难加工材料.




HSS Co8 | 33° | h8 | 135°

p. A229-A230

Recommended ToolHolder — Plain Shank: ER COLLET CHUCK — Page: D73-115

Unit(单位) : mm

| EDP No 型号 | Drill Diameter 刃径 D1 | Flute Length 槽长 L1 | Overall Length 全长 L2 | EDP No 型号 | Drill Diameter 刃径 D1 | Flute Length 槽长 L1 | Overall Length 全长 L2 |
|---|---|---|---|---|---|---|---|
| D2101020 | 2.0 | 29 | 55 | D2101049 | 4.9 | 62 | 92 |
| D2101021 | 2.1 | 29 | 55 | D2101050 | 5.0 | 62 | 92 |
| D2101022 | 2.2 | 33 | 58 | D2101051 | 5.1 | 62 | 92 |
| D2101023 | 2.3 | 33 | 58 | D2101052 | 5.2 | 64 | 95 |
| D2101024 | 2.4 | 35 | 61 | D2101053 | 5.3 | 64 | 95 |
| D2101025 | 2.5 | 35 | 61 | D2101054 | 5.4 | 64 | 95 |
| D2101026 | 2.6 | 37 | 64 | D2101055 | 5.5 | 64 | 95 |
| D2101027 | 2.7 | 37 | 64 | D2101056 | 5.6 | 67 | 98 |
| D2101028 | 2.8 | 39 | 67 | D2101057 | 5.7 | 67 | 98 |
| D2101029 | 2.9 | 42 | 71 | D2101058 | 5.8 | 67 | 98 |
| D2101030 | 3.0 | 42 | 71 | D2101059 | 5.9 | 67 | 98 |
| D2101031 | 3.1 | 42 | 71 | D2101060 | 6.0 | 70 | 102 |
| D2101032 | 3.2 | 42 | 71 | D2101061 | 6.1 | 70 | 102 |
| D2101033 | 3.3 | 45 | 73 | D2101062 | 6.2 | 70 | 102 |
| D2101034 | 3.4 | 45 | 73 | D2101063 | 6.3 | 70 | 102 |
| D2101035 | 3.5 | 45 | 73 | D2101064 | 6.4 | 73 | 105 |
| D2101036 | 3.6 | 48 | 76 | D2101065 | 6.5 | 73 | 105 |
| D2101037 | 3.7 | 48 | 76 | D2101066 | 6.6 | 73 | 105 |
| D2101038 | 3.8 | 48 | 76 | D2101067 | 6.7 | 73 | 105 |
| D2101039 | 3.9 | 51 | 79 | D2101068 | 6.8 | 73 | 105 |
| D2101040 | 4.0 | 54 | 83 | D2101069 | 6.9 | 73 | 105 |
| D2101041 | 4.1 | 54 | 83 | D2101070 | 7.0 | 73 | 105 |
| D2101042 | 4.2 | 54 | 83 | D2101071 | 7.1 | 75 | 108 |
| D2101043 | 4.3 | 54 | 83 | D2101072 | 7.2 | 75 | 108 |
| D2101044 | 4.4 | 56 | 86 | D2101073 | 7.3 | 75 | 108 |
| D2101045 | 4.5 | 56 | 86 | D2101074 | 7.4 | 78 | 111 |
| D2101046 | 4.6 | 56 | 86 | D2101075 | 7.5 | 78 | 111 |
| D2101047 | 4.7 | 59 | 89 | D2101076 | 7.6 | 78 | 111 |
| D2101048 | 4.8 | 59 | 89 | D2101077 | 7.7 | 81 | 114 |

▶ The TiN(D4101), TiCN(D7101) or TiAlN(DQ101) is available on your request.
TiN(D4101), TiCN(D7101), TiAlN(DQ101) 可根据客户需求进行加工.

▶ NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ○ | | ◎ | ○ | ○ | | ○ | | ◎ | ○ | ○ | ○ | ○ | ○ | | ○ | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron | |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 | |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 | |
| Recommended | ○ | ○ | ○ | | | | | | ○ | | | | | | | ○ | | | | | | |

# STRAIGHT SHANK DRILLS

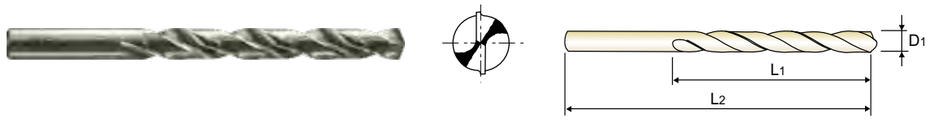
**D2101** SERIES

## HSSCo8, STRAIGHT SHANK TWIST DRILLS — *REGULAR*

## HSSCo8, 直柄麻花钻头 — 常规

▶**Surface treatment** : Coloring (Gold Color)
▶**Application** : Drilling in stainless steels, materials of difficult machining such as titanium and inconel.

▶表面处理：着色（金黄色）
▶应用 ：适用于不锈钢, 钛和镍铬合金等难加工材料.




HSS Co8 | 33° | h8 | 135° p. A229-A230

Recommended ToolHolder — Plain Shank: ER COLLET CHUCK — Page: D73 - 115

Unit(单位) : mm

| EDP No 型号 | Drill Diameter 刃径 D1 | Flute Length 槽长 L1 | Overall Length 全长 L2 |
|---|---|---|---|
| D2101078 | 7.8 | 81 | 114 |
| D2101079 | 7.9 | 81 | 114 |
| D2101080 | 8.0 | 81 | 114 |
| D2101081 | 8.1 | 84 | 117 |
| D2101082 | 8.2 | 84 | 117 |
| D2101083 | 8.3 | 84 | 117 |
| D2101084 | 8.4 | 87 | 121 |
| D2101085 | 8.5 | 87 | 121 |
| D2101086 | 8.6 | 87 | 121 |
| D2101087 | 8.7 | 87 | 121 |
| D2101088 | 8.8 | 89 | 124 |
| D2101089 | 8.9 | 89 | 124 |
| D2101090 | 9.0 | 89 | 124 |
| D2101091 | 9.1 | 89 | 124 |
| D2101092 | 9.2 | 92 | 127 |
| D2101093 | 9.3 | 92 | 127 |
| D2101094 | 9.4 | 92 | 127 |
| D2101095 | 9.5 | 92 | 127 |
| D2101096 | 9.6 | 95 | 130 |
| D2101097 | 9.7 | 95 | 130 |
| D2101098 | 9.8 | 95 | 130 |
| D2101099 | 9.9 | 95 | 130 |
| D2101100 | 10.0 | 95 | 130 |
| D2101101 | 10.1 | 98 | 133 |
| D2101102 | 10.2 | 98 | 133 |
| D2101103 | 10.3 | 98 | 133 |
| D2101104 | 10.4 | 98 | 133 |
| D2101105 | 10.5 | 100 | 137 |
| D2101106 | 10.6 | 100 | 137 |
| D2101107 | 10.7 | 100 | 137 |
| D2101108 | 10.8 | 103 | 140 |
| D2101109 | 10.9 | 103 | 140 |
| D2101110 | 11.0 | 103 | 140 |
| D2101111 | 11.1 | 103 | 140 |
| D2101112 | 11.2 | 106 | 143 |
| D2101113 | 11.3 | 106 | 143 |
| D2101114 | 11.4 | 106 | 143 |
| D2101115 | 11.5 | 106 | 143 |
| D2101116 | 11.6 | 109 | 146 |
| D2101117 | 11.7 | 109 | 146 |
| D2101118 | 11.8 | 109 | 146 |
| D2101119 | 11.9 | 109 | 146 |
| D2101120 | 12.0 | 111 | 149 |
| D2101121 | 12.1 | 111 | 149 |
| D2101122 | 12.2 | 111 | 149 |
| D2101123 | 12.3 | 111 | 149 |
| D2101124 | 12.4 | 114 | 152 |
| D2101125 | 12.5 | 114 | 152 |
| D2101126 | 12.6 | 114 | 152 |
| D2101127 | 12.7 | 114 | 152 |
| D2101128 | 12.8 | 114 | 152 |
| D2101129 | 12.9 | 114 | 152 |
| D2101130 | 13.0 | 114 | 152 |

▶ The TiN(D4101), TiCN(D7101) or TiAlN(DQ101) is available on your request.
TiN(D4101), TiCN(D7101), TiAlN(DQ101) 可根据客户需求进行加工.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ○ | | ◎ | ○ | ○ | | ○ | | ◎ | ○ | ○ | ○ | ○ | ○ | | ○ | |

| ISO | N | | | | | | | | | | S | | | | | | H | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | | | | ○ | | | | | | | ○ | | | | | |



# STRAIGHT SHANK DRILLS

**D1101** SERIES

## HSS, STRAIGHT SHANK TWIST DRILLS — *REGULAR*

## HSS, 直柄麻花钻头 — 常规

▶ **Surface treatment** : Steam Homo (Black Oxide Finish)
Bright Finish under 2mm
▶ **Application** : Drilling in steel, cast steel alloyed and non-alloyed, grey cast iron, malleable cast iron

▶ 表面处理：氧化发黑处理, 2mm以下无着色
▶ 应用 ：适用于钢, 铸钢合金和非合金钢, 灰铸铁,可锻铸铁的深 孔钻削和石墨的加工.

HSS | 20~30° | h8 | 118° p. A229-A230

Recommended ToolHolder — Plain Shank: ER COLLET CHUCK — Page: D73 - 115

Unit(单位) : mm

| EDP No 型号 | Drill Diameter 刃径 D1 | Flute Length 槽长 L1 | Overall Length 全长 L2 |
|---|---|---|---|
| * D1101010 | 1.0 | 18 | 40 |
| * D1101011 | 1.1 | 20 | 42 |
| * D1101012 | 1.2 | 20 | 42 |
| * D1101013 | 1.3 | 22 | 45 |
| * D1101014 | 1.4 | 23 | 48 |
| * D1101015 | 1.5 | 23 | 48 |
| * D1101016 | 1.6 | 25 | 50 |
| * D1101017 | 1.7 | 25 | 50 |
| * D1101018 | 1.8 | 28 | 52 |
| * D1101019 | 1.9 | 28 | 52 |
| D1101020 | 2.0 | 29 | 55 |
| D1101021 | 2.1 | 29 | 55 |
| D1101022 | 2.2 | 33 | 58 |
| D1101023 | 2.3 | 33 | 58 |
| D1101024 | 2.4 | 35 | 61 |
| D1101025 | 2.5 | 35 | 61 |
| D1101026 | 2.6 | 37 | 64 |
| D1101027 | 2.7 | 37 | 64 |
| D1101028 | 2.8 | 39 | 67 |
| D1101029 | 2.9 | 42 | 71 |
| D1101030 | 3.0 | 42 | 71 |
| D1101031 | 3.1 | 42 | 71 |
| D1101032 | 3.2 | 42 | 71 |
| D1101033 | 3.3 | 45 | 73 |
| D1101034 | 3.4 | 45 | 73 |
| D1101035 | 3.5 | 45 | 73 |
| D1101036 | 3.6 | 48 | 76 |
| D1101037 | 3.7 | 48 | 76 |
| D1101038 | 3.8 | 48 | 76 |
| D1101039 | 3.9 | 51 | 79 |
| D1101040 | 4.0 | 54 | 83 |
| D1101041 | 4.1 | 54 | 83 |
| D1101042 | 4.2 | 54 | 83 |
| D1101043 | 4.3 | 54 | 83 |
| D1101044 | 4.4 | 56 | 86 |
| D1101045 | 4.5 | 56 | 86 |
| D1101046 | 4.6 | 56 | 86 |
| D1101047 | 4.7 | 59 | 89 |
| D1101048 | 4.8 | 59 | 89 |
| D1101049 | 4.9 | 62 | 92 |
| D1101050 | 5.0 | 62 | 92 |
| D1101051 | 5.1 | 62 | 92 |
| D1101052 | 5.2 | 64 | 95 |
| D1101053 | 5.3 | 64 | 95 |
| D1101054 | 5.4 | 64 | 95 |
| D1101055 | 5.5 | 64 | 95 |
| D1101056 | 5.6 | 67 | 98 |
| D1101057 | 5.7 | 67 | 98 |
| D1101058 | 5.8 | 67 | 98 |
| D1101059 | 5.9 | 67 | 98 |
| D1101060 | 6.0 | 70 | 102 |
| D1101061 | 6.1 | 70 | 102 |
| D1101062 | 6.2 | 70 | 102 |
| D1101063 | 6.3 | 70 | 102 |
| D1101064 | 6.4 | 73 | 105 |
| D1101065 | 6.5 | 73 | 105 |
| D1101066 | 6.6 | 73 | 105 |
| D1101067 | 6.7 | 73 | 105 |
| D1101068 | 6.8 | 73 | 105 |
| D1101069 | 6.9 | 73 | 105 |

* Bright Finish / 光亮色

▶ NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ○ | | ◎ | ○ | ○ | | ○ | | ○ | ○ | ○ | ○ | ○ | | | ○ | |

| ISO | N | | | | | | | | | | S | | | | | | H | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | | | | ○ | | | | | | | ○ | | | | | |

# STRAIGHT SHANK DRILLS

**D1101** SERIES

## HSS, STRAIGHT SHANK TWIST DRILLS

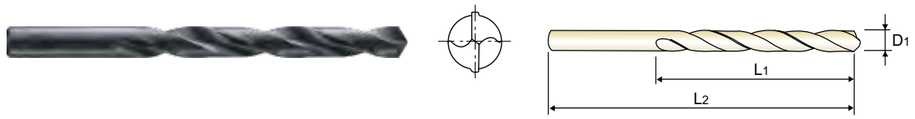
***REGULAR***

## HSS, 直柄麻花钻头

常规

▶ **Surface treatment** : Steam Homo (Black Oxide Finish)
▶ **Application** : Drilling in steel, cast steel alloyed and non-alloyed, grey cast iron, malleable cast iron

▶表面处理：氧化发黑处理
▶应用 ：适用于钢, 铸钢合金和非合金钢, 灰铸铁,可锻铸铁的深孔钻削和石墨的加工.




HSS | 20~30° | h8 | 118° | p. A229-A230

Recommended ToolHolder — Plain Shank — ER COLLET CHUCK — Page D73-115

Unit(单位) : mm

| EDP No 型号 | Drill Diameter 刃径 D1 | Flute Length 槽长 L1 | Overall Length 全长 L2 |
|---|---|---|---|
| D1101070 | 7.0 | 73 | 105 |
| D1101071 | 7.1 | 75 | 108 |
| D1101072 | 7.2 | 75 | 108 |
| D1101073 | 7.3 | 75 | 108 |
| D1101074 | 7.4 | 78 | 111 |
| D1101075 | 7.5 | 78 | 111 |
| D1101076 | 7.6 | 78 | 111 |
| D1101077 | 7.7 | 81 | 114 |
| D1101078 | 7.8 | 81 | 114 |
| D1101079 | 7.9 | 81 | 114 |
| D1101080 | 8.0 | 81 | 114 |
| D1101081 | 8.1 | 84 | 117 |
| D1101082 | 8.2 | 84 | 117 |
| D1101083 | 8.3 | 84 | 117 |
| D1101084 | 8.4 | 87 | 121 |
| D1101085 | 8.5 | 87 | 121 |
| D1101086 | 8.6 | 87 | 121 |
| D1101087 | 8.7 | 87 | 121 |
| D1101088 | 8.8 | 89 | 124 |
| D1101089 | 8.9 | 89 | 124 |
| D1101090 | 9.0 | 89 | 124 |
| D1101091 | 9.1 | 89 | 124 |
| D1101092 | 9.2 | 92 | 127 |
| D1101093 | 9.3 | 92 | 127 |
| D1101094 | 9.4 | 92 | 127 |
| D1101095 | 9.5 | 92 | 127 |
| D1101096 | 9.6 | 95 | 130 |
| D1101097 | 9.7 | 95 | 130 |
| D1101098 | 9.8 | 95 | 130 |
| D1101099 | 9.9 | 95 | 130 |
| D1101100 | 10.0 | 95 | 130 |

| EDP No 型号 TiAlN | Drill Diameter 刃径 D1 | Flute Length 槽长 L1 | Overall Length 全长 L2 |
|---|---|---|---|
| D1101101 | 10.1 | 98 | 133 |
| D1101102 | 10.2 | 98 | 133 |
| D1101103 | 10.3 | 98 | 133 |
| D1101104 | 10.4 | 98 | 133 |
| D1101105 | 10.5 | 100 | 137 |
| D1101106 | 10.6 | 100 | 137 |
| D1101107 | 10.7 | 100 | 137 |
| D1101108 | 10.8 | 103 | 140 |
| D1101109 | 10.9 | 103 | 140 |
| D1101110 | 11.0 | 103 | 140 |
| D1101111 | 11.1 | 103 | 140 |
| D1101112 | 11.2 | 106 | 143 |
| D1101113 | 11.3 | 106 | 143 |
| D1101114 | 11.4 | 106 | 143 |
| D1101115 | 11.5 | 106 | 143 |
| D1101116 | 11.6 | 109 | 146 |
| D1101117 | 11.7 | 109 | 146 |
| D1101118 | 11.8 | 109 | 146 |
| D1101119 | 11.9 | 109 | 146 |
| D1101120 | 12.0 | 111 | 149 |
| D1101121 | 12.1 | 111 | 149 |
| D1101122 | 12.2 | 111 | 149 |
| D1101123 | 12.3 | 111 | 149 |
| D1101124 | 12.4 | 114 | 152 |
| D1101125 | 12.5 | 114 | 152 |
| D1101126 | 12.6 | 114 | 152 |
| D1101127 | 12.7 | 114 | 152 |
| D1101128 | 12.8 | 114 | 152 |
| D1101129 | 12.9 | 114 | 152 |
| D1101130 | 13.0 | 114 | 152 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ○ | | ◎ | ○ | ○ | | ○ | | ○ | ○ | ○ | ○ | ○ | ○ | | ○ | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | | | | ○ | | | | | | | ○ | | | | | |



# STRAIGHT SHANK DRILLS

**D1102** SERIES

## HSS, STRAIGHT SHANK DRILLS

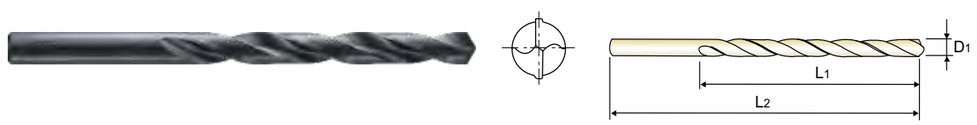
***LONG***

## HSS, 直柄钻头

长

▶**Surface treatment**: Steam Homo (Black Oxide Finish)
▶**Application** : Designed for drilling deep holes or deeply located holes. Drills in steel, cast steel alloyed and non-alloyed, grey cast iron, malleable cast iron

▶表面处理：氧化发黑处理
▶应用 ：设计用于深孔加工或深定位孔加工. 适用于钢, 铸钢合 金和非合金钢, 灰铸铁, 可锻铸铁的深孔钻削和石墨的 加工.




HSS | 20~30° | h8 | 118° | p. A229-A230

Recommended ToolHolder — Plain Shank — ER COLLET CHUCK — Page D73-115

Unit(单位) : mm

| EDP No 型号 | Drill Diameter 刃径 D1 | Flute Length 槽长 L1 | Overall Length 全长 L2 |
|---|---|---|---|
| D1102220 | 2.0 | 75 | 100 |
| D1102221 | 2.1 | 75 | 100 |
| D1102222 | 2.2 | 75 | 100 |
| D1102223 | 2.3 | 75 | 100 |
| D1102224 | 2.4 | 75 | 100 |
| D1102225 | 2.5 | 75 | 100 |
| D1102226 | 2.6 | 75 | 100 |
| D1102228 | 2.8 | 75 | 100 |
| D1102230 | 3.0 | 75 | 100 |
| D1102231 | 3.1 | 75 | 100 |
| D1102232 | 3.2 | 75 | 100 |
| D1102233 | 3.3 | 75 | 100 |
| D1102234 | 3.4 | 75 | 100 |
| D1102235 | 3.5 | 75 | 100 |
| D1102236 | 3.6 | 75 | 100 |
| D1102237 | 3.7 | 75 | 100 |
| D1102238 | 3.8 | 75 | 100 |
| D1102240 | 4.0 | 75 | 100 |
| D1102241 | 4.1 | 75 | 100 |
| D1102242 | 4.2 | 75 | 100 |
| D1102243 | 4.3 | 75 | 100 |
| D1102244 | 4.4 | 75 | 100 |
| D1102245 | 4.5 | 75 | 100 |
| D1102246 | 4.6 | 75 | 100 |
| D1102248 | 4.8 | 75 | 100 |
| D1102250 | 5.0 | 75 | 100 |
| D1102252 | 5.2 | 75 | 100 |
| D1102254 | 5.4 | 75 | 100 |
| D1102255 | 5.5 | 75 | 100 |

| EDP No 型号 | Drill Diameter 刃径 D1 | Flute Length 槽长 L1 | Overall Length 全长 L2 |
|---|---|---|---|
| D1102320 | 2.0 | 100 | 150 |
| D1102321 | 2.1 | 100 | 150 |
| D1102322 | 2.2 | 100 | 150 |
| D1102323 | 2.3 | 100 | 150 |
| D1102324 | 2.4 | 100 | 150 |
| D1102325 | 2.5 | 100 | 150 |
| D1102326 | 2.6 | 100 | 150 |
| D1102327 | 2.7 | 100 | 150 |
| D1102328 | 2.8 | 100 | 150 |
| D1102329 | 2.9 | 100 | 150 |
| D1102330 | 3.0 | 100 | 150 |
| D1102331 | 3.1 | 100 | 150 |
| D1102332 | 3.2 | 100 | 150 |
| D1102333 | 3.3 | 100 | 150 |
| D1102334 | 3.4 | 100 | 150 |
| D1102335 | 3.5 | 100 | 150 |
| D1102336 | 3.6 | 100 | 150 |
| D1102337 | 3.7 | 100 | 150 |
| D1102338 | 3.8 | 100 | 150 |
| D1102339 | 3.9 | 100 | 150 |
| D1102340 | 4.0 | 100 | 150 |
| D1102341 | 4.1 | 100 | 150 |
| D1102342 | 4.2 | 100 | 150 |
| D1102343 | 4.3 | 100 | 150 |
| D1102344 | 4.4 | 100 | 150 |
| D1102345 | 4.5 | 100 | 150 |
| D1102346 | 4.6 | 100 | 150 |
| D1102347 | 4.7 | 100 | 150 |
| D1102348 | 4.8 | 100 | 150 |

▶ NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ○ | | ◎ | ○ | ○ | | ○ | | ○ | ○ | ○ | ○ | ○ | ○ | | ○ | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | | | | ○ | | | | | | | ○ | | | | | |

# STRAIGHT SHANK DRILLS

**D1102** SERIES

## HSS, STRAIGHT SHANK DRILLS

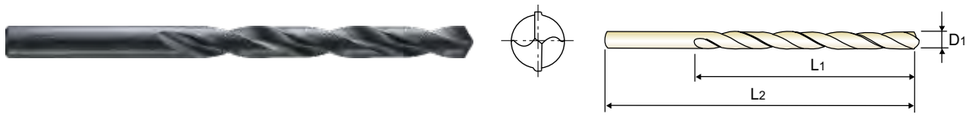
***LONG***

## HSS, 直柄钻头

长

▶**Surface treatment**: Steam Homo (Black Oxide Finish)
▶**Application** : Designed for drilling deep holes or deeply located holes. Drills in steel, cast steel alloyed and non-alloyed, grey cast iron, malleable cast iron

▶表面处理: 氧化发黑处理
▶应用 : 设计用于深孔加工或深定位孔加工. 适用于钢, 铸钢合金和非合金钢, 灰铸铁, 可锻铸铁的深孔钻削和石墨的 加工.




HSS | 20~30° | h8 | 118° | p. A229-A230

Recommended ToolHolder — Plain Shank: ER COLLET CHUCK — Page: D73 - 115

Unit(单位) : mm

| EDP No 型号 | Drill Diameter 刃径 D1 | Flute Length 槽长 L1 | Overall Length 全长 L2 |
|---|---|---|---|
| D1102349 | 4.9 | 100 | 150 |
| D1102350 | 5.0 | 100 | 150 |
| D1102351 | 5.1 | 100 | 150 |
| D1102352 | 5.2 | 100 | 150 |
| D1102353 | 5.3 | 100 | 150 |
| D1102354 | 5.4 | 100 | 150 |
| D1102355 | 5.5 | 100 | 150 |
| D1102356 | 5.6 | 100 | 150 |
| D1102357 | 5.7 | 100 | 150 |
| D1102358 | 5.8 | 100 | 150 |
| D1102359 | 5.9 | 100 | 150 |
| D1102360 | 6.0 | 100 | 150 |
| D1102361 | 6.1 | 100 | 150 |
| D1102362 | 6.2 | 100 | 150 |
| D1102363 | 6.3 | 100 | 150 |
| D1102364 | 6.4 | 100 | 150 |
| D1102365 | 6.5 | 100 | 150 |
| D1102366 | 6.6 | 100 | 150 |
| D1102367 | 6.7 | 100 | 150 |
| D1102368 | 6.8 | 100 | 150 |
| D1102369 | 6.9 | 100 | 150 |
| D1102370 | 7.0 | 100 | 150 |
| D1102371 | 7.1 | 100 | 150 |
| D1102372 | 7.2 | 100 | 150 |
| D1102373 | 7.3 | 100 | 150 |
| D1102374 | 7.4 | 100 | 150 |
| D1102375 | 7.5 | 100 | 150 |
| D1102376 | 7.6 | 100 | 150 |
| D1102377 | 7.7 | 100 | 150 |

| EDP No 型号 | Drill Diameter 刃径 D1 | Flute Length 槽长 L1 | Overall Length 全长 L2 |
|---|---|---|---|
| D1102378 | 7.8 | 100 | 150 |
| D1102379 | 7.9 | 100 | 150 |
| D1102380 | 8.0 | 100 | 150 |
| D1102382 | 8.2 | 100 | 150 |
| D1102384 | 8.4 | 100 | 150 |
| D1102385 | 8.5 | 100 | 150 |
| D1102386 | 8.6 | 100 | 150 |
| D1102388 | 8.8 | 100 | 150 |
| D1102390 | 9.0 | 100 | 150 |
| D1102392 | 9.2 | 100 | 150 |
| D1102394 | 9.4 | 100 | 150 |
| D1102395 | 9.5 | 100 | 150 |
| D1102396 | 9.6 | 100 | 150 |
| D1102398 | 9.8 | 100 | 150 |
| D1102600 | 10.0 | 100 | 150 |
| D1102602 | 10.2 | 100 | 150 |
| D1102604 | 10.4 | 100 | 150 |
| D1102605 | 10.5 | 100 | 150 |
| D1102606 | 10.6 | 100 | 150 |
| D1102608 | 10.8 | 100 | 150 |
| D1102610 | 11.0 | 100 | 150 |
| * D1102420 | 2.0 | 150 | 200 |
| * D1102422 | 2.2 | 150 | 200 |
| * D1102424 | 2.4 | 150 | 200 |
| * D1102425 | 2.5 | 150 | 200 |
| * D1102427 | 2.7 | 150 | 200 |
| * D1102428 | 2.8 | 150 | 200 |
| * D1102429 | 2.9 | 150 | 200 |
| * D1102430 | 3.0 | 150 | 200 |

* Bright Finish / 光亮色

▶ NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ○ | | ◎ | ○ | ○ | | ○ | | ○ | ○ | ○ | ○ | ○ | ○ | | ○ | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | | | | ○ | | | | | | | ○ | | | | | |



CARBIDE
HSS
i-ONE DRILLS
i-DREAM DRILLS
DREAM DRILLS -PRO
DREAM DRILLS -GENERAL
DREAM DRILLS -SOFT
DREAM DRILLS -HIGH FEED
DREAM DRILLS -FLAT BOTTOM
DREAM DRILLS -INOX
DREAM DRILLS -ALU
DREAM DRILLS -CFRP
DREAM DRILLS -MQL
DREAM DRILLS for HIGH HARDENED STEELS
GENERAL CARBIDE DRILLS
MULTI-1 DRILLS
GOLD-P DRILLS
SUPER-GP DRILLS
WORM PATTERN DRILLS
STRAIGHT SHANK DRILLS
TAPER SHANK DRILLS
NC-SPOTTING DRILLS
CENTER DRILLS
SPADE DRILLS
REAMERS
COUNTER SINKS
COUNTER BORES
TECHNICAL DATA

# STRAIGHT SHANK DRILLS

**D1102** SERIES

## HSS, STRAIGHT SHANK DRILLS

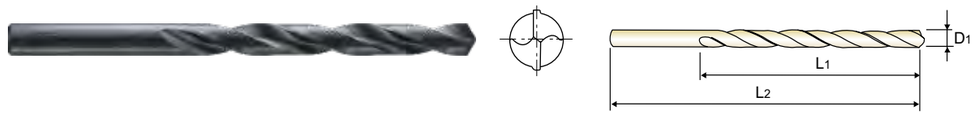
***LONG***

## HSS, 直柄钻头

长

▶**Surface treatment**: Steam Homo (Black Oxide Finish)
▶**Application** : Designed for drilling deep holes or deeply located holes. Drills in steel, cast steel alloyed and non-alloyed, grey cast iron, malleable cast iron

▶表面处理: 氧化发黑处理
▶应用 : 设计用于深孔加工或深定位孔加工. 适用于钢, 铸钢合 金和非合金钢, 灰铸铁, 可锻铸铁的深孔钻削和石墨的 加工.




HSS | 20~30° | h8 | 118° | p. A229-A230

Recommended ToolHolder — Plain Shank: ER COLLET CHUCK — Page: D73 - 115

Unit(单位) : mm

| EDP No 型号 | Drill Diameter 刃径 D1 | Flute Length 槽长 L1 | Overall Length 全长 L2 |
|---|---|---|---|
| * D1102432 | 3.2 | 150 | 200 |
| * D1102434 | 3.4 | 150 | 200 |
| * D1102435 | 3.5 | 150 | 200 |
| * D1102436 | 3.6 | 150 | 200 |
| * D1102437 | 3.7 | 150 | 200 |
| * D1102438 | 3.8 | 150 | 200 |
| * D1102439 | 3.9 | 150 | 200 |
| D1102440 | 4.0 | 150 | 200 |
| D1102441 | 4.1 | 150 | 200 |
| D1102442 | 4.2 | 150 | 200 |
| D1102443 | 4.3 | 150 | 200 |
| D1102444 | 4.4 | 150 | 200 |
| D1102445 | 4.5 | 150 | 200 |
| D1102446 | 4.6 | 150 | 200 |
| D1102447 | 4.7 | 150 | 200 |
| D1102448 | 4.8 | 150 | 200 |
| D1102449 | 4.9 | 150 | 200 |
| D1102450 | 5.0 | 150 | 200 |
| D1102451 | 5.1 | 150 | 200 |
| D1102452 | 5.2 | 150 | 200 |
| D1102453 | 5.3 | 150 | 200 |
| D1102454 | 5.4 | 150 | 200 |
| D1102455 | 5.5 | 150 | 200 |
| D1102456 | 5.6 | 150 | 200 |
| D1102457 | 5.7 | 150 | 200 |
| D1102458 | 5.8 | 150 | 200 |
| D1102459 | 5.9 | 150 | 200 |
| D1102460 | 6.0 | 150 | 200 |
| D1102461 | 6.1 | 150 | 200 |

| EDP No 型号 | Drill Diameter 刃径 D1 | Flute Length 槽长 L1 | Overall Length 全长 L2 |
|---|---|---|---|
| D1102462 | 6.2 | 150 | 200 |
| D1102463 | 6.3 | 150 | 200 |
| D1102464 | 6.4 | 150 | 200 |
| D1102465 | 6.5 | 150 | 200 |
| D1102466 | 6.6 | 150 | 200 |
| D1102467 | 6.7 | 150 | 200 |
| D1102468 | 6.8 | 150 | 200 |
| D1102469 | 6.9 | 150 | 200 |
| D1102470 | 7.0 | 150 | 200 |
| D1102471 | 7.1 | 150 | 200 |
| D1102472 | 7.2 | 150 | 200 |
| D1102473 | 7.3 | 150 | 200 |
| D1102474 | 7.4 | 150 | 200 |
| D1102475 | 7.5 | 150 | 200 |
| D1102476 | 7.6 | 150 | 200 |
| D1102477 | 7.7 | 150 | 200 |
| D1102478 | 7.8 | 150 | 200 |
| D1102479 | 7.9 | 150 | 200 |
| D1102480 | 8.0 | 150 | 200 |
| D1102481 | 8.1 | 150 | 200 |
| D1102482 | 8.2 | 150 | 200 |
| D1102483 | 8.3 | 150 | 200 |
| D1102484 | 8.4 | 150 | 200 |
| D1102485 | 8.5 | 150 | 200 |
| D1102486 | 8.6 | 150 | 200 |
| D1102487 | 8.7 | 150 | 200 |
| D1102488 | 8.8 | 150 | 200 |
| D1102489 | 8.9 | 150 | 200 |
| D1102490 | 9.0 | 150 | 200 |

* Bright Finish / 光亮色

▶ NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ○ | | ◎ | ○ | ○ | | ○ | | ○ | ○ | ○ | ○ | ○ | ○ | | ○ | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | | | | ○ | | | | | | | ○ | | | | | |

# STRAIGHT SHANK DRILLS

**D1102** SERIES

## HSS, STRAIGHT SHANK DRILLS

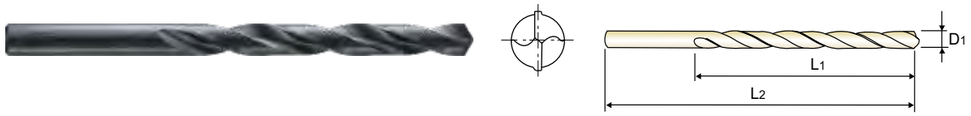
***LONG***

## HSS, 直柄钻头

长

▶**Surface treatment**: Steam Homo (Black Oxide Finish)
▶**Application** : Designed for drilling deep holes or deeply located holes. Drills in steel, cast steel alloyed and non-alloyed, grey cast iron, malleable cast iron

▶表面处理: 氧化发黑处理
▶应用 : 设计用于深孔加工或深定位孔加工. 适用于钢, 铸钢合金和非合金钢, 灰铸铁, 可锻铸铁的深孔钻削和石墨的 加工.




HSS | 20~30° | h8 | 118° | p. A229-A230

Recommended ToolHolder — Plain Shank: ER COLLET CHUCK — Page: D73-115

Unit(单位) : mm

| EDP No 型号 | Drill Diameter 刃径 D1 | Flute Length 槽长 L1 | Overall Length 全长 L2 |
|---|---|---|---|
| D1102491 | 9.1 | 150 | 200 |
| D1102492 | 9.2 | 150 | 200 |
| D1102493 | 9.3 | 150 | 200 |
| D1102494 | 9.4 | 150 | 200 |
| D1102495 | 9.5 | 150 | 200 |
| D1102496 | 9.6 | 150 | 200 |
| D1102497 | 9.7 | 150 | 200 |
| D1102498 | 9.8 | 150 | 200 |
| D1102499 | 9.9 | 150 | 200 |
| D1102700 | 10.0 | 150 | 200 |
| D1102702 | 10.2 | 150 | 200 |
| D1102704 | 10.4 | 150 | 200 |
| D1102705 | 10.5 | 150 | 200 |
| D1102706 | 10.6 | 150 | 200 |
| D1102708 | 10.8 | 150 | 200 |
| D1102710 | 11.0 | 150 | 200 |
| D1102712 | 11.2 | 150 | 200 |
| D1102714 | 11.4 | 150 | 200 |
| D1102715 | 11.5 | 150 | 200 |
| D1102716 | 11.6 | 150 | 200 |
| D1102718 | 11.8 | 150 | 200 |
| D1102720 | 12.0 | 150 | 200 |
| D1102722 | 12.2 | 150 | 200 |
| D1102724 | 12.4 | 150 | 200 |
| D1102725 | 12.5 | 150 | 200 |
| D1102726 | 12.6 | 150 | 200 |
| D1102728 | 12.8 | 150 | 200 |
| D1102730 | 13.0 | 150 | 200 |
| * D1102536 | 3.6 | 200 | 250 |

| EDP No 型号 | Drill Diameter 刃径 D1 | Flute Length 槽长 L1 | Overall Length 全长 L2 |
|---|---|---|---|
| D1102540 | 4.0 | 200 | 250 |
| D1102544 | 4.4 | 200 | 250 |
| D1102545 | 4.5 | 200 | 250 |
| D1102546 | 4.6 | 200 | 250 |
| D1102548 | 4.8 | 200 | 250 |
| D1102550 | 5.0 | 200 | 250 |
| D1102551 | 5.1 | 200 | 250 |
| D1102552 | 5.2 | 200 | 250 |
| D1102553 | 5.3 | 200 | 250 |
| D1102554 | 5.4 | 200 | 250 |
| D1102555 | 5.5 | 200 | 250 |
| D1102556 | 5.6 | 200 | 250 |
| D1102558 | 5.8 | 200 | 250 |
| D1102560 | 6.0 | 200 | 250 |
| D1102561 | 6.1 | 200 | 250 |
| D1102562 | 6.2 | 200 | 250 |
| D1102563 | 6.3 | 200 | 250 |
| D1102564 | 6.4 | 200 | 250 |
| D1102565 | 6.5 | 200 | 250 |
| D1102566 | 6.6 | 200 | 250 |
| D1102567 | 6.7 | 200 | 250 |
| D1102568 | 6.8 | 200 | 250 |
| D1102569 | 6.9 | 200 | 250 |
| D1102570 | 7.0 | 200 | 250 |
| D1102571 | 7.1 | 200 | 250 |
| D1102572 | 7.2 | 200 | 250 |
| D1102573 | 7.3 | 200 | 250 |
| D1102574 | 7.4 | 200 | 250 |
| D1102575 | 7.5 | 200 | 250 |

* Bright Finish / 光亮色

▶ NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ○ | | ◎ | ○ | ○ | | ○ | | ○ | ○ | ○ | ○ | ○ | ○ | | ○ | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | | | | ○ | | | | | | | ○ | | | | | |



CARBIDE
HSS
i-ONE DRILLS
i-DREAM DRILLS
DREAM DRILLS -PRO
DREAM DRILLS -GENERAL
DREAM DRILLS -SOFT
DREAM DRILLS -HIGH FEED
DREAM DRILLS -FLAT BOTTOM
DREAM DRILLS -INOX
DREAM DRILLS -ALU
DREAM DRILLS -CFRP
DREAM DRILLS -MQL
DREAM DRILLS for HIGH HARDENED STEELS
GENERAL CARBIDE DRILLS
MULTI-1 DRILLS
GOLD-P DRILLS
SUPER-GP DRILLS
WORM PATTERN DRILLS
STRAIGHT SHANK DRILLS
TAPER SHANK DRILLS
NC-SPOTTING DRILLS
CENTER DRILLS
SPADE DRILLS
REAMERS
COUNTER SINKS
COUNTER BORES
TECHNICAL DATA

# STRAIGHT SHANK DRILLS

**D1102** SERIES

## HSS, STRAIGHT SHANK DRILLS

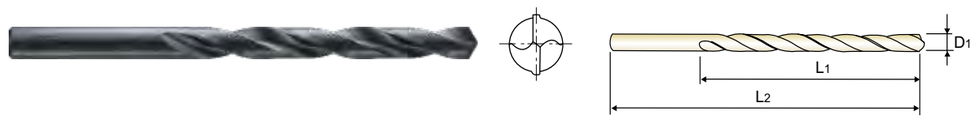
***LONG***

## HSS, 直柄钻头

长

▶**Surface treatment**: Steam Homo (Black Oxide Finish)
▶**Application** : Designed for drilling deep holes or deeply located holes. Drills in steel, cast steel alloyed and non-alloyed, grey cast iron, malleable cast iron

▶表面处理: 氧化发黑处理
▶应用 : 设计用于深孔加工或深定位孔加工. 适用于钢, 铸钢合金和非合金钢, 灰铸铁, 可锻铸铁的深孔钻削和石墨的 加工.




HSS | 20~30° | h8 | 118° | p. A229-A230

Recommended ToolHolder — Plain Shank: ER COLLET CHUCK — Page: D73-115

Unit(单位) : mm

| EDP No 型号 | Drill Diameter 刃径 D1 | Flute Length 槽长 L1 | Overall Length 全长 L2 |
|---|---|---|---|
| D1102576 | 7.6 | 200 | 250 |
| D1102577 | 7.7 | 200 | 250 |
| D1102578 | 7.8 | 200 | 250 |
| D1102579 | 7.9 | 200 | 250 |
| D1102580 | 8.0 | 200 | 250 |
| D1102581 | 8.1 | 200 | 250 |
| D1102582 | 8.2 | 200 | 250 |
| D1102583 | 8.3 | 200 | 250 |
| D1102584 | 8.4 | 200 | 250 |
| D1102585 | 8.5 | 200 | 250 |
| D1102586 | 8.6 | 200 | 250 |
| D1102587 | 8.7 | 200 | 250 |
| D1102588 | 8.8 | 200 | 250 |
| D1102589 | 8.9 | 200 | 250 |
| D1102590 | 9.0 | 200 | 250 |
| D1102591 | 9.1 | 200 | 250 |
| D1102592 | 9.2 | 200 | 250 |
| D1102593 | 9.3 | 200 | 250 |
| D1102594 | 9.4 | 200 | 250 |
| D1102595 | 9.5 | 200 | 250 |
| D1102596 | 9.6 | 200 | 250 |
| D1102597 | 9.7 | 200 | 250 |
| D1102598 | 9.8 | 200 | 250 |
| D1102599 | 9.9 | 200 | 250 |
| D1102800 | 10.0 | 200 | 250 |
| D1102801 | 10.1 | 200 | 250 |
| D1102802 | 10.2 | 200 | 250 |
| D1102803 | 10.3 | 200 | 250 |
| D1102804 | 10.4 | 200 | 250 |

| EDP No 型号 | Drill Diameter 刃径 D1 | Flute Length 槽长 L1 | Overall Length 全长 L2 |
|---|---|---|---|
| D1102805 | 10.5 | 200 | 250 |
| D1102806 | 10.6 | 200 | 250 |
| D1102807 | 10.7 | 200 | 250 |
| D1102808 | 10.8 | 200 | 250 |
| D1102809 | 10.9 | 200 | 250 |
| D1102810 | 11.0 | 200 | 250 |
| D1102811 | 11.1 | 200 | 250 |
| D1102812 | 11.2 | 200 | 250 |
| D1102813 | 11.3 | 200 | 250 |
| D1102814 | 11.4 | 200 | 250 |
| D1102815 | 11.5 | 200 | 250 |
| D1102816 | 11.6 | 200 | 250 |
| D1102817 | 11.7 | 200 | 250 |
| D1102818 | 11.8 | 200 | 250 |
| D1102819 | 11.9 | 200 | 250 |
| D1102820 | 12.0 | 200 | 250 |
| D1102821 | 12.1 | 200 | 250 |
| D1102822 | 12.2 | 200 | 250 |
| D1102823 | 12.3 | 200 | 250 |
| D1102824 | 12.4 | 200 | 250 |
| D1102825 | 12.5 | 200 | 250 |
| D1102826 | 12.6 | 200 | 250 |
| D1102827 | 12.7 | 200 | 250 |
| D1102828 | 12.8 | 200 | 250 |
| D1102829 | 12.9 | 200 | 250 |
| D1102830 | 13.0 | 200 | 250 |
| D1102654 | 5.4 | 200 | 300 |
| D1102655 | 5.5 | 200 | 300 |
| D1102656 | 5.6 | 200 | 300 |

▶ NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ○ | | ◎ | ○ | ○ | | ○ | | ○ | ○ | ○ | ○ | ○ | ○ | | ○ | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | | | | ○ | | | | | | | ○ | | | | | |

# STRAIGHT SHANK DRILLS

**D1102** SERIES

## HSS, STRAIGHT SHANK DRILLS

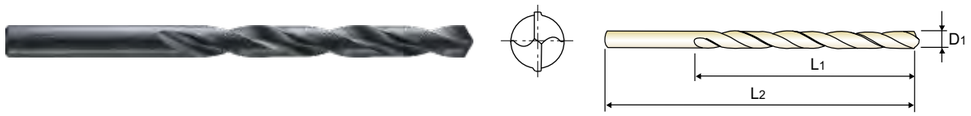
***LONG***

## HSS, 直柄钻头

长

▶**Surface treatment**: Steam Homo (Black Oxide Finish)
▶**Application** : Designed for drilling deep holes or deeply located holes. Drills in steel, cast steel alloyed and non-alloyed, grey cast iron, malleable cast iron

▶表面处理：氧化发黑处理
▶应用 ： 设计用于深孔加工或深定位孔加工. 适用于钢, 铸钢合金和非合金钢, 灰铸铁, 可锻铸铁的深孔钻削和石墨的 加工.




HSS | 20~30° | h8 | 118° | p. A229-A230

Recommended ToolHolder — Plain Shank: ER COLLET CHUCK — Page: D73-115

Unit(单位) : mm

| EDP No 型号 | Drill Diameter 刃径 D1 | Flute Length 槽长 L1 | Overall Length 全长 L2 |
|---|---|---|---|
| D1102660 | 6.0 | 200 | 300 |
| D1102662 | 6.2 | 200 | 300 |
| D1102664 | 6.4 | 200 | 300 |
| D1102665 | 6.5 | 200 | 300 |
| D1102666 | 6.6 | 200 | 300 |
| D1102670 | 7.0 | 200 | 300 |
| D1102672 | 7.2 | 200 | 300 |
| D1102674 | 7.4 | 200 | 300 |
| D1102675 | 7.5 | 200 | 300 |
| D1102676 | 7.6 | 200 | 300 |
| D1102678 | 7.8 | 200 | 300 |
| D1102680 | 8.0 | 200 | 300 |
| D1102682 | 8.2 | 200 | 300 |
| D1102684 | 8.4 | 200 | 300 |
| D1102685 | 8.5 | 200 | 300 |
| D1102686 | 8.6 | 200 | 300 |
| D1102688 | 8.8 | 200 | 300 |
| D1102690 | 9.0 | 200 | 300 |
| D1102692 | 9.2 | 200 | 300 |
| D1102694 | 9.4 | 200 | 300 |
| D1102695 | 9.5 | 200 | 300 |
| D1102696 | 9.6 | 200 | 300 |
| D1102698 | 9.8 | 200 | 300 |
| D1102900 | 10.0 | 200 | 300 |
| D1102901 | 10.1 | 200 | 300 |
| D1102902 | 10.2 | 200 | 300 |
| D1102903 | 10.3 | 200 | 300 |
| D1102904 | 10.4 | 200 | 300 |

| EDP No 型号 | Drill Diameter 刃径 D1 | Flute Length 槽长 L1 | Overall Length 全长 L2 |
|---|---|---|---|
| D1102905 | 10.5 | 200 | 300 |
| D1102906 | 10.6 | 200 | 300 |
| D1102907 | 10.7 | 200 | 300 |
| D1102908 | 10.8 | 200 | 300 |
| D1102909 | 10.9 | 200 | 300 |
| D1102910 | 11.0 | 200 | 300 |
| D1102911 | 11.1 | 200 | 300 |
| D1102912 | 11.2 | 200 | 300 |
| D1102913 | 11.3 | 200 | 300 |
| D1102914 | 11.4 | 200 | 300 |
| D1102915 | 11.5 | 200 | 300 |
| D1102916 | 11.6 | 200 | 300 |
| D1102917 | 11.7 | 200 | 300 |
| D1102918 | 11.8 | 200 | 300 |
| D1102919 | 11.9 | 200 | 300 |
| D1102920 | 12.0 | 200 | 300 |
| D1102921 | 12.1 | 200 | 300 |
| D1102922 | 12.2 | 200 | 300 |
| D1102923 | 12.3 | 200 | 300 |
| D1102924 | 12.4 | 200 | 300 |
| D1102925 | 12.5 | 200 | 300 |
| D1102926 | 12.6 | 200 | 300 |
| D1102927 | 12.7 | 200 | 300 |
| D1102928 | 12.8 | 200 | 300 |
| D1102929 | 12.9 | 200 | 300 |
| D1102930 | 13.0 | 200 | 300 |
| D1102A20 | 12.0 | 250 | 350 |
| D1102A30 | 13.0 | 250 | 350 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ○ | | ◎ | ○ | ○ | | ○ | | ○ | ○ | ○ | ○ | ○ | ○ | | ○ | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | | | | ○ | | | | | | | ○ | | | | | |





# STRAIGHT SHANK DRILLS

**D1104** SERIES

## HSS, STRAIGHT SHANK DRILLS

***LONG***

## HSS, 直柄钻头

长

▶**Surface treatment** : Bright Finish
▶ **Application** : Drilling stainless steels and difficult - to - cut materials

▶ 表面处理：光亮处理
▶ 应用 ： 适用于加工不锈钢, 及钛, 镍铬合金等难加工材料.

Only available till stock runs out
尽在库存用完之前可用

DIN 340 | HSS | N 20~30° | h8 | 118° | p. A229-A230

Recommended ToolHolder — Plain Shank: ER COLLET CHUCK — Page: D73-115

Unit(单位) : mm

| EDP No. 型号 | Drill Diameter 刃径 D1 | Flute Length 槽长 L1 | Overall Length 全长 L2 |
|---|---|---|---|
| ▲ D1104010 | 1.0 | 33 | 56 |
| ▲ D1104011 | 1.1 | 37 | 60 |
| ▲ D1104012 | 1.2 | 41 | 65 |
| ▲ D1104013 | 1.3 | 41 | 65 |
| ▲ D1104014 | 1.4 | 45 | 70 |
| ▲ D1104015 | 1.5 | 45 | 70 |
| ▲ D1104016 | 1.6 | 50 | 76 |
| ▲ D1104017 | 1.7 | 50 | 76 |
| ▲ D1104018 | 1.8 | 53 | 80 |
| ▲ D1104019 | 1.9 | 53 | 80 |
| ▲ D1104020 | 2.0 | 56 | 85 |
| ▲ D1104021 | 2.1 | 56 | 85 |
| ▲ D1104022 | 2.2 | 59 | 90 |
| ▲ D1104023 | 2.3 | 59 | 90 |
| ▲ D1104024 | 2.4 | 62 | 95 |
| ▲ D1104025 | 2.5 | 62 | 95 |
| ▲ D1104026 | 2.6 | 62 | 95 |
| ▲ D1104027 | 2.7 | 66 | 100 |
| ▲ D1104028 | 2.8 | 66 | 100 |
| ▲ D1104029 | 2.9 | 66 | 100 |
| ▲ D1104030 | 3.0 | 66 | 100 |
| ▲ D1104031 | 3.1 | 69 | 106 |
| ▲ D1104032 | 3.2 | 69 | 106 |
| ▲ D1104033 | 3.3 | 69 | 106 |
| ▲ D1104034 | 3.4 | 73 | 112 |
| ▲ D1104035 | 3.5 | 73 | 112 |
| ▲ D1104036 | 3.6 | 73 | 112 |
| ▲ D1104037 | 3.7 | 73 | 112 |
| ▲ D1104038 | 3.8 | 78 | 119 |
| ▲ D1104039 | 3.9 | 78 | 119 |

| EDP No. 型号 | Drill Diameter 刃径 D1 | Flute Length 槽长 L1 | Overall Length 全长 L2 |
|---|---|---|---|
| ▲ D1104040 | 4.0 | 78 | 119 |
| ▲ D1104041 | 4.1 | 78 | 119 |
| ▲ D1104042 | 4.2 | 78 | 119 |
| ▲ D1104043 | 4.3 | 82 | 126 |
| ▲ D1104044 | 4.4 | 82 | 126 |
| ▲ D1104045 | 4.5 | 82 | 126 |
| ▲ D1104046 | 4.6 | 82 | 126 |
| ▲ D1104047 | 4.7 | 82 | 126 |
| ▲ D1104048 | 4.8 | 87 | 132 |
| ▲ D1104049 | 4.9 | 87 | 132 |
| ▲ D1104050 | 5.0 | 87 | 132 |
| ▲ D1104051 | 5.1 | 87 | 132 |
| ▲ D1104052 | 5.2 | 87 | 132 |
| ▲ D1104053 | 5.3 | 87 | 132 |
| ▲ D1104054 | 5.4 | 91 | 139 |
| ▲ D1104055 | 5.5 | 91 | 139 |
| ▲ D1104056 | 5.6 | 91 | 139 |
| ▲ D1104057 | 5.7 | 91 | 139 |
| ▲ D1104058 | 5.8 | 91 | 139 |
| ▲ D1104059 | 5.9 | 91 | 139 |
| ▲ D1104060 | 6.0 | 91 | 139 |
| ▲ D1104061 | 6.1 | 97 | 148 |
| ▲ D1104062 | 6.2 | 97 | 148 |
| ▲ D1104063 | 6.3 | 97 | 148 |
| ▲ D1104064 | 6.4 | 97 | 148 |
| ▲ D1104065 | 6.5 | 97 | 148 |
| ▲ D1104066 | 6.6 | 97 | 148 |
| ▲ D1104067 | 6.7 | 97 | 148 |
| ▲ D1104068 | 6.8 | 102 | 156 |
| ▲ D1104069 | 6.9 | 102 | 156 |

▲ : Only available till stock runs out 尽在库存用完之前可用

▶ NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ○ | | ◎ | ○ | ○ | | ○ | | ○ | ○ | ○ | ○ | ○ | ○ | | ○ | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | | | | ○ | | | | | | | ○ | | | | | |

# STRAIGHT SHANK DRILLS

**D1104** SERIES

## HSS, STRAIGHT SHANK DRILLS

## HSS, 直柄钻头

***LONG***

长

▶**Surface treatment** : Bright Finish
▶**Application** : Drilling stainless steels and difficult - to - cut materials

▶ 表面处理：光亮处理
▶ 应用 ：适用于加工不锈钢, 及钛, 镍铬合金等难加工材料.

Only available till stock runs out
尽在库存用完之前可用

DIN 340 | HSS | N 20~30° | h8 | 118° | p. A229-A230

Recommended ToolHolder — Plain Shank: ER COLLET CHUCK — Page: D73 - 115

Unit(单位) : mm

| EDP No. 型号 | Drill Diameter 刃径 D1 | Flute Length 槽长 L1 | Overall Length 全长 L2 |
|---|---|---|---|
| ▲ D1104070 | 7.0 | 102 | 156 |
| ▲ D1104071 | 7.1 | 102 | 156 |
| ▲ D1104072 | 7.2 | 102 | 156 |
| ▲ D1104073 | 7.3 | 102 | 156 |
| ▲ D1104074 | 7.4 | 102 | 156 |
| ▲ D1104075 | 7.5 | 102 | 156 |
| ▲ D1104076 | 7.6 | 109 | 165 |
| ▲ D1104077 | 7.7 | 109 | 165 |
| ▲ D1104078 | 7.8 | 109 | 165 |
| ▲ D1104079 | 7.9 | 109 | 165 |
| ▲ D1104080 | 8.0 | 109 | 165 |
| ▲ D1104081 | 8.1 | 109 | 165 |
| ▲ D1104082 | 8.2 | 109 | 165 |
| ▲ D1104083 | 8.3 | 109 | 165 |
| ▲ D1104084 | 8.4 | 109 | 165 |
| ▲ D1104085 | 8.5 | 109 | 165 |
| ▲ D1104086 | 8.6 | 115 | 175 |
| ▲ D1104087 | 8.7 | 115 | 175 |
| ▲ D1104088 | 8.8 | 115 | 175 |
| ▲ D1104089 | 8.9 | 115 | 175 |
| ▲ D1104090 | 9.0 | 115 | 175 |
| ▲ D1104091 | 9.1 | 115 | 175 |
| ▲ D1104092 | 9.2 | 115 | 175 |
| ▲ D1104093 | 9.3 | 115 | 175 |
| ▲ D1104094 | 9.4 | 115 | 175 |
| ▲ D1104095 | 9.5 | 115 | 175 |
| ▲ D1104096 | 9.6 | 121 | 184 |

| EDP No. 型号 | Drill Diameter 刃径 D1 | Flute Length 槽长 L1 | Overall Length 全长 L2 |
|---|---|---|---|
| ▲ D1104097 | 9.7 | 121 | 184 |
| ▲ D1104098 | 9.8 | 121 | 184 |
| ▲ D1104099 | 9.9 | 121 | 184 |
| ▲ D1104100 | 10.0 | 121 | 184 |
| ▲ D1104101 | 10.1 | 121 | 184 |
| ▲ D1104102 | 10.2 | 121 | 184 |
| ▲ D1104103 | 10.3 | 121 | 184 |
| ▲ D1104105 | 10.5 | 121 | 184 |
| ▲ D1104106 | 10.6 | 121 | 184 |
| ▲ D1104107 | 10.7 | 128 | 195 |
| ▲ D1104108 | 10.8 | 128 | 195 |
| ▲ D1104110 | 11.0 | 128 | 195 |
| ▲ D1104115 | 11.5 | 128 | 195 |
| ▲ D1104117 | 11.7 | 128 | 195 |
| ▲ D1104118 | 11.8 | 128 | 195 |
| ▲ D1104119 | 11.9 | 134 | 205 |
| ▲ D1104120 | 12.0 | 134 | 205 |
| ▲ D1104125 | 12.5 | 134 | 205 |
| ▲ D1104127 | 12.7 | 134 | 205 |
| ▲ D1104130 | 13.0 | 134 | 205 |
| ▲ D1104135 | 13.5 | 140 | 214 |
| ▲ D1104140 | 14.0 | 140 | 214 |
| ▲ D1104145 | 14.5 | 144 | 220 |
| ▲ D1104150 | 15.0 | 144 | 220 |
| ▲ D1104160 | 16.0 | 149 | 227 |
| ▲ D1104165 | 16.5 | 154 | 235 |
| ▲ D1104175 | 17.5 | 158 | 241 |

▲ : Only available till stock runs out 尽在库存用完之前可用

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ○ | | ◎ | ○ | ○ | | ○ | | ○ | ○ | ○ | ○ | ○ | ○ | | ○ | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | | | | ○ | | | | | | | ○ | | | | | |



# STRAIGHT SHANK DRILLS

## RECOMMENDED CUTTING CONDITIONS

## 推荐加工条件

**D2101, D1101, D1102, D1104** SERIES

### HSS & HSSCo8 STRAIGHT SHANK DRILLS

### HSS & HSSCo8, 直柄钻头

RPM (转速) = (rev./min.)
FEED (进给) = (mm/rev.)

| ISO 公制 | VDI 3323 | Material Description 材料描述 | Vc 钻削速度 (m/min) | Parameter 参数 | Drill Diameter 刃径 (mm) 1.0 | Vc 钻削速度 (m/min) | Parameter 参数 | Drill Diameter 刃径 (mm) 2.0 | 3.0 | 4.0 | 6.0 | 8.0 | 10.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | 25 | RPM | 7960 | 30 | RPM | 4770 | 3180 | 2390 | 1590 | 1190 | 950 |
| | | | | FEED | 0.01-0.03 | | FEED | 0.02-0.04 | 0.03-0.05 | 0.04-0.06 | 0.05-0.08 | 0.10-0.13 | 0.11-0.15 |
| | 2 | | 20 | RPM | 6370 | 25 | RPM | 3980 | 2650 | 1990 | 1330 | 990 | 800 |
| | | | | FEED | 0.01-0.03 | | FEED | 0.02-0.04 | 0.03-0.05 | 0.04-0.06 | 0.05-0.08 | 0.10-0.13 | 0.11-0.15 |
| | 3 | | 15 | RPM | 4770 | 20 | RPM | 3180 | 2120 | 1590 | 1060 | 800 | 640 |
| | | | | FEED | 0.01-0.03 | | FEED | 0.02-0.04 | 0.03-0.05 | 0.04-0.06 | 0.05-0.08 | 0.10-0.13 | 0.11-0.15 |
| | 4 | | 15 | RPM | 4770 | 20 | RPM | 3180 | 2120 | 1590 | 1060 | 800 | 640 |
| | | | | FEED | 0.01-0.02 | | FEED | 0.01-0.02 | 0.01-0.03 | 0.02-0.04 | 0.02-0.05 | 0.03-0.06 | 0.03-0.06 |
| | 6 | Low alloy steel | 20 | RPM | 6370 | 25 | RPM | 3980 | 2650 | 1990 | 1330 | 990 | 800 |
| | | | | FEED | 0.01-0.03 | | FEED | 0.02-0.04 | 0.03-0.05 | 0.04-0.06 | 0.05-0.08 | 0.10-0.13 | 0.11-0.15 |
| | 7 | | 15 | RPM | 4770 | 20 | RPM | 3180 | 2120 | 1590 | 1060 | 800 | 640 |
| | | | | FEED | 0.01-0.03 | | FEED | 0.02-0.04 | 0.03-0.05 | 0.04-0.06 | 0.05-0.08 | 0.10-0.13 | 0.11-0.15 |
| | 8 | | 15 | RPM | 4770 | 20 | RPM | 3180 | 2120 | 1590 | 1060 | 800 | 640 |
| | | | | FEED | 0.01-0.02 | | FEED | 0.01-0.02 | 0.01-0.03 | 0.02-0.04 | 0.02-0.05 | 0.03-0.06 | 0.03-0.06 |
| | 10 | High alloyed steel, and tool steel | 10 | RPM | 3180 | 15 | RPM | 2390 | 1590 | 1190 | 800 | 600 | 480 |
| | | | | FEED | 0.01-0.03 | | FEED | 0.02-0.04 | 0.03-0.05 | 0.04-0.06 | 0.05-0.08 | 0.10-0.13 | 0.11-0.15 |
| M | 12 | Stainless steel | 15 | RPM | 4770 | 20 | RPM | 3180 | 2120 | 1590 | 1060 | 800 | 640 |
| | | | | FEED | 0.01-0.03 | | FEED | 0.02-0.04 | 0.03-0.05 | 0.04-0.06 | 0.05-0.08 | 0.10-0.13 | 0.11-0.15 |
| | 13 | | 10 | RPM | 3180 | 15 | RPM | 2390 | 1590 | 1190 | 800 | 600 | 480 |
| | | | | FEED | 0.01-0.03 | | FEED | 0.02-0.04 | 0.03-0.05 | 0.04-0.06 | 0.05-0.08 | 0.10-0.13 | 0.11-0.15 |
| | 14 | | 8 | RPM | 2550 | 10 | RPM | 1590 | 1060 | 800 | 530 | 400 | 320 |
| | | | | FEED | 0.01-0.02 | | FEED | 0.01-0.02 | 0.01-0.03 | 0.02-0.04 | 0.02-0.05 | 0.03-0.06 | 0.03-0.06 |
| K | 15 | Grey cast iron | 25 | RPM | 7960 | 30 | RPM | 4770 | 3180 | 2390 | 1590 | 1190 | 950 |
| | | | | FEED | 0.01-0.03 | | FEED | 0.02-0.04 | 0.03-0.05 | 0.04-0.06 | 0.05-0.08 | 0.10-0.13 | 0.11-0.15 |
| | 16 | | 20 | RPM | 6370 | 25 | RPM | 3980 | 2650 | 1990 | 1330 | 990 | 800 |
| | | | | FEED | 0.01-0.02 | | FEED | 0.01-0.02 | 0.01-0.03 | 0.02-0.04 | 0.02-0.05 | 0.03-0.06 | 0.03-0.06 |
| | 17 | Nodular cast iron | 25 | RPM | 7960 | 30 | RPM | 4770 | 3180 | 2390 | 1590 | 1190 | 950 |
| | | | | FEED | 0.01-0.03 | | FEED | 0.02-0.04 | 0.03-0.05 | 0.04-0.06 | 0.05-0.08 | 0.10-0.13 | 0.11-0.15 |
| | 19 | Malleable cast iron | 20 | RPM | 6370 | 25 | RPM | 3980 | 2650 | 1990 | 1330 | 990 | 800 |
| | | | | FEED | 0.01-0.03 | | FEED | 0.02-0.04 | 0.03-0.05 | 0.04-0.06 | 0.05-0.08 | 0.10-0.13 | 0.11-0.15 |
| N | 21 | Aluminum-wrought alloy | 45 | RPM | 14320 | 55 | RPM | 8750 | 5840 | 4380 | 2920 | 2190 | 1750 |
| | | | | FEED | 0.02-0.04 | | FEED | 0.03-0.06 | 0.05-0.09 | 0.07-0.11 | 0.12-0.16 | 0.12-0.18 | 0.14-0.20 |
| | 22 | | 45 | RPM | 14320 | 55 | RPM | 8750 | 5840 | 4380 | 2920 | 2190 | 1750 |
| | | | | FEED | 0.02-0.04 | | FEED | 0.03-0.06 | 0.05-0.09 | 0.07-0.11 | 0.12-0.16 | 0.12-0.18 | 0.14-0.20 |
| | 23 | Aluminum-cast, alloyed | 30 | RPM | 9550 | 40 | RPM | 6370 | 4240 | 3180 | 2120 | 1590 | 1270 |
| | | | | FEED | 0.02-0.04 | | FEED | 0.03-0.06 | 0.05-0.09 | 0.07-0.11 | 0.12-0.16 | 0.12-0.18 | 0.14-0.20 |
| | 29 | Non Metallic Materials | 15 | RPM | 4770 | 20 | RPM | 3180 | 2120 | 1590 | 1060 | 800 | 640 |
| | | | | FEED | 0.01-0.03 | | FEED | 0.02-0.04 | 0.03-0.05 | 0.04-0.06 | 0.05-0.08 | 0.10-0.13 | 0.11-0.15 |
| S | 36 | Titanium Alloys | 7 | RPM | 2230 | 10 | RPM | 1590 | 1060 | 800 | 530 | 400 | 320 |
| | | | | FEED | 0.01-0.03 | | FEED | 0.01-0.03 | 0.02-0.04 | 0.03-0.05 | 0.04-0.07 | 0.05-0.08 | 0.05-0.09 |

▶ NEXT PAGE 下页

# STRAIGHT SHANK DRILLS

## RECOMMENDED CUTTING CONDITIONS
推荐加工条件

## D2101, D1101, D1102, D1104 SERIES

### HSS & HSSCo8 STRAIGHT SHANK DRILLS
HSS & HSSCo8, 直柄钻头

RPM (转速) = (rev./min.)
FEED (进给) = (mm/rev.)

| ISO 公制 | VDI 3323 | Material Description 材料描述 | Vc 钻削速度 (m/min) | Parameter 参数 | Drill Diameter 刃径 (mm) | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | 13.0 | 16.0 | 18.0 | 20.0 | 30.0 |
| P | 1 | Non-alloy steel | 30 | RPM | 730 | 600 | 530 | 480 | 320 |
| | | | | FEED | 0.11-0.17 | 0.12-0.18 | 0.14-0.20 | 0.19-0.25 | 0.22-0.28 |
| | 2 | | 25 | RPM | 610 | 500 | 440 | 400 | 270 |
| | | | | FEED | 0.11-0.17 | 0.12-0.18 | 0.14-0.20 | 0.19-0.25 | 0.22-0.28 |
| | 3 | | 20 | RPM | 490 | 400 | 350 | 320 | 210 |
| | | | | FEED | 0.11-0.17 | 0.12-0.18 | 0.14-0.20 | 0.19-0.25 | 0.22-0.28 |
| | 4 | | 20 | RPM | 490 | 400 | 350 | 320 | 210 |
| | | | | FEED | 0.04-0.10 | 0.06-0.12 | 0.08-0.14 | 0.10-0.16 | 0.12-0.18 |
| | 6 | Low alloy steel | 25 | RPM | 610 | 500 | 440 | 400 | 270 |
| | | | | FEED | 0.11-0.17 | 0.12-0.18 | 0.14-0.20 | 0.19-0.25 | 0.22-0.28 |
| | 7 | | 20 | RPM | 490 | 400 | 350 | 320 | 210 |
| | | | | FEED | 0.11-0.17 | 0.12-0.18 | 0.14-0.20 | 0.19-0.25 | 0.22-0.28 |
| | 8 | | 20 | RPM | 490 | 400 | 350 | 320 | 210 |
| | | | | FEED | 0.04-0.10 | 0.06-0.12 | 0.08-0.14 | 0.10-0.16 | 0.12-0.18 |
| | 10 | High alloyed steel, and tool steel | 15 | RPM | 370 | 300 | 270 | 240 | 160 |
| | | | | FEED | 0.11-0.17 | 0.12-0.18 | 0.14-0.20 | 0.19-0.25 | 0.22-0.28 |
| M | 12 | Stainless steel | 20 | RPM | 490 | 400 | 350 | 320 | 210 |
| | | | | FEED | 0.11-0.17 | 0.12-0.18 | 0.14-0.20 | 0.19-0.25 | 0.22-0.28 |
| | 13 | | 15 | RPM | 370 | 300 | 270 | 240 | 160 |
| | | | | FEED | 0.11-0.17 | 0.12-0.18 | 0.14-0.20 | 0.19-0.25 | 0.22-0.28 |
| | 14 | | 10 | RPM | 240 | 200 | 180 | 160 | 110 |
| | | | | FEED | 0.04-0.10 | 0.06-0.12 | 0.08-0.14 | 0.10-0.16 | 0.12-0.18 |
| K | 15 | Grey cast iron | 30 | RPM | 730 | 600 | 530 | 480 | 320 |
| | | | | FEED | 0.11-0.17 | 0.12-0.18 | 0.14-0.20 | 0.19-0.25 | 0.22-0.28 |
| | 16 | | 25 | RPM | 610 | 500 | 440 | 400 | 270 |
| | | | | FEED | 0.04-0.10 | 0.06-0.12 | 0.08-0.14 | 0.10-0.16 | 0.12-0.18 |
| | 17 | Nodular cast iron | 30 | RPM | 730 | 600 | 530 | 480 | 320 |
| | | | | FEED | 0.11-0.17 | 0.12-0.18 | 0.14-0.20 | 0.19-0.25 | 0.22-0.28 |
| | 19 | Malleable cast iron | 25 | RPM | 610 | 500 | 440 | 400 | 270 |
| | | | | FEED | 0.11-0.17 | 0.12-0.18 | 0.14-0.20 | 0.19-0.25 | 0.22-0.28 |
| N | 21 | Aluminum-wrought alloy | 55 | RPM | 1350 | 1090 | 970 | 880 | 580 |
| | | | | FEED | 0.16-0.22 | 0.18-0.24 | 0.20-0.28 | 0.20-0.30 | 0.28-0.38 |
| | 22 | | 55 | RPM | 1350 | 1090 | 970 | 880 | 580 |
| | | | | FEED | 0.16-0.22 | 0.18-0.24 | 0.20-0.28 | 0.20-0.30 | 0.28-0.38 |
| | 23 | Aluminum-cast, alloyed | 40 | RPM | 980 | 800 | 710 | 640 | 420 |
| | | | | FEED | 0.16-0.22 | 0.18-0.24 | 0.20-0.28 | 0.20-0.30 | 0.28-0.38 |
| | 29 | Non Metallic Materials | 20 | RPM | 490 | 400 | 350 | 320 | 210 |
| | | | | FEED | 0.11-0.17 | 0.12-0.18 | 0.14-0.20 | 0.19-0.25 | 0.22-0.28 |
| S | 36 | Titanium Alloys | 10 | RPM | 240 | 200 | 180 | 160 | 110 |
| | | | | FEED | 0.06-0.10 | 0.05-0.11 | 0.06-0.12 | 0.09-0.13 | 0.12-0.18 |

Leading Through Innovation

## HSS, HSS-E & HSS-Co8

# MORSE TAPER SHANK DRILLS

- Morse Taper Shank Drills for Wide Applications
- 莫氏锥柄麻花钻头

# SELECTION GUIDE
## 选用指南

HOLEMAKING TOOLS

# HSS, HSS-E & HSSCo8
# MORSE TAPER SHANK DRILLS

Morse Taper Shank Drills for Wide Applications
莫氏锥柄麻花钻头

Please visit 请访问 globalyg1.com/mat for material search 查看产品材料

◎ : Excellent (优秀) ○ : Good (良好)

Recommended cutting conditions (推荐加工条件) : p. A244

| SERIES 系列 | D1201 | D1203 | D1202 |
|---|---|---|---|
| STANDARD 标准 | KS | KS | KS |
| LENGTH 长度 | REGULAR 常规 | LONG 长 | LONG 长 |
| SIZE MIN 最小尺寸 | D13.0 | D14.0 | D14.0 |
| SIZE MAX 最大尺寸 | D60.0 | D23.0 | D32.0 |
| PAGE 页数 | A234 | A236 | A237 |
| SURFACE TREATMENT 表面处理 | Steam Tempered | | |

| ISO 公制 | VDI 3323 | Material Description 材料描述 | Composition / Structure / Heat Treatment 成分 / 组织 / 热处理 | | HB 布氏硬度 | HRc 硬度 | D1201 | D1203 | D1202 |
|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | About 0.15% C | Annealed | 125 | | ◎ | ◎ | ◎ |
| | 2 | | About 0.45% C | Annealed | 190 | 13 | ◎ | ◎ | ◎ |
| | 3 | | About 0.45% C | Quenched & Tempered | 250 | 25 | ◎ | ◎ | ◎ |
| | 4 | | About 0.75% C | Annealed | 270 | 28 | ○ | ○ | ○ |
| | 5 | | About 0.75% C | Quenched & Tempered | 300 | 32 | | | |
| | 6 | Low alloy steel | | Annealed | 180 | 10 | ◎ | ◎ | ◎ |
| | 7 | | | Quenched & Tempered | 275 | 29 | ○ | ○ | ○ |
| | 8 | | | Quenched & Tempered | 300 | 32 | ○ | ○ | ○ |
| | 9 | | | Quenched & Tempered | 350 | 38 | | | |
| | 10 | High alloyed steel, and tool steel | | Annealed | 200 | 15 | ○ | ○ | ○ |
| | 11 | | | Quenched & Tempered | 325 | 35 | | | |
| M | 12 | Stainless steel | Ferritic / Martensitic | Annealed | 200 | 15 | ◎ | ◎ | ◎ |
| | 13 | | Martensitic | Quenched & Tempered | 240 | 23 | ○ | ○ | ○ |
| | 14 | | Austenitic | | 180 | 10 | | | |
| K | 15 | Grey cast iron | Pearlitic / ferritic | | 180 | 10 | ○ | ○ | ○ |
| | 16 | | Pearlitic (Martensitic) | | 260 | 26 | ○ | ○ | ○ |
| | 17 | Nodular cast iron | Ferritic | | 160 | 3 | ○ | ○ | ○ |
| | 18 | | Pearlitic | | 250 | 25 | ○ | ○ | ○ |
| | 19 | Malleable cast iron | Ferritic | | 130 | | ○ | ○ | ○ |
| | 20 | | Pearlitic | | 230 | 21 | ○ | ○ | ○ |
| N | 21 | Aluminum-wrought alloy | Not Curable | | 60 | | ○ | ○ | ○ |
| | 22 | | Curable | Hardened | 100 | | ○ | ○ | ○ |
| | 23 | Aluminum-cast, alloyed | ≤ 12% Si, Not Curable | | 75 | | ○ | ○ | ○ |
| | 24 | | ≤ 12% Si, Curable | Hardened | 90 | | | | |
| | 25 | | > 12% Si, Not Curable | | 130 | | | | |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | Cutting Alloys, PB>1% | | 110 | | | | |
| | 27 | | CuZn, CuSnZn (Brass) | | 90 | | | | |
| | 28 | | CuSn, lead-free copper and electrolytic copper | | 100 | | | | |
| | 29 | Non Metallic Materials | Duroplastic, Fiber Reinforced Plastic | | | | ○ | ○ | ○ |
| | 30 | | Rubber, Wood, etc. | | | | | | |
| S | 31 | Heat Resistant Super Alloys | Fe Based | Annealed | 200 | 15 | | | |
| | 32 | | | Cured | 280 | 30 | | | |
| | 33 | | Ni or Co Based | Annealed | 250 | 25 | | | |
| | 34 | | | Cured | 350 | 38 | | | |
| | 35 | | | Cast | 320 | 34 | | | |
| | 36 | Titanium Alloys | Pure Titanium | | 400 Rm | | ○ | ○ | ○ |
| | 37 | | Alpha + Beta Alloys | Hardened | 1050 Rm | | | | |
| H | 38 | Hardened steel | | Hardened | 550 | 55 | | | |
| | 39 | | | Hardened | 630 | 60 | | | |
| | 40 | Chilled Cast Iron | | Cast | 400 | 42 | | | |
| | 41 | Hardened Cast Iron | | Hardened | 550 | 55 | | | |

| SERIES 系列 | D1204 | D1208 | D1207 | D2201 | D2203 | D2202 | D2204 | D2208 | DN221 |
|---|---|---|---|---|---|---|---|---|---|
| STANDARD 标准 | KS | KS | KS | KS | KS | KS | KS | KS | - |
| LENGTH 长度 | LONG 长 | LONG 长 | LONG 长 | REGULAR 常规 | LONG 长 | LONG 长 | LONG 长 | LONG 长 | SHORT 短 |
| SIZE MIN 最小尺寸 | D14.5 | D14.5 | D14.5 | D13.0 | D16.0 | D18.0 | D20.0 | D20.0 | D13.0 |
| SIZE MAX 最大尺寸 | D50.0 | D50.0 | D50.0 | D47.0 | D22.0 | D30.0 | D20.0 | D30.0 | D32.0 |
| PAGE 页数 | A238 | A239 | A240 | A241 | A242 | A242 | A242 | A242 | A243 |
| SURFACE TREATMENT 表面处理 | Steam Tempered | | | | | | | | TiN |

| D1204 | D1208 | D1207 | D2201 | D2203 | D2202 | D2204 | D2208 | DN221 | | |
|---|---|---|---|---|---|---|---|---|---|---|
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 1 | |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 2 | |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 3 | |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 4 | |
| | | | | | | | | | 5 | |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 6 | P |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 7 | |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 8 | |
| | | | | | | | | | 9 | |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 10 | |
| | | | | | | | | | 11 | |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 12 | |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 13 | M |
| | | | | | | | | | 14 | |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 15 | |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 16 | |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 17 | |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 18 | K |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 19 | |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 20 | |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 21 | |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 22 | |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 23 | |
| | | | | | | | | | 24 | |
| | | | | | | | | | 25 | |
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| | | | | | | | | | 27 | |
| | | | | | | | | | 28 | |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | 29 | |
| | | | | | | | | | 30 | |
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| | | | | | | | | | 32 | |
| | | | | | | | | | 33 | |
| | | | | | | | | | 34 | S |
| | | | | | | | | | 35 | |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 36 | |
| | | | | | | | | | 37 | |
| | | | | | | | | | 38 | |
| | | | | | | | | | 39 | H |
| | | | | | | | | | 40 | |
| | | | | | | | | | 41 | |





CARBIDE
HSS
i-ONE DRILLS
i-DREAM DRILLS
DREAM DRILLS -PRO
DREAM DRILLS -GENERAL
DREAM DRILLS -SOFT
DREAM DRILLS -HIGH FEED
DREAM DRILLS -FLAT BOTTOM
DREAM DRILLS -INOX
DREAM DRILLS -ALU
DREAM DRILLS -CFRP
DREAM DRILLS -MQL
DREAM DRILLS for HIGH HARDENED STEELS
GENERAL CARBIDE DRILLS
MULTI-1 DRILLS
GOLD-P DRILLS
SUPER-GP DRILLS
WORM PATTERN DRILLS
STRAIGHT SHANK DRILLS
TAPER SHANK DRILLS
NC-SPOTTING DRILLS
CENTER DRILLS
SPADE DRILLS
REAMERS
COUNTER SINKS
COUNTER BORES
TECHNICAL DATA

# MORSE TAPER SHANK DRILLS

**D1201** SERIES

## HSS, MORSE TAPER SHANK DRILLS

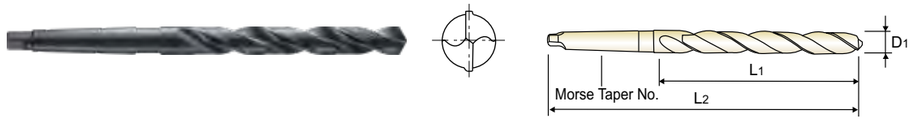
***REGULAR***

## HSS, 莫氏锥柄麻花钻头

常规

▶**Surface treatment** : Steam Homo (Black Oxide Finish)
▶**Application** : Drilling into steel, cast steel alloyed and non-alloyed, grey cast iron, melleable cast iron

▶表面处理：氧化发黑处理
▶应用 ：适用于钢, 铸钢合金和非合金钢, 灰铸铁, 可锻铸铁, 石 墨的加工




HSS | N 30° | 1 ~ 5 | h8 | 118° | p. A244

Recommended ToolHolder — Plain Shank — MORSE TAPER ARBOR — Page D177 - 181

Unit(单位) : mm

| EDP No 型号 | Drill Diameter 刃径 D1 | Flute Length 槽长 L1 | Overall Length 全长 L2 | No.of Morse Taper 莫氏锥度号 |
|---|---|---|---|---|
| D1201130 | 13.0 | 115 | 198 | 1 |
| D1201132 | 13.2 | 118 | 202 | 1 |
| D1201135 | 13.5 | 118 | 202 | 1 |
| D1201138 | 13.8 | 122 | 205 | 1 |
| D1201140 | 14.0 | 122 | 205 | 1 |
| D1201145 | 14.5 | 122 | 222 | 2 |
| D1201150 | 15.0 | 125 | 225 | 2 |
| D1201155 | 15.5 | 128 | 228 | 2 |
| D1201160 | 16.0 | 130 | 230 | 2 |
| D1201165 | 16.5 | 132 | 232 | 2 |
| D1201170 | 17.0 | 135 | 235 | 2 |
| D1201175 | 17.5 | 140 | 240 | 2 |
| D1201180 | 18.0 | 140 | 240 | 2 |
| D1201185 | 18.5 | 145 | 245 | 2 |
| D1201190 | 19.0 | 145 | 245 | 2 |
| D1201195 | 19.5 | 150 | 250 | 2 |
| D1201200 | 20.0 | 150 | 250 | 2 |
| D1201205 | 20.5 | 155 | 255 | 2 |

| EDP No 型号 | Drill Diameter 刃径 D1 | Flute Length 槽长 L1 | Overall Length 全长 L2 | No.of Morse Taper 莫氏锥度号 |
|---|---|---|---|---|
| D1201210 | 21.0 | 155 | 255 | 2 |
| D1201215 | 21.5 | 160 | 260 | 2 |
| D1201220 | 22.0 | 160 | 260 | 2 |
| D1201225 | 22.5 | 165 | 265 | 2 |
| D1201230 | 23.0 | 165 | 265 | 2 |
| D1201235 | 23.5 | 165 | 285 | 3 |
| D1201240 | 24.0 | 165 | 285 | 3 |
| D1201245 | 24.5 | 165 | 285 | 3 |
| D1201250 | 25.0 | 165 | 285 | 3 |
| D1201255 | 25.5 | 165 | 285 | 3 |
| D1201260 | 26.0 | 165 | 285 | 3 |
| D1201265 | 26.5 | 170 | 290 | 3 |
| D1201270 | 27.0 | 170 | 290 | 3 |
| D1201275 | 27.5 | 175 | 295 | 3 |
| D1201280 | 28.0 | 175 | 295 | 3 |
| D1201285 | 28.5 | 180 | 300 | 3 |
| D1201290 | 29.0 | 180 | 300 | 3 |
| D1201295 | 29.5 | 185 | 305 | 3 |

▶ NEXT PAGE 下页

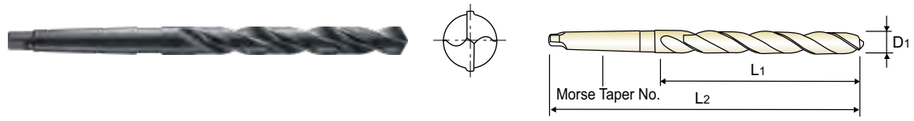
◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ○ | | ◎ | ○ | ○ | | ○ | | ◎ | ○ | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | | | | ○ | | | | | | | ○ | | | | | |



MORSE TAPER SHANK DRILLS
D1201 SERIES
HSS, MORSE TAPER SHANK DRILLS
REGULAR
HSS, 莫氏锥柄麻花钻头
常规
▶Surface treatment : Steam Homo (Black Oxide Finish)
▶Application : Drilling into steel, cast steel alloyed and non-alloyed, grey cast iron, melleable cast iron
▶表面处理：氧化发黑处理
▶应用 ：适用于钢, 铸钢合金和非合金钢, 灰铸铁, 可锻铸铁, 石 墨的加工




HSS | N 30° | 1 ~ 5 | h8 | 118° | p. A244
Recommended ToolHolder — Plain Shank — MORSE TAPER ARBOR — Page D177 - 181
Unit(单位) : mm

| EDP No 型号 | Drill Diameter 刃径 D1 | Flute Length 槽长 L1 | Overall Length 全长 L2 | No.of Morse Taper 莫氏锥度号 |
|---|---|---|---|---|
| D1201300 | 30.0 | 185 | 305 | 3 |
| D1201305 | 30.5 | 190 | 310 | 3 |
| D1201310 | 31.0 | 190 | 310 | 3 |
| D1201315 | 31.5 | 195 | 315 | 3 |
| D1201320 | 32.0 | 195 | 315 | 3 |
| D1201330 | 33.0 | 200 | 345 | 4 |
| D1201340 | 34.0 | 205 | 350 | 4 |
| D1201350 | 35.0 | 205 | 350 | 4 |
| D1201360 | 36.0 | 210 | 355 | 4 |
| D1201370 | 37.0 | 210 | 355 | 4 |
| D1201380 | 38.0 | 215 | 360 | 4 |
| D1201390 | 39.0 | 215 | 360 | 4 |
| D1201400 | 40.0 | 220 | 365 | 4 |
| D1201410 | 41.0 | 220 | 365 | 4 |
| D1201420 | 42.0 | 225 | 370 | 4 |
| D1201430 | 43.0 | 225 | 370 | 4 |
| D1201440 | 44.0 | 230 | 375 | 4 |

| EDP No 型号 | Drill Diameter 刃径 D1 | Flute Length 槽长 L1 | Overall Length 全长 L2 | No.of Morse Taper 莫氏锥度号 |
|---|---|---|---|---|
| D1201450 | 45.0 | 230 | 375 | 4 |
| D1201460 | 46.0 | 235 | 380 | 4 |
| D1201470 | 47.0 | 235 | 380 | 4 |
| D1201480 | 48.0 | 240 | 385 | 4 |
| D1201490 | 49.0 | 240 | 385 | 4 |
| D1201500 | 50.0 | 245 | 390 | 4 |
| D1201510 | 51.0 | 245 | 425 | 5 |
| D1201520 | 52.0 | 250 | 430 | 5 |
| D1201530 | 53.0 | 250 | 430 | 5 |
| D1201540 | 54.0 | 255 | 435 | 5 |
| D1201550 | 55.0 | 255 | 435 | 5 |
| D1201560 | 56.0 | 260 | 440 | 5 |
| D1201570 | 57.0 | 260 | 440 | 5 |
| D1201580 | 58.0 | 265 | 445 | 5 |
| D1201590 | 59.0 | 265 | 445 | 5 |
| D1201600 | 60.0 | 270 | 450 | 5 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ○ | | ◎ | ○ | ○ | | ○ | | ◎ | ○ | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | | | | ○ | | | | | | | ○ | | | | | |

# MORSE TAPER SHANK DRILLS

**D1203** SERIES

## HSS, MORSE TAPER SHANK DRILLS

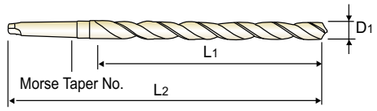
***LONG***

## HSS, 莫氏锥柄麻花钻头

长

▶**Surface treatment** : Steam Homo (Black Oxide Finish)
▶**Application** : Designed for drilling deep hole or deeply located hole.
Drilling into steel, cast steel alloyed and non-alloyed, grey cast iron, malleable cast iron, Spheroidal graphite cast iron, sintered iron, aluminium and aluminium alloy.

▶表面处理：氧化发黑处理
▶应用 ：设计用于深孔加工或深定位孔加工.
适用于钢, 铸钢合金和非合金钢, 灰铸铁, 可锻铸铁, 球状石墨铸铁, 烧结铁, 铝和铝合金的深孔和深定位孔的钻削.




HSS | N 30° | 1~2 | h8 | 118° | p. A244

Recommended ToolHolder — Plain Shank — MORSE TAPER ARBOR — Page D177-181

### Overall Length : 300mm

Unit(单位) : mm

| EDP No 型号 | Drill Diameter 刃径 D1 | Flute Length 槽长 L1 | Overall Length 全长 L2 | No.of Morse Taper 莫氏锥度号 |
|---|---|---|---|---|
| D1203140 | 14.0 | 200 | 300 | 1 |
| D1203145 | 14.5 | 175 | 300 | 2 |
| D1203150 | 15.0 | 175 | 300 | 2 |
| D1203155 | 15.5 | 175 | 300 | 2 |
| D1203160 | 16.0 | 175 | 300 | 2 |
| D1203165 | 16.5 | 175 | 300 | 2 |
| D1203170 | 17.0 | 175 | 300 | 2 |
| D1203175 | 17.5 | 175 | 300 | 2 |
| D1203180 | 18.0 | 175 | 300 | 2 |
| D1203185 | 18.5 | 175 | 300 | 2 |

| EDP No 型号 | Drill Diameter 刃径 D1 | Flute Length 槽长 L1 | Overall Length 全长 L2 | No.of Morse Taper 莫氏锥度号 |
|---|---|---|---|---|
| D1203190 | 19.0 | 175 | 300 | 2 |
| D1203195 | 19.5 | 175 | 300 | 2 |
| D1203200 | 20.0 | 175 | 300 | 2 |
| D1203205 | 20.5 | 175 | 300 | 2 |
| D1203210 | 21.0 | 175 | 300 | 2 |
| D1203215 | 21.5 | 175 | 300 | 2 |
| D1203220 | 22.0 | 175 | 300 | 2 |
| D1203225 | 22.5 | 175 | 300 | 2 |
| D1203230 | 23.0 | 175 | 300 | 2 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ○ | | ◎ | ○ | ○ | | ○ | | ◎ | ○ | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | | | | ○ | | | | | | | ○ | | | | | |



# MORSE TAPER SHANK DRILLS

**D1202** SERIES

## HSS, MORSE TAPER SHANK DRILLS

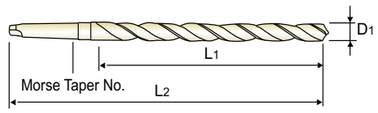
***LONG***

## HSS, 莫氏锥柄麻花钻头

长

▶**Surface treatment** : Steam Homo (Black Oxide Finish)
▶**Application** : Designed for drilling deep hole or deeply located hole.
Drilling into steel, cast steel alloyed and non-alloyed, grey cast iron, malleable cast iron, Spheroidal graphite cast iron, sintered iron, aluminium and aluminium alloy.

▶表面处理：氧化发黑处理
▶应用 ：设计用于深孔加工或深定位孔加工.
适用于钢, 铸钢合金和非合金钢, 灰铸铁, 可锻铸铁, 球 状石墨铸铁, 烧结铁, 铝和铝合金的深孔和深定位孔的钻削.




HSS | N 30° | 1~3 | h8 | 118° | p. A244

Recommended ToolHolder — Plain Shank — MORSE TAPER ARBOR — Page D177-181

### Overall Length : 350mm

Unit(单位) : mm

| EDP No 型号 | Drill Diameter 刃径 D1 | Flute Length 槽长 L1 | Overall Length 全长 L2 | No.of Morse Taper 莫氏锥度号 |
|---|---|---|---|---|
| D1202140 | 14.0 | 225 | 350 | 1 |
| D1202145 | 14.5 | 225 | 350 | 2 |
| D1202150 | 15.0 | 225 | 350 | 2 |
| D1202155 | 15.5 | 225 | 350 | 2 |
| D1202160 | 16.0 | 225 | 350 | 2 |
| D1202165 | 16.5 | 225 | 350 | 2 |
| D1202170 | 17.0 | 225 | 350 | 2 |
| D1202175 | 17.5 | 225 | 350 | 2 |
| D1202180 | 18.0 | 225 | 350 | 2 |
| D1202185 | 18.5 | 225 | 350 | 2 |
| D1202190 | 19.0 | 225 | 350 | 2 |
| D1202195 | 19.5 | 225 | 350 | 2 |
| D1202200 | 20.0 | 225 | 350 | 2 |
| D1202205 | 20.5 | 225 | 350 | 2 |
| D1202210 | 21.0 | 225 | 350 | 2 |
| D1202215 | 21.5 | 225 | 350 | 2 |
| D1202220 | 22.0 | 225 | 350 | 2 |
| D1202225 | 22.5 | 225 | 350 | 2 |
| D1202230 | 23.0 | 225 | 350 | 2 |

| EDP No 型号 | Drill Diameter 刃径 D1 | Flute Length 槽长 L1 | Overall Length 全长 L2 | No.of Morse Taper 莫氏锥度号 |
|---|---|---|---|---|
| D1202235 | 23.5 | 200 | 350 | 3 |
| D1202240 | 24.0 | 200 | 350 | 3 |
| D1202245 | 24.5 | 200 | 350 | 3 |
| D1202250 | 25.0 | 200 | 350 | 3 |
| D1202255 | 25.5 | 200 | 350 | 3 |
| D1202260 | 26.0 | 200 | 350 | 3 |
| D1202265 | 26.5 | 200 | 350 | 3 |
| D1202270 | 27.0 | 200 | 350 | 3 |
| D1202275 | 27.5 | 200 | 350 | 3 |
| D1202280 | 28.0 | 200 | 350 | 3 |
| D1202285 | 28.5 | 200 | 350 | 3 |
| D1202290 | 29.0 | 200 | 350 | 3 |
| D1202295 | 29.5 | 200 | 350 | 3 |
| D1202300 | 30.0 | 200 | 350 | 3 |
| D1202305 | 30.5 | 200 | 350 | 3 |
| D1202310 | 31.0 | 200 | 350 | 3 |
| D1202315 | 31.5 | 200 | 350 | 3 |
| D1202320 | 32.0 | 200 | 350 | 3 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ○ | | ◎ | ○ | ○ | | ○ | | ◎ | ○ | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | | | | ○ | | | | | | | ○ | | | | | |

# MORSE TAPER SHANK DRILLS

**D1204** SERIES

## HSS, MORSE TAPER SHANK DRILLS

***LONG***

## HSS, 莫氏锥柄麻花钻头

长

▶**Surface treatment** : Steam Homo (Black Oxide Finish)
▶**Application** : Designed for drilling deep hole or deeply located hole.
Drilling into steel, cast steel alloyed and non-alloyed, grey cast iron, malleable cast iron, Spheroidal graphite cast iron, sintered iron, aluminium and aluminium alloy.

▶表面处理：氧化发黑处理
▶应用 ：设计用于深孔加工或深定位孔加工.
适用于钢, 铸钢合金和非合金钢, 灰铸铁, 可锻铸铁, 球状石墨铸铁, 烧结铁, 铝和铝合金的深孔和深定位孔的钻削.

HSS | N 30° | 2~4 | h8 | 118° | p. A244

Recommended ToolHolder — Plain Shank — MORSE TAPER ARBOR — Page D177-181

### Overall Length : 400mm

Unit(单位) : mm

| EDP No 型号 | Drill Diameter 刃径 D1 | Flute Length 槽长 L1 | Overall Length 全长 L2 | No.of Morse Taper 莫氏锥度号 |
|---|---|---|---|---|
| D1204145 | 14.5 | 250 | 400 | 2 |
| D1204150 | 15.0 | 250 | 400 | 2 |
| D1204155 | 15.5 | 250 | 400 | 2 |
| D1204160 | 16.0 | 250 | 400 | 2 |
| D1204165 | 16.5 | 250 | 400 | 2 |
| D1204170 | 17.0 | 250 | 400 | 2 |
| D1204175 | 17.5 | 250 | 400 | 2 |
| D1204180 | 18.0 | 250 | 400 | 2 |
| D1204185 | 18.5 | 250 | 400 | 2 |
| D1204190 | 19.0 | 250 | 400 | 2 |
| D1204195 | 19.5 | 250 | 400 | 2 |
| D1204200 | 20.0 | 250 | 400 | 2 |
| D1204205 | 20.5 | 250 | 400 | 2 |
| D1204210 | 21.0 | 250 | 400 | 2 |
| D1204215 | 21.5 | 250 | 400 | 2 |
| D1204220 | 22.0 | 250 | 400 | 2 |
| D1204225 | 22.5 | 250 | 400 | 2 |
| D1204230 | 23.0 | 250 | 400 | 2 |
| D1204235 | 23.5 | 250 | 400 | 3 |
| D1204240 | 24.0 | 250 | 400 | 3 |
| D1204245 | 24.5 | 250 | 400 | 3 |
| D1204250 | 25.0 | 250 | 400 | 3 |
| D1204255 | 25.5 | 250 | 400 | 3 |
| D1204260 | 26.0 | 250 | 400 | 3 |
| D1204265 | 26.5 | 250 | 400 | 3 |
| D1204270 | 27.0 | 250 | 400 | 3 |
| D1204275 | 27.5 | 250 | 400 | 3 |

| EDP No 型号 | Drill Diameter 刃径 D1 | Flute Length 槽长 L1 | Overall Length 全长 L2 | No.of Morse Taper 莫氏锥度号 |
|---|---|---|---|---|
| D1204280 | 28.0 | 250 | 400 | 3 |
| D1204285 | 28.5 | 250 | 400 | 3 |
| D1204290 | 29.0 | 250 | 400 | 3 |
| D1204295 | 29.5 | 250 | 400 | 3 |
| D1204300 | 30.0 | 250 | 400 | 3 |
| D1204305 | 30.5 | 250 | 400 | 3 |
| D1204310 | 31.0 | 250 | 400 | 3 |
| D1204315 | 31.5 | 250 | 400 | 3 |
| D1204320 | 32.0 | 250 | 400 | 3 |
| D1204330 | 33.0 | 250 | 400 | 4 |
| D1204340 | 34.0 | 250 | 400 | 4 |
| D1204350 | 35.0 | 250 | 400 | 4 |
| D1204360 | 36.0 | 250 | 400 | 4 |
| D1204370 | 37.0 | 250 | 400 | 4 |
| D1204380 | 38.0 | 250 | 400 | 4 |
| D1204390 | 39.0 | 250 | 400 | 4 |
| D1204400 | 40.0 | 250 | 400 | 4 |
| D1204410 | 41.0 | 250 | 400 | 4 |
| D1204420 | 42.0 | 250 | 400 | 4 |
| D1204430 | 43.0 | 250 | 400 | 4 |
| D1204440 | 44.0 | 250 | 400 | 4 |
| D1204450 | 45.0 | 250 | 400 | 4 |
| D1204460 | 46.0 | 250 | 400 | 4 |
| D1204470 | 47.0 | 250 | 400 | 4 |
| D1204480 | 48.0 | 250 | 400 | 4 |
| D1204490 | 49.0 | 250 | 400 | 4 |
| D1204500 | 50.0 | 250 | 400 | 4 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ○ | | ◎ | ○ | ○ | | ○ | | ◎ | ○ | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | | | | ○ | | | | | | | ○ | | | | | |



# MORSE TAPER SHANK DRILLS

**D1208** SERIES

## HSS, MORSE TAPER SHANK DRILLS

***LONG***

## HSS, 莫氏锥柄麻花钻头

长

▶**Surface treatment** : Steam Homo (Black Oxide Finish)
▶**Application** : Designed for drilling deep hole or deeply located hole.
Drilling into steel, cast steel alloyed and non-alloyed, grey cast iron, malleable cast iron, Spheroidal graphite cast iron, sintered iron, aluminium and aluminium alloy.

▶表面处理：氧化发黑处理
▶应用 ：设计用于深孔加工或深定位孔加工.
适用于钢, 铸钢合金和非合金钢, 灰铸铁, 可锻铸铁, 球状石墨铸铁, 烧结铁, 铝和铝合金的深孔和深定位孔的钻削.

HSS | N 30° | 2~4 | h8 | 118° | p. A244

Recommended ToolHolder — Plain Shank — MORSE TAPER ARBOR — Page D177-181

### Overall Length : 450mm

Unit(单位) : mm

| EDP No 型号 | Drill Diameter 刃径 D1 | Flute Length 槽长 L1 | Overall Length 全长 L2 | No.of Morse Taper 莫氏锥度号 |
|---|---|---|---|---|
| D1208145 | 14.5 | 300 | 450 | 2 |
| D1208150 | 15.0 | 300 | 450 | 2 |
| D1208155 | 15.5 | 300 | 450 | 2 |
| D1208160 | 16.0 | 300 | 450 | 2 |
| D1208165 | 16.5 | 300 | 450 | 2 |
| D1208170 | 17.0 | 300 | 450 | 2 |
| D1208175 | 17.5 | 300 | 450 | 2 |
| D1208180 | 18.0 | 300 | 450 | 2 |
| D1208185 | 18.5 | 300 | 450 | 2 |
| D1208190 | 19.0 | 300 | 450 | 2 |
| D1208195 | 19.5 | 300 | 450 | 2 |
| D1208200 | 20.0 | 300 | 450 | 2 |
| D1208205 | 20.5 | 300 | 450 | 2 |
| D1208210 | 21.0 | 300 | 450 | 2 |
| D1208215 | 21.5 | 300 | 450 | 2 |
| D1208220 | 22.0 | 300 | 450 | 2 |
| D1208225 | 22.5 | 300 | 450 | 2 |
| D1208230 | 23.0 | 300 | 450 | 2 |
| D1208235 | 23.5 | 300 | 450 | 3 |
| D1208240 | 24.0 | 300 | 450 | 3 |
| D1208245 | 24.5 | 300 | 450 | 3 |
| D1208250 | 25.0 | 300 | 450 | 3 |
| D1208255 | 25.5 | 300 | 450 | 3 |
| D1208260 | 26.0 | 300 | 450 | 3 |
| D1208265 | 26.5 | 300 | 450 | 3 |
| D1208270 | 27.0 | 300 | 450 | 3 |
| D1208275 | 27.5 | 300 | 450 | 3 |

| EDP No 型号 | Drill Diameter 刃径 D1 | Flute Length 槽长 L1 | Overall Length 全长 L2 | No.of Morse Taper 莫氏锥度号 |
|---|---|---|---|---|
| D1208280 | 28.0 | 300 | 450 | 3 |
| D1208285 | 28.5 | 300 | 450 | 3 |
| D1208290 | 29.0 | 300 | 450 | 3 |
| D1208295 | 29.5 | 300 | 450 | 3 |
| D1208300 | 30.0 | 300 | 450 | 3 |
| D1208305 | 30.5 | 300 | 450 | 3 |
| D1208310 | 31.0 | 300 | 450 | 3 |
| D1208315 | 31.5 | 300 | 450 | 3 |
| D1208320 | 32.0 | 300 | 450 | 3 |
| D1208330 | 33.0 | 300 | 450 | 4 |
| D1208340 | 34.0 | 300 | 450 | 4 |
| D1208350 | 35.0 | 300 | 450 | 4 |
| D1208360 | 36.0 | 300 | 450 | 4 |
| D1208370 | 37.0 | 300 | 450 | 4 |
| D1208380 | 38.0 | 300 | 450 | 4 |
| D1208390 | 39.0 | 300 | 450 | 4 |
| D1208400 | 40.0 | 300 | 450 | 4 |
| D1208410 | 41.0 | 300 | 450 | 4 |
| D1208420 | 42.0 | 300 | 450 | 4 |
| D1208430 | 43.0 | 300 | 450 | 4 |
| D1208440 | 44.0 | 300 | 450 | 4 |
| D1208450 | 45.0 | 300 | 450 | 4 |
| D1208460 | 46.0 | 300 | 450 | 4 |
| D1208470 | 47.0 | 300 | 450 | 4 |
| D1208480 | 48.0 | 300 | 450 | 4 |
| D1208490 | 49.0 | 300 | 450 | 4 |
| D1208500 | 50.0 | 300 | 450 | 4 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ○ | | ◎ | ○ | ○ | | ○ | | ◎ | ○ | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | | | | ○ | | | | | | | ○ | | | | | |

# MORSE TAPER SHANK DRILLS

**D1207 SERIES**

## HSS, MORSE TAPER SHANK DRILLS — *LONG*

## HSS, 莫氏锥柄麻花钻头 — 长

▶**Surface treatment** : Steam Homo (Black Oxide Finish)
▶**Application** : Designed for drilling deep hole or deeply located hole.
Drilling into steel, cast steel alloyed and non-alloyed, grey cast iron, malleable cast iron, Spheroidal graphite cast iron, sintered iron, aluminium and aluminium alloy.

▶表面处理：氧化发黑处理
▶应用 ：设计用于深孔加工或深定位孔加工.
适用于钢, 铸钢合金和非合金钢, 灰铸铁, 可锻铸铁, 球状石墨铸铁, 烧结铁, 铝和铝合金的深孔和深定位孔的钻削.

HSS | N 30° | 2~4 | h8 | 118° | p. A244

Recommended ToolHolder — Plain Shank — MORSE TAPER ARBOR — Page D177-181

**Overall Length : 500mm**

Unit(单位) : mm

| EDP No 型号 | Drill Diameter 刃径 D1 | Flute Length 槽长 L1 | Overall Length 全长 L2 | No.of Morse Taper 莫氏锥度号 |
|---|---|---|---|---|
| D1207145 | 14.5 | 350 | 500 | 2 |
| D1207150 | 15.0 | 350 | 500 | 2 |
| D1207155 | 15.5 | 350 | 500 | 2 |
| D1207160 | 16.0 | 350 | 500 | 2 |
| D1207165 | 16.5 | 350 | 500 | 2 |
| D1207170 | 17.0 | 350 | 500 | 2 |
| D1207175 | 17.5 | 350 | 500 | 2 |
| D1207180 | 18.0 | 350 | 500 | 2 |
| D1207185 | 18.5 | 350 | 500 | 2 |
| D1207190 | 19.0 | 350 | 500 | 2 |
| D1207195 | 19.5 | 350 | 500 | 2 |
| D1207200 | 20.0 | 350 | 500 | 2 |
| D1207205 | 20.5 | 350 | 500 | 2 |
| D1207210 | 21.0 | 350 | 500 | 2 |
| D1207215 | 21.5 | 350 | 500 | 2 |
| D1207220 | 22.0 | 350 | 500 | 2 |
| D1207225 | 22.5 | 350 | 500 | 2 |
| D1207230 | 23.0 | 350 | 500 | 2 |
| D1207235 | 23.5 | 350 | 500 | 3 |
| D1207240 | 24.0 | 350 | 500 | 3 |
| D1207245 | 24.5 | 350 | 500 | 3 |
| D1207250 | 25.0 | 350 | 500 | 3 |
| D1207255 | 25.5 | 350 | 500 | 3 |
| D1207260 | 26.0 | 350 | 500 | 3 |
| D1207265 | 26.5 | 350 | 500 | 3 |
| D1207270 | 27.0 | 350 | 500 | 3 |
| D1207275 | 27.5 | 350 | 500 | 3 |

| EDP No 型号 | Drill Diameter 刃径 D1 | Flute Length 槽长 L1 | Overall Length 全长 L2 | No.of Morse Taper 莫氏锥度号 |
|---|---|---|---|---|
| D1207280 | 28.0 | 350 | 500 | 3 |
| D1207285 | 28.5 | 350 | 500 | 3 |
| D1207290 | 29.0 | 350 | 500 | 3 |
| D1207295 | 29.5 | 350 | 500 | 3 |
| D1207300 | 30.0 | 350 | 500 | 3 |
| D1207305 | 30.5 | 350 | 500 | 3 |
| D1207310 | 31.0 | 350 | 500 | 3 |
| D1207315 | 31.5 | 350 | 500 | 3 |
| D1207320 | 32.0 | 350 | 500 | 3 |
| D1207330 | 33.0 | 350 | 500 | 4 |
| D1207340 | 34.0 | 350 | 500 | 4 |
| D1207350 | 35.0 | 350 | 500 | 4 |
| D1207360 | 36.0 | 350 | 500 | 4 |
| D1207370 | 37.0 | 350 | 500 | 4 |
| D1207380 | 38.0 | 350 | 500 | 4 |
| D1207390 | 39.0 | 350 | 500 | 4 |
| D1207400 | 40.0 | 350 | 500 | 4 |
| D1207410 | 41.0 | 350 | 500 | 4 |
| D1207420 | 42.0 | 350 | 500 | 4 |
| D1207430 | 43.0 | 350 | 500 | 4 |
| D1207440 | 44.0 | 350 | 500 | 4 |
| D1207450 | 45.0 | 350 | 500 | 4 |
| D1207460 | 46.0 | 350 | 500 | 4 |
| D1207470 | 47.0 | 350 | 500 | 4 |
| D1207480 | 48.0 | 350 | 500 | 4 |
| D1207490 | 49.0 | 350 | 500 | 4 |
| D1207500 | 50.0 | 350 | 500 | 4 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ○ | | ◎ | ○ | ○ | | ○ | | ◎ | ○ | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | | | | ○ | | | | | | | ○ | | | | | |



# MORSE TAPER SHANK DRILLS

**D2201 SERIES**

## HSSCo8, MORSE TAPER SHANK DRILLS — *REGULAR*

## HSSCo8, 莫氏锥柄麻花钻头 — 常规

▶**Surface treatment** : Steam Homo (Black Oxide Finish)
▶**Application** : Cobalt 8% high speed steel-higher speed and feed, longer service life than HSS.
Drilling in steel, cast steel alloyed and unalloyed grey cast iron, malleable cast iron

▶表面处理：氧化发黑处理
▶应用 ：适用于钢, 铸钢合金, 非合金灰铸件, 可锻适铸件和石墨等材料的加工 含8% 钴高速钢材料, 大大优越于一般高速钢.

Only available till stock runs out
尽在库存用完之前可用

HSS Co8 | N 30° | 1~5 | h8 | 118° | p. A244

Recommended ToolHolder — Plain Shank — MORSE TAPER ARBOR — Page D177-181

Unit(单位) : mm

| EDP No 型号 | Drill Diameter 刃径 D1 | Flute Length 槽长 L1 | Overall Length 全长 L2 | No.of Morse Taper 莫氏锥度号 |
|---|---|---|---|---|
| ▲ D2201130 | 13.0 | 115 | 198 | 1 |
| ▲ D2201135 | 13.5 | 118 | 202 | 1 |
| ▲ D2201138 | 13.8 | 122 | 205 | 1 |
| ▲ D2201140 | 14.0 | 122 | 205 | 1 |
| ▲ D2201145 | 14.5 | 122 | 222 | 2 |
| ▲ D2201150 | 15.0 | 125 | 225 | 2 |
| ▲ D2201155 | 15.5 | 128 | 228 | 2 |
| ▲ D2201160 | 16.0 | 130 | 230 | 2 |
| ▲ D2201165 | 16.5 | 132 | 232 | 2 |
| ▲ D2201170 | 17.0 | 135 | 235 | 2 |
| ▲ D2201175 | 17.5 | 140 | 240 | 2 |
| ▲ D2201180 | 18.0 | 140 | 240 | 2 |
| ▲ D2201185 | 18.5 | 145 | 245 | 2 |
| ▲ D2201190 | 19.0 | 145 | 245 | 2 |
| ▲ D2201195 | 19.5 | 150 | 250 | 2 |
| ▲ D2201200 | 20.0 | 150 | 250 | 2 |
| ▲ D2201205 | 20.5 | 155 | 255 | 2 |
| ▲ D2201210 | 21.0 | 155 | 255 | 2 |
| ▲ D2201215 | 21.5 | 160 | 260 | 2 |
| ▲ D2201220 | 22.0 | 160 | 260 | 2 |
| ▲ D2201225 | 22.5 | 165 | 265 | 2 |
| ▲ D2201230 | 23.0 | 165 | 265 | 2 |
| ▲ D2201235 | 23.5 | 165 | 285 | 3 |
| ▲ D2201240 | 24.0 | 165 | 285 | 3 |

| EDP No 型号 | Drill Diameter 刃径 D1 | Flute Length 槽长 L1 | Overall Length 全长 L2 | No.of Morse Taper 莫氏锥度号 |
|---|---|---|---|---|
| ▲ D2201245 | 24.5 | 165 | 285 | 3 |
| ▲ D2201250 | 25.0 | 165 | 285 | 3 |
| ▲ D2201255 | 25.5 | 165 | 285 | 3 |
| ▲ D2201260 | 26.0 | 165 | 285 | 3 |
| ▲ D2201265 | 26.5 | 170 | 290 | 3 |
| ▲ D2201270 | 27.0 | 170 | 290 | 3 |
| ▲ D2201275 | 27.5 | 175 | 295 | 3 |
| ▲ D2201280 | 28.0 | 175 | 295 | 3 |
| ▲ D2201285 | 28.5 | 180 | 300 | 3 |
| ▲ D2201290 | 29.0 | 180 | 300 | 3 |
| ▲ D2201295 | 29.5 | 185 | 305 | 3 |
| ▲ D2201300 | 30.0 | 185 | 305 | 3 |
| ▲ D2201310 | 31.0 | 190 | 310 | 3 |
| ▲ D2201315 | 31.5 | 195 | 315 | 3 |
| ▲ D2201320 | 32.0 | 195 | 315 | 3 |
| ▲ D2201340 | 34.0 | 205 | 350 | 4 |
| ▲ D2201350 | 35.0 | 205 | 350 | 4 |
| ▲ D2201360 | 36.0 | 210 | 355 | 4 |
| ▲ D2201380 | 38.0 | 215 | 360 | 4 |
| ▲ D2201400 | 40.0 | 220 | 365 | 4 |
| ▲ D2201420 | 42.0 | 225 | 370 | 4 |
| ▲ D2201450 | 42.0 | 230 | 375 | 4 |
| ▲ D2201520 | 52.0 | 250 | 430 | 5 |
| ▲ D2201570 | 47.0 | 260 | 440 | 5 |

**▲ : Only available till stock runs out**

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ○ | | ◎ | ○ | ○ | | ○ | | ◎ | ○ | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | | | | ○ | | | | | | | ○ | | | | | |

# MORSE TAPER SHANK DRILLS

D2203 SERIES | D2204 SERIES | D2202 SERIES | D2208 SERIES

## HSSCo8, MORSE TAPER SHANK DRILLS — LONG

## HSSCo8, 莫氏锥柄麻花钻头 — 长

▶**Surface treatment** : Steam Homo (Black Oxide Finish)
▶**Application** : Cobalt 8% high speed steel-higher speed and feed, longer service life than HSS. Drilling in steel, cast steel alloyed and non-alloyed grey cast iron, malleable cast iron

▶表面处理：氧化发黑处理
▶应 用 ：适用于钢, 铸钢合金, 非合金灰铸件, 可锻适铸件和石墨 等材料的加工 含8% 钴高速钢材料, 大大优越于一般高速钢.

Only available till stock runs out
尽在库存用完之前可用

HSS Co8 | N 30° | 2~3 | h8 | 118° | p. A244

Recommended ToolHolder — Plain Shank: MORSE TAPER ARBOR — Page: D177 - 181

### D2203

Unit(单位) : mm

| EDP No 型号 | Drill Diameter 刃径 D1 | Flute Length 槽长 L1 | Overall Length 全长 L2 | No.of Morse Taper 莫氏锥度号 |
|---|---|---|---|---|
| ▲ D2203160 | 16.0 | 175 | 300 | 2 |
| ▲ D2203180 | 18.0 | 175 | 300 | 2 |
| ▲ D2203220 | 22.0 | 175 | 300 | 2 |

▲ : Only available till stock runs out

### D2202

Unit(单位) : mm

| EDP No 型号 | Drill Diameter 刃径 D1 | Flute Length 槽长 L1 | Overall Length 全长 L2 | No.of Morse Taper 莫氏锥度号 |
|---|---|---|---|---|
| ▲ D2202180 | 18.0 | 225 | 350 | 2 |
| ▲ D2202240 | 24.0 | 200 | 350 | 3 |
| ▲ D2202280 | 28.0 | 200 | 350 | 3 |
| ▲ D2202300 | 30.0 | 200 | 350 | 3 |

▲ : Only available till stock runs out

### D2204

Unit(单位) : mm

| EDP No 型号 | Drill Diameter 刃径 D1 | Flute Length 槽长 L1 | Overall Length 全长 L2 | No.of Morse Taper 莫氏锥度号 |
|---|---|---|---|---|
| ▲ D2204200 | 20.0 | 250 | 400 | 2 |

▲ : Only available till stock runs out

### D2208

Unit(单位) : mm

| EDP No 型号 | Drill Diameter 刃径 D1 | Flute Length 槽长 L1 | Overall Length 全长 L2 | No.of Morse Taper 莫氏锥度号 |
|---|---|---|---|---|
| ▲ D2208200 | 20.0 | 300 | 450 | 2 |
| ▲ D2208300 | 30.0 | 300 | 450 | 3 |

▲ : Only available till stock runs out

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ○ | | ◎ | ○ | ○ | | ○ | | ◎ | ○ | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | | | | ○ | | | | | | | ○ | | | | | |



# MORSE TAPER SHANK DRILLS

DN221 SERIES

## HSS-E, MORSE TAPER SHANK TWIST DRILLS — SHORT

## HSS-E, 莫氏锥柄麻花钻 — 短

▶**Application** : Short length - designed for high speed drilling in wide rarge of materials like carbon steels, stainless steels and aluminum.

▶应用： 短长度设计适合在碳钢, 不锈钢, 铝等多种材料上进行高速 钻削.

Only available till stock runs out
尽在库存用完之前可用

HSS-E | N 30° | 1~3 | h8 | 135° | p. A245

Recommended ToolHolder — Plain Shank: MORSE TAPER ARBOR — Page: D177 - 181

Unit(单位) : mm

| EDP No 型号 TiN | Drill Diameter 刃径 D1 | Flute Length 槽长 L1 | Overall Length 全长 L2 | No.of Morse Taper 莫氏锥度号 |
|---|---|---|---|---|
| ▲ DN221130 | 13.0 | 65.5 | 146.5 | 1 |
| ▲ DN221135 | 13.5 | 69.5 | 150.5 | 1 |
| ▲ DN221140 | 14.0 | 69.5 | 150.5 | 1 |
| ▲ DN221145 | 14.5 | 73 | 171 | 2 |
| ▲ DN221155 | 15.5 | 77 | 175 | 2 |
| ▲ DN221160 | 16.0 | 77 | 175 | 2 |
| ▲ DN221170 | 17.0 | 80.5 | 178.5 | 2 |
| ▲ DN221175 | 17.5 | 83.5 | 181.5 | 2 |
| ▲ DN221185 | 18.5 | 86.5 | 184.5 | 2 |
| ▲ DN221195 | 19.5 | 90 | 188 | 2 |
| ▲ DN221200 | 20.0 | 90 | 188 | 2 |
| ▲ DN221210 | 21.0 | 93 | 191 | 2 |
| ▲ DN221215 | 21.5 | 95.5 | 193.5 | 2 |
| ▲ DN221220 | 22.0 | 95.5 | 193.5 | 2 |
| ▲ DN221225 | 22.5 | 99.5 | 197.5 | 2 |

Unit(单位) : mm

| EDP No 型号 TiN | Drill Diameter 刃径 D1 | Flute Length 槽长 L1 | Overall Length 全长 L2 | No.of Morse Taper 莫氏锥度号 |
|---|---|---|---|---|
| ▲ DN221235 | 23.5 | 102.5 | 223.5 | 3 |
| ▲ DN221240 | 24.0 | 102.5 | 223.5 | 3 |
| ▲ DN221245 | 24.5 | 102.5 | 223.5 | 3 |
| ▲ DN221250 | 25.0 | 102.5 | 223.5 | 3 |
| ▲ DN221255 | 25.5 | 105 | 226 | 3 |
| ▲ DN221260 | 26.0 | 105 | 226 | 3 |
| ▲ DN221265 | 26.5 | 105 | 226 | 3 |
| ▲ DN221275 | 27.5 | 108.5 | 229.5 | 3 |
| ▲ DN221280 | 28.0 | 108.5 | 229.5 | 3 |
| ▲ DN221285 | 28.5 | 111 | 232 | 3 |
| ▲ DN221295 | 29.5 | 111 | 232 | 3 |
| ▲ DN221300 | 30.0 | 111 | 232 | 3 |
| ▲ DN221310 | 31.0 | 114 | 235 | 3 |
| ▲ DN221320 | 32.0 | 114 | 235 | 3 |

▲ : Only available till stock runs out

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ○ | | ◎ | ○ | ○ | | ○ | | ◎ | ○ | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | | | | | | | | | | | ○ | | | | | |

# MORSE TAPER SHANK DRILLS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工条件

## D1201, D1203, D1202, D1204, D1208, D1207, D2201, D2203, D2202, D2204, D2208 SERIES

### HSS & HSSCo8, MORSE TAPER SHANK DRILLS
### HSS & HSSCO8, 莫氏锥柄麻花钻头

RPM (转速) = (rev./min.)
FEED (进给) = (mm/rev.)

| ISO 公制 | VDI 3323 | Material Description 材料描述 | Vc 钻削速度 (m/min) | Parameter 参数 | Drill Diameter 刃径 (mm) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | 13.0 | 16.0 | 18.0 | 20.0 | 30.0 | 40.0 | 50.0 | 60.0 |
| P | 1 | Non-alloy steel | 30 | RPM | 730 | 600 | 530 | 480 | 320 | 240 | 190 | 160 |
| | | | | FEED | 0.11-0.17 | 0.12-0.18 | 0.14-0.20 | 0.19-0.25 | 0.22-0.28 | 0.24-0.30 | 0.28-0.34 | 0.36-0.40 |
| | 2 | | 25 | RPM | 610 | 500 | 440 | 400 | 270 | 200 | 160 | 130 |
| | | | | FEED | 0.11-0.17 | 0.12-0.18 | 0.14-0.20 | 0.19-0.25 | 0.22-0.28 | 0.24-0.30 | 0.28-0.34 | 0.36-0.40 |
| | 3 | | 20 | RPM | 490 | 400 | 350 | 320 | 210 | 160 | 130 | 110 |
| | | | | FEED | 0.11-0.17 | 0.12-0.18 | 0.14-0.20 | 0.19-0.25 | 0.22-0.28 | 0.24-0.30 | 0.28-0.34 | 0.36-0.40 |
| | 4 | | 15 | RPM | 370 | 300 | 270 | 240 | 160 | 120 | 100 | 80 |
| | | | | FEED | 0.04-0.10 | 0.06-0.12 | 0.08-0.14 | 0.10-0.16 | 0.12-0.18 | 0.14-0.20 | 0.16-0.22 | 0.18-0.24 |
| | 6 | Low alloy steel | 25 | RPM | 610 | 500 | 440 | 400 | 270 | 200 | 160 | 130 |
| | | | | FEED | 0.11-0.17 | 0.12-0.18 | 0.14-0.20 | 0.19-0.25 | 0.22-0.28 | 0.24-0.30 | 0.28-0.34 | 0.36-0.40 |
| | 7 | | 20 | RPM | 490 | 400 | 350 | 320 | 210 | 160 | 130 | 110 |
| | | | | FEED | 0.11-0.17 | 0.12-0.18 | 0.14-0.20 | 0.19-0.25 | 0.22-0.28 | 0.24-0.30 | 0.28-0.34 | 0.36-0.40 |
| | 8 | | 15 | RPM | 370 | 300 | 270 | 240 | 160 | 120 | 100 | 80 |
| | | | | FEED | 0.04-0.10 | 0.06-0.12 | 0.08-0.14 | 0.10-0.16 | 0.12-0.18 | 0.14-0.20 | 0.16-0.22 | 0.18-0.24 |
| | 10 | High alloyed steel, and tool steel | 15 | RPM | 370 | 300 | 270 | 240 | 160 | 120 | 100 | 80 |
| | | | | FEED | 0.11-0.17 | 0.12-0.18 | 0.14-0.20 | 0.19-0.25 | 0.22-0.28 | 0.24-0.30 | 0.28-0.34 | 0.36-0.40 |
| M | 12 | Stainless steel | 20 | RPM | 490 | 400 | 350 | 320 | 210 | 160 | 130 | 110 |
| | | | | FEED | 0.11-0.17 | 0.12-0.18 | 0.14-0.20 | 0.19-0.25 | 0.22-0.28 | 0.24-0.30 | 0.28-0.34 | 0.36-0.40 |
| | 13 | | 15 | RPM | 370 | 300 | 270 | 240 | 160 | 120 | 100 | 80 |
| | | | | FEED | 0.11-0.17 | 0.12-0.18 | 0.14-0.20 | 0.19-0.25 | 0.22-0.28 | 0.24-0.30 | 0.28-0.34 | 0.36-0.40 |
| K | 15 | Grey cast iron | 30 | RPM | 730 | 600 | 530 | 480 | 320 | 240 | 190 | 160 |
| | | | | FEED | 0.11-0.17 | 0.12-0.18 | 0.14-0.20 | 0.19-0.25 | 0.22-0.28 | 0.24-0.30 | 0.28-0.34 | 0.36-0.40 |
| | 16 | | 25 | RPM | 610 | 500 | 440 | 400 | 270 | 200 | 160 | 130 |
| | | | | FEED | 0.04-0.10 | 0.06-0.12 | 0.08-0.14 | 0.10-0.16 | 0.12-0.18 | 0.14-0.20 | 0.16-0.22 | 0.18-0.24 |
| | 17 | Nodular cast iron | 30 | RPM | 730 | 600 | 530 | 480 | 320 | 240 | 190 | 160 |
| | | | | FEED | 0.11-0.17 | 0.12-0.18 | 0.14-0.20 | 0.19-0.25 | 0.22-0.28 | 0.24-0.30 | 0.28-0.34 | 0.36-0.40 |
| | 18 | | 20 | RPM | 490 | 400 | 350 | 320 | 210 | 160 | 130 | 110 |
| | | | | FEED | 0.04-0.10 | 0.06-0.12 | 0.08-0.14 | 0.10-0.16 | 0.12-0.18 | 0.14-0.20 | 0.16-0.22 | 0.18-0.24 |
| | 19 | Malleable cast iron | 25 | RPM | 610 | 500 | 440 | 400 | 270 | 200 | 160 | 130 |
| | | | | FEED | 0.11-0.17 | 0.12-0.18 | 0.14-0.20 | 0.19-0.25 | 0.22-0.28 | 0.24-0.30 | 0.28-0.34 | 0.36-0.40 |
| | 20 | | 20 | RPM | 490 | 400 | 350 | 320 | 210 | 160 | 130 | 110 |
| | | | | FEED | 0.04-0.10 | 0.06-0.12 | 0.08-0.14 | 0.10-0.16 | 0.12-0.18 | 0.14-0.20 | 0.16-0.22 | 0.18-0.24 |
| N | 21 | Aluminum-wrought alloy | 55 | RPM | 1350 | 1090 | 970 | 880 | 580 | 440 | 350 | 290 |
| | | | | FEED | 0.16-0.22 | 0.18-0.24 | 0.20-0.28 | 0.20-0.30 | 0.28-0.38 | 0.32-0.42 | 0.36-0.46 | 0.40-0.50 |
| | 22 | | 55 | RPM | 1350 | 1090 | 970 | 880 | 580 | 440 | 350 | 290 |
| | | | | FEED | 0.16-0.22 | 0.18-0.24 | 0.20-0.28 | 0.20-0.30 | 0.28-0.38 | 0.32-0.42 | 0.36-0.46 | 0.40-0.50 |
| | 23 | Aluminum-cast, alloyed | 40 | RPM | 980 | 800 | 710 | 640 | 420 | 320 | 250 | 210 |
| | | | | FEED | 0.16-0.22 | 0.18-0.24 | 0.20-0.28 | 0.20-0.30 | 0.28-0.38 | 0.32-0.42 | 0.36-0.46 | 0.40-0.50 |
| | 29 | Non Metallic Materials | 20 | RPM | 490 | 400 | 350 | 320 | 210 | 160 | 130 | 110 |
| | | | | FEED | 0.11-0.17 | 0.12-0.18 | 0.14-0.20 | 0.19-0.25 | 0.22-0.28 | 0.24-0.30 | 0.28-0.34 | 0.36-0.40 |
| S | 36 | Titanium Alloys | 10 | RPM | 240 | 200 | 180 | 160 | 110 | 80 | 60 | 50 |
| | | | | FEED | 0.06-0.10 | 0.05-0.11 | 0.06-0.12 | 0.09-0.13 | 0.12-0.18 | 0.14-0.20 | 0.16-0.22 | 0.18-0.24 |





# MORSE TAPER SHANK DRILLS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工条件

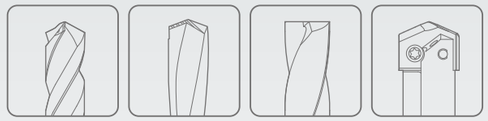
## DN221 SERIES

### HSS-E, MORSE TAPER SHANK DRILLS
### HSS-E, 莫氏锥柄麻花钻头

RPM (转速) = (rev./min.)
FEED (进给) = (mm/rev.)

| ISO 公制 | VDI 3323 | Material Description 材料描述 | Vc 钻削速度 (m/min) | Parameter 参数 | Drill Diameter 刃径 (mm) | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | 13.0 | 16.0 | 18.0 | 20.0 | 30.0 |
| P | 1 | Non-alloy steel | 40 | RPM | 980 | 800 | 710 | 640 | 420 |
| | | | | FEED | 0.16-0.22 | 0.17-0.23 | 0.19-0.25 | 0.24-0.30 | 0.27-0.33 |
| | 2 | | 30 | RPM | 730 | 600 | 530 | 480 | 320 |
| | | | | FEED | 0.16-0.22 | 0.17-0.23 | 0.19-0.25 | 0.24-0.30 | 0.27-0.33 |
| | 3 | | 25 | RPM | 610 | 500 | 440 | 400 | 270 |
| | | | | FEED | 0.16-0.22 | 0.17-0.23 | 0.19-0.25 | 0.24-0.30 | 0.27-0.33 |
| | 4 | | 20 | RPM | 490 | 400 | 350 | 320 | 210 |
| | | | | FEED | 0.09-0.15 | 0.11-0.17 | 0.13-0.19 | 0.15-0.21 | 0.17-0.23 |
| | 6 | Low alloy steel | 30 | RPM | 730 | 600 | 530 | 480 | 320 |
| | | | | FEED | 0.16-0.22 | 0.17-0.23 | 0.19-0.25 | 0.24-0.30 | 0.27-0.33 |
| | 7 | | 25 | RPM | 610 | 500 | 440 | 400 | 270 |
| | | | | FEED | 0.16-0.22 | 0.17-0.23 | 0.19-0.25 | 0.24-0.30 | 0.27-0.33 |
| | 8 | | 20 | RPM | 490 | 400 | 350 | 320 | 210 |
| | | | | FEED | 0.09-0.15 | 0.11-0.17 | 0.13-0.19 | 0.15-0.21 | 0.17-0.23 |
| | 10 | High alloyed steel, and tool steel | 20 | RPM | 490 | 400 | 350 | 320 | 210 |
| | | | | FEED | 0.16-0.22 | 0.17-0.23 | 0.19-0.25 | 0.24-0.30 | 0.27-0.33 |
| K | 15 | Grey cast iron | 40 | RPM | 980 | 800 | 710 | 640 | 420 |
| | | | | FEED | 0.16-0.22 | 0.17-0.23 | 0.19-0.25 | 0.24-0.30 | 0.27-0.33 |
| | 16 | | 30 | RPM | 730 | 600 | 530 | 480 | 320 |
| | | | | FEED | 0.09-0.15 | 0.11-0.17 | 0.13-0.19 | 0.15-0.21 | 0.17-0.23 |
| | 17 | Nodular cast iron | 40 | RPM | 980 | 800 | 710 | 640 | 420 |
| | | | | FEED | 0.16-0.22 | 0.17-0.23 | 0.19-0.25 | 0.24-0.30 | 0.27-0.33 |
| | 18 | | 25 | RPM | 610 | 500 | 440 | 400 | 270 |
| | | | | FEED | 0.09-0.15 | 0.11-0.17 | 0.13-0.19 | 0.15-0.21 | 0.17-0.23 |
| | 19 | Malleable cast iron | 30 | RPM | 730 | 600 | 530 | 480 | 320 |
| | | | | FEED | 0.16-0.22 | 0.17-0.23 | 0.19-0.25 | 0.24-0.30 | 0.27-0.33 |
| | 20 | | 25 | RPM | 610 | 500 | 440 | 400 | 270 |
| | | | | FEED | 0.09-0.15 | 0.11-0.17 | 0.13-0.19 | 0.15-0.21 | 0.17-0.23 |
| N | 21 | Aluminum-wrought alloy | 60 | RPM | 1470 | 1190 | 1060 | 950 | 640 |
| | | | | FEED | 0.21-0.27 | 0.23-0.29 | 0.25-0.33 | 0.25-0.35 | 0.33-0.43 |
| | 22 | | 60 | RPM | 1470 | 1190 | 1060 | 950 | 640 |
| | | | | FEED | 0.21-0.27 | 0.23-0.29 | 0.25-0.33 | 0.25-0.35 | 0.33-0.43 |
| | 23 | Aluminum-cast, alloyed | 45 | RPM | 1100 | 900 | 800 | 720 | 480 |
| | | | | FEED | 0.21-0.27 | 0.23-0.29 | 0.25-0.33 | 0.25-0.35 | 0.33-0.43 |
| S | 36 | Titanium Alloys | 15 | RPM | 370 | 300 | 270 | 240 | 160 |
| | | | | FEED | 0.06-0.10 | 0.05-0.11 | 0.06-0.12 | 0.09-0.13 | 0.12-0.18 |

Global Cutting Tool Leader **YG-1**



# HOLEMAKING

Leading Through Innovation

HSSCo8

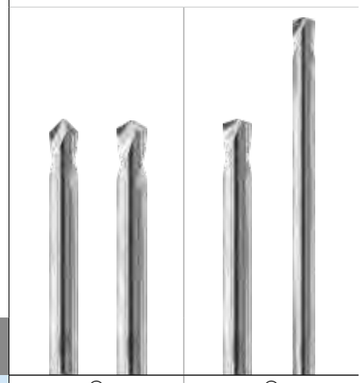
# NC-SPOTTING DRILLS

- For Centering and Chamfering of Holes
- 定中心和倒角

# SELECTION GUIDE
## 选用指南

HOLEMAKING TOOLS

| SERIES 选用指南 | D2306 D2307 | D2320 D2323 |
|---|---|---|
| POINT ANGLE 钻尖角度 | 90°/120° | 142° |
| SIZE MIN 最小尺寸 | D3.0 | D3.0 / D6.0 |
| SIZE MAX 最大尺寸 | D20.0 | D20.0 / D12.0 |
| PAGE 页数 | A249 | A250 |
| SURFACE TREATMENT 表面处理 | Bright | |



## HSSCo8
# NC-SPOTTING DRILLS

For Centering and Chamfering of Holes
定中心和倒角

Please visit 请访问 globalyg1.com/mat for material search 查看产品材料

◎ : Excellent (优秀) ○ : Good (良好)

Recommended cutting conditions (推荐加工条件) : p. A251

| ISO 公制 | VDI 3323 | Material Description 材料描述 | Composition / Structure / Heat Treatment 成分 / 组织 / 热处理 | | HB 布氏硬度 | HRc 硬度 | D2306 D2307 | D2320 D2323 |
|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | About 0.15% C | Annealed | 125 | | ◎ | ◎ |
| | 2 | | About 0.45% C | Annealed | 190 | 13 | ◎ | ◎ |
| | 3 | | About 0.45% C | Quenched & Tempered | 250 | 25 | ◎ | ◎ |
| | 4 | | About 0.75% C | Annealed | 270 | 28 | | |
| | 5 | | About 0.75% C | Quenched & Tempered | 300 | 32 | | |
| | 6 | Low alloy steel | | Annealed | 180 | 10 | ◎ | ◎ |
| | 7 | | | Quenched & Tempered | 275 | 29 | ○ | ○ |
| | 8 | | | Quenched & Tempered | 300 | 32 | | |
| | 9 | | | Quenched & Tempered | 350 | 38 | | |
| | 10 | High alloyed steel, and tool steel | | Annealed | 200 | 15 | | |
| | 11 | | | Quenched & Tempered | 325 | 35 | | |
| M | 12 | Stainless steel | Ferritic / Martensitic | Annealed | 200 | 15 | ○ | ○ |
| | 13 | | Martensitic | Quenched & Tempered | 240 | 23 | | |
| | 14 | | Austenitic | | 180 | 10 | | |
| K | 15 | Grey cast iron | Pearlitic / ferritic | | 180 | 10 | ◎ | ◎ |
| | 16 | | Pearlitic (Martensitic) | | 260 | 26 | ○ | ○ |
| | 17 | Nodular cast iron | Ferritic | | 160 | 3 | ○ | ○ |
| | 18 | | Pearlitic | | 250 | 25 | | |
| | 19 | Malleable cast iron | Ferritic | | 130 | | ○ | ○ |
| | 20 | | Pearlitic | | 230 | 21 | | |
| N | 21 | Aluminum-wrought alloy | Not Curable | | 60 | | ○ | ○ |
| | 22 | | Curable | Hardened | 100 | | ○ | ○ |
| | 23 | Aluminum-cast, alloyed | ≤ 12% Si, Not Curable | | 75 | | ○ | ○ |
| | 24 | | ≤ 12% Si, Curable | Hardened | 90 | | | |
| | 25 | | > 12% Si, Not Curable | | 130 | | | |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | Cutting Alloys, PB>1% | | 110 | | | |
| | 27 | | CuZn, CuSnZn (Brass) | | 90 | | | |
| | 28 | | CuSn, lead-free copper and electrolytic copper | | 100 | | | |
| | 29 | Non Metallic Materials | Duroplastic, Fiber Reinforced Plastic | | | | | |
| | 30 | | Rubber, Wood, etc. | | | | | |
| S | 31 | Heat Resistant Super Alloys | Fe Based | Annealed | 200 | 15 | | |
| | 32 | | | Cured | 280 | 30 | | |
| | 33 | | Ni or Co Based | Annealed | 250 | 25 | | |
| | 34 | | | Cured | 350 | 38 | | |
| | 35 | | | Cast | 320 | 34 | | |
| | 36 | Titanium Alloys | Pure Titanium | | 400 Rm | | | |
| | 37 | | Alpha + Beta Alloys | Hardened | 1050 Rm | | | |
| H | 38 | Hardened steel | | Hardened | 550 | 55 | | |
| | 39 | | | Hardened | 630 | 60 | | |
| | 40 | Chilled Cast Iron | | Cast | 400 | 42 | | |
| | 41 | Hardened Cast Iron | | Hardened | 550 | 55 | | |



CARBIDE
HSS
i-ONE DRILLS
i-DREAM DRILLS
DREAM DRILLS -PRO
DREAM DRILLS -GENERAL
DREAM DRILLS -SOFT
DREAM DRILLS -HIGH FEED
DREAM DRILLS -FLAT BOTTOM
DREAM DRILLS -INOX
DREAM DRILLS -ALU
DREAM DRILLS -CFRP
DREAM DRILLS -MQL
DREAM DRILLS for HIGH HARDENED STEELS
GENERAL CARBIDE DRILLS
MULTI-1 DRILLS
GOLD-P DRILLS
SUPER-GP DRILLS
WORM PATTERN DRILLS
STRAIGHT SHANK DRILLS
TAPER SHANK DRILLS
NC-SPOTTING DRILLS
CENTER DRILLS
SPADE DRILLS
REAMERS
COUNTER SINKS
COUNTER BORES
TECHNICAL DATA

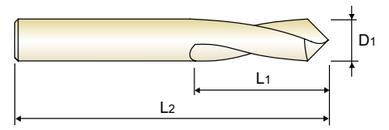
# NC-SPOTTING DRILLS

90° D2306 SERIES
120° D2307 SERIES

## HSSCo8, NC-SPOTTING DRILLS 90°/120°
## HSSCo8, 定心钻头 90°/120°

▶**Surface treatment** : Bright Finish
▶ **Application**: For more precise centering work on NC/CNC Machines. The large diameter of the tool permits chamfering work after centering continuously.

▶ 表面处理：光亮处理
▶ 应用：用于NC/CNC机床上的高精密中心孔加工, 大的产品直径允许 在中心孔加工后继续进行倒角工作.




NC | HSS Co8 | h6 | h6 | 90° | 120° | p. A251

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| ◎ | NC DRILL CHUCK & OTHER TOOL HOLDERS | D247 - 256 |
| ○ | ER COLLET CHUCK | D73 - 115 |

### Point Angle 90°

Unit(单位) : mm

| EDP No. 型号 | Drill Diameter 刃径 D1 | Flute Length 槽长 L1 | Overall Length 全长 L2 |
|---|---|---|---|
| D2306030 | 3.0 | 12 | 46 |
| D2306040 | 4.0 | 12 | 55 |
| D2306050 | 5.0 | 15 | 60 |
| D2306060 | 6.0 | 20 | 66 |
| D2306080 | 8.0 | 25 | 79 |
| D2306100 | 10.0 | 25 | 89 |
| D2306120 | 12.0 | 30 | 102 |
| D2306160 | 16.0 | 35 | 115 |
| D2306200 | 20.0 | 40 | 131 |

### Point Angle 120°

| EDP No. 型号 | Drill Diameter 刃径 D1 | Flute Length 槽长 L1 | Overall Length 全长 L2 |
|---|---|---|---|
| D2307030 | 3.0 | 12 | 46 |
| D2307040 | 4.0 | 12 | 55 |
| D2307050 | 5.0 | 15 | 60 |
| D2307060 | 6.0 | 20 | 66 |
| D2307080 | 8.0 | 25 | 79 |
| D2307100 | 10.0 | 25 | 89 |
| D2307120 | 12.0 | 30 | 102 |
| D2307160 | 16.0 | 35 | 115 |
| D2307200 | 20.0 | 40 | 131 |

▶ TiN, TiCN and TiAlN are available on your request. / TiN, TiCN, TiAlN 可根据客户需求进行加工.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | | | ◎ | ○ | | | | | ○ | | | ◎ | ○ | ○ | | ○ | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | | | | | | | | | | | | | | | | |

# NC-SPOTTING DRILLS

**D2320** SERIES
**D2323** SERIES

## HSSCo8, NC-SPOTTING DRILLS 142°
## HSSCo8, 定心钻头 142°

▶**Surface treatment** : Bright Finish
▶ **Application**: For more precise centering work on NC/CNC Machines. The large diameter of the tool permits chamfering work after centering continuously.

▶ 表面处理：光亮处理
▶ 应用：用于NC/CNC机床上的高精密中心孔加工, 大的产品直径允许 在中心孔加工后继续进行倒角工作.

NC | HSS Co8 | h6 | h6 | 142° | p. A251

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| ◎ | NC DRILL CHUCK & OTHER TOOL HOLDERS | D247 - 256 |
| ○ | ER COLLET CHUCK | D73 - 115 |

### LONG LENGTH

Unit(单位) : mm

| EDP No. 型号 | Drill Diameter 刃径 D1 | Flute Length 槽长 L1 | Overall Length 全长 L2 |
|---|---|---|---|
| D2320030 | 3.0 | 12 | 46 |
| D2320040 | 4.0 | 12 | 55 |
| D2320050 | 5.0 | 15 | 60 |
| D2320060 | 6.0 | 20 | 66 |
| D2320080 | 8.0 | 25 | 79 |
| D2320100 | 10.0 | 25 | 89 |
| D2320120 | 12.0 | 30 | 102 |
| D2320160 | 16.0 | 35 | 115 |
| D2320200 | 20.0 | 40 | 131 |

| EDP No. 型号 | Drill Diameter 刃径 D1 | Flute Length 槽长 L1 | Overall Length 全长 L2 |
|---|---|---|---|
| D2323060 | 6.0 | 20 | 140 |
| D2323080 | 8.0 | 25 | 140 |
| D2323100 | 10.0 | 25 | 170 |
| D2323120 | 12.0 | 30 | 170 |

▶ TiN, TiCN and TiAlN are available on your request. / TiN, TiCN, TiAlN 可根据客户需求进行加工.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | | | ◎ | ○ | | | | | ○ | | | ◎ | ○ | ○ | | ○ | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | | | | | | | | | | | | | | | | |



# NC-SPOTTING DRILLS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工条件

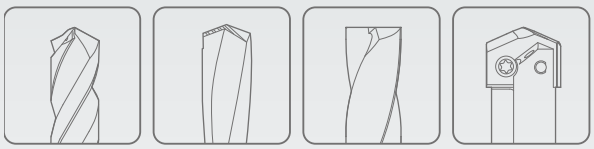
**D2306, D2307, D2320, D2323** SERIES

### HSSCo8, NC-SPOTTING DRILLS
### HSSCo8, 定心钻头

RPM (转速) = (rev./min.)
FEED (进给) = (mm/rev.)

| ISO 公制 | VDI 3323 | Material Description 材料描述 | Vc 钻削速度 (m/min) | Parameter 参数 | Drill Diameter 刃径 (mm) 2.0 | 3.0 | 4.0 | 6.0 | 8.0 | 10.0 | 12.0 | 16.0 | 20.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | 25 | RPM | 3980 | 2650 | 1990 | 1330 | 990 | 800 | 660 | 500 | 400 |
| | | | | FEED | 0.02-0.04 | 0.04-0.06 | 0.05-0.08 | 0.07-0.10 | 0.08-0.12 | 0.09-0.14 | 0.11-0.17 | 0.13-0.19 | 0.15-0.21 |
| | 2 | | 25 | RPM | 3980 | 2650 | 1990 | 1330 | 990 | 800 | 660 | 500 | 400 |
| | | | | FEED | 0.02-0.04 | 0.04-0.06 | 0.05-0.08 | 0.07-0.10 | 0.08-0.12 | 0.09-0.14 | 0.11-0.17 | 0.13-0.19 | 0.15-0.21 |
| | 3 | | 15 | RPM | 2390 | 1590 | 1190 | 800 | 600 | 480 | 400 | 300 | 240 |
| | | | | FEED | 0.01-0.03 | 0.03-0.05 | 0.04-0.07 | 0.05-0.08 | 0.07-0.10 | 0.08-0.12 | 0.09-0.14 | 0.11-0.17 | 0.13-0.19 |
| | 6 | Low alloy steel | 20 | RPM | 3180 | 2120 | 1590 | 1060 | 800 | 640 | 530 | 400 | 320 |
| | | | | FEED | 0.02-0.04 | 0.04-0.06 | 0.05-0.08 | 0.07-0.10 | 0.08-0.12 | 0.09-0.14 | 0.11-0.17 | 0.13-0.19 | 0.15-0.21 |
| | 7 | | 15 | RPM | 2390 | 1590 | 1190 | 800 | 600 | 480 | 400 | 300 | 240 |
| | | | | FEED | 0.01-0.03 | 0.03-0.05 | 0.04-0.07 | 0.05-0.08 | 0.07-0.10 | 0.08-0.12 | 0.09-0.14 | 0.11-0.17 | 0.13-0.19 |
| M | 12 | Stainless steel | 15 | RPM | 2390 | 1590 | 1190 | 800 | 600 | 480 | 400 | 300 | 240 |
| | | | | FEED | 0.02-0.04 | 0.04-0.06 | 0.05-0.08 | 0.07-0.10 | 0.08-0.12 | 0.09-0.14 | 0.11-0.17 | 0.13-0.19 | 0.15-0.21 |
| K | 15 | Grey cast iron | 30 | RPM | 4770 | 3180 | 2390 | 1590 | 1190 | 950 | 800 | 600 | 480 |
| | | | | FEED | 0.03-0.05 | 0.05-0.07 | 0.06-0.09 | 0.08-0.11 | 0.10-0.13 | 0.12-0.16 | 0.15-0.2 | 0.18-0.24 | 0.22-0.28 |
| | 16 | | 25 | RPM | 3980 | 2650 | 1990 | 1330 | 990 | 800 | 660 | 500 | 400 |
| | | | | FEED | 0.01-0.03 | 0.03-0.05 | 0.04-0.07 | 0.05-0.08 | 0.07-0.10 | 0.08-0.12 | 0.09-0.14 | 0.11-0.17 | 0.13-0.19 |
| | 17 | Nodular cast iron | 30 | RPM | 4770 | 3180 | 2390 | 1590 | 1190 | 950 | 800 | 600 | 480 |
| | | | | FEED | 0.03-0.05 | 0.05-0.07 | 0.06-0.09 | 0.08-0.11 | 0.10-0.13 | 0.12-0.16 | 0.15-0.2 | 0.18-0.24 | 0.22-0.28 |
| | 19 | Malleable cast iron | 20 | RPM | 3180 | 2120 | 1590 | 1060 | 800 | 640 | 530 | 400 | 320 |
| | | | | FEED | 0.03-0.05 | 0.05-0.07 | 0.06-0.09 | 0.08-0.11 | 0.10-0.13 | 0.12-0.16 | 0.15-0.2 | 0.18-0.24 | 0.22-0.28 |
| N | 21 | Aluminum-wrought alloy | 65 | RPM | 10350 | 6900 | 5170 | 3450 | 2590 | 2070 | 1720 | 1290 | 1030 |
| | | | | FEED | 0.04-0.06 | 0.06-0.09 | 0.08-0.11 | 0.10-0.13 | 0.12-0.15 | 0.15-0.19 | 0.18-0.23 | 0.21-0.27 | 0.25-0.31 |
| | 22 | | 60 | RPM | 9550 | 6370 | 4770 | 3180 | 2390 | 1910 | 1590 | 1190 | 950 |
| | | | | FEED | 0.04-0.06 | 0.06-0.09 | 0.08-0.11 | 0.10-0.13 | 0.12-0.15 | 0.15-0.19 | 0.18-0.23 | 0.21-0.27 | 0.25-0.31 |
| | 23 | Aluminum-cast, alloyed | 50 | RPM | 7960 | 5310 | 3980 | 2650 | 1990 | 1590 | 1330 | 990 | 800 |
| | | | | FEED | 0.04-0.06 | 0.06-0.09 | 0.08-0.11 | 0.10-0.13 | 0.12-0.15 | 0.15-0.19 | 0.18-0.23 | 0.21-0.27 | 0.25-0.31 |

Global Cutting Tool Leader **YG-1**



# HOLEMAKING

Leading Through Innovation

# HSS-E

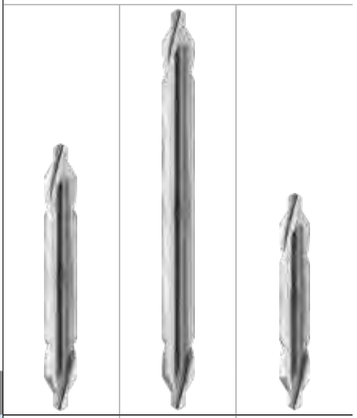
# CENTER DRILLS

- General Purpose
- 普通用途

# SELECTION GUIDE
## 选用指南

HOLEMAKING TOOLS

| SERIES 系列 | DV304 | DV305 | DV301 |
|---|---|---|---|
| DRILLING DEPTH 钻销深度 | - | - | - |
| LENGTH 长度 | EXTRA LONG 超长 | EXTRA LONG 超长 | - |
| SIZE MIN 最小尺寸 | D1.0 | D1.5 | D1.0 |
| SIZE MAX 最大尺寸 | D5.0 | D5.0 | D6.0 |
| PAGE 页数 | A255 | A255 | A256 |
| SURFACE TREATMENT 表面处理 | Bright | | |



# HSS-E
# CENTER DRILLS

General Purpose
普通用途

Please visit 请访问 globalyg1.com/mat for material search 查看产品材料

◎ : Excellent (优秀) ○ : Good (良好)

Recommended cutting conditions (推荐加工条件) : p. A257

| ISO 公制 | VDI 3323 | Material Description 材料描述 | Composition / Structure / Heat Treatment 成分 / 组织 / 热处理 | | HB 布氏硬度 | HRc 硬度 | DV304 | DV305 | DV301 |
|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | About 0.15% C | Annealed | 125 | | ◎ | ◎ | ◎ |
| | 2 | | About 0.45% C | Annealed | 190 | 13 | ◎ | ◎ | ◎ |
| | 3 | | About 0.45% C | Quenched & Tempered | 250 | 25 | ○ | ○ | ○ |
| | 4 | | About 0.75% C | Annealed | 270 | 28 | | | |
| | 5 | | About 0.75% C | Quenched & Tempered | 300 | 32 | | | |
| | 6 | Low alloy steel | | Annealed | 180 | 10 | ◎ | ◎ | ◎ |
| | 7 | | | Quenched & Tempered | 275 | 29 | ○ | ○ | ○ |
| | 8 | | | Quenched & Tempered | 300 | 32 | | | |
| | 9 | | | Quenched & Tempered | 350 | 38 | | | |
| | 10 | High alloyed steel, and tool steel | | Annealed | 200 | 15 | | | |
| | 11 | | | Quenched & Tempered | 325 | 35 | | | |
| M | 12 | Stainless steel | Ferritic / Martensitic | Annealed | 200 | 15 | ○ | ○ | ○ |
| | 13 | | Martensitic | Quenched & Tempered | 240 | 23 | | | |
| | 14 | | Austenitic | | 180 | 10 | | | |
| K | 15 | Grey cast iron | Pearlitic / ferritic | | 180 | 10 | ◎ | ◎ | ◎ |
| | 16 | | Pearlitic (Martensitic) | | 260 | 26 | ○ | ○ | ○ |
| | 17 | Nodular cast iron | Ferritic | | 160 | 3 | ○ | ○ | ○ |
| | 18 | | Pearlitic | | 250 | 25 | | | |
| | 19 | Malleable cast iron | Ferritic | | 130 | | ○ | ○ | ○ |
| | 20 | | Pearlitic | | 230 | 21 | | | |
| N | 21 | Aluminum-wrought alloy | Not Curable | | 60 | | | | |
| | 22 | | Curable | Hardened | 100 | | | | |
| | 23 | Aluminum-cast, alloyed | ≤ 12% Si, Not Curable | | 75 | | | | |
| | 24 | | ≤ 12% Si, Curable | Hardened | 90 | | | | |
| | 25 | | > 12% Si, Not Curable | | 130 | | | | |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | Cutting Alloys, PB>1% | | 110 | | | | |
| | 27 | | CuZn, CuSnZn (Brass) | | 90 | | | | |
| | 28 | | CuSn, lead-free copper and electrolytic copper | | 100 | | | | |
| | 29 | Non Metallic Materials | Duroplastic, Fiber Reinforced Plastic | | | | | | |
| | 30 | | Rubber, Wood, etc. | | | | | | |
| S | 31 | Heat Resistant Super Alloys | Fe Based | Annealed | 200 | 15 | | | |
| | 32 | | | Cured | 280 | 30 | | | |
| | 33 | | Ni or Co Based | Annealed | 250 | 25 | | | |
| | 34 | | | Cured | 350 | 38 | | | |
| | 35 | | | Cast | 320 | 34 | | | |
| | 36 | Titanium Alloys | Pure Titanium | | 400 Rm | | | | |
| | 37 | | Alpha + Beta Alloys | Hardened | 1050 Rm | | | | |
| H | 38 | Hardened steel | | Hardened | 550 | 55 | | | |
| | 39 | | | Hardened | 630 | 60 | | | |
| | 40 | Chilled Cast Iron | | Cast | 400 | 42 | | | |
| | 41 | Hardened Cast Iron | | Hardened | 550 | 55 | | | |



# CENTER DRILLS

100mm DV304 SERIES
150mm DV305 SERIES

## HSS-E, CENTER DRILLS
## HSS-E, 中心钻

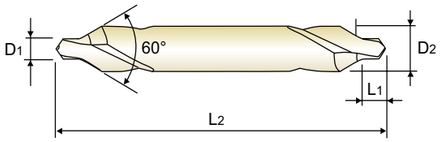
EXTRA LONG
超长

▶ **Application** : Center Drills suitable for center drilling and chamfering in general materials.
Excellent performance with High Vanadium HSS-E and YG-1's unique design technology.

▶ 应用：适用于一般材料的定心孔加工和倒角加工. 采用含钴高速钢材料和YG1独特的设计技术, 具有卓越的加工性能

Overall Length 100mm

Overall Length 150mm




HSS-E | h8 | k12 | 120°

p. A257

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| NC DRILL CHUCK & OTHER TOOL HOLDERS | D247 - 256 |
| ER COLLET CHUCK | D73 - 115 |

### DV304 : 100mm

Unit(单位) : mm

| EDP No 型号 | Drill Diameter 刃径 D1 | Shank Diameter 柄径 D2 | Pilot Length 槽长 L1 | Overall Length 全长 L2 |
|---|---|---|---|---|
| DV304010 | 1.0 | 4.0 | 1.0 | 100 |
| DV304012 | 1.2 | 5.0 | 1.2 | 100 |
| DV304015 | 1.5 | 5.0 | 1.5 | 100 |
| DV304020 | 2.0 | 6.0 | 2.0 | 100 |
| DV304025 | 2.5 | 8.0 | 2.5 | 100 |
| DV304030 | 3.0 | 8.0 | 3.0 | 100 |
| DV304032 | 3.2 | 8.0 | 3.0 | 100 |
| DV304040 | 4.0 | 10.0 | 4.5 | 100 |
| DV304050 | 5.0 | 12.0 | 5.5 | 100 |

### DV305 : 150mm

| EDP No 型号 | Drill Diameter 刃径 D1 | Shank Diameter 柄径 D2 | Pilot Length 槽长 L1 | Overall Length 全长 L2 |
|---|---|---|---|---|
| DV305015 | 1.5 | 5.0 | 1.9 | 150 |
| DV305020 | 2.0 | 6.0 | 2.5 | 150 |
| DV305025 | 2.5 | 8.0 | 3.1 | 150 |
| DV305030 | 3.0 | 10.0 | 3.7 | 150 |
| DV305040 | 4.0 | 10.0 | 5.0 | 150 |
| DV305050 | 5.0 | 12.0 | 6.3 | 150 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ○ | | | ◎ | ○ | | | | | ○ | | | ◎ | ○ | ○ | | ○ | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | | | | | | | | | | | | | | | | | | | | | |

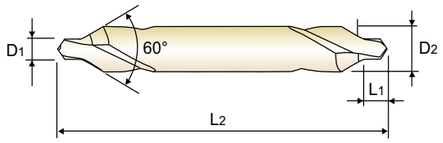
# CENTER DRILLS

DV301 SERIES

## HSS-E, CENTER DRILLS
## HSS-E, 中心钻

▶ **Application** : Center Drills suitable for center drilling and chamfering in general materials.
Excellent performance with High Vanadium HSS-E and YG-1's unique design technology.

▶ 应用：适用于一般材料的定心孔加工和倒角加工. 采用含钴高速钢材料和YG1独特的设计技术, 具有卓越的加工性能




HSS-E | h8 | k12 | 120°

p. A257

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| NC DRILL CHUCK & OTHER TOOL HOLDERS | D247 - 256 |
| ER COLLET CHUCK | D73 - 115 |

### FORM A (60°)

Unit(单位) : mm

| EDP No 型号 | Drill Diameter 刃径 D1 | Shank Diameter 柄径 D2 | Pilot Length 槽长 L1 | Overall Length 全长 L2 |
|---|---|---|---|---|
| DV301010 | 1.0 | 4.0 | 1.0 | 35 |
| DV301015 | 1.5 | 5.0 | 1.5 | 40 |
| DV301020 | 2.0 | 6.0 | 2.0 | 45 |
| DV301025 | 2.5 | 7.7 | 2.5 | 50 |
| DV301904 | 2.5 | 8.0 | 2.5 | 50 |
| DV301030 | 3.0 | 7.7 | 3.0 | 55 |
| DV301901 | 3.0 | 8.0 | 3.0 | 55 |
| DV301040 | 4.0 | 10.0 | 4.5 | 65 |
| DV301050 | 5.0 | 11.0 | 5.5 | 78 |
| DV301060 | 6.0 | 12.0 | 7.0 | 95 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ○ | | | ◎ | ○ | | | | | ○ | | | ◎ | ○ | ○ | | ○ | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | | | | | | | | | | | | | | | | | | | | | |





# CENTER DRILLS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工条件

DV304, DV305, DV301 SERIES

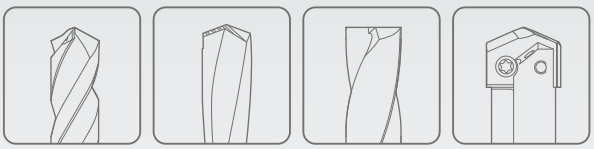
## HSS-E, CENTER DRILLS
## HSS-E, 中心钻

RPM (转速) = (rev./min.)
FEED (进给) = (mm/rev.)

| ISO 公制 | VDI 3323 | Material Description 材料描述 | Vc 钻削速度 (m/min) | Parameter 参数 | Drill Diameter 刃径 (mm) 0.5 | Vc 钻削速度 (m/min) | Parameter 参数 | Drill Diameter 刃径 (mm) 1.0 | Drill Diameter 刃径 (mm) 2.0 |
|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | 30 | RPM | 19100 | 40 | RPM | 12730 | 6370 |
| | | | | FEED | 0.01-0.03 | | FEED | 0.02-0.04 | 0.03-0.06 |
| | 2 | | 25 | RPM | 15920 | 35 | RPM | 9550 | 4770 |
| | | | | FEED | 0.01-0.03 | | FEED | 0.02-0.04 | 0.03-0.06 |
| | 3 | | 20 | RPM | 12730 | 25 | RPM | 7960 | 3980 |
| | | | | FEED | 0.005-0.02 | | FEED | 0.01-0.03 | 0.01-0.035 |
| | 6 | Low alloy steel | 25 | RPM | 15920 | 30 | RPM | 9550 | 4770 |
| | | | | FEED | 0.01-0.03 | | FEED | 0.02-0.04 | 0.03-0.06 |
| | 7 | | 15 | RPM | 9550 | 20 | RPM | 6370 | 3180 |
| | | | | FEED | 0.005-0.02 | | FEED | 0.01-0.03 | 0.01-0.035 |
| M | 12 | Stainless steel | 8 | RPM | 5090 | 10 | RPM | 3180 | 1590 |
| | | | | FEED | 0.005-0.02 | | FEED | 0.01-0.03 | 0.01-0.035 |
| K | 15 | Grey cast iron | 30 | RPM | 19100 | 40 | RPM | 12730 | 6370 |
| | | | | FEED | 0.01-0.03 | | FEED | 0.02-0.04 | 0.03-0.06 |
| | 16 | | 25 | RPM | 15920 | 30 | RPM | 9550 | 4770 |
| | | | | FEED | 0.005-0.02 | | FEED | 0.01-0.03 | 0.01-0.035 |
| | 17 | Nodular cast iron | 30 | RPM | 19100 | 40 | RPM | 12730 | 6370 |
| | | | | FEED | 0.01-0.03 | | FEED | 0.02-0.04 | 0.03-0.06 |
| | 19 | Malleable cast iron | 20 | RPM | 12730 | 25 | RPM | 7960 | 3980 |
| | | | | FEED | 0.01-0.03 | | FEED | 0.02-0.04 | 0.03-0.06 |

| ISO 公制 | VDI 3323 | Material Description 材料描述 | Vc 钻削速度 (m/min) | Parameter 参数 | Drill Diameter 刃径 (mm) 3.0 | 4.0 | 5.0 | 6.0 | 8.0 | 10.0 |
|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | 40 | RPM | 4240 | 3180 | 2550 | 2120 | 1590 | 1270 |
| | | | | FEED | 0.04-0.08 | 0.05-0.09 | 0.06-0.10 | 0.07-0.12 | 0.09-0.15 | 0.12-0.18 |
| | 2 | | 35 | RPM | 3180 | 2390 | 1910 | 1590 | 1190 | 950 |
| | | | | FEED | 0.04-0.08 | 0.05-0.09 | 0.06-0.10 | 0.07-0.12 | 0.09-0.15 | 0.12-0.18 |
| | 3 | | 25 | RPM | 2650 | 1990 | 1590 | 1330 | 990 | 800 |
| | | | | FEED | 0.015-0.05 | 0.02-0.06 | 0.03-0.07 | 0.04-0.08 | 0.06-0.12 | 0.08-0.14 |
| | 6 | Low alloy steel | 30 | RPM | 3180 | 2390 | 1910 | 1590 | 1190 | 950 |
| | | | | FEED | 0.04-0.08 | 0.05-0.09 | 0.06-0.10 | 0.07-0.12 | 0.09-0.15 | 0.12-0.18 |
| | 7 | | 20 | RPM | 2120 | 1590 | 1270 | 1060 | 800 | 640 |
| | | | | FEED | 0.015-0.05 | 0.02-0.06 | 0.03-0.07 | 0.04-0.08 | 0.06-0.12 | 0.08-0.14 |
| M | 12 | Stainless steel | 10 | RPM | 1060 | 800 | 640 | 530 | 400 | 320 |
| | | | | FEED | 0.015-0.05 | 0.02-0.06 | 0.03-0.07 | 0.04-0.08 | 0.06-0.12 | 0.08-0.14 |
| K | 15 | Grey cast iron | 40 | RPM | 4240 | 3180 | 2550 | 2120 | 1590 | 1270 |
| | | | | FEED | 0.04-0.08 | 0.05-0.09 | 0.06-0.10 | 0.07-0.12 | 0.09-0.15 | 0.12-0.18 |
| | 16 | | 30 | RPM | 3180 | 2390 | 1910 | 1590 | 1190 | 950 |
| | | | | FEED | 0.015-0.05 | 0.02-0.06 | 0.03-0.07 | 0.04-0.08 | 0.06-0.12 | 0.08-0.14 |
| | 17 | Nodular cast iron | 40 | RPM | 4240 | 3180 | 2550 | 2120 | 1590 | 1270 |
| | | | | FEED | 0.04-0.08 | 0.05-0.09 | 0.06-0.10 | 0.07-0.12 | 0.09-0.15 | 0.12-0.18 |
| | 19 | Malleable cast iron | 25 | RPM | 2650 | 1990 | 1590 | 1330 | 990 | 800 |
| | | | | FEED | 0.04-0.08 | 0.05-0.09 | 0.06-0.10 | 0.07-0.12 | 0.06-0.12 | 0.12-0.18 |

Global Cutting Tool Leader **YG-1**



# HOLEMAKING

YG

Leading Through Innovation

# INSERTS & HOLDERS

# SPADE DRILLS

- For General Machines and Drilling Large Diameters
  Longer Tool Life and High Productivity

- 普通机械和钻头用直径，工具寿命延长及高生产率

# SELECTION GUIDE
## 选用指南

YG HOLEMAKING TOOLS

# INSERTS & HOLDERS
# SPADE DRILLS

For General Machines and Drilling Large Diameters
Longer Tool Life and High Productivity
普通机械和钻头用直径，工具寿命延长及高生产率

Please visit 请访问 globalyg1.com/mat for material search 查看产品材料

◎ : Excellent (优秀) ○ : Good (良好) Recommended cutting conditions (推荐加工条件) : p. A365

| SERIES 系列 | 1~8 | Y,Z,0,1~4 |
|---|---|---|
| TOOL MATERIAL 刀具材料 | HSS M4 | SUPER HSS T15 |
| POINT 钻顶 | STANDARD | STANDARD |
| SIZE MIN 最小尺寸 | Ø17.86(#1) | Ø9.5(#Y) |
| SIZE MAX 最大尺寸 | Ø114.3(#8) | Ø65.09(#4) |
| PAGE 页数 | A264 | A270 |
| SURFACE TREATMENT 表面处理 | TiN / TiCN / TiAlN | |

| ISO 公制 | VDI 3323 | Material Description 材料描述 | Composition / Structure / Heat Treatment 成分 / 组织 / 热处理 | | HB 布氏硬度 | HRc 硬度 | | |
|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | About 0.15% C | Annealed | 125 | | ○ | ◎ |
| | 2 | | About 0.45% C | Annealed | 190 | 13 | ○ | ◎ |
| | 3 | | About 0.45% C | Quenched & Tempered | 250 | 25 | ○ | ◎ |
| | 4 | | About 0.75% C | Annealed | 270 | 28 | ○ | ◎ |
| | 5 | | About 0.75% C | Quenched & Tempered | 300 | 32 | | |
| | 6 | Low alloy steel | | Annealed | 180 | 10 | ○ | ◎ |
| | 7 | | | Quenched & Tempered | 275 | 29 | ○ | ◎ |
| | 8 | | | Quenched & Tempered | 300 | 32 | | ○ |
| | 9 | | | Quenched & Tempered | 350 | 38 | | ○ |
| | 10 | High alloyed steel, and tool steel | | Annealed | 200 | 15 | | ○ |
| | 11 | | | Quenched & Tempered | 325 | 35 | | ○ |
| M | 12 | Stainless steel | Ferritic / Martensitic | Annealed | 200 | 15 | ◎ | ○ |
| | 13 | | Martensitic | Quenched & Tempered | 240 | 23 | ◎ | ○ |
| | 14 | | Austenitic | | 180 | 10 | ◎ | ○ |
| K | 15 | Grey cast iron | Pearlitic / ferritic | | 180 | 10 | ◎ | ○ |
| | 16 | | Pearlitic (Martensitic) | | 260 | 26 | ○ | ◎ |
| | 17 | Nodular cast iron | Ferritic | | 160 | 3 | ◎ | ○ |
| | 18 | | Pearlitic | | 250 | 25 | ○ | ◎ |
| | 19 | Malleable cast iron | Ferritic | | 130 | | ◎ | ○ |
| | 20 | | Pearlitic | | 230 | 21 | ○ | ◎ |
| N | 21 | Aluminum-wrought alloy | Not Curable | | 60 | | ◎ | ○ |
| | 22 | | Curable | Hardened | 100 | | ◎ | ○ |
| | 23 | Aluminum-cast, alloyed | ≤ 12% Si, Not Curable | | 75 | | | |
| | 24 | | ≤ 12% Si, Curable | Hardened | 90 | | | |
| | 25 | | > 12% Si, Not Curable | | 130 | | | |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | Cutting Alloys, PB>1% | | 110 | | | |
| | 27 | | CuZn, CuSnZn (Brass) | | 90 | | ◎ | ○ |
| | 28 | | CuSn, lead-free copper and electrolytic copper | | 100 | | | |
| | 29 | Non Metallic Materials | Duroplastic, Fiber Reinforced Plastic | | | | | |
| | 30 | | Rubber, Wood, etc. | | | | | |
| S | 31 | Heat Resistant Super Alloys | Fe Based | Annealed | 200 | 15 | | ◎ |
| | 32 | | | Cured | 280 | 30 | | ○ |
| | 33 | | Ni or Co Based | Annealed | 250 | 25 | | ○ |
| | 34 | | | Cured | 350 | 38 | | ○ |
| | 35 | | | Cast | 320 | 34 | | ○ |
| | 36 | Titanium Alloys | Pure Titanium | | 400 Rm | | | |
| | 37 | | Alpha + Beta Alloys | Hardened | 1050 Rm | | | |
| H | 38 | Hardened steel | | Hardened | 550 | 55 | | ○ |
| | 39 | | | Hardened | 630 | 60 | | |
| | 40 | Chilled Cast Iron | | Cast | 400 | 42 | | |
| | 41 | Hardened Cast Iron | | Hardened | 550 | 55 | | |

| Coating | Characteristics |
|---|---|
| H | -First choice for excellent wear resistance and toughness<br>-Preventive of chipping due to cold welding<br>-Achieve high penetration rates even in deep holes with reliable tool life<br>-Coefficient of friction against steel : 0.25<br>-Color : Bronze |
| TiN | -Increased tool life over non-coating<br>-Improved wear resistance and high hardness<br>-For normal applications<br>-Coefficient of friction against steel : 0.4<br>-Color : Gold |



| Y,Z,0,1,2 | Y,Z,0,1,2 | Y,Z,0,1~3 | Y,Z,0,1~3 | 1~3 | Y,Z,0,1~3 |
|---|---|---|---|---|---|
| PREMIUM HSS M48 | CARBIDE K10 | CARBIDE K20 | CARBIDE P40 | HSS M4 | SUPER HSS T15 |
| STANDARD | STANDARD | STANDARD | STANDARD | SM-POINT | SM-POINT |
| Ø9.5(#Y) | Ø9.5(#Y) | Ø9.5(#Y) | Ø9.5(#Y) | Ø17.86(#1) | Ø9.5(#Y) |
| Ø35(#2) | Ø35(#2) | Ø47.63(#3) | Ø47.63(#3) | Ø47.63(#3) | Ø47.63(#3) |
| A275 | A278 | A281 | A285 | A290 | A293 |
| TiN / TiCN / TiAlN | | | | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| ◎ | | ○ | ◎ | ○ | ◎ | 1 | P | |
| ◎ | | ○ | ◎ | ○ | ◎ | 2 | | |
| ◎ | | ○ | ◎ | ○ | ◎ | 3 | | |
| ◎ | | ○ | ◎ | ○ | ◎ | 4 | | |
| | | | | | | 5 | | |
| ◎ | | ○ | ◎ | ○ | ◎ | 6 | | |
| ◎ | | ○ | ◎ | ○ | ◎ | 7 | | |
| ◎ | | ○ | ◎ | | ○ | 8 | | |
| ◎ | | ○ | ◎ | | ○ | 9 | | |
| ◎ | | ○ | ◎ | | ○ | 10 | | |
| ◎ | | ○ | ◎ | | ○ | 11 | | |
| | | ◎ | ○ | ◎ | ○ | 12 | M | |
| | | ◎ | ○ | ◎ | ○ | 13 | | |
| | | ◎ | ○ | ◎ | ○ | 14 | | |
| ○ | ◎ | ○ | ○ | ◎ | ○ | 15 | K | |
| ◎ | ◎ | ○ | ○ | ○ | ◎ | 16 | | |
| ○ | ◎ | ○ | ○ | ◎ | ○ | 17 | | |
| ◎ | ◎ | ○ | ○ | ○ | ◎ | 18 | | |
| ○ | ◎ | ○ | ○ | ◎ | ○ | 19 | | |
| ◎ | ◎ | ○ | ○ | ○ | ◎ | 20 | | |
| ○ | | ◎ | ○ | ◎ | ○ | 21 | N | |
| ○ | | ◎ | ○ | ◎ | ○ | 22 | | |
| | | | | | | 23 | | |
| | | | | | | 24 | | |
| | | | | | | 25 | | |
| | | | | | | 26 | | |
| ○ | | ◎ | ○ | ◎ | ○ | 27 | | |
| | | | | | | 28 | | |
| | | | | | | 29 | | |
| | | | | | | 30 | | |
| ◎ | | ◎ | ○ | | ◎ | 31 | S | |
| ◎ | | ◎ | ○ | | ○ | 32 | | |
| ◎ | | ◎ | ○ | | ○ | 33 | | |
| ◎ | | ◎ | ○ | | ○ | 34 | | |
| ◎ | | ◎ | ○ | | ○ | 35 | | |
| | | | | | | 36 | | |
| | | | | | | 37 | | |
| ◎ | | ○ | ◎ | | ○ | 38 | H | |
| | | | | | | 39 | | |
| | | | | | | 40 | | |
| | | | | | | 41 | | |

| | |
|---|---|
| TiCN | -Maximum working temperature up to 400°c<br>-Better wear resistance over non-coating<br>-Coefficient of friction against steel : 0.4<br>-Color : Blue-Grey |
| TiAlN | -Maximum working temperature up to 800°c<br>-Excellent heat and oxidation resisance<br>-Coefficient of friction against steel : 0.4<br>-Color : Violet-Grey |
| Hardslick | -Better chip evauation for tapping and drilling<br>-High hardness and improved lubrication<br>-Coefficient of friction against steel : 0.2<br>-Color : Black-Gery |



CARBIDE

HSS

i-ONE DRILLS

i-DREAM DRILLS

DREAM DRILLS -PRO

DREAM DRILLS -GENERAL

DREAM DRILLS -SOFT

DREAM DRILLS -HIGH FEED

DREAM DRILLS -FLAT BOTTOM

DREAM DRILLS -INOX

DREAM DRILLS -ALU

DREAM DRILLS -CFRP

DREAM DRILLS -MQL

DREAM DRILLS for HIGH HARDENED STEELS

GENERAL CARBIDE DRILLS

MULTI-1 DRILLS

GOLD-P DRILLS

SUPER-GP DRILLS

WORM PATTERN DRILLS

STRAIGHT SHANK DRILLS

TAPER SHANK DRILLS

NC-SPOTTING DRILLS

CENTER DRILLS

SPADE DRILLS

REAMERS

COUNTER SINKS

COUNTER BORES

TECHNICAL DATA

# SELECTION GUIDE
## 选用指南

HOLEMAKING TOOLS

# INSERTS & HOLDERS
# SPADE DRILLS

For General Machines and Drilling Large Diameters
Longer Tool Life and High Productivity
普通机械和钻头用直径，工具寿命延长及高生产率

Please visit 请访问 globalyg1.com/mat for material search 查看产品材料

◎ : Excellent (优秀) ○ : Good (良好) Recommended cutting conditions (推荐加工条件) : p. A365

| | SERIES 系列 | Y,Z,0,1,2 | Y,Z,0,1,2 |
|---|---|---|---|
| | TOOL MATERIAL 刀具材料 | PREMIUM HSS M48 | CARBIDE K10 |
| | POINT 钻顶 | SM-POINT | SM-POINT |
| | SIZE MIN 最小尺寸 | Ø9.5(#Y) | Ø9.5(#Y) |
| | SIZE MAX 最大尺寸 | Ø35(#2) | Ø35(#2) |
| | PAGE 页数 | A297 | A300 |
| | SURFACE TREATMENT 表面处理 | TiN / TiCN / TiAlN | |

| ISO 公制 | VDI 3323 | Material Description 材料描述 | Composition / Structure / Heat Treatment 成分 / 组织 / 热处理 | | HB 布氏硬度 | HRc 硬度 | | |
|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | About 0.15% C | Annealed | 125 | | ◎ | |
| | 2 | | About 0.45% C | Annealed | 190 | 13 | ◎ | |
| | 3 | | About 0.45% C | Quenched & Tempered | 250 | 25 | ◎ | |
| | 4 | | About 0.75% C | Annealed | 270 | 28 | ◎ | |
| | 5 | | About 0.75% C | Quenched & Tempered | 300 | 32 | | |
| | 6 | Low alloy steel | | Annealed | 180 | 10 | ◎ | |
| | 7 | | | Quenched & Tempered | 275 | 29 | ◎ | |
| | 8 | | | Quenched & Tempered | 300 | 32 | ◎ | |
| | 9 | | | Quenched & Tempered | 350 | 38 | ◎ | |
| | 10 | High alloyed steel, and tool steel | | Annealed | 200 | 15 | ◎ | |
| | 11 | | | Quenched & Tempered | 325 | 35 | ◎ | |
| M | 12 | Stainless steel | Ferritic / Martensitic | Annealed | 200 | 15 | | |
| | 13 | | Martensitic | Quenched & Tempered | 240 | 23 | | |
| | 14 | | Austenitic | | 180 | 10 | | |
| K | 15 | Grey cast iron | Pearlitic / ferritic | | 180 | 10 | ○ | ◎ |
| | 16 | | Pearlitic (Martensitic) | | 260 | 26 | ◎ | ◎ |
| | 17 | Nodular cast iron | Ferritic | | 160 | 3 | ○ | ◎ |
| | 18 | | Pearlitic | | 250 | 25 | ◎ | ◎ |
| | 19 | Malleable cast iron | Ferritic | | 130 | | ○ | ◎ |
| | 20 | | Pearlitic | | 230 | 21 | ◎ | ◎ |
| N | 21 | Aluminum-wrought alloy | Not Curable | | 60 | | ○ | |
| | 22 | | Curable | Hardened | 100 | | ○ | |
| | 23 | Aluminum-cast, alloyed | ≤ 12% Si, Not Curable | | 75 | | | |
| | 24 | | ≤ 12% Si, Curable | Hardened | 90 | | | |
| | 25 | | > 12% Si, Not Curable | | 130 | | | |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | Cutting Alloys, PB>1% | | 110 | | | |
| | 27 | | CuZn, CuSnZn (Brass) | | 90 | | ○ | |
| | 28 | | CuSn, lead-free copper and electrolytic copper | | 100 | | | |
| | 29 | Non Metallic Materials | Duroplastic, Fiber Reinforced Plastic | | | | | |
| | 30 | | Rubber, Wood, etc. | | | | | |
| S | 31 | Heat Resistant Super Alloys | Fe Based | Annealed | 200 | 15 | ◎ | |
| | 32 | | | Cured | 280 | 30 | ◎ | |
| | 33 | | Ni or Co Based | Annealed | 250 | 25 | ◎ | |
| | 34 | | | Cured | 350 | 38 | ◎ | |
| | 35 | | | Cast | 320 | 34 | ◎ | |
| | 36 | Titanium Alloys | Pure Titanium | | 400 Rm | | | |
| | 37 | | Alpha + Beta Alloys | Hardened | 1050 Rm | | | |
| H | 38 | Hardened steel | | Hardened | 550 | 55 | ◎ | |
| | 39 | | | Hardened | 630 | 60 | | |
| | 40 | Chilled Cast Iron | | Cast | 400 | 42 | | |
| | 41 | Hardened Cast Iron | | Hardened | 550 | 55 | | |

| | | | |
|---|---|---|---|
| TAPER SHANK | | TAPER SHANK HOLDERS - INCH/METRIC 锥柄刀杆 | A364 |
| FLANGED SHANK | | FLANGED STRAIGHT SHANK HOLDERS - INCH/METRIC 凸缘直柄刀杆 | A364 |
| STRAIGHT SHANK | | STRAIGHT SHANK HOLDERS - INCH 直柄刀杆 | A382 |



| | Y,Z,0,1~3 | Y,Z,0,1~3 | Y,Z,0,1~8 | Y,Z,0,1~8 | Y,Z,0,1~3 | Y,Z,0,1,2 |
|---|---|---|---|---|---|---|
| | CARBIDE K20 | CARBIDE P40 | SUPER COBALT T15 | PREMIUM COBALT M48 | C5 P40 | SUPER COBALT T15 |
| | SM-POINT | SM-POINT | SV-POINT | SV-POINT | SV-POINT | FALT BOTTOM |
| | Ø9.5(#Y) | Ø9.5(#Y) | Ø9.5(#Y) | Ø9.5(#Y) | Ø9.5(#Y) | Ø9.5(#Y) |
| | Ø47.63(#3) | Ø47.63(#3) | Ø114.3(#3) | Ø114.3(#3) | Ø47.63(#2) | Ø35(#2) |
| | A303 | A307 | A312 | A323 | A334 | A339 |
| | TiN / TiCN / TiAlN | | Hardslick / H-Coating | | | TiN / Hardslick / TiAlN |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 1 | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | | |
| 2 | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | | |
| 3 | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | | |
| 4 | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | | |
| 5 | | | | | | | | |
| 6 | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | P | |
| 7 | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | | |
| 8 | ○ | ◎ | ○ | ○ | ○ | ○ | | |
| 9 | ○ | ◎ | ○ | ○ | ○ | ○ | | |
| 10 | ○ | ◎ | ○ | ○ | ○ | ○ | | |
| 11 | ○ | ◎ | ○ | ○ | ○ | ○ | | |
| 12 | ◎ | ○ | ○ | ○ | ○ | ○ | | |
| 13 | ◎ | ○ | ○ | ○ | ○ | ○ | M | |
| 14 | ◎ | ○ | ○ | ○ | ○ | ○ | | |
| 15 | ○ | ○ | ○ | ○ | ○ | ○ | | |
| 16 | ○ | ○ | ◎ | ◎ | ◎ | ◎ | | |
| 17 | ○ | ○ | ○ | ○ | ○ | ○ | | |
| 18 | ○ | ○ | ◎ | ◎ | ◎ | ◎ | K | |
| 19 | ○ | ○ | ○ | ○ | ○ | ○ | | |
| 20 | ○ | ○ | ◎ | ◎ | ◎ | ◎ | | |
| 21 | ◎ | ○ | ○ | ○ | ○ | ○ | | |
| 22 | ◎ | ○ | ○ | ○ | ○ | ○ | | |
| 23 | | | | | | | | |
| 24 | | | | | | | | |
| 25 | | | | | | | | |
| 26 | | | | | | | N | |
| 27 | ◎ | ○ | ○ | ○ | ○ | ○ | | |
| 28 | | | | | | | | |
| 29 | | | | | | | | |
| 30 | | | | | | | | |
| 31 | ◎ | ○ | ◎ | ◎ | ◎ | ◎ | | |
| 32 | ◎ | ○ | ○ | ○ | ○ | ○ | | |
| 33 | ◎ | ○ | ○ | ○ | ○ | ○ | | |
| 34 | ◎ | ○ | ○ | ○ | ○ | ○ | S | |
| 35 | ◎ | ○ | ○ | ○ | ○ | ○ | | |
| 36 | | | | | | | | |
| 37 | | | | | | | | |
| 38 | ○ | ◎ | ○ | ○ | ○ | ○ | | |
| 39 | | | | | | | | |
| 40 | | | | | | | H | |
| 41 | | | | | | | | |



CARBIDE

HSS

i-ONE DRILLS

i-DREAM DRILLS

DREAM DRILLS -PRO

DREAM DRILLS -GENERAL

DREAM DRILLS -SOFT

DREAM DRILLS -HIGH FEED

DREAM DRILLS -FLAT BOTTOM

DREAM DRILLS -INOX

DREAM DRILLS -ALU

DREAM DRILLS -CFRP

DREAM DRILLS -MQL

DREAM DRILLS for HIGH HARDENED STEELS

GENERAL CARBIDE DRILLS

MULTI-1 DRILLS

GOLD-P DRILLS

SUPER-GP DRILLS

WORM PATTERN DRILLS

STRAIGHT SHANK DRILLS

TAPER SHANK DRILLS

NC-SPOTTING DRILLS

CENTER DRILLS

SPADE DRILLS

REAMERS

COUNTER SINKS

COUNTER BORES

TECHNICAL DATA

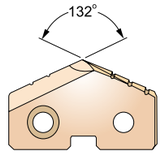
# SPADE DRILLS

SERIES 1, 2

## SPADE DRILL INSERTS - HSS M4
## 铲钻刀片-HSS M4

- ▶ For general use in steels and cast irons.
- ▶ Set up time can be reduced due to changing inserts easily on the machine.
- ▶ Any non-standard size available.

- ▶ 用于钢和铸铁的普通用途.
- ▶ 在设备上能够简单地更换刀片可以减少调试时间.
- ▶ 各种非标准尺寸均可进行生产.




Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | INDEXABLE DRILL HOLDER | D245 - 246 | - | - |
| ○ | ER COLLET CHUCK | | D73 - 115 | |

切削条件 / cutting conditions : p. A366

| Series 系列 | Diameter 直径 | | | Thick 厚度 | EDP No. 型号 | | |
|---|---|---|---|---|---|---|---|
| Min. to Max. mm (inch) | Inch (inch) | Metric (mm) | Decimal (inch) | Metric (mm, inch) | HSS M4 TiN | HSS M4 TiCN | HSS M4 TiAlN |
| **1** Ø17.53 (.690) to Ø24.38 (.960) | 45/64 | 17.86 | .7031 | 4.0 (5/32) | S1405045 | S1410045 | S1415045 |
| | | 18.00 | .7087 | | S1455180 | S1460180 | S1465180 |
| | 23/32 | 18.26 | .7188 | | S1405046 | S1410046 | S1415046 |
| | | 18.50 | .7283 | | S1455185 | S1460185 | S1465185 |
| | 47/64 | 18.65 | .7344 | | S1405047 | S1410047 | S1415047 |
| | | 19.00 | .7480 | | S1455190 | S1460190 | S1465190 |
| | 3/4 | 19.05 | .7500 | | S1405048 | S1410048 | S1415048 |
| | 49/64 | 19.45 | .7656 | | S1405049 | S1410049 | S1415049 |
| | | 19.50 | .7677 | | S1455195 | S1460195 | S1465195 |
| | 25/32 | 19.84 | .7813 | | S1405050 | S1410050 | S1415050 |
| | | 20.00 | .7874 | | S1455200 | S1460200 | S1465200 |
| | 51/64 | 20.24 | .7969 | | S1405051 | S1410051 | S1415051 |
| | | 20.50 | .8071 | | S1455205 | S1460205 | S1465205 |
| | 13/16 | 20.64 | .8125 | | S1405052 | S1410052 | S1415052 |
| | | 21.00 | .8268 | | S1455210 | S1460210 | S1465210 |
| | 27/32 | 21.43 | .8438 | | S1405054 | S1410054 | S1415054 |
| | 55/64 | 21.83 | .8594 | | S1405055 | S1410055 | S1415055 |
| | | 22.00 | .8661 | | S1455220 | S1460220 | S1465220 |
| | 7/8 | 22.23 | .8750 | | S1405056 | S1410056 | S1415056 |
| | 57/64 | 22.62 | .8906 | | S1405057 | S1410057 | S1415057 |
| | | 23.00 | .9055 | | S1455230 | S1460230 | S1465230 |
| | 29/32 | 23.02 | .9063 | | S1405058 | S1410058 | S1415058 |
| | 59/64 | 23.42 | .9219 | | S1405059 | S1410059 | S1415059 |
| | 15/16 | 23.81 | .9375 | | S1405060 | S1410060 | S1415060 |
| | | 24.00 | .9449 | | S1455240 | S1460240 | S1465240 |
| **2** Ø24.41 (.961) to Ø35.05 (1.380) | 31/32 | 24.61 | .9688 | 4.8 (3/16) | S1405062 | S1410062 | S1415062 |
| | 63/64 | 25.00 | .9843 | | S1455250 | S1460250 | S1465250 |
| | 1 | 25.40 | 1.0000 | | S1405100 | S1410100 | S1415100 |
| | 1-1/64 | 25.80 | 1.0156 | | S1405101 | S1410101 | S1415101 |
| | | 26.00 | 1.0236 | | S1455260 | S1460260 | S1465260 |
| | 1-1/32 | 26.19 | 1.0313 | | S1405102 | S1410102 | S1415102 |
| | 1-3/64 | 26.59 | 1.0469 | | S1405103 | S1410103 | S1415103 |
| | 1-1/16 | 26.99 | 1.0625 | | S1405104 | S1410104 | S1415104 |
| | | 27.00 | 1.0630 | | S1455270 | S1460270 | S1465270 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | 10 | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ○ | ○ | ○ | ○ | | ○ | ○ | | | | | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ○ | ◎ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ◎ | ◎ | | | | | ◎ | | | | | | | | | | | | | | |



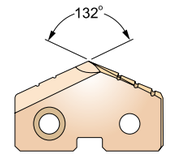
SPADE DRILLS

SERIES 2, 3

## SPADE DRILL INSERTS - HSS M4
## 铲钻刀片-HSS M4

- ▶ For general use in steels and cast irons.
- ▶ Set up time can be reduced due to changing inserts easily on the machine.
- ▶ Any non-standard size available.

- ▶ 用于钢和铸铁的普通用途.
- ▶ 在设备上能够简单地更换刀片可以减少调试时间.
- ▶ 各种非标准尺寸均可进行生产.




Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | INDEXABLE DRILL HOLDER | D245 - 246 | - | - |
| ○ | ER COLLET CHUCK | | D73 - 115 | |

切削条件 / cutting conditions : p. A366

| Series 系列 | Diameter 直径 | | | Thick 厚度 | EDP No. 型号 | | |
|---|---|---|---|---|---|---|---|
| Min. to Max. mm (inch) | Inch (inch) | Metric (mm) | Decimal (inch) | Metric (mm, inch) | HSS M4 TiN | HSS M4 TiCN | HSS M4 TiAlN |
| **2** Ø24.41 (.961) to Ø35.05 (1.380) | 1-3/32 | 27.78 | 1.0938 | 4.8 (3/16) | S1405106 | S1410106 | S1415106 |
| | | 28.00 | 1.1024 | | S1455280 | S1460280 | S1465280 |
| | 1-7/64 | 28.18 | 1.1094 | | S1405107 | S1410107 | S1415107 |
| | 1-1/8 | 28.58 | 1.1250 | | S1405108 | S1410108 | S1415108 |
| | | 29.00 | 1.1417 | | S1455290 | S1460290 | S1465290 |
| | 1-5/32 | 29.37 | 1.1563 | | S1405110 | S1410110 | S1415110 |
| | | 30.00 | 1.1811 | | S1455300 | S1460300 | S1465300 |
| | 1-3/16 | 30.16 | 1.1875 | | S1405112 | S1410112 | S1415112 |
| | 1-7/32 | 30.96 | 1.2188 | | S1405114 | S1410114 | S1415114 |
| | | 31.00 | 1.2205 | | S1455310 | S1460310 | S1465310 |
| | 1-1/4 | 31.75 | 1.2500 | | S1405116 | S1410116 | S1415116 |
| | | 32.00 | 1.2598 | | S1455320 | S1460320 | S1465320 |
| | 1-9/32 | 32.54 | 1.2813 | | S1405118 | S1410118 | S1415118 |
| | | 33.00 | 1.2992 | | S1455330 | S1460330 | S1465330 |
| | 1-5/16 | 33.34 | 1.3125 | | S1405120 | S1410120 | S1415120 |
| | | 34.00 | 1.3386 | | S1455340 | S1460340 | S1465340 |
| | 1-11/32 | 34.13 | 1.3438 | | S1405122 | S1410122 | S1415122 |
| | 1-3/8 | 34.93 | 1.3750 | | S1405124 | S1410124 | S1415124 |
| | | 35.00 | 1.3780 | | S1455350 | S1460350 | S1465350 |
| **3** Ø34.37 (1.353) to Ø47.80 (1.882) | 1-13/32 | 35.72 | 1.4063 | 6.4 (1/4) | S1405126 | S1410126 | S1415126 |
| | | 36.00 | 1.4173 | | S1455360 | S1460360 | S1465360 |
| | 1-7/16 | 36.51 | 1.4375 | | S1405128 | S1410128 | S1415128 |
| | | 37.00 | 1.4567 | | S1455370 | S1460370 | S1465370 |
| | 1-15/32 | 37.31 | 1.4688 | | S1405130 | S1410130 | S1415130 |
| | | 38.00 | 1.4961 | | S1455380 | S1460380 | S1465380 |
| | 1-1/2 | 38.10 | 1.5000 | | S1405132 | S1410132 | S1415132 |
| | 1-17/32 | 38.89 | 1.5313 | | S1405134 | S1410134 | S1415134 |
| | | 39.00 | 1.5354 | | S1455390 | S1460390 | S1465390 |
| | 1-9/16 | 39.69 | 1.5625 | | S1405136 | S1410136 | S1415136 |
| | | 40.00 | 1.5748 | | S1455400 | S1460400 | S1465400 |
| | 1-19/32 | 40.48 | 1.5938 | | S1405138 | S1410138 | S1415138 |
| | | 41.00 | 1.6142 | | S1455410 | S1460410 | S1465410 |
| | 1-5/8 | 41.28 | 1.6250 | | S1405140 | S1410140 | S1415140 |
| | | 42.00 | 1.6535 | | S1455420 | S1460420 | S1465420 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | 10 | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ○ | ○ | ○ | ○ | | ○ | ○ | | | | | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ○ | ◎ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ◎ | ◎ | | | | | ◎ | | | | | | | | | | | | | | |



CARBIDE
HSS
i-ONE DRILLS
i-DREAM DRILLS
DREAM DRILLS -PRO
DREAM DRILLS -GENERAL
DREAM DRILLS -SOFT
DREAM DRILLS -HIGH FEED
DREAM DRILLS -FLAT BOTTOM
DREAM DRILLS -INOX
DREAM DRILLS -ALU
DREAM DRILLS -CFRP
DREAM DRILLS -MQL
DREAM DRILLS for HIGH HARDENED STEELS
GENERAL CARBIDE DRILLS
MULTI-1 DRILLS
GOLD-P DRILLS
SUPER-GP DRILLS
WORM PATTERN DRILLS
STRAIGHT SHANK DRILLS
TAPER SHANK DRILLS
NC-SPOTTING DRILLS
CENTER DRILLS
SPADE DRILLS
REAMERS
COUNTER SINKS
COUNTER BORES
TECHNICAL DATA

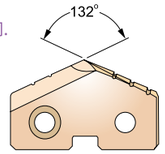
# SPADE DRILLS

SERIES 3, 4

## SPADE DRILL INSERTS - HSS M4
## 铲钻刀片-HSS M4

▶ For general use in steels and cast irons.
▶ Set up time can be reduced due to changing inserts easily on the machine.
▶ Any non-standard size available.

▶ 用于钢和铸铁的普通用途.
▶ 在设备上能够简单地更换刀片可以减少调试时间.
▶ 各种非标准尺寸均可进行生产.




Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | INDEXABLE DRILL HOLDER | D245 - 246 | - | - |
| ◎ | ER COLLET CHUCK | | D73 - 115 | |

切削条件 / cutting conditions : p. A366

| Series 系列 | Diameter 直径 | | | Thick 厚度 | EDP No. 型号 | | |
|---|---|---|---|---|---|---|---|
| Min. to Max. mm (inch) | Inch (inch) | Metric (mm) | Decimal (inch) | Metric (mm, inch) | HSS M4 TiN | HSS M4 TiCN | HSS M4 TiAlN |
| 3<br>Ø34.37 (1.353) to Ø47.80 (1.882) | 1-21/32 | 42.07 | 1.6563 | 6.4 (1/4) | S1405142 | S1410142 | S1415142 |
| | 1-11/16 | 42.86 | 1.6875 | | S1405144 | S1410144 | S1415144 |
| | | 43.00 | 1.6929 | | S1455430 | S1460430 | S1465430 |
| | 1-23/32 | 43.66 | 1.7188 | | S1405146 | S1410146 | S1415146 |
| | | 44.00 | 1.7323 | | S1455440 | S1460440 | S1465440 |
| | 1-3/4 | 44.45 | 1.7500 | | S1405148 | S1410148 | S1415148 |
| | | 45.00 | 1.7717 | | S1455450 | S1460450 | S1465450 |
| | 1-25/32 | 45.24 | 1.7813 | | S1405150 | S1410150 | S1415150 |
| | | 46.00 | 1.8110 | | S1455460 | S1460460 | S1465460 |
| | 1-13/16 | 46.04 | 1.8125 | | S1405152 | S1410152 | S1415152 |
| | 1-27/32 | 46.83 | 1.8438 | | S1405154 | S1410154 | S1415154 |
| | | 47.00 | 1.8504 | | S1455470 | S1460470 | S1465470 |
| | 1-7/8 | 47.63 | 1.8750 | | S1405156 | S1410156 | S1415156 |
| 4<br>Ø46.99 (1.850) to Ø65.28 (2.570) | | 48.00 | 1.8898 | 7.9 (5/16) | S1455480 | S1460480 | S1465480 |
| | 1-29/32 | 48.42 | 1.9063 | | S1405158 | S1410158 | S1415158 |
| | | 49.00 | 1.9291 | | S1455490 | S1460490 | S1465490 |
| | 1-15/16 | 49.21 | 1.9375 | | S1405160 | S1410160 | S1415160 |
| | | 50.00 | 1.9685 | | S1455500 | S1460500 | S1465500 |
| | 1-31/32 | 50.01 | 1.9688 | | S1405162 | S1410162 | S1415162 |
| | 2 | 50.80 | 2.0000 | | S1405200 | S1410200 | S1415200 |
| | | 51.00 | 2.0079 | | S1455510 | S1460510 | S1465510 |
| | 2-1/32 | 51.59 | 2.0313 | | S1405202 | S1410202 | S1415202 |
| | 2-3/64 | 52.00 | 2.0472 | | S1455520 | S1460520 | S1465520 |
| | 2-1/16 | 52.39 | 2.0625 | | S1405204 | S1410204 | S1415204 |
| | | 53.00 | 2.0866 | | S1455530 | S1460530 | S1465530 |
| | 2-3/32 | 53.18 | 2.0938 | | S1405206 | S1410206 | S1415206 |
| | 2-1/8 | 53.98 | 2.1250 | | S1405208 | S1410208 | S1415208 |
| | | 54.00 | 2.1260 | | S1455540 | S1460540 | S1465540 |
| | 2-5/32 | 54.77 | 2.1563 | | S1405210 | S1410210 | S1415210 |
| | | 55.00 | 2.1654 | | S1455550 | S1460550 | S1465550 |
| | 2-3/16 | 55.56 | 2.1875 | | S1405212 | S1410212 | S1415212 |
| | | 56.00 | 2.2047 | | S1455560 | S1460560 | S1465560 |
| | 2-7/32 | 56.36 | 2.2188 | | S1405214 | S1410214 | S1415214 |
| | | 57.00 | 2.2441 | | S1455570 | S1460570 | S1465570 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ○ | ○ | ○ | ○ | | ○ | ○ | | | | | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ○ | ◎ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ◎ | ◎ | | | | | ◎ | | | | | | | | | | | | | | |



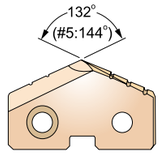
SPADE DRILLS

SERIES 4, 5

SPADE DRILL INSERTS - HSS M4
铲钻刀片-HSS M4

▶ For general use in steels and cast irons.
▶ Set up time can be reduced due to changing inserts easily on the machine.
▶ Any non-standard size available.

▶ 用于钢和铸铁的普通用途.
▶ 在设备上能够简单地更换刀片可以减少调试时间.
▶ 各种非标准尺寸均可进行生产.




Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | INDEXABLE DRILL HOLDER | D245 - 246 | - | - |
| ◎ | ER COLLET CHUCK | | D73 - 115 | |

切削条件 / cutting conditions : p. A366

| Series 系列 | Diameter 直径 | | | Thick 厚度 | EDP No. 型号 | | |
|---|---|---|---|---|---|---|---|
| Min. to Max. mm (inch) | Inch (inch) | Metric (mm) | Decimal (inch) | Metric (mm, inch) | HSS M4 TiN | HSS M4 TiCN | HSS M4 TiAlN |
| 4<br>Ø46.99 (1.850) to Ø65.28 (2.570) | 2-1/4 | 57.15 | 2.2500 | 7.9 (5/16) | S1405216 | S1410216 | S1415216 |
| | 2-9/32 | 57.94 | 2.2813 | | S1405218 | S1410218 | S1415218 |
| | | 58.00 | 2.2835 | | S1455580 | S1460580 | S1465580 |
| | 2-5/16 | 58.74 | 2.3125 | | S1405220 | S1410220 | S1415220 |
| | | 59.00 | 2.3228 | | S1455590 | S1460590 | S1465590 |
| | 2-11/32 | 59.53 | 2.3438 | | S1405222 | S1410222 | S1415222 |
| | | 60.00 | 2.3622 | | S1455600 | S1460600 | S1465600 |
| | 2-3/8 | 60.33 | 2.3750 | | S1405224 | S1410224 | S1415224 |
| | | 61.00 | 2.4016 | | S1455610 | S1460610 | S1465610 |
| | 2-13/32 | 61.12 | 2.4063 | | S1405226 | S1410226 | S1415226 |
| | 2-7/16 | 61.91 | 2.4375 | | S1405228 | S1410228 | S1415228 |
| | | 62.00 | 2.4409 | | S1455620 | S1460620 | S1465620 |
| | 2-15/32 | 62.71 | 2.4688 | | S1405230 | S1410230 | S1415230 |
| | | 63.00 | 2.4803 | | S1455630 | S1460630 | S1465630 |
| | 2-1/2 | 63.50 | 2.5000 | | S1405232 | S1410232 | S1415232 |
| | | 64.00 | 2.5197 | | S1455640 | S1460640 | S1465640 |
| | 2-17/32 | 64.29 | 2.5313 | | S1405234 | S1410234 | S1415234 |
| | | 65.00 | 2.5591 | | S1455650 | S1460650 | S1465650 |
| | 2-9/16 | 65.09 | 2.5625 | | S1405236 | S1410236 | S1415236 |
| 5<br>Ø62.38 (2.456) to Ø76.20 (3.000) | 2-1/2 | 63.50 | 2.5000 | 11.1 (7/16) | S14052D2 | S14102D2 | S14152D2 |
| | | 64.00 | 2.5197 | | S145564A | S146064A | S146564A |
| | 2-17/32 | 64.29 | 2.5313 | | S14052D4 | S14102D4 | S14152D4 |
| | 2-9/16 | 65.09 | 2.5625 | | S14052D6 | S14102D6 | S14152D6 |
| | 2-19/32 | 65.88 | 2.5938 | | S1405238 | S1410238 | S1415238 |
| | | 66.00 | 2.5984 | | S1455660 | S1460660 | S1465660 |
| | 2-5/8 | 66.68 | 2.6250 | | S1405240 | S1410240 | S1415240 |
| | 2-21/32 | 67.47 | 2.6563 | | S1405242 | S1410242 | S1415242 |
| | | 68.00 | 2.6772 | | S1455680 | S1460680 | S1465680 |
| | 2-11/16 | 68.26 | 2.6875 | | S1405244 | S1410244 | S1415244 |
| | 2-23/32 | 69.05 | 2.7188 | | S1405246 | S1410246 | S1415246 |
| | 2-3/4 | 69.85 | 2.7500 | | S1405248 | S1410248 | S1415248 |
| | | 70.00 | 2.7559 | | S1455700 | S1460700 | S1465700 |
| | 2-25/32 | 70.64 | 2.7813 | | S1405250 | S1410250 | S1415250 |
| | 2-13/16 | 71.44 | 2.8125 | | S1405252 | S1410252 | S1415252 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ○ | ○ | ○ | ○ | | ○ | ○ | | | | | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ○ | ◎ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ◎ | ◎ | | | | | ◎ | | | | | | | | | | | | | | |



CARBIDE
HSS
i-ONE DRILLS
i-DREAM DRILLS
DREAM DRILLS -PRO
DREAM DRILLS -GENERAL
DREAM DRILLS -SOFT
DREAM DRILLS -HIGH FEED
DREAM DRILLS -FLAT BOTTOM
DREAM DRILLS -INOX
DREAM DRILLS -ALU
DREAM DRILLS -CFRP
DREAM DRILLS -MQL
DREAM DRILLS for HIGH HARDENED STEELS
GENERAL CARBIDE DRILLS
MULTI-1 DRILLS
GOLD-P DRILLS
SUPER-GP DRILLS
WORM PATTERN DRILLS
STRAIGHT SHANK DRILLS
TAPER SHANK DRILLS
NC-SPOTTING DRILLS
CENTER DRILLS
SPADE DRILLS
REAMERS
COUNTER SINKS
COUNTER BORES
TECHNICAL DATA

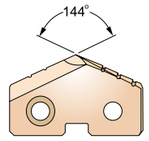
# SPADE DRILLS

SERIES 5, 6, 7

## SPADE DRILL INSERTS - HSS M4
## 铲钻刀片-HSS M4

- ▶ For general use in steels and cast irons.
- ▶ Set up time can be reduced due to changing inserts easily on the machine.
- ▶ Any non-standard size available.

- ▶ 用于钢和铸铁的普通用途.
- ▶ 在设备上能够简单地更换刀片可以减少调试时间.
- ▶ 各种非标准尺寸均可进行生产.



切削条件 / cutting conditions : p. A366

Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | INDEXABLE DRILL HOLDER | D245 - 246 | - | - |
| ◎ | ER COLLET CHUCK | | D73 - 115 | |

| Series 系列 | Diameter 直径 | | | Thick 厚度 | EDP No. 型号 | | |
|---|---|---|---|---|---|---|---|
| Min. to Max. mm (inch) | Inch (inch) | Metric (mm) | Decimal (inch) | Metric (mm, inch) | HSS M4 TiN | HSS M4 TiCN | HSS M4 TiAlN |
| **5** Ø62.38 (2.456) to Ø76.20 (3.000) | | 72.00 | 2.8346 | 11.1 (7/16) | S1455720 | S1460720 | S1465720 |
| | 2-27/32 | 72.23 | 2.8438 | | S1405254 | S1410254 | S1415254 |
| | 2-7/8 | 73.03 | 2.8750 | | S1405256 | S1410256 | S1415256 |
| | 2-29/32 | 73.82 | 2.9063 | | S1405258 | S1410258 | S1415258 |
| | | 74.00 | 2.9134 | | S1455740 | S1460740 | S1465740 |
| | 2-15/16 | 74.61 | 2.9375 | | S1405260 | S1410260 | S1415260 |
| | 2-31/32 | 75.41 | 2.9688 | | S1405262 | S1410262 | S1415262 |
| | | 76.00 | 2.9921 | | S1455760 | S1460760 | S1465760 |
| | 3 | 76.20 | 3.0000 | | S1405300 | S1410300 | S1415300 |
| | 3-1/32 | 76.99 | 3.0313 | | S1405302 | S1410302 | S1415302 |
| | 3-1/16 | 77.79 | 3.0625 | | S1405304 | S1410304 | S1415304 |
| | | 78.00 | 3.0709 | | S1455780 | S1460780 | S1465780 |
| | 3-3/32 | 78.58 | 3.0938 | | S1405306 | S1410306 | S1415306 |
| | 3-1/8 | 79.38 | 3.1250 | | S1405308 | S1410308 | S1415308 |
| | | 80.00 | 3.1496 | | S1455800 | S1460800 | S1465800 |
| | 3-5/32 | 80.17 | 3.1563 | | S1405310 | S1410310 | S1415310 |
| **6** Ø76.23 (3.001) to Ø89.08 (3.507) | 3-3/16 | 80.96 | 3.1875 | 11.1 (7/16) | S1405312 | S1410312 | S1415312 |
| | 3-7/32 | 81.76 | 3.2188 | | S1405314 | S1410314 | S1415314 |
| | | 82.00 | 3.2283 | | S1455820 | S1460820 | S1465820 |
| | 3-1/4 | 82.55 | 3.2500 | | S1405316 | S1410316 | S1415316 |
| | 3-9/32 | 83.34 | 3.2813 | | S1405318 | S1410318 | S1415318 |
| | | 84.00 | 3.3071 | | S1455840 | S1460840 | S1465840 |
| | 3-5/16 | 84.14 | 3.3125 | | S1405320 | S1410320 | S1415320 |
| | 3-11/32 | 84.93 | 3.3438 | | S1405322 | S1410322 | S1415322 |
| | 3-3/8 | 85.73 | 3.3750 | | S1405324 | S1410324 | S1415324 |
| | | 86.00 | 3.3858 | | S1455860 | S1460860 | S1465860 |
| | 3-13/32 | 86.52 | 3.4063 | | S1405326 | S1410326 | S1415326 |
| | 3-7/16 | 87.31 | 3.4375 | | S1405328 | S1410328 | S1415328 |
| | | 88.00 | 3.4646 | | S1455880 | S1460880 | S1465880 |
| | 3-15/32 | 88.11 | 3.4688 | | S1405330 | S1410330 | S1415330 |
| | 3-1/2 | 88.90 | 3.5000 | | S1405332 | S1410332 | S1415332 |
| **7** | 3-17/32 | 89.69 | 3.5313 | 11.1 (7/16) | S1405334 | S1410334 | S1415334 |
| | | 90.00 | 3.5433 | | S1455900 | S1460900 | S1465900 |
| | 3-9/16 | 90.49 | 3.5625 | | S1405336 | S1410336 | S1415336 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ○ | ◎ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ◎ | ◎ | | | | | ◎ | | | | | | | | | | | | | | |



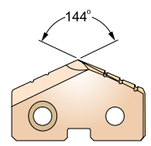
SPADE DRILLS

SERIES 7, 8

## SPADE DRILL INSERTS - HSS M4
## 铲钻刀片-HSS M4

- ▶ For general use in steels and cast irons.
- ▶ Set up time can be reduced due to changing inserts easily on the machine.
- ▶ Any non-standard size available.

- ▶ 用于钢和铸铁的普通用途.
- ▶ 在设备上能够简单地更换刀片可以减少调试时间.
- ▶ 各种非标准尺寸均可进行生产.



切削条件 / cutting conditions : p. A366

Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | INDEXABLE DRILL HOLDER | D245 - 246 | - | - |
| ◎ | ER COLLET CHUCK | | D73 - 115 | |

| Series 系列 | Diameter 直径 | | | Thick 厚度 | EDP No. 型号 | | |
|---|---|---|---|---|---|---|---|
| Min. to Max. mm (inch) | Inch (inch) | Metric (mm) | Decimal (inch) | Metric (mm, inch) | HSS M4 TiN | HSS M4 TiCN | HSS M4 TiAlN |
| **7** Ø87.76 (3.455) to Ø101.60 (4.000) | 3-19/32 | 91.28 | 3.5938 | 11.1 (7/16) | S1405338 | S1410338 | S1415338 |
| | | 92.00 | 3.6221 | | S1455920 | S1460920 | S1465920 |
| | 3-5/8 | 92.08 | 3.6250 | | S1405340 | S1410340 | S1415340 |
| | 3-21/32 | 92.87 | 3.6563 | | S1405342 | S1410342 | S1415342 |
| | 3-11/16 | 93.66 | 3.6875 | | S1405344 | S1410344 | S1415344 |
| | | 94.00 | 3.7008 | | S1455940 | S1460940 | S1465940 |
| | 3-23/32 | 94.46 | 3.7188 | | S1405346 | S1410346 | S1415346 |
| | 3-3/4 | 95.25 | 3.7500 | | S1405348 | S1410348 | S1415348 |
| | | 96.00 | 3.7795 | | S1455960 | S1460960 | S1465960 |
| | 3-25/32 | 96.04 | 3.7813 | | S1405350 | S1410350 | S1415350 |
| | 3-13/16 | 96.84 | 3.8125 | | S1405352 | S1410352 | S1415352 |
| | 3-27/32 | 97.63 | 3.8438 | | S1405354 | S1410354 | S1415354 |
| | | 98.00 | 3.8583 | | S1455980 | S1460980 | S1465980 |
| | 3-7/8 | 98.43 | 3.8750 | | S1405356 | S1410356 | S1415356 |
| | 3-29/32 | 99.22 | 3.9063 | | S1405358 | S1410358 | S1415358 |
| | | 100.00 | 3.9370 | | S1455A00 | S1460A00 | S1465A00 |
| | 3-15/16 | 100.01 | 3.9375 | | S1405360 | S1410360 | S1415360 |
| | 3-31/32 | 100.81 | 3.9688 | | S1405362 | S1410362 | S1415362 |
| | 4 | 101.60 | 4.0000 | | S1405400 | S1410400 | S1415400 |
| **8** Ø101.63 (4.001) to Ø114.48 (4.507) | 4-1/64 | 102.00 | 4.0157 | 11.1 (7/16) | S1455A20 | S1460A20 | S1465A20 |
| | 4-1/16 | 103.19 | 4.0625 | | S1405404 | S1410404 | S1415404 |
| | 4-3/32 | 104.00 | 4.0945 | | S1455A40 | S1460A40 | S1465A40 |
| | 4-1/8 | 104.78 | 4.1250 | | S1405408 | S1410408 | S1415408 |
| | | 106.00 | 4.1732 | | S1455A60 | S1460A60 | S1465A60 |
| | 4-3/16 | 106.36 | 4.1875 | | S1405412 | S1410412 | S1415412 |
| | 4-1/4 | 107.95 | 4.2500 | | S1405416 | S1410416 | S1415416 |
| | | 108.00 | 4.2520 | | S1455A80 | S1460A80 | S1465A80 |
| | 4-5/16 | 109.54 | 4.3125 | | S1405420 | S1410420 | S1415420 |
| | | 110.00 | 4.3307 | | S1455B00 | S1460B00 | S1465B00 |
| | 4-3/8 | 111.13 | 4.3750 | | S1405424 | S1410424 | S1415424 |
| | | 112.00 | 4.4094 | | S1455B20 | S1460B20 | S1465B20 |
| | 4-7/16 | 112.71 | 4.4375 | | S1405428 | S1410428 | S1415428 |
| | | 114.00 | 4.4882 | | S1455B40 | S1460B40 | S1465B40 |
| | 4-1/2 | 114.30 | 4.5000 | | S1405432 | S1410432 | S1415432 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ○ | ○ | ○ | ○ | | ○ | ○ | | | | | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ○ | ◎ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ◎ | ◎ | | | | | ◎ | | | | | | | | | | | | | | |



CARBIDE
HSS
i-ONE DRILLS
i-DREAM DRILLS
DREAM DRILLS -PRO
DREAM DRILLS -GENERAL
DREAM DRILLS -SOFT
DREAM DRILLS -HIGH FEED
DREAM DRILLS -FLAT BOTTOM
DREAM DRILLS -INOX
DREAM DRILLS -ALU
DREAM DRILLS -CFRP
DREAM DRILLS -MQL
DREAM DRILLS for HIGH HARDENED STEELS
GENERAL CARBIDE DRILLS
MULTI-1 DRILLS
GOLD-P DRILLS
SUPER-GP DRILLS
WORM PATTERN DRILLS
STRAIGHT SHANK DRILLS
TAPER SHANK DRILLS
NC-SPOTTING DRILLS
CENTER DRILLS
SPADE DRILLS
REAMERS
COUNTER SINKS
COUNTER BORES
TECHNICAL DATA

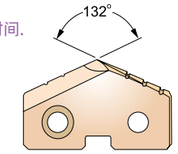
# SPADE DRILLS

SERIES Y, Z, 0

## SPADE DRILL INSERTS - SUPER HSS T15
## 铲钻刀片-SUPER HSS T15

- ▶ For use in high nickel alloys and materials over 280 Brinell.
- ▶ Set up time can be reduced due to changing inserts easily on the machine.
- ▶ Any non-standard size available.

- ▶ 用于高镍合金和硬度超过280布氏的材质.
- ▶ 在设备上能够简单地更换刀片可以减少调试时间.
- ▶ 各种非标准尺寸均可进行生产.




Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | INDEXABLE DRILL HOLDER | D245 - 246 | - | - |
| ◎ | ER COLLET CHUCK | | D73 - 115 | |

切削条件 / cutting conditions : p. A365

| Series 系列 | Diameter 直径 | | | Thick 厚度 | EDP No. 型号 | | |
|---|---|---|---|---|---|---|---|
| Min. to Max. mm (inch) | Inch (inch) | Metric (mm) | Decimal (inch) | Metric (mm, inch) | SUPER HSS T15 TiN | SUPER HSS T15 TiCN | SUPER HSS T15 TiAlN |
| **Y** Ø9.50 (.374) to Ø11.07 (.436) | | 9.50 | .3740 | 2.4 (3/32) | S1155095 | S1160095 | S1165095 |
| | 3/8 | 9.53 | .3750 | | S1105024 | S1110024 | S1115024 |
| | | 9.80 | .3860 | | S1155098 | S1160098 | S1165098 |
| | 25/64 | 9.92 | .3906 | | S1105025 | S1110025 | S1115025 |
| | | 10.00 | .3937 | | S1155100 | S1160100 | S1165100 |
| | | 10.20 | .4016 | | S1155102 | S1160102 | S1165102 |
| | 13/32 | 10.32 | .4063 | | S1105026 | S1110026 | S1115026 |
| | | 10.50 | .4134 | | S1155105 | S1160105 | S1165105 |
| | 27/64 | 10.72 | .4219 | | S1105027 | S1110027 | S1115027 |
| | | 10.80 | .4252 | | S1155108 | S1160108 | S1165108 |
| | | 11.00 | .4331 | | S1155110 | S1160110 | S1165110 |
| **Z** Ø11.11(.437) to Ø12.95(.510) | 7/16 | 11.11 | .4375 | 2.4 (3/32) | S1105028 | S1110028 | S1115028 |
| | | 11.50 | .4528 | | S1155115 | S1160115 | S1165115 |
| | 29/64 | 11.51 | .4531 | | S1105029 | S1110029 | S1115029 |
| | 15/32 | 11.91 | .4688 | | S1105030 | S1110030 | S1115030 |
| | | 12.00 | .4724 | | S1155120 | S1160120 | S1165120 |
| | 31/64 | 12.30 | .4844 | | S1105031 | S1110031 | S1115031 |
| | | 12.50 | .4921 | | S1155125 | S1160125 | S1165125 |
| | 1/2 | 12.70 | .5000 | | S1105032 | S1110032 | S1115032 |
| **0** Ø12.98 (.511) to Ø17.65 (.695) | | 13.00 | .5118 | 3.2 (1/8) | S1155130 | S1160130 | S1165130 |
| | 33/64 | 13.10 | .5156 | | S1105033 | S1110033 | S1115033 |
| | 17/32 | 13.49 | .5313 | | S1105034 | S1110034 | S1115034 |
| | | 13.50 | .5315 | | S1155135 | S1160135 | S1165135 |
| | 35/64 | 13.89 | .5469 | | S1105035 | S1110035 | S1115035 |
| | | 14.00 | .5512 | | S1155140 | S1160140 | S1165140 |
| | 9/16 | 14.29 | .5625 | | S1105036 | S1110036 | S1115036 |
| | | 14.50 | .5709 | | S1155145 | S1160145 | S1165145 |
| | 37/64 | 14.68 | .5781 | | S1105037 | S1110037 | S1115037 |
| | | 15.00 | .5906 | | S1155150 | S1160150 | S1165150 |
| | 19/32 | 15.08 | .5938 | | S1105038 | S1110038 | S1115038 |
| | 39/64 | 15.48 | .6094 | | S1105039 | S1110039 | S1115039 |
| | | 15.50 | .6102 | | S1155155 | S1160155 | S1165155 |
| | 5/8 | 15.88 | .6250 | | S1105040 | S1110040 | S1115040 |
| | | 16.00 | .6299 | | S1155160 | S1160160 | S1165160 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ◎ | | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ◎ | ○ | ◎ | ○ | ◎ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | | | | | ○ | | | | ◎ | ○ | ○ | ○ | ○ | | | ○ | | | |



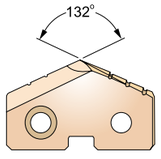
# SPADE DRILLS

SERIES 0, 1

## SPADE DRILL INSERTS - SUPER HSS T15
## 铲钻刀片-SUPER HSS T15

- ▶ For use in high nickel alloys and materials over 280 Brinell.
- ▶ Set up time can be reduced due to changing inserts easily on the machine.
- ▶ Any non-standard size available.

- ▶ 用于高镍合金和硬度超过280布氏的材质.
- ▶ 在设备上能够简单地更换刀片可以减少调试时间.
- ▶ 各种非标准尺寸均可进行生产.




Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | INDEXABLE DRILL HOLDER | D245 - 246 | - | - |
| ◎ | ER COLLET CHUCK | | D73 - 115 | |

切削条件 / cutting conditions : p. A365

| Series 系列 | Diameter 直径 | | | Thick 厚度 | EDP No. 型号 | | |
|---|---|---|---|---|---|---|---|
| Min. to Max. mm (inch) | Inch (inch) | Metric (mm) | Decimal (inch) | Metric (mm, inch) | SUPER HSS T15 TiN | SUPER HSS T15 TiCN | SUPER HSS T15 TiAlN |
| **0** Ø12.98 (.511) to Ø17.65 (.695) | 41/64 | 16.27 | .6406 | 3.2 (1/8) | S1105041 | S1110041 | S1115041 |
| | | 16.50 | .6496 | | S1155165 | S1160165 | S1165165 |
| | 21/32 | 16.67 | .6563 | | S1105042 | S1110042 | S1115042 |
| | | 17.00 | .6693 | | S1155170 | S1160170 | S1165170 |
| | 43/64 | 17.07 | .6719 | | S1105043 | S1110043 | S1115043 |
| | 11/16 | 17.46 | .6875 | | S1105044 | S1110044 | S1115044 |
| | | 17.50 | .6890 | | S1155175 | S1160175 | S1165175 |
| | 45/64 | 17.86 | .7031 | | S1105045 | S1110045 | S1115045 |
| | | 18.00 | .7087 | | S1155180 | S1160180 | S1165180 |
| | 23/32 | 18.26 | .7188 | | S1105046 | S1110046 | S1115046 |
| | | 18.50 | .7283 | | S1155185 | S1160185 | S1165185 |
| | 47/64 | 18.65 | .7344 | | S1105047 | S1110047 | S1115047 |
| | | 19.00 | .7480 | | S1155190 | S1160190 | S1165190 |
| | 3/4 | 19.05 | .7500 | | S1105048 | S1110048 | S1115048 |
| | 49/64 | 19.45 | .7656 | | S1105049 | S1110049 | S1115049 |
| | | 19.50 | .7677 | | S1155195 | S1160195 | S1165195 |
| | 25/32 | 19.84 | .7813 | | S1105050 | S1110050 | S1115050 |
| | | 20.00 | .7874 | | S1155200 | S1160200 | S1165200 |
| | 51/64 | 20.24 | .7969 | | S1105051 | S1110051 | S1115051 |
| **1** Ø17.53 (.690) to Ø24.38 (.960) | | 20.50 | .8071 | 4.0 (5/32) | S1155205 | S1160205 | S1165205 |
| | 13/16 | 20.64 | .8125 | | S1105052 | S1110052 | S1115052 |
| | | 21.00 | .8268 | | S1155210 | S1160210 | S1165210 |
| | 27/32 | 21.43 | .8438 | | S1105054 | S1110054 | S1115054 |
| | 55/64 | 21.83 | .8594 | | S1105055 | S1110055 | S1115055 |
| | | 22.00 | .8661 | | S1155220 | S1160220 | S1165220 |
| | 7/8 | 22.23 | .8750 | | S1105056 | S1110056 | S1115056 |
| | 57/64 | 22.62 | .8906 | | S1105057 | S1110057 | S1115057 |
| | | 23.00 | .9055 | | S1155230 | S1160230 | S1165230 |
| | 29/32 | 23.02 | .9063 | | S1105058 | S1110058 | S1115058 |
| | 59/64 | 23.42 | .9219 | | S1105059 | S1110059 | S1115059 |
| | 15/16 | 23.81 | .9375 | | S1105060 | S1110060 | S1115060 |
| | | 24.00 | .9449 | | S1155240 | S1160240 | S1165240 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ◎ | | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ◎ | ○ | ◎ | ○ | ◎ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | | | | | ○ | | | | ◎ | ○ | ○ | ○ | ○ | | | ○ | | | |

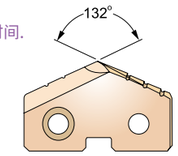
# SPADE DRILLS

SERIES 2, 3

## SPADE DRILL INSERTS - SUPER HSS T15
## 铲钻刀片-SUPER HSS T15

- ▶ For use in high nickel alloys and materials over 280 Brinell.
- ▶ Set up time can be reduced due to changing inserts easily on the machine.
- ▶ Any non-standard size available.

- ▶ 用于高镍合金和硬度超过280布氏的材质.
- ▶ 在设备上能够简单地更换刀片可以减少调试时间.
- ▶ 各种非标准尺寸均可进行生产.




Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | INDEXABLE DRILL HOLDER | D245 - 246 | - | - |
| ◎ | ER COLLET CHUCK | | D73 - 115 | |

切削条件 / cutting conditions : p. A365

| Series 系列 Min. to Max. mm (inch) | Diameter 直径 Inch (inch) | Metric (mm) | Decimal (inch) | Thick 厚度 Metric (mm, inch) | EDP No. 型号 SUPER HSS T15 TiN | TiCN | TiAlN |
|---|---|---|---|---|---|---|---|
| 2 Ø24.41 (.961) to Ø35.05 (1.380) | 31/32 | 24.61 | .9688 | 4.8 (3/16) | S1105062 | S1110062 | S1115062 |
| | 63/64 | 25.00 | .9843 | | S1155250 | S1160250 | S1165250 |
| | 1 | 25.40 | 1.0000 | | S1105100 | S1110100 | S1115100 |
| | 1-1/64 | 25.80 | 1.0156 | | S1105101 | S1110101 | S1115101 |
| | | 26.00 | 1.0236 | | S1155260 | S1160260 | S1165260 |
| | 1-1/32 | 26.19 | 1.0313 | | S1105102 | S1110102 | S1115102 |
| | 1-3/64 | 26.59 | 1.0469 | | S1105103 | S1110103 | S1115103 |
| | 1-1/16 | 26.99 | 1.0625 | | S1105104 | S1110104 | S1115104 |
| | | 27.00 | 1.0630 | | S1155270 | S1160270 | S1165270 |
| | 1-3/32 | 27.78 | 1.0938 | | S1105106 | S1110106 | S1115106 |
| | | 28.00 | 1.1024 | | S1155280 | S1160280 | S1165280 |
| | 1-7/64 | 28.18 | 1.1094 | | S1105107 | S1110107 | S1115107 |
| | 1-1/8 | 28.58 | 1.1250 | | S1105108 | S1110108 | S1115108 |
| | | 29.00 | 1.1417 | | S1155290 | S1160290 | S1165290 |
| | 1-5/32 | 29.37 | 1.1563 | | S1105110 | S1110110 | S1115110 |
| | | 30.00 | 1.1811 | | S1155300 | S1160300 | S1165300 |
| | 1-3/16 | 30.16 | 1.1875 | | S1105112 | S1110112 | S1115112 |
| | 1-7/32 | 30.96 | 1.2188 | | S1105114 | S1110114 | S1115114 |
| | | 31.00 | 1.2205 | | S1155310 | S1160310 | S1165310 |
| | 1-1/4 | 31.75 | 1.2500 | | S1105116 | S1110116 | S1115116 |
| | | 32.00 | 1.2598 | | S1155320 | S1160320 | S1165320 |
| | 1-9/32 | 32.54 | 1.2813 | | S1105118 | S1110118 | S1115118 |
| | 1-5/16 | 33.00 | 1.2992 | | S1155330 | S1160330 | S1165330 |
| | | 33.34 | 1.3125 | | S1105120 | S1110120 | S1115120 |
| | | 34.00 | 1.3386 | | S1155340 | S1160340 | S1165340 |
| | 1-11/32 | 34.13 | 1.3438 | | S1105122 | S1110122 | S1115122 |
| | 1-3/8 | 34.93 | 1.3750 | | S1105124 | S1110124 | S1115124 |
| | | 35.00 | 1.3780 | | S1155350 | S1160350 | S1165350 |
| 3 Ø34.37(1.353) to Ø47.80(1.882) | 1-13/32 | 35.72 | 1.4063 | 6.4 (1/4) | S1105126 | S1110126 | S1115126 |
| | | 36.00 | 1.4173 | | S1155360 | S1160360 | S1165360 |
| | 1-7/16 | 36.51 | 1.4375 | | S1105128 | S1110128 | S1115128 |
| | | 37.00 | 1.4567 | | S1155370 | S1160370 | S1165370 |
| | 1-15/32 | 37.31 | 1.4688 | | S1105130 | S1110130 | S1115130 |
| | | 38.00 | 1.4961 | | S1155380 | S1160380 | S1165380 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO / Material Description | P: Non-alloy steel | | | | | Low alloy steel | | | | | High alloyed steel, and tool steel | | | | | M: Stainless steel | | | | | K: Grey cast iron | | Nodular cast iron | | | Malleable cast iron | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | | | | | | | |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 | | | | | | | |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 | | | | | | | |
| Recommended | ◎ | ◎ | ◎ | ◎ | | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ◎ | ○ | ◎ | ○ | ◎ | | | | | | | |

| ISO / Material Description | N: Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | S: Heat Resistant Super Alloys | | | | | Titanium Alloys | | H: Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | | | | | ○ | | | | ◎ | ○ | ○ | ○ | ○ | | | ○ | | | |



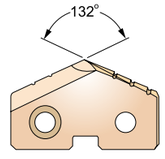
# SPADE DRILLS

SERIES 3, 4

## SPADE DRILL INSERTS - SUPER HSS T15
## 铲钻刀片-SUPER HSS T15

- ▶ For use in high nickel alloys and materials over 280 Brinell.
- ▶ Set up time can be reduced due to changing inserts easily on the machine.
- ▶ Any non-standard size available.

- ▶ 用于高镍合金和硬度超过280布氏的材质.
- ▶ 在设备上能够简单地更换刀片可以减少调试时间.
- ▶ 各种非标准尺寸均可进行生产.




Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | INDEXABLE DRILL HOLDER | D245 - 246 | - | - |
| ◎ | ER COLLET CHUCK | | D73 - 115 | |

切削条件 / cutting conditions : p. A365

| Series 系列 Min. to Max. mm (inch) | Diameter 直径 Inch (inch) | Metric (mm) | Decimal (inch) | Thick 厚度 Metric (mm, inch) | EDP No. 型号 SUPER HSS T15 TiN | TiCN | TiAlN |
|---|---|---|---|---|---|---|---|
| 3 Ø34.37 (1.353) to Ø47.80 (1.882) | 1-1/2 | 38.10 | 1.5000 | 6.4 (1/4) | S1105132 | S1110132 | S1115132 |
| | 1-17/32 | 38.89 | 1.5313 | | S1105134 | S1110134 | S1115134 |
| | | 39.00 | 1.5354 | | S1155390 | S1160390 | S1165390 |
| | 1-9/16 | 39.69 | 1.5625 | | S1105136 | S1110136 | S1115136 |
| | | 40.00 | 1.5748 | | S1155400 | S1160400 | S1165400 |
| | 1-19/32 | 40.48 | 1.5938 | | S1105138 | S1110138 | S1115138 |
| | | 41.00 | 1.6142 | | S1155410 | S1160410 | S1165410 |
| | 1-5/8 | 41.28 | 1.6250 | | S1105140 | S1110140 | S1115140 |
| | | 42.00 | 1.6535 | | S1155420 | S1160420 | S1165420 |
| | 1-21/32 | 42.07 | 1.6563 | | S1105142 | S1110142 | S1115142 |
| | 1-11/16 | 42.86 | 1.6875 | | S1105144 | S1110144 | S1115144 |
| | | 43.00 | 1.6929 | | S1155430 | S1160430 | S1165430 |
| | 1-23/32 | 43.66 | 1.7188 | | S1105146 | S1110146 | S1115146 |
| | | 44.00 | 1.7323 | | S1155440 | S1160440 | S1165440 |
| | 1-3/4 | 44.45 | 1.7500 | | S1105148 | S1110148 | S1115148 |
| | | 45.00 | 1.7717 | | S1155450 | S1160450 | S1165450 |
| | 1-25/32 | 45.24 | 1.7813 | | S1105150 | S1110150 | S1115150 |
| | | 46.00 | 1.8110 | | S1155460 | S1160460 | S1165460 |
| | 1-13/16 | 46.04 | 1.8125 | | S1105152 | S1110152 | S1115152 |
| | 1-27/32 | 46.83 | 1.8438 | | S1105154 | S1110154 | S1115154 |
| | | 47.00 | 1.8504 | | S1155470 | S1160470 | S1165470 |
| | 1-7/8 | 47.63 | 1.8750 | | S1105156 | S1110156 | S1115156 |
| 4 Ø46.99 (1.850) to Ø65.28 (2.570) | | 48.00 | 1.8898 | 7.9 (5/16) | S1155480 | S1160480 | S1165480 |
| | 1-29/32 | 48.42 | 1.9063 | | S1105158 | S1110158 | S1115158 |
| | | 49.00 | 1.9291 | | S1155490 | S1160490 | S1165490 |
| | 1-15/16 | 49.21 | 1.9375 | | S1105160 | S1110160 | S1115160 |
| | | 50.00 | 1.9685 | | S1155500 | S1160500 | S1165500 |
| | 1-31/32 | 50.01 | 1.9688 | | S1105162 | S1110162 | S1115162 |
| | 2 | 50.80 | 2.0000 | | S1105200 | S1110200 | S1115200 |
| | | 51.00 | 2.0079 | | S1155510 | S1160510 | S1165510 |
| | 2-1/32 | 51.59 | 2.0313 | | S1105202 | S1110202 | S1115202 |
| | 2-3/64 | 52.00 | 2.0472 | | S1155520 | S1160520 | S1165520 |
| | 2-1/16 | 52.39 | 2.0625 | | S1105204 | S1110204 | S1115204 |
| | | 53.00 | 2.0866 | | S1155530 | S1160530 | S1165530 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO / Material Description | P: Non-alloy steel | | | | | Low alloy steel | | | | | High alloyed steel, and tool steel | | | | | M: Stainless steel | | | | | K: Grey cast iron | | Nodular cast iron | | | Malleable cast iron | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | | | | | | | |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 | | | | | | | |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 | | | | | | | |
| Recommended | ◎ | ◎ | ◎ | ◎ | | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ◎ | ○ | ◎ | ○ | ◎ | | | | | | | |

| ISO / Material Description | N: Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | S: Heat Resistant Super Alloys | | | | | Titanium Alloys | | H: Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | | | | | ○ | | | | ◎ | ○ | ○ | ○ | ○ | | | ○ | | | |

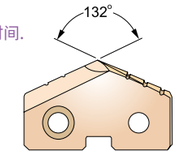
# SPADE DRILLS

SERIES 4

## SPADE DRILL INSERTS - SUPER HSS T15
## 铲钻刀片-SUPER HSS T15

▶ For use in high nickel alloys and materials over 280 Brinell.
▶ Set up time can be reduced due to changing inserts easily on the machine.
▶ Any non-standard size available.

▶ 用于高镍合金和硬度超过280布氏的材质.
▶ 在设备上能够简单地更换刀片可以减少调试时间.
▶ 各种非标准尺寸均可进行生产.




Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | INDEXABLE DRILL HOLDER | D245 - 246 | - | - |
| ○ | ER COLLET CHUCK | | D73 - 115 | |

切削条件 / cutting conditions : p. A365

| Series 系列 | Diameter 直径 | | | Thick 厚度 | EDP No. 型号 | | |
|---|---|---|---|---|---|---|---|
| Min. to Max. mm (inch) | Inch (inch) | Metric (mm) | Decimal (inch) | Metric (mm, inch) | SUPER HSS T15 TiN | SUPER HSS T15 TiCN | SUPER HSS T15 TiAlN |
| 4<br>Ø46.99 (1.850) to Ø65.28 (2.570) | 2-3/32 | 53.18 | 2.0938 | 7.9 (5/16) | S1105206 | S1110206 | S1115206 |
| | 2-1/8 | 53.98 | 2.1250 | | S1105208 | S1110208 | S1115208 |
| | | 54.00 | 2.1260 | | S1155540 | S1160540 | S1165540 |
| | 2-5/32 | 54.77 | 2.1563 | | S1105210 | S1110210 | S1115210 |
| | | 55.00 | 2.1654 | | S1155550 | S1160550 | S1165550 |
| | 2-3/16 | 55.56 | 2.1875 | | S1105212 | S1110212 | S1115212 |
| | | 56.00 | 2.2047 | | S1155560 | S1160560 | S1165560 |
| | 2-7/32 | 56.36 | 2.2188 | | S1105214 | S1110214 | S1115214 |
| | | 57.00 | 2.2441 | | S1155570 | S1160570 | S1165570 |
| | 2-1/4 | 57.15 | 2.2500 | | S1105216 | S1110216 | S1115216 |
| | 2-9/32 | 57.94 | 2.2813 | | S1105218 | S1110218 | S1115218 |
| | | 58.00 | 2.2835 | | S1155580 | S1160580 | S1165580 |
| | 2-5/16 | 58.74 | 2.3125 | | S1105220 | S1110220 | S1115220 |
| | | 59.00 | 2.3228 | | S1155590 | S1160590 | S1165590 |
| | 2-11/32 | 59.53 | 2.3438 | | S1105222 | S1110222 | S1115222 |
| | | 60.00 | 2.3622 | | S1155600 | S1160600 | S1165600 |
| | 2-3/8 | 60.33 | 2.3750 | | S1105224 | S1110224 | S1115224 |
| | | 61.00 | 2.4016 | | S1155610 | S1160610 | S1165610 |
| | 2-13/32 | 61.12 | 2.4063 | | S1105226 | S1110226 | S1115226 |
| | 2-7/16 | 61.91 | 2.4375 | | S1105228 | S1110228 | S1115228 |
| | | 62.00 | 2.4409 | | S1155620 | S1160620 | S1165620 |
| | 2-15/32 | 62.71 | 2.4688 | | S1105230 | S1110230 | S1115230 |
| | | 63.00 | 2.4803 | | S1155630 | S1160630 | S1165630 |
| | 2-1/2 | 63.50 | 2.5000 | | S1105232 | S1110232 | S1115232 |
| | | 64.00 | 2.5197 | | S1155640 | S1160640 | S1165640 |
| | 2-17/32 | 64.29 | 2.5313 | | S1105234 | S1110234 | S1115234 |
| | | 65.00 | 2.5591 | | S1155650 | S1160650 | S1165650 |
| | 2-9/16 | 65.09 | 2.5625 | | S1105236 | S1110236 | S1115236 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ◎ | | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ◎ | ○ | ◎ | ○ | ◎ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | | | | | ○ | | | | ◎ | ○ | ○ | ○ | ○ | | | ○ | | | |





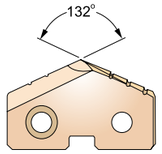
# SPADE DRILLS

SERIES Y, Z, 0

## SPADE DRILL INSERTS - PREMIUM HSS M48
## 铲钻刀片-PREMIUM HSS M48

▶ For use in high nickel alloys and materials over 280 Brinell.
▶ Set up time can be reduced due to changing inserts easily on the machine.
▶ Any non-standard size available.

▶ 用于高镍合金和硬度超过280布氏的材质.
▶ 在设备上能够简单地更换刀片可以减少调试时间.
▶ 各种非标准尺寸均可进行生产.




Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | INDEXABLE DRILL HOLDER | D245 - 246 | - | - |
| ○ | ER COLLET CHUCK | | D73 - 115 | |

切削条件 / cutting conditions : p. A367

| Series 系列 | Diameter 直径 | | | Thick 厚度 | EDP No. 型号 | | |
|---|---|---|---|---|---|---|---|
| Min. to Max. mm (inch) | Inch (inch) | Metric (mm) | Decimal (inch) | Metric (mm, inch) | PREMIUM HSS M48 TiN | PREMIUM HSS M48 TiCN | PREMIUM HSS M48 TiAlN |
| Y<br>Ø9.50 (.374) to Ø11.07 (.436) | | 9.50 | .3740 | 2.4 (3/32) | S1555095 | S1560095 | S1565095 |
| | 3/8 | 9.53 | .3750 | | S1505024 | S1510024 | S1515024 |
| | | 9.80 | .3860 | | S1555098 | S1560098 | S1565098 |
| | 25/64 | 9.92 | .3906 | | S1505025 | S1510025 | S1515025 |
| | | 10.00 | .3937 | | S1555100 | S1560100 | S1565100 |
| | | 10.20 | .4016 | | S1555102 | S1560102 | S1565102 |
| | 13/32 | 10.32 | .4063 | | S1505026 | S1510026 | S1515026 |
| | | 10.50 | .4134 | | S1555105 | S1560105 | S1565105 |
| | 27/64 | 10.72 | .4219 | | S1505027 | S1510027 | S1515027 |
| | | 10.80 | .4252 | | S1555108 | S1560108 | S1565108 |
| | | 11.00 | .4331 | | S1555110 | S1560110 | S1565110 |
| Z<br>Ø11.11(.437) to Ø12.95(.510) | 7/16 | 11.11 | .4375 | 2.4 (3/32) | S1505028 | S1510028 | S1515028 |
| | | 11.50 | .4528 | | S1555115 | S1560115 | S1565115 |
| | 29/64 | 11.51 | .4531 | | S1505029 | S1510029 | S1515029 |
| | 15/32 | 11.91 | .4688 | | S1505030 | S1510030 | S1515030 |
| | | 12.00 | .4724 | | S1555120 | S1560120 | S1565120 |
| | 31/64 | 12.30 | .4844 | | S1505031 | S1510031 | S1515031 |
| | | 12.50 | .4921 | | S1555125 | S1560125 | S1565125 |
| | 1/2 | 12.70 | .5000 | | S1505032 | S1510032 | S1515032 |
| 0<br>Ø12.98 (.511) to Ø17.65 (.695) | | 13.00 | .5118 | 3.2 (1/8) | S1555130 | S1560130 | S1565130 |
| | 33/64 | 13.10 | .5156 | | S1505033 | S1510033 | S1515033 |
| | 17/32 | 13.49 | .5313 | | S1505034 | S1510034 | S1515034 |
| | | 13.50 | .5315 | | S1555135 | S1560135 | S1565135 |
| | 35/64 | 13.89 | .5469 | | S1505035 | S1510035 | S1515035 |
| | | 14.00 | .5512 | | S1555140 | S1560140 | S1565140 |
| | 9/16 | 14.29 | .5625 | | S1505036 | S1510036 | S1515036 |
| | | 14.50 | .5709 | | S1555145 | S1560145 | S1565145 |
| | 37/64 | 14.68 | .5781 | | S1505037 | S1510037 | S1515037 |
| | | 15.00 | .5906 | | S1555150 | S1560150 | S1565150 |
| | 19/32 | 15.08 | .5938 | | S1505038 | S1510038 | S1515038 |
| | 39/64 | 15.48 | .6094 | | S1505039 | S1510039 | S1515039 |
| | | 15.50 | .6102 | | S1555155 | S1560155 | S1565155 |
| | 5/8 | 15.88 | .6250 | | S1505040 | S1510040 | S1515040 |
| | | 16.00 | .6299 | | S1555160 | S1560160 | S1565160 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ◎ | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | | | | ○ | ◎ | ○ | ◎ | ○ | ◎ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | | | | | ○ | | | | ◎ | ◎ | ◎ | ◎ | ◎ | | | ◎ | | | |

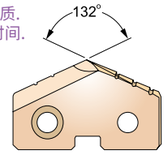
# SPADE DRILLS

SERIES 0, 1

## SPADE DRILL INSERTS - PREMIUM HSS M48
## 铲钻刀片-PREMIUM HSS M48

- ▶ For use in high temperature alloys and materials with 350~500 Brinell.
- ▶ Set up time can be reduced due to changing inserts easily on the machine.
- ▶ Any non-standard size available.

- ▶ 用于高温合金和硬度在350-500布氏之间的材质.
- ▶ 在设备上能够简单地更挽刀片可以减少调试时间.
- ▶ 各种非标准尺寸均可进行生产.



切削条件 / cutting conditions : p. A367

Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | INDEXABLE DRILL HOLDER | D245 - 246 | - | - |
| ◎ | ER COLLET CHUCK | | D73 - 115 | |

| Series 系列 | Diameter 直径 | | | Thick 厚度 | EDP No. 型号 | | |
|---|---|---|---|---|---|---|---|
| Min. to Max. mm (inch) | Inch (inch) | Metric (mm) | Decimal (inch) | Metric (mm, inch) | PREMIUM HSS M48 TiN | PREMIUM HSS M48 TiCN | PREMIUM HSS M48 TiAlN |
| **0** Ø12.98(.511) to Ø17.65(.695) | 41/64 | 16.27 | .6406 | 3.2 (1/8) | S1505041 | S1510041 | S1515041 |
| | | 16.50 | .6496 | | S1555165 | S1560165 | S1565165 |
| | 21/32 | 16.67 | .6563 | | S1505042 | S1510042 | S1515042 |
| | | 17.00 | .6693 | | S1555170 | S1560170 | S1565170 |
| | 43/64 | 17.07 | .6719 | | S1505043 | S1510043 | S1515043 |
| | 11/16 | 17.46 | .6875 | | S1505044 | S1510044 | S1515044 |
| | | 17.50 | .6890 | | S1555175 | S1560175 | S1565175 |
| **1** Ø17.53 (.690) to Ø24.38 (.960) | 45/64 | 17.86 | .7031 | 4.0 (5/32) | S1505045 | S1510045 | S1515045 |
| | | 18.00 | .7087 | | S1555180 | S1560180 | S1565180 |
| | 23/32 | 18.26 | .7188 | | S1505046 | S1510046 | S1515046 |
| | | 18.50 | .7283 | | S1555185 | S1560185 | S1565185 |
| | 47/64 | 18.65 | .7344 | | S1505047 | S1510047 | S1515047 |
| | | 19.00 | .7480 | | S1555190 | S1560190 | S1565190 |
| | 3/4 | 19.05 | .7500 | | S1505048 | S1510048 | S1515048 |
| | 49/64 | 19.45 | .7656 | | S1505049 | S1510049 | S1515049 |
| | | 19.50 | .7677 | | S1555195 | S1560195 | S1565195 |
| | 25/32 | 19.84 | .7813 | | S1505050 | S1510050 | S1515050 |
| | | 20.00 | .7874 | | S1555200 | S1560200 | S1565200 |
| | 51/64 | 20.24 | .7969 | | S1505051 | S1510051 | S1515051 |
| | | 20.50 | .8071 | | S1555205 | S1560205 | S1565205 |
| | 13/16 | 20.64 | .8125 | | S1505052 | S1510052 | S1515052 |
| | | 21.00 | .8268 | | S1555210 | S1560210 | S1565210 |
| | 27/32 | 21.43 | .8438 | | S1505054 | S1510054 | S1515054 |
| | 55/64 | 21.83 | .8594 | | S1505055 | S1510055 | S1515055 |
| | | 22.00 | .8661 | | S1555220 | S1560220 | S1565220 |
| | 7/8 | 22.23 | .8750 | | S1505056 | S1510056 | S1515056 |
| | 57/64 | 22.62 | .8906 | | S1505057 | S1510057 | S1515057 |
| | | 23.00 | .9055 | | S1555230 | S1560230 | S1565230 |
| | 29/32 | 23.02 | .9063 | | S1505058 | S1510058 | S1515058 |
| | 59/64 | 23.42 | .9219 | | S1505059 | S1510059 | S1515059 |
| | 15/16 | 23.81 | .9375 | | S1505060 | S1510060 | S1515060 |
| | | 24.00 | .9449 | | S1555240 | S1560240 | S1565240 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ◎ | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | | | | ○ | ◎ | ○ | ◎ | ○ | ◎ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | | | | | ○ | | | | ◎ | ◎ | ◎ | ◎ | ◎ | | | ◎ | | | |



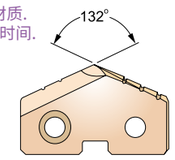
SPADE DRILLS

SERIES 2

SPADE DRILL INSERTS - PREMIUM HSS M48
铲钻刀片-PREMIUM HSS M48

- ▶ For use in high temperature alloys and materials with 350~500 Brinell.
- ▶ Set up time can be reduced due to changing inserts easily on the machine.
- ▶ Any non-standard size available.

- ▶ 用于高温合金和硬度在350-500布氏之间的材质.
- ▶ 在设备上能够简单地更挽刀片可以减少调试时间.
- ▶ 各种非标准尺寸均可进行生产.



切削条件 / cutting conditions : p. A367

Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | INDEXABLE DRILL HOLDER | D245 - 246 | - | - |
| ◎ | ER COLLET CHUCK | | D73 - 115 | |

| Series 系列 | Diameter 直径 | | | Thick 厚度 | EDP No. 型号 | | |
|---|---|---|---|---|---|---|---|
| Min. to Max. mm (inch) | Inch (inch) | Metric (mm) | Decimal (inch) | Metric (mm, inch) | PREMIUM HSS M48 TiN | PREMIUM HSS M48 TiCN | PREMIUM HSS M48 TiAlN |
| **2** Ø24.41 (.961) to Ø35.05 (1.380) | 31/32 | 24.61 | .9688 | 4.8 (3/16) | S1505062 | S1510062 | S1515062 |
| | 63/64 | 25.00 | .9843 | | S1555250 | S1560250 | S1565250 |
| | 1 | 25.40 | 1.0000 | | S1505100 | S1510100 | S1515100 |
| | 1-1/64 | 25.80 | 1.0156 | | S1505101 | S1510101 | S1515101 |
| | | 26.00 | 1.0236 | | S1555260 | S1560260 | S1565260 |
| | 1-1/32 | 26.19 | 1.0313 | | S1505102 | S1510102 | S1515102 |
| | 1-3/64 | 26.59 | 1.0469 | | S1505103 | S1510103 | S1515103 |
| | 1-1/16 | 26.99 | 1.0625 | | S1505104 | S1510104 | S1515104 |
| | | 27.00 | 1.0630 | | S1555270 | S1560270 | S1565270 |
| | 1-3/32 | 27.78 | 1.0938 | | S1505106 | S1510106 | S1515106 |
| | | 28.00 | 1.1024 | | S1555280 | S1560280 | S1565280 |
| | 1-7/64 | 28.18 | 1.1094 | | S1505107 | S1510107 | S1515107 |
| | 1-1/8 | 28.58 | 1.1250 | | S1505108 | S1510108 | S1515108 |
| | | 29.00 | 1.1417 | | S1555290 | S1560290 | S1565290 |
| | 1-5/32 | 29.37 | 1.1563 | | S1505110 | S1510110 | S1515110 |
| | | 30.00 | 1.1811 | | S1555300 | S1560300 | S1565300 |
| | 1-3/16 | 30.16 | 1.1875 | | S1505112 | S1510112 | S1515112 |
| | 1-7/32 | 30.96 | 1.2188 | | S1505114 | S1510114 | S1515114 |
| | | 31.00 | 1.2205 | | S1555310 | S1560310 | S1565310 |
| | 1-1/4 | 31.75 | 1.2500 | | S1505116 | S1510116 | S1515116 |
| | | 32.00 | 1.2598 | | S1555320 | S1560320 | S1565320 |
| | 1-9/32 | 32.54 | 1.2813 | | S1505118 | S1510118 | S1515118 |
| | | 33.00 | 1.2992 | | S1555330 | S1560330 | S1565330 |
| | 1-5/16 | 33.34 | 1.3125 | | S1505120 | S1510120 | S1515120 |
| | | 34.00 | 1.3386 | | S1555340 | S1560340 | S1565340 |
| | 1-11/32 | 34.13 | 1.3438 | | S1505122 | S1510122 | S1515122 |
| | 1-3/8 | 34.93 | 1.3750 | | S1505124 | S1510124 | S1515124 |
| | | 35.00 | 1.3780 | | S1555350 | S1560350 | S1565350 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ◎ | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | | | | ○ | ◎ | ○ | ◎ | ○ | ◎ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | | | | | ○ | | | | ◎ | ◎ | ◎ | ◎ | ◎ | | | ◎ | | | |

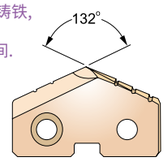
# SPADE DRILLS

SERIES **Y, Z, 0**

## SPADE DRILL INSERTS for CAST IRON - CARBIDE K10
## 铸铁用铲钻刀片-硬质合金 K10

- ▶ High performance on Gray cast iron over 220 Brinell, malleable cast iron with short chips, silicon aluminum and copper alloys.
- ▶ Set up time can be reduced due to changing inserts easily on the machine.
- ▶ Any non-standard size available.

- ▶ 在超过220布氏的灰铸铁, 可断成短碎片的可锻铸铁, 硅铝 和铜合金上有很高的性能.
- ▶ 在设备上能够简单地更换刀片可以减少调试时间.
- ▶ 各种非标准尺寸均可进行生产.



切削条件 / cutting conditions : p. A368

| Recommended ToolHolder | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| | INDEXABLE DRILL HOLDER | D245 - 246 | - | - |
| | ER COLLET CHUCK | | D73 - 115 | |

| Series 系列 | Diameter 直径 | | | Thick 厚度 | EDP No. 型号 | | |
|---|---|---|---|---|---|---|---|
| Min. to Max. mm (inch) | Inch (inch) | Metric (mm) | Decimal (inch) | Metric (mm, inch) | CARBIDE K10 TiN | CARBIDE K10 TiCN | CARBIDE K10 TiAlN |
| **Y** Ø9.50 (.374) to Ø11.07 (.436) | | 9.50 | .3740 | 2.4 (3/32) | S1655095 | S1660095 | S1665095 |
| | 3/8 | 9.53 | .3750 | | S1605024 | S1610024 | S1615024 |
| | | 9.80 | .3860 | | S1655098 | S1660098 | S1665098 |
| | 25/64 | 9.92 | .3906 | | S1605025 | S1610025 | S1615025 |
| | | 10.00 | .3937 | | S1655100 | S1660100 | S1665100 |
| | | 10.20 | .4016 | | S1655102 | S1660102 | S1665102 |
| | 13/32 | 10.32 | .4063 | | S1605026 | S1610026 | S1615026 |
| | | 10.50 | .4134 | | S1655105 | S1660105 | S1665105 |
| | 27/64 | 10.72 | .4219 | | S1605027 | S1610027 | S1615027 |
| | | 10.80 | .4252 | | S1655108 | S1660108 | S1665108 |
| | | 11.00 | .4331 | | S1655110 | S1660110 | S1665110 |
| **Z** Ø11.11(.437) to Ø12.95(.510) | 7/16 | 11.11 | .4375 | 2.4 (3/32) | S1605028 | S1610028 | S1615028 |
| | | 11.50 | .4528 | | S1655115 | S1660115 | S1665115 |
| | 29/64 | 11.51 | .4531 | | S1605029 | S1610029 | S1615029 |
| | 15/32 | 11.91 | .4688 | | S1605030 | S1610030 | S1615030 |
| | | 12.00 | .4724 | | S1655120 | S1660120 | S1665120 |
| | 31/64 | 12.30 | .4844 | | S1605031 | S1610031 | S1615031 |
| | | 12.50 | .4921 | | S1655125 | S1660125 | S1665125 |
| | 1/2 | 12.70 | .5000 | | S1605032 | S1610032 | S1615032 |
| **0** Ø12.98 (.511) to Ø17.65 (.695) | | 13.00 | .5118 | 3.2 (1/8) | S1655130 | S1660130 | S1665130 |
| | 33/64 | 13.10 | .5156 | | S1605033 | S1610033 | S1615033 |
| | 17/32 | 13.49 | .5313 | | S1605034 | S1610034 | S1615034 |
| | | 13.50 | .5315 | | S1655135 | S1660135 | S1665135 |
| | 35/64 | 13.89 | .5469 | | S1605035 | S1610035 | S1615035 |
| | | 14.00 | .5512 | | S1655140 | S1660140 | S1665140 |
| | 9/16 | 14.29 | .5625 | | S1605036 | S1610036 | S1615036 |
| | | 14.50 | .5709 | | S1655145 | S1660145 | S1665145 |
| | 37/64 | 14.68 | .5781 | | S1605037 | S1610037 | S1615037 |
| | | 15.00 | .5906 | | S1655150 | S1660150 | S1665150 |
| | 19/32 | 15.08 | .5938 | | S1605038 | S1610038 | S1615038 |
| | 39/64 | 15.48 | .6094 | | S1605039 | S1610039 | S1615039 |
| | | 15.50 | .6102 | | S1655155 | S1660155 | S1665155 |
| | 5/8 | 15.88 | .6250 | | S1605040 | S1610040 | S1615040 |
| | | 16.00 | .6299 | | S1655160 | S1660160 | S1665160 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | | | | | | | | | | | | | | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | | | | | | | | | | | | | | | | | | | | | |



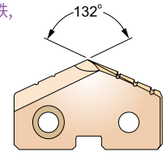
# SPADE DRILLS

SERIES **0, 1**

## SPADE DRILL INSERTS for CAST IRON - CARBIDE K10
## 铸铁用铲钻刀片-硬质合金 K10

- ▶ High performance on Gray cast iron over 220 Brinell, malleable cast iron with short chips, silicon aluminum and copper alloys.
- ▶ Set up time can be reduced due to changing inserts easily on the machine.
- ▶ Any non-standard size available.

- ▶ 在超过220布氏的灰铸铁, 可断成短碎片的可锻铸铁, 硅铝 和铜合金上有很高的性能.
- ▶ 在设备上能够简单地更换刀片可以减少调试时间.
- ▶ 各种非标准尺寸均可进行生产.



切削条件 / cutting conditions : p. A368

| Recommended ToolHolder | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| | INDEXABLE DRILL HOLDER | D245 - 246 | - | - |
| | ER COLLET CHUCK | | D73 - 115 | |

| Series 系列 | Diameter 直径 | | | Thick 厚度 | EDP No. 型号 | | |
|---|---|---|---|---|---|---|---|
| Min. to Max. mm (inch) | Inch (inch) | Metric (mm) | Decimal (inch) | Metric (mm, inch) | CARBIDE K10 TiN | CARBIDE K10 TiCN | CARBIDE K10 TiAlN |
| **0** Ø12.98(.511) to Ø17.65(.695) | 41/64 | 16.27 | .6406 | 3.2 (1/8) | S1605041 | S1610041 | S1615041 |
| | | 16.50 | .6496 | | S1655165 | S1660165 | S1665165 |
| | 21/32 | 16.67 | .6563 | | S1605042 | S1610042 | S1615042 |
| | | 17.00 | .6693 | | S1655170 | S1660170 | S1665170 |
| | 43/64 | 17.07 | .6719 | | S1605043 | S1610043 | S1615043 |
| | 11/16 | 17.46 | .6875 | | S1605044 | S1610044 | S1615044 |
| | | 17.50 | .6890 | | S1655175 | S1660175 | S1665175 |
| **1** Ø17.53 (.690) to Ø24.38 (.960) | 45/64 | 17.86 | .7031 | 4.0 (5/32) | S1605045 | S1610045 | S1615045 |
| | | 18.00 | .7087 | | S1655180 | S1660180 | S1665180 |
| | 23/32 | 18.26 | .7188 | | S1605046 | S1610046 | S1615046 |
| | | 18.50 | .7283 | | S1655185 | S1660185 | S1665185 |
| | 47/64 | 18.65 | .7344 | | S1605047 | S1610047 | S1615047 |
| | | 19.00 | .7480 | | S1655190 | S1660190 | S1665190 |
| | 3/4 | 19.05 | .7500 | | S1605048 | S1610048 | S1615048 |
| | 49/64 | 19.45 | .7656 | | S1605049 | S1610049 | S1615049 |
| | | 19.50 | .7677 | | S1655195 | S1660195 | S1665195 |
| | 25/32 | 19.84 | .7813 | | S1605050 | S1610050 | S1615050 |
| | | 20.00 | .7874 | | S1655200 | S1660200 | S1665200 |
| | 51/64 | 20.24 | .7969 | | S1605051 | S1610051 | S1615051 |
| | | 20.50 | .8071 | | S1655205 | S1660205 | S1665205 |
| | 13/16 | 20.64 | .8125 | | S1605052 | S1610052 | S1615052 |
| | | 21.00 | .8268 | | S1655210 | S1660210 | S1665210 |
| | 27/32 | 21.43 | .8438 | | S1605054 | S1610054 | S1615054 |
| | 55/64 | 21.83 | .8594 | | S1605055 | S1610055 | S1615055 |
| | | 22.00 | .8661 | | S1655220 | S1660220 | S1665220 |
| | 7/8 | 22.23 | .8750 | | S1605056 | S1610056 | S1615056 |
| | 57/64 | 22.62 | .8906 | | S1605057 | S1610057 | S1615057 |
| | | 23.00 | .9055 | | S1655230 | S1660230 | S1665230 |
| | 29/32 | 23.02 | .9063 | | S1605058 | S1610058 | S1615058 |
| | 59/64 | 23.42 | .9219 | | S1605059 | S1610059 | S1615059 |
| | 15/16 | 23.81 | .9375 | | S1605060 | S1610060 | S1615060 |
| | | 24.00 | .9449 | | S1655240 | S1660240 | S1665240 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | | | | | | | | | | | | | | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | | | | | | | | | | | | | | | | | | | | | |

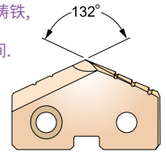
# SPADE DRILLS

SERIES 2

## SPADE DRILL INSERTS for CAST IRON - CARBIDE K10
## 铸铁用铲钻刀片-硬质合金 K10

▶ High performance on Gray cast iron over 220 Brinell, malleable cast iron with short chips, silicon aluminum and copper alloys.
▶ Set up time can be reduced due to changing inserts easily on the machine.
▶ Any non-standard size available.

▶ 在超过220布氏的灰铸铁, 可断成短碎片的可锻铸铁, 硅铝 和铜合金上有很高的性能.
▶ 在设备上能够简单地更换刀片可以减少调试时间.
▶ 各种非标准尺寸均可进行生产.



切削条件 / cutting conditions : p. A368

Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| INDEXABLE DRILL HOLDER | D245 - 246 | - | - |
| ER COLLET CHUCK | D73 - 115 | | |

| Series 系列 | Diameter 直径 | | | Thick 厚度 | EDP No. 型号 | | |
|---|---|---|---|---|---|---|---|
| Min. to Max. mm (inch) | Inch (inch) | Metric (mm) | Decimal (inch) | Metric (mm, inch) | CARBIDE K10 TiN | CARBIDE K10 TiCN | CARBIDE K10 TiAlN |
| 2<br>Ø24.41 (.961) to Ø35.05 (1.380) | 31/32 | 24.61 | .9688 | 4.8 (3/16) | S1605062 | S1610062 | S1615062 |
| | 63/64 | 25.00 | .9843 | | S1655250 | S1660250 | S1665250 |
| | 1 | 25.40 | 1.0000 | | S1605100 | S1610100 | S1615100 |
| | 1-1/64 | 25.80 | 1.0156 | | S1605101 | S1610101 | S1615101 |
| | | 26.00 | 1.0236 | | S1655260 | S1660260 | S1665260 |
| | 1-1/32 | 26.19 | 1.0313 | | S1605102 | S1610102 | S1615102 |
| | 1-3/64 | 26.59 | 1.0469 | | S1605103 | S1610103 | S1615103 |
| | 1-1/16 | 26.99 | 1.0625 | | S1605104 | S1610104 | S1615104 |
| | | 27.00 | 1.0630 | | S1655270 | S1660270 | S1665270 |
| | 1-3/32 | 27.78 | 1.0938 | | S1605106 | S1610106 | S1615106 |
| | | 28.00 | 1.1024 | | S1655280 | S1660280 | S1665280 |
| | 1-7/64 | 28.18 | 1.1094 | | S1605107 | S1610107 | S1615107 |
| | 1-1/8 | 28.58 | 1.1250 | | S1605108 | S1610108 | S1615108 |
| | | 29.00 | 1.1417 | | S1655290 | S1660290 | S1665290 |
| | 1-5/32 | 29.37 | 1.1563 | | S1605110 | S1610110 | S1615110 |
| | | 30.00 | 1.1811 | | S1655300 | S1660300 | S1665300 |
| | 1-3/16 | 30.16 | 1.1875 | | S1605112 | S1610112 | S1615112 |
| | 1-7/32 | 30.96 | 1.2188 | | S1605114 | S1610114 | S1615114 |
| | | 31.00 | 1.2205 | | S1655310 | S1660310 | S1665310 |
| | 1-1/4 | 31.75 | 1.2500 | | S1605116 | S1610116 | S1615116 |
| | | 32.00 | 1.2598 | | S1655320 | S1660320 | S1665320 |
| | 1-9/32 | 32.54 | 1.2813 | | S1605118 | S1610118 | S1615118 |
| | | 33.00 | 1.2992 | | S1655330 | S1660330 | S1665330 |
| | 1-5/16 | 33.34 | 1.3125 | | S1605120 | S1610120 | S1615120 |
| | | 34.00 | 1.3386 | | S1655340 | S1660340 | S1665340 |
| | 1-11/32 | 34.13 | 1.3438 | | S1605122 | S1610122 | S1615122 |
| | 1-3/8 | 34.93 | 1.3750 | | S1605124 | S1610124 | S1615124 |
| | | 35.00 | 1.3780 | | S1655350 | S1660350 | S1665350 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | | | | | | | | | | | | | | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | | | | | | | | | | | | | | | | | | | | | |



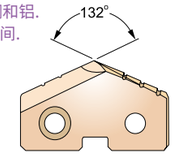
# SPADE DRILLS

SERIES Y, Z, 0

## SPADE DRILL INSERTS - CARBIDE K20
## 铲钻刀片-硬质合金 K20

▶ For use in Gray cast iron up to 220 Brinell, nonferrous metals, copper, brass and aluminum.
▶ Set up time can be reduced due to changing inserts easily on the machine.
▶ Any non-standard size available.

▶ 用于220布氏以下的灰铸铁, 有色金属, 铜, 黄铜和铝.
▶ 在设备上能够简单地更换刀片可以减少调试时间.
▶ 各种非标准尺寸均可进行生产.



切削条件 / cutting conditions : p. A369

Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| INDEXABLE DRILL HOLDER | D245 - 246 | - | - |
| ER COLLET CHUCK | D73 - 115 | | |

| Series 系列 | Diameter 直径 | | | Thick 厚度 | EDP No. 型号 | | |
|---|---|---|---|---|---|---|---|
| Min. to Max. mm (inch) | Inch (inch) | Metric (mm) | Decimal (inch) | Metric (mm, inch) | CARBIDE K20 TiN | CARBIDE K20 TiCN | CARBIDE K20 TiAlN |
| Y<br>Ø9.50 (.374) to Ø11.07 (.436) | | 9.50 | .3740 | 2.4 (3/32) | S1755095 | S1760095 | S1765095 |
| | 3/8 | 9.53 | .3750 | | S1705024 | S1710024 | S1715024 |
| | | 9.80 | .3860 | | S1755098 | S1760098 | S1765098 |
| | 25/64 | 9.92 | .3906 | | S1705025 | S1710025 | S1715025 |
| | | 10.00 | .3937 | | S1755100 | S1760100 | S1765100 |
| | | 10.20 | .4016 | | S1755102 | S1760102 | S1765102 |
| | 13/32 | 10.32 | .4063 | | S1705026 | S1710026 | S1715026 |
| | | 10.50 | .4134 | | S1755105 | S1760105 | S1765105 |
| | 27/64 | 10.72 | .4219 | | S1705027 | S1710027 | S1715027 |
| | | 10.80 | .4252 | | S1755108 | S1760108 | S1765108 |
| | | 11.00 | .4331 | | S1755110 | S1760110 | S1765110 |
| Z<br>Ø11.11(.437) to Ø12.95(.510) | 7/16 | 11.11 | .4375 | 2.4 (3/32) | S1705028 | S1710028 | S1715028 |
| | | 11.50 | .4528 | | S1755115 | S1760115 | S1765115 |
| | 29/64 | 11.51 | .4531 | | S1705029 | S1710029 | S1715029 |
| | 15/32 | 11.91 | .4688 | | S1705030 | S1710030 | S1715030 |
| | | 12.00 | .4724 | | S1755120 | S1760120 | S1765120 |
| | 31/64 | 12.30 | .4844 | | S1705031 | S1710031 | S1715031 |
| | | 12.50 | .4921 | | S1755125 | S1760125 | S1765125 |
| | 1/2 | 12.70 | .5000 | | S1705032 | S1710032 | S1715032 |
| 0<br>Ø12.98 (.511) to Ø17.65 (.695) | | 13.00 | .5118 | 3.2 (1/8) | S1755130 | S1760130 | S1765130 |
| | 33/64 | 13.10 | .5156 | | S1705033 | S1710033 | S1715033 |
| | 17/32 | 13.49 | .5313 | | S1705034 | S1710034 | S1715034 |
| | | 13.50 | .5315 | | S1755135 | S1760135 | S1765135 |
| | 35/64 | 13.89 | .5469 | | S1705035 | S1710035 | S1715035 |
| | | 14.00 | .5512 | | S1755140 | S1760140 | S1765140 |
| | 9/16 | 14.29 | .5625 | | S1705036 | S1710036 | S1715036 |
| | | 14.50 | .5709 | | S1755145 | S1760145 | S1765145 |
| | 37/64 | 14.68 | .5781 | | S1705037 | S1710037 | S1715037 |
| | | 15.00 | .5906 | | S1755150 | S1760150 | S1765150 |
| | 19/32 | 15.08 | .5938 | | S1705038 | S1710038 | S1715038 |
| | 39/64 | 15.48 | .6094 | | S1705039 | S1710039 | S1715039 |
| | | 15.50 | .6102 | | S1755155 | S1760155 | S1765155 |
| | 5/8 | 15.88 | .6250 | | S1705040 | S1710040 | S1715040 |
| | | 16.00 | .6299 | | S1755160 | S1760160 | S1765160 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ○ | ○ | ○ | ○ | | ○ | ○ | ○ | ○ | ○ | ○ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ◎ | ◎ | | | | | ◎ | | | | ◎ | ◎ | ◎ | ◎ | ◎ | | | ○ | | | |

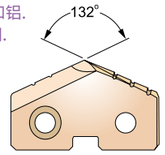
# SPADE DRILLS

SERIES 0, 1

## SPADE DRILL INSERTS - CARBIDE K20
## 铲钻刀片-硬质合金 K20

- ▶ For use in Gray cast iron up to 220 Brinell, nonferrous metals, copper, brass and aluminum.
- ▶ Set up time can be reduced due to changing inserts easily on the machine.
- ▶ Any non-standard size available.

- ▶ 用于220布氏以下的灰铸铁, 有色金属, 铜, 黄铜和铝.
- ▶ 在设备上能够简单地更换刀片可以减少调试时间.
- ▶ 各种非标准尺寸均可进行生产.



切削条件 / cutting conditions : p. A369

Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | INDEXABLE DRILL HOLDER | D245 - 246 | - | - |
| ○ | ER COLLET CHUCK | | D73 - 115 | |

| Series 系列 | Diameter 直径 | | | Thick 厚度 | EDP No. 型号 | | |
|---|---|---|---|---|---|---|---|
| Min. to Max. mm (inch) | Inch (inch) | Metric (mm) | Decimal (inch) | Metric (mm, inch) | CARBIDE K20 TiN | CARBIDE K20 TiCN | CARBIDE K20 TiAlN |
| **0** Ø12.98(.511) to Ø17.65(.695) | 41/64 | 16.27 | .6406 | 3.2 (1/8) | S1705041 | S1710041 | S1715041 |
| | | 16.50 | .6496 | | S1755165 | S1760165 | S1765165 |
| | 21/32 | 16.67 | .6563 | | S1705042 | S1710042 | S1715042 |
| | | 17.00 | .6693 | | S1755170 | S1760170 | S1765170 |
| | 43/64 | 17.07 | .6719 | | S1705043 | S1710043 | S1715043 |
| | 11/16 | 17.46 | .6875 | | S1705044 | S1710044 | S1715044 |
| | | 17.50 | .6890 | | S1755175 | S1760175 | S1765175 |
| | 45/64 | 17.86 | .7031 | | S1705045 | S1710045 | S1715045 |
| | | 18.00 | .7087 | | S1755180 | S1760180 | S1765180 |
| | 23/32 | 18.26 | .7188 | | S1705046 | S1710046 | S1715046 |
| | | 18.50 | .7283 | | S1755185 | S1760185 | S1765185 |
| | 47/64 | 18.65 | .7344 | | S1705047 | S1710047 | S1715047 |
| | | 19.00 | .7480 | | S1755190 | S1760190 | S1765190 |
| | 3/4 | 19.05 | .7500 | | S1705048 | S1710048 | S1715048 |
| | 49/64 | 19.45 | .7656 | | S1705049 | S1710049 | S1715049 |
| | | 19.50 | .7677 | | S1755195 | S1760195 | S1765195 |
| | 25/32 | 19.84 | .7813 | | S1705050 | S1710050 | S1715050 |
| | | 20.00 | .7874 | | S1755200 | S1760200 | S1765200 |
| | 51/64 | 20.24 | .7969 | | S1705051 | S1710051 | S1715051 |
| | | 20.50 | .8071 | | S1755205 | S1760205 | S1765205 |
| | 13/16 | 20.64 | .8125 | | S1705052 | S1710052 | S1715052 |
| | | 21.00 | .8268 | | S1755210 | S1760210 | S1765210 |
| | 27/32 | 21.43 | .8438 | | S1705054 | S1710054 | S1715054 |
| | 55/64 | 21.83 | .8594 | | S1705055 | S1710055 | S1715055 |
| | | 22.00 | .8661 | | S1755220 | S1760220 | S1765220 |
| | 7/8 | 22.23 | .8750 | | S1705056 | S1710056 | S1715056 |
| | 57/64 | 22.62 | .8906 | | S1705057 | S1710057 | S1715057 |
| | | 23.00 | .9055 | | S1755230 | S1760230 | S1765230 |
| | 29/32 | 23.02 | .9063 | | S1705058 | S1710058 | S1715058 |
| | 59/64 | 23.42 | .9219 | | S1705059 | S1710059 | S1715059 |
| | 15/16 | 23.81 | .9375 | | S1705060 | S1710060 | S1715060 |
| | | 24.00 | .9449 | | S1755240 | S1760240 | S1765240 |
| **1** Ø17.53 (.690) to Ø24.38 (.960) | 31/32 | 24.61 | .9688 | 4.0 (5/32) | S1705062 | S1710062 | S1715062 |
| | 63/64 | 25.00 | .9843 | | S1755250 | S1760250 | S1765250 |
| | 1 | 25.40 | 1.0000 | | S1705100 | S1710100 | S1715100 |
| | 1-1/64 | 25.80 | 1.0156 | | S1705101 | S1710101 | S1715101 |
| | | 26.00 | 1.0236 | | S1755260 | S1760260 | S1765260 |
| | 1-1/32 | 26.19 | 1.0313 | | S1705102 | S1710102 | S1715102 |
| | 1-3/64 | 26.59 | 1.0469 | | S1705103 | S1710103 | S1715103 |
| | 1-1/16 | 26.99 | 1.0625 | | S1705104 | S1710104 | S1715104 |
| | | 27.00 | 1.0630 | | S1755270 | S1760270 | S1765270 |
| | 1-3/32 | 27.78 | 1.0938 | | S1705106 | S1710106 | S1715106 |
| | | 28.00 | 1.1024 | | S1755280 | S1760280 | S1765280 |
| | 1-7/64 | 28.18 | 1.1094 | | S1705107 | S1710107 | S1715107 |
| | 1-1/8 | 28.58 | 1.1250 | | S1705108 | S1710108 | S1715108 |
| | | 29.00 | 1.1417 | | S1755290 | S1760290 | S1765290 |
| | 1-5/32 | 29.37 | 1.1563 | | S1705110 | S1710110 | S1715110 |
| | | 30.00 | 1.1811 | | S1755300 | S1760300 | S1765300 |
| | 1-3/16 | 30.16 | 1.1875 | | S1705112 | S1710112 | S1715112 |
| | 1-7/32 | 30.96 | 1.2188 | | S1705114 | S1710114 | S1715114 |
| | | 31.00 | 1.2205 | | S1755310 | S1760310 | S1765310 |
| | 1-1/4 | 31.75 | 1.2500 | | S1705116 | S1710116 | S1715116 |
| | | 32.00 | 1.2598 | | S1755320 | S1760320 | S1765320 |
| | 1-9/32 | 32.54 | 1.2813 | | S1705118 | S1710118 | S1715118 |
| | | 33.00 | 1.2992 | | S1755330 | S1760330 | S1765330 |
| | 1-5/16 | 33.34 | 1.3125 | | S1705120 | S1710120 | S1715120 |
| | | 34.00 | 1.3386 | | S1755340 | S1760340 | S1765340 |
| | 1-11/32 | 34.13 | 1.3438 | | S1705122 | S1710122 | S1715122 |
| | 1-3/8 | 34.93 | 1.3750 | | S1705124 | S1710124 | S1715124 |
| | | 35.00 | 1.3780 | | S1755350 | S1760350 | S1765350 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ○ | ○ | ○ | ○ | | ○ | ○ | ○ | ○ | ○ | ○ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ◎ | ◎ | | | | | ◎ | | | | ◎ | ◎ | ◎ | ◎ | ◎ | | | ○ | | | |





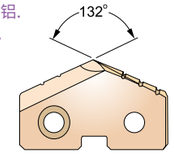
# SPADE DRILLS

SERIES 2

## SPADE DRILL INSERTS - CARBIDE K20
## 铲钻刀片-硬质合金 K20

- ▶ For use in Gray cast iron up to 220 Brinell, nonferrous metals, copper, brass and aluminum.
- ▶ Set up time can be reduced due to changing inserts easily on the machine.
- ▶ Any non-standard size available.

- ▶ 用于220布氏以下的灰铸铁, 有色金属, 铜, 黄铜和铝.
- ▶ 在设备上能够简单地更换刀片可以减少调试时间.
- ▶ 各种非标准尺寸均可进行生产.



切削条件 / cutting conditions : p. A369

Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | INDEXABLE DRILL HOLDER | D245 - 246 | - | - |
| ○ | ER COLLET CHUCK | | D73 - 115 | |

| Series 系列 | Diameter 直径 | | | Thick 厚度 | EDP No. 型号 | | |
|---|---|---|---|---|---|---|---|
| Min. to Max. mm (inch) | Inch (inch) | Metric (mm) | Decimal (inch) | Metric (mm, inch) | CARBIDE K20 TiN | CARBIDE K20 TiCN | CARBIDE K20 TiAlN |
| **2** Ø24.41 (.961) to Ø35.05 (1.380) | 31/32 | 24.61 | .9688 | 4.8 (3/16) | S1705062 | S1710062 | S1715062 |
| | 63/64 | 25.00 | .9843 | | S1755250 | S1760250 | S1765250 |
| | 1 | 25.40 | 1.0000 | | S1705100 | S1710100 | S1715100 |
| | 1-1/64 | 25.80 | 1.0156 | | S1705101 | S1710101 | S1715101 |
| | | 26.00 | 1.0236 | | S1755260 | S1760260 | S1765260 |
| | 1-1/32 | 26.19 | 1.0313 | | S1705102 | S1710102 | S1715102 |
| | 1-3/64 | 26.59 | 1.0469 | | S1705103 | S1710103 | S1715103 |
| | 1-1/16 | 26.99 | 1.0625 | | S1705104 | S1710104 | S1715104 |
| | | 27.00 | 1.0630 | | S1755270 | S1760270 | S1765270 |
| | 1-3/32 | 27.78 | 1.0938 | | S1705106 | S1710106 | S1715106 |
| | | 28.00 | 1.1024 | | S1755280 | S1760280 | S1765280 |
| | 1-7/64 | 28.18 | 1.1094 | | S1705107 | S1710107 | S1715107 |
| | 1-1/8 | 28.58 | 1.1250 | | S1705108 | S1710108 | S1715108 |
| | | 29.00 | 1.1417 | | S1755290 | S1760290 | S1765290 |
| | 1-5/32 | 29.37 | 1.1563 | | S1705110 | S1710110 | S1715110 |
| | | 30.00 | 1.1811 | | S1755300 | S1760300 | S1765300 |
| | 1-3/16 | 30.16 | 1.1875 | | S1705112 | S1710112 | S1715112 |
| | 1-7/32 | 30.96 | 1.2188 | | S1705114 | S1710114 | S1715114 |
| | | 31.00 | 1.2205 | | S1755310 | S1760310 | S1765310 |
| | 1-1/4 | 31.75 | 1.2500 | | S1705116 | S1710116 | S1715116 |
| | | 32.00 | 1.2598 | | S1755320 | S1760320 | S1765320 |
| | 1-9/32 | 32.54 | 1.2813 | | S1705118 | S1710118 | S1715118 |
| | | 33.00 | 1.2992 | | S1755330 | S1760330 | S1765330 |
| | 1-5/16 | 33.34 | 1.3125 | | S1705120 | S1710120 | S1715120 |
| | | 34.00 | 1.3386 | | S1755340 | S1760340 | S1765340 |
| | 1-11/32 | 34.13 | 1.3438 | | S1705122 | S1710122 | S1715122 |
| | 1-3/8 | 34.93 | 1.3750 | | S1705124 | S1710124 | S1715124 |
| | | 35.00 | 1.3780 | | S1755350 | S1760350 | S1765350 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ○ | ○ | ○ | ○ | | ○ | ○ | ○ | ○ | ○ | ○ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ◎ | ◎ | | | | | ◎ | | | | ◎ | ◎ | ◎ | ◎ | ◎ | | | ○ | | | |

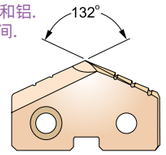
# SPADE DRILLS

SERIES 3

## SPADE DRILL INSERTS - CARBIDE K20
## 铲钻刀片-硬质合金 K20

- ▶ For use in Gray cast iron up to 220 Brinell, nonferrous metals, copper, brass and aluminum.
- ▶ Set up time can be reduced due to changing inserts easily on the machine.
- ▶ Any non-standard size available.

- ▶ 用于220布氏以下的灰铸铁, 有色金属, 铜, 黄铜和铝.
- ▶ 在设备上能够简单地更换刀片可以减少调试时间.
- ▶ 各种非标准尺寸均可进行生产.



切削条件 / cutting conditions : p. A369

Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| INDEXABLE DRILL HOLDER | D245 - 246 | - | - |
| ER COLLET CHUCK | D73 - 115 | | |

| Series 系列 | Diameter 直径 | | | Thick 厚度 | EDP No. 型号 | | |
|---|---|---|---|---|---|---|---|
| Min. to Max. mm (inch) | Inch (inch) | Metric (mm) | Decimal (inch) | Metric (mm, inch) | CARBIDE K20 TiN | TiCN | TiAlN |
| 3<br>Ø34.37 (1.353) to Ø47.80 (1.882) | 1-13/32 | 35.72 | 1.4063 | 6.4 (1/4) | S1705126 | S1710126 | S1715126 |
| | | 36.00 | 1.4173 | | S1755360 | S1760360 | S1765360 |
| | 1-7/16 | 36.51 | 1.4375 | | S1705128 | S1710128 | S1715128 |
| | | 37.00 | 1.4567 | | S1755370 | S1760370 | S1765370 |
| | 1-15/32 | 37.31 | 1.4688 | | S1705130 | S1710130 | S1715130 |
| | | 38.00 | 1.4961 | | S1755380 | S1760380 | S1765380 |
| | 1-1/2 | 38.10 | 1.5000 | | S1705132 | S1710132 | S1715132 |
| | 1-17/32 | 38.89 | 1.5313 | | S1705134 | S1710134 | S1715134 |
| | | 39.00 | 1.5354 | | S1755390 | S1760390 | S1765390 |
| | 1-9/16 | 39.69 | 1.5625 | | S1705136 | S1710136 | S1715136 |
| | | 40.00 | 1.5748 | | S1755400 | S1760400 | S1765400 |
| | 1-19/32 | 40.48 | 1.5938 | | S1705138 | S1710138 | S1715138 |
| | | 41.00 | 1.6142 | | S1755410 | S1760410 | S1765410 |
| | 1-5/8 | 41.28 | 1.6250 | | S1705140 | S1710140 | S1715140 |
| | | 42.00 | 1.6535 | | S1755420 | S1760420 | S1765420 |
| | 1-21/32 | 42.07 | 1.6563 | | S1705142 | S1710142 | S1715142 |
| | 1-11/16 | 42.86 | 1.6875 | | S1705144 | S1710144 | S1715144 |
| | | 43.00 | 1.6929 | | S1755430 | S1760430 | S1765430 |
| | 1-23/32 | 43.66 | 1.7188 | | S1705146 | S1710146 | S1715146 |
| | | 44.00 | 1.7323 | | S1755440 | S1760440 | S1765440 |
| | 1-3/4 | 44.45 | 1.7500 | | S1705148 | S1710148 | S1715148 |
| | | 45.00 | 1.7717 | | S1755450 | S1760450 | S1765450 |
| | 1-25/32 | 45.24 | 1.7813 | | S1705150 | S1710150 | S1715150 |
| | | 46.00 | 1.8110 | | S1755460 | S1760460 | S1765460 |
| | 1-13/16 | 46.04 | 1.8125 | | S1705152 | S1710152 | S1715152 |
| | 1-27/32 | 46.83 | 1.8438 | | S1705154 | S1710154 | S1715154 |
| | | 47.00 | 1.8504 | | S1755470 | S1760470 | S1765470 |
| | 1-7/8 | 47.63 | 1.8750 | | S1705156 | S1710156 | S1715156 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ○ | ○ | ○ | ○ | | ○ | ○ | ○ | ○ | ○ | ○ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ◎ | ◎ | | | | | ◎ | | | | ◎ | ◎ | ◎ | ◎ | ◎ | | | ○ | | | |





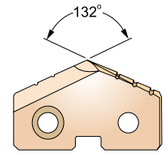
# SPADE DRILLS

SERIES Y, Z, 0

## SPADE DRILL INSERTS - CARBIDE P40
## 铲钻刀片-硬质合金 P40

- ▶ For general use in carbon steels and alloy steels.
- ▶ Set up time can be reduced due to changing inserts easily on the machine.
- ▶ Any non-standard size available.

- ▶ 用于碳素钢和合金钢的普通用途.
- ▶ 在设备上能够简单地更换刀片可以减少调试时间.
- ▶ 各种非标准尺寸均可进行生产.



切削条件 / cutting conditions : p. A371

Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| INDEXABLE DRILL HOLDER | D245 - 246 | - | - |
| ER COLLET CHUCK | D73 - 115 | | |

| Series 系列 | Diameter 直径 | | | Thick 厚度 | EDP No. 型号 | | |
|---|---|---|---|---|---|---|---|
| Min. to Max. mm (inch) | Inch (inch) | Metric (mm) | Decimal (inch) | Metric (mm, inch) | CARBIDE P40 TiN | TiCN | TiAlN |
| Y<br>Ø9.50 (.374) to Ø11.07 (.436) | | 9.50 | .3740 | 2.4 (3/32) | S1855095 | S1860095 | S1865095 |
| | 3/8 | 9.53 | .3750 | | S1805024 | S1810024 | S1815024 |
| | | 9.80 | .3860 | | S1855098 | S1860098 | S1865098 |
| | 25/64 | 9.92 | .3906 | | S1805025 | S1810025 | S1815025 |
| | | 10.00 | .3937 | | S1855100 | S1860100 | S1865100 |
| | | 10.20 | .4016 | | S1855102 | S1860102 | S1865102 |
| | 13/32 | 10.32 | .4063 | | S1805026 | S1810026 | S1815026 |
| | | 10.50 | .4134 | | S1855105 | S1860105 | S1865105 |
| | 27/64 | 10.72 | .4219 | | S1805027 | S1810027 | S1815027 |
| | | 10.80 | .4252 | | S1855108 | S1860108 | S1865108 |
| | | 11.00 | .4331 | | S1855110 | S1860110 | S1865110 |
| Z<br>Ø11.11(.437) to Ø12.95(.510) | 7/16 | 11.11 | .4375 | 2.4 (3/32) | S1805028 | S1810028 | S1815028 |
| | | 11.50 | .4528 | | S1855115 | S1860115 | S1865115 |
| | 29/64 | 11.51 | .4531 | | S1805029 | S1810029 | S1815029 |
| | 15/32 | 11.91 | .4688 | | S1805030 | S1810030 | S1815030 |
| | | 12.00 | .4724 | | S1855120 | S1860120 | S1865120 |
| | 31/64 | 12.30 | .4844 | | S1805031 | S1810031 | S1815031 |
| | | 12.50 | .4921 | | S1855125 | S1860125 | S1865125 |
| | 1/2 | 12.70 | .5000 | | S1805032 | S1810032 | S1815032 |
| 0<br>Ø12.98 (.511) to Ø17.65 (.695) | | 13.00 | .5118 | 3.2 (1/8) | S1855130 | S1860130 | S1865130 |
| | 33/64 | 13.10 | .5156 | | S1805033 | S1810033 | S1815033 |
| | 17/32 | 13.49 | .5313 | | S1805034 | S1810034 | S1815034 |
| | | 13.50 | .5315 | | S1855135 | S1860135 | S1865135 |
| | 35/64 | 13.89 | .5469 | | S1805035 | S1810035 | S1815035 |
| | | 14.00 | .5512 | | S1855140 | S1860140 | S1865140 |
| | 9/16 | 14.29 | .5625 | | S1805036 | S1810036 | S1815036 |
| | | 14.50 | .5709 | | S1855145 | S1860145 | S1865145 |
| | 37/64 | 14.68 | .5781 | | S1805037 | S1810037 | S1815037 |
| | | 15.00 | .5906 | | S1855150 | S1860150 | S1865150 |
| | 19/32 | 15.08 | .5938 | | S1805038 | S1810038 | S1815038 |
| | 39/64 | 15.48 | .6094 | | S1805039 | S1810039 | S1815039 |
| | | 15.50 | .6102 | | S1855155 | S1860155 | S1865155 |
| | 5/8 | 15.88 | .6250 | | S1805040 | S1810040 | S1815040 |
| | | 16.00 | .6299 | | S1855160 | S1860160 | S1865160 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ◎ | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | | | | | ○ | | | | ○ | ○ | ○ | ○ | ○ | | | ◎ | | | |

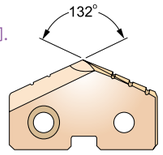
# SPADE DRILLS

SERIES 0, 1

## SPADE DRILL INSERTS - CARBIDE P40
## 铲钻刀片-硬质合金 P40

- ▶ For general use in carbon steels and alloy steels.
- ▶ Set up time can be reduced due to changing inserts easily on the machine.
- ▶ Any non-standard size available.

- ▶ 用于碳素钢和合金钢的普通用途.
- ▶ 在设备上能够简单地更换刀片可以减少调试时间.
- ▶ 各种非标准尺寸均可进行生




切削条件 / cutting conditions : p. A371

Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| INDEXABLE DRILL HOLDER | D245 - 246 | - | - |
| ER COLLET CHUCK | D73 - 115 | | |

| Series 系列 | Diameter 直径 | | | Thick 厚度 | EDP No. 型号 | | |
|---|---|---|---|---|---|---|---|
| Min. to Max. mm (inch) | Inch (inch) | Metric (mm) | Decimal (inch) | Metric (mm, inch) | CARBIDE P40 TiN | CARBIDE P40 TiCN | CARBIDE P40 TiAlN |
| **0** Ø12.98(.511) to Ø17.65(.695) | 41/64 | 16.27 | .6406 | 3.2 (1/8) | S1805041 | S1810041 | S1815041 |
| | | 16.50 | .6496 | | S1855165 | S1860165 | S1865165 |
| | 21/32 | 16.67 | .6563 | | S1805042 | S1810042 | S1815042 |
| | | 17.00 | .6693 | | S1855170 | S1860170 | S1865170 |
| | 43/64 | 17.07 | .6719 | | S1805043 | S1810043 | S1815043 |
| | 11/16 | 17.46 | .6875 | | S1805044 | S1810044 | S1815044 |
| | | 17.50 | .6890 | | S1855175 | S1860175 | S1865175 |
| | 45/64 | 17.86 | .7031 | | S1805045 | S1810045 | S1815045 |
| | | 18.00 | .7087 | | S1855180 | S1860180 | S1865180 |
| | 23/32 | 18.26 | .7188 | | S1805046 | S1810046 | S1815046 |
| | | 18.50 | .7283 | | S1855185 | S1860185 | S1865185 |
| | 47/64 | 18.65 | .7344 | | S1805047 | S1810047 | S1815047 |
| | | 19.00 | .7480 | | S1855190 | S1860190 | S1865190 |
| | 3/4 | 19.05 | .7500 | | S1805048 | S1810048 | S1815048 |
| | 49/64 | 19.45 | .7656 | | S1805049 | S1810049 | S1815049 |
| | | 19.50 | .7677 | | S1855195 | S1860195 | S1865195 |
| | 25/32 | 19.84 | .7813 | | S1805050 | S1810050 | S1815050 |
| | | 20.00 | .7874 | | S1855200 | S1860200 | S1865200 |
| | 51/64 | 20.24 | .7969 | | S1805051 | S1810051 | S1815051 |
| | | 20.50 | .8071 | | S1855205 | S1860205 | S1865205 |
| | 13/16 | 20.64 | .8125 | | S1805052 | S1810052 | S1815052 |
| | | 21.00 | .8268 | | S1855210 | S1860210 | S1865210 |
| | 27/32 | 21.43 | .8438 | | S1805054 | S1810054 | S1815054 |
| | 55/64 | 21.83 | .8594 | | S1805055 | S1810055 | S1815055 |
| | | 22.00 | .8661 | | S1855220 | S1860220 | S1865220 |
| | 7/8 | 22.23 | .8750 | | S1805056 | S1810056 | S1815056 |
| | 57/64 | 22.62 | .8906 | | S1805057 | S1810057 | S1815057 |
| | | 23.00 | .9055 | | S1855230 | S1860230 | S1865230 |
| | 29/32 | 23.02 | .9063 | | S1805058 | S1810058 | S1815058 |
| | 59/64 | 23.42 | .9219 | | S1805059 | S1810059 | S1815059 |
| | 15/16 | 23.81 | .9375 | | S1805060 | S1810060 | S1815060 |
| | | 24.00 | .9449 | | S1855240 | S1860240 | S1865240 |
| **1** Ø17.53 (.690) to Ø24.38 (.960) | | | | 4.0 (5/32) | | | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ◎ | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | | | | | ○ | | | | ○ | ○ | ○ | ○ | ○ | | | ◎ | | | |





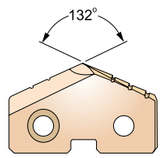
# SPADE DRILLS

SERIES 2

## SPADE DRILL INSERTS - CARBIDE P40
## 铲钻刀片-硬质合金 P40

- ▶ For general use in carbon steels and alloy steels.
- ▶ Set up time can be reduced due to changing inserts easily on the machine.
- ▶ Any non-standard size available.

- ▶ 用于碳素钢和合金钢的普通用途.
- ▶ 在设备上能够简单地更换刀片可以减少调试时间.
- ▶ 各种非标准尺寸均可进行生




切削条件 / cutting conditions : p. A371

Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| INDEXABLE DRILL HOLDER | D245 - 246 | - | - |
| ER COLLET CHUCK | D73 - 115 | | |

| Series 系列 | Diameter 直径 | | | Thick 厚度 | EDP No. 型号 | | |
|---|---|---|---|---|---|---|---|
| Min. to Max. mm (inch) | Inch (inch) | Metric (mm) | Decimal (inch) | Metric (mm, inch) | CARBIDE P40 TiN | CARBIDE P40 TiCN | CARBIDE P40 TiAlN |
| **2** Ø24.41 (.961) to Ø35.05 (1.380) | 31/32 | 24.61 | .9688 | 4.8 (3/16) | S1805062 | S1810062 | S1815062 |
| | 63/64 | 25.00 | .9843 | | S1855250 | S1860250 | S1865250 |
| | 1 | 25.40 | 1.0000 | | S1805100 | S1810100 | S1815100 |
| | 1-1/64 | 25.80 | 1.0156 | | S1805101 | S1810101 | S1815101 |
| | | 26.00 | 1.0236 | | S1855260 | S1860260 | S1865260 |
| | 1-1/32 | 26.19 | 1.0313 | | S1805102 | S1810102 | S1815102 |
| | 1-3/64 | 26.59 | 1.0469 | | S1805103 | S1810103 | S1815103 |
| | 1-1/16 | 26.99 | 1.0625 | | S1805104 | S1810104 | S1815104 |
| | | 27.00 | 1.0630 | | S1855270 | S1860270 | S1865270 |
| | 1-3/32 | 27.78 | 1.0938 | | S1805106 | S1810106 | S1815106 |
| | | 28.00 | 1.1024 | | S1855280 | S1860280 | S1865280 |
| | 1-7/64 | 28.18 | 1.1094 | | S1805107 | S1810107 | S1815107 |
| | 1-1/8 | 28.58 | 1.1250 | | S1805108 | S1810108 | S1815108 |
| | | 29.00 | 1.1417 | | S1855290 | S1860290 | S1865290 |
| | 1-5/32 | 29.37 | 1.1563 | | S1805110 | S1810110 | S1815110 |
| | | 30.00 | 1.1811 | | S1855300 | S1860300 | S1865300 |
| | 1-3/16 | 30.16 | 1.1875 | | S1805112 | S1810112 | S1815112 |
| | 1-7/32 | 30.96 | 1.2188 | | S1805114 | S1810114 | S1815114 |
| | | 31.00 | 1.2205 | | S1855310 | S1860310 | S1865310 |
| | 1-1/4 | 31.75 | 1.2500 | | S1805116 | S1810116 | S1815116 |
| | | 32.00 | 1.2598 | | S1855320 | S1860320 | S1865320 |
| | 1-9/32 | 32.54 | 1.2813 | | S1805118 | S1810118 | S1815118 |
| | | 33.00 | 1.2992 | | S1855330 | S1860330 | S1865330 |
| | 1-5/16 | 33.34 | 1.3125 | | S1805120 | S1810120 | S1815120 |
| | | 34.00 | 1.3386 | | S1855340 | S1860340 | S1865340 |
| | 1-11/32 | 34.13 | 1.3438 | | S1805122 | S1810122 | S1815122 |
| | 1-3/8 | 34.93 | 1.3750 | | S1805124 | S1810124 | S1815124 |
| | | 35.00 | 1.3780 | | S1855350 | S1860350 | S1865350 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ◎ | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | | | | | ○ | | | | ○ | ○ | ○ | ○ | ○ | | | ◎ | | | |

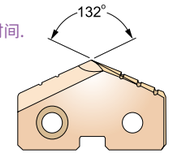
# SPADE DRILLS

SERIES 3

## SPADE DRILL INSERTS - CARBIDE P40
## 铲钻刀片-硬质合金 P40

- For general use in carbon steels and alloy steels.
- Set up time can be reduced due to changing inserts easily on the machine.
- Any non-standard size available.

- 用于碳素钢和合金钢的普通用途.
- 在设备上能够简单地更换刀片可以减少调试时间.
- 各种非标准尺寸均可进行生产.



切削条件 / cutting conditions : p. A371

Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| INDEXABLE DRILL HOLDER | D245 - 246 | - | - |
| ER COLLET CHUCK | | D73 - 115 | |

| Series 系列 | Diameter 直径 | | | Thick 厚度 | EDP No. 型号 | | |
|---|---|---|---|---|---|---|---|
| Min. to Max. mm (inch) | Inch (inch) | Metric (mm) | Decimal (inch) | Metric (mm, inch) | CARBIDE P40 TiN | CARBIDE P40 TiCN | CARBIDE P40 TiAlN |
| 3 Ø34.37 (1.353) to Ø47.80 (1.882) | 1-13/32 | 35.72 | 1.4063 | 6.4 (1/4) | S1805126 | S1810126 | S1815126 |
| | | 36.00 | 1.4173 | | S1855360 | S1860360 | S1865360 |
| | 1-7/16 | 36.51 | 1.4375 | | S1805128 | S1810128 | S1815128 |
| | | 37.00 | 1.4567 | | S1855370 | S1860370 | S1865370 |
| | 1-15/32 | 37.31 | 1.4688 | | S1805130 | S1810130 | S1815130 |
| | | 38.00 | 1.4961 | | S1855380 | S1860380 | S1865380 |
| | 1-1/2 | 38.10 | 1.5000 | | S1805132 | S1810132 | S1815132 |
| | 1-17/32 | 38.89 | 1.5313 | | S1805134 | S1810134 | S1815134 |
| | | 39.00 | 1.5354 | | S1855390 | S1860390 | S1865390 |
| | 1-9/16 | 39.69 | 1.5625 | | S1805136 | S1810136 | S1815136 |
| | | 40.00 | 1.5748 | | S1855400 | S1860400 | S1865400 |
| | 1-19/32 | 40.48 | 1.5938 | | S1805138 | S1810138 | S1815138 |
| | | 41.00 | 1.6142 | | S1855410 | S1860410 | S1865410 |
| | 1-5/8 | 41.28 | 1.6250 | | S1805140 | S1810140 | S1815140 |
| | | 42.00 | 1.6535 | | S1855420 | S1860420 | S1865420 |
| | 1-21/32 | 42.07 | 1.6563 | | S1805142 | S1810142 | S1815142 |
| | 1-11/16 | 42.86 | 1.6875 | | S1805144 | S1810144 | S1815144 |
| | | 43.00 | 1.6929 | | S1855430 | S1860430 | S1865430 |
| | 1-23/32 | 43.66 | 1.7188 | | S1805146 | S1810146 | S1815146 |
| | | 44.00 | 1.7323 | | S1855440 | S1860440 | S1865440 |
| | 1-3/4 | 44.45 | 1.7500 | | S1805148 | S1810148 | S1815148 |
| | | 45.00 | 1.7717 | | S1855450 | S1860450 | S1865450 |
| | 1-25/32 | 45.24 | 1.7813 | | S1805150 | S1810150 | S1815150 |
| | | 46.00 | 1.8110 | | S1855460 | S1860460 | S1865460 |
| | 1-13/16 | 46.04 | 1.8125 | | S1805152 | S1810152 | S1815152 |
| | 1-27/32 | 46.83 | 1.8438 | | S1805154 | S1810154 | S1815154 |
| | | 47.00 | 1.8504 | | S1855470 | S1860470 | S1865470 |
| | 1-7/8 | 47.63 | 1.8750 | | S1805156 | S1810156 | S1815156 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ◎ | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | | | | | ○ | | | | ○ | ○ | ○ | ○ | ○ | | | ◎ | | | |

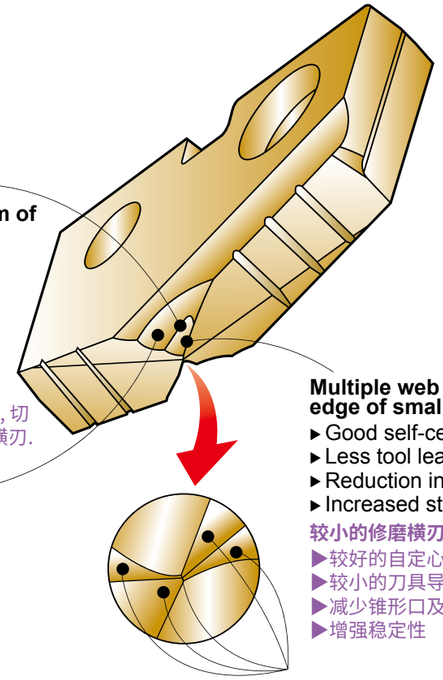


# Special features of SM-Point Spade Drill

**This new "Hybrid Point" combines the strength of the standard point with additional "Web Thinning".**

**This new point increases stability, reduces thrust, improves centering and allows increased speeds and feeds.**

新的 “混合式钻尖” 结合标准钻顶角的特征并增加了 “修磨横刃”
新的钻顶增加了稳定性, 减少了推力, 提高了定心力并且允许更高的加工速度和进给



**Multiple thinning form at the bottom of the large thinning.**

- The optimum thinning for the difference from the cutting speed, the cutting quantity and the cutting load according to the distance from the drill point to the cutting edge.

在宽大的横刃底面有多种横刃方式
▶根据从钻顶到切削刃的距离, 在切削速度, 切削质量和切削负载不同情况下最适宜的横刃.

**Radius back face**

- Wide chip space

弧形的后刀面
▶较宽的排屑槽

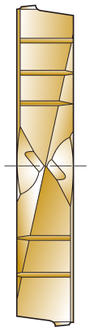
**Multiple web thinning with the cutting edge of small web thinning.**

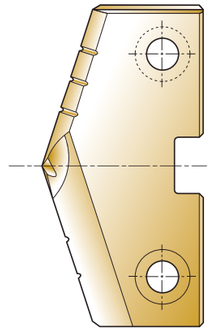
- Good self-centering
- Less tool lead off
- Reduction in bell mouthing, thrust
- Increased stability

较小的修磨横刃的刃口具有多种修磨横刃
▶较好的自定心力
▶较小的刀具导向移动
▶减少锥形口及推力
▶增强稳定性

**Four-facet point / 具有四个面的钻顶角**

- Self-centering / 自定心
- Less thrust force / 较小的推力





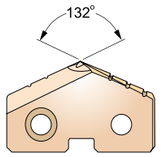
# SPADE DRILLS

SERIES 1

## SM-POINT SPADE DRILL INSERTS - HSS M4
## SM-POINT 铲钻刀片-HSS M4

- For general use in steels and cast irons.
- Improved stability and hole straightness by newly developed thinning design.
- Less thrust force and excellent self-centering.
- Any non-standard size available.

- 用于钢和铸铁的普通用途
- 通过新开发的钻顶设计增强稳定性和孔的垂直性
- 较小的推力和卓越的自定心功能
- 各种非标准尺寸均可进行生产.




切削条件 / cutting conditions : p. A366

Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | INDEXABLE DRILL HOLDER | D245 - 246 | - | - |
| ○ | ER COLLET CHUCK | | D73 - 115 | |

| Series 系列 | Diameter 直径 | | | Thick 厚度 | EDP No. 型号 | | |
|---|---|---|---|---|---|---|---|
| Min. to Max. mm (inch) | Inch (inch) | Metric (mm) | Decimal (inch) | Metric (mm, inch) | HSS M4 TiN | HSS M4 TiCN | HSS M4 TiAlN |
| 1 Ø17.53 (.690) to Ø24.38 (.960) | 45/64 | 17.86 | .7031 | 4.0 (5/32) | SM405045 | SM410045 | SM415045 |
| | | 18.00 | .7087 | | SM455180 | SM460180 | SM465180 |
| | 23/32 | 18.26 | .7188 | | SM405046 | SM410046 | SM415046 |
| | | 18.50 | .7283 | | SM455185 | SM460185 | SM465185 |
| | 47/64 | 18.65 | .7344 | | SM405047 | SM410047 | SM415047 |
| | | 19.00 | .7480 | | SM455190 | SM460190 | SM465190 |
| | 3/4 | 19.05 | .7500 | | SM405048 | SM410048 | SM415048 |
| | 49/64 | 19.45 | .7656 | | SM405049 | SM410049 | SM415049 |
| | | 19.50 | .7677 | | SM455195 | SM460195 | SM465195 |
| | 25/32 | 19.84 | .7812 | | SM405050 | SM410050 | SM415050 |
| | | 20.00 | .7874 | | SM455200 | SM460200 | SM465200 |
| | 51/64 | 20.24 | .7969 | | SM405051 | SM410051 | SM415051 |
| | | 20.50 | .8071 | | SM455205 | SM460205 | SM465205 |
| | 13/16 | 20.64 | .8125 | | SM405052 | SM410052 | SM415052 |
| | | 21.00 | .8268 | | SM455210 | SM460210 | SM465210 |
| | 27/32 | 21.43 | .8438 | | SM405054 | SM410054 | SM415054 |
| | 55/64 | 21.83 | .8594 | | SM405055 | SM410055 | SM415055 |
| | | 22.00 | .8661 | | SM455220 | SM460220 | SM465220 |
| | 7/8 | 22.23 | .8750 | | SM405056 | SM410056 | SM415056 |
| | 57/64 | 22.62 | .8906 | | SM405057 | SM410057 | SM415057 |
| | | 23.00 | .9055 | | SM455230 | SM460230 | SM465230 |
| | 29/32 | 23.02 | .9062 | | SM405058 | SM410058 | SM415058 |
| | 59/64 | 23.42 | .9219 | | SM405059 | SM410059 | SM415059 |
| | 15/16 | 23.81 | .9375 | | SM405060 | SM410060 | SM415060 |
| | | 24.00 | .9449 | | SM455240 | SM460240 | SM465240 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ○ | ○ | ○ | ○ | | ○ | ○ | | | | | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ○ | ◎ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ◎ | ◎ | | | | | ◎ | | | | | | | | | | | | | | |



CARBIDE
HSS
i-ONE DRILLS
i-DREAM DRILLS
DREAM DRILLS -PRO
DREAM DRILLS -GENERAL
DREAM DRILLS -SOFT
DREAM DRILLS -HIGH FEED
DREAM DRILLS -FLAT BOTTOM
DREAM DRILLS -INOX
DREAM DRILLS -ALU
DREAM DRILLS -CFRP
DREAM DRILLS -MQL
DREAM DRILLS for HIGH HARDENED STEELS
GENERAL CARBIDE DRILLS
MULTI-1 DRILLS
GOLD-P DRILLS
SUPER-GP DRILLS
WORM PATTERN DRILLS
STRAIGHT SHANK DRILLS
TAPER SHANK DRILLS
NC-SPOTTING DRILLS
CENTER DRILLS
SPADE DRILLS
REAMERS
COUNTER SINKS
COUNTER BORES
TECHNICAL DATA

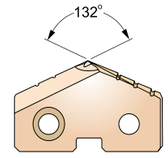
# SPADE DRILLS

SERIES 2

## SM-POINT SPADE DRILL INSERTS - HSS M4
## SM-POINT 铲钻刀片-HSS M4

- For general use in steels and cast irons.
- Improved stability and hole straightness by newly developed thinning design.
- Less thrust force and excellent self-centering.
- Any non-standard size available.

- 用于钢和铸铁的普通用途
- 通过新开发的钻顶设计增强稳定性和孔的垂直性
- 较小的推力和卓越的自定心功能
- 各种非标准尺寸均可进行生产.




切削条件 / cutting conditions : p. A366

Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | INDEXABLE DRILL HOLDER | D245 - 246 | - | - |
| ○ | ER COLLET CHUCK | | D73 - 115 | |

| Series 系列 | Diameter 直径 | | | Thick 厚度 | EDP No. 型号 | | |
|---|---|---|---|---|---|---|---|
| Min. to Max. mm (inch) | Inch (inch) | Metric (mm) | Decimal (inch) | Metric (mm, inch) | HSS M4 TiN | HSS M4 TiCN | HSS M4 TiAlN |
| 2 Ø24.41 (.961) to Ø35.05 (1.380) | 31/32 | 24.61 | .9688 | 4.8 (3/16) | SM405062 | SM410062 | SM415062 |
| | 63/64 | 25.00 | .9843 | | SM455250 | SM460250 | SM465250 |
| | 1 | 25.40 | 1.0000 | | SM405100 | SM410100 | SM415100 |
| | 1-1/64 | 25.80 | 1.0156 | | SM405101 | SM410101 | SM415101 |
| | | 26.00 | 1.0236 | | SM455260 | SM460260 | SM465260 |
| | 1-1/32 | 26.19 | 1.0312 | | SM405102 | SM410102 | SM415102 |
| | 1-3/64 | 26.59 | 1.0469 | | SM405103 | SM410103 | SM415103 |
| | 1-1/16 | 26.99 | 1.0625 | | SM405104 | SM410104 | SM415104 |
| | | 27.00 | 1.0630 | | SM455270 | SM460270 | SM465270 |
| | 1-3/32 | 27.78 | 1.0938 | | SM405106 | SM410106 | SM415106 |
| | | 28.00 | 1.1024 | | SM455280 | SM460280 | SM465280 |
| | 1-7/64 | 28.18 | 1.1094 | | SM405107 | SM410107 | SM415107 |
| | 1-1/8 | 28.58 | 1.1250 | | SM405108 | SM410108 | SM415108 |
| | | 29.00 | 1.1417 | | SM455290 | SM460290 | SM465290 |
| | 1-5/32 | 29.37 | 1.1562 | | SM405110 | SM410110 | SM415110 |
| | | 30.00 | 1.1811 | | SM455300 | SM460300 | SM465300 |
| | 1-3/16 | 30.16 | 1.1875 | | SM405112 | SM410112 | SM415112 |
| | 1-7/32 | 30.96 | 1.2188 | | SM405114 | SM410114 | SM415114 |
| | | 31.00 | 1.2205 | | SM455310 | SM460310 | SM465310 |
| | 1-1/4 | 31.75 | 1.2500 | | SM405116 | SM410116 | SM415116 |
| | | 32.00 | 1.2598 | | SM455320 | SM460320 | SM465320 |
| | 1-9/32 | 32.54 | 1.2812 | | SM405118 | SM410118 | SM415118 |
| | | 33.00 | 1.2992 | | SM455330 | SM460330 | SM465330 |
| | 1-5/16 | 33.34 | 1.3125 | | SM405120 | SM410120 | SM415120 |
| | | 34.00 | 1.3386 | | SM455340 | SM460340 | SM465340 |
| | 1-11/32 | 34.13 | 1.3438 | | SM405122 | SM410122 | SM415122 |
| | 1-3/8 | 34.93 | 1.3750 | | SM405124 | SM410124 | SM415124 |
| | | 35.00 | 1.3780 | | SM455350 | SM460350 | SM465350 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ○ | ○ | ○ | ○ | | ○ | ○ | | | | | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ○ | ◎ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ◎ | ◎ | | | | | ◎ | | | | | | | | | | | | | | |

# SPADE DRILLS

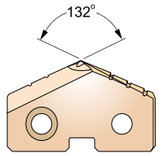
SERIES 3

## SM-POINT SPADE DRILL INSERTS - HSS M4

## SM-POINT 铲钻刀片-HSS M4

- For general use in steels and cast irons.
- Improved stability and hole straightness by newly developed thinning design.
- Less thrust force and excellent self-centering.
- Any non-standard size available.

- 用于钢和铸铁的普通用途
- 通过新开发的钻顶设计增强稳定性和孔的垂直性
- 较小的推力和卓越的自定心功能
- 各种非标准尺寸均可进行生产.




切削条件 / cutting conditions : p. A366

Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | INDEXABLE DRILL HOLDER | D245 - 246 | - | - |
| ○ | ER COLLET CHUCK | | D73 - 115 | |

| Series 系列 | Diameter 直径 | | | Thick 厚度 | EDP No. 型号 | | |
|---|---|---|---|---|---|---|---|
| Min. to Max. mm (inch) | Inch (inch) | Metric (mm) | Decimal (inch) | Metric (mm, inch) | HSS M4 TiN | HSS M4 TiCN | HSS M4 TiAlN |
| 3 Ø34.37 (1.353) to Ø47.80 (1.882) | 1-13/32 | 35.72 | 1.4062 | 6.4 (1/4) | SM405126 | SM410126 | SM415126 |
| | | 36.00 | 1.4173 | | SM455360 | SM460360 | SM465360 |
| | 1-7/16 | 36.51 | 1.4375 | | SM405128 | SM410128 | SM415128 |
| | | 37.00 | 1.4567 | | SM455370 | SM460370 | SM465370 |
| | 1-15/32 | 37.31 | 1.4688 | | SM405130 | SM410130 | SM415130 |
| | | 38.00 | 1.4961 | | SM455380 | SM460380 | SM465380 |
| | 1-1/2 | 38.10 | 1.5000 | | SM405132 | SM410132 | SM415132 |
| | 1-17/32 | 38.89 | 1.5312 | | SM405134 | SM410134 | SM415134 |
| | | 39.00 | 1.5354 | | SM455390 | SM460390 | SM465390 |
| | 1-9/16 | 39.69 | 1.5625 | | SM405136 | SM410136 | SM415136 |
| | | 40.00 | 1.5748 | | SM455400 | SM460400 | SM465400 |
| | 1-19/32 | 40.48 | 1.5938 | | SM405138 | SM410138 | SM415138 |
| | | 41.00 | 1.6142 | | SM455410 | SM460410 | SM465410 |
| | 1-5/8 | 41.28 | 1.6250 | | SM405140 | SM410140 | SM415140 |
| | | 42.00 | 1.6535 | | SM455420 | SM460420 | SM465420 |
| | 1-21/32 | 42.07 | 1.6562 | | SM405142 | SM410142 | SM415142 |
| | 1-11/16 | 42.86 | 1.6875 | | SM405144 | SM410144 | SM415144 |
| | | 43.00 | 1.6929 | | SM455430 | SM460430 | SM465430 |
| | 1-23/32 | 43.66 | 1.7188 | | SM405146 | SM410146 | SM415146 |
| | | 44.00 | 1.7323 | | SM455440 | SM460440 | SM465440 |
| | 1-3/4 | 44.45 | 1.7500 | | SM405148 | SM410148 | SM415148 |
| | | 45.00 | 1.7717 | | SM455450 | SM460450 | SM465450 |
| | 1-25/32 | 45.24 | 1.7812 | | SM405150 | SM410150 | SM415150 |
| | | 46.00 | 1.8110 | | SM455460 | SM460460 | SM465460 |
| | 1-13/16 | 46.04 | 1.8125 | | SM405152 | SM410152 | SM415152 |
| | 1-27/32 | 46.83 | 1.8438 | | SM405154 | SM410154 | SM415154 |
| | | 47.00 | 1.8504 | | SM455470 | SM460470 | SM465470 |
| | 1-7/8 | 47.63 | 1.8750 | | SM405156 | SM410156 | SM415156 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ○ | ○ | ○ | ○ | | ○ | ○ | | | | | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ○ | ◎ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ◎ | ◎ | | | | | ◎ | | | | | | | | | | | | | | |



# SPADE DRILLS

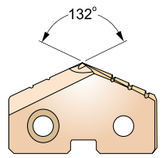
SERIES Y, Z, 0

## SM-POINT SPADE DRILL INSERTS - SUPER HSS T15

## SM-POINT 铲钻刀片-SUPER HSS T15

- For use in high nickel alloys and materials over 280 Brinell.
- Improved stability and hole straightness by newly developed thinning design.
- Less thrust force and excellent self-centering.
- Any non-standard size available.

- 用于高镍合金和硬度超过280布氏的材质
- 通过新开发的钻顶设计增强稳定性和孔的垂直性
- 较小的推力和卓越的自定心功能
- 各种非标准尺寸均可进行生产.




切削条件 / cutting conditions : p. A365

Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | INDEXABLE DRILL HOLDER | D245 - 246 | - | - |
| ○ | ER COLLET CHUCK | | D73 - 115 | |

| Series 系列 | Diameter 直径 | | | Thick 厚度 | EDP No. 型号 | | |
|---|---|---|---|---|---|---|---|
| Min. to Max. mm (inch) | Inch (inch) | Metric (mm) | Decimal (inch) | Metric (mm, inch) | SUPER HSS T15 TiN | SUPER HSS T15 TiCN | SUPER HSS T15 TiAlN |
| Y Ø9.50 (.374) to Ø11.07 (.436) | | 9.50 | .3740 | 2.4 (3/32) | SM155095 | SM160095 | SM165095 |
| | 3/8 | 9.53 | .3750 | | SM105024 | SM110024 | SM115024 |
| | | 9.80 | .3858 | | SM155098 | SM160098 | SM165098 |
| | 25/64 | 9.92 | .3906 | | SM105025 | SM110025 | SM115025 |
| | | 10.00 | .3937 | | SM155100 | SM160100 | SM165100 |
| | | 10.20 | .4016 | | SM155102 | SM160102 | SM165102 |
| | 13/32 | 10.32 | .4062 | | SM105026 | SM110026 | SM115026 |
| | | 10.50 | .4134 | | SM155105 | SM160105 | SM165105 |
| | 27/64 | 10.72 | .4219 | | SM105027 | SM110027 | SM115027 |
| | | 10.80 | .4252 | | SM155108 | SM160108 | SM165108 |
| | | 11.00 | .4331 | | SM155110 | SM160110 | SM165110 |
| Z Ø11.11(.437) to Ø12.95(.510) | 7/16 | 11.11 | .4375 | 2.4 (3/32) | SM105028 | SM110028 | SM115028 |
| | | 11.50 | .4528 | | SM155115 | SM160115 | SM165115 |
| | 29/64 | 11.51 | .4531 | | SM105029 | SM110029 | SM115029 |
| | 15/32 | 11.91 | .4688 | | SM105030 | SM110030 | SM115030 |
| | | 12.00 | .4724 | | SM155120 | SM160120 | SM165120 |
| | 31/64 | 12.30 | .4844 | | SM105031 | SM110031 | SM115031 |
| | | 12.50 | .4921 | | SM155125 | SM160125 | SM165125 |
| | 1/2 | 12.70 | .5000 | | SM105032 | SM110032 | SM115032 |
| 0 Ø12.98 (.511) to Ø17.65 (.695) | | 13.00 | .5118 | 3.2 (1/8) | SM155130 | SM160130 | SM165130 |
| | 33/64 | 13.10 | .5156 | | SM105033 | SM110033 | SM115033 |
| | 17/32 | 13.49 | .5312 | | SM105034 | SM110034 | SM115034 |
| | | 13.50 | .5315 | | SM155135 | SM160135 | SM165135 |
| | 35/64 | 13.89 | .5469 | | SM105035 | SM110035 | SM115035 |
| | | 14.00 | .5512 | | SM155140 | SM160140 | SM165140 |
| | 9/16 | 14.29 | .5625 | | SM105036 | SM110036 | SM115036 |
| | | 14.50 | .5709 | | SM155145 | SM160145 | SM165145 |
| | 37/64 | 14.68 | .5781 | | SM105037 | SM110037 | SM115037 |
| | | 15.00 | .5906 | | SM155150 | SM160150 | SM165150 |
| | 19/32 | 15.08 | .5938 | | SM105038 | SM110038 | SM115038 |
| | 39/64 | 15.48 | .6094 | | SM105039 | SM110039 | SM115039 |
| | | 15.50 | .6102 | | SM155155 | SM160155 | SM165155 |
| | 5/8 | 15.88 | .6250 | | SM105040 | SM110040 | SM115040 |
| | | 16.00 | .6299 | | SM155160 | SM160160 | SM165160 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ◎ | | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ◎ | ○ | ◎ | ○ | ◎ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | | | | | ○ | | | | ◎ | ○ | ○ | ○ | ○ | | | ○ | | | |

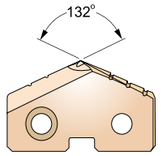
# SPADE DRILLS

SERIES 0, 1

## SM-POINT SPADE DRILL INSERTS - SUPER HSS T15
## SM-POINT 铲钻刀片-SUPER HSS T15

- ▶ For use in high nickel alloys and materials over 280 Brinell.
- ▶ Improved stability and hole straightness by newly developed thinning design.
- ▶ Less thrust force and excellent self-centering.
- ▶ Any non-standard size available.

- ▶ 用于高镍合金和硬度超过280布氏的材质
- ▶ 通过新开发的钻顶设计增强稳定性和孔的垂直性
- ▶ 较小的推力和卓越的自定心功能
- ▶ 各种非标准尺寸均可进行生产.




切削条件 / cutting conditions : p. A365

Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | INDEXABLE DRILL HOLDER | D245 - 246 | - | - |
| ○ | ER COLLET CHUCK | | | D73 - 115 |

| Series 系列 | Diameter 直径 | | | Thick 厚度 | EDP No. 型号 | | |
|---|---|---|---|---|---|---|---|
| Min. to Max. mm (inch) | Inch (inch) | Metric (mm) | Decimal (inch) | Metric (mm, inch) | SUPER HSS T15 TiN | SUPER HSS T15 TiCN | SUPER HSS T15 TiAlN |
| **0** Ø12.98(.511) to Ø17.65(.695) | 41/64 | 16.27 | .6406 | 3.2 (1/8) | SM105041 | SM110041 | SM115041 |
| | | 16.50 | .6496 | | SM155165 | SM160165 | SM165165 |
| | 21/32 | 16.67 | .6562 | | SM105042 | SM110042 | SM115042 |
| | | 17.00 | .6693 | | SM155170 | SM160170 | SM165170 |
| | 43/64 | 17.07 | .6719 | | SM105043 | SM110043 | SM115043 |
| | 11/16 | 17.46 | .6875 | | SM105044 | SM110044 | SM115044 |
| | | 17.50 | .6890 | | SM155175 | SM160175 | SM165175 |
| **1** Ø17.53 (.690) to Ø24.38 (.960) | 45/64 | 17.86 | .7031 | 4.0 (5/32) | SM105045 | SM110045 | SM115045 |
| | | 18.00 | .7087 | | SM155180 | SM160180 | SM165180 |
| | 23/32 | 18.26 | .7188 | | SM105046 | SM110046 | SM115046 |
| | | 18.50 | .7283 | | SM155185 | SM160185 | SM165185 |
| | 47/64 | 18.65 | .7344 | | SM105047 | SM110047 | SM115047 |
| | | 19.00 | .7480 | | SM155190 | SM160190 | SM165190 |
| | 3/4 | 19.05 | .7500 | | SM105048 | SM110048 | SM115048 |
| | 49/64 | 19.45 | .7656 | | SM105049 | SM110049 | SM115049 |
| | | 19.50 | .7677 | | SM155195 | SM160195 | SM165195 |
| | 25/32 | 19.84 | .7812 | | SM105050 | SM110050 | SM115050 |
| | | 20.00 | .7874 | | SM155200 | SM160200 | SM165200 |
| | 51/64 | 20.24 | .7969 | | SM105051 | SM110051 | SM115051 |
| | | 20.50 | .8071 | | SM155205 | SM160205 | SM165205 |
| | 13/16 | 20.64 | .8125 | | SM105052 | SM110052 | SM115052 |
| | | 21.00 | .8268 | | SM155210 | SM160210 | SM165210 |
| | 27/32 | 21.43 | .8438 | | SM105054 | SM110054 | SM115054 |
| | 55/64 | 21.83 | .8594 | | SM105055 | SM110055 | SM115055 |
| | | 22.00 | .8661 | | SM155220 | SM160220 | SM165220 |
| | 7/8 | 22.23 | .8750 | | SM105056 | SM110056 | SM115056 |
| | 57/64 | 22.62 | .8906 | | SM105057 | SM110057 | SM115057 |
| | | 23.00 | .9055 | | SM155230 | SM160230 | SM165230 |
| | 29/32 | 23.02 | .9062 | | SM105058 | SM110058 | SM115058 |
| | 59/64 | 23.42 | .9219 | | SM105059 | SM110059 | SM115059 |
| | 15/16 | 23.81 | .9375 | | SM105060 | SM110060 | SM115060 |
| | | 24.00 | .9449 | | SM155240 | SM160240 | SM165240 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ◎ | | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ◎ | ○ | ◎ | ○ | ◎ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | | | | | ○ | | | | ◎ | ○ | ○ | ○ | ○ | | | ○ | | | |



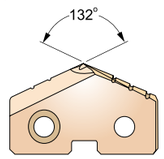
SPADE DRILLS

SERIES 2

SM-POINT SPADE DRILL INSERTS - SUPER HSS T15
SM-POINT 铲钻刀片-SUPER HSS T15

- ▶ For use in high nickel alloys and materials over 280 Brinell.
- ▶ Improved stability and hole straightness by newly developed thinning design.
- ▶ Less thrust force and excellent self-centering.
- ▶ Any non-standard size available.

- ▶ 用于高镍合金和硬度超过280布氏的材质
- ▶ 通过新开发的钻顶设计增强稳定性和孔的垂直性
- ▶ 较小的推力和卓越的自定心功能
- ▶ 各种非标准尺寸均可进行生产.




切削条件 / cutting conditions : p. A365

Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | INDEXABLE DRILL HOLDER | D245 - 246 | - | - |
| ○ | ER COLLET CHUCK | | | D73 - 115 |

| Series 系列 | Diameter 直径 | | | Thick 厚度 | EDP No. 型号 | | |
|---|---|---|---|---|---|---|---|
| Min. to Max. mm (inch) | Inch (inch) | Metric (mm) | Decimal (inch) | Metric (mm, inch) | SUPER HSS T15 TiN | SUPER HSS T15 TiCN | SUPER HSS T15 TiAlN |
| **2** Ø24.41 (.961) to Ø35.05 (1.380) | 31/32 | 24.61 | .9688 | 4.8 (3/16) | SM105062 | SM110062 | SM115062 |
| | 63/64 | 25.00 | .9843 | | SM155250 | SM160250 | SM165250 |
| | 1 | 25.40 | 1.0000 | | SM105100 | SM110100 | SM115100 |
| | 1-1/64 | 25.80 | 1.0156 | | SM105101 | SM110101 | SM115101 |
| | | 26.00 | 1.0236 | | SM155260 | SM160260 | SM165260 |
| | 1-1/32 | 26.19 | 1.0312 | | SM105102 | SM110102 | SM115102 |
| | 1-3/64 | 26.59 | 1.0469 | | SM105103 | SM110103 | SM115103 |
| | 1-1/16 | 26.99 | 1.0625 | | SM105104 | SM110104 | SM115104 |
| | | 27.00 | 1.0630 | | SM155270 | SM160270 | SM165270 |
| | 1-3/32 | 27.78 | 1.0938 | | SM105106 | SM110106 | SM115106 |
| | | 28.00 | 1.1024 | | SM155280 | SM160280 | SM165280 |
| | 1-7/64 | 28.18 | 1.1094 | | SM105107 | SM110107 | SM115107 |
| | 1-1/8 | 28.58 | 1.1250 | | SM105108 | SM110108 | SM115108 |
| | | 29.00 | 1.1417 | | SM155290 | SM160290 | SM165290 |
| | 1-5/32 | 29.37 | 1.1562 | | SM105110 | SM110110 | SM115110 |
| | | 30.00 | 1.1811 | | SM155300 | SM160300 | SM165300 |
| | 1-3/16 | 30.16 | 1.1875 | | SM105112 | SM110112 | SM115112 |
| | 1-7/32 | 30.96 | 1.2188 | | SM105114 | SM110114 | SM115114 |
| | | 31.00 | 1.2205 | | SM155310 | SM160310 | SM165310 |
| | 1-1/4 | 31.75 | 1.2500 | | SM105116 | SM110116 | SM115116 |
| | | 32.00 | 1.2598 | | SM155320 | SM160320 | SM165320 |
| | 1-9/32 | 32.54 | 1.2812 | | SM105118 | SM110118 | SM115118 |
| | | 33.00 | 1.2992 | | SM155330 | SM160330 | SM165330 |
| | 1-5/16 | 33.34 | 1.3125 | | SM105120 | SM110120 | SM115120 |
| | | 34.00 | 1.3386 | | SM155340 | SM160340 | SM165340 |
| | 1-11/32 | 34.13 | 1.3438 | | SM105122 | SM110122 | SM115122 |
| | 1-3/8 | 34.93 | 1.3750 | | SM105124 | SM110124 | SM115124 |
| | | 35.00 | 1.3780 | | SM155350 | SM160350 | SM165350 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ◎ | | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ◎ | ○ | ◎ | ○ | ◎ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | | | | | ○ | | | | ◎ | ○ | ○ | ○ | ○ | | | ○ | | | |

# SPADE DRILLS

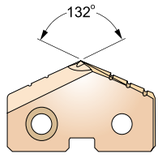
SERIES 3

## SM-POINT SPADE DRILL INSERTS - SUPER HSS T15

## SM-POINT 铲钻刀片-SUPER HSS T15

- For use in high nickel alloys and materials over 280 Brinell.
- Improved stability and hole straightness by newly developed thinning design.
- Less thrust force and excellent self-centering.
- Any non-standard size available.

- 用于高镍合金和硬度超过280布氏的材质
- 通过新开发的钻顶设计增强稳定性和孔的垂直性
- 较小的推力和卓越的自定心功能
- 各种非标准尺寸均可进行生产.




切削条件 / cutting conditions : p. A365

Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | INDEXABLE DRILL HOLDER | D245 - 246 | - | - |
| ○ | ER COLLET CHUCK | | | D73 - 115 |

| Series 系列 | Diameter 直径 | | | Thick 厚度 | EDP No. 型号 | | |
|---|---|---|---|---|---|---|---|
| Min. to Max. mm (inch) | Inch (inch) | Metric (mm) | Decimal (inch) | Metric (mm, inch) | SUPER HSS T15 TiN | SUPER HSS T15 TiCN | SUPER HSS T15 TiAlN |
| 3<br>Ø34.37 (1.353) to Ø47.80 (1.882) | 1-13/32 | 35.72 | 1.4062 | 6.4 (1/4) | SM105126 | SM110126 | SM115126 |
| | | 36.00 | 1.4173 | | SM155360 | SM160360 | SM165360 |
| | 1-7/16 | 36.51 | 1.4375 | | SM105128 | SM110128 | SM115128 |
| | | 37.00 | 1.4567 | | SM155370 | SM160370 | SM165370 |
| | 1-15/32 | 37.31 | 1.4688 | | SM105130 | SM110130 | SM115130 |
| | | 38.00 | 1.4961 | | SM155380 | SM160380 | SM165380 |
| | 1-1/2 | 38.10 | 1.5000 | | SM105132 | SM110132 | SM115132 |
| | 1-17/32 | 38.89 | 1.5312 | | SM105134 | SM110134 | SM115134 |
| | | 39.00 | 1.5354 | | SM155390 | SM160390 | SM165390 |
| | 1-9/16 | 39.69 | 1.5625 | | SM105136 | SM110136 | SM115136 |
| | | 40.00 | 1.5748 | | SM155400 | SM160400 | SM165400 |
| | 1-19/32 | 40.48 | 1.5938 | | SM105138 | SM110138 | SM115138 |
| | | 41.00 | 1.6142 | | SM155410 | SM160410 | SM165410 |
| | 1-5/8 | 41.28 | 1.6250 | | SM105140 | SM110140 | SM115140 |
| | | 42.00 | 1.6535 | | SM155420 | SM160420 | SM165420 |
| | 1-21/32 | 42.07 | 1.6562 | | SM105142 | SM110142 | SM115142 |
| | 1-11/16 | 42.86 | 1.6875 | | SM105144 | SM110144 | SM115144 |
| | | 43.00 | 1.6929 | | SM155430 | SM160430 | SM165430 |
| | 1-23/32 | 43.66 | 1.7188 | | SM105146 | SM110146 | SM115146 |
| | | 44.00 | 1.7323 | | SM155440 | SM160440 | SM165440 |
| | 1-3/4 | 44.45 | 1.7500 | | SM105148 | SM110148 | SM115148 |
| | | 45.00 | 1.7717 | | SM155450 | SM160450 | SM165450 |
| | 1-25/32 | 45.24 | 1.7812 | | SM105150 | SM110150 | SM115150 |
| | | 46.00 | 1.8110 | | SM155460 | SM160460 | SM165460 |
| | 1-13/16 | 46.04 | 1.8125 | | SM105152 | SM110152 | SM115152 |
| | 1-27/32 | 46.83 | 1.8438 | | SM105154 | SM110154 | SM115154 |
| | | 47.00 | 1.8504 | | SM155470 | SM160470 | SM165470 |
| | 1-7/8 | 47.63 | 1.8750 | | SM105156 | SM110156 | SM115156 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ◎ | | ◎ | ◎ | ○ | ○ | ○ | ◎ | ○ | ○ | ○ | ○ | ◎ | ○ | ◎ | ○ | ◎ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | | | | | ○ | | | | ◎ | ○ | ○ | ○ | ○ | | | ○ | | | |





# SPADE DRILLS

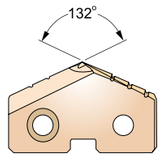
SERIES Y, Z, 0

## SM-POINT SPADE DRILL INSERTS - PREMIUM HSS M48

## SM-POINT 铲钻刀片-PREMIUM HSS M48

- For use in high temperature alloys and materials with 350~500 Brinell.
- Improved stability and hole straightness by newly developed thinning design.
- Less thrust force and excellent self-centering.
- Any non-standard size available.

- 用于高温合金和硬度在350-500布氏之间的材质
- 通过新开发的钻顶设计增强稳定性和孔的垂直性
- 较小的推力和卓越的自定心功能
- 各种非标准尺寸均可进行生产.




切削条件 / cutting conditions : p. A367

Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | INDEXABLE DRILL HOLDER | D245 - 246 | - | - |
| ○ | ER COLLET CHUCK | | | D73 - 115 |

| Series 系列 | Diameter 直径 | | | Thick 厚度 | EDP No. 型号 | | |
|---|---|---|---|---|---|---|---|
| Min. to Max. mm (inch) | Inch (inch) | Metric (mm) | Decimal (inch) | Metric (mm, inch) | PREMIUM HSS M48 TiN | PREMIUM HSS M48 TiCN | PREMIUM HSS M48 TiAlN |
| Y<br>Ø9.50 (.374) to Ø11.07 (.436) | | 9.50 | .3740 | 2.4 (3/32) | SM555095 | SM560095 | SM565095 |
| | 3/8 | 9.53 | .3750 | | SM505024 | SM510024 | SM515024 |
| | | 9.80 | .3858 | | SM555098 | SM560098 | SM565098 |
| | 25/64 | 9.92 | .3906 | | SM505025 | SM510025 | SM515025 |
| | | 10.00 | .3937 | | SM555100 | SM560100 | SM565100 |
| | | 10.20 | .4016 | | SM555102 | SM560102 | SM565102 |
| | 13/32 | 10.32 | .4062 | | SM505026 | SM510026 | SM515026 |
| | | 10.50 | .4134 | | SM555105 | SM560105 | SM565105 |
| | 27/64 | 10.72 | .4219 | | SM505027 | SM510027 | SM515027 |
| | | 10.80 | .4252 | | SM555108 | SM560108 | SM565108 |
| | | 11.00 | .4331 | | SM555110 | SM560110 | SM565110 |
| Z<br>Ø11.11(.437) to Ø12.95(.510) | 7/16 | 11.11 | .4375 | 2.4 (3/32) | SM505028 | SM510028 | SM515028 |
| | | 11.50 | .4528 | | SM555115 | SM560115 | SM565115 |
| | 29/64 | 11.51 | .4531 | | SM505029 | SM510029 | SM515029 |
| | 15/32 | 11.91 | .4688 | | SM505030 | SM510030 | SM515030 |
| | | 12.00 | .4724 | | SM555120 | SM560120 | SM565120 |
| | 31/64 | 12.30 | .4844 | | SM505031 | SM510031 | SM515031 |
| | | 12.50 | .4921 | | SM555125 | SM560125 | SM565125 |
| | 1/2 | 12.70 | .5000 | | SM505032 | SM510032 | SM515032 |
| 0<br>Ø12.98 (.511) to Ø17.65 (.695) | | 13.00 | .5118 | 3.2 (1/8) | SM555130 | SM560130 | SM565130 |
| | 33/64 | 13.10 | .5156 | | SM505033 | SM510033 | SM515033 |
| | 17/32 | 13.49 | .5312 | | SM505034 | SM510034 | SM515034 |
| | | 13.50 | .5315 | | SM555135 | SM560135 | SM565135 |
| | 35/64 | 13.89 | .5469 | | SM505035 | SM510035 | SM515035 |
| | | 14.00 | .5512 | | SM555140 | SM560140 | SM565140 |
| | 9/16 | 14.29 | .5625 | | SM505036 | SM510036 | SM515036 |
| | | 14.50 | .5709 | | SM555145 | SM560145 | SM565145 |
| | 37/64 | 14.68 | .5781 | | SM505037 | SM510037 | SM515037 |
| | | 15.00 | .5906 | | SM555150 | SM560150 | SM565150 |
| | 19/32 | 15.08 | .5938 | | SM505038 | SM510038 | SM515038 |
| | 39/64 | 15.48 | .6094 | | SM505039 | SM510039 | SM515039 |
| | | 15.50 | .6102 | | SM555155 | SM560155 | SM565155 |
| | 5/8 | 15.88 | .6250 | | SM505040 | SM510040 | SM515040 |
| | | 16.00 | .6299 | | SM555160 | SM560160 | SM565160 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ◎ | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | | | | ○ | ◎ | ◎ | ◎ | ○ | ◎ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | | | | | ○ | | | | ◎ | ◎ | ◎ | ◎ | ◎ | | | ◎ | | | |

# SPADE DRILLS

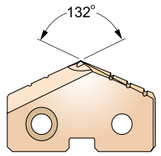
SERIES 0, 1

## SM-POINT SPADE DRILL INSERTS - PREMIUM HSS M48

## SM-POINT 铲钻刀片-PREMIUM HSS M48

- ▶ For use in high temperature alloys and materials with 350~500 Brinell.
- ▶ Improved stability and hole straightness by newly developed thinning design.
- ▶ Less thrust force and excellent self-centering.
- ▶ Any non-standard size available.

- ▶ 用于高温合金和硬度在350-500布氏之间的材质
- ▶ 通过新开发的钻顶设计增强稳定性和孔的垂直性
- ▶ 较小的推力和卓越的自定心功能
- ▶ 各种非标准尺寸均可进行生产.




切削条件 / cutting conditions : p. A367

Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | INDEXABLE DRILL HOLDER | D245 - 246 | - | - |
| ◎ | ER COLLET CHUCK | | | D73 - 115 |

| Series 系列 | Diameter 直径 | | | Thick 厚度 | EDP No. 型号 | | |
|---|---|---|---|---|---|---|---|
| Min. to Max. mm (inch) | Inch (inch) | Metric (mm) | Decimal (inch) | Metric (mm, inch) | PREMIUM HSS M48 TiN | PREMIUM HSS M48 TiCN | PREMIUM HSS M48 TiAlN |
| **0** Ø12.98(.511) to Ø17.65(.695) | 41/64 | 16.27 | .6406 | 3.2 (1/8) | SM505041 | SM510041 | SM515041 |
| | | 16.50 | .6496 | | SM555165 | SM560165 | SM565165 |
| | 21/32 | 16.67 | .6562 | | SM505042 | SM510042 | SM515042 |
| | | 17.00 | .6693 | | SM555170 | SM560170 | SM565170 |
| | 43/64 | 17.07 | .6719 | | SM505043 | SM510043 | SM515043 |
| | 11/16 | 17.46 | .6875 | | SM505044 | SM510044 | SM515044 |
| | | 17.50 | .6890 | | SM555175 | SM560175 | SM565175 |
| **1** Ø17.53 (.690) to Ø24.38 (.960) | 45/64 | 17.86 | .7031 | 4.0 (5/32) | SM505045 | SM510045 | SM515045 |
| | | 18.00 | .7087 | | SM555180 | SM560180 | SM565180 |
| | 23/32 | 18.26 | .7188 | | SM505046 | SM510046 | SM515046 |
| | | 18.50 | .7283 | | SM555185 | SM560185 | SM565185 |
| | 47/64 | 18.65 | .7344 | | SM505047 | SM510047 | SM515047 |
| | | 19.00 | .7480 | | SM555190 | SM560190 | SM565190 |
| | 3/4 | 19.05 | .7500 | | SM505048 | SM510048 | SM515048 |
| | 49/64 | 19.45 | .7656 | | SM505049 | SM510049 | SM515049 |
| | | 19.50 | .7677 | | SM555195 | SM560195 | SM565195 |
| | 25/32 | 19.84 | .7812 | | SM505050 | SM510050 | SM515050 |
| | | 20.00 | .7874 | | SM555200 | SM560200 | SM565200 |
| | 51/64 | 20.24 | .7969 | | SM505051 | SM510051 | SM515051 |
| | | 20.50 | .8071 | | SM555205 | SM560205 | SM565205 |
| | 13/16 | 20.64 | .8125 | | SM505052 | SM510052 | SM515052 |
| | | 21.00 | .8268 | | SM555210 | SM560210 | SM565210 |
| | 27/32 | 21.43 | .8438 | | SM505054 | SM510054 | SM515054 |
| | 55/64 | 21.83 | .8594 | | SM505055 | SM510055 | SM515055 |
| | | 22.00 | .8661 | | SM555220 | SM560220 | SM565220 |
| | 7/8 | 22.23 | .8750 | | SM505056 | SM510056 | SM515056 |
| | 57/64 | 22.62 | .8906 | | SM505057 | SM510057 | SM515057 |
| | | 23.00 | .9055 | | SM555230 | SM560230 | SM565230 |
| | 29/32 | 23.02 | .9062 | | SM505058 | SM510058 | SM515058 |
| | 59/64 | 23.42 | .9219 | | SM505059 | SM510059 | SM515059 |
| | 15/16 | 23.81 | .9375 | | SM505060 | SM510060 | SM515060 |
| | | 24.00 | .9449 | | SM555240 | SM560240 | SM565240 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ◎ | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | | | | ○ | ◎ | ○ | ◎ | ○ | ◎ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | | | | | ○ | | | | ◎ | ◎ | ◎ | ◎ | ◎ | | | ◎ | | | |



# SPADE DRILLS

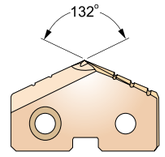
SERIES 2

## SM-POINT SPADE DRILL INSERTS - PREMIUM HSS M48

## SM-POINT 铲钻刀片-PREMIUM HSS M48

- ▶ For use in high temperature alloys and materials with 350~500 Brinell.
- ▶ Improved stability and hole straightness by newly developed thinning design.
- ▶ Less thrust force and excellent self-centering.
- ▶ Any non-standard size available.

- ▶ 用于高温合金和硬度在350-500布氏之间的材质
- ▶ 通过新开发的钻顶设计增强稳定性和孔的垂直性
- ▶ 较小的推力和卓越的自定心功能
- ▶ 各种非标准尺寸均可进行生产.




切削条件 / cutting conditions : p. A367

Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | INDEXABLE DRILL HOLDER | D245 - 246 | - | - |
| ◎ | ER COLLET CHUCK | | | D73 - 115 |

| Series 系列 | Diameter 直径 | | | Thick 厚度 | EDP No. 型号 | | |
|---|---|---|---|---|---|---|---|
| Min. to Max. mm (inch) | Inch (inch) | Metric (mm) | Decimal (inch) | Metric (mm, inch) | PREMIUM HSS M48 TiN | PREMIUM HSS M48 TiCN | PREMIUM HSS M48 TiAlN |
| **2** Ø24.41 (.961) to Ø35.05 (1.380) | 31/32 | 24.61 | .9688 | 4.8 (3/16) | SM505062 | SM510062 | SM515062 |
| | 63/64 | 25.00 | .9843 | | SM555250 | SM560250 | SM565250 |
| | 1 | 25.40 | 1.0000 | | SM505100 | SM510100 | SM515100 |
| | 1-1/64 | 25.80 | 1.0156 | | SM505101 | SM510101 | SM515101 |
| | | 26.00 | 1.0236 | | SM555260 | SM560260 | SM565260 |
| | 1-1/32 | 26.19 | 1.0312 | | SM505102 | SM510102 | SM515102 |
| | 1-3/64 | 26.59 | 1.0469 | | SM505103 | SM510103 | SM515103 |
| | 1-1/16 | 26.99 | 1.0625 | | SM505104 | SM510104 | SM515104 |
| | | 27.00 | 1.0630 | | SM555270 | SM560270 | SM565270 |
| | 1-3/32 | 27.78 | 1.0938 | | SM505106 | SM510106 | SM515106 |
| | | 28.00 | 1.1024 | | SM555280 | SM560280 | SM565280 |
| | 1-7/64 | 28.18 | 1.1094 | | SM505107 | SM510107 | SM515107 |
| | 1-1/8 | 28.58 | 1.1250 | | SM505108 | SM510108 | SM515108 |
| | | 29.00 | 1.1417 | | SM555290 | SM560290 | SM565290 |
| | 1-5/32 | 29.37 | 1.1562 | | SM505110 | SM510110 | SM515110 |
| | | 30.00 | 1.1811 | | SM555300 | SM560300 | SM565300 |
| | 1-3/16 | 30.16 | 1.1875 | | SM505112 | SM510112 | SM515112 |
| | 1-7/32 | 30.96 | 1.2188 | | SM505114 | SM510114 | SM515114 |
| | | 31.00 | 1.2205 | | SM555310 | SM560310 | SM565310 |
| | 1-1/4 | 31.75 | 1.2500 | | SM505116 | SM510116 | SM515116 |
| | | 32.00 | 1.2598 | | SM555320 | SM560320 | SM565320 |
| | 1-9/32 | 32.54 | 1.2812 | | SM505118 | SM510118 | SM515118 |
| | | 33.00 | 1.2992 | | SM555330 | SM560330 | SM565330 |
| | 1-5/16 | 33.34 | 1.3125 | | SM505120 | SM510120 | SM515120 |
| | | 34.00 | 1.3386 | | SM555340 | SM560340 | SM565340 |
| | 1-11/32 | 34.13 | 1.3438 | | SM505122 | SM510122 | SM515122 |
| | 1-3/8 | 34.93 | 1.3750 | | SM505124 | SM510124 | SM515124 |
| | | 35.00 | 1.3780 | | SM555350 | SM560350 | SM565350 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ◎ | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | | | | ○ | ◎ | ○ | ◎ | ○ | ◎ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | | | | | ○ | | | | ◎ | ◎ | ◎ | ◎ | ◎ | | | ◎ | | | |

# SPADE DRILLS

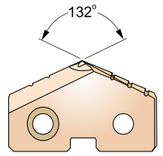
SERIES Y, Z, 0

## SM-POINT SPADE DRILL INSERTS for CAST IRON - CARBIDE K10

## SM-POINT铸铁用铲钻刀片-硬质合金 K10

- ▶ High performance on Gray cast iron over 220 Brinell, malleable cast iron with short chips, silicon aluminum and copper alloys.
- ▶ Improved stability and hole straightness by newly developed thinning design.
- ▶ Less thrust force and excellent self-centering.
- ▶ Any non-standard size available.

- ▶ 在超过220布氏的灰铸铁, 可断成短碎片的可锻铸铁, 硅铝和铜合金上有很高的性能
- ▶ 通过新开发的钻顶设计增强稳定性和孔的垂直性
- ▶ 较小的推力和卓越的自定心功能
- ▶ 各种非标准尺寸均可进行生产.




Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | INDEXABLE DRILL HOLDER | D245 - 246 | - | - |
| ○ | ER COLLET CHUCK | | D73 - 115 | |

切削条件 / cutting conditions : p. A368

| Series 系列 | Diameter 直径 | | | Thick 厚度 | EDP No. 型号 | | |
|---|---|---|---|---|---|---|---|
| Min. to Max. mm (inch) | Inch (inch) | Metric (mm) | Decimal (inch) | Metric (mm, inch) | CARBIDE K10 TiN | CARBIDE K10 TiCN | CARBIDE K10 TiAlN |
| **Y** Ø9.50 (.374) to Ø11.07 (.436) | | 9.50 | .3740 | 2.4 (3/32 ) | SM655095 | SM660095 | SM665095 |
| | 3/8 | 9.53 | .3750 | | SM605024 | SM610024 | SM615024 |
| | | 9.80 | .3858 | | SM655098 | SM660098 | SM665098 |
| | 25/64 | 9.92 | .3906 | | SM605025 | SM610025 | SM615025 |
| | | 10.00 | .3937 | | SM655100 | SM660100 | SM665100 |
| | | 10.20 | .4016 | | SM655102 | SM660102 | SM665102 |
| | 13/32 | 10.32 | .4062 | | SM605026 | SM610026 | SM615026 |
| | | 10.50 | .4134 | | SM655105 | SM660105 | SM665105 |
| | 27/64 | 10.72 | .4219 | | SM605027 | SM610027 | SM615027 |
| | | 10.80 | .4252 | | SM655108 | SM660108 | SM665108 |
| | | 11.00 | .4331 | | SM655110 | SM660110 | SM665110 |
| **Z** Ø11.11(.437) to Ø12.95(.510) | 7/16 | 11.11 | .4375 | 2.4 (3/32) | SM605028 | SM610028 | SM615028 |
| | | 11.50 | .4528 | | SM655115 | SM660115 | SM665115 |
| | 29/64 | 11.51 | .4531 | | SM605029 | SM610029 | SM615029 |
| | 15/32 | 11.91 | .4688 | | SM605030 | SM610030 | SM615030 |
| | | 12.00 | .4724 | | SM655120 | SM660120 | SM665120 |
| | 31/64 | 12.30 | .4844 | | SM605031 | SM610031 | SM615031 |
| | | 12.50 | .4921 | | SM655125 | SM660125 | SM665125 |
| | 1/2 | 12.70 | .5000 | | SM605032 | SM610032 | SM615032 |
| **0** Ø12.98 (.511) to Ø17.65 (.695) | | 13.00 | .5118 | 3.2 (1/8) | SM655130 | SM660130 | SM665130 |
| | 33/64 | 13.10 | .5156 | | SM605033 | SM610033 | SM615033 |
| | 17/32 | 13.49 | .5312 | | SM605034 | SM610034 | SM615034 |
| | | 13.50 | .5315 | | SM655135 | SM660135 | SM665135 |
| | 35/64 | 13.89 | .5469 | | SM605035 | SM610035 | SM615035 |
| | | 14.00 | .5512 | | SM655140 | SM660140 | SM665140 |
| | 9/16 | 14.29 | .5625 | | SM605036 | SM610036 | SM615036 |
| | | 14.50 | .5709 | | SM655145 | SM660145 | SM665145 |
| | 37/64 | 14.68 | .5781 | | SM605037 | SM610037 | SM615037 |
| | | 15.00 | .5906 | | SM655150 | SM660150 | SM665150 |
| | 19/32 | 15.08 | .5938 | | SM605038 | SM610038 | SM615038 |
| | 39/64 | 15.48 | .6094 | | SM605039 | SM610039 | SM615039 |
| | | 15.50 | .6102 | | SM655155 | SM660155 | SM665155 |
| | 5/8 | 15.88 | .6250 | | SM605040 | SM610040 | SM615040 |
| | | 16.00 | .6299 | | SM655160 | SM660160 | SM665160 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | | | | | | | | | | | | | | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | | | | | | | | | | | | | | | | | | | | | |



# SPADE DRILLS

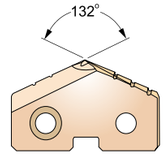
SERIES 0, 1

## SM-POINT SPADE DRILL INSERTS for CAST IRON - CARBIDE K10

## SM-POINT铸铁用铲钻刀片-硬质合金 K10

- ▶ High performance on Gray cast iron over 220 Brinell, malleable cast iron with short chips, silicon aluminum and copper alloys.
- ▶ Improved stability and hole straightness by newly developed thinning design.
- ▶ Less thrust force and excellent self-centering.
- ▶ Any non-standard size available.

- ▶ 在超过220布氏的灰铸铁, 可断成短碎片的可锻铸铁, 硅铝和铜合金上有很高的性能
- ▶ 通过新开发的钻顶设计增强稳定性和孔的垂直性
- ▶ 较小的推力和卓越的自定心功能
- ▶ 各种非标准尺寸均可进行生产.




Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | INDEXABLE DRILL HOLDER | D245 - 246 | - | - |
| ○ | ER COLLET CHUCK | | D73 - 115 | |

切削条件 / cutting conditions : p. A368

| Series 系列 | Diameter 直径 | | | Thick 厚度 | EDP No. 型号 | | |
|---|---|---|---|---|---|---|---|
| Min. to Max. mm (inch) | Inch (inch) | Metric (mm) | Decimal (inch) | Metric (mm, inch) | CARBIDE K10 TiN | CARBIDE K10 TiCN | CARBIDE K10 TiAlN |
| **0** Ø12.98(.511) to Ø17.65(.695) | 41/64 | 16.27 | .6406 | 3.2 (1/8) | SM605041 | SM610041 | SM615041 |
| | | 16.50 | .6496 | | SM655165 | SM660165 | SM665165 |
| | 21/32 | 16.67 | .6562 | | SM605042 | SM610042 | SM615042 |
| | | 17.00 | .6693 | | SM655170 | SM660170 | SM665170 |
| | 43/64 | 17.07 | .6719 | | SM605043 | SM610043 | SM615043 |
| | 11/16 | 17.46 | .6875 | | SM605044 | SM610044 | SM615044 |
| | | 17.50 | .6890 | | SM655175 | SM660175 | SM665175 |
| **1** Ø17.53 (.690) to Ø24.38 (.960) | 45/64 | 17.86 | .7031 | 4.0 (5/32) | SM605045 | SM610045 | SM615045 |
| | | 18.00 | .7087 | | SM655180 | SM660180 | SM665180 |
| | 23/32 | 18.26 | .7188 | | SM605046 | SM610046 | SM615046 |
| | | 18.50 | .7283 | | SM655185 | SM660185 | SM665185 |
| | 47/64 | 18.65 | .7344 | | SM605047 | SM610047 | SM615047 |
| | | 19.00 | .7480 | | SM655190 | SM660190 | SM665190 |
| | 3/4 | 19.05 | .7500 | | SM605048 | SM610048 | SM615048 |
| | 49/64 | 19.45 | .7656 | | SM605049 | SM610049 | SM615049 |
| | | 19.50 | .7677 | | SM655195 | SM660195 | SM665195 |
| | 25/32 | 19.84 | .7812 | | SM605050 | SM610050 | SM615050 |
| | | 20.00 | .7874 | | SM655200 | SM660200 | SM665200 |
| | 51/64 | 20.24 | .7969 | | SM605051 | SM610051 | SM615051 |
| | | 20.50 | .8071 | | SM655205 | SM660205 | SM665205 |
| | 13/16 | 20.64 | .8125 | | SM605052 | SM610052 | SM615052 |
| | | 21.00 | .8268 | | SM655210 | SM660210 | SM665210 |
| | 27/32 | 21.43 | .8438 | | SM605054 | SM610054 | SM615054 |
| | 55/64 | 21.83 | .8594 | | SM605055 | SM610055 | SM615055 |
| | | 22.00 | .8661 | | SM655220 | SM660220 | SM665220 |
| | 7/8 | 22.23 | .8750 | | SM605056 | SM610056 | SM615056 |
| | 57/64 | 22.62 | .8906 | | SM605057 | SM610057 | SM615057 |
| | | 23.00 | .9055 | | SM655230 | SM660230 | SM665230 |
| | 29/32 | 23.02 | .9062 | | SM605058 | SM610058 | SM615058 |
| | 59/64 | 23.42 | .9219 | | SM605059 | SM610059 | SM615059 |
| | 15/16 | 23.81 | .9375 | | SM605060 | SM610060 | SM615060 |
| | | 24.00 | .9449 | | SM655240 | SM660240 | SM665240 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | | | | | | | | | | | | | | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | | | | | | | | | | | | | | | | | | | | | |

# SPADE DRILLS

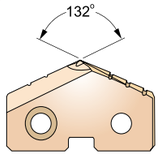
SERIES 2

## SM-POINT SPADE DRILL INSERTS for CAST IRON - CARBIDE K10

## SM-POINT铸铁用铲钻刀片-硬质合金 K10

- ▶ High performance on Gray cast iron over 220 Brinell, malleable cast iron with short chips, silicon aluminum and copper alloys.
- ▶ Improved stability and hole straightness by newly developed thinning design.
- ▶ Less thrust force and excellent self-centering.
- ▶ Any non-standard size available.

- ▶ 在超过220布氏的灰铸铁, 可断成短碎片的可锻铸铁, 硅铝和铜合金上有很高的性能
- ▶ 通过新开发的钻顶设计增强稳定性和孔的垂直性
- ▶ 较小的推力和卓越的自定心功能
- ▶ 各种非标准尺寸均可进行生产.




切削条件 / cutting conditions : p. A368

| Recommended ToolHolder | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| | INDEXABLE DRILL HOLDER | D245 - 246 | - | - |
| | ER COLLET CHUCK | D73 - 115 | | |

| Series 系列 | Diameter 直径 | | | Thick 厚度 | EDP No. 型号 | | |
|---|---|---|---|---|---|---|---|
| Min. to Max. mm (inch) | Inch (inch) | Metric (mm) | Decimal (inch) | Metric (mm, inch) | CARBIDE K10 TiN | TiCN | TiAlN |
| **2** Ø24.41 (.961) to Ø35.05 (1.380) | 31/32 | 24.61 | .9688 | 4.8 (3/16) | SM605062 | SM610062 | SM615062 |
| | 63/64 | 25.00 | .9843 | | SM655250 | SM660250 | SM665250 |
| | 1 | 25.40 | 1.0000 | | SM605100 | SM610100 | SM615100 |
| | 1-1/64 | 25.80 | 1.0156 | | SM605101 | SM610101 | SM615101 |
| | | 26.00 | 1.0236 | | SM655260 | SM660260 | SM665260 |
| | 1-1/32 | 26.19 | 1.0312 | | SM605102 | SM610102 | SM615102 |
| | 1-3/64 | 26.59 | 1.0469 | | SM605103 | SM610103 | SM615103 |
| | 1-1/16 | 26.99 | 1.0625 | | SM605104 | SM610104 | SM615104 |
| | | 27.00 | 1.0630 | | SM655270 | SM660270 | SM665270 |
| | 1-3/32 | 27.78 | 1.0938 | | SM605106 | SM610106 | SM615106 |
| | | 28.00 | 1.1024 | | SM655280 | SM660280 | SM665280 |
| | 1-7/64 | 28.18 | 1.1094 | | SM605107 | SM610107 | SM615107 |
| | 1-1/8 | 28.58 | 1.1250 | | SM605108 | SM610108 | SM615108 |
| | | 29.00 | 1.1417 | | SM655290 | SM660290 | SM665290 |
| | 1-5/32 | 29.37 | 1.1562 | | SM605110 | SM610110 | SM615110 |
| | | 30.00 | 1.1811 | | SM655300 | SM660300 | SM665300 |
| | 1-3/16 | 30.16 | 1.1875 | | SM605112 | SM610112 | SM615112 |
| | 1-7/32 | 30.96 | 1.2188 | | SM605114 | SM610114 | SM615114 |
| | | 31.00 | 1.2205 | | SM655310 | SM660310 | SM665310 |
| | 1-1/4 | 31.75 | 1.2500 | | SM605116 | SM610116 | SM615116 |
| | | 32.00 | 1.2598 | | SM655320 | SM660320 | SM665320 |
| | 1-9/32 | 32.54 | 1.2812 | | SM605118 | SM610118 | SM615118 |
| | | 33.00 | 1.2992 | | SM655330 | SM660330 | SM665330 |
| | 1-5/16 | 33.34 | 1.3125 | | SM605120 | SM610120 | SM615120 |
| | | 34.00 | 1.3386 | | SM655340 | SM660340 | SM665340 |
| | 1-11/32 | 34.13 | 1.3438 | | SM605122 | SM610122 | SM615122 |
| | 1-3/8 | 34.93 | 1.3750 | | SM605124 | SM610124 | SM615124 |
| | | 35.00 | 1.3780 | | SM655350 | SM660350 | SM665350 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | | | | | | | | | | | | | | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | | | | | | | | | | | | | | | | | | | | | |



# SPADE DRILLS

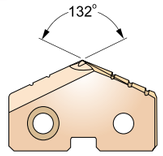
SERIES Y, Z, 0

## SM-POINT SPADE DRILL INSERTS - CARBIDE K20

## SM-POINT 铲钻刀片-硬质合金K20

- ▶ For use in Gray cast iron up to 220 Brinell, nonferrous metals, copper, brass and aluminum.
- ▶ Improved stability and hole straightness by newly developed thinning design.
- ▶ Less thrust force and excellent self-centering.
- ▶ Any non-standard size available.

- ▶ 在超过220布氏的灰铸铁, 可断成短碎片的可锻铸铁, 硅铝和铜合金上有很高的性能
- ▶ 通过新开发的钻顶设计增强稳定性和孔的垂直性
- ▶ 较小的推力和卓越的自定心功能
- ▶ 各种非标准尺寸均可进行生产.




切削条件 / cutting conditions : p. A369

| Recommended ToolHolder | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| | INDEXABLE DRILL HOLDER | D245 - 246 | - | - |
| | ER COLLET CHUCK | D73 - 115 | | |

| Series 系列 | Diameter 直径 | | | Thick 厚度 | EDP No. 型号 | | |
|---|---|---|---|---|---|---|---|
| Min. to Max. mm (inch) | Inch (inch) | Metric (mm) | Decimal (inch) | Metric (mm, inch) | CARBIDE K20 TiN | TiCN | TiAlN |
| **Y** Ø9.50 (.374) to Ø11.07 (.436) | | 9.50 | .3740 | 2.4 (3/32) | SM755095 | SM760095 | SM765095 |
| | 3/8 | 9.53 | .3750 | | SM705024 | SM710024 | SM715024 |
| | | 9.80 | .3858 | | SM755098 | SM760098 | SM765098 |
| | 25/64 | 9.92 | .3906 | | SM705025 | SM710025 | SM715025 |
| | | 10.00 | .3937 | | SM755100 | SM760100 | SM765100 |
| | | 10.20 | .4016 | | SM755102 | SM760102 | SM765102 |
| | 13/32 | 10.32 | .4062 | | SM705026 | SM710026 | SM715026 |
| | | 10.50 | .4134 | | SM755105 | SM760105 | SM765105 |
| | 27/64 | 10.72 | .4219 | | SM705027 | SM710027 | SM715027 |
| | | 10.80 | .4252 | | SM755108 | SM760108 | SM765108 |
| | | 11.00 | .4331 | | SM755110 | SM760110 | SM765110 |
| **Z** Ø11.11(.437) to Ø12.95(.510) | 7/16 | 11.11 | .4375 | 2.4 (3/32) | SM705028 | SM710028 | SM715028 |
| | | 11.50 | .4528 | | SM755115 | SM760115 | SM765115 |
| | 29/64 | 11.51 | .4531 | | SM705029 | SM710029 | SM715029 |
| | 15/32 | 11.91 | .4688 | | SM705030 | SM710030 | SM715030 |
| | | 12.00 | .4724 | | SM755120 | SM760120 | SM765120 |
| | 31/64 | 12.30 | .4844 | | SM705031 | SM710031 | SM715031 |
| | | 12.50 | .4921 | | SM755125 | SM760125 | SM765125 |
| | 1/2 | 12.70 | .5000 | | SM705032 | SM710032 | SM715032 |
| **0** Ø12.98 (.511) to Ø17.65 (.695) | | 13.00 | .5118 | 3.2 (1/8) | SM755130 | SM760130 | SM765130 |
| | 33/64 | 13.10 | .5156 | | SM705033 | SM710033 | SM715033 |
| | 17/32 | 13.49 | .5312 | | SM705034 | SM710034 | SM715034 |
| | | 13.50 | .5315 | | SM755135 | SM760135 | SM765135 |
| | 35/64 | 13.89 | .5469 | | SM705035 | SM710035 | SM715035 |
| | | 14.00 | .5512 | | SM755140 | SM760140 | SM765140 |
| | 9/16 | 14.29 | .5625 | | SM705036 | SM710036 | SM715036 |
| | | 14.50 | .5709 | | SM755145 | SM760145 | SM765145 |
| | 37/64 | 14.68 | .5781 | | SM705037 | SM710037 | SM715037 |
| | | 15.00 | .5906 | | SM755150 | SM760150 | SM765150 |
| | 19/32 | 15.08 | .5938 | | SM705038 | SM710038 | SM715038 |
| | 39/64 | 15.48 | .6094 | | SM705039 | SM710039 | SM715039 |
| | | 15.50 | .6102 | | SM755155 | SM760155 | SM765155 |
| | 5/8 | 15.88 | .6250 | | SM705040 | SM710040 | SM715040 |
| | | 16.00 | .6299 | | SM755160 | SM760160 | SM765160 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ○ | ○ | ○ | ○ | | ○ | ○ | ○ | ○ | ○ | ○ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ◎ | ◎ | | | | | ◎ | | | | ◎ | ◎ | ◎ | ◎ | ◎ | | | ○ | | | |

# SPADE DRILLS

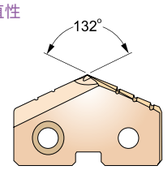
SERIES 0, 1

## SM-POINT SPADE DRILL INSERTS - CARBIDE K20

## SM-POINT 铲钻刀片-硬质合金K20

- ▶ For use in Gray cast iron up to 220 Brinell, nonferrous metals, copper, brass and aluminum.
- ▶ Improved stability and hole straightness by newly developed thinning design.
- ▶ Less thrust force and excellent self-centering.
- ▶ Any non-standard size available.

- ▶ 在超过220布氏的灰铸铁, 可断成短碎片的可锻铸铁, 硅铝和铜合金上有很高的性能
- ▶ 通过新开发的钻顶设计增强稳定性和孔的垂直性
- ▶ 较小的推力和卓越的自定心功能
- ▶ 各种非标准尺寸均可进行生产.




切削条件 / cutting conditions : p. A369

Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | INDEXABLE DRILL HOLDER | D245 - 246 | - | - |
| ○ | ER COLLET CHUCK | | D73 - 115 | |

| Series 系列 | Diameter 直径 | | | Thick 厚度 | EDP No. 型号 | | |
|---|---|---|---|---|---|---|---|
| Min. to Max. mm (inch) | Inch (inch) | Metric (mm) | Decimal (inch) | Metric (mm, inch) | CARBIDE K20 TiN | CARBIDE K20 TiCN | CARBIDE K20 TiAlN |
| **0** Ø12.98(.511) to Ø17.65(.695) | 41/64 | 16.27 | .6406 | 3.2 (1/8) | SM705041 | SM710041 | SM715041 |
| | | 16.50 | .6496 | | SM755165 | SM760165 | SM765165 |
| | 21/32 | 16.67 | .6562 | | SM705042 | SM710042 | SM715042 |
| | | 17.00 | .6693 | | SM755170 | SM760170 | SM765170 |
| | 43/64 | 17.07 | .6719 | | SM705043 | SM710043 | SM715043 |
| | 11/16 | 17.46 | .6875 | | SM705044 | SM710044 | SM715044 |
| | | 17.50 | .6890 | | SM755175 | SM760175 | SM765175 |
| | 45/64 | 17.86 | .7031 | | SM705045 | SM710045 | SM715045 |
| | | 18.00 | .7087 | | SM755180 | SM760180 | SM765180 |
| | 23/32 | 18.26 | .7188 | | SM705046 | SM710046 | SM715046 |
| | | 18.50 | .7283 | | SM755185 | SM760185 | SM765185 |
| | 47/64 | 18.65 | .7344 | | SM705047 | SM710047 | SM715047 |
| | | 19.00 | .7480 | | SM755190 | SM760190 | SM765190 |
| | 3/4 | 19.05 | .7500 | | SM705048 | SM710048 | SM715048 |
| | 49/64 | 19.45 | .7656 | | SM705049 | SM710049 | SM715049 |
| | | 19.50 | .7677 | | SM755195 | SM760195 | SM765195 |
| **1** Ø17.53 (.690) to Ø24.38 (.960) | 25/32 | 19.84 | .7812 | 4.0 (5/32) | SM705050 | SM710050 | SM715050 |
| | | 20.00 | .7874 | | SM755200 | SM760200 | SM765200 |
| | 51/64 | 20.24 | .7969 | | SM705051 | SM710051 | SM715051 |
| | | 20.50 | .8071 | | SM755205 | SM760205 | SM765205 |
| | 13/16 | 20.64 | .8125 | | SM705052 | SM710052 | SM715052 |
| | | 21.00 | .8268 | | SM755210 | SM760210 | SM765210 |
| | 27/32 | 21.43 | .8438 | | SM705054 | SM710054 | SM715054 |
| | 55/64 | 21.83 | .8594 | | SM705055 | SM710055 | SM715055 |
| | | 22.00 | .8661 | | SM755220 | SM760220 | SM765220 |
| | 7/8 | 22.23 | .8750 | | SM705056 | SM710056 | SM715056 |
| | 57/64 | 22.62 | .8906 | | SM705057 | SM710057 | SM715057 |
| | | 23.00 | .9055 | | SM755230 | SM760230 | SM765230 |
| | 29/32 | 23.02 | .9062 | | SM705058 | SM710058 | SM715058 |
| | 59/64 | 23.42 | .9219 | | SM705059 | SM710059 | SM715059 |
| | 15/16 | 23.81 | .9375 | | SM705060 | SM710060 | SM715060 |
| | | 24.00 | .9449 | | SM755240 | SM760240 | SM765240 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ○ | ○ | ○ | ○ | | ○ | ○ | ○ | ○ | ○ | ○ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ◎ | ◎ | | | | | ◎ | | | | ◎ | ◎ | ◎ | ◎ | ◎ | | | ○ | | | |



# SPADE DRILLS

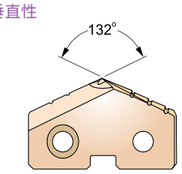
SERIES 2

## SM-POINT SPADE DRILL INSERTS - CARBIDE K20

## SM-POINT 铲钻刀片-硬质合金K20

- ▶ For use in Gray cast iron up to 220 Brinell, nonferrous metals, copper, brass and aluminum.
- ▶ Improved stability and hole straightness by newly developed thinning design.
- ▶ Less thrust force and excellent self-centering.
- ▶ Any non-standard size available.

- ▶ 在超过220布氏的灰铸铁, 可断成短碎片的可锻铸铁, 硅铝和铜合金上有很高的性能
- ▶ 通过新开发的钻顶设计增强稳定性和孔的垂直性
- ▶ 较小的推力和卓越的自定心功能
- ▶ 各种非标准尺寸均可进行生产.




切削条件 / cutting conditions : p. A369

Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | INDEXABLE DRILL HOLDER | D245 - 246 | - | - |
| ○ | ER COLLET CHUCK | | D73 - 115 | |

| Series 系列 | Diameter 直径 | | | Thick 厚度 | EDP No. 型号 | | |
|---|---|---|---|---|---|---|---|
| Min. to Max. mm (inch) | Inch (inch) | Metric (mm) | Decimal (inch) | Metric (mm, inch) | CARBIDE K20 TiN | CARBIDE K20 TiCN | CARBIDE K20 TiAlN |
| **2** Ø24.41 (.961) to Ø35.05 (1.380) | 31/32 | 24.61 | .9688 | 4.8 (3/16) | SM705062 | SM710062 | SM715062 |
| | 63/64 | 25.00 | .9843 | | SM755250 | SM760250 | SM765250 |
| | 1 | 25.40 | 1.0000 | | SM705100 | SM710100 | SM715100 |
| | 1-1/64 | 25.80 | 1.0156 | | SM705101 | SM710101 | SM715101 |
| | | 26.00 | 1.0236 | | SM755260 | SM760260 | SM765260 |
| | 1-1/32 | 26.19 | 1.0312 | | SM705102 | SM710102 | SM715102 |
| | 1-3/64 | 26.59 | 1.0469 | | SM705103 | SM710103 | SM715103 |
| | 1-1/16 | 26.99 | 1.0625 | | SM705104 | SM710104 | SM715104 |
| | | 27.00 | 1.0630 | | SM755270 | SM760270 | SM765270 |
| | 1-3/32 | 27.78 | 1.0938 | | SM705106 | SM710106 | SM715106 |
| | | 28.00 | 1.1024 | | SM755280 | SM760280 | SM765280 |
| | 1-7/64 | 28.18 | 1.1094 | | SM705107 | SM710107 | SM715107 |
| | 1-1/8 | 28.58 | 1.1250 | | SM705108 | SM710108 | SM715108 |
| | | 29.00 | 1.1417 | | SM755290 | SM760290 | SM765290 |
| | 1-5/32 | 29.37 | 1.1562 | | SM705110 | SM710110 | SM715110 |
| | | 30.00 | 1.1811 | | SM755300 | SM760300 | SM765300 |
| | 1-3/16 | 30.16 | 1.1875 | | SM705112 | SM710112 | SM715112 |
| | 1-7/32 | 30.96 | 1.2188 | | SM705114 | SM710114 | SM715114 |
| | | 31.00 | 1.2205 | | SM755310 | SM760310 | SM765310 |
| | 1-1/4 | 31.75 | 1.2500 | | SM705116 | SM710116 | SM715116 |
| | | 32.00 | 1.2598 | | SM755320 | SM760320 | SM765320 |
| | 1-9/32 | 32.54 | 1.2812 | | SM705118 | SM710118 | SM715118 |
| | | 33.00 | 1.2992 | | SM755330 | SM760330 | SM765330 |
| | 1-5/16 | 33.34 | 1.3125 | | SM705120 | SM710120 | SM715120 |
| | | 34.00 | 1.3386 | | SM755340 | SM760340 | SM765340 |
| | 1-11/32 | 34.13 | 1.3438 | | SM705122 | SM710122 | SM715122 |
| | 1-3/8 | 34.93 | 1.3750 | | SM705124 | SM710124 | SM715124 |
| | | 35.00 | 1.3780 | | SM755350 | SM760350 | SM765350 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ○ | ○ | ○ | ○ | | ○ | ○ | ○ | ○ | ○ | ○ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ◎ | ◎ | | | | | ◎ | | | | ◎ | ◎ | ◎ | ◎ | ◎ | | | ○ | | | |

# SPADE DRILLS

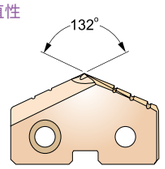
SERIES 3

## SM-POINT SPADE DRILL INSERTS - CARBIDE K20

## SM-POINT 铲钻刀片-硬质合金K20

- ▶ For use in Gray cast iron up to 220 Brinell, nonferrous metals, copper, brass and aluminum.
- ▶ Improved stability and hole straightness by newly developed thinning design.
- ▶ Less thrust force and excellent self-centering.
- ▶ Any non-standard size available.

- ▶ 在超过220布氏的灰铸铁, 可断成短碎片的可锻铸铁, 硅铝和铜合金上有很高的性能
- ▶ 通过新开发的钻顶设计增强稳定性和孔的垂直性
- ▶ 较小的推力和卓越的自定心功能
- ▶ 各种非标准尺寸均可进行生产.




切削条件 / cutting conditions : p. A369

Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | INDEXABLE DRILL HOLDER | D245 - 246 | - | - |
| ○ | ER COLLET CHUCK | | D73 - 115 | |

| Series 系列 | Diameter 直径 | | | Thick 厚度 | EDP No. 型号 | | |
|---|---|---|---|---|---|---|---|
| Min. to Max. mm (inch) | Inch (inch) | Metric (mm) | Decimal (inch) | Metric (mm, inch) | CARBIDE K20 TiN | TiCN | TiAlN |
| 3 Ø34.37 (1.353) to Ø47.80 (1.882) | 1-13/32 | 35.72 | 1.4062 | 6.4 (1/4) | SM705126 | SM710126 | SM715126 |
| | | 36.00 | 1.4173 | | SM755360 | SM760360 | SM765360 |
| | 1-7/16 | 36.51 | 1.4375 | | SM705128 | SM710128 | SM715128 |
| | | 37.00 | 1.4567 | | SM755370 | SM760370 | SM765370 |
| | 1-15/32 | 37.31 | 1.4688 | | SM705130 | SM710130 | SM715130 |
| | | 38.00 | 1.4961 | | SM755380 | SM760380 | SM765380 |
| | 1-1/2 | 38.10 | 1.5000 | | SM705132 | SM710132 | SM715132 |
| | 1-17/32 | 38.89 | 1.5312 | | SM705134 | SM710134 | SM715134 |
| | | 39.00 | 1.5354 | | SM755390 | SM760390 | SM765390 |
| | 1-9/16 | 39.69 | 1.5625 | | SM705136 | SM710136 | SM715136 |
| | | 40.00 | 1.5748 | | SM755400 | SM760400 | SM765400 |
| | 1-19/32 | 40.48 | 1.5938 | | SM705138 | SM710138 | SM715138 |
| | | 41.00 | 1.6142 | | SM755410 | SM760410 | SM765410 |
| | 1-5/8 | 41.28 | 1.6250 | | SM705140 | SM710140 | SM715140 |
| | | 42.00 | 1.6535 | | SM755420 | SM760420 | SM765420 |
| | 1-21/32 | 42.07 | 1.6562 | | SM705142 | SM710142 | SM715142 |
| | 1-11/16 | 42.86 | 1.6875 | | SM705144 | SM710144 | SM715144 |
| | | 43.00 | 1.6929 | | SM755430 | SM760430 | SM765430 |
| | 1-23/32 | 43.66 | 1.7188 | | SM705146 | SM710146 | SM715146 |
| | | 44.00 | 1.7323 | | SM755440 | SM760440 | SM765440 |
| | 1-3/4 | 44.45 | 1.7500 | | SM705148 | SM710148 | SM715148 |
| | | 45.00 | 1.7717 | | SM755450 | SM760450 | SM765450 |
| | 1-25/32 | 45.24 | 1.7812 | | SM705150 | SM710150 | SM715150 |
| | | 46.00 | 1.8110 | | SM755460 | SM760460 | SM765460 |
| | 1-13/16 | 46.04 | 1.8125 | | SM705152 | SM710152 | SM715152 |
| | 1-27/32 | 46.83 | 1.8438 | | SM705154 | SM710154 | SM715154 |
| | | 47.00 | 1.8504 | | SM755470 | SM760470 | SM765470 |
| | 1-7/8 | 47.63 | 1.8750 | | SM705156 | SM710156 | SM715156 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ○ | ○ | ○ | ○ | | ○ | ○ | ○ | ○ | ○ | ○ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ◎ | ◎ | | | | | ◎ | | | | ◎ | ◎ | ◎ | ◎ | ◎ | | | ○ | | | |



# SPADE DRILLS

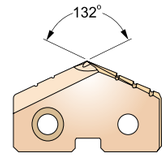
SERIES Y, Z, 0

## SM-POINT SPADE DRILL INSERTS - CARBIDE P40

## SM-POINT 铲钻刀片-硬质合金 P40

- ▶ For general use in carbon steels and alloys steels.
- ▶ Improved stability and hole straightness by newly developed thinning design.
- ▶ Less thrust force and excellent self-centering.
- ▶ Any non-standard size available.

- ▶ 用于碳素钢和合金钢的普通用途
- ▶ 通过新开发的钻顶设计增强稳定性和孔的垂直性
- ▶ 较小的推力和卓越的自定心功能
- ▶ 各种非标准尺寸均可进行生产.




切削条件 / cutting conditions : p. A371

Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | INDEXABLE DRILL HOLDER | D245 - 246 | - | - |
| ○ | ER COLLET CHUCK | | D73 - 115 | |

| Series 系列 | Diameter 直径 | | | Thick 厚度 | EDP No. 型号 | | |
|---|---|---|---|---|---|---|---|
| Min. to Max. mm (inch) | Inch (inch) | Metric (mm) | Decimal (inch) | Metric (mm, inch) | CARBIDE P40 TiN | TiCN | TiAlN |
| Y Ø9.50 (.374) to Ø11.07 (.436) | | 9.50 | .3740 | 2.4 (3/32) | SM855095 | SM860095 | SM865095 |
| | 3/8 | 9.53 | .3750 | | SM805024 | SM810024 | SM815024 |
| | | 9.80 | .3858 | | SM855098 | SM860098 | SM865098 |
| | 25/64 | 9.92 | .3906 | | SM805025 | SM810025 | SM815025 |
| | | 10.00 | .3937 | | SM855100 | SM860100 | SM865100 |
| | | 10.20 | .4016 | | SM855102 | SM860102 | SM865102 |
| | 13/32 | 10.32 | .4062 | | SM805026 | SM810026 | SM815026 |
| | | 10.50 | .4134 | | SM855105 | SM860105 | SM865105 |
| | 27/64 | 10.72 | .4219 | | SM805027 | SM810027 | SM815027 |
| | | 10.80 | .4252 | | SM855108 | SM860108 | SM865108 |
| | | 11.00 | .4331 | | SM855110 | SM860110 | SM865110 |
| Z Ø11.11(.437) to Ø12.95(.510) | 7/16 | 11.11 | .4375 | 2.4 (3/32) | SM805028 | SM810028 | SM815028 |
| | | 11.50 | .4528 | | SM855115 | SM860115 | SM865115 |
| | 29/64 | 11.51 | .4531 | | SM805029 | SM810029 | SM815029 |
| | 15/32 | 11.91 | .4688 | | SM805030 | SM810030 | SM815030 |
| | | 12.00 | .4724 | | SM855120 | SM860120 | SM865120 |
| | 31/64 | 12.30 | .4844 | | SM805031 | SM810031 | SM815031 |
| | | 12.50 | .4921 | | SM855125 | SM860125 | SM865125 |
| | 1/2 | 12.70 | .5000 | | SM805032 | SM810032 | SM815032 |
| 0 Ø12.98 (.511) to Ø17.65 (.695) | | 13.00 | .5118 | 3.2 (1/8) | SM855130 | SM860130 | SM865130 |
| | 33/64 | 13.10 | .5156 | | SM805033 | SM810033 | SM815033 |
| | 17/32 | 13.49 | .5312 | | SM805034 | SM810034 | SM815034 |
| | | 13.50 | .5315 | | SM855135 | SM860135 | SM865135 |
| | 35/64 | 13.89 | .5469 | | SM805035 | SM810035 | SM815035 |
| | | 14.00 | .5512 | | SM855140 | SM860140 | SM865140 |
| | 9/16 | 14.29 | .5625 | | SM805036 | SM810036 | SM815036 |
| | | 14.50 | .5709 | | SM855145 | SM860145 | SM865145 |
| | 37/64 | 14.68 | .5781 | | SM805037 | SM810037 | SM815037 |
| | | 15.00 | .5906 | | SM855150 | SM860150 | SM865150 |
| | 19/32 | 15.08 | .5938 | | SM805038 | SM810038 | SM815038 |
| | 39/64 | 15.48 | .6094 | | SM805039 | SM810039 | SM815039 |
| | | 15.50 | .6102 | | SM855155 | SM860155 | SM865155 |
| | 5/8 | 15.88 | .6250 | | SM805040 | SM810040 | SM815040 |
| | | 16.00 | .6299 | | SM855160 | SM860160 | SM865160 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ◎ | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | | | | | ○ | | | | ○ | ○ | ○ | ○ | ○ | | | ◎ | | | |

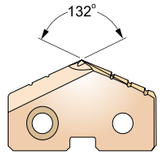
# SPADE DRILLS

SERIES 0, 1

## SM-POINT SPADE DRILL INSERTS - CARBIDE P40
## SM-POINT 铲钻刀片-硬质合金 P40

- ▶ For general use in carbon steels and alloys steels.
- ▶ Improved stability and hole straightness by newly developed thinning design.
- ▶ Less thrust force and excellent self-centering.
- ▶ Any non-standard size available.

- ▶ 用于碳素钢和合金钢的普通用途
- ▶ 通过新开发的钻顶设计增强稳定性和孔的垂直性
- ▶ 较小的推力和卓越的自定心功能
- ▶ 各种非标准尺寸均可进行生产.




切削条件 / cutting conditions : p. A371

Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | INDEXABLE DRILL HOLDER | D245 - 246 | - | - |
| ○ | ER COLLET CHUCK | | D73 - 115 | |

| Series 系列 | Diameter 直径 | | | Thick 厚度 | EDP No. 型号 | | |
|---|---|---|---|---|---|---|---|
| Min. to Max. mm (inch) | Inch (inch) | Metric (mm) | Decimal (inch) | Metric (mm, inch) | CARBIDE P40 TiN | CARBIDE P40 TiCN | CARBIDE P40 TiAlN |
| **0** Ø12.98(.511) to Ø17.65(.695) | 41/64 | 16.27 | .6406 | 3.2 (1/8) | SM805041 | SM810041 | SM815041 |
| | | 16.50 | .6496 | | SM855165 | SM860165 | SM865165 |
| | 21/32 | 16.67 | .6562 | | SM805042 | SM810042 | SM815042 |
| | | 17.00 | .6693 | | SM855170 | SM860170 | SM865170 |
| | 43/64 | 17.07 | .6719 | | SM805043 | SM810043 | SM815043 |
| | 11/16 | 17.46 | .6875 | | SM805044 | SM810044 | SM815044 |
| | | 17.50 | .6890 | | SM855175 | SM860175 | SM865175 |
| | 45/64 | 17.86 | .7031 | | SM805045 | SM810045 | SM815045 |
| | | 18.00 | .7087 | | SM855180 | SM860180 | SM865180 |
| | 23/32 | 18.26 | .7188 | | SM805046 | SM810046 | SM815046 |
| | | 18.50 | .7283 | | SM855185 | SM860185 | SM865185 |
| | 47/64 | 18.65 | .7344 | | SM805047 | SM810047 | SM815047 |
| | | 19.00 | .7480 | | SM855190 | SM860190 | SM865190 |
| | 3/4 | 19.05 | .7500 | | SM805048 | SM810048 | SM815048 |
| | 49/64 | 19.45 | .7656 | | SM805049 | SM810049 | SM815049 |
| | | 19.50 | .7677 | | SM855195 | SM860195 | SM865195 |
| **1** Ø17.53 (.690) to Ø24.38 (.960) | 25/32 | 19.84 | .7812 | 4.0 (5/32) | SM805050 | SM810050 | SM815050 |
| | | 20.00 | .7874 | | SM855200 | SM860200 | SM865200 |
| | 51/64 | 20.24 | .7969 | | SM805051 | SM810051 | SM815051 |
| | | 20.50 | .8071 | | SM855205 | SM860205 | SM865205 |
| | 13/16 | 20.64 | .8125 | | SM805052 | SM810052 | SM815052 |
| | | 21.00 | .8268 | | SM855210 | SM860210 | SM865210 |
| | 27/32 | 21.43 | .8438 | | SM805054 | SM810054 | SM815054 |
| | 55/64 | 21.83 | .8594 | | SM805055 | SM810055 | SM815055 |
| | | 22.00 | .8661 | | SM855220 | SM860220 | SM865220 |
| | 7/8 | 22.23 | .8750 | | SM805056 | SM810056 | SM815056 |
| | 57/64 | 22.62 | .8906 | | SM805057 | SM810057 | SM815057 |
| | | 23.00 | .9055 | | SM855230 | SM860230 | SM865230 |
| | 29/32 | 23.02 | .9062 | | SM805058 | SM810058 | SM815058 |
| | 59/64 | 23.42 | .9219 | | SM805059 | SM810059 | SM815059 |
| | 15/16 | 23.81 | .9375 | | SM805060 | SM810060 | SM815060 |
| | | 24.00 | .9449 | | SM855240 | SM860240 | SM865240 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ◎ | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | | | | | ○ | | | | ○ | ○ | ○ | ○ | ○ | | | ◎ | | | |





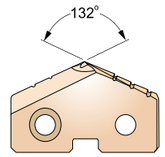
# SPADE DRILLS

SERIES 2

## SM-POINT SPADE DRILL INSERTS - CARBIDE P40
## SM-POINT 铲钻刀片-硬质合金 P40

- ▶ For general use in carbon steels and alloys steels.
- ▶ Improved stability and hole straightness by newly developed thinning design.
- ▶ Less thrust force and excellent self-centering.
- ▶ Any non-standard size available.

- ▶ 用于碳素钢和合金钢的普通用途
- ▶ 通过新开发的钻顶设计增强稳定性和孔的垂直性
- ▶ 较小的推力和卓越的自定心功能
- ▶ 各种非标准尺寸均可进行生产.




切削条件 / cutting conditions : p. A371

Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | INDEXABLE DRILL HOLDER | D245 - 246 | - | - |
| ○ | ER COLLET CHUCK | | D73 - 115 | |

| Series 系列 | Diameter 直径 | | | Thick 厚度 | EDP No. 型号 | | |
|---|---|---|---|---|---|---|---|
| Min. to Max. mm (inch) | Inch (inch) | Metric (mm) | Decimal (inch) | Metric (mm, inch) | CARBIDE P40 TiN | CARBIDE P40 TiCN | CARBIDE P40 TiAlN |
| **2** Ø24.41 (.961) to Ø35.05 (1.380) | 31/32 | 24.61 | .9688 | 4.8 (3/16) | SM805062 | SM810062 | SM815062 |
| | 63/64 | 25.00 | .9843 | | SM855250 | SM860250 | SM865250 |
| | 1 | 25.40 | 1.0000 | | SM805100 | SM810100 | SM815100 |
| | 1-1/64 | 25.80 | 1.0156 | | SM805101 | SM810101 | SM815101 |
| | | 26.00 | 1.0236 | | SM855260 | SM860260 | SM865260 |
| | 1-1/32 | 26.19 | 1.0312 | | SM805102 | SM810102 | SM815102 |
| | 1-3/64 | 26.59 | 1.0469 | | SM805103 | SM810103 | SM815103 |
| | 1-1/16 | 26.99 | 1.0625 | | SM805104 | SM810104 | SM815104 |
| | | 27.00 | 1.0630 | | SM855270 | SM860270 | SM865270 |
| | 1-3/32 | 27.78 | 1.0938 | | SM805106 | SM810106 | SM815106 |
| | | 28.00 | 1.1024 | | SM855280 | SM860280 | SM865280 |
| | 1-7/64 | 28.18 | 1.1094 | | SM805107 | SM810107 | SM815107 |
| | 1-1/8 | 28.58 | 1.1250 | | SM805108 | SM810108 | SM815108 |
| | | 29.00 | 1.1417 | | SM855290 | SM860290 | SM865290 |
| | 1-5/32 | 29.37 | 1.1562 | | SM805110 | SM810110 | SM815110 |
| | | 30.00 | 1.1811 | | SM855300 | SM860300 | SM865300 |
| | 1-3/16 | 30.16 | 1.1875 | | SM805112 | SM810112 | SM815112 |
| | 1-7/32 | 30.96 | 1.2188 | | SM805114 | SM810114 | SM815114 |
| | | 31.00 | 1.2205 | | SM855310 | SM860310 | SM865310 |
| | 1-1/4 | 31.75 | 1.2500 | | SM805116 | SM810116 | SM815116 |
| | | 32.00 | 1.2598 | | SM855320 | SM860320 | SM865320 |
| | 1-9/32 | 32.54 | 1.2812 | | SM805118 | SM810118 | SM815118 |
| | | 33.00 | 1.2992 | | SM855330 | SM860330 | SM865330 |
| | 1-5/16 | 33.34 | 1.3125 | | SM805120 | SM810120 | SM815120 |
| | | 34.00 | 1.3386 | | SM855340 | SM860340 | SM865340 |
| | 1-11/32 | 34.13 | 1.3438 | | SM805122 | SM810122 | SM815122 |
| | 1-3/8 | 34.93 | 1.3750 | | SM805124 | SM810124 | SM815124 |
| | | 35.00 | 1.3780 | | SM855350 | SM860350 | SM865350 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ◎ | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | | | | | ○ | | | | ○ | ○ | ○ | ○ | ○ | | | ◎ | | | |

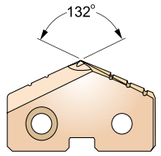
# SPADE DRILLS

SERIES 3

## SM-POINT SPADE DRILL INSERTS - CARBIDE P40
## SM-POINT 铲钻刀片-硬质合金 P40

- For general use in carbon steels and alloys steels.
- Improved stability and hole straightness by newly developed thinning design.
- Less thrust force and excellent self-centering.
- Any non-standard size available.

- 用于碳素钢和合金钢的普通用途
- 通过新开发的钻顶设计增强稳定性和孔的垂直性
- 较小的推力和卓越的自定心功能
- 各种非标准尺寸均可进行生产.




切削条件 / cutting conditions : p. A371

Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | INDEXABLE DRILL HOLDER | D245 - 246 | - | - |
| ○ | ER COLLET CHUCK | | | D73 - 115 |

| Series 系列 | Diameter 直径 | | | Thick 厚度 | EDP No. 型号 | | |
|---|---|---|---|---|---|---|---|
| Min. to Max. mm (inch) | Inch (inch) | Metric (mm) | Decimal (inch) | Metric (mm, inch) | CARBIDE P40 | | |
| | | | | | TiN | TiCN | TiAlN |
| 3 Ø34.37 (1.353) to Ø47.80 (1.882) | 1-13/32 | 35.72 | 1.4062 | 6.4 (1/4) | SM805126 | SM810126 | SM815126 |
| | | 36.00 | 1.4173 | | SM855360 | SM860360 | SM865360 |
| | 1-7/16 | 36.51 | 1.4375 | | SM805128 | SM810128 | SM815128 |
| | | 37.00 | 1.4567 | | SM855370 | SM860370 | SM865370 |
| | 1-15/32 | 37.31 | 1.4688 | | SM805130 | SM810130 | SM815130 |
| | | 38.00 | 1.4961 | | SM855380 | SM860380 | SM865380 |
| | 1-1/2 | 38.10 | 1.5000 | | SM805132 | SM810132 | SM815132 |
| | 1-17/32 | 38.89 | 1.5312 | | SM805134 | SM810134 | SM815134 |
| | | 39.00 | 1.5354 | | SM855390 | SM860390 | SM865390 |
| | 1-9/16 | 39.69 | 1.5625 | | SM805136 | SM810136 | SM815136 |
| | | 40.00 | 1.5748 | | SM855400 | SM860400 | SM865400 |
| | 1-19/32 | 40.48 | 1.5938 | | SM805138 | SM810138 | SM815138 |
| | | 41.00 | 1.6142 | | SM855410 | SM860410 | SM865410 |
| | 1-5/8 | 41.28 | 1.6250 | | SM805140 | SM810140 | SM815140 |
| | | 42.00 | 1.6535 | | SM855420 | SM860420 | SM865420 |
| | 1-21/32 | 42.07 | 1.6562 | | SM805142 | SM810142 | SM815142 |
| | 1-11/16 | 42.86 | 1.6875 | | SM805144 | SM810144 | SM815144 |
| | | 43.00 | 1.6929 | | SM855430 | SM860430 | SM865430 |
| | 1-23/32 | 43.66 | 1.7188 | | SM805146 | SM810146 | SM815146 |
| | | 44.00 | 1.7323 | | SM855440 | SM860440 | SM865440 |
| | 1-3/4 | 44.45 | 1.7500 | | SM805148 | SM810148 | SM815148 |
| | | 45.00 | 1.7717 | | SM855450 | SM860450 | SM865450 |
| | 1-25/32 | 45.24 | 1.7812 | | SM805150 | SM810150 | SM815150 |
| | | 46.00 | 1.8110 | | SM855460 | SM860460 | SM865460 |
| | 1-13/16 | 46.04 | 1.8125 | | SM805152 | SM810152 | SM815152 |
| | 1-27/32 | 46.83 | 1.8438 | | SM805154 | SM810154 | SM815154 |
| | | 47.00 | 1.8504 | | SM855470 | SM860470 | SM865470 |
| | 1-7/8 | 47.63 | 1.8750 | | SM805156 | SM810156 | SM815156 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ◎ | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | | | | | ○ | | | | ○ | ○ | ○ | ○ | ○ | | | ◎ | | | |



# SPADE DRILLS SV-POINT
# 铲钻刀片 SV-POINT

## Improved stability and hole straightness
## 改进稳定性和孔的垂直性

**H-Coating ( Upgraded AlCrN-Based Multi-Layer coating )**
H-Coating(基于AlCrN多层涂层)

- Higher wear resistance and reduced material adhesion
  极高的耐磨性和减少附着力
- Higher cutting speeds and feeds
  更快的切削速度和进给速度
- Improved hole quality over conventional spade drills
  提高孔的质量铲钻刀片

- Smooth cutting
  顺畅地切削
- Breaks chips
  断屑
- Low thrust
  稳定扭矩
- Stable torque
  稳定扭矩
- Self centering
  卓越的自定心功能
- Long tool life
  延长刀具寿命

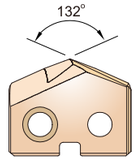
# SPADE DRILLS

SERIES Y, Z

## SV-POINT SPADE DRILL INSERTS - SUPER COBALT T15
## SV-POINT 铲钻刀片-超级含钴T15

- ▶ Sinusoidal thinning edge for smooth cutting
- ▶ Positive rake angle
- ▶ Less thrust force and heat generation

- ▶ 为柔软切削的Sinusoidal刃
- ▶ 正前角
- ▶ 较小的推力和发热性




(Series 5-8 : 144 degree)

切削条件 / cutting conditions : p. A365

Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | INDEXABLE DRILL HOLDER | D245 - 246 | - | - |
| ○ | ER COLLET CHUCK | | D73 - 115 | |

| Series 系列 | Diameter 直径 | | | Thick 厚度 | EDP No. 型号 | |
|---|---|---|---|---|---|---|
| Min. to Max. mm (inch) | Inch (inch) | Metric (mm) | Decimal (inch) | Metric (mm, inch) | SUPER COBALT T15 Hardslick | SUPER COBALT T15 H-Coating |
| Y 9.50 (.374) to 11.07 (.436) | | 9.5 | .3740 | 2.4 [3/32] | SV170095 | SV175095 |
| | 3/8 | 9.53 | .3750 | | SV120024 | SV125024 |
| | | 9.8 | .3860 | | SV170098 | SV175098 |
| | 25/64 | 9.92 | .3906 | | SV120025 | SV125025 |
| | | 10 | .3937 | | SV170100 | SV175100 |
| | | 10.2 | .4016 | | SV170102 | SV175102 |
| | 13/32 | 10.32 | .4063 | | SV120026 | SV125026 |
| | | 10.5 | .4134 | | SV170105 | SV175105 |
| | 27/64 | 10.72 | .4219 | | SV120027 | SV125027 |
| | | 10.8 | .4252 | | SV170108 | SV175108 |
| | | 11 | .4331 | | SV170110 | SV175110 |
| Z 11.11 (.437) to 12.95 (.510) | 7/16 | 11.11 | .4375 | 2.4 [3/32] | SV120028 | SV125028 |
| | | 11.5 | .4528 | | SV170115 | SV175115 |
| | 29/64 | 11.51 | .4531 | | SV120029 | SV125029 |
| | 15/32 | 11.91 | .4688 | | SV120030 | SV125030 |
| | | 12 | .4724 | | SV170120 | SV175120 |
| | 31/64 | 12.3 | .4844 | | SV120031 | SV125031 |
| | | 12.5 | .4921 | | SV170125 | SV175125 |
| | 1/2 | 12.7 | .5000 | | SV120032 | SV125032 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ◎ | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | | | | | ○ | | | | ○ | ○ | ○ | ○ | ○ | | | ◎ | | | |



CARBIDE
HSS
i-ONE DRILLS
i-DREAM DRILLS
DREAM DRILLS -PRO
DREAM DRILLS -GENERAL
DREAM DRILLS -SOFT
DREAM DRILLS -HIGH FEED
DREAM DRILLS -FLAT BOTTOM
DREAM DRILLS -INOX
DREAM DRILLS -ALU
DREAM DRILLS -CFRP
DREAM DRILLS -MQL
DREAM DRILLS for HIGH HARDENED STEELS
GENERAL CARBIDE DRILLS
MULTI-1 DRILLS
GOLD-P DRILLS
SUPER-GP DRILLS
WORM PATTERN DRILLS
STRAIGHT SHANK DRILLS
TAPER SHANK DRILLS
NC-SPOTTING DRILLS
CENTER DRILLS
SPADE DRILLS
REAMERS
COUNTER SINKS
COUNTER BORES
TECHNICAL DATA

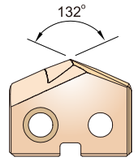
# SPADE DRILLS

SERIES 0

## SV-POINT SPADE DRILL INSERTS - SUPER COBALT T15
## SV-POINT 铲钻刀片-超级含钴T15

- ▶ Sinusoidal thinning edge for smooth cutting
- ▶ Positive rake angle
- ▶ Less thrust force and heat generation

- ▶ 为柔软切削的Sinusoidal刃
- ▶ 正前角
- ▶ 较小的推力和发热性




(Series 5-8 : 144 degree)

切削条件 / cutting conditions : p. A364

Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | INDEXABLE DRILL HOLDER | D245 - 246 | - | - |
| ○ | ER COLLET CHUCK | | D73 - 115 | |

| Series 系列 | Diameter 直径 | | | Thick 厚度 | EDP No. 型号 | |
|---|---|---|---|---|---|---|
| Min. to Max. mm (inch) | Inch (inch) | Metric (mm) | Decimal (inch) | Metric (mm, inch) | SUPER COBALT T15 Hardslick | SUPER COBALT T15 H-Coating |
| 0 12.98 (.511) to 17.65 (.695) | | 13 | .5118 | 3.2 [1/8] | SV170130 | SV175130 |
| | 33/64 | 13.1 | .5156 | | SV120033 | SV125033 |
| | 17/32 | 13.49 | .5313 | | SV120034 | SV125034 |
| | | 13.5 | .5315 | | SV170135 | SV175135 |
| | 35/64 | 13.89 | .5469 | | SV120035 | SV125035 |
| | | 14 | .5512 | | SV170140 | SV175140 |
| | 9/16 | 14.29 | .5625 | | SV120036 | SV125036 |
| | | 14.5 | .5709 | | SV170145 | SV175145 |
| | 37/64 | 14.68 | .5781 | | SV120037 | SV125037 |
| | | 15 | .5906 | | SV170150 | SV175150 |
| | 19/32 | 15.08 | .5938 | | SV120038 | SV125038 |
| | 39/64 | 15.48 | .6094 | | SV120039 | SV125039 |
| | | 15.5 | .6102 | | SV170155 | SV175155 |
| | 5/8 | 15.88 | .6250 | | SV120040 | SV125040 |
| | | 16 | .6299 | | SV170160 | SV175160 |
| | 41/64 | 16.27 | .6406 | | SV120041 | SV125041 |
| | | 16.5 | .6496 | | SV170165 | SV175165 |
| | 21/32 | 16.67 | .6563 | | SV120042 | SV125042 |
| | | 17 | .6693 | | SV170170 | SV175170 |
| | 43/64 | 17.07 | .6719 | | SV120043 | SV125043 |
| | 11/16 | 17.46 | .6875 | | SV120044 | SV125044 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ◎ | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | | | | | ○ | | | | ○ | ○ | ○ | ○ | ○ | | | ◎ | | | |

# SPADE DRILLS

SERIES 1

## SV-POINT SPADE DRILL INSERTS - SUPER COBALT T15
## SV-POINT 铲钻刀片-超级含钴T15

- ▶ Sinusoidal thinning edge for smooth cutting
- ▶ Positive rake angle
- ▶ Less thrust force and heat generation

- ▶ 为柔软切削的Sinusoidal刃
- ▶ 正前角
- ▶ 较小的推力和发热性

切削条件 / cutting conditions : p. A365

(Series 5-8 : 144 degree)

| Recommended ToolHolder | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| | INDEXABLE DRILL HOLDER | D245 - 246 | - | - |
| | ER COLLET CHUCK | D73 - 115 | | |

| Series 系列 | Diameter 直径 | | | Thick 厚度 | EDP No. 型号 | |
|---|---|---|---|---|---|---|
| Min. to Max. mm (inch) | Inch (inch) | Metric (mm) | Decimal (inch) | Metric (mm, inch) | SUPER COBALT T15 Hardslick | SUPER COBALT T15 H-Coating |
| 1<br>17.53 (.690) to 24.38 (.960) | 45/64 | 17.86 | .7031 | 4.0 [5/32] | SV120045 | SV125045 |
| | | 18 | .7087 | | SV170180 | SV175180 |
| | 23/32 | 18.26 | .7188 | | SV120046 | SV125046 |
| | | 18.5 | .7283 | | SV170185 | SV175185 |
| | 47/64 | 18.65 | .7344 | | SV120047 | SV125047 |
| | | 19 | .7480 | | SV170190 | SV175190 |
| | 3/4 | 19.05 | .7500 | | SV120048 | SV125048 |
| | | 19.5 | .7677 | | SV170195 | SV175195 |
| | 25/32 | 19.84 | .7812 | | SV120050 | SV125050 |
| | | 20 | .7874 | | SV170200 | SV175200 |
| | 51/64 | 20.24 | .7969 | | SV120051 | SV125051 |
| | | 20.5 | .8071 | | SV170205 | SV175205 |
| | 13/16 | 20.64 | .8125 | | SV120052 | SV125052 |
| | | 21 | .8268 | | SV170210 | SV175210 |
| | 27/32 | 21.43 | .8438 | | SV120054 | SV125054 |
| | 55/64 | 21.83 | .8594 | | SV120055 | SV125055 |
| | | 22 | .8661 | | SV170220 | SV175220 |
| | 7/8 | 22.23 | .8750 | | SV120056 | SV125056 |
| | 57/64 | 22.62 | .8906 | | SV120057 | SV125057 |
| | | 23 | .9055 | | SV170230 | SV175230 |
| | 29/32 | 23.02 | .9062 | | SV120058 | SV125058 |
| | 59/64 | 23.42 | .9219 | | SV120059 | SV125059 |
| | 15/16 | 23.81 | .9375 | | SV120060 | SV125060 |
| | | 24 | .9449 | | SV170240 | SV175240 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | | M | | | K | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | | | | | | | | | | | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | | | | | | | | | | | |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 | | | | | | | | | | | |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 | | | | | | | | | | | |
| Recommended | ◎ | ◎ | ◎ | ◎ | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | | | | | ○ | | | | ○ | ○ | ○ | ○ | ○ | | | ◎ | | | |





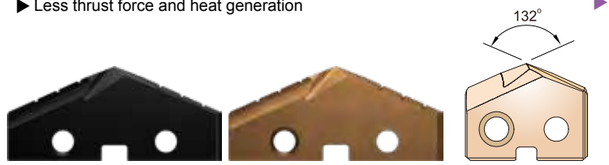
# SPADE DRILLS

SERIES 2

## SV-POINT SPADE DRILL INSERTS - SUPER COBALT T15
## SV-POINT 铲钻刀片-超级含钴T15

- ▶ Sinusoidal thinning edge for smooth cutting
- ▶ Positive rake angle
- ▶ Less thrust force and heat generation

- ▶ 为柔软切削的Sinusoidal刃
- ▶ 正前角
- ▶ 较小的推力和发热性




切削条件 / cutting conditions : p. A364

(Series 5-8 : 144 degree)

| Recommended ToolHolder | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| | INDEXABLE DRILL HOLDER | D245 - 246 | - | - |
| | ER COLLET CHUCK | D73 - 115 | | |

| Series 系列 | Diameter 直径 | | | Thick 厚度 | EDP No. 型号 | |
|---|---|---|---|---|---|---|
| Min. to Max. mm (inch) | Inch (inch) | Metric (mm) | Decimal (inch) | Metric (mm, inch) | SUPER COBALT T15 Hardslick | SUPER COBALT T15 H-Coating |
| 2<br>24.41 (.961) to 35.05 (1.380) | 31/32 | 24.61 | .9688 | 4.8 [3/16] | SV120062 | SV125062 |
| | 63/64 | 25 | .9843 | | SV120063 | SV125063 |
| | 1 | 25.4 | 1.0000 | | SV120100 | SV125100 |
| | 1 1/64 | 25.8 | 1.0156 | | SV120101 | SV125101 |
| | | 26 | 1.0236 | | SV170260 | SV175260 |
| | 1 1/32 | 26.19 | 1.0312 | | SV120102 | SV125102 |
| | 1 3/64 | 26.59 | 1.0469 | | SV120103 | SV125103 |
| | 1 1/16 | 26.99 | 1.0625 | | SV120104 | SV125104 |
| | | 27 | 1.0630 | | SV170270 | SV175270 |
| | 1 3/32 | 27.78 | 1.0938 | | SV120106 | SV125106 |
| | | 28 | 1.1024 | | SV170280 | SV175280 |
| | 1 7/64 | 28.18 | 1.1094 | | SV120107 | SV125107 |
| | 1 1/8 | 28.58 | 1.1250 | | SV120108 | SV125108 |
| | | 29 | 1.1417 | | SV170290 | SV175290 |
| | 1 5/32 | 29.37 | 1.1562 | | SV120110 | SV125110 |
| | | 30 | 1.1811 | | SV170300 | SV175300 |
| | 1 3/16 | 30.16 | 1.1875 | | SV120112 | SV125112 |
| | 1 7/32 | 30.96 | 1.2188 | | SV120114 | SV125114 |
| | | 31 | 1.2205 | | SV170310 | SV175310 |
| | 1 1/4 | 31.75 | 1.2500 | | SV120116 | SV125116 |
| | | 32 | 1.2598 | | SV170320 | SV175320 |
| | 1 9/32 | 32.54 | 1.2812 | | SV120118 | SV125118 |
| | | 33 | 1.2992 | | SV170330 | SV175330 |
| | 1 5/16 | 33.34 | 1.3125 | | SV120120 | SV125120 |
| | | 34 | 1.3386 | | SV170340 | SV175340 |
| | 1 11/32 | 34.13 | 1.3438 | | SV120122 | SV125122 |
| | 1 3/8 | 34.93 | 1.3750 | | SV120124 | SV125124 |
| | | 35 | 1.3780 | | SV170350 | SV175350 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | | M | | | K | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | | | | | | | | | | | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | | | | | | | | | | | |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 | | | | | | | | | | | |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 | | | | | | | | | | | |
| Recommended | ◎ | ◎ | ◎ | ◎ | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | | | | | ○ | | | | ○ | ○ | ○ | ○ | ○ | | | ◎ | | | |

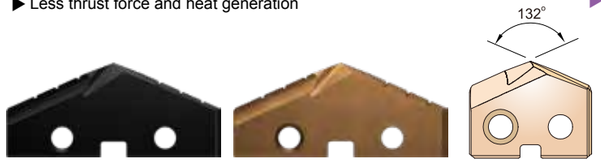
# SPADE DRILLS

SERIES 3

## SV-POINT SPADE DRILL INSERTS - SUPER COBALT T15
## SV-POINT 铲钻刀片-超级含钴T15

- ▶ Sinusoidal thinning edge for smooth cutting
- ▶ Positive rake angle
- ▶ Less thrust force and heat generation

- ▶ 为柔软切削的Sinusoidal刃
- ▶ 正前角
- ▶ 较小的推力和发热性




| Recommended ToolHolder | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| | INDEXABLE DRILL HOLDER | D245 - 246 | - | - |
| | ER COLLET CHUCK | | D73 - 115 | |

切削条件 / cutting conditions : p. A365

**(Series 5-8 : 144 degree)**

| Series 系列 | Diameter 直径 | | | Thick 厚度 | EDP No. 型号 | |
|---|---|---|---|---|---|---|
| Min. to Max. mm (inch) | Inch (inch) | Metric (mm) | Decimal (inch) | Metric (mm, inch) | SUPER COBALT T15 Hardslick | SUPER COBALT T15 H-Coating |
| 3 34.37 (1.353) to 47.80 (1.882) | 1 13/32 | 35.72 | 1.4063 | 6.4 [1/4] | SV120126 | SV125126 |
| | | 36 | 1.4173 | | SV170360 | SV175360 |
| | 1 7/16 | 36.51 | 1.4375 | | SV120128 | SV125128 |
| | | 37 | 1.4567 | | SV170370 | SV175370 |
| | 1 15/32 | 37.31 | 1.4688 | | SV120130 | SV125130 |
| | | 38 | 1.4961 | | SV170380 | SV175380 |
| | 1 1/2 | 38.1 | 1.5000 | | SV120132 | SV125132 |
| | 1 17/32 | 38.89 | 1.5313 | | SV120134 | SV125134 |
| | | 39 | 1.5354 | | SV170390 | SV175390 |
| | 1 9/16 | 39.69 | 1.5625 | | SV120136 | SV125136 |
| | | 40 | 1.5748 | | SV170400 | SV175400 |
| | 1 19/32 | 40.48 | 1.5938 | | SV120138 | SV125138 |
| | | 41 | 1.6142 | | SV170410 | SV175410 |
| | 1 5/8 | 41.28 | 1.6250 | | SV120140 | SV125140 |
| | | 42 | 1.6535 | | SV170420 | SV175420 |
| | 1 21/32 | 42.07 | 1.6563 | | SV120142 | SV125142 |
| | 1 11/16 | 42.86 | 1.6875 | | SV120144 | SV125144 |
| | | 43 | 1.6929 | | SV170430 | SV175430 |
| | 1 23/32 | 43.66 | 1.7188 | | SV120146 | SV125146 |
| | | 44 | 1.7323 | | SV170440 | SV175440 |
| | 1 3/4 | 44.45 | 1.7500 | | SV120148 | SV125148 |
| | | 45 | 1.7717 | | SV170450 | SV175450 |
| | 1 25/32 | 45.24 | 1.7813 | | SV120150 | SV125150 |
| | | 46 | 1.8110 | | SV170460 | SV175460 |
| | 1 13/16 | 46.04 | 1.8125 | | SV120152 | SV125152 |
| | 1 27/32 | 46.83 | 1.8438 | | SV120154 | SV125154 |
| | | 47 | 1.8504 | | SV170470 | SV175470 |
| | 1 7/8 | 47.63 | 1.8750 | | SV120156 | SV125156 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ◎ | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | | | | | ○ | | | | ○ | ○ | ○ | ○ | ○ | | | ◎ | | | |





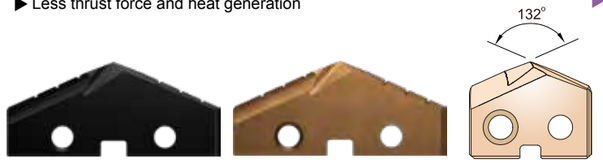
# SPADE DRILLS

SERIES 4

## SV-POINT SPADE DRILL INSERTS - SUPER COBALT T15
## SV-POINT 铲钻刀片-超级含钴T15

- ▶ Sinusoidal thinning edge for smooth cutting
- ▶ Positive rake angle
- ▶ Less thrust force and heat generation

- ▶ 为柔软切削的Sinusoidal刃
- ▶ 正前角
- ▶ 较小的推力和发热性




| Recommended ToolHolder | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| | INDEXABLE DRILL HOLDER | D245 - 246 | - | - |
| | ER COLLET CHUCK | | D73 - 115 | |

切削条件 / cutting conditions : p. A364

**(Series 5-8 : 144 degree)**

| Series 系列 | Diameter 直径 | | | Thick 厚度 | EDP No. 型号 | |
|---|---|---|---|---|---|---|
| Min. to Max. mm (inch) | Inch (inch) | Metric (mm) | Decimal (inch) | Metric (mm, inch) | SUPER COBALT T15 Hardslick | SUPER COBALT T15 H-Coating |
| 4 46.99 (1.850) to 65.28 (2.570) | | 48 | 1.8898 | 7.9 [5/16] | SV170480 | SV175480 |
| | 1 29/32 | 48.42 | 1.9062 | | SV120158 | SV125158 |
| | | 49 | 1.9291 | | SV170490 | SV175490 |
| | 1 15/16 | 49.21 | 1.9375 | | SV120160 | SV125160 |
| | | 50 | 1.9685 | | SV170500 | SV175500 |
| | 1 31/32 | 50.01 | 1.9688 | | SV120162 | SV125162 |
| | 2 | 50.8 | 2.0000 | | SV120200 | SV125200 |
| | | 51 | 2.0079 | | SV170510 | SV175510 |
| | 2 1/32 | 51.59 | 2.0312 | | SV120202 | SV125202 |
| | 2 3/64 | 51.99 | 2.0472 | | SV120203 | SV125203 |
| | 2 1/16 | 52.39 | 2.0625 | | SV120204 | SV125204 |
| | | 53 | 2.0866 | | SV170530 | SV175530 |
| | 2 3/32 | 53.18 | 2.0938 | | SV120206 | SV125206 |
| | 2 1/8 | 53.98 | 2.1250 | | SV120208 | SV125208 |
| | | 54 | 2.1260 | | SV170540 | SV175540 |
| | 2 5/32 | 54.77 | 2.1562 | | SV120210 | SV125210 |
| | | 55 | 2.1654 | | SV170550 | SV175550 |
| | 2 3/16 | 55.56 | 2.1875 | | SV120212 | SV125212 |
| | | 56 | 2.2047 | | SV170560 | SV175560 |
| | 2 7/32 | 56.36 | 2.2188 | | SV120214 | SV125214 |
| | | 57 | 2.2441 | | SV170570 | SV175570 |
| | 2 1/4 | 57.15 | 2.2500 | | SV120216 | SV125216 |
| | 2 9/32 | 57.94 | 2.2812 | | SV120218 | SV125218 |
| | | 58 | 2.2835 | | SV170580 | SV175580 |
| | 2 5/16 | 58.74 | 2.3125 | | SV120220 | SV125220 |
| | | 59 | 2.3228 | | SV170590 | SV175590 |
| | 2 11/32 | 59.53 | 2.3438 | | SV120222 | SV125222 |
| | | 60 | 2.3622 | | SV170600 | SV175600 |
| | 2 3/8 | 60.33 | 2.3750 | | SV120224 | SV125224 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ◎ | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | | | | | ○ | | | | ○ | ○ | ○ | ○ | ○ | | | ◎ | | | |

# SPADE DRILLS

SERIES 4

## SV-POINT SPADE DRILL INSERTS - SUPER COBALT T15
## SV-POINT 铲钻刀片-超级含钴T15

- ▶ Sinusoidal thinning edge for smooth cutting
- ▶ Positive rake angle
- ▶ Less thrust force and heat generation

- ▶ 为柔软切削的Sinusoidal刃
- ▶ 正前角
- ▶ 较小的推力和发热性

| Recommended ToolHolder | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| | INDEXABLE DRILL HOLDER | D245 - 246 | - | - |
| | ER COLLET CHUCK | D73 - 115 | | |

切削条件 / cutting conditions : p. A365

**(Series 5-8 : 144 degree)**

| Series 系列 | Diameter 直径 | | | Thick 厚度 | EDP No. 型号 | |
|---|---|---|---|---|---|---|
| Min. to Max. mm (inch) | Inch (inch) | Metric (mm) | Decimal (inch) | Metric (mm, inch) | SUPER COBALT T15 Hardslick | SUPER COBALT T15 H-Coating |
| 4<br>46.99 (1.850) to 65.28 (2.570) | | 61 | 2.4016 | 7.9 [5/16] | SV170610 | SV175610 |
| | 2 13/32 | 61.12 | 2.4062 | | SV120226 | SV125226 |
| | 2 7/16 | 61.91 | 2.4375 | | SV120228 | SV125228 |
| | | 62 | 2.4409 | | SV170620 | SV175620 |
| | 2 15/32 | 62.71 | 2.4688 | | SV120230 | SV125230 |
| | | 63 | 2.4803 | | SV170630 | SV175630 |
| | 2 1/2 | 63.5 | 2.5000 | | SV120232 | SV125232 |
| | | 64 | 2.5197 | | SV170640 | SV175640 |
| | 2 17/32 | 64.29 | 2.5312 | | SV120234 | SV125234 |
| | | 65 | 2.5591 | | SV170650 | SV175650 |
| | 2 9/16 | 65.09 | 2.5625 | | SV120236 | SV125236 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | | | M | | | K | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | | High alloyed steel, and tool steel | | | | | | | | | | | Stainless steel | | | Grey cast iron | | | Nodular cast iron | | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | | | | | | | | | | | |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 | | | | | | | | | | | |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 | | | | | | | | | | | |
| Recommended | ◎ | ◎ | ◎ | ◎ | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | | | | | ○ | | | | ○ | ○ | ○ | ○ | ○ | | | ◎ | | | |



# SPADE DRILLS

SERIES 5

## SV-POINT SPADE DRILL INSERTS - SUPER COBALT T15
## SV-POINT 铲钻刀片-超级含钴T15

- ▶ Sinusoidal thinning edge for smooth cutting
- ▶ Positive rake angle
- ▶ Less thrust force and heat generation

- ▶ 为柔软切削的Sinusoidal刃
- ▶ 正前角
- ▶ 较小的推力和发热性

| Recommended ToolHolder | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| | INDEXABLE DRILL HOLDER | D245 - 246 | - | - |
| | ER COLLET CHUCK | D73 - 115 | | |

切削条件 / cutting conditions : p. A364

**(Series 5-8 : 144 degree)**

| Series 系列 | Diameter 直径 | | | Thick 厚度 | EDP No. 型号 | |
|---|---|---|---|---|---|---|
| Min. to Max. mm (inch) | Inch (inch) | Metric (mm) | Decimal (inch) | Metric (mm, inch) | SUPER COBALT T15 Hardslick | SUPER COBALT T15 H-Coating |
| 5<br>62.38 (2.456) to 76.20 (3.000) | 2 1/2 | 63.5 | 2.5000 | 11.1 [7/16] | SV1202D2 | SV1252D2 |
| | | 64 | 2.5197 | | SV170640 | SV17564A |
| | 2 17/32 | 64.29 | 2.5312 | | SV1202D4 | SV1252D4 |
| | 2 9/16 | 65.09 | 2.5625 | | SV1202D6 | SV1252D6 |
| | 2 19/32 | 65.88 | 2.5938 | | SV120238 | SV125238 |
| | | 66 | 2.5984 | | SV170660 | SV175660 |
| | 2 5/8 | 66.68 | 2.6250 | | SV120240 | SV125240 |
| | 2 21/32 | 67.47 | 2.6562 | | SV120242 | SV125242 |
| | | 68 | 2.6772 | | SV170680 | SV175680 |
| | 2 11/16 | 68.26 | 2.6875 | | SV120244 | SV125244 |
| | 2 23/32 | 69.06 | 2.7188 | | SV120246 | SV125246 |
| | 2 3/4 | 69.85 | 2.7500 | | SV120248 | SV125248 |
| | | 70 | 2.7559 | | SV170700 | SV175700 |
| | 2 25/32 | 70.64 | 2.7812 | | SV120250 | SV125250 |
| | 2 13/16 | 71.44 | 2.8125 | | SV120252 | SV125252 |
| | | 72 | 2.8346 | | SV170720 | SV175720 |
| | 2 27/32 | 72.23 | 2.8438 | | SV120254 | SV125254 |
| | 2 7/8 | 73.03 | 2.8750 | | SV120256 | SV125256 |
| | 2 29/32 | 73.82 | 2.9062 | | SV120258 | SV125258 |
| | | 74 | 2.9134 | | SV170740 | SV175740 |
| | 2 15/16 | 74.61 | 2.9375 | | SV120260 | SV125260 |
| | 2 31/32 | 75.41 | 2.9688 | | SV120262 | SV125262 |
| | | 76 | 2.9921 | | SV170760 | SV175760 |
| | 3 | 76.2 | 3.0000 | | SV120300 | SV125300 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | | | M | | | K | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | | High alloyed steel, and tool steel | | | | | | | | | | | Stainless steel | | | Grey cast iron | | | Nodular cast iron | | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | | | | | | | | | | | |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 | | | | | | | | | | | |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 | | | | | | | | | | | |
| Recommended | ◎ | ◎ | ◎ | ◎ | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | | | | | ○ | | | | ○ | ○ | ○ | ○ | ○ | | | ◎ | | | |

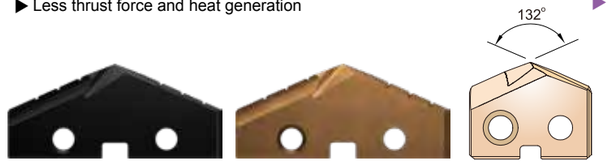
# SPADE DRILLS

SERIES 6

## SV-POINT SPADE DRILL INSERTS - SUPER COBALT T15
## SV-POINT 铲钻刀片-超级含钴T15

- ▶ Sinusoidal thinning edge for smooth cutting
- ▶ Positive rake angle
- ▶ Less thrust force and heat generation

- ▶ 为柔软切削的Sinusoidal刃
- ▶ 正前角
- ▶ 较小的推力和发热性




切削条件 / cutting conditions : p. A365

**(Series 5-8 : 144 degree)**

Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | INDEXABLE DRILL HOLDER | D245 - 246 | - | - |
| ○ | ER COLLET CHUCK | | D73 - 115 | |

| Series 系列 | Diameter 直径 | | | Thick 厚度 | EDP No. 型号 | |
|---|---|---|---|---|---|---|
| Min. to Max. mm (inch) | Inch (inch) | Metric (mm) | Decimal (inch) | Metric (mm, inch) | SUPER COBALT T15 Hardslick | SUPER COBALT T15 H-Coating |
| 6<br>3.001 (76.23) to 3.507 (89.08) | 3 1/32 | 76.99 | 3.0312 | 11.1 [7/16] | SV120302 | SV125302 |
| | 3 1/16 | 77.79 | 3.0625 | | SV120304 | SV125304 |
| | | 78 | 3.0709 | | SV170780 | SV175780 |
| | 3 3/32 | 78.58 | 3.0938 | | SV120306 | SV125306 |
| | 3 1/8 | 79.38 | 3.1250 | | SV120308 | SV125308 |
| | | 80 | 3.1496 | | SV170800 | SV175800 |
| | 3 5/32 | 80.17 | 3.1562 | | SV120310 | SV125310 |
| | 3 3/16 | 80.96 | 3.1875 | | SV120312 | SV125312 |
| | 3 7/32 | 81.76 | 3.2188 | | SV120314 | SV125314 |
| | | 82 | 3.2283 | | SV170820 | SV175820 |
| | 3 1/4 | 82.55 | 3.2500 | | SV120316 | SV125316 |
| | 3 9/32 | 83.34 | 3.2812 | | SV120318 | SV125318 |
| | | 84 | 3.3071 | | SV170840 | SV175840 |
| | 3 5/16 | 84.14 | 3.3125 | | SV120320 | SV125320 |
| | 3 11/32 | 84.93 | 3.3438 | | SV120322 | SV125322 |
| | 3 3/8 | 85.73 | 3.3750 | | SV120324 | SV125324 |
| | | 86 | 3.3858 | | SV170860 | SV175860 |
| | 3 13/32 | 86.52 | 3.4063 | | SV120326 | SV125326 |
| | 3 7/16 | 87.31 | 3.4375 | | SV120328 | SV125328 |
| | | 88 | 3.4646 | | SV170880 | SV175880 |
| | 3 15/32 | 88.11 | 3.4688 | | SV120330 | SV125330 |
| | 3 1/2 | 88.9 | 3.5000 | | SV120332 | SV125332 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ◎ | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | | | | | ○ | | | | ○ | ○ | ○ | ○ | ○ | | | ◎ | | | |



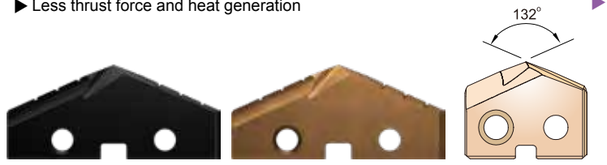
# SPADE DRILLS

SERIES 7

## SV-POINT SPADE DRILL INSERTS - SUPER COBALT T15
## SV-POINT 铲钻刀片-超级含钴T15

- ▶ Sinusoidal thinning edge for smooth cutting
- ▶ Positive rake angle
- ▶ Less thrust force and heat generation

- ▶ 为柔软切削的Sinusoidal刃
- ▶ 正前角
- ▶ 较小的推力和发热性




切削条件 / cutting conditions : p. A364

**(Series 5-8 : 144 degree)**

Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | INDEXABLE DRILL HOLDER | D245 - 246 | - | - |
| ○ | ER COLLET CHUCK | | D73 - 115 | |

| Series 系列 | Diameter 直径 | | | Thick 厚度 | EDP No. 型号 | |
|---|---|---|---|---|---|---|
| Min. to Max. mm (inch) | Inch (inch) | Metric (mm) | Decimal (inch) | Metric (mm, inch) | SUPER COBALT T15 Hardslick | SUPER COBALT T15 H-Coating |
| 7<br>87.76 (3.455) to 101.60 (4.000) | 3 17/32 | 89.69 | 3.5312 | 11.1 [7/16] | SV120334 | SV125334 |
| | | 90 | 3.5433 | | SV170900 | SV175900 |
| | 3 9/16 | 90.49 | 3.5625 | | SV120336 | SV125336 |
| | 3 19/32 | 91.28 | 3.5938 | | SV120338 | SV125338 |
| | | 92 | 3.6221 | | SV170920 | SV175920 |
| | 3 5/8 | 92.08 | 3.6250 | | SV120340 | SV125340 |
| | 3 21/32 | 92.87 | 3.6562 | | SV120342 | SV125342 |
| | 3 11/16 | 93.66 | 3.6875 | | SV120344 | SV125344 |
| | | 94 | 3.7008 | | SV170940 | SV175940 |
| | 3 23/32 | 94.46 | 3.7188 | | SV120346 | SV125346 |
| | 3 3/4 | 95.25 | 3.7500 | | SV120348 | SV125348 |
| | | 96 | 3.7795 | | SV170960 | SV175960 |
| | 3 25/32 | 96.04 | 3.7812 | | SV120350 | SV125350 |
| | 3 13/16 | 96.84 | 3.8125 | | SV120352 | SV125352 |
| | 3 27/32 | 97.63 | 3.8438 | | SV120354 | SV125354 |
| | | 98 | 3.8583 | | SV170980 | SV175980 |
| | 3 7/8 | 98.43 | 3.8750 | | SV120356 | SV125356 |
| | 3 29/32 | 99.22 | 3.9062 | | SV120358 | SV125358 |
| | | 100 | 3.9370 | | SV170A00 | SV175A00 |
| | 3 15/16 | 100.01 | 3.9375 | | SV120360 | SV125360 |
| | 3 31/32 | 100.81 | 3.9688 | | SV120362 | SV125362 |
| | 4 | 101.6 | 4.0000 | | SV120400 | SV125400 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ◎ | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | | | | | ○ | | | | ○ | ○ | ○ | ○ | ○ | | | ◎ | | | |

# SPADE DRILLS

SERIES 8

## SV-POINT SPADE DRILL INSERTS - SUPER COBALT T15

## SV-POINT 铲钻刀片-超级含钴T15

▶ Sinusoidal thinning edge for smooth cutting
▶ Positive rake angle
▶ Less thrust force and heat generation

▶ 为柔软切削的Sinusoidal刃
▶ 正前角
▶ 较小的推力和发热性

切削条件 / cutting conditions : p. A365

**(Series 5-8 : 144 degree)**

Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | INDEXABLE DRILL HOLDER | D245 - 246 | - | - |
| ○ | ER COLLET CHUCK | | D73 - 115 | |

| Series 系列 | Diameter 直径 | | | Thick 厚度 | EDP No. 型号 | |
|---|---|---|---|---|---|---|
| Min. to Max. mm (inch) | Inch (inch) | Metric (mm) | Decimal (inch) | Metric (mm, inch) | SUPER COBALT T15 Hardslick | SUPER COBALT T15 H-Coating |
| 8<br>101.63 (4.001) to 114.48 (4.507) | 4 1/64 | 102 | 4.0156 | 11.1 [7/16] | SV120401 | SV125401 |
| | 4 1/16 | 103.19 | 4.0625 | | SV120404 | SV125404 |
| | 4 3/32 | 103.98 | 4.0945 | | SV120406 | SV125406 |
| | 4 1/8 | 104.78 | 4.1250 | | SV120408 | SV125408 |
| | | 106 | 4.1732 | | SV170A60 | SV175A60 |
| | 4 3/16 | 106.36 | 4.1875 | | SV120412 | SV125412 |
| | 4 1/4 | 107.95 | 4.2500 | | SV120416 | SV125416 |
| | | 108 | 4.2520 | | SV170A80 | SV175A80 |
| | 4 5/16 | 109.54 | 4.3125 | | SV120420 | SV125420 |
| | | 110 | 4.3307 | | SV170B00 | SV175B00 |
| | 4 3/8 | 111.13 | 4.3750 | | SV120424 | SV125424 |
| | | 112 | 4.4094 | | SV170B20 | SV175B20 |
| | 4 7/16 | 112.71 | 4.4375 | | SV120428 | SV125428 |
| | | 114 | 4.4882 | | SV170B40 | SV175B40 |
| | 4 1/2 | 114.3 | 4.5000 | | SV120432 | SV125432 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 | |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 | |
| Recommended | ◎ | ◎ | ◎ | ◎ | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | | | | | ○ | | | | ○ | ○ | ○ | ○ | ○ | | | ◎ | | | |



# SPADE DRILLS

SERIES Y, Z

## SV-POINT SPADE DRILL INSERTS - PREMIUM COBALT M48

## SV-POINT 铲钻刀片-优质钴 M48

▶ Sinusoidal thinning edge for smooth cutting
▶ Positive rake angle
▶ Less thrust force and heat generation

▶ 为柔软切削的Sinusoidal刃
▶ 正前角
▶ 较小的推力和发热性

切削条件 / cutting conditions : p. A367

**(Series 5-8 : 144 degree)**

Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | INDEXABLE DRILL HOLDER | D245 - 246 | - | - |
| ○ | ER COLLET CHUCK | | D73 - 115 | |

| Series 系列 | Diameter 直径 | | | Thick 厚度 | EDP No. 型号 | |
|---|---|---|---|---|---|---|
| Min. to Max. mm (inch) | Inch (inch) | Metric (mm) | Decimal (inch) | Metric (mm, inch) | PREMIUM COBALT M48 Hardslick | PREMIUM COBALT M48 H-Coating |
| Y<br>9.50 (.374) to 11.07 (.436) | | 9.5 | .3740 | 2.4 [3/32] | SV570095 | SV575095 |
| | 3/8 | 9.53 | .3750 | | SV520024 | SV525024 |
| | | 9.8 | .3860 | | SV570098 | SV575098 |
| | 25/64 | 9.92 | .3906 | | SV520025 | SV525025 |
| | | 10 | .3937 | | SV570100 | SV575100 |
| | | 10.2 | .4016 | | SV570102 | SV575102 |
| | 13/32 | 10.32 | .4063 | | SV520026 | SV525026 |
| | | 10.5 | .4134 | | SV570105 | SV575105 |
| | 27/64 | 10.72 | .4219 | | SV520027 | SV525027 |
| | | 10.8 | .4252 | | SV570108 | SV575108 |
| | | 11 | .4331 | | SV570110 | SV575110 |
| Z<br>11.11 (.437) to 12.95 (.510) | 7/16 | 11.11 | .4375 | 2.4 [3/32] | SV520028 | SV525028 |
| | | 11.5 | .4528 | | SV570115 | SV575115 |
| | 29/64 | 11.51 | .4531 | | SV520029 | SV525029 |
| | 15/32 | 11.91 | .4688 | | SV520030 | SV525030 |
| | | 12 | .4724 | | SV570120 | SV575120 |
| | 31/64 | 12.3 | .4844 | | SV520031 | SV525031 |
| | | 12.5 | .4921 | | SV570125 | SV575125 |
| | 1/2 | 12.7 | .5000 | | SV520032 | SV525032 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 | |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 | |
| Recommended | ◎ | ◎ | ◎ | ◎ | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | | | | | ○ | | | | ○ | ○ | ○ | ○ | ○ | | | ◎ | | | |

# SPADE DRILLS

SERIES 0

## SV-POINT SPADE DRILL INSERTS - PREMIUM COBALT M48
## SV-POINT 铲钻刀片-优质钴 M48

- ▶ Sinusoidal thinning edge for smooth cutting
- ▶ Positive rake angle
- ▶ Less thrust force and heat generation

- ▶ 为柔软切削的Sinusoidal刃
- ▶ 正前角
- ▶ 较小的推力和发热性

切削条件 / cutting conditions : p. A367

**(Series 5-8 : 144 degree)**

| Recommended ToolHolder | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| | INDEXABLE DRILL HOLDER | D245 - 246 | - | - |
| | ER COLLET CHUCK | | D73 - 115 | |

| Series 系列 | Diameter 直径 | | | Thick 厚度 | EDP No. 型号 | |
|---|---|---|---|---|---|---|
| Min. to Max. mm (inch) | Inch (inch) | Metric (mm) | Decimal (inch) | Metric (mm, inch) | PREMIUM COBALT M48 Hardslick | PREMIUM COBALT M48 H-Coating |
| 0<br>12.98 (.511) to 17.65 (.695) | | 13 | .5118 | 3.2 [1/8] | SV570130 | SV575130 |
| | 33/64 | 13.1 | .5156 | | SV520033 | SV525033 |
| | 17/32 | 13.49 | .5313 | | SV520034 | SV525034 |
| | | 13.5 | .5315 | | SV570135 | SV575135 |
| | 35/64 | 13.89 | .5469 | | SV520035 | SV525035 |
| | | 14 | .5512 | | SV570140 | SV575140 |
| | 9/16 | 14.29 | .5625 | | SV520036 | SV525036 |
| | | 14.5 | .5709 | | SV570145 | SV575145 |
| | 37/64 | 14.68 | .5781 | | SV520037 | SV525037 |
| | | 15 | .5906 | | SV570150 | SV575150 |
| | 19/32 | 15.08 | .5938 | | SV520038 | SV525038 |
| | 39/64 | 15.48 | .6094 | | SV520039 | SV525039 |
| | | 15.5 | .6102 | | SV570155 | SV575155 |
| | 5/8 | 15.88 | .6250 | | SV520040 | SV525040 |
| | | 16 | .6299 | | SV570160 | SV575160 |
| | 41/64 | 16.27 | .6406 | | SV520041 | SV525041 |
| | | 16.5 | .6496 | | SV570165 | SV575165 |
| | 21/32 | 16.67 | .6563 | | SV520042 | SV525042 |
| | | 17 | .6693 | | SV570170 | SV575170 |
| | 43/64 | 17.07 | .6719 | | SV520043 | SV525043 |
| | 11/16 | 17.46 | .6875 | | SV520044 | SV525044 |
| | | 17.5 | .6890 | | SV570175 | SV575175 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ◎ | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | | | | | ○ | | | | ○ | ○ | ○ | ○ | ○ | | | ◎ | | | |





# SPADE DRILLS

SERIES 1

## SV-POINT SPADE DRILL INSERTS - PREMIUM COBALT M48
## SV-POINT 铲钻刀片-优质钴 M48

- ▶ Sinusoidal thinning edge for smooth cutting
- ▶ Positive rake angle
- ▶ Less thrust force and heat generation

- ▶ 为柔软切削的Sinusoidal刃
- ▶ 正前角
- ▶ 较小的推力和发热性

切削条件 / cutting conditions : p. A367

**(Series 5-8 : 144 degree)**

| Recommended ToolHolder | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| | INDEXABLE DRILL HOLDER | D245 - 246 | - | - |
| | ER COLLET CHUCK | | D73 - 115 | |

| Series 系列 | Diameter 直径 | | | Thick 厚度 | EDP No. 型号 | |
|---|---|---|---|---|---|---|
| Min. to Max. mm (inch) | Inch (inch) | Metric (mm) | Decimal (inch) | Metric (mm, inch) | PREMIUM COBALT M48 Hardslick | PREMIUM COBALT M48 H-Coating |
| 1<br>17.53 (.690) to 24.38 (.960) | 45/64 | 17.86 | .7031 | 4.0 [5/32] | SV520045 | SV525045 |
| | | 18 | .7087 | | SV570180 | SV575180 |
| | 23/32 | 18.26 | .7188 | | SV520046 | SV525046 |
| | | 18.5 | .7283 | | SV570185 | SV575185 |
| | 47/64 | 18.65 | .7344 | | SV520047 | SV525047 |
| | | 19 | .7480 | | SV570190 | SV575190 |
| | 3/4 | 19.05 | .7500 | | SV520048 | SV525048 |
| | 49/64 | 19.45 | .7656 | | SV520049 | SV525049 |
| | | 19.5 | .7677 | | SV570195 | SV575195 |
| | 25/32 | 19.84 | .7812 | | SV520050 | SV525050 |
| | | 20 | .7874 | | SV570200 | SV575200 |
| | 51/64 | 20.24 | .7969 | | SV520051 | SV525051 |
| | | 20.5 | .8071 | | SV570205 | SV575205 |
| | 13/16 | 20.64 | .8125 | | SV520052 | SV525052 |
| | | 21 | .8268 | | SV570210 | SV575210 |
| | 27/32 | 21.43 | .8438 | | SV520054 | SV525054 |
| | 55/64 | 21.83 | .8594 | | SV520055 | SV525055 |
| | | 22 | .8661 | | SV570220 | SV575220 |
| | 7/8 | 22.23 | .8750 | | SV520056 | SV525056 |
| | 57/64 | 22.62 | .8906 | | SV520057 | SV525057 |
| | | 23 | .9055 | | SV570230 | SV575230 |
| | 29/32 | 23.02 | .9062 | | SV520058 | SV525058 |
| | 59/64 | 23.42 | .9219 | | SV520059 | SV525059 |
| | 15/16 | 23.81 | .9375 | | SV520060 | SV525060 |
| | | 24 | .9449 | | SV570240 | SV575240 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ◎ | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | | | | | ○ | | | | ○ | ○ | ○ | ○ | ○ | | | ◎ | | | |

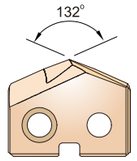
# SPADE DRILLS

SERIES 2

## SV-POINT SPADE DRILL INSERTS - PREMIUM COBALT M48
## SV-POINT 铲钻刀片-优质钴 M48

- ▶ Sinusoidal thinning edge for smooth cutting
- ▶ Positive rake angle
- ▶ Less thrust force and heat generation

- ▶ 为柔软切削的Sinusoidal刃
- ▶ 正前角
- ▶ 较小的推力和发热性




切削条件 / cutting conditions : p. A367

(Series 5-8 : 144 degree)

| Recommended ToolHolder | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| | INDEXABLE DRILL HOLDER | D245 - 246 | - | - |
| | ER COLLET CHUCK | D73 - 115 | | |

| Series 系列 | Diameter 直径 | | | Thick 厚度 | EDP No. 型号 | |
|---|---|---|---|---|---|---|
| Min. to Max. mm (inch) | Inch (inch) | Metric (mm) | Decimal (inch) | Metric (mm, inch) | PREMIUM COBALT M48 Hardslick | PREMIUM COBALT M48 H-Coating |
| 2 24.41 (.961) to 35.05 (1.380) | 31/32 | 24.61 | .9688 | 4.8 [3/16] | SV520062 | SV525062 |
| | 63/64 | 25 | .9843 | | SV520063 | SV525063 |
| | 1 | 25.4 | 1.0000 | | SV520100 | SV525100 |
| | 1 1/64 | 25.8 | 1.0156 | | SV520101 | SV525101 |
| | | 26 | 1.0236 | | SV570260 | SV575260 |
| | 1 1/32 | 26.19 | 1.0312 | | SV520102 | SV525102 |
| | 1 3/64 | 26.59 | 1.0469 | | SV520103 | SV525103 |
| | 1 1/16 | 26.99 | 1.0625 | | SV520104 | SV525104 |
| | | 27 | 1.0630 | | SV570270 | SV575270 |
| | 1 3/32 | 27.78 | 1.0938 | | SV520106 | SV525106 |
| | | 28 | 1.1024 | | SV570280 | SV575280 |
| | 1 7/64 | 28.18 | 1.1094 | | SV520107 | SV525107 |
| | 1 1/8 | 28.58 | 1.1250 | | SV520108 | SV525108 |
| | | 29 | 1.1417 | | SV570290 | SV575290 |
| | 1 5/32 | 29.37 | 1.1562 | | SV520110 | SV525110 |
| | | 30 | 1.1811 | | SV570300 | SV575300 |
| | 1 3/16 | 30.16 | 1.1875 | | SV520112 | SV525112 |
| | 1 7/32 | 30.96 | 1.2188 | | SV520114 | SV525114 |
| | | 31 | 1.2205 | | SV570310 | SV575310 |
| | 1 1/4 | 31.75 | 1.2500 | | SV520116 | SV525116 |
| | | 32 | 1.2598 | | SV570320 | SV575320 |
| | 1 9/32 | 32.54 | 1.2812 | | SV520118 | SV525118 |
| | | 33 | 1.2992 | | SV570330 | SV575330 |
| | 1 5/16 | 33.34 | 1.3125 | | SV520120 | SV525120 |
| | | 34 | 1.3386 | | SV570340 | SV575340 |
| | 1 11/32 | 34.13 | 1.3438 | | SV520122 | SV525122 |
| | 1 3/8 | 34.93 | 1.3750 | | SV520124 | SV525124 |
| | | 35 | 1.3780 | | SV570350 | SV575350 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | M Stainless steel | | | K Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 | |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 | |
| Recommended | ◎ | ◎ | ◎ | ◎ | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | | | | | ○ | | | | ○ | ○ | ○ | ○ | ○ | | | ◎ | | | |





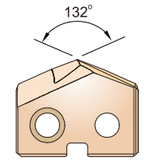
# SPADE DRILLS

SERIES 3

## SV-POINT SPADE DRILL INSERTS - PREMIUM COBALT M48
## SV-POINT 铲钻刀片-优质钴 M48

- ▶ Sinusoidal thinning edge for smooth cutting
- ▶ Positive rake angle
- ▶ Less thrust force and heat generation

- ▶ 为柔软切削的Sinusoidal刃
- ▶ 正前角
- ▶ 较小的推力和发热性




切削条件 / cutting conditions : p. A367

(Series 5-8 : 144 degree)

| Recommended ToolHolder | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| | INDEXABLE DRILL HOLDER | D245 - 246 | - | - |
| | ER COLLET CHUCK | D73 - 115 | | |

| Series 系列 | Diameter 直径 | | | Thick 厚度 | EDP No. 型号 | |
|---|---|---|---|---|---|---|
| Min. to Max. mm (inch) | Inch (inch) | Metric (mm) | Decimal (inch) | Metric (mm, inch) | PREMIUM COBALT M48 Hardslick | PREMIUM COBALT M48 H-Coating |
| 3 34.37 (1.353) to 47.80 (1.882) | 1 13/32 | 35.72 | 1.4063 | 6.4 [1/4] | SV520126 | SV525126 |
| | | 36 | 1.4173 | | SV570360 | SV575360 |
| | 1 7/16 | 36.51 | 1.4375 | | SV520128 | SV525128 |
| | | 37 | 1.4567 | | SV570370 | SV575370 |
| | 1 15/32 | 37.31 | 1.4688 | | SV520130 | SV525130 |
| | | 38 | 1.4961 | | SV570380 | SV575380 |
| | 1 1/2 | 38.1 | 1.5000 | | SV520132 | SV525132 |
| | 1 17/32 | 38.89 | 1.5313 | | SV520134 | SV525134 |
| | | 39 | 1.5354 | | SV570390 | SV575390 |
| | 1 9/16 | 39.69 | 1.5625 | | SV520136 | SV525136 |
| | | 40 | 1.5748 | | SV570400 | SV575400 |
| | 1 19/32 | 40.48 | 1.5938 | | SV520138 | SV525138 |
| | | 41 | 1.6142 | | SV570410 | SV575410 |
| | 1 5/8 | 41.28 | 1.6250 | | SV520140 | SV525140 |
| | | 42 | 1.6535 | | SV570420 | SV575420 |
| | 1 21/32 | 42.07 | 1.6563 | | SV520142 | SV525142 |
| | 1 11/16 | 42.86 | 1.6875 | | SV520144 | SV525144 |
| | | 43 | 1.6929 | | SV570430 | SV575430 |
| | 1 23/32 | 43.66 | 1.7188 | | SV520146 | SV525146 |
| | | 44 | 1.7323 | | SV570440 | SV575440 |
| | 1 3/4 | 44.45 | 1.7500 | | SV520148 | SV525148 |
| | | 45 | 1.7717 | | SV570450 | SV575450 |
| | 1 25/32 | 45.24 | 1.7813 | | SV520150 | SV525150 |
| | | 46 | 1.8110 | | SV570460 | SV575460 |
| | 1 13/16 | 46.04 | 1.8125 | | SV520152 | SV525152 |
| | 1 27/32 | 46.83 | 1.8438 | | SV520154 | SV525154 |
| | | 47 | 1.8504 | | SV570470 | SV575470 |
| | 1 7/8 | 47.63 | 1.8750 | | SV520156 | SV525156 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | M Stainless steel | | | K Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 | |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 | |
| Recommended | ◎ | ◎ | ◎ | ◎ | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | | | | | ○ | | | | ○ | ○ | ○ | ○ | ○ | | | ◎ | | | |

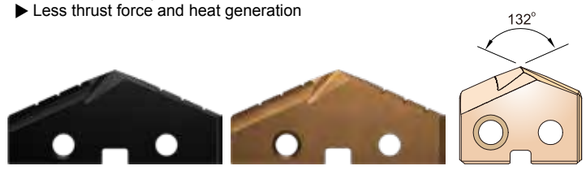
# SPADE DRILLS

SERIES 4

## SV-POINT SPADE DRILL INSERTS - PREMIUM COBALT M48
## SV-POINT 铲钻刀片-优质钴 M48

- ▶ Sinusoidal thinning edge for smooth cutting
- ▶ Positive rake angle
- ▶ Less thrust force and heat generation

- ▶ 为柔软切削的Sinusoidal刃
- ▶ 正前角
- ▶ 较小的推力和发热性




切削条件 / cutting conditions : p. A367

**(Series 5-8 : 144 degree)**

| Recommended ToolHolder | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| | INDEXABLE DRILL HOLDER | D245 - 246 | - | - |
| | ER COLLET CHUCK | | D73 - 115 | |

| Series 系列 | Diameter 直径 | | | Thick 厚度 | EDP No. 型号 | |
|---|---|---|---|---|---|---|
| Min. to Max. mm (inch) | Inch (inch) | Metric (mm) | Decimal (inch) | Metric (mm, inch) | PREMIUM COBALT M48 Hardslick | PREMIUM COBALT M48 H-Coating |
| 4<br>46.99<br>(1.850)<br>to<br>65.28<br>(2.570) | | 48 | 1.8898 | 7.9<br>[5/16] | SV570480 | SV575480 |
| | 1 29/32 | 48.42 | 1.9062 | | SV520158 | SV525158 |
| | | 49 | 1.9291 | | SV570490 | SV575490 |
| | 1 15/16 | 49.21 | 1.9375 | | SV520160 | SV525160 |
| | | 50 | 1.9685 | | SV570500 | SV575500 |
| | 1 31/32 | 50.01 | 1.9688 | | SV520162 | SV525162 |
| | 2 | 50.8 | 2.0000 | | SV520200 | SV525200 |
| | | 51 | 2.0079 | | SV570510 | SV575510 |
| | 2 1/32 | 51.59 | 2.0312 | | SV520202 | SV525202 |
| | 2 3/64 | 51.99 | 2.0472 | | SV520203 | SV525203 |
| | 2 1/16 | 52.39 | 2.0625 | | SV520204 | SV525204 |
| | | 53 | 2.0866 | | SV570530 | SV575530 |
| | 2 3/32 | 53.18 | 2.0938 | | SV520206 | SV525206 |
| | 2 1/8 | 53.98 | 2.1250 | | SV520208 | SV525208 |
| | | 54 | 2.1260 | | SV570540 | SV575540 |
| | 2 5/32 | 54.77 | 2.1562 | | SV520210 | SV525210 |
| | | 55 | 2.1654 | | SV570550 | SV575550 |
| | 2 3/16 | 55.56 | 2.1875 | | SV520212 | SV525212 |
| | | 56 | 2.2047 | | SV570560 | SV575560 |
| | 2 7/32 | 56.36 | 2.2188 | | SV520214 | SV525214 |
| | | 57 | 2.2441 | | SV570570 | SV575570 |
| | 2 1/4 | 57.15 | 2.2500 | | SV520216 | SV525216 |
| | 2 9/32 | 57.94 | 2.2812 | | SV520218 | SV525218 |
| | | 58 | 2.2835 | | SV570580 | SV575580 |
| | 2 5/16 | 58.74 | 2.3125 | | SV520220 | SV525220 |
| | | 59 | 2.3228 | | SV570590 | SV575590 |

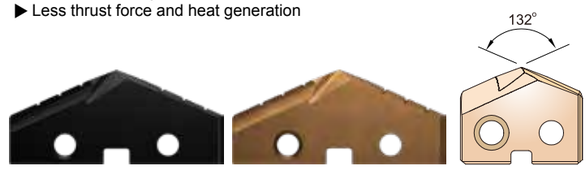
◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | M | | | K | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | | | | | | | | | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | | | | | | | | | |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 | | | | | | | | | |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 | | | | | | | | | |
| Recommended | ◎ | ◎ | ◎ | ◎ | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron | | |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | | |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 | | |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 | | |
| Recommended | ○ | ○ | | | | | ○ | | | | ○ | ○ | ○ | ○ | ○ | | | ◎ | | | | | |



SPADE DRILLS
SERIES 4
SV-POINT SPADE DRILL INSERTS - PREMIUM COBALT M48
SV-POINT 铲钻刀片-优质钴 M48
▶ Sinusoidal thinning edge for smooth cutting
▶ Positive rake angle
▶ Less thrust force and heat generation
▶ 为柔软切削的Sinusoidal刃
▶ 正前角
▶ 较小的推力和发热性




切削条件 / cutting conditions : p. A367

**(Series 5-8 : 144 degree)**

| Recommended ToolHolder | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| | INDEXABLE DRILL HOLDER | D245 - 246 | - | - |
| | ER COLLET CHUCK | | D73 - 115 | |

| Series 系列 | Diameter 直径 | | | Thick 厚度 | EDP No. 型号 | |
|---|---|---|---|---|---|---|
| Min. to Max. mm (inch) | Inch (inch) | Metric (mm) | Decimal (inch) | Metric (mm, inch) | PREMIUM COBALT M48 Hardslick | PREMIUM COBALT M48 H-Coating |
| 4<br>46.99<br>(1.850)<br>to<br>65.28<br>(2.570) | 2 11/32 | 59.53 | 2.3438 | 7.9<br>[5/16] | SV520222 | SV525222 |
| | | 60 | 2.3622 | | SV570600 | SV575600 |
| | 2 3/8 | 60.33 | 2.3750 | | SV520224 | SV525224 |
| | | 61 | 2.4016 | | SV570610 | SV575610 |
| | 2 13/32 | 61.12 | 2.4062 | | SV520226 | SV525226 |
| | 2 7/16 | 61.91 | 2.4375 | | SV520228 | SV525228 |
| | | 62 | 2.4409 | | SV570620 | SV575620 |
| | 2 15/32 | 62.71 | 2.4688 | | SV520230 | SV525230 |
| | | 63 | 2.4803 | | SV570630 | SV575630 |
| | 2 1/2 | 63.5 | 2.5000 | | SV520232 | SV525232 |
| | | 64 | 2.5197 | | SV570640 | SV575640 |
| | 2 17/32 | 64.29 | 2.5312 | | SV520234 | SV525234 |
| | | 65 | 2.5591 | | SV570650 | SV575650 |
| | 2 9/16 | 65.09 | 2.5625 | | SV520236 | SV525236 |
| | 2 1/2 | 63.5 | 2.5000 | | SV520232 | SV525232 |
| | | 64 | 2.5197 | | SV570640 | SV575640 |
| | 2 17/32 | 64.29 | 2.5312 | | SV520234 | SV525234 |
| | 2 9/16 | 65.09 | 2.5625 | | SV520236 | SV525236 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | M | | | K | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | | | | | | | | | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | | | | | | | | | |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 | | | | | | | | | |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 | | | | | | | | | |
| Recommended | ◎ | ◎ | ◎ | ◎ | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron | | |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | | |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 | | |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 | | |
| Recommended | ○ | ○ | | | | | ○ | | | | ○ | ○ | ○ | ○ | ○ | | | ◎ | | | | | |

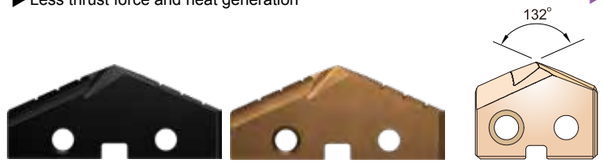
# SPADE DRILLS

SERIES 5

## SV-POINT SPADE DRILL INSERTS - PREMIUM COBALT M48
## SV-POINT 铲钻刀片-优质钴 M48

- ▶ Sinusoidal thinning edge for smooth cutting
- ▶ Positive rake angle
- ▶ Less thrust force and heat generation

- ▶ 为柔软切削的Sinusoidal刃
- ▶ 正前角
- ▶ 较小的推力和发热性




| Recommended ToolHolder | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| | INDEXABLE DRILL HOLDER | D245 - 246 | - | - |
| | ER COLLET CHUCK | D73 - 115 | | |

切削条件 / cutting conditions : p. A367

**(Series 5-8 : 144 degree)**

| Series 系列 | Diameter 直径 | | | Thick 厚度 | EDP No. 型号 | |
|---|---|---|---|---|---|---|
| Min. to Max. mm (inch) | Inch (inch) | Metric (mm) | Decimal (inch) | Metric (mm, inch) | PREMIUM COBALT M48 Hardslick | PREMIUM COBALT M48 H-Coating |
| 5<br>62.38 (2.456) to 76.20 (3.000) | 2 19/32 | 65.88 | 2.5938 | 11.1 [7/16] | SV520238 | SV525238 |
| | | 66 | 2.5984 | | SV570660 | SV575660 |
| | 2 5/8 | 66.68 | 2.6250 | | SV520240 | SV525240 |
| | 2 21/32 | 67.47 | 2.6562 | | SV520242 | SV525242 |
| | | 68 | 2.6772 | | SV570680 | SV575680 |
| | 2 11/16 | 68.26 | 2.6875 | | SV520244 | SV525244 |
| | 2 23/32 | 69.06 | 2.7188 | | SV520246 | SV525246 |
| | 2 3/4 | 69.85 | 2.7500 | | SV520248 | SV525248 |
| | | 70 | 2.7559 | | SV570700 | SV575700 |
| | 2 25/32 | 70.64 | 2.7812 | | SV520250 | SV525250 |
| | 2 13/16 | 71.44 | 2.8125 | | SV520252 | SV525252 |
| | | 72 | 2.8346 | | SV570720 | SV575720 |
| | 2 27/32 | 72.23 | 2.8438 | | SV520254 | SV525254 |
| | 2 7/8 | 73.03 | 2.8750 | | SV520256 | SV525256 |
| | 2 29/32 | 73.82 | 2.9062 | | SV520258 | SV525258 |
| | | 74 | 2.9134 | | SV570740 | SV575740 |
| | 2 15/16 | 74.61 | 2.9375 | | SV520260 | SV525260 |
| | 2 31/32 | 75.41 | 2.9688 | | SV520262 | SV525262 |
| | | 76 | 2.9921 | | SV570760 | SV575760 |
| | 3 | 76.2 | 3.0000 | | SV520300 | SV525300 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ◎ | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | | | | | ○ | | | | ○ | ○ | ○ | ○ | ○ | | | ◎ | | | |





# SPADE DRILLS

SERIES 6

## SV-POINT SPADE DRILL INSERTS - PREMIUM COBALT M48
## SV-POINT 铲钻刀片-优质钴 M48

- ▶ Sinusoidal thinning edge for smooth cutting
- ▶ Positive rake angle
- ▶ Less thrust force and heat generation

- ▶ 为柔软切削的Sinusoidal刃
- ▶ 正前角
- ▶ 较小的推力和发热性

| Recommended ToolHolder | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| | INDEXABLE DRILL HOLDER | D245 - 246 | - | - |
| | ER COLLET CHUCK | D73 - 115 | | |

切削条件 / cutting conditions : p. A367

**(Series 5-8 : 144 degree)**

| Series 系列 | Diameter 直径 | | | Thick 厚度 | EDP No. 型号 | |
|---|---|---|---|---|---|---|
| Min. to Max. mm (inch) | Inch (inch) | Metric (mm) | Decimal (inch) | Metric (mm, inch) | PREMIUM COBALT M48 Hardslick | PREMIUM COBALT M48 H-Coating |
| 6<br>76.23 (3.001) to 89.08 (3.507) | 3 1/32 | 76.99 | 3.0312 | 11.1 [7/16] | SV520302 | SV525302 |
| | 3 1/16 | 77.79 | 3.0625 | | SV520304 | SV525304 |
| | | 78 | 3.0709 | | SV570780 | SV575780 |
| | 3 3/32 | 78.58 | 3.0938 | | SV520306 | SV525306 |
| | 3 1/8 | 79.38 | 3.1250 | | SV520308 | SV525308 |
| | | 80 | 3.1496 | | SV570800 | SV575800 |
| | 3 5/32 | 80.17 | 3.1562 | | SV520310 | SV525310 |
| | 3 3/16 | 80.96 | 3.1875 | | SV520312 | SV525312 |
| | 3 7/32 | 81.76 | 3.2188 | | SV520314 | SV525314 |
| | | 82 | 3.2283 | | SV570820 | SV575820 |
| | 3 1/4 | 82.55 | 3.2500 | | SV520316 | SV525316 |
| | 3 9/32 | 83.34 | 3.2812 | | SV520318 | SV525318 |
| | | 84 | 3.3071 | | SV570840 | SV575840 |
| | 3 5/16 | 84.14 | 3.3125 | | SV520320 | SV525320 |
| | 3 11/32 | 84.93 | 3.3438 | | SV520322 | SV525322 |
| | 3 3/8 | 85.73 | 3.3750 | | SV520324 | SV525324 |
| | | 86 | 3.3858 | | SV570860 | SV575860 |
| | 3 13/32 | 86.52 | 3.4063 | | SV520326 | SV525326 |
| | 3 7/16 | 87.31 | 3.4375 | | SV520328 | SV525328 |
| | | 88 | 3.4646 | | SV570880 | SV575880 |
| | 3 15/32 | 88.11 | 3.4688 | | SV520330 | SV525330 |
| | 3 1/2 | 88.9 | 3.5000 | | SV520332 | SV525332 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ◎ | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | | | | | ○ | | | | ○ | ○ | ○ | ○ | ○ | | | ◎ | | | |

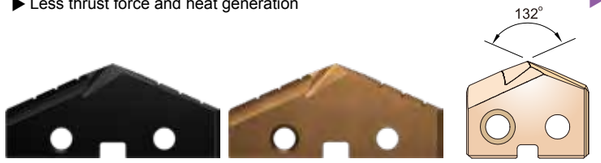
# SPADE DRILLS

SERIES 7

## SV-POINT SPADE DRILL INSERTS - PREMIUM COBALT M48
## SV-POINT 铲钻刀片-优质钴 M48

- ▶ Sinusoidal thinning edge for smooth cutting
- ▶ Positive rake angle
- ▶ Less thrust force and heat generation

- ▶ 为柔软切削的Sinusoidal刃
- ▶ 正前角
- ▶ 较小的推力和发热性




切削条件 / cutting conditions : p. A367

**(Series 5-8 : 144 degree)**

Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | INDEXABLE DRILL HOLDER | D245 - 246 | - | - |
| ○ | ER COLLET CHUCK | | D73 - 115 | |

| Series 系列 | Diameter 直径 | | | Thick 厚度 | EDP No. 型号 | |
|---|---|---|---|---|---|---|
| Min. to Max. mm (inch) | Inch (inch) | Metric (mm) | Decimal (inch) | Metric (mm, inch) | PREMIUM COBALT M48 Hardslick | PREMIUM COBALT M48 H-Coating |
| 7<br>87.76<br>(3.455)<br>to<br>101.60<br>(4.000) | 3 17/32 | 89.69 | 3.5312 | 11.1<br>[7/16] | SV520334 | SV525334 |
| | | 90 | 3.5433 | | SV570900 | SV575900 |
| | 3 9/16 | 90.49 | 3.5625 | | SV520336 | SV525336 |
| | 3 19/32 | 91.28 | 3.5938 | | SV520338 | SV525338 |
| | | 92 | 3.6221 | | SV570920 | SV575920 |
| | 3 5/8 | 92.08 | 3.6250 | | SV520340 | SV525340 |
| | 3 21/32 | 92.87 | 3.6562 | | SV520342 | SV525342 |
| | 3 11/16 | 93.66 | 3.6875 | | SV520344 | SV525344 |
| | | 94 | 3.7008 | | SV570940 | SV575940 |
| | 3 23/32 | 94.46 | 3.7188 | | SV520346 | SV525346 |
| | 3 3/4 | 95.25 | 3.7500 | | SV520348 | SV525348 |
| | | 96 | 3.7795 | | SV570960 | SV575960 |
| | 3 25/32 | 96.04 | 3.7812 | | SV520350 | SV525350 |
| | 3 13/16 | 96.84 | 3.8125 | | SV520352 | SV525352 |
| | 3 27/32 | 97.63 | 3.8438 | | SV520354 | SV525354 |
| | | 98 | 3.8583 | | SV570980 | SV575980 |
| | 3 7/8 | 98.43 | 3.8750 | | SV520356 | SV525356 |
| | 3 29/32 | 99.22 | 3.9062 | | SV520358 | SV525358 |
| | | 100 | 3.9370 | | SV570A00 | SV575A00 |
| | 3 15/16 | 100.01 | 3.9375 | | SV520360 | SV525360 |
| | 3 31/32 | 100.81 | 3.9688 | | SV520362 | SV525362 |
| | 4 | 101.6 | 4.0000 | | SV520400 | SV525400 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ◎ | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | | | | | ○ | | | | ○ | ○ | ○ | ○ | ○ | | | ◎ | | | |





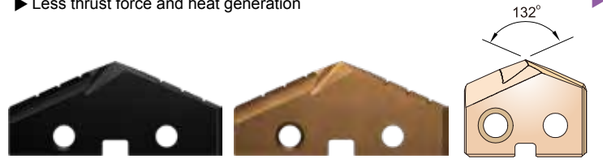
# SPADE DRILLS

SERIES 8

## SV-POINT SPADE DRILL INSERTS - PREMIUM COBALT M48
## SV-POINT 铲钻刀片-优质钴 M48

- ▶ Sinusoidal thinning edge for smooth cutting
- ▶ Positive rake angle
- ▶ Less thrust force and heat generation

- ▶ 为柔软切削的Sinusoidal刃
- ▶ 正前角
- ▶ 较小的推力和发热性




切削条件 / cutting conditions : p. A367

**(Series 5-8 : 144 degree)**

Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | INDEXABLE DRILL HOLDER | D245 - 246 | - | - |
| ○ | ER COLLET CHUCK | | D73 - 115 | |

| Series 系列 | Diameter 直径 | | | Thick 厚度 | EDP No. 型号 | |
|---|---|---|---|---|---|---|
| Min. to Max. mm (inch) | Inch (inch) | Metric (mm) | Decimal (inch) | Metric (mm, inch) | PREMIUM COBALT M48 Hardslick | PREMIUM COBALT M48 H-Coating |
| 8<br>101.63<br>(4.001)<br>to<br>114.48<br>(4.507) | 4 1/64 | 102 | 4.0156 | 11.1<br>[7/16] | SV520401 | SV525401 |
| | 4 1/16 | 103.19 | 4.0625 | | SV520404 | SV525404 |
| | 4 3/32 | 103.98 | 4.0945 | | SV520406 | SV525406 |
| | 4 1/8 | 104.78 | 4.1250 | | SV520408 | SV525408 |
| | | 106 | 4.1732 | | SV570A60 | SV575A60 |
| | 4 3/16 | 106.36 | 4.1875 | | SV520412 | SV525412 |
| | 4 1/4 | 107.95 | 4.2500 | | SV520416 | SV525416 |
| | | 108 | 4.2520 | | SV570A80 | SV575A80 |
| | 4 5/16 | 109.54 | 4.3125 | | SV520420 | SV525420 |
| | | 110 | 4.3307 | | SV570B00 | SV575B00 |
| | 4 3/8 | 111.13 | 4.3750 | | SV520424 | SV525424 |
| | | 112 | 4.4094 | | SV570B20 | SV575B20 |
| | 4 7/16 | 112.71 | 4.4375 | | SV520428 | SV525428 |
| | | 114 | 4.4882 | | SV570B40 | SV575B40 |
| | 4 1/2 | 114.3 | 4.5000 | | SV520432 | SV525432 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ◎ | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | | | | | ○ | | | | ○ | ○ | ○ | ○ | ○ | | | ◎ | | | |

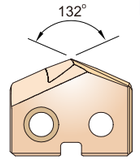
# SPADE DRILLS

SERIES Y, Z

## SV-POINT SPADE DRILL INSERTS - CARBIDE C5 P40
## SV-POINT 铲钻刀片-硬质合金 C5 P40

- For general use in carbon steels and alloys steels
- Sinusoidal thinning edge for smooth cutting
- Positive rake angle
- Less thrust force and heat generation

- 用于碳素钢和合金钢的普通用途
- 为柔软切削的Sinusoidal刃
- 正前角
- 较小的推力和发热性




(Series 5-8 : 144 degree)

切削条件 / cutting conditions : p. A371

Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | INDEXABLE DRILL HOLDER | D245 - 246 | - | - |
| ○ | ER COLLET CHUCK | D73 - 115 | | |

| Series 系列 | Diameter 直径 | | | Thick 厚度 | EDP No. 型号 | |
|---|---|---|---|---|---|---|
| Min. to Max. mm (inch) | Inch (inch) | Metric (mm) | Decimal (inch) | Metric (mm, inch) | C5 P40 Hardslick | C5 P40 H-Coating |
| Y<br>9.50 (.374) to 11.07 (.436) | | 9.5 | .3740 | 2.4 [3/32] | SV870095 | SV875095 |
| | 3/8 | 9.53 | .3750 | | SV820024 | SV825024 |
| | | 9.8 | .3860 | | SV870098 | SV875098 |
| | 25/64 | 9.92 | .3906 | | SV820025 | SV825025 |
| | | 10 | .3937 | | SV870100 | SV875100 |
| | | 10.2 | .4016 | | SV870102 | SV875102 |
| | 13/32 | 10.32 | .4063 | | SV820026 | SV825026 |
| | | 10.5 | .4134 | | SV870105 | SV875105 |
| | 27/64 | 10.72 | .4219 | | SV820027 | SV825027 |
| | | 10.8 | .4252 | | SV870108 | SV875108 |
| | | 11 | .4331 | | SV870110 | SV875110 |
| Z<br>11.11 (.437) to 12.95 (.510) | 7/16 | 11.11 | .4375 | 2.4 [3/32] | SV820028 | SV825028 |
| | | 11.5 | .4528 | | SV870115 | SV875115 |
| | 29/64 | 11.51 | .4531 | | SV820029 | SV825029 |
| | 15/32 | 11.91 | .4688 | | SV820030 | SV825030 |
| | | 12 | .4724 | | SV870120 | SV875120 |
| | 31/64 | 12.3 | .4844 | | SV820031 | SV825031 |
| | | 12.5 | .4921 | | SV870125 | SV875125 |
| | 1/2 | 12.7 | .5000 | | SV820032 | SV825032 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ◎ | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | | | | | ○ | | | | ○ | ○ | ○ | ○ | ○ | | | ◎ | | | |



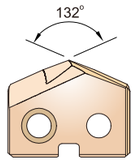
# SPADE DRILLS

SERIES 0

## SV-POINT SPADE DRILL INSERTS - CARBIDE C5 P40
## SV-POINT 铲钻刀片-硬质合金 C5 P40

- For general use in carbon steels and alloys steels
- Sinusoidal thinning edge for smooth cutting
- Positive rake angle
- Less thrust force and heat generation

- 用于碳素钢和合金钢的普通用途
- 为柔软切削的Sinusoidal刃
- 正前角
- 较小的推力和发热性




(Series 5-8 : 144 degree)

切削条件 / cutting conditions : p. A371

Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | INDEXABLE DRILL HOLDER | D245 - 246 | - | - |
| ○ | ER COLLET CHUCK | D73 - 115 | | |

| Series 系列 | Diameter 直径 | | | Thick 厚度 | EDP No. 型号 | |
|---|---|---|---|---|---|---|
| Min. to Max. mm (inch) | Inch (inch) | Metric (mm) | Decimal (inch) | Metric (mm, inch) | C5 P40 Hardslick | C5 P40 H-Coating |
| 0<br>12.98 (.511) to 17.65 (.695) | | 13 | .5118 | 3.2 [1/8] | SV870130 | SV875130 |
| | 33/64 | 13.1 | .5156 | | SV820033 | SV825033 |
| | 17/32 | 13.49 | .5313 | | SV820034 | SV825034 |
| | | 13.5 | .5315 | | SV870135 | SV875135 |
| | 35/64 | 13.89 | .5469 | | SV820035 | SV825035 |
| | | 14 | .5512 | | SV870140 | SV875140 |
| | 9/16 | 14.29 | .5625 | | SV820036 | SV825036 |
| | | 14.5 | .5709 | | SV870145 | SV875145 |
| | 37/64 | 14.68 | .5781 | | SV820037 | SV825037 |
| | | 15 | .5906 | | SV870150 | SV875150 |
| | 19/32 | 15.08 | .5938 | | SV820038 | SV825038 |
| | 39/64 | 15.48 | .6094 | | SV820039 | SV825039 |
| | | 15.5 | .6102 | | SV870155 | SV875155 |
| | 5/8 | 15.88 | .6250 | | SV820040 | SV825040 |
| | | 16 | .6299 | | SV870160 | SV875160 |
| | 41/64 | 16.27 | .6406 | | SV820041 | SV825041 |
| | | 16.5 | .6496 | | SV870165 | SV875165 |
| | 21/32 | 16.67 | .6563 | | SV820042 | SV825042 |
| | | 17 | .6693 | | SV870170 | SV875170 |
| | 43/64 | 17.07 | .6719 | | SV820043 | SV825043 |
| | 11/16 | 17.46 | .6875 | | SV820044 | SV825044 |
| | | 17.5 | .6890 | | SV870175 | SV875175 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ◎ | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | | | | | ○ | | | | ○ | ○ | ○ | ○ | ○ | | | ◎ | | | |

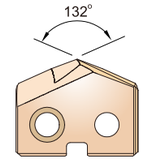
# SPADE DRILLS

SERIES 1

## SV-POINT SPADE DRILL INSERTS - CARBIDE C5 P40
## SV-POINT 铲钻刀片-硬质合金 C5 P40

- For general use in carbon steels and alloys steels
- Sinusoidal thinning edge for smooth cutting
- Positive rake angle
- Less thrust force and heat generation

- 用于碳素钢和合金钢的普通用途
- 为柔软切削的Sinusoidal刃
- 正前角
- 较小的推力和发热性




(Series 5-8 : 144 degree)

切削条件 / cutting conditions : p. A371

Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| INDEXABLE DRILL HOLDER | D245 - 246 | - | - |
| ER COLLET CHUCK | D73 - 115 | | |

| Series 系列 | Diameter 直径 | | | Thick 厚度 | EDP No. 型号 | |
|---|---|---|---|---|---|---|
| Min. to Max. mm (inch) | Inch (inch) | Metric (mm) | Decimal (inch) | Metric (mm, inch) | C5 P40 Hardslick | C5 P40 H-Coating |
| 1<br>17.53 (.690) to 24.38 (.960) | 45/64 | 17.86 | .7031 | 4.0 [5/32] | SV820045 | SV825045 |
| | | 18 | .7087 | | SV870180 | SV875180 |
| | 23/32 | 18.26 | .7188 | | SV820046 | SV825046 |
| | | 18.5 | .7283 | | SV870185 | SV875185 |
| | 47/64 | 18.65 | .7344 | | SV820047 | SV825047 |
| | | 19 | .7480 | | SV870190 | SV875190 |
| | 3/4 | 19.05 | .7500 | | SV820048 | SV825048 |
| | 49/64 | 19.45 | .7656 | | SV820049 | SV825049 |
| | | 19.5 | .7677 | | SV870195 | SV875195 |
| | 25/32 | 19.84 | .7812 | | SV820050 | SV825050 |
| | | 20 | .7874 | | SV870200 | SV875200 |
| | 51/64 | 20.24 | .7969 | | SV820051 | SV825051 |
| | | 20.5 | .8071 | | SV870205 | SV875205 |
| | 13/16 | 20.64 | .8125 | | SV820052 | SV825052 |
| | | 21 | .8268 | | SV870210 | SV875210 |
| | 27/32 | 21.43 | .8438 | | SV820054 | SV825054 |
| | 55/64 | 21.83 | .8594 | | SV820055 | SV825055 |
| | | 22 | .8661 | | SV870220 | SV875220 |
| | 7/8 | 22.23 | .8750 | | SV820056 | SV825056 |
| | 57/64 | 22.62 | .8906 | | SV820057 | SV825057 |
| | | 23 | .9055 | | SV870230 | SV875230 |
| | 29/32 | 23.02 | .9062 | | SV820058 | SV825058 |
| | 59/64 | 23.42 | .9219 | | SV820059 | SV825059 |
| | 15/16 | 23.81 | .9375 | | SV820060 | SV825060 |
| | | 24 | .9449 | | SV870240 | SV875240 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ◎ | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | | | | | ○ | | | | ○ | ○ | ○ | ○ | ○ | | | ◎ | | | |





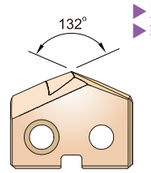
# SPADE DRILLS

SERIES 2

## SV-POINT SPADE DRILL INSERTS - CARBIDE C5 P40
## SV-POINT 铲钻刀片-硬质合金 C5 P40

- For general use in carbon steels and alloys steels
- Sinusoidal thinning edge for smooth cutting
- Positive rake angle
- Less thrust force and heat generation

- 用于碳素钢和合金钢的普通用途
- 为柔软切削的Sinusoidal刃
- 正前角
- 较小的推力和发热性




(Series 5-8 : 144 degree)

切削条件 / cutting conditions : p. A371

Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| INDEXABLE DRILL HOLDER | D245 - 246 | - | - |
| ER COLLET CHUCK | D73 - 115 | | |

| Series 系列 | Diameter 直径 | | | Thick 厚度 | EDP No. 型号 | |
|---|---|---|---|---|---|---|
| Min. to Max. mm (inch) | Inch (inch) | Metric (mm) | Decimal (inch) | Metric (mm, inch) | C5 P40 Hardslick | C5 P40 H-Coating |
| 2<br>24.41 (.961) to 35.05 (1.380) | 31/32 | 24.61 | .9688 | 4.8 [3/16] | SV820062 | SV825062 |
| | 63/64 | 25 | .9843 | | SV820063 | SV825063 |
| | 1 | 25.4 | 1.0000 | | SV820100 | SV825100 |
| | 1 1/64 | 25.8 | 1.0156 | | SV820101 | SV825101 |
| | | 26 | 1.0236 | | SV870260 | SV875260 |
| | 1 1/32 | 26.19 | 1.0312 | | SV820102 | SV825102 |
| | 1 3/64 | 26.59 | 1.0469 | | SV820103 | SV825103 |
| | 1 1/16 | 26.99 | 1.0625 | | SV820104 | SV825104 |
| | | 27 | 1.0630 | | SV870270 | SV875270 |
| | 1 3/32 | 27.78 | 1.0938 | | SV820106 | SV825106 |
| | | 28 | 1.1024 | | SV870280 | SV875280 |
| | 1 7/64 | 28.18 | 1.1094 | | SV820107 | SV825107 |
| | 1 1/8 | 28.58 | 1.1250 | | SV820108 | SV825108 |
| | | 29 | 1.1417 | | SV870290 | SV875290 |
| | 1 5/32 | 29.37 | 1.1562 | | SV820110 | SV825110 |
| | | 30 | 1.1811 | | SV870300 | SV875300 |
| | 1 3/16 | 30.16 | 1.1875 | | SV820112 | SV825112 |
| | 1 7/32 | 30.96 | 1.2188 | | SV820114 | SV825114 |
| | | 31 | 1.2205 | | SV870310 | SV875310 |
| | 1 1/4 | 31.75 | 1.2500 | | SV820116 | SV825116 |
| | | 32 | 1.2598 | | SV870320 | SV875320 |
| | 1 9/32 | 32.54 | 1.2812 | | SV820118 | SV825118 |
| | | 33 | 1.2992 | | SV870330 | SV875330 |
| | 1 5/16 | 33.34 | 1.3125 | | SV820120 | SV825120 |
| | | 34 | 1.3386 | | SV870340 | SV875340 |
| | 1 11/32 | 34.13 | 1.3438 | | SV820122 | SV825122 |
| | 1 3/8 | 34.93 | 1.3750 | | SV820124 | SV825124 |
| | | 35 | 1.3780 | | SV870350 | SV875350 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ◎ | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | | | | | ○ | | | | ○ | ○ | ○ | ○ | ○ | | | ◎ | | | |

# SPADE DRILLS

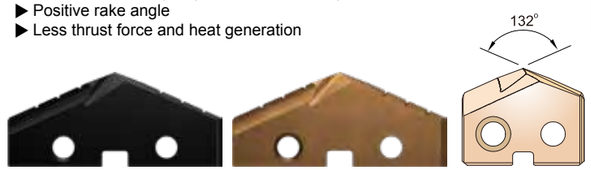
SERIES 3

## SV-POINT SPADE DRILL INSERTS - CARBIDE C5 P40

## SV-POINT 铲钻刀片-硬质合金 C5 P40

- For general use in carbon steels and alloys steels
- Sinusoidal thinning edge for smooth cutting
- Positive rake angle
- Less thrust force and heat generation

- 用于碳素钢和合金钢的普通用途
- 为柔软切削的Sinusoidal刃
- 正前角
- 较小的推力和发热性




切削条件 / cutting conditions : p. A371

**(Series 5-8 : 144 degree)**

Recommended ToolHolder
Flat Shank — Page — Plain Shank — Page
INDEXABLE DRILL HOLDER D245 - 246 — -
ER COLLET CHUCK — D73 - 115

| Series 系列 | Diameter 直径 | | | Thick 厚度 | EDP No. 型号 | |
|---|---|---|---|---|---|---|
| Min. to Max. mm (inch) | Inch (inch) | Metric (mm) | Decimal (inch) | Metric (mm, inch) | C5 P40 Hardslick | C5 P40 H-Coating |
| 3<br>34.37 (1.353) to 47.80 (1.882) | 1 13/32 | 35.72 | 1.4063 | 6.4 [1/4] | SV820126 | SV825126 |
| | | 36 | 1.4173 | | SV870360 | SV875360 |
| | 1 7/16 | 36.51 | 1.4375 | | SV820128 | SV825128 |
| | | 37 | 1.4567 | | SV870370 | SV875370 |
| | 1 15/32 | 37.31 | 1.4688 | | SV820130 | SV825130 |
| | | 38 | 1.4961 | | SV870380 | SV875380 |
| | 1 1/2 | 38.1 | 1.5000 | | SV820132 | SV825132 |
| | 1 17/32 | 38.89 | 1.5313 | | SV820134 | SV825134 |
| | | 39 | 1.5354 | | SV870390 | SV875390 |
| | 1 9/16 | 39.69 | 1.5625 | | SV820136 | SV825136 |
| | | 40 | 1.5748 | | SV870400 | SV875400 |
| | 1 19/32 | 40.48 | 1.5938 | | SV820138 | SV825138 |
| | | 41 | 1.6142 | | SV870410 | SV875410 |
| | 1 5/8 | 41.28 | 1.6250 | | SV820140 | SV825140 |
| | | 42 | 1.6535 | | SV870420 | SV875420 |
| | 1 21/32 | 42.07 | 1.6563 | | SV820142 | SV825142 |
| | 1 11/16 | 42.86 | 1.6875 | | SV820144 | SV825144 |
| | | 43 | 1.6929 | | SV870430 | SV875430 |
| | 1 23/32 | 43.66 | 1.7188 | | SV820146 | SV825146 |
| | | 44 | 1.7323 | | SV870440 | SV875440 |
| | 1 3/4 | 44.45 | 1.7500 | | SV820148 | SV825148 |
| | | 45 | 1.7717 | | SV870450 | SV875450 |
| | 1 25/32 | 45.24 | 1.7813 | | SV820150 | SV825150 |
| | | 46 | 1.8110 | | SV870460 | SV875460 |
| | 1 13/16 | 46.04 | 1.8125 | | SV820152 | SV825152 |
| | 1 27/32 | 46.83 | 1.8438 | | SV820154 | SV825154 |
| | | 47 | 1.8504 | | SV870470 | SV875470 |
| | 1 7/8 | 47.63 | 1.8750 | | SV820156 | SV825156 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ◎ | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | | | | | ○ | | | | ○ | ○ | ○ | ○ | ○ | | | ◎ | | | |



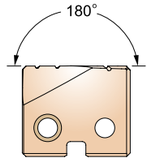


# SPADE DRILLS

SERIES Y, Z, 0

## SPADE DRILL INSERTS - SUPER COBALT T15 FLAT BOTTOM

## SV-POINT 铲钻刀片-超级含钴T15 平底




切削条件 / cutting conditions : p. A370

Recommended ToolHolder
Flat Shank — Page — Plain Shank — Page
INDEXABLE DRILL HOLDER D245 - 246 — -
ER COLLET CHUCK — D73 - 115

| Series 系列 | Diameter 直径 | | | Thick 厚度 | EDP No. 型号 | | |
|---|---|---|---|---|---|---|---|
| Min. to Max. mm (inch) | Inch (inch) | Metric (mm) | Decimal (inch) | Metric (mm, inch) | SUPER HSS T15 TiN | SUPER HSS T15 Hardslick | SUPER HSS T15 TiAlN |
| Y<br>Ø9.50 (.374) to Ø11.07 (.436) | | 9.50 | .3740 | 2.4 (3/32) | S2155095 | S2170095 | S2165095 |
| | 3/8 | 9.53 | .3750 | | S2105024 | S2120024 | S2115024 |
| | | 9.80 | .3858 | | S2155098 | S2170098 | S2165098 |
| | 25/64 | 9.92 | .3906 | | S2105025 | S2120025 | S2115025 |
| | | 10.00 | .3937 | | S2155100 | S2170100 | S2165100 |
| | | 10.20 | .4016 | | S2155102 | S2170102 | S2165102 |
| | 13/32 | 10.32 | .4062 | | S2105026 | S2120026 | S2115026 |
| | | 10.50 | .4134 | | S2155105 | S2170105 | S2165105 |
| | 27/64 | 10.72 | .4219 | | S2105027 | S2120027 | S2115027 |
| | | 10.80 | .4252 | | S2155108 | S2170108 | S2165108 |
| | | 11.00 | .4331 | | S2155110 | S2170110 | S2165110 |
| Z<br>Ø11.11(.437) to Ø12.95(.510) | 7/16 | 11.11 | .4375 | 2.4 (3/32) | S2105028 | S2120028 | S2115028 |
| | | 11.50 | .4528 | | S2155115 | S2170115 | S2165115 |
| | 29/64 | 11.51 | .4531 | | S2105029 | S2120029 | S2115029 |
| | 15/32 | 11.91 | .4688 | | S2105030 | S2120030 | S2115030 |
| | | 12.00 | .4724 | | S2155120 | S2170120 | S2165120 |
| | 31/64 | 12.30 | .4844 | | S2105031 | S2120031 | S2115031 |
| | | 12.50 | .4921 | | S2155125 | S2170125 | S2165125 |
| | 1/2 | 12.70 | .5000 | | S2105032 | S2120032 | S2115032 |
| 0<br>Ø12.98 (.511) to Ø17.65 (.695) | | 13.00 | .5118 | 3.2 (1/8) | S2155130 | S2170130 | S2165130 |
| | 33/64 | 13.10 | .5156 | | S2105033 | S2120033 | S2115033 |
| | 17/32 | 13.49 | .5312 | | S2105034 | S2120034 | S2115034 |
| | | 13.50 | .5315 | | S2155135 | S2170135 | S2165135 |
| | 35/64 | 13.89 | .5469 | | S2105035 | S2120035 | S2115035 |
| | | 14.00 | .5512 | | S2155140 | S2170140 | S2165140 |
| | 9/16 | 14.29 | .5625 | | S2105036 | S2120036 | S2115036 |
| | | 14.50 | .5709 | | S2155145 | S2170145 | S2165145 |
| | 37/64 | 14.68 | .5781 | | S2105037 | S2120037 | S2115037 |
| | | 15.00 | .5906 | | S2155150 | S2170150 | S2165150 |
| | 19/32 | 15.08 | .5938 | | S2105038 | S2120038 | S2115038 |
| | 39/64 | 15.48 | .6094 | | S2105039 | S2120039 | S2115039 |
| | | 15.50 | .6102 | | S2155155 | S2170155 | S2165155 |
| | 5/8 | 15.88 | .6250 | | S2105040 | S2120040 | S2115040 |
| | | 16.00 | .6299 | | S2155160 | S2170160 | S2165160 |

◎ : Excellent (优秀) ○ : Good (良好)

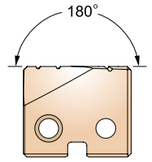
| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ◎ | | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ◎ | ○ | ◎ | ○ | ◎ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | | | | | ○ | | | | ◎ | ○ | ○ | ○ | ○ | | | ○ | | | |

# SPADE DRILLS

SERIES 0, 1

## SPADE DRILL INSERTS - SUPER COBALT T15 FLAT BOTTOM
## SV-POINT 铲钻刀片-超级含钴T15 平底




Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | INDEXABLE DRILL HOLDER | D245 - 246 | - | - |
| ○ | ER COLLET CHUCK | | D73 - 115 | |

切削条件 / cutting conditions : p. A370

| Series 系列 Min. to Max. mm (inch) | Diameter 直径 Inch (inch) | Metric (mm) | Decimal (inch) | Thick 厚度 Metric (mm, inch) | EDP No. 型号 SUPER HSS T15 TiN | Hardslick | TiAlN |
|---|---|---|---|---|---|---|---|
| **0** Ø12.98(.511) to Ø17.65(.695) | 41/64 | 16.27 | .6406 | 3.2 (1/8) | S2105041 | S2120041 | S2115041 |
| | | 16.50 | .6496 | | S2155165 | S2170165 | S2165165 |
| | 21/32 | 16.67 | .6562 | | S2105042 | S2120042 | S2115042 |
| | | 17.00 | .6693 | | S2155170 | S2170170 | S2165170 |
| | 43/64 | 17.07 | .6719 | | S2105043 | S2120043 | S2115043 |
| | 11/16 | 17.46 | .6875 | | S2105044 | S2120044 | S2115044 |
| | | 17.50 | .6890 | | S2155175 | S2170175 | S2165175 |
| | 45/64 | 17.86 | .7031 | | S2105045 | S2120045 | S2115045 |
| | | 18.00 | .7087 | | S2155180 | S2170180 | S2165180 |
| | 23/32 | 18.26 | .7188 | | S2105046 | S2120046 | S2115046 |
| | | 18.50 | .7283 | | S2155185 | S2170185 | S2165185 |
| | 47/64 | 18.65 | .7344 | | S2105047 | S2120047 | S2115047 |
| | | 19.00 | .7480 | | S2155190 | S2170190 | S2165190 |
| | 3/4 | 19.05 | .7500 | | S2105048 | S2120048 | S2115048 |
| | 49/64 | 19.45 | .7656 | | S2105049 | S2120049 | S2115049 |
| | | 19.50 | .7677 | | S2155195 | S2170195 | S2165195 |
| **1** Ø17.53 (.690) to Ø24.38 (.960) | 25/32 | 19.84 | .7812 | 4.0 (5/32) | S2105050 | S2120050 | S2115050 |
| | | 20.00 | .7874 | | S2155200 | S2170200 | S2165200 |
| | 51/64 | 20.24 | .7969 | | S2105051 | S2120051 | S2115051 |
| | | 20.50 | .8071 | | S2155205 | S2170205 | S2165205 |
| | 13/16 | 20.64 | .8125 | | S2105052 | S2120052 | S2115052 |
| | | 21.00 | .8268 | | S2155210 | S2170210 | S2165210 |
| | 27/32 | 21.43 | .8438 | | S2105054 | S2120054 | S2115054 |
| | 55/64 | 21.83 | .8594 | | S2105055 | S2120055 | S2115055 |
| | | 22.00 | .8661 | | S2155220 | S2170220 | S2165220 |
| | 7/8 | 22.23 | .8750 | | S2105056 | S2120056 | S2115056 |
| | 57/64 | 22.62 | .8906 | | S2105057 | S2120057 | S2115057 |
| | | 23.00 | .9055 | | S2155230 | S2170230 | S2165230 |
| | 29/32 | 23.02 | .9062 | | S2105058 | S2120058 | S2115058 |
| | 59/64 | 23.42 | .9219 | | S2105059 | S2120059 | S2115059 |
| | 15/16 | 23.81 | .9375 | | S2105060 | S2120060 | S2115060 |
| | | 24.00 | .9449 | | S2155240 | S2170240 | S2165240 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ◎ | | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ◎ | ○ | ◎ | ○ | ◎ |

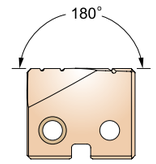
| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | | | | | ○ | | | | ◎ | ○ | ○ | ○ | ○ | | | ○ | | | |



SPADE DRILLS

SERIES 2

## SPADE DRILL INSERTS - SUPER COBALT T15 FLAT BOTTOM
## SV-POINT 铲钻刀片-超级含钴T15 平底




Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | INDEXABLE DRILL HOLDER | D245 - 246 | - | - |
| ○ | ER COLLET CHUCK | | D73 - 115 | |

切削条件 / cutting conditions : p. A370

| Series 系列 Min. to Max. mm (inch) | Diameter 直径 Inch (inch) | Metric (mm) | Decimal (inch) | Thick 厚度 Metric (mm, inch) | EDP No. 型号 SUPER HSS T15 TiN | Hardslick | TiAlN |
|---|---|---|---|---|---|---|---|
| **2** Ø24.41 (.961) to Ø35.05 (1.380) | 31/32 | 24.61 | .9688 | 4.8 (3/16) | S2105062 | S2120062 | S2115062 |
| | 63/64 | 25.00 | .9843 | | S2105063 | S2120063 | S2115063 |
| | 1 | 25.40 | 1.0000 | | S2105100 | S2120100 | S2115100 |
| | 1-1/64 | 25.80 | 1.0156 | | S2105101 | S2120101 | S2115101 |
| | | 26.00 | 1.0236 | | S2155260 | S2170260 | S2165260 |
| | 1-1/32 | 26.19 | 1.0312 | | S2105102 | S2120102 | S2115102 |
| | 1-3/64 | 26.59 | 1.0469 | | S2105103 | S2120103 | S2115103 |
| | 1-1/16 | 26.99 | 1.0625 | | S2105104 | S2120104 | S2115104 |
| | | 27.00 | 1.0630 | | S2155270 | S2170270 | S2165270 |
| | 1-3/32 | 27.78 | 1.0938 | | S2105106 | S2120106 | S2115106 |
| | | 28.00 | 1.1024 | | S2155280 | S2170280 | S2165280 |
| | 1-7/64 | 28.18 | 1.1094 | | S2105107 | S2120107 | S2115107 |
| | 1-1/8 | 28.58 | 1.1250 | | S2105108 | S2120108 | S2115108 |
| | | 29.00 | 1.1417 | | S2155290 | S2170290 | S2165290 |
| | 1-5/32 | 29.37 | 1.1562 | | S2105110 | S2120110 | S2115110 |
| | | 30.00 | 1.1811 | | S2155300 | S2170300 | S2165300 |
| | 1-3/16 | 30.16 | 1.1875 | | S2105112 | S2120112 | S2115112 |
| | 1-7/32 | 30.96 | 1.2188 | | S2105114 | S2120114 | S2115114 |
| | | 31.00 | 1.2205 | | S2155310 | S2170310 | S2165310 |
| | 1-1/4 | 31.75 | 1.2500 | | S2105116 | S2120116 | S2115116 |
| | | 32.00 | 1.2598 | | S2155320 | S2170320 | S2165320 |
| | 1-9/32 | 32.54 | 1.2812 | | S2105118 | S2120118 | S2115118 |
| | | 33.00 | 1.2992 | | S2155330 | S2170330 | S2165330 |
| | 1-5/16 | 33.34 | 1.3125 | | S2105120 | S2120120 | S2115120 |
| | | 34.00 | 1.3386 | | S2155340 | S2170340 | S2165340 |
| | 1-11/32 | 34.13 | 1.3438 | | S2105122 | S2120122 | S2115122 |
| | 1-3/8 | 34.93 | 1.3750 | | S2105124 | S2120124 | S2115124 |
| | | 35.00 | 1.3780 | | S2155350 | S2170350 | S2165350 |

◎ : Excellent (优秀) ○ : Good (良好)

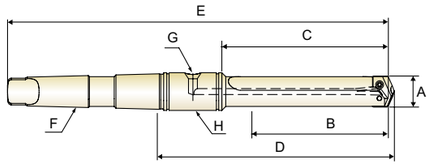
| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ◎ | | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ◎ | ○ | ◎ | ○ | ◎ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | | | | | ○ | | | | ◎ | ○ | ○ | ○ | ○ | | | ○ | | | |

# SPADE DRILLS

**Z**STSMT** SERIES

## TAPER SHANK HOLDERS
## 锥柄刀杆




### SHORT LENGTH - Straight Flute (Inch)
### 短刃-直槽 (英制)

| Series | EDP No. | Drill Insert Range | Max. Drill Depth | Body Length | Ref. Length | Overall Length | MT | Pipe Tap | RCA |
|---|---|---|---|---|---|---|---|---|---|
| 系列 | 型号 | 钻头刀片范围 | 钻的最大深度 | 主要长度 | 参考长度 | 全长 | 莫氏锥度 | 管用丝锥 | 旋转冷却油适配器 |
| | | A | B | C | D | E | F | G | H |
| Y | ZY0STSMT02I | 3/8 ~ 27/64 | 1-1/4 | 2-1/32 | 3-15/32 | 6-5/16 | #2 | 1/16 | PR110048 |
| Z | ZZ0STSMT02I | 7/16 ~ 1/2 | 1-1/4 | 2-1/32 | 3-15/32 | 6-5/16 | #2 | 1/16 | PR110048 |
| 0 | Z00STSMT02I | 33/64 ~ 11/16 | 1-3/8 | 2-3/16 | 3-41/64 | 6-15/32 | #2 | 1/16 | PR110048 |
| 0.5 | Z05STSMT02I | 39/64 ~ 11/16 | 1-3/8 | 2-3/16 | 3-41/64 | 6-15/32 | #2 | 1/16 | PR110048 |
| 1 | Z10STSMT03I | 45/64 ~ 15/16 | 2-3/4 | 3-7/8 | 5-39/64 | 9-5/32 | #3 | 1/8 | PR110100 |
| | Z10STSMT04I | 45/64 ~ 15/16 | 2-3/4 | 3-7/8 | 5-43/64 | 10-5/32 | #4 | 1/8 | PR110100 |
| 1.5 | Z15STSMT03I | 55/64 ~ 15/16 | 2-3/4 | 3-7/8 | 5-39/64 | 9-5/32 | #3 | 1/8 | PR110100 |
| | Z15STSMT04I | 55/64 ~ 15/16 | 2-3/4 | 3-7/8 | 5-43/64 | 10-5/32 | #4 | 1/8 | PR110100 |
| 2 | Z20STSMT03I | 31/32 ~ 1-3/8 | 3-3/8 | 4-1/2 | 6-15/64 | 9-25/32 | #3 | 1/8 | PR110100 |
| | Z20STSMT04I | 31/32 ~ 1-3/8 | 3-3/8 | 4-1/2 | 6-19/64 | 10-25/32 | #4 | 1/8 | PR110100 |
| 2.5 | Z25STSMT03I | 1-3/16 ~ 1-3/8 | 3-3/8 | 4-1/2 | 6-15/64 | 9-25/32 | #3 | 1/8 | PR110100 |
| | Z25STSMT04I | 1-3/16 ~ 1-3/8 | 3-3/8 | 4-1/2 | 6-37/64 | 11-1/16 | #4 | 1/4 | PR110116 |
| 3 | Z30STSMT04I | 1-13/32 ~ 1-7/8 | 4-3/4 | 6 | 8-1/8 | 12-9/16 | #4 | 1/4 | PR110116 |
| | Z30STSMT05I | 1-13/32 ~ 1-7/8 | 4-3/4 | 6 | 8-1/8 | 13-13/16 | #5 | 1/4 | PR110148 |
| 4 | Z40STSMT04I | 1-29/32 ~ 2-9/16 | 5-1/8 | 6-1/2 | 8-5/8 | 13-1/16 | #4 | 1/4 | PR110116 |
| | Z40STSMT05I | 1-29/32 ~ 2-9/16 | 5-1/8 | 6-1/2 | 8-5/8 | 14-5/16 | #5 | 1/4 | PR110148 |
| 5 | Z50STSMT05I | 2-1/2 ~ 3-1/2 | 6-3/4 | 8-1/2 | 11-5/16 | 16-15/16 | #5 | 1/2 | PR110216 |
| 7 | Z70STSMT05I | 3-17/32 ~ 4-1/2 | 6-3/4 | 8-7/8 | 11-11/16 | 17-5/16 | #5 | 1/2 | PR110216 |

▶ You can also apply **RCA**(**R**otary **C**oolant **A**dapter) for internal cooling. (See page A308)
你也可通过RCA(旋转冷却油适配器) 采用内冷(请看A308页)

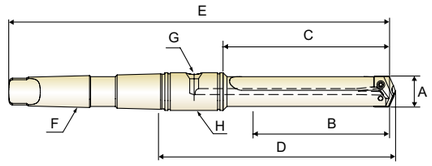


CARBIDE
HSS
i-ONE DRILLS
i-DREAM DRILLS
DREAM DRILLS -PRO
DREAM DRILLS -GENERAL
DREAM DRILLS -SOFT
DREAM DRILLS -HIGH FEED
DREAM DRILLS -FLAT BOTTOM
DREAM DRILLS -INOX
DREAM DRILLS -ALU
DREAM DRILLS -CFRP
DREAM DRILLS -MQL
DREAM DRILLS for HIGH HARDENED STEELS
GENERAL CARBIDE DRILLS
MULTI-1 DRILLS
GOLD-P DRILLS
SUPER-GP DRILLS
WORM PATTERN DRILLS
STRAIGHT SHANK DRILLS
TAPER SHANK DRILLS
NC-SPOTTING DRILLS
CENTER DRILLS
SPADE DRILLS
REAMERS
COUNTER SINKS
COUNTER BORES
TECHNICAL DATA

# SPADE DRILLS

**Z**ITSMT SERIES**
**Z**ITHMT SERIES**

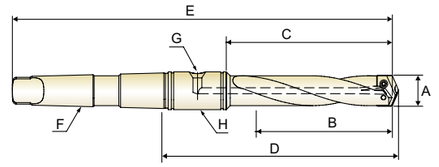
## TAPER SHANK HOLDERS
## 锥柄刀杆




### INTERMEDIATE LENGTH - Straight Flute (Inch)
### 普长刃-直槽 (英制)

| Series | EDP No. | Drill Insert Range | Max. Drill Depth | Body Length | Ref. Length | Overall Length | MT | Pipe Tap | RCA |
|---|---|---|---|---|---|---|---|---|---|
| 系列 | 型号 | 钻头刀片范围 | 钻的最大深度 | 主要长度 | 参考长度 | 全长 | 莫氏锥度 | 管用丝锥 | 旋转冷却油适配器 |
| | | A | B | C | D | E | F | G | H |
| 1 | Z10ITSMT03I | 45/64 ~ 15/16 | 4-3/4 | 5-7/8 | 7-39/64 | 11-5/32 | #3 | 1/8 | PR110100 |
| 1.5 | Z15ITSMT03I | 55/64 ~ 15/16 | 4-3/4 | 5-7/8 | 7-39/64 | 11-5/32 | #3 | 1/8 | PR110100 |
| 2 | Z20ITSMT04I | 31/32 ~ 1-3/8 | 5-3/8 | 6-1/2 | 8-19/64 | 12-25/32 | #4 | 1/8 | PR110100 |
| 2.5 | Z25ITSMT04I | 1-3/16 ~ 1-3/8 | 5-3/8 | 6-1/2 | 8-37/64 | 13-1/16 | #4 | 1/4 | PR110116 |
| 3 | Z30ITSMT04I | 1-13/32 ~ 1-7/8 | 6-1/2 | 7-3/4 | 9-7/8 | 14-5/16 | #4 | 1/4 | PR110116 |

▶ You can also apply **RCA**(**R**otary **C**oolant **A**dapter) for internal cooling. (See page A308)
你也可通过RCA(旋转冷却油适配器) 采用内冷(请看308页)




### INTERMEDIATE LENGTH - Helical Flute (Inch)
### 普长刃-螺旋槽 (英制)

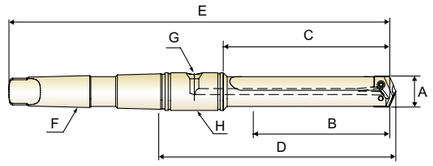
| Series | EDP No. | Drill Insert Range | Max. Drill Depth | Body Length | Ref. Length | Overall Length | MT | Pipe Tap | RCA |
|---|---|---|---|---|---|---|---|---|---|
| 系列 | 型号 | 钻头刀片范围 | 钻的最大深度 | 主要长度 | 参考长度 | 全长 | 莫氏锥度 | 管用丝锥 | 旋转冷却油适配器 |
| | | A | B | C | D | E | F | G | H |
| 1 | Z10ITHMT03I | 45/64 ~ 15/16 | 4-3/4 | 5-7/8 | 7-39/64 | 11-5/32 | #3 | 1/8 | PR110100 |
| 1.5 | Z15ITHMT03I | 55/64 ~ 15/16 | 4-3/4 | 5-7/8 | 7-39/64 | 11-5/32 | #3 | 1/8 | PR110100 |
| 2 | Z20ITHMT04I | 31/32 ~ 1-3/8 | 5-3/8 | 6-1/2 | 8-19/64 | 12-25/32 | #4 | 1/8 | PR110100 |
| 2.5 | Z25ITHMT04I | 1-3/16 ~ 1-3/8 | 5-3/8 | 6-1/2 | 8-37/64 | 13-1/16 | #4 | 1/4 | PR110116 |

▶ You can also apply **RCA**(**R**otary **C**oolant **A**dapter) for internal cooling. (See page A308)
你也可通过RCA(旋转冷却油适配器) 采用内冷(请看A308页)

# SPADE DRILLS

**Z**SDSMT** SERIES

## TAPER SHANK HOLDERS
## 锥柄刀杆




### STANDARD LENGTH - Straight Flute (Inch)
### 标长刃-直槽 (英制)

| Series 系列 | EDP No. 型号 | Drill Insert Range 钻头刀片范围 | Max. Drill Depth 钻的最大深度 | Body Length 主要长度 | Ref. Length 参考长度 | Overall Length 全长 | MT 莫氏锥度 | Pipe Tap 管用丝锥 | RCA 旋转冷却油适配器 |
|---|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E | F | G | H |
| Y | ZY0SDSMT02I | 3/8 ~ 27/64 | 2-3/8 | 3-5/32 | 4-19/32 | 7-7/16 | #2 | 1/16 | PR110048 |
| Z | ZZ0SDSMT02I | 7/16 ~ 1/2 | 2-3/8 | 3-5/32 | 4-19/32 | 7-7/16 | #2 | 1/16 | PR110048 |
| 0 | Z00SDSMT02I | 33/64 ~ 11/16 | 2-1/2 | 3-5/16 | 4-49/64 | 7-19/32 | #2 | 1/16 | PR110048 |
| 0.5 | Z05SDSMT02I | 39/64 ~ 11/16 | 2-1/2 | 3-5/16 | 4-49/64 | 7-19/32 | #2 | 1/16 | PR110048 |
| 1 | Z10SDSMT03I | 45/64 ~ 15/16 | 6-3/4 | 7-7/8 | 9-39/64 | 13-5/32 | #3 | 1/8 | PR110100 |
| | Z10SDSMT04I | 45/64 ~ 15/16 | 6-3/4 | 7-7/8 | 9-43/64 | 14-5/32 | #4 | 1/8 | PR110100 |
| 1.5 | Z15SDSMT03I | 55/64 ~ 15/16 | 6-3/4 | 7-7/8 | 9-39/64 | 13-5/32 | #3 | 1/8 | PR110100 |
| | Z15SDSMT04I | 55/64 ~ 15/16 | 6-3/4 | 7-7/8 | 9-43/64 | 14-5/32 | #4 | 1/8 | PR110100 |
| 2 | Z20SDSMT03I | 31/32 ~ 1-3/8 | 7-3/8 | 8-1/2 | 10-15/64 | 13-25/32 | #3 | 1/8 | PR110100 |
| | Z20SDSMT04I | 31/32 ~ 1-3/8 | 7-3/8 | 8-1/2 | 10-19/64 | 14-25/32 | #4 | 1/8 | PR110100 |
| 2.5 | Z25SDSMT03I | 1-3/16 ~ 1-3/8 | 7-3/8 | 8-1/2 | 10-15/64 | 13-25/32 | #3 | 1/8 | PR110100 |
| | Z25SDSMT04I | 1-3/16 ~ 1-3/8 | 7-3/8 | 8-1/2 | 10-37/64 | 15-1/16 | #4 | 1/4 | PR110116 |
| 3 | Z30SDSMT04I | 1-13/32 ~ 1-7/8 | 8-1/4 | 9-1/2 | 11-5/8 | 16-1/16 | #4 | 1/4 | PR110116 |
| | Z30SDSMT05I | 1-13/32 ~ 1-7/8 | 8-1/4 | 9-1/2 | 11-5/8 | 17-5/16 | #5 | 1/4 | PR110148 |
| 4 | Z40SDSMT04I | 1-29/32 ~ 2-9/16 | 9-1/8 | 10-1/2 | 12-5/8 | 17-1/16 | #4 | 1/4 | PR110116 |
| | Z40SDSMT05I | 1-29/32 ~ 2-9/16 | 9-1/8 | 10-1/2 | 12-5/8 | 18-5/16 | #5 | 1/4 | PR110148 |
| 5 | Z50SDSMT05I | 2-1/2 ~ 3-1/2 | 10-3/4 | 12-1/2 | 15-5/16 | 20-15/16 | #5 | 1/2 | PR110216 |
| 7 | Z70SDSMT05I | 3-17/32 ~ 4-1/2 | 10-3/4 | 12-7/8 | 15-11/16 | 21-5/16 | #5 | 1/2 | PR110216 |

▶ You can also apply **RCA**(**R**otary **C**oolant **A**dapter) for internal cooling. (See page A308)
你也可通过RCA(旋转冷却油适配器) 采用内冷(请看A308页)

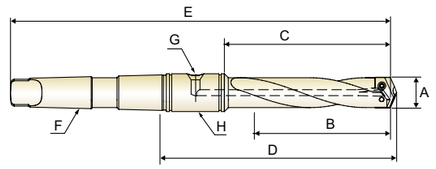


CARBIDE
HSS
i-ONE DRILLS
i-DREAM DRILLS
DREAM DRILLS -PRO
DREAM DRILLS -GENERAL
DREAM DRILLS -SOFT
DREAM DRILLS -HIGH FEED
DREAM DRILLS -FLAT BOTTOM
DREAM DRILLS -INOX
DREAM DRILLS -ALU
DREAM DRILLS -CFRP
DREAM DRILLS -MQL
DREAM DRILLS for HIGH HARDENED STEELS
GENERAL CARBIDE DRILLS
MULTI-1 DRILLS
GOLD-P DRILLS
SUPER-GP DRILLS
WORM PATTERN DRILLS
STRAIGHT SHANK DRILLS
TAPER SHANK DRILLS
NC-SPOTTING DRILLS
CENTER DRILLS
SPADE DRILLS
REAMERS
COUNTER SINKS
COUNTER BORES
TECHNICAL DATA

# SPADE DRILLS

**Z**SDHMT** SERIES

## TAPER SHANK HOLDERS
## 锥柄刀杆




### STANDARD LENGTH - Helical Flute (Inch)
### 标长刃-螺旋槽 (英制)

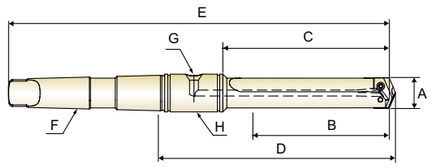
| Series 系列 | EDP No. 型号 | Drill Insert Range 钻头刀片范围 | Max. Drill Depth 钻的最大深度 | Body Length 主要长度 | Ref. Length 参考长度 | Overall Length 全长 | MT 莫氏锥度 | Pipe Tap 管用丝锥 | RCA 旋转冷却油适配器 |
|---|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E | F | G | H |
| Y | ZY0SDHMT02I | 3/8 ~ 27/64 | 2-3/8 | 3-5/32 | 4-19/32 | 7-7/16 | #2 | 1/16 | PR110048 |
| Z | ZZ0SDHMT02I | 7/16 ~ 1/2 | 2-3/8 | 3-5/32 | 4-19/32 | 7-7/16 | #2 | 1/16 | PR110048 |
| 0 | Z00SDHMT02I | 33/64 ~ 11/16 | 2-1/2 | 3-5/16 | 4-49/64 | 7-19/32 | #2 | 1/16 | PR110048 |
| 0.5 | Z05SDHMT02I | 39/64 ~ 11/16 | 2-1/2 | 3-5/16 | 4-49/64 | 7-19/32 | #2 | 1/16 | PR110048 |
| 1 | Z10SDHMT03I | 45/64 ~ 15/16 | 6-3/4 | 7-7/8 | 9-39/64 | 13-5/32 | #3 | 1/8 | PR110100 |
| | Z10SDHMT04I | 45/64 ~ 15/16 | 6-3/4 | 7-7/8 | 9-43/64 | 14-5/32 | #4 | 1/8 | PR110100 |
| 1.5 | Z15SDHMT03I | 55/64 ~ 15/16 | 6-3/4 | 7-7/8 | 9-39/64 | 13-5/32 | #3 | 1/8 | PR110100 |
| | Z15SDHMT04I | 55/64 ~ 15/16 | 6-3/4 | 7-7/8 | 9-43/64 | 14-5/32 | #4 | 1/8 | PR110100 |
| 2 | Z20SDHMT03I | 31/32 ~ 1-3/8 | 7-3/8 | 8-1/2 | 10-15/64 | 13-25/32 | #3 | 1/8 | PR110100 |
| | Z20SDHMT04I | 31/32 ~ 1-3/8 | 7-3/8 | 8-1/2 | 10-19/64 | 14-25/32 | #4 | 1/8 | PR110100 |
| 2.5 | Z25SDHMT03I | 1-3/16 ~ 1-3/8 | 7-3/8 | 8-1/2 | 10-15/64 | 13-25/32 | #3 | 1/8 | PR110100 |
| | Z25SDHMT04I | 1-3/16 ~ 1-3/8 | 7-3/8 | 8-1/2 | 10-37/64 | 15-1/16 | #4 | 1/4 | PR110116 |

▶ You can also apply **RCA**(**R**otary **C**oolant **A**dapter) for internal cooling. (See page A308)
你也可通过RCA(旋转冷却油适配器) 采用内冷(请看A308页)

# SPADE DRILLS

**Z**EXSMT** SERIES
**Z**EXHMT** SERIES

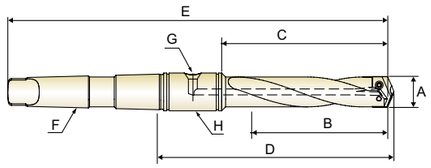
## TAPER SHANK HOLDERS
## 锥柄刀杆




### EXTENDED LENGTH - Straight Flute (Inch)
### 加长刃-直槽 (英制)

| Series 系列 | EDP No. 型号 | Drill Insert Range 钻头刀片范围 | Max. Drill Depth 钻的最大深度 | Body Length 主要长度 | Ref. Length 参考长度 | Overall Length 全长 | MT 莫氏锥度 | Pipe Tap 管用丝锥 | RCA 旋转冷却油适配器 |
|---|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E | F | G | H |
| Y | ZY0EXSMT02I | 3/8 ~ 27/64 | 4-3/8 | 5-5/32 | 6-19/32 | 9-7/16 | #2 | 1/16 | PR110048 |
| Z | ZZ0EXSMT02I | 7/16 ~ 1/2 | 4-3/8 | 5-5/32 | 6-19/32 | 9-7/16 | #2 | 1/16 | PR110048 |
| 0 | Z00EXSMT02I | 33/64 ~ 11/16 | 4-1/2 | 5-5/16 | 6-49/64 | 9-19/32 | #2 | 1/16 | PR110048 |
| 0.5 | Z05EXSMT02I | 39/64 ~ 11/16 | 4-1/2 | 5-5/16 | 6-49/64 | 9-19/32 | #2 | 1/16 | PR110048 |
| 1 | Z10EXSMT03I | 45/64 ~ 15/16 | 10-3/4 | 11-7/8 | 13-39/64 | 17-5/32 | #3 | 1/8 | PR110100 |
| 1.5 | Z15EXSMT03I | 55/64 ~ 15/16 | 10-3/4 | 11-7/8 | 13-39/64 | 17-5/32 | #3 | 1/8 | PR110100 |
| 2 | Z20EXSMT04I | 31/32 ~ 1-3/8 | 11-3/8 | 12-1/2 | 14-15/64 | 18-25/32 | #4 | 1/8 | PR110100 |
| 2.5 | Z25EXSMT04I | 1-3/16 ~ 1-3/8 | 11-3/8 | 12-1/2 | 14-37/64 | 19-1/16 | #4 | 1/4 | PR110116 |
| 3 | Z30EXSMT04I | 1-13/32 ~ 1-7/8 | 13-3/4 | 15 | 17-1/8 | 21-9/16 | #4 | 1/4 | PR110116 |
| 4 | Z40EXSMT05I | 1-29/32 ~ 2-9/16 | 16-5/8 | 18 | 20-1/8 | 25-13/16 | #5 | 1/4 | PR110148 |
| 5 | Z50EXSMT05I | 2-1/2 ~ 3-1/2 | 18-1/4 | 20 | 22-13/16 | 28-7/16 | #5 | 1/2 | PR110216 |
| 7 | Z70EXSMT05I | 3-17/32 ~ 4-1/2 | 21-7/8 | 24 | 26-13/16 | 32-7/16 | #5 | 1/2 | PR110216 |

▶ You can also apply RCA(Rotary Coolant Adapter) for internal cooling. (See page A308)
你也可通过RCA(旋转冷却油适配器) 采用内冷(请看A308页)




### EXTENDED LENGTH - Helical Flute (Inch)
### 标长刃-螺旋槽 (英制)

| Series 系列 | EDP No. 型号 | Drill Insert Range 钻头刀片范围 | Max. Drill Depth 钻的最大深度 | Body Length 主要长度 | Ref. Length 参考长度 | Overall Length 全长 | MT 莫氏锥度 | Pipe Tap 管用丝锥 | RCA 旋转冷却油适配器 |
|---|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E | F | G | H |
| Y | ZY0EXHMT02I | 3/8 ~ 27/64 | 4-3/8 | 5-5/32 | 6-19/32 | 9-7/16 | #2 | 1/16 | PR110048 |
| Z | ZZ0EXHMT02I | 7/16 ~ 1/2 | 4-3/8 | 5-5/32 | 6-19/32 | 9-7/16 | #2 | 1/16 | PR110048 |
| 0 | Z00EXHMT02I | 33/64 ~ 11/16 | 4-1/2 | 5-5/16 | 6-49/64 | 9-19/32 | #2 | 1/16 | PR110048 |
| 0.5 | Z05EXHMT02I | 39/64 ~ 11/16 | 4-1/2 | 5-5/16 | 6-49/64 | 9-19/32 | #2 | 1/16 | PR110048 |
| 1 | Z10EXHMT03I | 45/64 ~ 15/16 | 10-3/4 | 11-7/8 | 13-39/64 | 17-5/32 | #3 | 1/8 | PR110100 |
| 1.5 | Z15EXHMT03I | 55/64 ~ 15/16 | 10-3/4 | 11-7/8 | 13-39/64 | 17-5/32 | #3 | 1/8 | PR110100 |
| 2 | Z20EXHMT04I | 31/32 ~ 1-3/8 | 11-3/8 | 12-1/2 | 14-15/64 | 18-25/32 | #4 | 1/8 | PR110100 |
| 2.5 | Z25EXHMT04 | 1-3/16 ~ 1-3/8 | 11-3/8 | 12-1/2 | 14-37/64 | 19-1/16 | #4 | 1/4 | PR110116 |

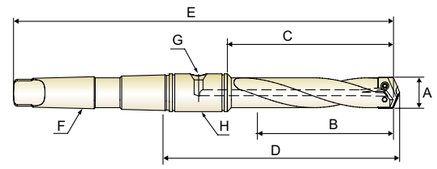
▶ You can also apply **RCA**(**R**otary **C**oolant **A**dapter) for internal cooling. (See page A308)
你也可通过RCA(旋转冷却油适配器) 采用内冷(请看A308页)



# SPADE DRILLS

**Z**LGHMT** SERIES

## TAPER SHANK HOLDERS
## 锥柄刀杆




### LONG LENGTH - Helical Flute (Inch)
### 标长刃-螺旋槽 (英制)

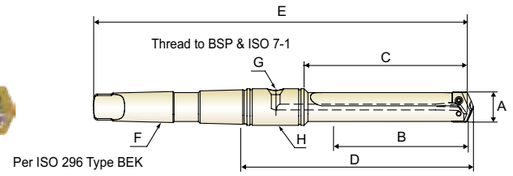
| Series 系列 | EDP No. 型号 | Drill Insert Range 钻头刀片范围 | Max. Drill Depth 钻的最大深度 | Body Length 主要长度 | Ref. Length 参考长度 | Overall Length 全长 | MT 莫氏锥度 | Pipe Tap 管用丝锥 | RCA 旋转冷却油适配器 |
|---|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E | F | G | H |
| 0 | Z00LGHMT02I | 33/64 ~ 11/16 | 7 | 7-13/16 | 9-17/64 | 12-3/32 | #2 | 1/16 | PR110048 |
| 0.5 | Z05LGHMT02I | 39/64 ~ 11/16 | 7 | 7-13/16 | 9-17/64 | 12-3/32 | #2 | 1/16 | PR110048 |

▶ You can also apply **RCA**(**R**otary **C**oolant **A**dapter) for internal cooling. (See page A308)
你也可通过RCA(旋转冷却油适配器) 采用内冷(请看A308页)

# SPADE DRILLS

**Z**STSMT** SERIES
**Z**ITHMT** SERIES

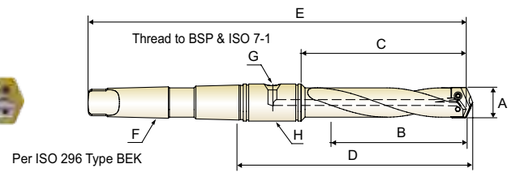
## TAPER SHANK HOLDERS
## 锥柄刀杆




### SHORT LENGTH - Straight Flute (Metric)
### 短刃-直槽 (公制)

| Series | EDP No. | Drill Insert Range | Max. Drill Depth | Body Length | Ref. Length | Overall Length | MT | Pipe Tap | RCA |
|---|---|---|---|---|---|---|---|---|---|
| 系列 | 型号 | 钻头刀片范围 | 钻的最大深度 | 主要长度 | 参考长度 | 全长 | 莫氏锥度 | 管用丝锥 | 旋转冷却油适配器 |
| | | A | B | C | D | E | F | G | H |
| Y | ZY0STSMT02M | 9.5 ~ 11.0 | 31.8 | 51.5 | 88.0 | 160.3 | #2 | 1/16 | PR120190 |
| Z | ZZ0STSMT02M | 11.5 ~ 12.5 | 31.8 | 51.5 | 88.0 | 160.3 | #2 | 1/16 | PR120190 |
| 0 | Z00STSMT02M | 13.0 ~ 17.5 | 35.0 | 55.5 | 92.4 | 164.3 | #2 | 1/16 | PR120190 |
| 0.5 | Z05STSMT02M | 15.5 ~ 17.5 | 35.0 | 55.5 | 92.4 | 164.3 | #2 | 1/16 | PR120190 |
| 1 | Z10STSMT03M | 18.0 ~ 24.0 | 69.8 | 98.4 | 142.5 | 232.5 | #3 | 1/8 | PR120254 |
| 1.5 | Z15STSMT03M | 22.0 ~ 24.0 | 69.8 | 98.4 | 142.5 | 232.5 | #3 | 1/8 | PR120254 |
| 2 | Z20STSMT04M | 25.0 ~ 35.0 | 85.7 | 114.3 | 160.4 | 273.8 | #4 | 1/8 | PR120254 |
| 2.5 | Z25STSMT04M | 30.0 ~ 35.0 | 85.7 | 114.3 | 167.6 | 281.0 | #4 | 1/4 | PR120317 |
| 3 | Z30STSMT04M | 36.0 ~ 47.0 | 120.6 | 152.4 | 206.4 | 319.1 | #4 | 1/4 | PR120317 |
| 4 | Z40STSMT05M | 48.0 ~ 65.0 | 130.1 | 165.1 | 219.1 | 363.5 | #5 | 1/4 | PR120444 |
| 5 | Z50STSMT05M | 64.0 ~ 88.0 | 171.5 | 215.9 | 287.3 | 430.2 | #5 | 1/2 | PR120571 |
| 7 | Z70STSMT05M | 90.0 ~ 114.0 | 171.5 | 225.4 | 296.8 | 439.7 | #5 | 1/2 | PR120571 |

▶ You can also apply **RCA**(**R**otary **C**oolant **A**dapter) for internal cooling. (See page A308)
你也可通过RCA(旋转冷却油适配器) 采用内冷(请看A308页)




### INTERMEDIATE LENGTH - Helical Flute (Metric)
### 普长刃-螺旋槽 (公制)

| Series | EDP No. | Drill Insert Range | Max. Drill Depth | Body Length | Ref. Length | Overall Length | MT | Pipe Tap | RCA |
|---|---|---|---|---|---|---|---|---|---|
| 系列 | 型号 | 钻头刀片范围 | 钻的最大深度 | 主要长度 | 参考长度 | 全长 | 莫氏锥度 | 管用丝锥 | 旋转冷却油适配器 |
| | | A | B | C | D | E | F | G | H |
| 1 | Z10ITHMT03M | 18.0 ~ 24.0 | 120.7 | 149.2 | 193.3 | 283.3 | #3 | 1/8 | PR120254 |
| 1.5 | Z15ITHMT03M | 22.0 ~ 24.0 | 120.7 | 149.2 | 193.3 | 283.3 | #3 | 1/8 | PR120254 |
| 2 | Z20ITHMT04M | 25.0 ~ 35.0 | 136.5 | 165.1 | 211.2 | 324.6 | #4 | 1/8 | PR120254 |
| 2.5 | Z25ITHMT04M | 30.0 ~ 35.0 | 136.5 | 165.1 | 218.4 | 331.8 | #4 | 1/4 | PR120317 |
| 3 | Z30ITHMT04M | 36.0 ~ 47.0 | 165.1 | 196.9 | 250.9 | 363.6 | #4 | 1/4 | PR120317 |

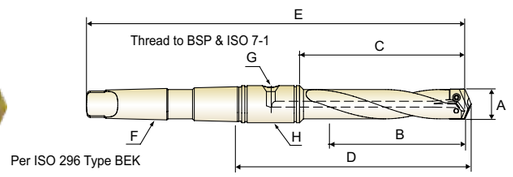
▶ You can also apply **RCA**(**R**otary **C**oolant **A**dapter) for internal cooling. (See page A308)
你也可通过RCA(旋转冷却油适配器) 采用内冷(请看A308页)



SPADE DRILLS

**Z**SDHMT** SERIES

TAPER SHANK HOLDERS
锥柄刀杆




### STANDARD LENGTH - Helical Flute (Metric)
### 标长刃-螺旋槽 (公制)

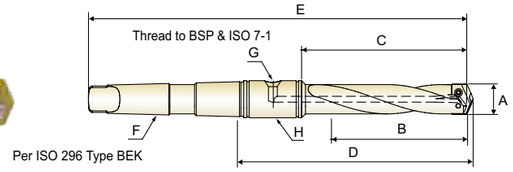
| Series | EDP No. | Drill Insert Range | Max. Drill Depth | Body Length | Ref. Length | Overall Length | MT | Pipe Tap | RCA |
|---|---|---|---|---|---|---|---|---|---|
| 系列 | 型号 | 钻头刀片范围 | 钻的最大深度 | 主要长度 | 参考长度 | 全长 | 莫氏锥度 | 管用丝锥 | 旋转冷却油适配器 |
| | | A | B | C | D | E | F | G | H |
| Y | ZY0SDHMT02M | 9.5 ~ 11.0 | 60.3 | 80.2 | 116.7 | 188.9 | #2 | 1/16 | PR120190 |
| Z | ZZ0SDHMT02M | 11.5 ~ 12.5 | 60.3 | 80.2 | 116.7 | 188.9 | #2 | 1/16 | PR120190 |
| 0 | Z00SDHMT02M | 13.0 ~ 17.5 | 63.5 | 84.1 | 121.0 | 192.9 | #2 | 1/16 | PR120190 |
| 0.5 | Z05SDHMT02M | 15.5 ~ 17.5 | 63.5 | 84.1 | 121.0 | 192.9 | #2 | 1/16 | PR120190 |
| 1 | Z10SDHMT03M | 18.0 ~ 24.0 | 171.5 | 200.0 | 244.1 | 334.2 | #3 | 1/8 | PR120254 |
| 1.5 | Z15SDHMT03M | 22.0 ~ 24.0 | 171.5 | 200.0 | 244.1 | 334.2 | #3 | 1/8 | PR120254 |
| 2 | Z20SDHMT04M | 25.0 ~ 35.0 | 187.3 | 215.9 | 262.0 | 375.4 | #4 | 1/8 | PR120254 |
| 2.5 | Z25SDHMT04M | 30.0 ~ 35.0 | 187.3 | 215.9 | 269.2 | 382.6 | #4 | 1/4 | PR120317 |
| 3 | Z30SDHMT04M | 36.0 ~ 47.0 | 209.5 | 241.3 | 295.3 | 408.0 | #4 | 1/4 | PR120317 |
| 4 | Z40SDHMT05M | 48.0 ~ 65.0 | 231.8 | 266.7 | 320.7 | 465.1 | #5 | 1/4 | PR120444 |
| 5 | Z50SDHMT05M | 64.0 ~ 88.0 | 273.1 | 317.5 | 388.9 | 531.8 | #5 | 1/2 | PR120571 |
| 7 | Z70SDHMT05M | 90.0 ~ 114.0 | 273.1 | 327.0 | 398.5 | 541.3 | #5 | 1/2 | PR120571 |

▶ You can also apply **RCA**(**R**otary **C**oolant **A**dapter) for internal cooling. (See page A308)
你也可通过RCA(旋转冷却油适配器) 采用内冷(请看A308页)

# SPADE DRILLS

**Z**EXHMT** SERIES
**Z**EXSMT** SERIES

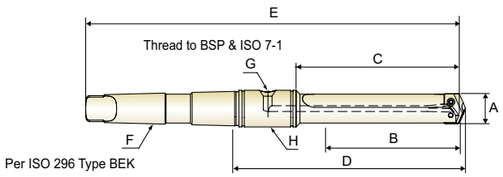
## TAPER SHANK HOLDERS
## 锥柄刀杆




### EXTENDED LENGTH - Helical Flute (Metric)
### 加长刃-螺旋槽 (公制)

| Series | EDP No. | Drill Insert Range | Max. Drill Depth | Body Length | Ref. Length | Overall Length | MT | Pipe Tap | RCA |
|---|---|---|---|---|---|---|---|---|---|
| 系列 | 型号 | 钻头刀片范围 | 钻的最大深度 | 主要长度 | 参考长度 | 全长 | 莫氏锥度 | 管用丝锥 | 旋转冷却油适配器 |
| | | A | B | C | D | E | F | G | H |
| Y | ZY0EXHMT02M | 9.5 ~ 11.0 | 111.1 | 130.9 | 167.4 | 239.7 | #2 | 1/16 | PR120190 |
| Z | ZZ0EXHMT02M | 11.5 ~ 12.5 | 111.1 | 130.9 | 167.4 | 239.7 | #2 | 1/16 | PR120190 |
| 0 | Z00EXHMT02M | 13.0 ~ 17.5 | 114.3 | 135.0 | 171.8 | 243.7 | #2 | 1/16 | PR120190 |
| 0.5 | Z05EXHMT02M | 15.5 ~ 17.5 | 114.3 | 135.0 | 171.8 | 243.7 | #2 | 1/16 | PR120190 |
| 1 | Z10EXHMT03M | 18.0 ~ 24.0 | 273.1 | 301.6 | 345.7 | 435.8 | #3 | 1/8 | PR120254 |
| 1.5 | Z15EXHMT03M | 22.0 ~ 24.0 | 273.1 | 301.6 | 345.7 | 435.8 | #3 | 1/8 | PR120254 |
| 2 | Z20EXHMT04M | 25.0 ~ 35.0 | 289.0 | 317.5 | 363.6 | 477.0 | #4 | 1/8 | PR120254 |
| 2.5 | Z25EXHMT04M | 30.0 ~ 35.0 | 289.0 | 317.5 | 370.8 | 484.2 | #4 | 1/4 | PR120317 |

▶ You can also apply **RCA**(**R**otary **C**oolant **A**dapter) for internal cooling. (See page A308)
你也可通过RCA(旋转冷却油适配器) 采用内冷(请看A308页)




### EXTENDED LENGTH - Straight Flute (Metric)
### 加长刃-直槽 (公制)

| Series | EDP No. | Drill Insert Range | Max. Drill Depth | Body Length | Ref. Length | Overall Length | MT | Pipe Tap | RCA |
|---|---|---|---|---|---|---|---|---|---|
| 系列 | 型号 | 钻头刀片范围 | 钻的最大深度 | 主要长度 | 参考长度 | 全长 | 莫氏锥度 | 管用丝锥 | 旋转冷却油适配器 |
| | | A | B | C | D | E | F | G | H |
| 3 | Z30EXSMT04M | 36.0 ~ 47.0 | 349.3 | 381.0 | 435.0 | 547.7 | #4 | 1/4 | PR120317 |
| 4 | Z40EXSMT05M | 48.0 ~ 65.0 | 422.3 | 457.2 | 511.2 | 655.6 | #5 | 1/4 | PR120444 |
| 5 | Z50EXSMT05M | 64.0 ~ 88.0 | 463.6 | 508.0 | 579.4 | 722.3 | #5 | 1/2 | PR120571 |
| 7 | Z70EXSMT05M | 90.0 ~ 114.0 | 555.6 | 609.6 | 681.1 | 823.9 | #5 | 1/2 | PR120571 |

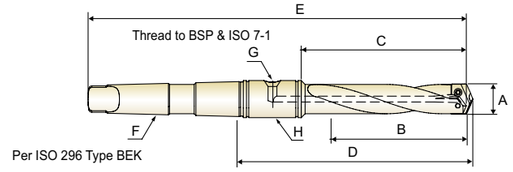
▶ You can also apply **RCA**(**R**otary **C**oolant **A**dapter) for internal cooling. (See page A308)
你也可通过RCA(旋转冷却油适配器) 采用内冷(请看A308页)



SPADE DRILLS

**Z**LGHMT** SERIES

TAPER SHANK HOLDERS
锥柄刀杆




### LONG LENGTH - Helical Flute (Metric)
### 长刃-螺旋槽 (公制)

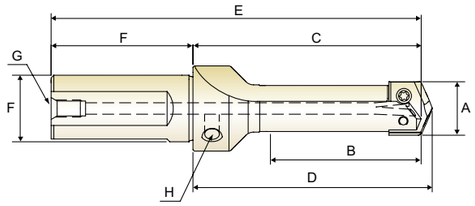
| Series | EDP No. | Drill Insert Range | Max. Drill Depth | Body Length | Ref. Length | Overall Length | MT | Pipe Tap | RCA |
|---|---|---|---|---|---|---|---|---|---|
| 系列 | 型号 | 钻头刀片范围 | 钻的最大深度 | 主要长度 | 参考长度 | 全长 | 莫氏锥度 | 管用丝锥 | 旋转冷却油适配器 |
| | | A | B | C | D | E | F | G | H |
| 0 | Z00LGHMT02M | 13.0 ~ 17.5 | 177.8 | 198.5 | 235.3 | 307.2 | #2 | 1/16 | PR120190 |
| 0.5 | Z05LGHMT02M | 15.5 ~ 17.5 | 177.8 | 198.5 | 235.3 | 307.2 | #2 | 1/16 | PR120190 |

▶ You can also apply **RCA**(**R**otary **C**oolant **A**dapter) for internal cooling. (See page A308)
你也可通过RCA(旋转冷却油适配器) 采用内冷(请看A308页)

# SPADE DRILLS

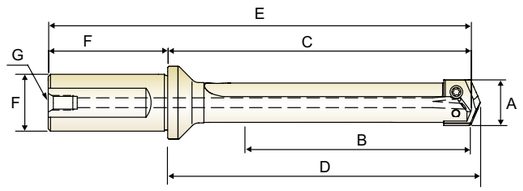
**Z**SBSF** SERIES
**Z**STSF** SERIES

## FLANGED STRAIGHT SHANK HOLDERS
## 凸缘直柄刀杆




### STUB LENGTH - Straight Flute (Inch)
### 超短刃-直槽 (英制)

| Series | EDP No. | Drill Insert Range | Max. Drill Depth | Body Length | Ref. Length | Overall Length | Shank | | Pipe Tap | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Dia. | Length | Rear | Side |
| 系列 | 型号 | 钻头刀片范围 | 钻的最大深度 | 主要长度 | 参考长度 | 全长 | 柄 | | 管用丝锥 | |
| | | | | | | | 直径 | 长度 | 后面 | 侧面 |
| | | A | B | C | D | E | F | | G | H |
| Y | ZY0SBSF063I | 3/8 ~ 27/64 | 3/4 | 1-7/8 | 1-31/32 | 3-3/4 | 5/8 | 1-7/8 | 1/16 | 1/8 |
| Z | ZZ0SBSF063I | 7/16 ~ 1/2 | 3/4 | 1-7/8 | 1-31/32 | 3-3/4 | 5/8 | 1-7/8 | 1/16 | 1/8 |
| 0 | Z00SBSF075I | 33/64 ~ 11/16 | 7/8 | 1-7/8 | 1-63/64 | 3-29/32 | 3/4 | 2-1/32 | 1/8 | 1/8 |
| 0.5 | Z05SBSF075I | 39/64 ~ 11/16 | 7/8 | 1-7/8 | 1-63/64 | 3-29/32 | 3/4 | 2-1/32 | 1/8 | 1/8 |
| 1 | Z10SBSF100I | 45/64 ~ 15/16 | 1-7/8 | 2-63/64 | 3-1/8 | 5-17/64 | 1 | 2-9/32 | 1/8 | 1/8 |
| 1.5 | Z15SBSF100I | 55/64 ~ 15/16 | 2-1/4 | 3-31/64 | 3-5/8 | 5-49/64 | 1 | 2-9/32 | 1/8 | 1/8 |
| 2 | Z20SBSF125I | 31/32 ~ 1-3/8 | 2-1/4 | 3-31/64 | 3-5/8 | 5-49/64 | 1-1/4 | 2-9/32 | 1/4 | 1/8 |
| 2.5 | Z25SBSF125I | 1-3/16 ~ 1-3/8 | 3-5/8 | 4-55/64 | 5 | 7-9/64 | 1-1/4 | 2-9/32 | 1/4 | 1/8 |
| 3 | Z30SBSF150I | 1-13/32 ~ 1-7/8 | 3 | 4-59/64 | 5-7/64 | 7-39/64 | 1-1/2 | 2-11/16 | 1/4 | 1/4 |




### SHORT LENGTH - Straight Flute (Inch)
### 短刃- 直槽 (英制)

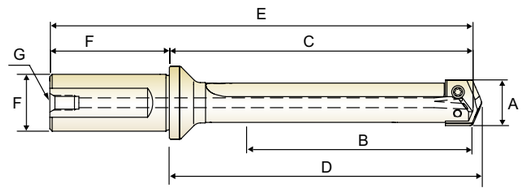
| Series | EDP No. | Drill Insert Range | Max. Drill Depth | Body Length | Ref. Length | Overall Length | Shank | | Pipe Tap |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Dia. | Length | |
| 系列 | 型号 | 钻头刀片范围 | 钻的最大深度 | 主要长度 | 参考长度 | 全长 | 柄 | | 管用丝锥 |
| | | | | | | | 直径 | 长度 | |
| | | A | B | C | D | E | F | | G |
| Y | ZY0STSF075I | 3/8 ~ 27/64 | 1-1/4 | 2-13/32 | 2-1/2 | 4-7/16 | 3/4 | 2-1/32 | 1/8 |
| Z | ZZ0STSF075I | 7/16 ~ 1/2 | 1-1/4 | 2-13/32 | 2-1/2 | 4-7/16 | 3/4 | 2-1/32 | 1/8 |
| 0 | Z00STSF075I | 33/64 ~ 11/16 | 1-3/8 | 2-1/2 | 2-39/64 | 4-17/32 | 3/4 | 2-1/32 | 1/8 |
| 0.5 | Z05STSF075I | 39/64 ~ 11/16 | 1-3/8 | 2-1/2 | 2-39/64 | 4-17/32 | 3/4 | 2-1/32 | 1/8 |
| 1 | Z10STSF100I | 45/64 ~ 15/16 | 2-5/8 | 4-7/32 | 4-23/64 | 6-1/2 | 1 | 2-9/32 | 1/8 |
| 1.5 | Z15STSF100I | 55/64 ~ 15/16 | 2-5/8 | 4-7/32 | 4-23/64 | 6-1/2 | 1 | 2-9/32 | 1/8 |
| 2 | Z20STSF125I | 31/32 ~ 1-3/8 | 3-3/8 | 5-1/16 | 5-13/64 | 7-11/32 | 1-1/4 | 2-9/32 | 1/4 |
| 2.5 | Z25STSF125I | 1-3/16 ~ 1-3/8 | 3-3/8 | 5-1/16 | 5-13/64 | 7-11/32 | 1-1/4 | 2-9/32 | 1/4 |
| 3 | Z30STSF150I | 1-13/32 ~ 1-7/8 | 4-3/4 | 6-13/16 | 7 | 9-1/2 | 1-1/2 | 2-11/16 | 1/4 |
| 4 | Z40STSF150I | 1-29/32 ~ 2-9/16 | 5-1/8 | 7-1/16 | 7-1/4 | 9-3/4 | 1-1/2 | 2-11/16 | 1/4 |



# SPADE DRILLS

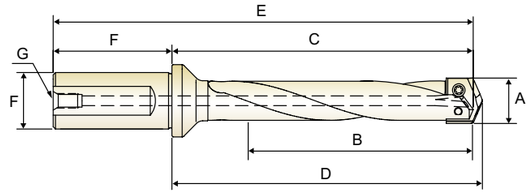
**Z**ITSF** SERIES
**Z**ITHF** SERIES

## FLANGED STRAIGHT SHANK HOLDERS
## 凸缘直柄刀杆




### INTERMEDIATE LENGTH - Straight Flute (Inch)
### 普长刃-直槽 (英制)

| Series | EDP No. | Drill Insert Range | Max. Drill Depth | Body Length | Ref. Length | Overall Length | Shank | | Pipe Tap |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Dia. | Length | |
| 系列 | 型号 | 钻头刀片范围 | 钻的最大深度 | 主要长度 | 参考长度 | 全长 | 柄 | | 管用丝锥 |
| | | | | | | | 直径 | 长度 | |
| | | A | B | C | D | E | F | | G |
| 1 | Z10ITSF100I | 45/64 ~ 15/16 | 4-5/8 | 6-3/32 | 6-15/64 | 8-3/8 | 1 | 2-9/32 | 1/8 |
| 1.5 | Z15ITSF100I | 55/64 ~ 15/16 | 4-5/8 | 6-3/32 | 6-15/64 | 8-3/8 | 1 | 2-9/32 | 1/8 |
| 2 | Z20ITSF125I | 31/32 ~ 1-3/8 | 5-3/8 | 7-1/16 | 7-13/64 | 9-11/32 | 1-1/4 | 2-9/32 | 1/4 |
| 2.5 | Z25ITSF125I | 1-3/16 ~ 1-3/8 | 5-3/8 | 7-1/16 | 7-13/64 | 9-11/32 | 1-1/4 | 2-9/32 | 1/4 |
| 3 | Z30ITSF150I | 1-13/32 ~ 1-7/8 | 6-1/2 | 8-9/16 | 8-3/4 | 11-1/4 | 1-1/2 | 2-11/16 | 1/4 |



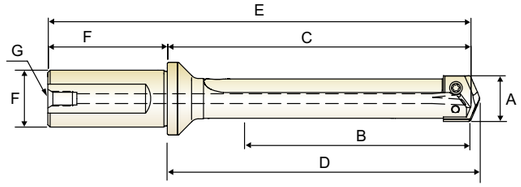

### INTERMEDIATE LENGTH - Helical Flute (Inch)
### 普长刃-螺旋槽 (英制)

| Series | EDP No. | Drill Insert Range | Max. Drill Depth | Body Length | Ref. Length | Overall Length | Shank | | Pipe Tap |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Dia. | Length | |
| 系列 | 型号 | 钻头刀片范围 | 钻的最大深度 | 主要长度 | 参考长度 | 全长 | 柄 | | 管用丝锥 |
| | | | | | | | 直径 | 长度 | |
| | | A | B | C | D | E | F | | G |
| 1 | Z10ITHF100I | 45/64 ~ 15/16 | 4-5/8 | 6-3/32 | 6-15/64 | 8-3/8 | 1 | 2-9/32 | 1/8 |
| 1.5 | Z15ITHF100I | 55/64 ~ 15/16 | 4-5/8 | 6-3/32 | 6-15/64 | 8-3/8 | 1 | 2-9/32 | 1/8 |
| 2 | Z20ITHF125I | 31/32 ~ 1-3/8 | 5-3/8 | 7-1/16 | 7-13/64 | 9-11/32 | 1-1/4 | 2-9/32 | 1/4 |
| 2.5 | Z25ITHF125I | 1-3/16 ~ 1-3/8 | 5-3/8 | 7-1/16 | 7-13/64 | 9-11/32 | 1-1/4 | 2-9/32 | 1/4 |
| 3 | Z30ITHF150I | 1-13/32 ~ 1-7/8 | 6-1/2 | 8-9/16 | 8-3/4 | 11-1/4 | 1-1/2 | 2-11/16 | 1/4 |

# SPADE DRILLS

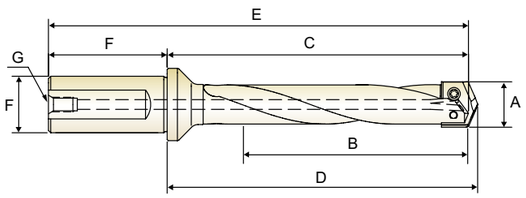
**Z**SDSF** SERIES
**Z**SDHF** SERIES

## FLANGED STRAIGHT SHANK HOLDERS
## 凸缘直柄刀杆




### STANDARD LENGTH - Straight Flute (Inch)
### 标长刃-直槽 (英制)

| Series | EDP No. | Drill Insert Range | Max. Drill Depth | Body Length | Ref. Length | Overall Length | Shank | | Pipe Tap |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Dia. | Length | |
| 系列 | 型号 | 钻头刀片范围 | 钻的最大深度 | 主要长度 | 参考长度 | 全长 | 柄 直径 | 柄 长度 | 管用丝锥 |
| | | A | B | C | D | E | F | | G |
| Y | ZY0SDSF075I | 3/8 ~ 27/64 | 2-3/8 | 3-17/32 | 3-5/8 | 5-9/16 | 3/4 | 2-1/32 | 1/8 |
| Z | ZZ0SDSF075I | 7/16 ~ 1/2 | 2-3/8 | 3-17/32 | 3-5/8 | 5-9/16 | 3/4 | 2-1/32 | 1/8 |
| 0 | Z00SDSF075I | 33/64 ~ 11/16 | 2-1/2 | 3-5/8 | 3-47/64 | 5-21/32 | 3/4 | 2-1/32 | 1/8 |
| 0.5 | Z05SDSF075I | 39/64 ~ 11/16 | 2-1/2 | 3-5/8 | 3-47/64 | 5-21/32 | 3/4 | 2-1/32 | 1/8 |
| 1 | Z10SDSF100I | 45/64 ~ 15/16 | 6-5/8 | 8-3/32 | 8-15/64 | 10-3/8 | 1 | 2-9/32 | 1/8 |
| 1.5 | Z15SDSF100I | 55/64 ~ 15/16 | 6-5/8 | 8-3/32 | 8-15/64 | 10-3/8 | 1 | 2-9/32 | 1/8 |
| 2 | Z20SDSF125I | 31/32 ~ 1-3/8 | 7-3/8 | 9-1/16 | 9-13/64 | 11-11/32 | 1-1/4 | 2-9/32 | 1/4 |
| 2.5 | Z25SDSF125I | 1-3/16 ~ 1-3/8 | 7-3/8 | 9-1/16 | 9-13/64 | 11-11/32 | 1-1/4 | 2-9/32 | 1/4 |
| 3 | Z30SDSF150I | 1-13/32 ~ 1-7/8 | 8-1/4 | 10-5/16 | 10-1/2 | 13 | 1-1/2 | 2-11/16 | 1/4 |
| 4 | Z40SDSF150I | 1-29/32 ~ 2-9/16 | 9-1/8 | 11-1/16 | 11-1/4 | 13-3/4 | 1-1/2 | 2-11/16 | 1/4 |




### STANDARD LENGTH - Helical Flute (Inch)
### 标长刃-螺旋槽 (英制)

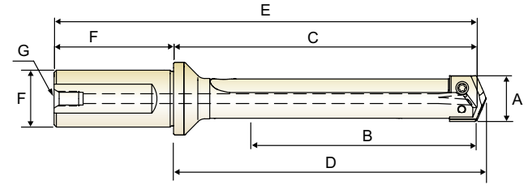
| Series | EDP No. | Drill Insert Range | Max. Drill Depth | Body Length | Ref. Length | Overall Length | Shank | | Pipe Tap |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Dia. | Length | |
| 系列 | 型号 | 钻头刀片范围 | 钻的最大深度 | 主要长度 | 参考长度 | 全长 | 柄 直径 | 柄 长度 | 管用丝锥 |
| | | A | B | C | D | E | F | | G |
| Y | ZY0SDHF075I | 3/8 ~ 27/64 | 2-3/8 | 3-17/32 | 3-5/8 | 5-9/16 | 3/4 | 2-1/32 | 1/8 |
| Z | ZZ0SDHF075I | 7/16 ~ 1/2 | 2-3/8 | 3-17/32 | 3-5/8 | 5-9/16 | 3/4 | 2-1/32 | 1/8 |
| 0 | Z00SDHF075I | 33/64 ~ 11/16 | 2-1/2 | 3-5/8 | 3-47/64 | 5-21/32 | 3/4 | 2-1/32 | 1/8 |
| 0.5 | Z05SDHF075I | 39/64 ~ 11/16 | 2-1/2 | 3-5/8 | 3-47/64 | 5-21/32 | 3/4 | 2-1/32 | 1/8 |
| 1 | Z10SDHF100I | 45/64 ~ 15/16 | 6-5/8 | 8-3/32 | 8-15/64 | 10-3/8 | 1 | 2-9/32 | 1/8 |
| 1.5 | Z15SDHF100I | 55/64 ~ 15/16 | 6-5/8 | 8-3/32 | 8-15/64 | 10-3/8 | 1 | 2-9/32 | 1/8 |
| 2 | Z20SDHF125I | 31/32 ~ 1-3/8 | 7-3/8 | 9-1/16 | 9-13/64 | 11-11/32 | 1-1/4 | 2-9/32 | 1/4 |
| 2.5 | Z25SDHF125I | 1-3/16 ~ 1-3/8 | 7-3/8 | 9-1/16 | 9-13/64 | 11-11/32 | 1-1/4 | 2-9/32 | 1/4 |
| 3 | Z30SDHF150I | 1-13/32 ~ 1-7/8 | 8-1/4 | 10-5/16 | 10-1/2 | 13 | 1-1/2 | 2-11/16 | 1/4 |
| 4 | Z40SDHF150I | 1-29/32 ~ 2-9/16 | 9-1/8 | 11-1/16 | 11-1/4 | 13-3/4 | 1-1/2 | 2-11/16 | 1/4 |



# SPADE DRILLS

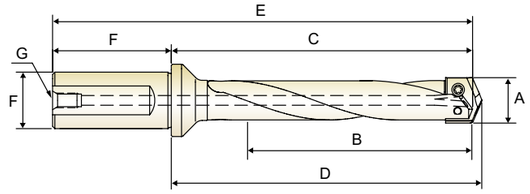
**Z**EXSF** SERIES
**Z**EXHF** SERIES

## FLANGED STRAIGHT SHANK HOLDERS
## 凸缘直柄刀杆




### EXTENDED LENGTH - Straight Flute (Inch)
### 普长刃-直槽 (英制)

| Series | EDP No. | Drill Insert Range | Max. Drill Depth | Body Length | Ref. Length | Overall Length | Shank | | Pipe Tap |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Dia. | Length | |
| 系列 | 型号 | 钻头刀片范围 | 钻的最大深度 | 主要长度 | 参考长度 | 全长 | 柄 直径 | 柄 长度 | 管用丝锥 |
| | | A | B | C | D | E | F | | G |
| Y | ZY0EXSF075I | 3/8 ~ 27/64 | 4-3/8 | 5-17/32 | 5-5/8 | 7-9/16 | 3/4 | 2-1/32 | 1/8 |
| Z | ZZ0EXSF075I | 7/16 ~ 1/2 | 4-3/8 | 5-17/32 | 5-5/8 | 7-9/16 | 3/4 | 2-1/32 | 1/8 |
| 0 | Z00EXSF075I | 33/64 ~ 11/16 | 4-1/2 | 5-5/8 | 5-47/64 | 7-21/32 | 3/4 | 2-1/32 | 1/8 |
| 0.5 | Z05EXSF075I | 39/64 ~ 11/16 | 4-1/2 | 5-5/8 | 5-47/64 | 7-21/32 | 3/4 | 2-1/32 | 1/8 |
| 1 | Z10EXSF100I | 45/64 ~ 15/16 | 10-5/8 | 12-3/32 | 12-15/64 | 14-3/8 | 1 | 2-9/32 | 1/8 |
| 1.5 | Z15EXSF100I | 55/64 ~ 15/16 | 10-5/8 | 12-3/32 | 12-15/64 | 14-3/8 | 1 | 2-9/32 | 1/8 |
| 2 | Z20EXSF125I | 31/32 ~ 1-3/8 | 11-3/8 | 13-1/16 | 13-13/64 | 15-11/32 | 1-1/4 | 2-9/32 | 1/4 |
| 2.5 | Z25EXSF125I | 1-3/16 ~ 1-3/8 | 11-3/8 | 13-1/16 | 13-13/64 | 15-11/32 | 1-1/4 | 2-9/32 | 1/4 |



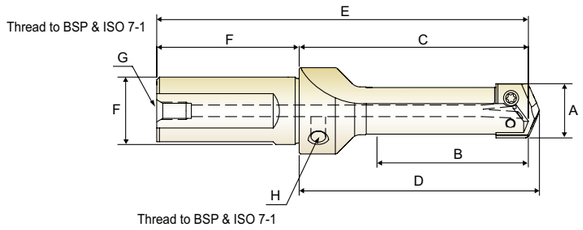

### EXTENDED LENGTH - Helical Flute (Inch)
### 加长刃-螺旋槽 (英制)

| Series | EDP No. | Drill Insert Range | Max. Drill Depth | Body Length | Ref. Length | Overall Length | Shank | | Pipe Tap |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Dia. | Length | |
| 系列 | 型号 | 钻头刀片范围 | 钻的最大深度 | 主要长度 | 参考长度 | 全长 | 柄 直径 | 柄 长度 | 管用丝锥 |
| | | A | B | C | D | E | F | | G |
| Y | ZY0EXHF075I | 3/8 ~ 27/64 | 4-3/8 | 5-17/32 | 5-5/8 | 7-9/16 | 3/4 | 2-1/32 | 1/8 |
| Z | ZZ0EXHF075I | 7/16 ~ 1/2 | 4-3/8 | 5-17/32 | 5-5/8 | 7-9/16 | 3/4 | 2-1/32 | 1/8 |
| 0 | Z00EXHF075I | 33/64 ~ 11/16 | 4-1/2 | 5-5/8 | 5-47/64 | 7-21/32 | 3/4 | 2-1/32 | 1/8 |
| 0.5 | Z05EXHF075I | 39/64 ~ 11/16 | 4-1/2 | 5-5/8 | 5-47/64 | 7-21/32 | 3/4 | 2-1/32 | 1/8 |
| 1 | Z10EXHF100I | 45/64 ~ 15/16 | 10-5/8 | 12-3/32 | 12-15/64 | 14-3/8 | 1 | 2-9/32 | 1/8 |
| 1.5 | Z15EXHF100I | 55/64 ~ 15/16 | 10-5/8 | 12-3/32 | 12-15/64 | 14-3/8 | 1 | 2-9/32 | 1/8 |
| 2 | Z20EXHF125I | 31/32 ~ 1-3/8 | 11-3/8 | 13-1/16 | 13-13/64 | 15-11/32 | 1-1/4 | 2-9/32 | 1/4 |
| 2.5 | Z25EXHF125I | 1-3/16 ~ 1-3/8 | 11-3/8 | 13-1/16 | 13-13/64 | 15-11/32 | 1-1/4 | 2-9/32 | 1/4 |

# SPADE DRILLS

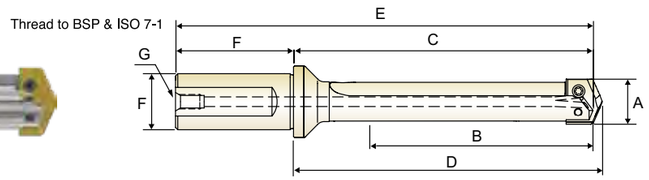
**Z**SBSF** SERIES
**Z**STSF** SERIES

## FLANGED STRAIGHT SHANK HOLDERS
## 凸缘直柄刀杆




### STUB LENGTH - Straight Flute (Metric)
### 超短刃-直槽 (公制)

| Series | EDP No. | Drill Insert Range | Max. Drill Depth | Body Length | Ref. Length | Overall Length | Shank | | Pipe Tap | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Dia. | Length | Rear | Side |
| 系列 | 型号 | 钻头刀片范围 | 钻的最大深度 | 主要长度 | 参考长度 | 全长 | 柄 直径 | 柄 长度 | 管用丝锥 后面 | 管用丝锥 侧面 |
| | | A | B | C | D | E | F | | G | H |
| Y | ZY0SBSF016M | 9.5 ~ 11.0 | 19.1 | 47.6 | 50.0 | 95.6 | 16.0 | 48.0 | 1/16 | 1/8 |
| Z | ZZ0SBSF016M | 11.5 ~ 12.5 | 19.1 | 47.6 | 50.0 | 95.6 | 16.0 | 48.0 | 1/16 | 1/8 |
| 0 | Z00SBSF020M | 13.0 ~ 17.5 | 22.2 | 47.6 | 50.4 | 97.6 | 20.0 | 50.0 | 1/8 | 1/8 |
| 0.5 | Z05SBSF020M | 15.5 ~ 17.5 | 22.2 | 47.6 | 50.4 | 97.6 | 20.0 | 50.0 | 1/8 | 1/8 |
| 1 | Z10SBSF025M | 18.0 ~ 24.0 | 47.6 | 75.8 | 79.4 | 131.8 | 25.0 | 56.0 | 1/8 | 1/8 |
| 1.5 | Z15SBSF025M | 22.0 ~ 24.0 | 57.2 | 88.5 | 92.1 | 144.5 | 25.0 | 56.0 | 1/8 | 1/8 |
| 2 | Z20SBSF032M | 25.0 ~ 35.0 | 57.2 | 88.5 | 92.1 | 148.5 | 32.0 | 60.0 | 1/4 | 1/8 |
| 2.5 | Z25SBSF032M | 30.0 ~ 35.0 | 92.1 | 123.4 | 127.0 | 183.4 | 32.0 | 60.0 | 1/4 | 1/8 |
| 3 | Z30SBSF040M | 36.0 ~ 47.0 | 76.2 | 125.0 | 129.8 | 195.0 | 40.0 | 70.0 | 1/4 | 1/4 |




### SHORT LENGTH - Straight Flute (Metric)
### 标短刃-螺旋槽 (公制)

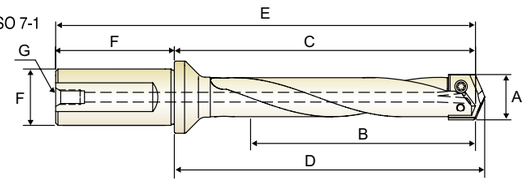
| Series | EDP No. | Drill Insert Range | Max. Drill Depth | Body Length | Ref. Length | Overall Length | Shank | | Pipe Tap |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Dia. | Length | |
| 系列 | 型号 | 钻头刀片范围 | 钻的最大深度 | 主要长度 | 参考长度 | 全长 | 柄 直径 | 柄 长度 | 管用丝锥 |
| | | A | B | C | D | E | F | | G |
| Y | ZY0STSF020M | 9.5 ~ 11.0 | 31.8 | 61.1 | 63.5 | 111.1 | 20.0 | 50.0 | 1/8 |
| Z | ZZ0STSF020M | 11.5 ~ 12.5 | 31.8 | 61.1 | 63.5 | 111.1 | 20.0 | 50.0 | 1/8 |
| 0 | Z00STSF020M | 13.0 ~ 17.5 | 34.9 | 63.5 | 66.3 | 113.5 | 20.0 | 50.0 | 1/8 |
| 0.5 | Z05STSF020M | 15.5 ~ 17.5 | 34.9 | 63.5 | 66.3 | 113.5 | 20.0 | 50.0 | 1/8 |
| 1 | Z10STSF025M | 18.0 ~ 24.0 | 66.7 | 107.2 | 110.7 | 163.2 | 25.0 | 56.0 | 1/8 |
| 1.5 | Z15STSF025M | 22.0 ~ 24.0 | 66.7 | 107.2 | 110.7 | 163.2 | 25.0 | 56.0 | 1/8 |
| 2 | Z20STSF032M | 25.0 ~ 35.0 | 85.7 | 128.6 | 132.2 | 188.6 | 32.0 | 60.0 | 1/4 |
| 2.5 | Z25STSF032M | 30.0 ~ 35.0 | 85.7 | 128.6 | 132.2 | 188.6 | 32.0 | 60.0 | 1/4 |
| 3 | Z30STSF040M | 36.0 ~ 47.0 | 120.7 | 173.0 | 177.8 | 243.0 | 40.0 | 70.0 | 1/4 |
| 4 | Z40STSF040M | 48.0 ~ 65.0 | 130.2 | 179.4 | 184.0 | 249.4 | 40.0 | 70.0 | 1/4 |



# SPADE DRILLS

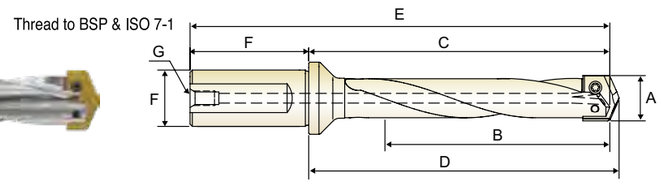
**Z**ITHF** SERIES
**Z**SDHF** SERIES

## FLANGED STRAIGHT SHANK HOLDERS
## 凸缘直柄刀杆




### INTERMEDIATE LENGTH - Helical Flute (Metric)
### 普长刃-螺旋槽 (公制)

| Series | EDP No. | Drill Insert Range | Max. Drill Depth | Body Length | Ref. Length | Overall Length | Shank | | Pipe Tap |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Dia. | Length | |
| 系列 | 型号 | 钻头刀片范围 | 钻的最大深度 | 主要长度 | 参考长度 | 全长 | 柄 直径 | 柄 长度 | 管用丝锥 |
| | | A | B | C | D | E | F | | G |
| 1 | Z10ITHF025M | 18.0 ~ 24.0 | 117.5 | 154.8 | 158.4 | 210.8 | 25.0 | 56.0 | 1/8 |
| 1.5 | Z15ITHF025M | 22.0 ~ 24.0 | 117.5 | 154.8 | 158.4 | 210.8 | 25.0 | 56.0 | 1/8 |
| 2 | Z20ITHF032M | 25.0 ~ 35.0 | 136.5 | 179.4 | 183.0 | 239.4 | 32.0 | 60.0 | 1/4 |
| 2.5 | Z25ITHF032M | 30.0 ~ 35.0 | 136.5 | 179.4 | 183.0 | 239.4 | 32.0 | 60.0 | 1/4 |
| 3 | Z30ITHF040M | 36.0 ~ 47.0 | 165.1 | 217.5 | 222.3 | 287.5 | 40.0 | 70.0 | 1/4 |



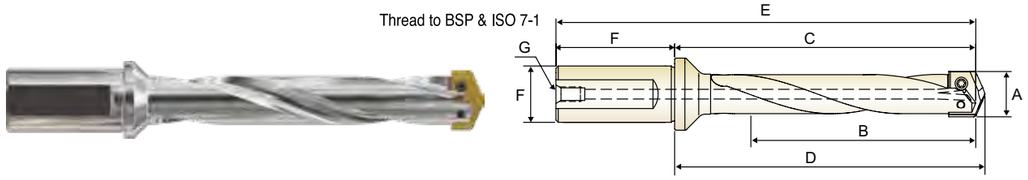

### STANDARD LENGTH - Helical Flute (Metric)
### 标长刃-螺旋槽 (公制)

| Series | EDP No. | Drill Insert Range | Max. Drill Depth | Body Length | Ref. Length | Overall Length | Shank | | Pipe Tap |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Dia. | Length | |
| 系列 | 型号 | 钻头刀片范围 | 钻的最大深度 | 主要长度 | 参考长度 | 全长 | 柄 直径 | 柄 长度 | 管用丝锥 |
| | | A | B | C | D | E | F | | G |
| Y | ZY0SDHF020M | 9.5 ~ 11.0 | 60.3 | 89.7 | 92.1 | 139.7 | 20.0 | 50.0 | 1/8 |
| Z | ZZ0SDHF020M | 11.5 ~ 12.5 | 60.3 | 89.7 | 92.1 | 139.7 | 20.0 | 50.0 | 1/8 |
| 0 | Z00SDHF020M | 13.0 ~ 17.5 | 63.5 | 92.1 | 94.9 | 142.1 | 20.0 | 50.0 | 1/8 |
| 0.5 | Z05SDHF020M | 15.5 ~ 17.5 | 63.5 | 92.1 | 94.9 | 142.1 | 20.0 | 50.0 | 1/8 |
| 1 | Z10SDHF025M | 18.0 ~ 24.0 | 168.3 | 205.6 | 209.2 | 261.6 | 25.0 | 56.0 | 1/8 |
| 1.5 | Z15SDHF025M | 22.0 ~ 24.0 | 168.3 | 205.6 | 209.2 | 261.6 | 25.0 | 56.0 | 1/8 |
| 2 | Z20SDHF032M | 25.0 ~ 35.0 | 187.3 | 230.2 | 233.8 | 290.2 | 32.0 | 60.0 | 1/4 |
| 2.5 | Z25SDHF032M | 30.0 ~ 35.0 | 187.3 | 230.2 | 233.8 | 290.2 | 32.0 | 60.0 | 1/4 |
| 3 | Z30SDHF040M | 36.0 ~ 47.0 | 209.6 | 261.9 | 266.7 | 331.9 | 40.0 | 70.0 | 1/4 |
| 4 | Z40SDHF040M | 48.0 ~ 65.0 | 231.8 | 281.0 | 285.8 | 351.0 | 40.0 | 70.0 | 1/4 |

# SPADE DRILLS

Z**EXHF SERIES
Z**EXSF SERIES

## FLANGED STRAIGHT SHANK HOLDERS
## 凸缘直柄刀杆




### EXTENDED LENGTH - Helical Flute (Metric)
### 加长刃-螺旋槽 (公制)

| Series | EDP No. | Drill Insert Range | Max. Drill Depth | Body Length | Ref. Length | Overall Length | Shank | | Pipe Tap |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Dia. | Length | |
| 系列 | 型号 | 钻头刀片范围 | 钻的最大深度 | 主要长度 | 参考长度 | 全长 | 柄 | | 管用丝锥 |
| | | | | | | | 直径 | 长度 | |
| | | A | B | C | D | E | F | | G |
| Y | ZY0EXHF020M | 9.5 ~ 11.0 | 111.1 | 140.5 | 142.9 | 190.5 | 20.0 | 50.0 | 1/8 |
| Z | ZZ0EXHF020M | 11.5 ~ 12.5 | 111.1 | 140.5 | 142.9 | 190.5 | 20.0 | 50.0 | 1/8 |
| 0 | Z00EXHF020M | 13.0 ~ 17.5 | 114.3 | 142.9 | 145.7 | 192.9 | 20.0 | 50.0 | 1/8 |
| 0.5 | Z05EXHF020M | 15.5 ~ 17.5 | 114.3 | 142.9 | 145.7 | 192.9 | 20.0 | 50.0 | 1/8 |
| 1 | Z10EXHF025M | 18.0 ~ 24.0 | 269.9 | 307.2 | 310.8 | 363.2 | 25.0 | 56.0 | 1/8 |
| 1.5 | Z15EXHF025M | 22.0 ~ 24.0 | 269.9 | 307.2 | 310.8 | 363.2 | 25.0 | 56.0 | 1/8 |
| 2 | Z20EXHF032M | 25.0 ~ 35.0 | 288.9 | 331.8 | 335.4 | 391.8 | 32.0 | 60.0 | 1/4 |
| 2.5 | Z25EXHF032M | 30.0 ~ 35.0 | 288.9 | 331.8 | 335.4 | 391.8 | 32.0 | 60.0 | 1/4 |

### EXTENDED LENGTH - Straight Flute (Metric)
### 加长刃-直槽 (公制)

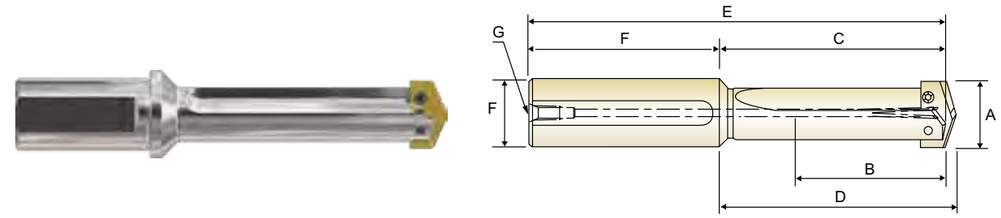
| Series | EDP No. | Drill Insert Range | Max. Drill Depth | Body Length | Ref. Length | Overall Length | Shank | | Pipe Tap |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Dia. | Length | |
| 系列 | 型号 | 钻头刀片范围 | 钻的最大深度 | 主要长度 | 参考长度 | 全长 | 柄 | | 管用丝锥 |
| | | | | | | | 直径 | 长度 | |
| | | A | B | C | D | E | F | | G |
| 3 | Z30EXSF040M | 36.0 ~ 47.0 | 349.3 | 401.6 | 406.4 | 471.6 | 40.0 | 70.0 | 1/4 |
| 4 | Z40EXSF040M | 48.0 ~ 65.0 | 422.3 | 471.5 | 476.3 | 541.5 | 40.0 | 70.0 | 1/4 |



# SPADE DRILLS

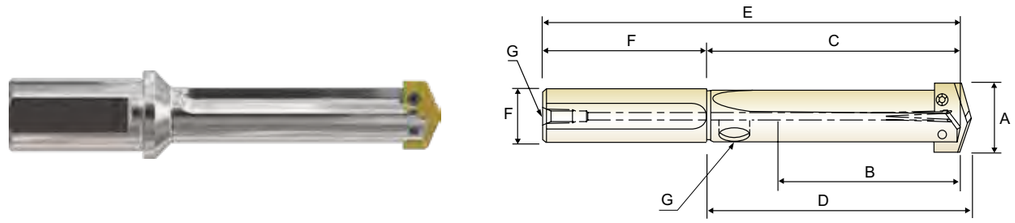
Z**STSS SERIES

## FLANGED STRAIGHT SHANK HOLDERS
## 凸缘直柄刀杆




### SHORT LENGTH - Straight Flute (Inch)
### 短刃-直槽 (英制)

| Series | EDP No. | Drill Insert Range | Max. Drill Depth | Body Length | Ref. Length | Overall Length | Shank | | Pipe Tap |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Dia. | Length | |
| 系列 | 型号 | 钻头刀片范围 | 钻的最大深度 | 主要长度 | 参考长度 | 全长 | 柄 | | 管用丝锥 |
| | | | | | | | 直径 | 长度 | |
| | | A | B | C | D | E | F | | G |
| Y | ZY0STSS075I | 3/8 ~ 27/64 | 1-1/4 | 2-1/32 | 2-1/8 | 4-13/32 | 3/4 | 2-3/8 | 1/8 |
| Z | ZZ0STSS075I | 7/16 ~ 1/2 | 1-1/4 | 2-1/32 | 2-1/8 | 4-13/32 | 3/4 | 2-3/8 | 1/8 |
| 0 | Z00STSS075I | 33/64 ~ 11/16 | 1-3/8 | 2-3/16 | 2-19/64 | 4-9/16 | 3/4 | 2-3/8 | 1/8 |
| 0.5 | Z05STSS075I | 39/64 ~ 11/16 | 1-3/8 | 2-3/16 | 2-19/64 | 4-9/16 | 3/4 | 2-3/8 | 1/8 |




### SHORT LENGTH - Straight Flute (Inch)
### 短刃-直槽 (英制)

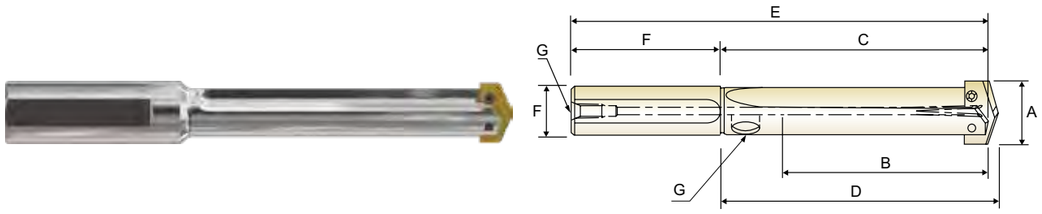
| Series | EDP No. | Drill Insert Range | Max. Drill Depth | Body Length | Ref. Length | Overall Length | Shank | | Pipe Tap |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Dia. | Length | |
| 系列 | 型号 | 钻头刀片范围 | 钻的最大深度 | 主要长度 | 参考长度 | 全长 | 柄 | | 管用丝锥 |
| | | | | | | | 直径 | 长度 | |
| | | A | B | C | D | E | F | | G |
| ▲1 | Z10STSS075I | 45/64 ~ 15/16 | 2-5/8 | 3-7/8 | 4-1/64 | 6-7/8 | 3/4 | 3 | 1/8 |
| | Z10STSS100I | 45/64 ~ 15/16 | 2-5/8 | 3-7/8 | 4-1/64 | 6-7/8 | 1 | 3 | 1/8 |
| ▲1.5 | Z15STSS075I | 55/64 ~ 15/16 | 2-5/8 | 3-7/8 | 4-1/64 | 6-7/8 | 3/4 | 3 | 1/8 |
| | Z15STSS100I | 55/64 ~ 15/16 | 2-5/8 | 3-7/8 | 4-1/64 | 6-7/8 | 1 | 3 | 1/8 |
| 2 | Z20STSS100I | 31/32 ~ 1-3/8 | 3-3/8 | 4-1/2 | 4-41/64 | 8 | 1 | 3-1/2 | 1/8 |
| | Z20STSS125I | 31/32 ~ 1-3/8 | 3-3/8 | 4-1/2 | 4-41/64 | 8 | 1-1/4 | 3-1/2 | 1/8 |
| ▲2.5 | Z25STSS100I | 1-3/16 ~ 1-3/8 | 3-3/8 | 4-1/2 | 4-41/64 | 8 | 1 | 3-1/2 | 1/8 |
| | Z25STSS125I | 1-3/16 ~ 1-3/8 | 3-3/8 | 4-1/2 | 4-41/64 | 8 | 1-1/4 | 3-1/2 | 1/8 |
| 3 | Z30STSS125I | 1-13/32 ~ 1-7/8 | 4-3/4 | 6 | 6-3/16 | 10 | 1-1/4 | 4 | 1/4 |
| | Z30STSS150I | 1-13/32 ~ 1-7/8 | 4-3/4 | 6 | 6-3/16 | 10 | 1-1/2 | 4 | 1/4 |
| 4 | Z40STSS150I | 1-29/32 ~ 2-9/16 | 5-1/8 | 6-1/2 | 6-11/16 | 10-1/2 | 1-1/2 | 4 | 1/4 |
| | Z40STSS175I | 1-29/32 ~ 2-9/16 | 5-1/8 | 6-1/2 | 6-11/16 | 10-1/2 | 1-3/4 | 4 | 1/4 |
| 5 | Z50STSS200I | 2-1/2 ~ 3-1/2 | 6-3/4 | 8-1/2 | 8-3/4 | 12-1/2 | 2 | 4 | 1/2 |

▲ : Flanged Type

# SPADE DRILLS

**Z**ITSS** SERIES

## STRAIGHT SHANK HOLDERS
## 直柄刀杆




### INTERMEDIATE LENGTH - Straight Flute (Inch)
### 普长刃-直槽 (英制)

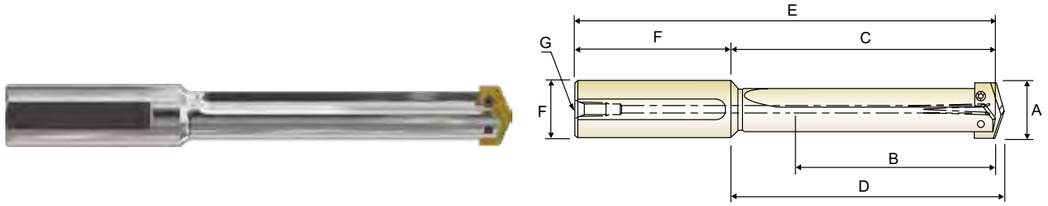
| Series | EDP No. | Drill Insert Range | Max. Drill Depth | Body Length | Ref. Length | Overall Length | Shank | | Pipe Tap |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Dia. | Length | |
| 系列 | 型号 | 钻头刀片范围 | 钻的最大深度 | 主要长度 | 参考长度 | 全长 | 柄 直径 | 柄 长度 | 管用丝锥 |
| | | A | B | C | D | E | F | | G |
| 1 | Z10ITSS100I | 45/64 ~ 15/16 | 4-5/8 | 5-7/8 | 6-1/64 | 8-7/8 | 1 | 3 | 1/8 |
| 1.5 | Z15ITSS100I | 55/64 ~ 15/16 | 4-5/8 | 5-7/8 | 6-1/64 | 8-7/8 | 1 | 3 | 1/8 |
| 2 | Z20ITSS125I | 31/32 ~ 1-3/8 | 5-3/8 | 6-1/2 | 6-41/64 | 10 | 1-1/4 | 3-1/2 | 1/8 |
| 2.5 | Z25ITSS125I | 1-3/16 ~ 1-3/8 | 5-3/8 | 6-1/2 | 6-41/64 | 10 | 1-1/4 | 3-1/2 | 1/8 |
| 3 | Z30ITSS150I | 1-13/32 ~ 1-7/8 | 6-1/2 | 7-3/4 | 7-15/16 | 11-3/4 | 1-1/2 | 4 | 1/4 |



# SPADE DRILLS

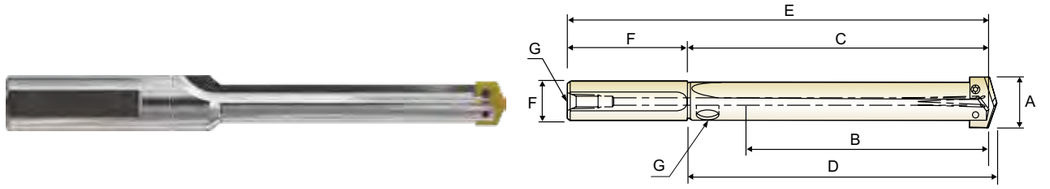
**Z**SDSS** SERIES

## STRAIGHT SHANK HOLDERS
## 直柄刀杆




### STANDARD LENGTH - Straight Flute (Inch)
### 标长刃-直槽 (英制)

| Series | EDP No. | Drill Insert Range | Max. Drill Depth | Body Length | Ref. Length | Overall Length | Shank | | Pipe Tap |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Dia. | Length | |
| 系列 | 型号 | 钻头刀片范围 | 钻的最大深度 | 主要长度 | 参考长度 | 全长 | 柄 直径 | 柄 长度 | 管用丝锥 |
| | | A | B | C | D | E | F | | G |
| Y | ZY0SDSS075I | 3/8 ~ 27/64 | 2-3/8 | 3-5/32 | 3-1/4 | 5-17/32 | 3/4 | 2-3/8 | 1/8 |
| Z | ZZ0SDSS075I | 7/16 ~ 1/2 | 2-3/8 | 3-5/32 | 3-1/4 | 5-17/32 | 3/4 | 2-3/8 | 1/8 |
| 0 | Z00SDSS075I | 33/64 ~ 11/16 | 2-1/2 | 3-5/16 | 3-27/64 | 5-11/16 | 3/4 | 2-3/8 | 1/8 |
| 0.5 | Z05SDSS075I | 39/64 ~ 11/16 | 2-1/2 | 3-5/16 | 3-27/64 | 5-11/16 | 3/4 | 2-3/8 | 1/8 |




### STANDARD LENGTH - Straight Flute (Inch)
### 标长刃-直槽 (英制)

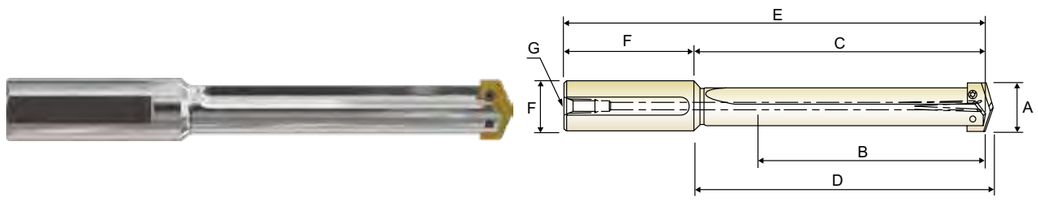
| Series | EDP No. | Drill Insert Range | Max. Drill Depth | Body Length | Ref. Length | Overall Length | Shank | | Pipe Tap |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Dia. | Length | |
| 系列 | 型号 | 钻头刀片范围 | 钻的最大深度 | 主要长度 | 参考长度 | 全长 | 柄 直径 | 柄 长度 | 管用丝锥 |
| | | A | B | C | D | E | F | | G |
| ▲1 | Z10SDSS075I | 45/64 ~ 15/16 | 6-5/8 | 7-7/8 | 8-1/64 | 10-7/8 | 3/4 | 3 | 1/8 |
| | Z10SDSS100I | 45/64 ~ 15/16 | 6-5/8 | 7-7/8 | 8-1/64 | 10-7/8 | 1 | 3 | 1/8 |
| ▲1.5 | Z15SDSS075I | 55/64 ~ 15/16 | 6-5/8 | 7-7/8 | 8-1/64 | 10-7/8 | 3/4 | 3 | 1/8 |
| | Z15SDSS100I | 55/64 ~ 15/16 | 6-5/8 | 7-7/8 | 8-1/64 | 10-7/8 | 1 | 3 | 1/8 |
| 2 | Z20SDSS100I | 31/32 ~ 1-3/8 | 7-3/8 | 8-1/2 | 8-41/64 | 12 | 1 | 3-1/2 | 1/8 |
| | Z20SDSS125I | 31/32 ~ 1-3/8 | 7-3/8 | 8-1/2 | 8-41/64 | 12 | 1-1/4 | 3-1/2 | 1/8 |
| ▲2.5 | Z25SDSS100I | 1-3/16 ~ 1-3/8 | 7-3/8 | 8-1/2 | 8-41/64 | 12 | 1 | 3-1/2 | 1/8 |
| | Z25SDSS125I | 1-3/16 ~ 1-3/8 | 7-3/8 | 8-1/2 | 8-41/64 | 12 | 1-1/4 | 3-1/2 | 1/8 |
| 3 | Z30SDSS125I | 1-13/32 ~ 1-7/8 | 8-1/4 | 9-1/2 | 9-11/16 | 13-1/2 | 1-1/4 | 4 | 1/4 |
| | Z30SDSS150I | 1-13/32 ~ 1-7/8 | 8-1/4 | 9-1/2 | 9-11/16 | 13-1/2 | 1-1/2 | 4 | 1/4 |
| 4 | Z40SDSS150I | 1-29/32 ~ 2-9/16 | 9-1/8 | 10-1/2 | 10-11/16 | 14-1/2 | 1-1/2 | 4 | 1/4 |
| | Z40SDSS175I | 1-29/32 ~ 2-9/16 | 9-1/8 | 10-1/2 | 10-11/16 | 14-1/2 | 1-3/4 | 4 | 1/4 |
| 5 | Z50SDSS200I | 2-1/2 ~ 3-1/2 | 10-3/4 | 12-1/2 | 12-3/4 | 16-1/2 | 2 | 4 | 1/2 |
| 7 | Z70SDSS300I | 3-17/32 ~ 4-1/2 | 10-3/4 | 12-7/8 | 13-1/8 | 17-7/8 | 3 | 5 | 1/2 |

▲ : Flanged Type

# SPADE DRILLS

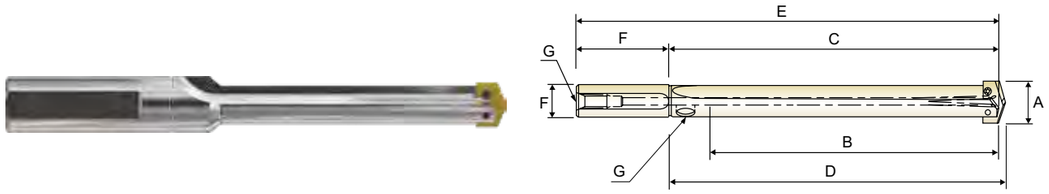
**Z**EXSS SERIES

## STRAIGHT SHANK HOLDERS
## 直柄刀杆




## EXTENDED LENGTH - Straight Flute (Inch)
## 加长刃-直槽 (英制)

| Series | EDP No. | Drill Insert Range | Max. Drill Depth | Body Length | Ref. Length | Overall Length | Shank | | Pipe Tap |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Dia. | Length | |
| 系列 | 型号 | 钻头刀片范围 | 钻的最大深度 | 主要长度 | 参考长度 | 全长 | 柄 直径 | 柄 长度 | 管用丝锥 |
| | | A | B | C | D | E | F | | G |
| Y | ZY0EXSS075I | 3/8 ~ 27/64 | 4-3/8 | 5-5/32 | 5-1/4 | 7-17/32 | 3/4 | 2-3/8 | 1/8 |
| Z | ZZ0EXSS075I | 7/16 ~ 1/2 | 4-3/8 | 5-5/32 | 5-1/4 | 7-17/32 | 3/4 | 2-3/8 | 1/8 |
| 0 | Z00EXSS075I | 33/64 ~ 11/16 | 4-1/2 | 5-5/16 | 5-27/64 | 7-11/16 | 3/4 | 2-3/8 | 1/8 |
| 0.5 | Z05EXSS075I | 39/64 ~ 11/16 | 4-1/2 | 5-5/16 | 5-27/64 | 7-11/16 | 3/4 | 2-3/8 | 1/8 |




## EXTENDED LENGTH - Straight Flute (Inch)
## 加长刃-直槽 (英制)

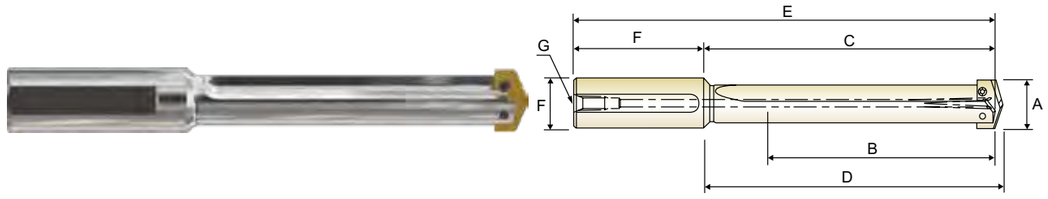
| Series | EDP No. | Drill Insert Range | Max. Drill Depth | Body Length | Ref. Length | Overall Length | Shank | | Pipe Tap |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Dia. | Length | |
| 系列 | 型号 | 钻头刀片范围 | 钻的最大深度 | 主要长度 | 参考长度 | 全长 | 柄 直径 | 柄 长度 | 管用丝锥 |
| | | A | B | C | D | E | F | | G |
| 1 | Z10EXSS100I | 45/64 ~ 15/16 | 10-5/8 | 11-7/8 | 12-1/64 | 14-7/8 | 1 | 3 | 1/8 |
| 1.5 | Z15EXSS100I | 55/64 ~ 15/16 | 10-5/8 | 11-7/8 | 12-1/64 | 14-7/8 | 1 | 3 | 1/8 |
| 2 | Z20EXSS125I | 31/32 ~ 1-3/8 | 11-3/8 | 12-1/2 | 12-41/64 | 16 | 1-1/4 | 3-1/2 | 1/8 |
| 2.5 | Z25EXSS125I | 1-3/16 ~ 1-3/8 | 11-3/8 | 12-1/2 | 12-41/64 | 16 | 1-1/4 | 3-1/2 | 1/8 |
| 3 | Z30EXSS125I | 1-13/32 ~ 1-7/8 | 13-3/4 | 15 | 15-3/16 | 19 | 1-1/4 | 4 | 1/4 |
| 4 | Z40EXSS150I | 1-29/32 ~ 2-9/16 | 16-5/8 | 18 | 18-3/16 | 22 | 1-1/2 | 4 | 1/4 |
| 5 | Z50EXSS200I | 2-1/2 ~ 3-1/2 | 18-1/4 | 20 | 20-1/4 | 24 | 2 | 4 | 1/2 |
| 7 | Z70EXSS300I | 3-17/32 ~ 4-1/2 | 21-7/8 | 24 | 24-1/4 | 29 | 3 | 5 | 1/2 |



# SPADE DRILLS

**Z**LGSS SERIES

## STRAIGHT SHANK HOLDERS
## 直柄刀杆



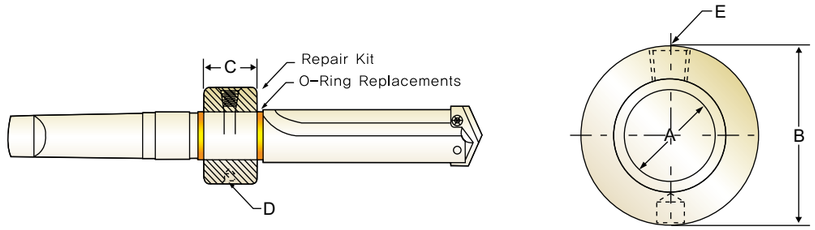

## LONG LENGTH - Straight Flute (Inch)
## 长刃-直槽 (英制)

| Series | EDP No. | Drill Insert Range | Max. Drill Depth | Body Length | Ref. Length | Overall Length | Shank | | Pipe Tap |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Dia. | Length | |
| 系列 | 型号 | 钻头刀片范围 | 钻的最大深度 | 主要长度 | 参考长度 | 全长 | 柄 直径 | 柄 长度 | 管用丝锥 |
| | | A | B | C | D | E | F | | G |
| 0 | Z00LGSS075I | 33/64 ~ 11/16 | 7 | 7-13/16 | 7-59/64 | 10-3/16 | 3/4 | 2-3/8 | 1/8 |
| 0.5 | Z05LGSS075I | 39/64 ~ 11/16 | 7 | 7-13/16 | 7-59/64 | 10-3/16 | 3/4 | 2-3/8 | 1/8 |

# SPADE DRILLS

**RECOMMENDED CUTTING CONDITIONS**
**推荐加工条件**

## HOLDER ACCESSORIES
## 刀柄附件







### Inch 英制

| Item No. | I.D. | O.D. | Length | Thread for Driving Rod | Pipe Tap | RCA Repair Kit Item No. | RCA O-Ring Replacements Item No. |
|---|---|---|---|---|---|---|---|
| 项目 | 内部直径 | 外部直径 | 长 | 传动杆螺纹 | 管用丝锥 | 旋转式冷却适配器项目 | O型垫圈项目 |
| | A | B | C | D | E | | |
| PR110048 | 3/4 | 1-3/4 | 7/8 | 5/16-NC | ◈1/8 | PR210048 | PR310048 |
| PR110100 | 1 | 2-1/8 | 1-1/8 | 5/16-NC | ◈1/8 | PR210100 | PR310100 |
| PR110116 | 1-1/4 | 2-1/2 | 1-3/8 | 3/8-NC | ◈1/4 | PR210116 | PR310116 |
| PR110148 | 1-3/4 | 3 | 1-3/8 | 3/8-NC | ◈1/4 | PR210148 | PR310148 |
| PR110216 | 2-1/4 | 3-3/4 | 1-3/4 | 1/2-NC | ◈1/2 | PR210216 | PR310216 |

### Metric 公制

| Item No. | I.D. | O.D. | Length | Thread for Driving Rod | Pipe Tap | RCA Repair Kit Item No. | RCA O-Ring Replacements Item No. |
|---|---|---|---|---|---|---|---|
| 项目 | 内部直径 | 外部直径 | 长 | 传动杆螺纹 | 管用丝锥 | 旋转式冷却适配器项目 | O型垫圈项目 |
| | A | B | C | D | E | | |
| PR120190 | 19.05 | 44.45 | 22.23 | M8 ×1.25 | ◈1/8 | PR220190 | PR320190 |
| PR120254 | 25.40 | 53.97 | 28.57 | M8 ×1.25 | ◈1/8 | PR220254 | PR320254 |
| PR120317 | 31.75 | 63.50 | 34.92 | M10 ×1.5 | ◈1/4 | PR220317 | PR320317 |
| PR120444 | 44.45 | 76.20 | 34.92 | M10 ×1.5 | ◈1/4 | PR220444 | PR320444 |
| PR120571 | 57.15 | 95.27 | 44.45 | M12 ×1.75 | ◈1/2 | PR220571 | PR320571 |

◈ Thread to BSP & ISO 7-1

## TORX SCREWS TORX螺纹

| Holder Series | Item No. | TORX Hand Driver | Drill Range Used With | |
|---|---|---|---|---|
| 刀柄系列 | 项目 | TORX 手动扳手 | 钻孔范围 | |
| | | | Inch | Metric |
| Y | J07Y0010 | J05Y0070 | 3/8 ~ 27/64 | 9.5 mm ~ 11.0 mm |
| Z | J07Z0110 | | 7/16 ~ 1/2 | 11.5 mm ~ 12.5 mm |
| 0 | J0800210 | J0500080 | 33/64 ~ 11/16 | 13.0 mm ~ 17.5 mm |
| 0.5 | J0805310 | | 39/64 ~ 11/16 | 15.5 mm ~ 17.5 mm |
| 1 | J0910410 | J0510090 | 45/64 ~ 15/16 | 18.0 mm ~ 24.0 mm |
| 1.5 | J0915510 | | 55/64 ~ 15/16 | 22.0 mm ~ 24.0 mm |
| 2 | J1520610 | J0520150 | 31/32 ~ 1-3/8 | 25.0 mm ~ 35.0 mm |
| 2.5 | J1525710 | | 1-3/16 ~ 1-3/8 | 30.0 mm ~ 35.0 mm |
| 3,4 | J2030810 | J0530200 | 1-13/32 ~ 2-9/16 | 36.0 mm ~ 65.0 mm |
| 5 ~ 8 | J2550910 | J0550250 | 2-1/2 ~ 4-1/2 | 64.0 mm ~ 114.0 mm |

** Note : Replacement screws sold in packages(10 screws per package)
注意 : 替换用螺钉成包出售(每包10个)





# SPADE DRILLS

**RECOMMENDED CUTTING CONDITIONS**
**推荐加工条件**

## SPADE DRILL HSS-T15
## 铲钻刀片 HSS-T15

RPM (转速) = (rev./min.)
FEED (进给) = (mm/rev.)

| ISO 公制 | VDI 3323 | Material Description 材料描述 | Vc钻销速度(m/min) | | | Feed 进给 (mm/rev) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | TiN | TiCN | TiAlN | Ø9.5-12.5 | Ø13-17.5 | Ø18-24 | Ø25-35 | Ø36-47 | Ø48-65 | Ø66-114 |
| P | 1 | Non-alloy steel | 54 | 67 | 75 | 0.15 | 0.22 | 0.28 | 0.37 | 0.46 | 0.56 | 0.67 |
| | 2 | | 49 | 58 | 69 | 0.13 | 0.19 | 0.24 | 0.34 | 0.43 | 0.50 | 0.57 |
| | 3 | | 45 | 56 | 63 | 0.13 | 0.19 | 0.23 | 0.34 | 0.43 | 0.50 | 0.58 |
| | 4 | | 45 | 56 | 63 | 0.13 | 0.19 | 0.23 | 0.34 | 0.43 | 0.50 | 0.58 |
| | 6 | Low alloy steel | 45 | 56 | 58 | 0.13 | 0.20 | 0.24 | 0.36 | 0.42 | 0.46 | 0.55 |
| | 7 | | 41 | 50 | 56 | 0.13 | 0.16 | 0.23 | 0.35 | 0.41 | 0.44 | 0.55 |
| | 8 | | 39 | 47 | 53 | 0.09 | 0.15 | 0.22 | 0.28 | 0.38 | 0.41 | 0.50 |
| | 9 | | 36 | 43 | 46 | 0.08 | 0.15 | 0.21 | 0.27 | 0.38 | 0.40 | 0.51 |
| | 10 | High alloyed steel, and tool steel | 25 | 34 | 36 | 0.08 | 0.17 | 0.20 | 0.24 | 0.30 | 0.37 | 0.39 |
| | 11 | | 19 | 27 | 29 | 0.08 | 0.14 | 0.18 | 0.19 | 0.25 | 0.29 | 0.34 |
| M | 12 | Stainless steel | 20 | 23 | 29 | 0.12 | 0.18 | 0.20 | 0.24 | 0.30 | 0.36 | 0.46 |
| | 13 | | 20 | 23 | 29 | 0.12 | 0.18 | 0.20 | 0.24 | 0.30 | 0.36 | 0.46 |
| | 14 | | 24 | 29 | 34 | 0.14 | 0.20 | 0.23 | 0.26 | 0.36 | 0.41 | 0.50 |
| K | 15 | Grey cast iron | 48 | 58 | 70 | 0.14 | 0.26 | 0.35 | 0.45 | 0.56 | 0.64 | 0.68 |
| | 16 | | 29 | 35 | 41 | 0.10 | 0.15 | 0.16 | 0.23 | 0.28 | 0.35 | 0.40 |
| | 17 | Nodular cast iron | 48 | 58 | 70 | 0.14 | 0.26 | 0.35 | 0.45 | 0.56 | 0.64 | 0.68 |
| | 18 | | 35 | 44 | 52 | 0.13 | 0.17 | 0.23 | 0.30 | 0.35 | 0.43 | 0.50 |
| | 19 | Malleable cast iron | 52 | 64 | 75 | 0.16 | 0.30 | 0.40 | 0.49 | 0.59 | 0.69 | 0.75 |
| | 20 | | 35 | 44 | 52 | 0.13 | 0.17 | 0.23 | 0.30 | 0.35 | 0.43 | 0.50 |
| N | 21 | Aluminum-wrought alloy | 187 | 229 | 244 | 0.19 | 0.33 | 0.41 | 0.50 | 0.54 | 0.64 | 0.70 |
| | 22 | | 92 | 137 | 137 | 0.19 | 0.33 | 0.41 | 0.46 | 0.54 | 0.64 | 0.70 |
| | 27 | Copper and Copper Alloys (Bronze / Brass) | 95 | 128 | 142 | 0.19 | 0.31 | 0.43 | 0.53 | 0.64 | 0.74 | 0.79 |
| S | 31 | Heat Resistant Super Alloys | 9 | 11 | 12 | 0.08 | 0.17 | 0.20 | 0.24 | 0.30 | 0.37 | 0.39 |
| | 32 | | 8 | 9 | 11 | 0.08 | 0.14 | 0.18 | 0.19 | 0.25 | 0.29 | 0.34 |
| | 33 | | 8 | 9 | 11 | 0.08 | 0.14 | 0.18 | 0.19 | 0.25 | 0.29 | 0.34 |
| | 34 | | 8 | 9 | 11 | 0.08 | 0.14 | 0.18 | 0.19 | 0.25 | 0.29 | 0.34 |
| | 35 | | 8 | 9 | 11 | 0.08 | 0.14 | 0.18 | 0.19 | 0.25 | 0.29 | 0.34 |
| H | 38 | Hardened steel | 20 | 23 | 29 | 0.12 | 0.18 | 0.20 | 0.24 | 0.30 | 0.36 | 0.46 |

▶ The recommendations for speeds, feeds and other parameters presented in this chart are nominal recommendations and should be considered only as good starting points.
Speed and feed reductions (20% reduction in speed and 10% reduction in feed) are recommended
▶ 表中推荐的速度, 进给率和其它参数只可用来参考推荐降低速度和进给量(速度降低20%和进给降低10%)

# SPADE DRILLS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工条件

### SPADE DRILL HSS-M4
### 铲钻刀片 HSS-M4

RPM (转速) = (rev./min.)
FEED (进给) = (mm/rev.)

| ISO 公制 | VDI 3323 | Material Description 材料描述 | Vc钻销速度(m/min) | | | Feed 进给 (mm/rev) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | TiN | TiCN | TiAlN | Ø9.5-12.5 | Ø13-17.5 | Ø18-24 | Ø25-35 | Ø36-47 | Ø48-65 | Ø66-114 |
| P | 1 | Non-alloy steel | 54 | 67 | 75 | 0.15 | 0.22 | 0.28 | 0.37 | 0.46 | 0.56 | 0.67 |
| | 2 | | 49 | 58 | 69 | 0.13 | 0.19 | 0.24 | 0.34 | 0.43 | 0.50 | 0.57 |
| | 3 | | 45 | 56 | 63 | 0.13 | 0.19 | 0.23 | 0.34 | 0.43 | 0.50 | 0.58 |
| | 4 | | 45 | 56 | 63 | 0.13 | 0.19 | 0.23 | 0.34 | 0.43 | 0.50 | 0.58 |
| | 6 | Low alloy steel | 45 | 56 | 58 | 0.13 | 0.20 | 0.24 | 0.36 | 0.42 | 0.46 | 0.55 |
| | 7 | | 41 | 50 | 56 | 0.13 | 0.16 | 0.23 | 0.35 | 0.41 | 0.44 | 0.55 |
| M | 12 | Stainless steel | 20 | 23 | 29 | 0.12 | 0.18 | 0.20 | 0.24 | 0.30 | 0.36 | 0.46 |
| | 13 | | 20 | 23 | 29 | 0.12 | 0.18 | 0.20 | 0.24 | 0.30 | 0.36 | 0.46 |
| | 14 | | 24 | 29 | 34 | 0.14 | 0.20 | 0.23 | 0.26 | 0.36 | 0.41 | 0.50 |
| K | 15 | Grey cast iron | 48 | 58 | 70 | 0.14 | 0.26 | 0.35 | 0.45 | 0.56 | 0.64 | 0.68 |
| | 16 | | 29 | 35 | 41 | 0.10 | 0.15 | 0.16 | 0.23 | 0.28 | 0.35 | 0.40 |
| | 17 | Nodular cast iron | 48 | 58 | 70 | 0.14 | 0.26 | 0.35 | 0.45 | 0.56 | 0.64 | 0.68 |
| | 18 | | 35 | 44 | 52 | 0.13 | 0.17 | 0.23 | 0.3 | 0.35 | 0.43 | 0.50 |
| | 19 | Malleable cast iron | 52 | 64 | 75 | 0.16 | 0.30 | 0.40 | 0.49 | 0.59 | 0.69 | 0.75 |
| | 20 | | 35 | 44 | 52 | 0.13 | 0.17 | 0.23 | 0.30 | 0.35 | 0.43 | 0.50 |
| N | 21 | Aluminum-wrought alloy | 187 | 229 | 244 | 0.19 | 0.33 | 0.41 | 0.50 | 0.54 | 0.64 | 0.70 |
| | 22 | | 92 | 137 | 137 | 0.19 | 0.33 | 0.41 | 0.46 | 0.54 | 0.64 | 0.70 |
| | 27 | Copper and Copper Alloys (Bronze / Brass) | 95 | 128 | 142 | 0.19 | 0.31 | 0.43 | 0.53 | 0.64 | 0.74 | 0.79 |

▶ The recommendations for speeds, feeds and other parameters presented in this chart are nominal recommendations and should be considered only as good starting points.
Speed and feed reductions (20% reduction in speed and 10% reduction in feed) are recommended

▶ 表中推荐的速度, 进给率和其它参数只可用来参考推荐降低速度和进给量(速度降低20%和进给降低10%)



SPADE DRILLS
RECOMMENDED CUTTING CONDITIONS
推荐加工条件

### SPADE DRILL HSS-M48
### 铲钻刀片 HSS-M48

RPM (转速) = (rev./min.)
FEED (进给) = (mm/rev.)

| ISO 公制 | VDI 3323 | Material Description 材料描述 | Vc钻销速度(m/min) | | | Feed 进给 (mm/rev) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | TiN | TiCN | TiAlN | Ø9.5-12.5 | Ø13-17.5 | Ø18-24 | Ø25-35 | Ø36-47 | Ø48-65 | Ø66-114 |
| P | 1 | Non-alloy steel | 54 | 67 | 75 | 0.15 | 0.22 | 0.28 | 0.37 | 0.46 | 0.56 | 0.67 |
| | 2 | | 49 | 58 | 69 | 0.13 | 0.19 | 0.24 | 0.34 | 0.43 | 0.50 | 0.57 |
| | 3 | | 45 | 56 | 63 | 0.13 | 0.19 | 0.23 | 0.34 | 0.43 | 0.50 | 0.58 |
| | 4 | | 45 | 56 | 63 | 0.13 | 0.19 | 0.23 | 0.34 | 0.43 | 0.50 | 0.58 |
| | 6 | Low alloy steel | 45 | 56 | 58 | 0.13 | 0.20 | 0.24 | 0.36 | 0.42 | 0.46 | 0.55 |
| | 7 | | 41 | 50 | 56 | 0.13 | 0.16 | 0.23 | 0.35 | 0.41 | 0.44 | 0.55 |
| | 8 | | 39 | 47 | 53 | 0.09 | 0.15 | 0.22 | 0.28 | 0.38 | 0.41 | 0.50 |
| | 9 | | 36 | 43 | 46 | 0.08 | 0.15 | 0.21 | 0.27 | 0.38 | 0.40 | 0.51 |
| | 10 | High alloyed steel, and tool steel | 25 | 34 | 36 | 0.08 | 0.17 | 0.20 | 0.24 | 0.30 | 0.37 | 0.39 |
| | 11 | | 19 | 27 | 29 | 0.08 | 0.14 | 0.18 | 0.19 | 0.25 | 0.29 | 0.34 |
| K | 15 | Grey cast iron | 48 | 58 | 70 | 0.14 | 0.26 | 0.35 | 0.45 | 0.56 | 0.64 | 0.68 |
| | 16 | | 29 | 35 | 41 | 0.10 | 0.15 | 0.16 | 0.23 | 0.28 | 0.35 | 0.40 |
| | 17 | Nodular cast iron | 48 | 58 | 70 | 0.14 | 0.26 | 0.35 | 0.45 | 0.56 | 0.64 | 0.68 |
| | 18 | | 35 | 44 | 52 | 0.13 | 0.17 | 0.23 | 0.30 | 0.35 | 0.43 | 0.50 |
| | 19 | Malleable cast iron | 52 | 64 | 75 | 0.16 | 0.30 | 0.40 | 0.49 | 0.59 | 0.69 | 0.75 |
| | 20 | | 35 | 44 | 52 | 0.13 | 0.17 | 0.23 | 0.30 | 0.35 | 0.43 | 0.50 |
| N | 21 | Aluminum-wrought alloy | 187 | 229 | 244 | 0.19 | 0.33 | 0.41 | 0.50 | 0.54 | 0.64 | 0.70 |
| | 22 | | 92 | 137 | 137 | 0.19 | 0.33 | 0.41 | 0.46 | 0.54 | 0.64 | 0.70 |
| | 27 | Copper and Copper Alloys (Bronze / Brass) | 95 | 128 | 142 | 0.19 | 0.31 | 0.43 | 0.53 | 0.64 | 0.74 | 0.79 |
| S | 31 | Heat Resistant Super Alloys | 9 | 11 | 12 | 0.08 | 0.17 | 0.20 | 0.24 | 0.30 | 0.37 | 0.39 |
| | 32 | | 8 | 9 | 11 | 0.08 | 0.14 | 0.18 | 0.19 | 0.25 | 0.29 | 0.34 |
| | 33 | | 8 | 9 | 11 | 0.08 | 0.14 | 0.18 | 0.19 | 0.25 | 0.29 | 0.34 |
| | 34 | | 8 | 9 | 11 | 0.08 | 0.14 | 0.18 | 0.19 | 0.25 | 0.29 | 0.34 |
| | 35 | | 8 | 9 | 11 | 0.08 | 0.14 | 0.18 | 0.19 | 0.25 | 0.29 | 0.34 |
| H | 38 | Hardened steel | 20 | 23 | 29 | 0.12 | 0.18 | 0.20 | 0.24 | 0.30 | 0.36 | 0.46 |

▶ The recommendations for speeds, feeds and other parameters presented in this chart are nominal recommendations and should be considered only as good starting points.
Speed and feed reductions (20% reduction in speed and 10% reduction in feed) are recommended

▶ 表中推荐的速度, 进给率和其它参数只可用来参考推荐降低速度和进给量(速度降低20%和进给降低10%)

# SPADE DRILLS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工条件

### SPADE DRILL CARBIDE-K10
### 铲钻刀片 硬质合金-K10

RPM (转速) = (rev./min.)
FEED (进给) = (mm/rev.)

| ISO 公制 | VDI 3323 | Material Description 材料描述 | Vc钻销速度(m/min) | | | Feed 进给 (mm/rev) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | TiN | TiCN | TiAlN | Ø9.5~12.5 | Ø13~17.5 | Ø18~24 | Ø25~35 | Ø36~47 |
| K | 15 | Grey cast iron | 95 | 101 | 125 | 0.17 | 0.26 | 0.32 | 0.42 | 0.53 |
| | 16 | | 56 | 70 | 79 | 0.13 | 0.18 | 0.23 | 0.28 | 0.33 |
| | 17 | Nodular cast iron | 95 | 101 | 125 | 0.17 | 0.26 | 0.32 | 0.42 | 0.53 |
| | 18 | | 66 | 81 | 93 | 0.13 | 0.15 | 0.28 | 0.33 | 0.37 |
| | 19 | Malleable cast iron | 98 | 125 | 137 | 0.18 | 0.30 | 0.37 | 0.46 | 0.56 |
| | 20 | | 66 | 81 | 93 | 0.13 | 0.15 | 0.28 | 0.33 | 0.37 |

▶ The recommendations for speeds, feeds and other parameters presented in this chart are nominal recommendations and should be considered only as good starting points.
Speed and feed reductions (20% reduction in speed and 10% reduction in feed) are recommended

▶ 表中推荐的速度, 进给率和其它参数只可用来参考推荐降低速度和进给量(速度降低20%和进给降低10%)



SPADE DRILLS

RECOMMENDED CUTTING CONDITIONS
推荐加工条件

### SPADE DRILL CARBIDE-K20
### 铲钻刀片 英制合金-K20

RPM (转速) = (rev./min.)
FEED (进给) = (mm/rev.)

| ISO 公制 | VDI 3323 | Material Description 材料描述 | Vc钻销速度(m/min) | | | Feed 进给 (mm/rev) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | TiN | TiCN | TiAlN | Ø9.5-12.5 | Ø13-17.5 | Ø18-24 | Ø25-35 | Ø36-47 |
| P | 1 | Non-alloy steel | 94 | 110 | 119 | 0.20 | 0.24 | 0.31 | 0.42 | 0.46 |
| | 2 | | 76 | 82 | 96 | 0.15 | 0.22 | 0.29 | 0.36 | 0.40 |
| | 3 | | 66 | 70 | 84 | 0.15 | 0.22 | 0.28 | 0.36 | 0.40 |
| | 4 | | 66 | 70 | 84 | 0.15 | 0.22 | 0.28 | 0.36 | 0.40 |
| | 6 | Low alloy steel | 73 | 81 | 88 | 0.15 | 0.23 | 0.29 | 0.38 | 0.42 |
| | 7 | | 66 | 73 | 81 | 0.15 | 0.21 | 0.28 | 0.37 | 0.41 |
| | 8 | | 62 | 70 | 78 | 0.12 | 0.20 | 0.27 | 0.33 | 0.40 |
| | 9 | | 53 | 58 | 64 | 0.10 | 0.18 | 0.23 | 0.30 | 0.38 |
| | 10 | High alloyed steel, and tool steel | 50 | 56 | 67 | 0.09 | 0.18 | 0.22 | 0.28 | 0.31 |
| | 11 | | 37 | 46 | 50 | 0.09 | 0.18 | 0.22 | 0.28 | 0.31 |
| M | 12 | Stainless steel | 38 | 43 | 47 | 0.10 | 0.18 | 0.20 | 0.24 | 0.30 |
| | 13 | | 38 | 43 | 47 | 0.10 | 0.18 | 0.20 | 0.24 | 0.30 |
| | 14 | | 43 | 49 | 55 | 0.12 | 0.20 | 0.23 | 0.27 | 0.35 |
| K | 15 | Grey cast iron | 95 | 101 | 125 | 0.17 | 0.26 | 0.32 | 0.42 | 0.53 |
| | 16 | | 56 | 70 | 79 | 0.13 | 0.18 | 0.23 | 0.28 | 0.33 |
| | 17 | Nodular cast iron | 95 | 101 | 125 | 0.17 | 0.26 | 0.32 | 0.42 | 0.53 |
| | 18 | | 66 | 81 | 93 | 0.13 | 0.15 | 0.28 | 0.33 | 0.37 |
| | 19 | Malleable cast iron | 98 | 125 | 137 | 0.18 | 0.30 | 0.37 | 0.46 | 0.56 |
| | 20 | | 66 | 81 | 93 | 0.13 | 0.15 | 0.28 | 0.33 | 0.37 |
| N | 21 | Aluminum-wrought alloy | 366 | 396 | 427 | 0.24 | 0.38 | 0.45 | 0.50 | 0.53 |
| | 22 | | 244 | 290 | 291 | 0.22 | 0.33 | 0.40 | 0.45 | 0.48 |
| | 27 | Copper and Copper Alloys (Bronze / Brass) | 136 | 168 | 193 | 0.15 | 0.24 | 0.29 | 0.39 | 0.47 |
| S | 31 | Heat Resistant Super Alloys | 50 | 55 | 62 | 0.19 | 0.19 | 0.21 | 0.24 | 0.30 |
| | 32 | | 38 | 44 | 46 | 0.15 | 0.17 | 0.20 | 0.21 | 0.25 |
| | 33 | | 38 | 44 | 46 | 0.15 | 0.17 | 0.20 | 0.21 | 0.25 |
| | 34 | | 38 | 44 | 46 | 0.15 | 0.17 | 0.20 | 0.21 | 0.25 |
| | 35 | | 38 | 44 | 46 | 0.15 | 0.17 | 0.20 | 0.21 | 0.25 |
| H | 38 | Hardened steel | 38 | 43 | 47 | 0.10 | 0.18 | 0.20 | 0.24 | 0.30 |

▶ The recommendations for speeds, feeds and other parameters presented in this chart are nominal recommendations and should be considered only as good starting points.
Speed and feed reductions (20% reduction in speed and 10% reduction in feed) are recommended

▶ 表中推荐的速度, 进给率和其它参数只可用来参考推荐降低速度和进给量(速度降低20%和进给降低10%)

# SPADE DRILLS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工条件

### SPADE DRILL FLAT BOTTOM HSS-T15
### 铲钻刀片 平底钻 HSS-T15

RPM (转速) = (rev./min.)
FEED (进给) = (mm/rev.)

| ISO 公制 | VDI 3323 | Material Description 材料描述 | Vc钻销速度(m/min) | | Feed 进给 (mm/rev) | | | |
|---|---|---|---|---|---|---|---|---|
| | | | TiN | TiAlN | Ø9.5-12.5 | Ø13-17.5 | Ø18-24 | Ø25-35 |
| P | 1 | Non-alloy steel | 54 | 60 | 0.12 | 0.18 | 0.22 | 0.30 |
| | 2 | | 46 | 55 | 0.10 | 0.15 | 0.19 | 0.27 |
| | 3 | | 45 | 50 | 0.10 | 0.15 | 0.18 | 0.27 |
| | 4 | | 42 | 46 | 0.08 | 0.14 | 0.17 | 0.22 |
| | 6 | Low alloy steel | 45 | 46 | 0.10 | 0.16 | 0.19 | 0.29 |
| | 7 | | 40 | 45 | 0.10 | 0.13 | 0.18 | 0.28 |
| | 8 | | 38 | 42 | 0.07 | 0.12 | 0.18 | 0.22 |
| | 9 | | 34 | 37 | 0.06 | 0.12 | 0.17 | 0.22 |
| | 10 | High alloyed steel, and tool steel | 27 | 29 | 0.07 | 0.12 | 0.15 | 0.20 |
| | 11 | | 22 | 23 | 0.07 | 0.12 | 0.15 | 0.20 |
| M | 12 | Stainless steel | 23 | 25 | 0.13 | 0.15 | 0.18 | 0.22 |
| | 13 | | 23 | 25 | 0.13 | 0.15 | 0.18 | 0.22 |
| | 14 | | 26 | 29 | 0.17 | 0.18 | 0.20 | 0.23 |
| K | 15 | Grey cast iron | 51 | 60 | 0.12 | 0.21 | 0.29 | 0.40 |
| | 16 | | 38 | 48 | 0.10 | 0.14 | 0.20 | 0.25 |
| | 17 | Nodular cast iron | 51 | 60 | 0.12 | 0.21 | 0.29 | 0.40 |
| | 18 | | 38 | 48 | 0.10 | 0.14 | 0.20 | 0.25 |
| | 19 | Malleable cast iron | 56 | 66 | 0.13 | 0.25 | 0.35 | 0.41 |
| | 20 | | 38 | 48 | 0.10 | 0.14 | 0.20 | 0.25 |
| N | 21 | Aluminum-wrought alloy | 208 | 213 | 0.17 | 0.28 | 0.36 | 0.43 |
| | 22 | | 112 | 121 | 0.17 | 0.28 | 0.36 | 0.41 |
| | 27 | Copper and Copper Alloys (Bronze / Brass) | 48 | 70 | 0.15 | 0.26 | 0.37 | 0.45 |
| S | 31 | Heat Resistant Super Alloys | 20 | 10 | 0.06 | 0.14 | 0.16 | 0.19 |
| | 32 | | 7 | 9 | 0.06 | 0.11 | 0.14 | 0.15 |
| | 33 | | 7 | 9 | 0.06 | 0.11 | 0.14 | 0.15 |
| | 34 | | 7 | 9 | 0.06 | 0.11 | 0.14 | 0.15 |
| | 35 | | 7 | 9 | 0.06 | 0.11 | 0.14 | 0.15 |
| H | 38 | Hardened steel | 23 | 25 | 0.13 | 0.15 | 0.18 | 0.22 |

▶ The recommendations for speeds, feeds and other parameters presented in this chart are nominal recommendations and should be considered only as good starting points.
Speed and feed reductions (20% reduction in speed and 10% reduction in feed) are recommended
▶ 表中推荐的速度, 进给率和其它参数只可用来参考推荐降低速度和进给量(速度降低20%和进给降低10%)



SPADE DRILLS
RECOMMENDED CUTTING CONDITIONS
推荐加工条件

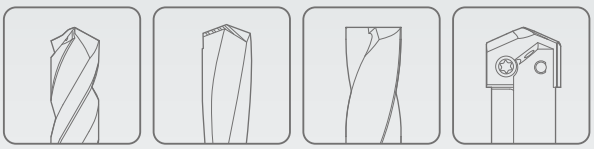
### SPADE DRILL CARBIDE-P40
### 铲钻刀片 硬质合金-P40

RPM (转速) = (rev./min.)
FEED (进给) = (mm/rev.)

| ISO 公制 | VDI 3323 | Material Description 材料描述 | Vc钻销速度(m/min) | | | Feed 进给 (mm/rev) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | TiN | TiCN | TiAlN | Ø9.5-12.5 | Ø13-17.5 | Ø18-24 | Ø25-35 | Ø36-47 |
| P | 1 | Non-alloy steel | 94 | 110 | 119 | 0.20 | 0.24 | 0.31 | 0.42 | 0.46 |
| | 2 | | 76 | 82 | 96 | 0.15 | 0.22 | 0.29 | 0.36 | 0.40 |
| | 3 | | 66 | 70 | 84 | 0.15 | 0.22 | 0.28 | 0.36 | 0.40 |
| | 4 | | 66 | 70 | 84 | 0.15 | 0.22 | 0.28 | 0.36 | 0.40 |
| | 6 | Low alloy steel | 73 | 81 | 88 | 0.15 | 0.23 | 0.29 | 0.38 | 0.42 |
| | 7 | | 66 | 73 | 81 | 0.15 | 0.21 | 0.28 | 0.37 | 0.41 |
| | 8 | | 62 | 70 | 78 | 0.12 | 0.20 | 0.27 | 0.33 | 0.40 |
| | 9 | | 53 | 58 | 64 | 0.10 | 0.18 | 0.23 | 0.30 | 0.38 |
| | 10 | High alloyed steel, and tool steel | 50 | 56 | 67 | 0.09 | 0.18 | 0.22 | 0.28 | 0.31 |
| | 11 | | 37 | 46 | 50 | 0.09 | 0.18 | 0.22 | 0.28 | 0.31 |
| M | 12 | Stainless steel | 38 | 43 | 47 | 0.10 | 0.18 | 0.20 | 0.24 | 0.30 |
| | 13 | | 38 | 43 | 47 | 0.10 | 0.18 | 0.20 | 0.24 | 0.30 |
| | 14 | | 43 | 49 | 55 | 0.12 | 0.20 | 0.23 | 0.27 | 0.35 |
| K | 15 | Grey cast iron | 95 | 101 | 125 | 0.17 | 0.26 | 0.32 | 0.42 | 0.53 |
| | 16 | | 56 | 70 | 79 | 0.13 | 0.18 | 0.23 | 0.28 | 0.33 |
| | 17 | Nodular cast iron | 95 | 101 | 125 | 0.17 | 0.26 | 0.32 | 0.42 | 0.53 |
| | 18 | | 66 | 81 | 93 | 0.13 | 0.15 | 0.28 | 0.33 | 0.37 |
| | 19 | Malleable cast iron | 98 | 125 | 137 | 0.18 | 0.30 | 0.37 | 0.46 | 0.56 |
| | 20 | | 66 | 81 | 93 | 0.13 | 0.15 | 0.28 | 0.33 | 0.37 |
| N | 21 | Aluminum-wrought alloy | 366 | 396 | 427 | 0.24 | 0.38 | 0.45 | 0.50 | 0.53 |
| | 22 | | 244 | 290 | 291 | 0.22 | 0.33 | 0.40 | 0.45 | 0.48 |
| | 27 | Copper and Copper Alloys (Bronze / Brass) | 136 | 168 | 193 | 0.15 | 0.24 | 0.29 | 0.39 | 0.47 |
| S | 31 | Heat Resistant Super Alloys | 50 | 55 | 62 | 0.19 | 0.19 | 0.21 | 0.24 | 0.30 |
| | 32 | | 38 | 44 | 46 | 0.15 | 0.17 | 0.20 | 0.21 | 0.25 |
| | 33 | | 38 | 44 | 46 | 0.15 | 0.17 | 0.20 | 0.21 | 0.25 |
| | 34 | | 38 | 44 | 46 | 0.15 | 0.17 | 0.20 | 0.21 | 0.25 |
| | 35 | | 38 | 44 | 46 | 0.15 | 0.17 | 0.20 | 0.21 | 0.25 |
| H | 38 | Hardened steel | 38 | 43 | 47 | 0.10 | 0.18 | 0.20 | 0.24 | 0.30 |

▶ The recommendations for speeds, feeds and other parameters presented in this chart are nominal recommendations and should be considered only as good starting points.
Speed and feed reductions (20% reduction in speed and 10% reduction in feed) are recommended
▶ 表中推荐的速度, 进给率和其它参数只可用来参考推荐降低速度和进给量(速度降低20%和进给降低10%)

Global Cutting Tool Leader **YG-1**



# HOLEMAKING

Leading Through Innovation

# CARBIDE, HSS & HSS-E

# REAMERS

- Carbide NC Machine Reamers
  HSS Hand Reamers, HSS-E Chucking Reamers

- 硬质合金机用铰刀
  HSS手用铰刀，HSS-E机夹铰刀

# SELECTION GUIDE
## 选用指南

HOLEMAKING TOOLS

# CARBIDE, HSS & HSS-E REAMERS

Carbide NC Machine Reamers
HSS Hand Reamers, HSS-E Chucking Reamers
硬质合金机用铰刀
HSS手用铰刀, HSS-E机夹铰刀

Please visit 请访问 globalyg1.com/mat for material search 查看产品材料

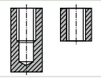
◎ : Excellent (优秀) ○ : Good (良好)

Recommended cutting conditions (推荐加工条件) : p. A397

| SERIES 系列 | K4101 | K4111 |
|---|---|---|
| HOLE TYPE 孔类型 | | |
| FLUTE TYPE 槽型 | Straight 直槽 | LH Spiral 左旋槽 |
| SIZE MIN 最小尺寸 | D2.0 | D2.0 |
| SIZE MAX 最大尺寸 | D20.0 | D20.0 |
| PAGE 页数 | **A376** | **A377** |
| SURFACE TREATMENT 表面处理 | Bright | |
| | | |

| ISO 公制 | VDI 3323 | Material Description 材料描述 | Composition / Structure / Heat Treatment 成分 / 组织 / 热处理 | | HB 布氏硬度 | HRc 硬度 | | |
|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | About 0.15% C | Annealed | 125 | | ◎ | ◎ |
| | 2 | | About 0.45% C | Annealed | 190 | 13 | ◎ | ◎ |
| | 3 | | About 0.45% C | Quenched & Tempered | 250 | 25 | ◎ | ◎ |
| | 4 | | About 0.75% C | Annealed | 270 | 28 | ○ | ○ |
| | 5 | | About 0.75% C | Quenched & Tempered | 300 | 32 | ○ | ○ |
| | 6 | Low alloy steel | | Annealed | 180 | 10 | ◎ | ◎ |
| | 7 | | | Quenched & Tempered | 275 | 29 | ◎ | ◎ |
| | 8 | | | Quenched & Tempered | 300 | 32 | ○ | ○ |
| | 9 | | | Quenched & Tempered | 350 | 38 | | |
| | 10 | High alloyed steel, and tool steel | | Annealed | 200 | 15 | ○ | ○ |
| | 11 | | | Quenched & Tempered | 325 | 35 | | |
| M | 12 | Stainless steel | Ferritic / Martensitic | Annealed | 200 | 15 | ○ | ○ |
| | 13 | | Martensitic | Quenched & Tempered | 240 | 23 | ○ | ○ |
| | 14 | | Austenitic | | 180 | 10 | ○ | ○ |
| K | 15 | Grey cast iron | Pearlitic / ferritic | | 180 | 10 | ◎ | ◎ |
| | 16 | | Pearlitic (Martensitic) | | 260 | 26 | ○ | ○ |
| | 17 | Nodular cast iron | Ferritic | | 160 | 3 | ◎ | ◎ |
| | 18 | | Pearlitic | | 250 | 25 | ○ | ○ |
| | 19 | Malleable cast iron | Ferritic | | 130 | | ◎ | ◎ |
| | 20 | | Pearlitic | | 230 | 21 | ○ | ○ |
| N | 21 | Aluminum-wrought alloy | Not Curable | | 60 | | ○ | ○ |
| | 22 | | Curable | Hardened | 100 | | ○ | ○ |
| | 23 | Aluminum-cast, alloyed | ≤ 12% Si, Not Curable | | 75 | | ○ | ○ |
| | 24 | | ≤ 12% Si, Curable | Hardened | 90 | | ○ | ○ |
| | 25 | | > 12% Si, Not Curable | | 130 | | | |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | Cutting Alloys, PB>1% | | 110 | | ○ | ○ |
| | 27 | | CuZn, CuSnZn (Brass) | | 90 | | ○ | ○ |
| | 28 | | CuSn, lead-free copper and electrolytic copper | | 100 | | ○ | ○ |
| | 29 | Non Metallic Materials | Duroplastic, Fiber Reinforced Plastic | | | | | |
| | 30 | | Rubber, Wood, etc. | | | | | |
| S | 31 | Heat Resistant Super Alloys | Fe Based | Annealed | 200 | 15 | | |
| | 32 | | | Cured | 280 | 30 | | |
| | 33 | | Ni or Co Based | Annealed | 250 | 25 | | |
| | 34 | | | Cured | 350 | 38 | | |
| | 35 | | | Cast | 320 | 34 | | |
| | 36 | Titanium Alloys | Pure Titanium | | 400 Rm | | | |
| | 37 | | Alpha + Beta Alloys | Hardened | 1050 Rm | | | |
| H | 38 | Hardened steel | | Hardened | 550 | 55 | | |
| | 39 | | | Hardened | 630 | 60 | | |
| | 40 | Chilled Cast Iron | | Cast | 400 | 42 | | |
| | 41 | Hardened Cast Iron | | Hardened | 550 | 55 | | |



| SERIES 系列 | K1143 | K1153 | K2101 | K2111 | K2121 | K2102 | K2112 | K21B1 |
|---|---|---|---|---|---|---|---|---|
| HOLE TYPE 孔类型 | | |  | | | | | |
| FLUTE TYPE 槽型 | Straight 直槽 | LH Spiral 左旋槽 | Straight 直槽 | LH Spiral 左旋槽 | LH Spiral (Quick Spiral) 左旋槽（快速） | Straight 直槽 | LH Spiral 左旋槽 | LH Spiral 左旋槽 |
| SIZE MIN 最小尺寸 | D2.0 | D2.0 | D2.0 | D2.0 | D4.0 | D10.0 | D10.0 | D2.0 |
| SIZE MAX 最大尺寸 | D60.0 | D60.0 | D20.0 | D20.0 | D20.0 | D50.0 | D50.0 | D20.0 |
| PAGE 页数 | **A378** | **A380** | **A382** | **A384** | **A386** | **A387** | **A389** | **A391** |
| SURFACE TREATMENT 表面处理 | Bright | | | | | | | |
| | | | | | | | | |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| ○ | ○ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | 1 | | |
| ○ | ○ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | 2 | | |
| | | ○ | ○ | | ○ | ○ | ○ | 3 | | |
| | | ○ | ○ | | ○ | ○ | ○ | 4 | | |
| | | | | | | | | 5 | | |
| ○ | ○ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | 6 | P | |
| | | ○ | ○ | | ○ | ○ | ○ | 7 | | |
| | | | | | | | | 8 | | |
| | | | | | | | | 9 | | |
| | | ○ | ○ | | ○ | ○ | ○ | 10 | | |
| | | | | | | | | 11 | | |
| | | ○ | ○ | | ○ | ○ | ○ | 12 | | |
| | | ○ | ○ | | ○ | ○ | ○ | 13 | M | |
| | | ○ | ○ | | ○ | ○ | ○ | 14 | | |
| | | ○ | ○ | | ○ | ○ | ○ | 15 | | |
| | | ○ | ○ | | ○ | ○ | ○ | 16 | | |
| | | ○ | ○ | | ○ | ○ | ○ | 17 | | |
| | | ○ | ○ | | ○ | ○ | ○ | 18 | K | |
| | | ○ | ○ | | ○ | ○ | ○ | 19 | | |
| | | ○ | ○ | | ○ | ○ | ○ | 20 | | |
| ○ | ○ | ○ | ○ | ◎ | ○ | ○ | ○ | 21 | | |
| ○ | ○ | ○ | ○ | ◎ | ○ | ○ | ○ | 22 | | |
| ○ | ○ | ○ | ○ | ◎ | ○ | ○ | ○ | 23 | | |
| ○ | ○ | ○ | ○ | ◎ | ○ | ○ | ○ | 24 | | |
| | | | | | | | | 25 | | |
| ○ | ○ | ○ | ○ | ◎ | ○ | ○ | ○ | 26 | N | |
| ○ | ○ | ○ | ○ | ◎ | ○ | ○ | ○ | 27 | | |
| ○ | ○ | ○ | ○ | ◎ | ○ | ○ | ○ | 28 | | |
| | | | | | | | | 29 | | |
| | | | | | | | | 30 | | |
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| | | | | | | | | 38 | | |
| | | | | | | | | 39 | H | |
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| | | | | | | | | 41 | | |

# YG REAMERS

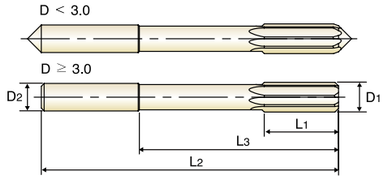
## K4101 SERIES

## CARBIDE, NC MACHINE REAMERS - STRAIGHT FLUTES
## 硬质合金, 机用铰刀-直槽

▶ Material - Up to Ø12.0 : Solid Carbide
- Over Ø12.0 : Carbide Head Brazed
▶ Straight Flutes, Right Hand Cut
▶ Unequal Flute Spacing
▶ O.D. Tolerances : DIN 1420 for H7
▶ Shank : DIN 6535-HA
▶ Chamfer Angle - D<3.0 : 15°
- D≥3.0 : 45°

▶ 材料 - Ø12.0以下：整体合金
- Ø12.0以上：头部焊接硬质合金
▶ 左槽，右切
▶ 不等分切削刃
▶ 刃径公差：DIN 1420 H7
▶ 柄：DIN 6535-HA
▶ 倒角铰刀 - D<3.0 : 15°
- D≥3.0 : 45°

Hole type 孔类型




CARBIDE | H7 | 15° | 45° | p. A397
D<3.0 D≥3.0

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| ◎ | SHRINK FIT HOLDER | D47 - 72 |
| ◎ | HYDRAULIC CHUCK | D15 - 46 |
| ○ | ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. 型号 | Reamer Diameter 铰刀直径 D1 | Shank Diameter 柄部直径 D2 | Cutting Length 切削长度 L1 | Neck Length 颈部长度 L3 | Overall Length 全长 L2 | No. of Flute 刃数 |
|---|---|---|---|---|---|---|
| K410100200 | 2.0 | 4 | 11 | 20 | 50 | 4 |
| K410100250 | 2.5 | 4 | 14 | 26 | 57 | 4 |
| K410100300 | 3.0 | 4 | 15 | 31 | 61 | 6 |
| K410100350 | 3.5 | 4 | 18 | 36 | 70 | 6 |
| K410100400 | 4.0 | 4 | 19 | 42 | 75 | 6 |
| K410100450 | 4.5 | 6 | 21 | 46 | 80 | 6 |
| K410100500 | 5.0 | 6 | 23 | 51 | 86 | 6 |
| K410100550 | 5.5 | 6 | 26 | 56 | 93 | 6 |
| K410100600 | 6.0 | 6 | 26 | 56 | 93 | 6 |
| K410100650 | 6.5 | 8 | 28 | 62 | 101 | 6 |
| K410100700 | 7.0 | 8 | 31 | 68 | 109 | 6 |
| K410100750 | 7.5 | 8 | 31 | 68 | 109 | 6 |
| K410100800 | 8.0 | 8 | 33 | 74 | 117 | 6 |
| K410100850 | 8.5 | 10 | 33 | 74 | 117 | 6 |
| K410100900 | 9.0 | 10 | 36 | 80 | 125 | 6 |
| K410100950 | 9.5 | 10 | 36 | 80 | 125 | 6 |
| K410101000 | 10.0 | 10 | 38 | 86 | 133 | 6 |
| K410101050 | 10.5 | 12 | 38 | 86 | 133 | 6 |
| K410101100 | 11.0 | 12 | 41 | 95 | 142 | 6 |
| K410101200 | 12.0 | 12 | 44 | 104 | 151 | 6 |
| K410101300 | 13.0 | 16 | 44 | 104 | 151 | 6 |
| K410101400 | 14.0 | 16 | 47 | 108 | 160 | 8 |
| K410101500 | 15.0 | 16 | 50 | 110 | 162 | 8 |
| K410101600 | 16.0 | 16 | 52 | 118 | 170 | 8 |
| K410101700 | 17.0 | 20 | 54 | 121 | 175 | 8 |
| K410101800 | 18.0 | 20 | 56 | 128 | 182 | 8 |
| K410101900 | 19.0 | 20 | 58 | 129 | 189 | 8 |
| K410102000 | 20.0 | 20 | 60 | 135 | 195 | 8 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ○ | ○ | ◎ | ◎ | ○ | | ○ | | ○ | ○ | ○ | ◎ | ○ | ◎ | ○ | ◎ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400Rm | 1050Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | ○ | | ○ | ○ | ○ | | | | | | | | | | | | | |



# YG REAMERS

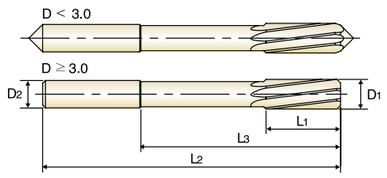
## K4111 SERIES

## CARBIDE, NC MACHINE REAMERS - LH SPIRAL FLUTES
## 硬质合金, 机用铰刀-左螺旋槽

▶ Material - Up to Ø12.0 : Solid Carbide
- Over Ø12.0 : Carbide Head Brazed
▶ Left Spiral Flutes, Right Hand Cut
▶ Unequal Flute Spacing
▶ O.D. Tolerances : DIN 1420 for H7
▶ Shank : DIN 6535-HA
▶ Chamfer Angle - D<3.0 : 15°
- D≥3.0 : 45°

▶ 材料 - Ø12.0以下：整体合金
- Ø12.0以上：头部焊接硬质合金
▶ 左槽，右切
▶ 不等分切削刃
▶ 刃径公差：DIN 1420 H7
▶ 柄：DIN 6535-HA
▶ 倒角铰刀 - D<3.0 : 15°
- D≥3.0 : 45°

Hole type 孔类型




CARBIDE | H7 | LH7° | 15° | 45° | p. A397
D<3.0 D≥3.0

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| ◎ | SHRINK FIT HOLDER | D47 - 72 |
| ◎ | HYDRAULIC CHUCK | D15 - 46 |
| ○ | ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. 型号 | Reamer Diameter 铰刀直径 D1 | Shank Diameter 柄部直径 D2 | Cutting Length 切削长度 L1 | Neck Length 颈部长度 L3 | Overall Length 全长 L2 | No. of Flute 刃数 |
|---|---|---|---|---|---|---|
| K411100200 | 2.0 | 4 | 11 | 20 | 50 | 4 |
| K411100250 | 2.5 | 4 | 14 | 26 | 57 | 4 |
| K411100300 | 3.0 | 4 | 15 | 31 | 61 | 6 |
| K411100350 | 3.5 | 4 | 18 | 36 | 70 | 6 |
| K411100400 | 4.0 | 4 | 19 | 42 | 75 | 6 |
| K411100450 | 4.5 | 6 | 21 | 46 | 80 | 6 |
| K411100500 | 5.0 | 6 | 23 | 51 | 86 | 6 |
| K411100550 | 5.5 | 6 | 26 | 56 | 93 | 6 |
| K411100600 | 6.0 | 6 | 26 | 56 | 93 | 6 |
| K411100650 | 6.5 | 8 | 28 | 62 | 101 | 6 |
| K411100700 | 7.0 | 8 | 31 | 68 | 109 | 6 |
| K411100750 | 7.5 | 8 | 31 | 68 | 109 | 6 |
| K411100800 | 8.0 | 8 | 33 | 74 | 117 | 6 |
| K411100850 | 8.5 | 10 | 33 | 74 | 117 | 6 |
| K411100900 | 9.0 | 10 | 36 | 80 | 125 | 6 |
| K411100950 | 9.5 | 10 | 36 | 80 | 125 | 6 |
| K411101000 | 10.0 | 10 | 38 | 86 | 133 | 6 |
| K411101050 | 10.5 | 12 | 38 | 86 | 133 | 6 |
| K411101100 | 11.0 | 12 | 41 | 95 | 142 | 6 |
| K411101200 | 12.0 | 12 | 44 | 104 | 151 | 6 |
| K411101300 | 13.0 | 16 | 44 | 104 | 151 | 6 |
| K411101400 | 14.0 | 16 | 47 | 108 | 160 | 8 |
| K411101500 | 15.0 | 16 | 50 | 110 | 162 | 8 |
| K411101600 | 16.0 | 16 | 52 | 118 | 170 | 8 |
| K411101700 | 17.0 | 20 | 54 | 121 | 175 | 8 |
| K411101800 | 18.0 | 20 | 56 | 128 | 182 | 8 |
| K411101900 | 19.0 | 20 | 58 | 129 | 189 | 8 |
| K411102000 | 20.0 | 20 | 60 | 135 | 195 | 8 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ○ | ○ | ◎ | ◎ | ○ | | ○ | | ○ | ○ | ○ | ◎ | ○ | ◎ | ○ | ◎ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400Rm | 1050Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | ○ | | ○ | ○ | ○ | | | | | | | | | | | | | |

# YG REAMERS

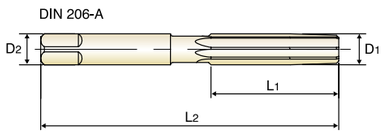
## K1143 SERIES

## HSS, HAND REAMERS - STRAIGHT FLUTES
## 高速钢, 手用铰刀-直槽

- ▶ O.D. Tolerances : DIN 1420 for H7
- ▶ Shank Diameter ≒ Nominal Reamer Diameter
- ▶ Straight Flutes / Right Hand Cut
- ▶ Chamfer Angle - tapered
- ▶ Type of center - Up to Ø3.75 : external centers
  - Over Ø3.75 : internal centers

- ▶ 刃部公差 : DIN 1420 for H7
- ▶ 柄部直径 = 铰刀刃部直径
- ▶ 直槽/右切
- ▶ 倒角-锥形
- ▶ 中心孔类形 - Ø3.75以下 : 凸出中心孔
  - Ø3.75超过 : 内部中心孔

Hole type
孔类型




$D_1=D_2$

HSS | DIN 206 | H7

Recommended ToolHolder — Plain Shank: ER COLLET CHUCK — Page: D73 - 115

Unit(单位) : mm

| EDP No. 型号 | Reamer Diameter 铰刀直径 D | Flute Length 槽长 $L_1$ | Overall Length 全长 $L_2$ | No. of Flute 刃数 |
|---|---|---|---|---|
| K114300200 | 2.0 | 25 | 50 | 4 |
| K114300220 | 2.2 | 27 | 54 | 4 |
| K114300250 | 2.5 | 29 | 58 | 4 |
| K114300280 | 2.8 | 31 | 62 | 4 |
| K114300300 | 3.0 | 31 | 62 | 6 |
| K114300320 | 3.2 | 33 | 66 | 6 |
| K114300350 | 3.5 | 35 | 71 | 6 |
| K114300400 | 4.0 | 38 | 76 | 6 |
| K114300450 | 4.5 | 41 | 81 | 6 |
| K114300500 | 5.0 | 44 | 87 | 6 |
| K114300550 | 5.5 | 47 | 93 | 6 |
| K114300600 | 6.0 | 47 | 93 | 6 |
| K114300700 | 7.0 | 54 | 107 | 6 |
| K114300800 | 8.0 | 58 | 115 | 6 |
| K114300900 | 9.0 | 62 | 124 | 6 |
| K114301000 | 10.0 | 66 | 133 | 6 |
| K114301100 | 11.0 | 71 | 142 | 6 |
| K114301200 | 12.0 | 76 | 152 | 6 |
| K114301300 | 13.0 | 76 | 152 | 6 |
| K114301400 | 14.0 | 81 | 163 | 8 |
| K114301500 | 15.0 | 81 | 163 | 8 |
| K114301600 | 16.0 | 87 | 175 | 8 |
| K114301700 | 17.0 | 87 | 175 | 8 |
| K114301800 | 18.0 | 93 | 188 | 8 |
| K114301900 | 19.0 | 93 | 188 | 8 |
| K114302000 | 20.0 | 100 | 201 | 8 |
| K114302200 | 22.0 | 107 | 215 | 8 |
| K114302400 | 24.0 | 115 | 231 | 8 |

▶ NEXT PAGE 下页

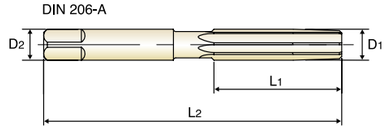
◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ○ | ○ | | | | ○ | | | | | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | ○ | | ○ | ○ | ○ | | | | | | | | | | | | | |



YG REAMERS
K1143 SERIES
HSS, HAND REAMERS - STRAIGHT FLUTES
高速钢, 手用铰刀-直槽
▶ O.D. Tolerances : DIN 1420 for H7
▶ Shank Diameter ≒ Nominal Reamer Diameter
▶ Straight Flutes / Right Hand Cut
▶ Chamfer Angle - tapered
▶ Type of center - Up to Ø3.75 : external centers
- Over Ø3.75 : internal centers
▶ 刃部公差 : DIN 1420 for H7
▶ 柄部直径 = 铰刀刃部直径
▶ 直槽/右切
▶ 倒角-锥形
▶ 中心孔类形 - Ø3.75以下 : 凸出中心孔
- Ø3.75超过 : 内部中心孔
Hole type
孔类型




$D_1=D_2$
HSS | DIN 206 | H7
Recommended ToolHolder — Plain Shank: ER COLLET CHUCK — Page: D73 - 115
Unit(单位) : mm

| EDP No. 型号 | Reamer Diameter 铰刀直径 D | Flute Length 槽长 $L_1$ | Overall Length 全长 $L_2$ | No. of Flute 刃数 |
|---|---|---|---|---|
| K114302500 | 25.0 | 115 | 231 | 8 |
| K114302600 | 26.0 | 115 | 231 | 8 |
| K114302700 | 27.0 | 124 | 247 | 10 |
| K114302800 | 28.0 | 124 | 247 | 10 |
| K114302900 | 29.0 | 124 | 247 | 10 |
| K114303000 | 30.0 | 124 | 247 | 10 |
| K114303100 | 31.0 | 133 | 265 | 10 |
| K114303200 | 32.0 | 133 | 265 | 10 |
| K114303300 | 33.0 | 133 | 265 | 10 |
| K114303400 | 34.0 | 142 | 284 | 10 |
| K114303500 | 35.0 | 142 | 284 | 10 |
| K114303600 | 36.0 | 142 | 284 | 10 |
| K114303700 | 37.0 | 142 | 284 | 10 |
| K114303800 | 38.0 | 152 | 305 | 10 |
| K114303810 | 38.1 | 152 | 305 | 10 |
| K114303900 | 39.0 | 152 | 305 | 10 |
| K114304000 | 40.0 | 152 | 305 | 10 |
| K114304100 | 41.0 | 152 | 305 | 12 |
| K114304200 | 42.0 | 152 | 305 | 12 |
| K114304300 | 43.0 | 163 | 326 | 12 |
| K114304400 | 44.0 | 163 | 326 | 12 |
| K114304500 | 45.0 | 163 | 326 | 12 |
| K114304600 | 46.0 | 163 | 326 | 12 |
| K114304700 | 47.0 | 163 | 326 | 12 |
| K114304800 | 48.0 | 174 | 347 | 12 |
| K114304900 | 49.0 | 174 | 347 | 12 |
| K114305200 | 52.0 | 174 | 347 | 12 |
| K114306000 | 60.0 | 184 | 367 | 12 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ○ | ○ | | | | ○ | | | | | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | ○ | | ○ | ○ | ○ | | | | | | | | | | | | | |

# YG REAMERS

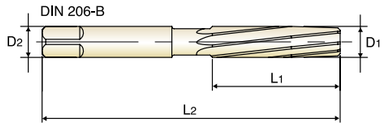
## K1153 SERIES

## HSS, HAND REAMERS - LH SPIRAL FLUTES
## 高速钢, 手用铰刀-左向螺旋槽

- ▶ O.D. Tolerances : DIN 1420, H7
- ▶ Shank Diameter ≒ Nominal Reamer Diameter
- ▶ LH Spiral Flutes / Right Hand Cut
- ▶ Chamfer Angle - tapered
- ▶ Type of center - Up to Ø3.75 : external centers
  - Over Ø3.75 : internal centers

- ▶ 刃部公差 : DIN 1420 for H7
- ▶ 柄部直径 = 铰刀刃部直径
- ▶ 直槽/右切
- ▶ 倒角-锥形
- ▶ 中心孔类形 - Ø3.75以下 : 凸出中心孔
  - Ø3.75超过 : 内部中心孔

Hole type 孔类型




$D_1=D_2$

HSS | DIN 206 | H7 | LH7°

Recommended ToolHolder — Plain Shank: ER COLLET CHUCK — Page: D73 - 115

Unit(单位) : mm

| EDP No. 型号 | Reamer Diameter 铰刀直径 D | Flute Length 槽长 $L_1$ | Overall Length 全长 $L_2$ | No. of Flute 刃数 |
|---|---|---|---|---|
| K115300200 | 2.0 | 25 | 50 | 4 |
| K115300220 | 2.2 | 27 | 54 | 4 |
| K115300250 | 2.5 | 29 | 58 | 4 |
| K115300280 | 2.8 | 31 | 62 | 4 |
| K115300300 | 3.0 | 31 | 62 | 6 |
| K115300320 | 3.2 | 33 | 66 | 6 |
| K115300350 | 3.5 | 35 | 71 | 6 |
| K115300400 | 4.0 | 38 | 76 | 6 |
| K115300450 | 4.5 | 41 | 81 | 6 |
| K115300500 | 5.0 | 44 | 87 | 6 |
| K115300550 | 5.5 | 47 | 93 | 6 |
| K115300600 | 6.0 | 47 | 93 | 6 |
| K115300700 | 7.0 | 54 | 107 | 6 |
| K115300800 | 8.0 | 58 | 115 | 6 |
| K115300900 | 9.0 | 62 | 124 | 6 |
| K115301000 | 10.0 | 66 | 133 | 6 |
| K115301100 | 11.0 | 71 | 142 | 6 |
| K115301200 | 12.0 | 76 | 152 | 6 |
| K115301300 | 13.0 | 76 | 152 | 6 |
| K115301400 | 14.0 | 81 | 163 | 8 |
| K115301500 | 15.0 | 81 | 163 | 8 |
| K115301600 | 16.0 | 87 | 175 | 8 |
| K115301700 | 17.0 | 87 | 175 | 8 |
| K115301800 | 18.0 | 93 | 188 | 8 |
| K115301900 | 19.0 | 93 | 188 | 8 |
| K115302000 | 20.0 | 100 | 201 | 8 |
| K115302200 | 22.0 | 107 | 215 | 8 |
| K115302400 | 24.0 | 115 | 231 | 8 |

▶ NEXT PAGE 下页

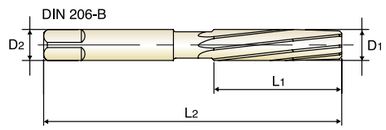
◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ○ | ○ | | | | ○ | | | | | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | ○ | | ○ | ○ | ○ | | | | | | | | | | | | | |



YG REAMERS
K1153 SERIES
HSS, HAND REAMERS - LH SPIRAL FLUTES
高速钢, 手用铰刀-左向螺旋槽
▶ O.D. Tolerances : DIN 1420, H7
▶ Shank Diameter ≒ Nominal Reamer Diameter
▶ LH Spiral Flutes / Right Hand Cut
▶ Chamfer Angle - tapered
▶ Type of center - Up to Ø3.75 : external centers
- Over Ø3.75 : internal centers
▶ 刃部公差 : DIN 1420 for H7
▶ 柄部直径 = 铰刀刃部直径
▶ 左向螺旋槽/右切
▶ 倒角-锥形
▶ 中心孔类形 - Ø3.75以下 : 凸出中心孔
- Ø3.75超过 : 内部中心孔
Hole type 孔类型




$D_1=D_2$

HSS | DIN 206 | H7 | LH7°
Recommended ToolHolder — Plain Shank: ER COLLET CHUCK — Page: D73 - 115
Unit(单位) : mm

| EDP No. 型号 | Reamer Diameter 铰刀直径 D | Flute Length 槽长 $L_1$ | Overall Length 全长 $L_2$ | No. of Flute 刃数 |
|---|---|---|---|---|
| K115302500 | 25.0 | 115 | 231 | 8 |
| K115302600 | 26.0 | 115 | 231 | 8 |
| K115302700 | 27.0 | 124 | 247 | 10 |
| K115302800 | 28.0 | 124 | 247 | 10 |
| K115302900 | 29.0 | 124 | 247 | 10 |
| K115303000 | 30.0 | 124 | 247 | 10 |
| K115303100 | 31.0 | 133 | 265 | 10 |
| K115303200 | 32.0 | 133 | 265 | 10 |
| K115303300 | 33.0 | 133 | 265 | 10 |
| K115303400 | 34.0 | 142 | 284 | 10 |
| K115303500 | 35.0 | 142 | 284 | 10 |
| K115303600 | 36.0 | 142 | 284 | 10 |
| K115303700 | 37.0 | 142 | 284 | 10 |
| K115303800 | 38.0 | 152 | 305 | 10 |
| K115303810 | 38.1 | 152 | 305 | 10 |
| K115303900 | 39.0 | 152 | 305 | 10 |
| K115304000 | 40.0 | 152 | 305 | 10 |
| K115304100 | 41.0 | 152 | 305 | 12 |
| K115304200 | 42.0 | 152 | 305 | 12 |
| K115304300 | 43.0 | 163 | 326 | 12 |
| K115304400 | 44.0 | 163 | 326 | 12 |
| K115304500 | 45.0 | 163 | 326 | 12 |
| K115304600 | 46.0 | 163 | 326 | 12 |
| K115304700 | 47.0 | 163 | 326 | 12 |
| K115304800 | 48.0 | 174 | 347 | 12 |
| K115304900 | 49.0 | 174 | 347 | 12 |
| K115305200 | 52.0 | 174 | 347 | 12 |
| K115306000 | 60.0 | 184 | 367 | 12 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ○ | ○ | | | | ○ | | | | | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | ○ | | ○ | ○ | ○ | | | | | | | | | | | | | |

# YG REAMERS

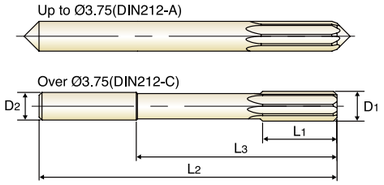
## K2101 SERIES

## HSS-E, STRAIGHT SHANK CHUCKING REAMERS - STRAIGHT FLUTES
## HSS-E, 直柄夹持铰刀-直槽

- ▶ O.D. Tolerances : DIN 1420 for H7
- ▶ Shank Diameter Tolerances : h8
- ▶ Straight Flute / Right Hand Cut
- ▶ Chamfer Angle - Up to Ø3.75 : 15°
  - Over Ø3.75 : 45°

- ▶ 刃部公差 : DIN 1420 for H7
- ▶ 柄部直径 = h8
- ▶ 直槽/右切
- ▶ 倒角 - Ø3.75以下 : 15°
  - Ø3.75超过 : 45°

Hole type
孔类型




HSS-E | DIN 212 | H7 | 15° | 45°
up to Ø3.75 over Ø3.75

p. A398

Recommended ToolHolder — Plain Shank — ER COLLET CHUCK — Page D73 - 115

Unit(单位) : mm

| EDP No. 型号 | Reamer Diameter 铰刀直径 D1 | Shank Diameter 柄部直径 D2 | Cutting Length 切削长度 L1 | Neck Length 颈部长度 L3 | Overall Length 全长 L2 | No. of Flute 刃数 |
|---|---|---|---|---|---|---|
| K210100200 | 2.0 | 2 | 11 | - | 49 | 4 |
| K210100220 | 2.2 | 2.2 | 12 | - | 53 | 4 |
| K210100250 | 2.5 | 2.5 | 14 | - | 57 | 4 |
| K210100260 | 2.6 | 2.6 | 14 | - | 57 | 4 |
| K210100280 | 2.8 | 2.8 | 15 | - | 61 | 4 |
| K210100300 | 3.0 | 3 | 15 | - | 61 | 6 |
| K210100310 | 3.1 | 3.1 | 16 | - | 65 | 6 |
| K210100320 | 3.2 | 3.2 | 16 | - | 65 | 6 |
| K210100350 | 3.5 | 3.5 | 18 | - | 70 | 6 |
| K210100360 | 3.6 | 3.6 | 18 | - | 70 | 6 |
| K210100370 | 3.7 | 3.7 | 18 | - | 70 | 6 |
| K210100400 | 4.0 | 4 | 19 | 42 | 75 | 6 |
| K210100430 | 4.3 | 4.5 | 21 | 46 | 80 | 6 |
| K210100450 | 4.5 | 4.5 | 21 | 46 | 80 | 6 |
| K210100460 | 4.6 | 4.5 | 21 | 46 | 80 | 6 |
| K210100500 | 5.0 | 5 | 23 | 51 | 86 | 6 |
| K210100550 | 5.5 | 5.6 | 26 | 56 | 93 | 6 |
| K210100560 | 5.6 | 5.6 | 26 | 56 | 93 | 6 |
| K210100600 | 6.0 | 5.6 | 26 | 56 | 93 | 6 |
| K210100650 | 6.5 | 6.3 | 28 | 62 | 101 | 6 |
| K210100700 | 7.0 | 7.1 | 31 | 68 | 109 | 6 |
| K210100720 | 7.2 | 7.1 | 31 | 68 | 109 | 6 |
| K210100800 | 8.0 | 8 | 33 | 74 | 117 | 6 |
| K210100830 | 8.3 | 8 | 33 | 74 | 117 | 6 |

▶ NEXT PAGE 下页

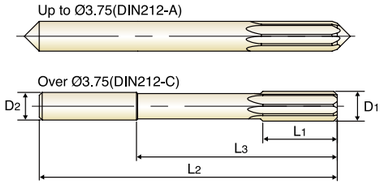
◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ○ | ○ | | ◎ | ○ | | | ○ | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | ○ | | ○ | ○ | ○ | | | | | | | | | | | | | |



YG REAMERS
K2101 SERIES
HSS-E, STRAIGHT SHANK CHUCKING REAMERS - STRAIGHT FLUTES
HSS-E, 直柄夹持铰刀-直槽
▶ O.D. Tolerances : DIN 1420 for H7
▶ Shank Diameter Tolerances : h8
▶ Straight Flute / Right Hand Cut
▶ Chamfer Angle - Up to Ø3.75 : 15°
- Over Ø3.75 : 45°
▶ 刃部公差 : DIN 1420 for H7
▶ 柄部直径 = h8
▶ 直槽/右切
▶ 倒角 - Ø3.75以下 : 15°
- Ø3.75超过 : 45°
Hole type
孔类型




HSS-E | DIN 212 | H7 | 15° | 45°
up to Ø3.75 over Ø3.75

p. A398

Recommended ToolHolder — Plain Shank — ER COLLET CHUCK — Page D73 - 115
Unit(单位) : mm

| EDP No. 型号 | Reamer Diameter 铰刀直径 D1 | Shank Diameter 柄部直径 D2 | Cutting Length 切削长度 L1 | Neck Length 颈部长度 L3 | Overall Length 全长 L2 | No. of Flute 刃数 |
|---|---|---|---|---|---|---|
| K210100850 | 8.5 | 8 | 33 | 74 | 117 | 6 |
| K210100900 | 9.0 | 9 | 36 | 80 | 125 | 6 |
| K210100950 | 9.5 | 9 | 36 | 80 | 125 | 6 |
| K210101000 | 10.0 | 10 | 38 | 86 | 133 | 6 |
| K210101050 | 10.5 | 10 | 38 | 86 | 133 | 6 |
| K210101100 | 11.0 | 10 | 41 | 95 | 142 | 6 |
| K210101200 | 12.0 | 10 | 44 | 104 | 151 | 6 |
| K210101300 | 13.0 | 10 | 44 | 104 | 151 | 6 |
| K210101400 | 14.0 | 12.5 | 47 | 108 | 160 | 8 |
| K210101500 | 15.0 | 12.5 | 50 | 110 | 162 | 8 |
| K210101600 | 16.0 | 12.5 | 52 | 118 | 170 | 8 |
| K210101700 | 17.0 | 14 | 54 | 121 | 175 | 8 |
| K210101800 | 18.0 | 14 | 56 | 128 | 182 | 8 |
| K210101900 | 19.0 | 16 | 58 | 129 | 189 | 8 |
| K210102000 | 20.0 | 16 | 60 | 135 | 195 | 8 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ○ | ○ | | ◎ | ○ | | | ○ | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | ○ | | ○ | ○ | ○ | | | | | | | | | | | | | |

# YG REAMERS

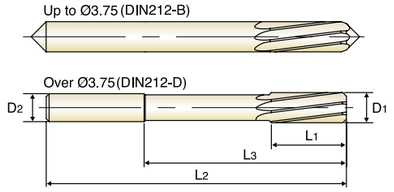
## K2111 SERIES

## HSS-E, STRAIGHT SHANK CHUCKING REAMERS - LH SPIRAL FLUTES
## HSS-E, 直柄夹持铰刀-左向螺旋槽

▶ O.D. Tolerances : DIN 1420 for H7
▶ Shank Diameter Tolerances : h8
▶ LH Spiral Flutes / Right Hand Cut
▶ Chamfer Angle - Up to Ø3.75 : 15°
- Over Ø3.75 : 45°

▶ 刃部公差 : DIN 1420 for H7
▶ 柄部直径 = h8
▶ 左向螺旋槽/右切
▶ 倒角 - Ø3.75以下 : 15°
- Ø3.75超过 : 45°

Hole type
孔类型




HSS-E | DIN 212 | H7 | LH7° | 15° | 45° |

up to Ø3.75 over Ø3.75

p. A398

Recommended ToolHolder — Plain Shank — ER COLLET CHUCK — Page D73 - 115

Unit(单位) : mm

| EDP No. 型号 | Reamer Diameter 铰刀直径 D1 | Shank Diameter 柄部直径 D2 | Cutting Length 切削长度 L1 | Neck Length 颈部长度 L3 | Overall Length 全长 L2 | No. of Flute 刃数 |
|---|---|---|---|---|---|---|
| K211100200 | 2.0 | 2 | 11 | - | 49 | 4 |
| K211100220 | 2.2 | 2.2 | 12 | - | 53 | 4 |
| K211100250 | 2.5 | 2.5 | 14 | - | 57 | 4 |
| K211100260 | 2.6 | 2.6 | 14 | - | 57 | 4 |
| K211100280 | 2.8 | 2.8 | 15 | - | 61 | 4 |
| K211100300 | 3.0 | 3 | 15 | - | 61 | 6 |
| K211100310 | 3.1 | 3.1 | 16 | - | 65 | 6 |
| K211100320 | 3.2 | 3.2 | 16 | - | 65 | 6 |
| K211100350 | 3.5 | 3.5 | 18 | - | 70 | 6 |
| K211100360 | 3.6 | 3.6 | 18 | - | 70 | 6 |
| K211100370 | 3.7 | 3.7 | 18 | - | 70 | 6 |
| K211100400 | 4.0 | 4 | 19 | 42 | 75 | 6 |
| K211100430 | 4.3 | 4.5 | 21 | 46 | 80 | 6 |
| K211100450 | 4.5 | 4.5 | 21 | 46 | 80 | 6 |
| K211100460 | 4.6 | 4.5 | 21 | 46 | 80 | 6 |
| K211100500 | 5.0 | 5 | 23 | 51 | 86 | 6 |
| K211100550 | 5.5 | 5.6 | 26 | 56 | 93 | 6 |
| K211100560 | 5.6 | 5.6 | 26 | 56 | 93 | 6 |
| K211100600 | 6.0 | 5.6 | 26 | 56 | 93 | 6 |
| K211100650 | 6.5 | 6.3 | 28 | 62 | 101 | 6 |
| K211100700 | 7.0 | 7.1 | 31 | 68 | 109 | 6 |
| K211100720 | 7.2 | 7.1 | 31 | 68 | 109 | 6 |
| K211100800 | 8.0 | 8 | 33 | 74 | 117 | 6 |
| K211100830 | 8.3 | 8 | 33 | 74 | 117 | 6 |

▶ NEXT PAGE 下页

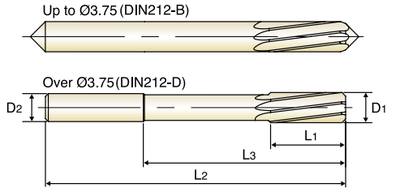
◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ○ | ○ | | ◎ | ○ | | | ○ | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | ○ | | ○ | ○ | ○ | | | | | | | | | | | | | |



YG REAMERS
K2111 SERIES
HSS-E, STRAIGHT SHANK CHUCKING REAMERS - LH SPIRAL FLUTES
HSS-E, 直柄夹持铰刀-左向螺旋槽
▶ O.D. Tolerances : DIN 1420 for H7
▶ Shank Diameter Tolerances : h8
▶ LH Spiral Flutes / Right Hand Cut
▶ Chamfer Angle - Up to Ø3.75 : 15°
- Over Ø3.75 : 45°
▶ 刃部公差 : DIN 1420 for H7
▶ 柄部直径 = h8
▶ 左向螺旋槽/右切
▶ 倒角 - Ø3.75以下 : 15°
- Ø3.75超过 : 45°
Hole type
孔类型




HSS-E | DIN 212 | H7 | LH7° | 15° | 45°

up to Ø3.75 over Ø3.75
p. A398
Recommended ToolHolder — Plain Shank — ER COLLET CHUCK — Page D73 - 115
Unit(单位) : mm

| EDP No. 型号 | Reamer Diameter 铰刀直径 D1 | Shank Diameter 柄部直径 D2 | Cutting Length 切削长度 L1 | Neck Length 颈部长度 L3 | Overall Length 全长 L2 | No. of Flute 刃数 |
|---|---|---|---|---|---|---|
| K211100850 | 8.5 | 8 | 33 | 74 | 117 | 6 |
| K211100900 | 9.0 | 9 | 36 | 80 | 125 | 6 |
| K211100950 | 9.5 | 9 | 36 | 80 | 125 | 6 |
| K211101000 | 10.0 | 10 | 38 | 86 | 133 | 6 |
| K211101050 | 10.5 | 10 | 38 | 86 | 133 | 6 |
| K211101100 | 11.0 | 10 | 41 | 95 | 142 | 6 |
| K211101200 | 12.0 | 10 | 44 | 104 | 151 | 6 |
| K211101300 | 13.0 | 10 | 44 | 104 | 151 | 6 |
| K211101400 | 14.0 | 12.5 | 47 | 108 | 160 | 8 |
| K211101500 | 15.0 | 12.5 | 50 | 110 | 162 | 8 |
| K211101600 | 16.0 | 12.5 | 52 | 118 | 170 | 8 |
| K211101700 | 17.0 | 14 | 54 | 121 | 175 | 8 |
| K211101800 | 18.0 | 14 | 56 | 128 | 182 | 8 |
| K211101900 | 19.0 | 16 | 58 | 129 | 189 | 8 |
| K211102000 | 20.0 | 16 | 60 | 135 | 195 | 8 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ○ | ○ | | ◎ | ○ | | | ○ | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | ○ | | ○ | ○ | ○ | | | | | | | | | | | | | |

# YG REAMERS

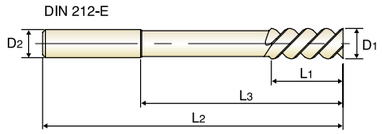
## K2121 SERIES

## HSS-E, STRAIGHT SHANK CHUCKING REAMERS - LH SPIRAL FLUTES (QUICK SPIRAL)
## HSS-E, 直柄夹持铰刀-左向螺旋槽(快速螺旋)

- ▶ O.D. Tolerances : DIN 1420 for H7
- ▶ Shank Diameter Tolerances : h8
- ▶ Chamfer Angle - tapered
- ▶ LH High Spiral Flutes / Right Hand Cut

- ▶刃部公差 : DIN 1420 for H7
- ▶柄部直径 = h8
- ▶倒角-锥形
- ▶左向高螺旋槽/右切

Hole type 孔类型




HSS-E | DIN 212 | H7 | LH45° | FORM E

p. A399

Recommended ToolHolder — Plain Shank — ER COLLET CHUCK — Page D73 - 115

Unit(单位) : mm

| EDP No. 型号 | Reamer Diameter 铰刀直径 D1 | Shank Diameter 柄部直径 D2 | Cutting Length 切削长度 L1 | Neck Length 颈部长度 L3 | Overall Length 全长 L2 | No. of Flute 刃数 |
|---|---|---|---|---|---|---|
| K212100400 | 4.0 | 4 | 19 | 42 | 75 | 3 |
| K212100450 | 4.5 | 4.5 | 21 | 46 | 80 | 3 |
| K212100500 | 5.0 | 5 | 23 | 51 | 86 | 3 |
| K212100550 | 5.5 | 5.6 | 26 | 56 | 93 | 3 |
| K212100600 | 6.0 | 5.6 | 26 | 56 | 93 | 3 |
| K212100650 | 6.5 | 6.3 | 28 | 62 | 101 | 3 |
| K212100700 | 7.0 | 7.1 | 31 | 68 | 109 | 3 |
| K212100800 | 8.0 | 8 | 33 | 74 | 117 | 3 |
| K212100850 | 8.5 | 8 | 33 | 74 | 117 | 3 |
| K212100900 | 9.0 | 9 | 36 | 80 | 125 | 3 |
| K212100950 | 9.5 | 9 | 36 | 80 | 125 | 3 |
| K212101000 | 10.0 | 10 | 38 | 86 | 133 | 3 |
| K212101100 | 11.0 | 10 | 41 | 95 | 142 | 3 |
| K212101200 | 12.0 | 10 | 44 | 104 | 151 | 3 |
| K212101300 | 13.0 | 10 | 44 | 104 | 151 | 3 |
| K212101400 | 14.0 | 12.5 | 47 | 108 | 160 | 4 |
| K212101500 | 15.0 | 12.5 | 50 | 110 | 162 | 4 |
| K212101600 | 16.0 | 12.5 | 52 | 118 | 170 | 4 |
| K212101700 | 17.0 | 14 | 54 | 121 | 175 | 4 |
| K212101800 | 18.0 | 14 | 56 | 128 | 182 | 4 |
| K212101900 | 19.0 | 16 | 58 | 129 | 189 | 4 |
| K212102000 | 20.0 | 16 | 60 | 135 | 195 | 4 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ○ | ○ | | | | ○ | | | | | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ◎ | ◎ | ◎ | ◎ | | ◎ | ◎ | ◎ | | | | | | | | | | | | | |



# YG REAMERS

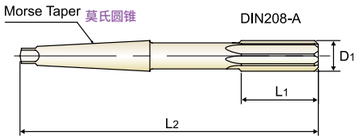
## K2102 SERIES

## HSS-E, MORSE TAPER SHANK CHUCKING REAMERS - STRAIGHT FLUTES
## HSS-E, 锥柄夹持铰刀-直槽

- ▶ O.D. Tolerances : DIN 1420 for H7
- ▶ Straight Flute / Right Hand Cut
- ▶ Chamfer Angle : 45°

- ▶刃部公差 : DIN 1420 for H7
- ▶直槽/右切
- ▶倒角 - 45°

Hole type 孔类型




HSS-E | DIN 208 | H7 | 45°

p. A398

Recommended ToolHolder — Plain Shank — ER COLLET CHUCK — Page D73 - 115

Unit(单位) : mm

| EDP No. 型号 | Reamer Diameter 铰刀直径 D1 | No. of Morse Taper 锥度型号 | Cutting Length 切削长度 L1 | Overall Length 全长 L2 | No. of Flute 刃数 |
|---|---|---|---|---|---|
| K210201000 | 10.0 | 1 | 38 | 168 | 6 |
| K210201100 | 11.0 | 1 | 41 | 175 | 6 |
| K210201200 | 12.0 | 1 | 44 | 182 | 6 |
| K210201300 | 13.0 | 1 | 44 | 182 | 6 |
| K210201400 | 14.0 | 1 | 47 | 189 | 8 |
| K210201500 | 15.0 | 2 | 50 | 204 | 8 |
| K210201600 | 16.0 | 2 | 52 | 210 | 8 |
| K210201700 | 17.0 | 2 | 54 | 214 | 8 |
| K210201800 | 18.0 | 2 | 56 | 219 | 8 |
| K210201900 | 19.0 | 2 | 58 | 223 | 8 |
| K210202000 | 20.0 | 2 | 60 | 228 | 8 |
| K210202100 | 21.0 | 2 | 62 | 232 | 8 |
| K210202200 | 22.0 | 2 | 64 | 237 | 8 |
| K210202300 | 23.0 | 2 | 66 | 241 | 8 |
| K210202400 | 24.0 | 3 | 68 | 268 | 8 |
| K210202500 | 25.0 | 3 | 68 | 268 | 8 |
| K210202600 | 26.0 | 3 | 70 | 273 | 8 |
| K210202700 | 27.0 | 3 | 71 | 277 | 10 |
| K210202800 | 28.0 | 3 | 71 | 277 | 10 |
| K210202900 | 29.0 | 3 | 73 | 281 | 10 |
| K210203000 | 30.0 | 3 | 73 | 281 | 10 |
| K210203100 | 31.0 | 3 | 75 | 285 | 10 |

▶ NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ○ | ○ | | ◎ | ○ | | | ○ | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | ○ | | ○ | ○ | ○ | | | | | | | | | | | | | |

# YG REAMERS

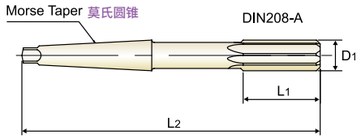
## K2102 SERIES

## HSS-E, MORSE TAPER SHANK CHUCKING REAMERS - STRAIGHT FLUTES
## HSS-E, 锥柄夹持铰刀-直槽

- ▶ O.D. Tolerances : DIN 1420 for H7
- ▶ Straight Flute / Right Hand Cut
- ▶ Chamfer Angle : 45°

- ▶刃部公差 : DIN 1420 for H7
- ▶直槽/右切
- ▶倒角: 45°

Hole type 孔类型




HSS-E | DIN 208 | H7 | 45° | p. A398

Recommended ToolHolder — Plain Shank — ER COLLET CHUCK — Page D73 - 115

Unit(单位) : mm

| EDP No. 型号 | Reamer Diameter 铰刀直径 D1 | No. of Morse Taper 锥度型号 | Cutting Length 切削长度 L1 | Overall Length 全长 L2 | No. of Flute 刀数 |
|---|---|---|---|---|---|
| K210203200 | 32.0 | 4 | 77 | 317 | 10 |
| K210203400 | 34.0 | 4 | 78 | 321 | 10 |
| K210203500 | 35.0 | 4 | 78 | 321 | 10 |
| K210203600 | 36.0 | 4 | 79 | 325 | 10 |
| K210203800 | 38.0 | 4 | 81 | 329 | 10 |
| K210204000 | 40.0 | 4 | 81 | 329 | 10 |
| K210204100 | 41.0 | 4 | 82 | 333 | 12 |
| K210204200 | 42.0 | 4 | 82 | 333 | 12 |
| K210204300 | 43.0 | 4 | 83 | 336 | 12 |
| K210204400 | 44.0 | 4 | 83 | 336 | 12 |
| K210204500 | 45.0 | 4 | 83 | 336 | 12 |
| K210204600 | 46.0 | 4 | 84 | 340 | 12 |
| K210204700 | 47.0 | 4 | 84 | 340 | 12 |
| K210204800 | 48.0 | 4 | 86 | 344 | 12 |
| K210205000 | 50.0 | 4 | 86 | 344 | 12 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ○ | ○ | | ◎ | ○ | | | ○ | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | ○ | | ○ | ○ | ○ | | | | | | | | | | | | | |



# YG REAMERS

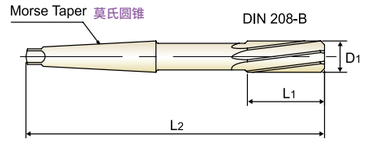
## K2112 SERIES

## HSS-E, MORSE TAPER SHANK CHUCKING REAMERS - LH SPIRAL FLUTES
## HSS-E, 锥柄夹持铰刀-左向螺旋槽

- ▶ O.D. Tolerances : DIN 1420 for H7
- ▶ LH Spiral Flutes / Right Hand Cut
- ▶ Chamfer Angle : 45°

- ▶刃部公差 : DIN 1420 for H7
- ▶左向高螺旋槽/右切
- ▶倒角: 45°

Hole type 孔类型




HSS-E | DIN 208 | H7 | LH7° | 45° | p. A398

Recommended ToolHolder — Plain Shank — ER COLLET CHUCK — Page D73 - 115

Unit(单位) : mm

| EDP No. 型号 | Reamer Diameter 铰刀直径 D1 | No. of Morse Taper 锥度型号 | Cutting Length 切削长度 L1 | Overall Length 全长 L2 | No. of Flute 刀数 |
|---|---|---|---|---|---|
| K211201000 | 10.0 | 1 | 38 | 168 | 6 |
| K211201100 | 11.0 | 1 | 41 | 175 | 6 |
| K211201200 | 12.0 | 1 | 44 | 182 | 6 |
| K211201300 | 13.0 | 1 | 44 | 182 | 6 |
| K211201400 | 14.0 | 1 | 47 | 189 | 8 |
| K211201500 | 15.0 | 2 | 50 | 204 | 8 |
| K211201600 | 16.0 | 2 | 52 | 210 | 8 |
| K211201700 | 17.0 | 2 | 54 | 214 | 8 |
| K211201800 | 18.0 | 2 | 56 | 219 | 8 |
| K211201900 | 19.0 | 2 | 58 | 223 | 8 |
| K211202000 | 20.0 | 2 | 60 | 228 | 8 |
| K211202100 | 21.0 | 2 | 62 | 232 | 8 |
| K211202200 | 22.0 | 2 | 64 | 237 | 8 |
| K211202300 | 23.0 | 2 | 66 | 241 | 8 |
| K211202400 | 24.0 | 3 | 68 | 268 | 8 |
| K211202500 | 25.0 | 3 | 68 | 268 | 8 |
| K211202600 | 26.0 | 3 | 70 | 273 | 8 |
| K211202700 | 27.0 | 3 | 71 | 277 | 10 |
| K211202800 | 28.0 | 3 | 71 | 277 | 10 |
| K211202900 | 29.0 | 3 | 73 | 281 | 10 |
| K211203000 | 30.0 | 3 | 73 | 281 | 10 |
| K211203100 | 31.0 | 3 | 75 | 285 | 10 |

▶ NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ○ | ○ | | ◎ | ○ | | | ○ | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | ○ | | ○ | ○ | ○ | | | | | | | | | | | | | |

# YG REAMERS

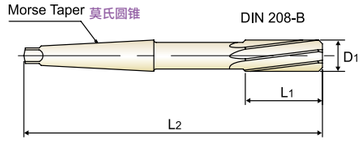
## K2112 SERIES

## HSS-E, MORSE TAPER SHANK CHUCKING REAMERS - LH SPIRAL FLUTES
## HSS-E, 锥柄夹持铰刀-左向螺旋槽

▶ O.D. Tolerances : DIN 1420 for H7
▶ LH Spiral Flutes / Right Hand Cut
▶ Chamfer Angle : 45°

▶ 刃部公差 : DIN 1420 for H7
▶ 左向高螺旋槽/右切
▶ 倒角: 45°

Hole type 孔类型




HSS-E | DIN 208 | H7 | LH7° | 45°

p. A398

Recommended ToolHolder — Plain Shank — ER COLLET CHUCK — Page D73 - 115

Unit(单位) : mm

| EDP No. 型号 | Reamer Diameter 铰刀直径 D1 | No. of Morse Taper 锥度型号 | Cutting Length 切削长度 L1 | Overall Length 全长 L2 | No. of Flute 刃数 |
|---|---|---|---|---|---|
| K211203200 | 32.0 | 4 | 77 | 317 | 10 |
| K211203400 | 34.0 | 4 | 78 | 321 | 10 |
| K211203500 | 35.0 | 4 | 78 | 321 | 10 |
| K211203600 | 36.0 | 4 | 79 | 325 | 10 |
| K211203800 | 38.0 | 4 | 81 | 329 | 10 |
| K211204000 | 40.0 | 4 | 81 | 329 | 10 |
| K211204100 | 41.0 | 4 | 82 | 333 | 12 |
| K211204200 | 42.0 | 4 | 82 | 333 | 12 |
| K211204300 | 43.0 | 4 | 83 | 336 | 12 |
| K211204400 | 44.0 | 4 | 83 | 336 | 12 |
| K211204500 | 45.0 | 4 | 83 | 336 | 12 |
| K211204600 | 46.0 | 4 | 84 | 340 | 12 |
| K211204700 | 47.0 | 4 | 84 | 340 | 12 |
| K211204800 | 48.0 | 4 | 86 | 344 | 12 |
| K211205000 | 50.0 | 4 | 86 | 344 | 12 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ○ | ○ | | ◎ | ○ | | | ○ | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400Rm | 1050Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | ○ | | ○ | ○ | ○ | | | | | | | | | | | | | |



# YG REAMERS

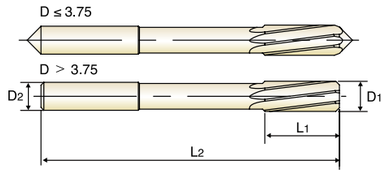
## K21B1 SERIES

## HSS-E, NC MACHINE REAMERS WITH SHANK WHOLE NUMBER
## HSS-E, 整数柄机用铰刀

▶ O.D. Tolerances
Whole-number Ø and 1/10 size : DIN 1420 for H7
1/100 size : from Ø2.01 to Ø5.03 : +0.004/-0.000mm
from Ø5.97 to Ø12.03 : +0.005/-0mm
▶ Shank Diameter Tolerances : h6
▶ LH Spiral Flutes / Right Hand Cut
▶ Chamfer Angle - Up to Ø3.75 : 15°
- Over Ø3.75 : 45°

▶ 刃部公差
整数和1/10梯度: DIN 1420 for H7
1/100梯度 : 从Ø2.01至Ø5.03: +0.004/-0.000mm
从Ø5.97至Ø12.03: +0.005/ -0mm
▶ 柄部公差: h6
▶ 左旋/右切
▶ 倒角角度 - 小于 D3.75: 15°
- 大于 D3.75: 45°

Hole type 孔类型




HSS-E | H7 | LH7° | 15° | 45°

up to Ø3.75 over Ø3.75

p. A398

Recommended ToolHolder — Plain Shank — ER COLLET CHUCK — Page D73 - 115

Unit(单位) : mm

| EDP No. 型号 | Reamer Diameter 铰刀直径 D1 | Shank Diameter 柄部直径 D2 | Flute Length 槽长 L1 | Overall Length 全长 L2 |
|---|---|---|---|---|
| K21B100200 | 2.0 | 2 | 11 | 49 |
| K21B100201 | 2.01 | 2 | 11 | 49 |
| K21B100202 | 2.02 | 2 | 11 | 49 |
| K21B100203 | 2.03 | 2 | 11 | 49 |
| K21B100210 | 2.1 | 2 | 11 | 49 |
| K21B100220 | 2.2 | 3 | 12 | 53 |
| K21B100230 | 2.3 | 3 | 12 | 53 |
| K21B100240 | 2.4 | 3 | 14 | 57 |
| K21B100247 | 2.47 | 3 | 14 | 57 |
| K21B100248 | 2.48 | 3 | 14 | 57 |
| K21B100249 | 2.49 | 3 | 14 | 57 |
| K21B100250 | 2.5 | 3 | 14 | 57 |
| K21B100251 | 2.51 | 3 | 14 | 57 |
| K21B100252 | 2.52 | 3 | 14 | 57 |
| K21B100253 | 2.53 | 3 | 14 | 57 |
| K21B100260 | 2.6 | 3 | 14 | 57 |
| K21B100270 | 2.7 | 3 | 15 | 61 |
| K21B100280 | 2.8 | 3 | 15 | 61 |
| K21B100290 | 2.9 | 3 | 15 | 61 |
| K21B100297 | 2.97 | 3 | 15 | 61 |
| K21B100298 | 2.98 | 3 | 15 | 61 |
| K21B100299 | 2.99 | 3 | 15 | 61 |
| K21B100300 | 3.0 | 3 | 15 | 61 |
| K21B100301 | 3.01 | 4 | 16 | 65 |

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◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ○ | ○ | | ◎ | ○ | | | ○ | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400Rm | 1050Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | ○ | | ○ | ○ | ○ | | | | | | | | | | | | | |

# YG REAMERS

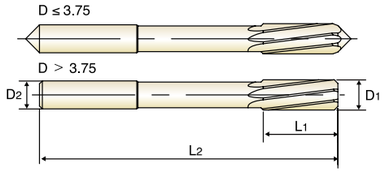
## K21B1 SERIES

## HSS-E, NC MACHINE REAMERS WITH SHANK WHOLE NUMBER
## HSS-E, 整数柄机用铰刀

▶ O.D. Tolerances
Whole-number Ø and 1/10 size : DIN 1420 for H7
1/100 size : from Ø2.01 to Ø5.03 : +0.004/-0.000mm
from Ø5.97 to Ø12.03 : +0.005/-0mm
▶ Shank Diameter Tolerances : h6
▶ LH Spiral Flutes / Right Hand Cut
▶ Chamfer Angle - Up to Ø3.75 : 15°
- Over Ø3.75 : 45°

▶ 刃部公差
整数和1/10梯度: DIN 1420 for H7
1/100梯度 : 从Ø2.01至Ø5.03: +0.004/-0.000mm
从Ø5.97至Ø12.03: +0.005/ -0mm
▶ 柄部公差: h6
▶ 左旋/右切
▶ 倒角角度 - 小于 D3.75: 15°
- 大于 D3.75: 45°

Hole type
孔类型




HSS-E | H7 | LH7° | 15° | 45° | p. A398

up to Ø3.75 over Ø3.75

Recommended ToolHolder — Plain Shank — Page
ER COLLET CHUCK — D73 - 115

Unit(单位) : mm

| EDP No. 型号 | Reamer Diameter 铰刀直径 D1 | Shank Diameter 柄部直径 D2 | Flute Length 槽长 L1 | Overall Length 全长 L2 |
|---|---|---|---|---|
| K21B100302 | 3.02 | 4 | 16 | 65 |
| K21B100303 | 3.03 | 4 | 16 | 65 |
| K21B100310 | 3.1 | 4 | 16 | 65 |
| K21B100320 | 3.2 | 4 | 16 | 65 |
| K21B100330 | 3.3 | 4 | 16 | 65 |
| K21B100340 | 3.4 | 4 | 18 | 70 |
| K21B100350 | 3.5 | 4 | 18 | 70 |
| K21B100360 | 3.6 | 4 | 18 | 70 |
| K21B100370 | 3.7 | 4 | 18 | 70 |
| K21B100380 | 3.8 | 4 | 19 | 75 |
| K21B100390 | 3.9 | 4 | 19 | 75 |
| K21B100397 | 3.97 | 4 | 19 | 75 |
| K21B100398 | 3.98 | 4 | 19 | 75 |
| K21B100399 | 3.99 | 4 | 19 | 75 |
| K21B100400 | 4.0 | 4 | 19 | 75 |
| K21B100401 | 4.01 | 4 | 19 | 75 |
| K21B100402 | 4.02 | 4 | 19 | 75 |
| K21B100403 | 4.03 | 4 | 19 | 75 |
| K21B100410 | 4.1 | 4 | 19 | 75 |
| K21B100420 | 4.2 | 4 | 19 | 75 |
| K21B100430 | 4.3 | 5 | 21 | 80 |
| K21B100440 | 4.4 | 5 | 21 | 80 |
| K21B100450 | 4.5 | 5 | 21 | 80 |
| K21B100460 | 4.6 | 5 | 21 | 80 |

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◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ○ | ○ | | ◎ | ○ | | | ○ | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400Rm | 1050Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | ○ | | ○ | ○ | ○ | | | | | | | | | | | | | |

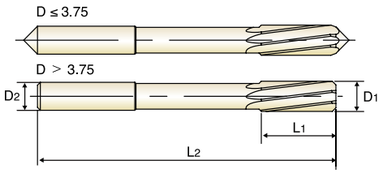


YG REAMERS
K21B1 SERIES
HSS-E, NC MACHINE REAMERS WITH SHANK WHOLE NUMBER
HSS-E, 整数柄机用铰刀

▶ O.D. Tolerances
Whole-number Ø and 1/10 size : DIN 1420 for H7
1/100 size : from Ø2.01 to Ø5.03 : +0.004/-0.000mm
from Ø5.97 to Ø12.03 : +0.005/-0mm
▶ Shank Diameter Tolerances : h6
▶ LH Spiral Flutes / Right Hand Cut
▶ Chamfer Angle - Up to Ø3.75 : 15°
- Over Ø3.75 : 45°

▶ 刃部公差
整数和1/10梯度: DIN 1420 for H7
1/100梯度 : 从Ø2.01至Ø5.03: +0.004/-0.000mm
从Ø5.97至Ø12.03: +0.005/ -0mm
▶ 柄部公差: h6
▶ 左旋/右切
▶ 倒角角度 - 小于 D3.75: 15°
- 大于 D3.75: 45°

Hole type
孔类型




HSS-E | H7 | LH7° | 15° | 45° | p. A398

up to Ø3.75 over Ø3.75

Recommended ToolHolder — Plain Shank — Page
ER COLLET CHUCK — D73 - 115

Unit(单位) : mm

| EDP No. 型号 | Reamer Diameter 铰刀直径 D1 | Shank Diameter 柄部直径 D2 | Flute Length 槽长 L1 | Overall Length 全长 L2 |
|---|---|---|---|---|
| K21B100470 | 4.7 | 5 | 21 | 80 |
| K21B100480 | 4.8 | 5 | 23 | 86 |
| K21B100490 | 4.9 | 5 | 23 | 86 |
| K21B100497 | 4.97 | 5 | 23 | 86 |
| K21B100498 | 4.98 | 5 | 23 | 86 |
| K21B100499 | 4.99 | 5 | 23 | 86 |
| K21B100500 | 5.0 | 5 | 23 | 86 |
| K21B100501 | 5.01 | 5 | 23 | 86 |
| K21B100502 | 5.02 | 5 | 23 | 86 |
| K21B100503 | 5.03 | 5 | 23 | 86 |
| K21B100510 | 5.1 | 5 | 23 | 86 |
| K21B100520 | 5.2 | 5 | 23 | 86 |
| K21B100530 | 5.3 | 5 | 23 | 86 |
| K21B100540 | 5.4 | 6 | 26 | 93 |
| K21B100550 | 5.5 | 6 | 26 | 93 |
| K21B100560 | 5.6 | 6 | 26 | 93 |
| K21B100570 | 5.7 | 6 | 26 | 93 |
| K21B100580 | 5.8 | 6 | 26 | 93 |
| K21B100590 | 5.9 | 6 | 26 | 93 |
| K21B100597 | 5.97 | 6 | 26 | 93 |
| K21B100598 | 5.98 | 6 | 26 | 93 |
| K21B100599 | 5.99 | 6 | 26 | 93 |
| K21B100600 | 6.0 | 6 | 26 | 93 |
| K21B100601 | 6.01 | 6 | 28 | 101 |

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◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ○ | ○ | | ◎ | ○ | | | ○ | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400Rm | 1050Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | ○ | | ○ | ○ | ○ | | | | | | | | | | | | | |

# YG REAMERS

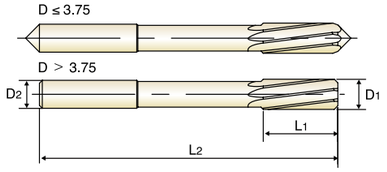
## K21B1 SERIES

## HSS-E, NC MACHINE REAMERS WITH SHANK WHOLE NUMBER
## HSS-E, 整数柄机用铰刀

▶ O.D. Tolerances
Whole-number Ø and 1/10 size : DIN 1420 for H7
1/100 size : from Ø2.01 to Ø5.03 : +0.004/-0.000mm
from Ø5.97 to Ø12.03 : +0.005/-0mm
▶ Shank Diameter Tolerances : h6
▶ LH Spiral Flutes / Right Hand Cut
▶ Chamfer Angle - Up to Ø3.75 : 15°
- Over Ø3.75 : 45°

▶ 刃部公差
整数和1/10梯度: DIN 1420 for H7
1/100梯度 : 从Ø2.01至Ø5.03: +0.004/-0.000mm
从Ø5.97至Ø12.03: +0.005/ -0mm
▶ 柄部公差: h6
▶ 左旋/右切
▶ 倒角角度 - 小于 D3.75: 15°
- 大于 D3.75: 45°

Hole type
孔类型




HSS-E | H7 | LH7° | 15° | 45° | up to Ø3.75 | over Ø3.75

p. A398

Recommended ToolHolder — Plain Shank — ER COLLET CHUCK — Page D73 - 115

Unit(单位) : mm

| EDP No. 型号 | Reamer Diameter 铰刀直径 D1 | Shank Diameter 柄部直径 D2 | Flute Length 槽长 L1 | Overall Length 全长 L2 |
|---|---|---|---|---|
| K21B100602 | 6.02 | 6 | 28 | 101 |
| K21B100603 | 6.03 | 6 | 28 | 101 |
| K21B100610 | 6.1 | 6 | 28 | 101 |
| K21B100620 | 6.2 | 6 | 28 | 101 |
| K21B100630 | 6.3 | 6 | 28 | 101 |
| K21B100640 | 6.4 | 6 | 28 | 101 |
| K21B100650 | 6.5 | 6 | 28 | 101 |
| K21B100660 | 6.6 | 6 | 28 | 101 |
| K21B100670 | 6.7 | 6 | 28 | 101 |
| K21B100680 | 6.8 | 8 | 31 | 109 |
| K21B100690 | 6.9 | 8 | 31 | 109 |
| K21B100700 | 7.0 | 8 | 31 | 109 |
| K21B100710 | 7.1 | 8 | 31 | 109 |
| K21B100720 | 7.2 | 8 | 31 | 109 |
| K21B100730 | 7.3 | 8 | 31 | 109 |
| K21B100740 | 7.4 | 8 | 31 | 109 |
| K21B100750 | 7.5 | 8 | 31 | 109 |
| K21B100760 | 7.6 | 8 | 33 | 117 |
| K21B100770 | 7.7 | 8 | 33 | 117 |
| K21B100780 | 7.8 | 8 | 33 | 117 |
| K21B100790 | 7.9 | 8 | 33 | 117 |
| K21B100797 | 7.97 | 8 | 33 | 117 |
| K21B100798 | 7.98 | 8 | 33 | 117 |
| K21B100799 | 7.99 | 8 | 33 | 117 |

▶ NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ○ | ○ | | ◎ | ○ | | | ○ | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | ○ | | ○ | ○ | ○ | | | | | | | | | | | | | |

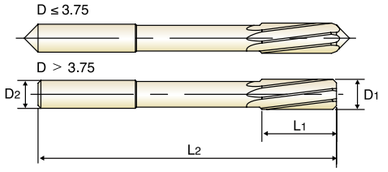


YG REAMERS
K21B1 SERIES
HSS-E, NC MACHINE REAMERS WITH SHANK WHOLE NUMBER
HSS-E, 整数柄机用铰刀

▶ O.D. Tolerances
Whole-number Ø and 1/10 size : DIN 1420 for H7
1/100 size : from Ø2.01 to Ø5.03 : +0.004/-0.000mm
from Ø5.97 to Ø12.03 : +0.005/-0mm
▶ Shank Diameter Tolerances : h6
▶ LH Spiral Flutes / Right Hand Cut
▶ Chamfer Angle - Up to Ø3.75 : 15°
- Over Ø3.75 : 45°

▶ 刃部公差
整数和1/10梯度: DIN 1420 for H7
1/100梯度 : 从Ø2.01至Ø5.03: +0.004/-0.000mm
从Ø5.97至Ø12.03: +0.005/ -0mm
▶ 柄部公差: h6
▶ 左旋/右切
▶ 倒角角度 - 小于 D3.75: 15°
- 大于 D3.75: 45°

Hole type
孔类型




HSS-E | H7 | LH7° | 15° | 45° | up to Ø3.75 | over Ø3.75

p. A398

Recommended ToolHolder — Plain Shank — ER COLLET CHUCK — Page D73 - 115

Unit(单位) : mm

| EDP No. 型号 | Reamer Diameter 铰刀直径 D1 | Shank Diameter 柄部直径 D2 | Flute Length 槽长 L1 | Overall Length 全长 L2 |
|---|---|---|---|---|
| K21B100800 | 8.0 | 8 | 33 | 117 |
| K21B100801 | 8.01 | 8 | 33 | 117 |
| K21B100802 | 8.02 | 8 | 33 | 117 |
| K21B100803 | 8.03 | 8 | 33 | 117 |
| K21B100810 | 8.1 | 8 | 33 | 117 |
| K21B100820 | 8.2 | 8 | 33 | 117 |
| K21B100830 | 8.3 | 8 | 33 | 117 |
| K21B100840 | 8.4 | 8 | 33 | 117 |
| K21B100850 | 8.5 | 8 | 33 | 117 |
| K21B100860 | 8.6 | 10 | 36 | 125 |
| K21B100870 | 8.7 | 10 | 36 | 125 |
| K21B100880 | 8.8 | 10 | 36 | 125 |
| K21B100890 | 8.9 | 10 | 36 | 125 |
| K21B100900 | 9.0 | 10 | 36 | 125 |
| K21B100901 | 9.01 | 10 | 36 | 125 |
| K21B100902 | 9.02 | 10 | 36 | 125 |
| K21B100903 | 9.03 | 10 | 36 | 125 |
| K21B100910 | 9.1 | 10 | 36 | 125 |
| K21B100920 | 9.2 | 10 | 36 | 125 |
| K21B100930 | 9.3 | 10 | 36 | 125 |
| K21B100940 | 9.4 | 10 | 36 | 125 |
| K21B100950 | 9.5 | 10 | 36 | 125 |
| K21B100960 | 9.6 | 10 | 38 | 133 |
| K21B100970 | 9.7 | 10 | 38 | 133 |

▶ NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ○ | ○ | | ◎ | ○ | | | ○ | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | ○ | | ○ | ○ | ○ | | | | | | | | | | | | | |

YG REAMERS

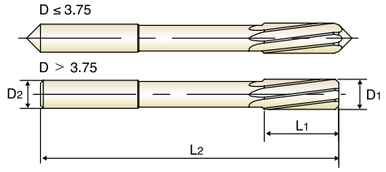
**K21B1 SERIES**

# HSS-E, NC MACHINE REAMERS WITH SHANK WHOLE NUMBER
## HSS-E, 整数柄机用铰刀

▶ O.D. Tolerances
Whole-number Ø and 1/10 size : DIN 1420 for H7
1/100 size : from Ø2.01 to Ø5.03 : +0.004/-0.000mm
from Ø5.97 to Ø12.03 : +0.005/-0mm
▶ Shank Diameter Tolerances : h6
▶ LH Spiral Flutes / Right Hand Cut
▶ Chamfer Angle - Up to Ø3.75 : 15°
- Over Ø3.75 : 45°

▶ 刃部公差
整数和1/10梯度: DIN 1420 for H7
1/100梯度 : 从Ø2.01至Ø5.03: +0.004/-0.000mm
从Ø5.97至Ø12.03: +0.005/ -0mm
▶ 柄部公差: h6
▶ 左旋/右切
▶ 倒角角度 - 小于 D3.75: 15°
- 大于 D3.75: 45°

Hole type 孔类型




HSS-E | H7 | LH7° | 15° | 45°
up to Ø3.75 over Ø3.75

p. A398

Recommended ToolHolder — Plain Shank — ER COLLET CHUCK — Page D73 - 115

Unit(单位) : mm

| EDP No. 型号 | Reamer Diameter 铰刀直径 D1 | Shank Diameter 柄部直径 D2 | Flute Length 槽长 L1 | Overall Length 全长 L2 |
|---|---|---|---|---|
| K21B100980 | 9.8 | 10 | 38 | 133 |
| K21B100990 | 9.9 | 10 | 38 | 133 |
| K21B100997 | 9.97 | 10 | 38 | 133 |
| K21B100998 | 9.98 | 10 | 38 | 133 |
| K21B100999 | 9.99 | 10 | 38 | 133 |
| K21B101000 | 10.0 | 10 | 38 | 133 |
| K21B101001 | 10.01 | 10 | 38 | 133 |
| K21B101002 | 10.02 | 10 | 38 | 133 |
| K21B101003 | 10.03 | 10 | 38 | 133 |
| K21B101100 | 11.0 | 10 | 41 | 142 |
| K21B101197 | 11.97 | 10 | 41 | 151 |
| K21B101198 | 11.98 | 10 | 41 | 151 |
| K21B101199 | 11.99 | 10 | 41 | 151 |
| K21B101200 | 12.0 | 10 | 44 | 151 |
| K21B101201 | 12.01 | 10 | 44 | 151 |
| K21B101202 | 12.02 | 10 | 44 | 151 |
| K21B101203 | 12.03 | 10 | 44 | 151 |
| K21B101300 | 13.0 | 10 | 44 | 151 |
| K21B101400 | 14.0 | 14 | 47 | 160 |
| K21B101500 | 15.0 | 14 | 50 | 162 |
| K21B101600 | 16.0 | 14 | 52 | 170 |
| K21B101700 | 17.0 | 14 | 54 | 175 |
| K21B101800 | 18.0 | 14 | 56 | 182 |
| K21B101900 | 19.0 | 16 | 58 | 189 |
| K21B102000 | 20.0 | 16 | 60 | 195 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ○ | ○ | | ◎ | ○ | | | ○ | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | H | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400Rm | 1050Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | ○ | | ○ | ○ | ○ | | | | | | | | | | | | | |



CARBIDE
HSS
i-ONE DRILLS
i-DREAM DRILLS
DREAM DRILLS -PRO
DREAM DRILLS -GENERAL
DREAM DRILLS -SOFT
DREAM DRILLS -HIGH FEED
DREAM DRILLS -FLAT BOTTOM
DREAM DRILLS -INOX
DREAM DRILLS -ALU
DREAM DRILLS -CFRP
DREAM DRILLS -MQL
DREAM DRILLS for HIGH HARDENED STEELS
GENERAL CARBIDE DRILLS
MULTI-1 DRILLS
GOLD-P DRILLS
SUPER-GP DRILLS
WORM PATTERN DRILLS
STRAIGHT SHANK DRILLS
TAPER SHANK DRILLS
NC-SPOTTING DRILLS
CENTER DRILLS
SPADE DRILLS
REAMERS
COUNTER SINKS
COUNTER BORES
TECHNICAL DATA

YG REAMERS

**K4101, K4111 SERIES**

# CARBIDE, NC MACHINE REAMERS
## 硬质合金机用铰刀

Vc (切削速度)= (m/min.)
FEED (进给) = (mm/rev.)

| ISO 公制 | VDI 3323 | Material Description 材料描述 | Vc 钻削速度 (m/min) | Feed 进给 (mm/rev) 2.0 | 4.0 | 6.0 | 8.0 | 10.0 | 12.0 | 14.0 | 16.0 | 20.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | 18 | 0.08-0.10 | 0.10-0.12 | 0.12-0.16 | 0.16-0.20 | 0.20-0.24 | 0.24-0.28 | 0.28-0.32 | 0.32-0.36 | 0.36-0.40 |
| | 2 | | 17 | 0.08-0.10 | 0.10-0.12 | 0.12-0.16 | 0.16-0.20 | 0.20-0.24 | 0.24-0.28 | 0.28-0.32 | 0.32-0.36 | 0.36-0.40 |
| | 3 | | 15 | 0.08-0.10 | 0.10-0.12 | 0.12-0.16 | 0.16-0.20 | 0.20-0.24 | 0.24-0.28 | 0.28-0.32 | 0.32-0.36 | 0.36-0.40 |
| | 4 | | 15 | 0.08-0.10 | 0.10-0.12 | 0.12-0.16 | 0.16-0.20 | 0.20-0.24 | 0.24-0.28 | 0.28-0.32 | 0.32-0.36 | 0.36-0.40 |
| | 5 | | 15 | 0.08-0.10 | 0.10-0.12 | 0.12-0.16 | 0.16-0.20 | 0.20-0.24 | 0.24-0.28 | 0.28-0.32 | 0.32-0.36 | 0.36-0.40 |
| | 6 | Low alloy steel | 17 | 0.06-0.08 | 0.08-0.10 | 0.10-0.12 | 0.12-0.15 | 0.15-0.18 | 0.18-0.21 | 0.21-0.24 | 0.24-0.27 | 0.27-0.30 |
| | 7 | | 14 | 0.06-0.08 | 0.08-0.10 | 0.10-0.12 | 0.12-0.15 | 0.15-0.18 | 0.18-0.21 | 0.21-0.24 | 0.24-0.27 | 0.27-0.30 |
| | 8 | | 14 | 0.06-0.08 | 0.08-0.10 | 0.10-0.12 | 0.12-0.15 | 0.15-0.18 | 0.18-0.21 | 0.21-0.24 | 0.24-0.27 | 0.27-0.30 |
| | 10 | High alloyed steel, and tool steel | 13 | 0.06-0.08 | 0.08-0.10 | 0.10-0.12 | 0.12-0.15 | 0.15-0.18 | 0.18-0.21 | 0.21-0.24 | 0.24-0.27 | 0.27-0.30 |
| M | 12 | Stainless steel | 8 | 0.06-0.08 | 0.08-0.10 | 0.10-0.12 | 0.12-0.15 | 0.15-0.18 | 0.18-0.21 | 0.21-0.24 | 0.24-0.27 | 0.27-0.30 |
| | 13 | | 7 | 0.06-0.08 | 0.08-0.10 | 0.10-0.12 | 0.12-0.15 | 0.15-0.18 | 0.18-0.21 | 0.21-0.24 | 0.24-0.27 | 0.27-0.30 |
| | 14 | | 6 | 0.06-0.08 | 0.08-0.10 | 0.10-0.12 | 0.12-0.15 | 0.15-0.18 | 0.18-0.21 | 0.21-0.24 | 0.24-0.27 | 0.27-0.30 |
| K | 15 | Grey cast iron | 20 | 0.08-0.10 | 0.10-0.12 | 0.12-0.16 | 0.16-0.20 | 0.20-0.24 | 0.24-0.28 | 0.28-0.32 | 0.32-0.36 | 0.36-0.40 |
| | 16 | | 15 | 0.08-0.10 | 0.10-0.12 | 0.12-0.16 | 0.16-0.20 | 0.20-0.24 | 0.24-0.28 | 0.28-0.32 | 0.32-0.36 | 0.36-0.40 |
| | 17 | Nodular cast iron | 18 | 0.08-0.10 | 0.10-0.12 | 0.12-0.16 | 0.16-0.20 | 0.20-0.24 | 0.24-0.28 | 0.28-0.32 | 0.32-0.36 | 0.36-0.40 |
| | 18 | | 13 | 0.08-0.10 | 0.10-0.12 | 0.12-0.16 | 0.16-0.20 | 0.20-0.24 | 0.24-0.28 | 0.28-0.32 | 0.32-0.36 | 0.36-0.40 |
| | 19 | Malleable cast iron | 18 | 0.08-0.10 | 0.10-0.12 | 0.12-0.16 | 0.16-0.20 | 0.20-0.24 | 0.24-0.28 | 0.28-0.32 | 0.32-0.36 | 0.36-0.40 |
| | 20 | | 13 | 0.08-0.10 | 0.10-0.12 | 0.12-0.16 | 0.16-0.20 | 0.2-0.240 | 0.24-0.28 | 0.28-0.32 | 0.32-0.36 | 0.36-0.40 |
| N | 21 | Aluminum-wrought alloy | 30 | 0.10-0.13 | 0.13-0.16 | 0.16-0.20 | 0.20-0.25 | 0.25-0.30 | 0.30-0.35 | 0.35-0.40 | 0.40-0.45 | 0.45-0.50 |
| | 22 | | 30 | 0.1-0.130 | 0.13-0.16 | 0.16-0.20 | 0.20-0.25 | 0.25-0.30 | 0.30-0.35 | 0.35-0.40 | 0.40-0.45 | 0.45-0.50 |
| | 23 | Aluminum-cast, alloyed | 30 | 0.10-0.13 | 0.13-0.16 | 0.16-0.20 | 0.20-0.25 | 0.25-0.30 | 0.30-0.35 | 0.35-0.40 | 0.40-0.45 | 0.45-0.50 |
| | 24 | | 25 | 0.10-0.13 | 0.13-0.16 | 0.16-0.20 | 0.20-0.25 | 0.25-0.30 | 0.30-0.35 | 0.35-0.40 | 0.40-0.45 | 0.45-0.50 |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | 25 | 0.10-0.13 | 0.13-0.16 | 0.16-0.20 | 0.20-0.25 | 0.25-0.30 | 0.30-0.35 | 0.35-0.40 | 0.40-0.45 | 0.45-0.50 |
| | 27 | | 22 | 0.10-0.13 | 0.13-0.16 | 0.16-0.20 | 0.20-0.25 | 0.25-0.30 | 0.30-0.35 | 0.35-0.40 | 0.40-0.45 | 0.45-0.50 |
| | 28 | | 23 | 0.10-0.13 | 0.13-0.16 | 0.16-0.20 | 0.20-0.25 | 0.25-0.30 | 0.30-0.35 | 0.35-0.40 | 0.40-0.45 | 0.45-0.50 |

# REAMERS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工条件

### K2101, K2111, K21B1, K2102, K2112 SERIES

### HSS-E, STRAIGHT & LH SPIRAL FLUTE CHUCKING REAMERS
### HSS-E 直槽&左旋槽 机夹铰刀
### HSS-E, NC MACHINE REAMERS HSS-E 机用铰刀

Vc (切削速度)= (m/min.)
FEED (进给) = (mm/rev.)

| ISO 公制 | VDI 3323 | Material Description 材料描述 | Vc 钻削速度 (m/min) | Feed 进给 (mm/rev) | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 2.0 | 4.0 | 6.0 | 8.0 | 10.0 | 12.0 | 14.0 | 16.0 | 20.0 | 24.0 | 28.0 | 32.0 | 36.0 | 40.0 | 45.0 | 50.0 |
| P | 1 | Non-alloy steel | 14 | 0.05-0.07 | 0.07-0.09 | 0.09-0.11 | 0.11-0.14 | 0.14-0.17 | 0.17-0.20 | 0.20-0.23 | 0.23-0.26 | 0.26-0.29 | 0.29-0.32 | 0.32-0.35 | 0.35-0.38 | 0.38-0.41 | 0.41-0.44 | 0.44-0.47 | 0.47-0.50 |
| | 2 | | 14 | 0.05-0.07 | 0.07-0.09 | 0.09-0.11 | 0.11-0.14 | 0.14-0.17 | 0.17-0.20 | 0.20-0.23 | 0.23-0.26 | 0.26-0.29 | 0.29-0.32 | 0.32-0.35 | 0.35-0.38 | 0.38-0.41 | 0.41-0.44 | 0.44-0.47 | 0.47-0.50 |
| | 3 | | 10 | 0.05-0.07 | 0.07-0.09 | 0.09-0.11 | 0.11-0.13 | 0.13-0.15 | 0.15-0.17 | 0.17-0.19 | 0.19-0.21 | 0.21-0.23 | 0.23-0.25 | 0.25-0.27 | 0.27-0.29 | 0.29-0.31 | 0.31-0.34 | 0.34-0.37 | 0.37-0.40 |
| | 4 | | 8 | 0.05-0.07 | 0.07-0.09 | 0.09-0.11 | 0.11-0.13 | 0.13-0.15 | 0.15-0.17 | 0.17-0.19 | 0.19-0.21 | 0.21-0.23 | 0.23-0.25 | 0.25-0.27 | 0.27-0.29 | 0.29-0.31 | 0.31-0.34 | 0.34-0.37 | 0.37-0.40 |
| | 6 | Low alloy steel | 12 | 0.05-0.07 | 0.07-0.09 | 0.09-0.11 | 0.11-0.13 | 0.13-0.15 | 0.15-0.17 | 0.17-0.19 | 0.19-0.21 | 0.21-0.23 | 0.23-0.25 | 0.25-0.27 | 0.27-0.29 | 0.29-0.31 | 0.31-0.34 | 0.34-0.37 | 0.37-0.40 |
| | 7 | | 8 | 0.05-0.07 | 0.07-0.09 | 0.09-0.11 | 0.11-0.13 | 0.13-0.15 | 0.15-0.17 | 0.17-0.19 | 0.19-0.21 | 0.21-0.23 | 0.23-0.25 | 0.25-0.27 | 0.27-0.29 | 0.29-0.31 | 0.31-0.34 | 0.34-0.37 | 0.37-0.40 |
| | 10 | High alloyed steel, and tool steel | 6 | 0.03-0.04 | 0.04-0.05 | 0.05-0.06 | 0.06-0.07 | 0.07-0.08 | 0.08-0.10 | 0.10-0.12 | 0.12-0.14 | 0.14-0.16 | 0.16-0.18 | 0.18-0.20 | 0.20-0.22 | 0.22-0.24 | 0.24-0.26 | 0.26-0.28 | 0.28-0.30 |
| M | 12 | Stainless steel | 6 | 0.03-0.04 | 0.04-0.05 | 0.05-0.06 | 0.06-0.07 | 0.07-0.08 | 0.08-0.10 | 0.10-0.12 | 0.12-0.14 | 0.14-0.16 | 0.16-0.18 | 0.18-0.20 | 0.20-0.22 | 0.22-0.24 | 0.24-0.26 | 0.26-0.28 | 0.28-0.30 |
| | 13 | | 5 | 0.03-0.04 | 0.04-0.05 | 0.05-0.06 | 0.06-0.07 | 0.07-0.08 | 0.08-0.10 | 0.10-0.12 | 0.12-0.14 | 0.14-0.16 | 0.16-0.18 | 0.18-0.20 | 0.20-0.22 | 0.22-0.24 | 0.24-0.26 | 0.26-0.28 | 0.28-0.30 |
| | 14 | | 4 | 0.03-0.04 | 0.04-0.05 | 0.05-0.06 | 0.06-0.07 | 0.07-0.08 | 0.08-0.10 | 0.10-0.12 | 0.12-0.14 | 0.14-0.16 | 0.16-0.18 | 0.18-0.20 | 0.20-0.22 | 0.22-0.24 | 0.24-0.26 | 0.26-0.28 | 0.28-0.30 |
| K | 15 | Grey cast iron | 14 | 0.05-0.07 | 0.07-0.09 | 0.09-0.11 | 0.11-0.14 | 0.14-0.17 | 0.17-0.20 | 0.20-0.23 | 0.23-0.26 | 0.26-0.29 | 0.29-0.32 | 0.32-0.35 | 0.35-0.38 | 0.38-0.41 | 0.41-0.44 | 0.44-0.47 | 0.47-0.50 |
| | 16 | | 11 | 0.05-0.07 | 0.07-0.09 | 0.09-0.11 | 0.11-0.13 | 0.13-0.15 | 0.15-0.17 | 0.17-0.19 | 0.19-0.21 | 0.21-0.23 | 0.23-0.25 | 0.25-0.27 | 0.27-0.29 | 0.29-0.31 | 0.31-0.34 | 0.34-0.37 | 0.37-0.40 |
| | 17 | Nodular cast iron | 12 | 0.05-0.07 | 0.07-0.09 | 0.09-0.11 | 0.11-0.14 | 0.14-0.17 | 0.17-0.20 | 0.20-0.23 | 0.23-0.26 | 0.26-0.29 | 0.29-0.32 | 0.32-0.35 | 0.35-0.38 | 0.38-0.41 | 0.41-0.44 | 0.44-0.47 | 0.47-0.50 |
| | 18 | | 10 | 0.05-0.07 | 0.07-0.09 | 0.09-0.11 | 0.11-0.13 | 0.13-0.15 | 0.15-0.17 | 0.17-0.19 | 0.19-0.21 | 0.21-0.23 | 0.23-0.25 | 0.25-0.27 | 0.27-0.29 | 0.29-0.31 | 0.31-0.34 | 0.34-0.37 | 0.37-0.40 |
| | 19 | Malleable cast iron | 12 | 0.05-0.07 | 0.07-0.09 | 0.09-0.11 | 0.11-0.14 | 0.14-0.17 | 0.17-0.20 | 0.20-0.23 | 0.23-0.26 | 0.26-0.29 | 0.29-0.32 | 0.32-0.35 | 0.35-0.38 | 0.38-0.41 | 0.41-0.44 | 0.44-0.47 | 0.47-0.50 |
| | 20 | | 10 | 0.05-0.07 | 0.07-0.09 | 0.09-0.11 | 0.11-0.13 | 0.13-0.15 | 0.15-0.17 | 0.17-0.19 | 0.19-0.21 | 0.21-0.23 | 0.23-0.25 | 0.25-0.27 | 0.27-0.29 | 0.29-0.31 | 0.31-0.34 | 0.34-0.37 | 0.37-0.40 |
| N | 21 | Aluminum-wrought alloy | 18 | 0.10-0.13 | 0.13-0.16 | 0.16-0.19 | 0.19-0.22 | 0.22-0.25 | 0.25-0.28 | 0.28-0.31 | 0.31-0.34 | 0.34-0.37 | 0.37-0.40 | 0.40-0.43 | 0.43-0.46 | 0.46-0.49 | 0.49-0.52 | 0.52-0.56 | 0.56-0.60 |
| | 22 | | 18 | 0.10-0.13 | 0.13-0.16 | 0.16-0.19 | 0.19-0.22 | 0.22-0.25 | 0.25-0.28 | 0.28-0.31 | 0.31-0.34 | 0.34-0.37 | 0.37-0.40 | 0.40-0.43 | 0.43-0.46 | 0.46-0.49 | 0.49-0.52 | 0.52-0.56 | 0.56-0.60 |
| | 23 | Aluminum-cast, alloyed | 18 | 0.10-0.13 | 0.13-0.16 | 0.16-0.19 | 0.19-0.22 | 0.22-0.25 | 0.25-0.28 | 0.28-0.31 | 0.31-0.34 | 0.34-0.37 | 0.37-0.40 | 0.40-0.43 | 0.43-0.46 | 0.46-0.49 | 0.49-0.52 | 0.52-0.56 | 0.56-0.60 |
| | 24 | | 17 | 0.10-0.13 | 0.13-0.16 | 0.16-0.19 | 0.19-0.22 | 0.22-0.25 | 0.25-0.28 | 0.28-0.31 | 0.31-0.34 | 0.34-0.37 | 0.37-0.40 | 0.40-0.43 | 0.43-0.46 | 0.46-0.49 | 0.49-0.52 | 0.52-0.56 | 0.56-0.60 |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | 18 | 0.10-0.13 | 0.13-0.16 | 0.16-0.19 | 0.19-0.22 | 0.22-0.25 | 0.25-0.28 | 0.28-0.31 | 0.31-0.34 | 0.34-0.37 | 0.37-0.40 | 0.40-0.43 | 0.43-0.46 | 0.46-0.49 | 0.49-0.52 | 0.52-0.56 | 0.56-0.60 |
| | 27 | | 16 | 0.10-0.13 | 0.13-0.16 | 0.16-0.19 | 0.19-0.22 | 0.22-0.25 | 0.25-0.28 | 0.28-0.31 | 0.31-0.34 | 0.34-0.37 | 0.37-0.40 | 0.40-0.43 | 0.43-0.46 | 0.46-0.49 | 0.49-0.52 | 0.52-0.56 | 0.56-0.60 |
| | 28 | | 20 | 0.10-0.13 | 0.13-0.16 | 0.16-0.19 | 0.19-0.22 | 0.22-0.25 | 0.25-0.28 | 0.28-0.31 | 0.31-0.34 | 0.34-0.37 | 0.37-0.40 | 0.40-0.43 | 0.43-0.46 | 0.46-0.49 | 0.49-0.52 | 0.52-0.56 | 0.56-0.60 |



REAMERS
RECOMMENDED CUTTING CONDITIONS
推荐加工条件

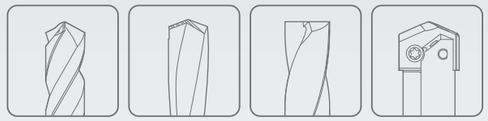
### K2121 SERIES

### HSS-E, CHUCKING REAMERS - QUICK SPIRAL
### HSS-E 夹具绞刀 - 快速螺旋

Vc (切削速度)= (m/min.)
FEED (进给) = (mm/rev.)

| ISO 公制 | VDI 3323 | Material Description 材料描述 | Vc 钻削速度 (m/min) | Feed 进给 (mm/rev) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 2.0 | 4.0 | 8.0 | 10.0 | 12.0 | 14.0 | 16.0 | 20.0 |
| P | 1 | Non-alloy steel | 18 | 0.13-0.16 | 0.16-0.19 | 0.19-0.22 | 0.22-0.25 | 0.25-0.28 | 0.28-0.32 | 0.32-0.36 | 0.36-0.40 |
| | 2 | | 16 | 0.13-0.16 | 0.16-0.19 | 0.19-0.22 | 0.22-0.25 | 0.25-0.28 | 0.28-0.32 | 0.32-0.36 | 0.36-0.40 |
| | 6 | Low alloy steel | 14 | 0.10-0.12 | 0.12-0.14 | 0.14-0.16 | 0.16-0.18 | 0.18-0.21 | 0.21-0.24 | 0.24-0.27 | 0.27-0.30 |
| N | 21 | Aluminum-wrought alloy | 20 | 0.15-0.20 | 0.20-0.25 | 0.25-0.30 | 0.30-0.36 | 0.36-0.42 | 0.42-0.48 | 0.48-0.54 | 0.54-0.60 |
| | 22 | | 20 | 0.15-0.20 | 0.20-0.25 | 0.25-0.30 | 0.30-0.36 | 0.36-0.42 | 0.42-0.48 | 0.48-0.54 | 0.54-0.60 |
| | 23 | Aluminum-cast, alloyed | 20 | 0.15-0.20 | 0.20-0.25 | 0.25-0.30 | 0.30-0.36 | 0.36-0.42 | 0.42-0.48 | 0.48-0.54 | 0.54-0.60 |
| | 24 | | 18 | 0.15-0.20 | 0.20-0.25 | 0.25-0.30 | 0.30-0.36 | 0.36-0.42 | 0.42-0.48 | 0.48-0.54 | 0.54-0.60 |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | 19 | 0.15-0.20 | 0.20-0.25 | 0.25-0.30 | 0.30-0.36 | 0.36-0.42 | 0.42-0.48 | 0.48-0.54 | 0.54-0.60 |
| | 27 | | 18 | 0.15-0.20 | 0.20-0.25 | 0.25-0.30 | 0.30-0.36 | 0.36-0.42 | 0.42-0.48 | 0.48-0.54 | 0.54-0.60 |
| | 28 | | 20 | 0.15-0.20 | 0.20-0.25 | 0.25-0.30 | 0.30-0.36 | 0.36-0.42 | 0.42-0.48 | 0.48-0.54 | 0.54-0.60 |

Global Cutting Tool Leader **YG-1**



# HOLEMAKING

Leading Through Innovation

## HSS & HSSCo8

# COUNTERSINKS

- For Deburring, Chamfering and Countersinking
- 去毛刺, 倒角和深孔

# SELECTION GUIDE
## 选用指南

HOLEMAKING TOOLS

## HSS & HSSCo8
# COUNTERSINKS

For Deburring, Chamfering and Countersinking
去毛刺, 倒角和深孔

Please visit 请访问 globalyg1.com/mat for material search 查看产品材料

◎ : Excellent (优秀) ○ : Good (良好)

Recommended cutting conditions (推荐加工条件) : p. A409

| SERIES 系列 | C1109 C3109 | C1119 C3119 | C1136 C3136 | C1139 C3139 | C1132 C3132 |
|---|---|---|---|---|---|
| STANDARD 标准 | YG STD | YG STD | DIN334C | DIN335C | YG STD |
| POINT ANGLE 钻尖角度 | 90° | 90° | 60° | 90° | 120° |
| SIZE MIN 最小尺寸 | D10.0 | D10.0 | D6.3 | D4.3 | D8.0 |
| SIZE MAX 最大尺寸 | D50.0 | D50.0 | D25.0 | D31.0 | D25.0 |
| PAGE 页数 | A404 | A405 | A406 | A407 | A408 |
| SURFACE TREATMENT 表面处理 | Bright | | Bright | | |

| ISO 公制 | VDI 3323 | Material Description 材料描述 | Composition / Structure / Heat Treatment 成分 / 组织 / 热处理 | | HB 布氏硬度 | HRc 硬度 | C1109 C3109 | C1119 C3119 | C1136 C3136 | C1139 C3139 | C1132 C3132 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | About 0.15% C | Annealed | 125 | | ○ | ○ | ◎ | ◎ | ◎ | 1 P |
| | 2 | | About 0.45% C | Annealed | 190 | 13 | ○ | ○ | ◎ | ◎ | ◎ | 2 |
| | 3 | | About 0.45% C | Quenched & Tempered | 250 | 25 | ○ | ○ | ○ | ○ | ○ | 3 |
| | 4 | | About 0.75% C | Annealed | 270 | 28 | ○ | ○ | ○ | ○ | ○ | 4 |
| | 5 | | About 0.75% C | Quenched & Tempered | 300 | 32 | ○ | ○ | ○ | ○ | ○ | 5 |
| | 6 | Low alloy steel | | Annealed | 180 | 10 | | | | | | 6 |
| | 7 | | | Quenched & Tempered | 275 | 29 | | | | | | 7 |
| | 8 | | | Quenched & Tempered | 300 | 32 | | | | | | 8 |
| | 9 | | | Quenched & Tempered | 350 | 38 | | | | | | 9 |
| | 10 | High alloyed steel, and tool steel | | Annealed | 200 | 15 | | | | | | 10 |
| | 11 | | | Quenched & Tempered | 325 | 35 | | | | | | 11 |
| M | 12 | Stainless steel | Ferritic / Martensitic | Annealed | 200 | 15 | ○ | ○ | ○ | ○ | ○ | 12 M |
| | 13 | | Martensitic | Quenched & Tempered | 240 | 23 | ○ | ○ | ○ | ○ | ○ | 13 |
| | 14 | | Austenitic | | 180 | 10 | ○ | ○ | ○ | ○ | ○ | 14 |
| K | 15 | Grey cast iron | Pearlitic / ferritic | | 180 | 10 | ○ | ○ | ◎ | ◎ | ◎ | 15 K |
| | 16 | | Pearlitic (Martensitic) | | 260 | 26 | ○ | ○ | ○ | ○ | ○ | 16 |
| | 17 | Nodular cast iron | Ferritic | | 160 | 3 | ○ | ○ | ○ | ○ | ○ | 17 |
| | 18 | | Pearlitic | | 250 | 25 | ○ | ○ | ○ | ○ | ○ | 18 |
| | 19 | Malleable cast iron | Ferritic | | 130 | | ○ | ○ | ○ | ○ | ○ | 19 |
| | 20 | | Pearlitic | | 230 | 21 | ○ | ○ | ○ | ○ | ○ | 20 |
| N | 21 | Aluminum-wrought alloy | Not Curable | | 60 | | ○ | ○ | ◎ | ◎ | ◎ | 21 N |
| | 22 | | Curable | Hardened | 100 | | ○ | ○ | ○ | ○ | ○ | 22 |
| | 23 | Aluminum-cast, alloyed | ≤ 12% Si, Not Curable | | 75 | | ○ | ○ | ○ | ○ | ○ | 23 |
| | 24 | | ≤ 12% Si, Curable | Hardened | 90 | | ○ | ○ | ○ | ○ | ○ | 24 |
| | 25 | | > 12% Si, Not Curable | | 130 | | ○ | ○ | ○ | ○ | ○ | 25 |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | Cutting Alloys, PB>1% | | 110 | | ○ | ○ | ○ | ○ | ○ | 26 |
| | 27 | | CuZn, CuSnZn (Brass) | | 90 | | ○ | ○ | ○ | ○ | ○ | 27 |
| | 28 | | CuSn, lead-free copper and electrolytic copper | | 100 | | ○ | ○ | ○ | ○ | ○ | 28 |
| | 29 | Non Metallic Materials | Duroplastic, Fiber Reinforced Plastic | | | | | | | | | 29 |
| | 30 | | Rubber, Wood, etc. | | | | | | | | | 30 |
| S | 31 | Heat Resistant Super Alloys | Fe Based | Annealed | 200 | 15 | | | | | | 31 S |
| | 32 | | | Cured | 280 | 30 | | | | | | 32 |
| | 33 | | Ni or Co Based | Annealed | 250 | 25 | | | | | | 33 |
| | 34 | | | Cured | 350 | 38 | | | | | | 34 |
| | 35 | | | Cast | 320 | 34 | | | | | | 35 |
| | 36 | Titanium Alloys | Pure Titanium | | 400 Rm | | | | | | | 36 |
| | 37 | | Alpha + Beta Alloys | Hardened | 1050 Rm | | | | | | | 37 |
| H | 38 | Hardened steel | | Hardened | 550 | 55 | | | | | | 38 H |
| | 39 | | | Hardened | 630 | 60 | | | | | | 39 |
| | 40 | Chilled Cast Iron | | Cast | 400 | 42 | | | | | | 40 |
| | 41 | Hardened Cast Iron | | Hardened | 550 | 55 | | | | | | 41 |





CARBIDE
HSS
i-ONE DRILLS
i-DREAM DRILLS
DREAM DRILLS -PRO
DREAM DRILLS -GENERAL
DREAM DRILLS -SOFT
DREAM DRILLS -HIGH FEED
DREAM DRILLS -FLAT BOTTOM
DREAM DRILLS -INOX
DREAM DRILLS -ALU
DREAM DRILLS -CFRP
DREAM DRILLS -MQL
DREAM DRILLS for HIGH HARDENED STEELS
GENERAL CARBIDE DRILLS
MULTI-1 DRILLS
GOLD-P DRILLS
SUPER-GP DRILLS
WORM PATTERN DRILLS
STRAIGHT SHANK DRILLS
TAPER SHANK DRILLS
NC-SPOTTING DRILLS
CENTER DRILLS
SPADE DRILLS
REAMERS
COUNTER SINKS
COUNTER BORES
TECHNICAL DATA

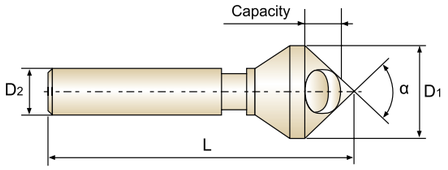
# COUNTERSINKS

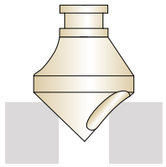
**C1109 SERIES**
**C3109 SERIES**

## HSS & HSSCo8, DEBURRING TOOL with HOLE
## HSS & HSSCo8, 带孔的去毛刺刀具

▶ For light metals and plastics.
▶ For deburring and small chamfers.
▶ Best surface finish.
▶ Works without vibrations.

▶ 用于轻金属和塑料
▶ 用于去毛刺和小的倒角
▶ 最好的表面料糙度
▶ 加工时没有振动



YG STD

p. A409

Recommended ToolHolder — Plain Shank — ER COLLET CHUCK — Page D73 - 115

Unit(单位) : mm

| EDP No. (uncoating) 型号 | | Point Angle 钻尖角度 | Cutter Diameter 刃部直径 | Shank Diameter 柄部直径 | Overall Length 全长 | Capacity 生产量 |
|---|---|---|---|---|---|---|
| HSSCo8 | HSS | α | D1 | D2 | L(±1) | min最小/max最大 |
| **C1109100** | **C3109100** | 90° | **10.0** | 6 | 45 | 2 - 5 |
| **C1109150** | **C3109150** | 90° | **15.0** | 8 | 55 | 6 - 14 |
| **C1109200** | **C3109200** | 90° | **20.0** | 10 | 65 | 8 - 18 |
| **C1109250** | **C3109250** | 90° | **25.0** | 12 | 78 | 10 - 23 |
| **C1109300** | **C3109300** | 90° | **30.0** | 12 | 88 | 12 - 28 |
| **C1109350** | **C3109350** | 90° | **35.0** | 16 | 110 | 14 - 33 |
| **C1109400** | **C3109400** | 90° | **40.0** | 16 | 115 | 16 - 38 |
| **C1109450** | **C3109450** | 90° | **45.0** | 16 | 120 | 18 - 43 |
| **C1109500** | **C3109500** | 90° | **50.0** | 16 | 130 | 20 - 48 |

▶ TiN & TiCN coating are available on your request.
TiN&TiCN涂层可根据客户要求进行加工.

| Cutter Dia. Tolerance(mm) 刃部直径公差 | Shank Dia.Tolerance(mm) 柄部公差 | Point Angle Tolerance(°) 钻尖角度公差 |
|---|---|---|
| +0.3/-0 | h9 | +0/-1 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ○ | ○ | ○ | ○ | ○ | | | | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400Rm | 1050Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | | |



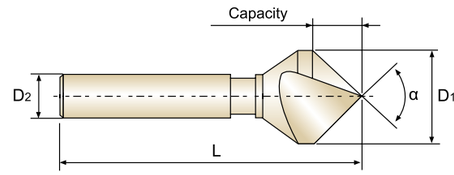
# COUNTERSINKS

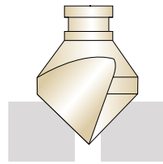
**C1119 SERIES**
**C3119 SERIES**

## HSS & HSSCo8, SINGLE FLUTE CHAMFERING CUTTERS
## HSS & HSSCo8, 单刃倒角刀具

▶ For wood and hard plastics.
▶ Can drill in sheet materials.
▶ Easy to resharp.
▶ Works without vibrations.

▶ 用于木头和硬塑料
▶ 可以在薄板上钻孔
▶ 容易再研磨
▶ 加工时没有振动



YG STD

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Recommended ToolHolder — Plain Shank — ER COLLET CHUCK — Page D73 - 115

Unit(单位) : mm

| EDP No. (uncoating) 型号 | | Point Angle 钻尖角度 | Cutter Diameter 刃部直径 | Shank Diameter 柄部直径 | Overall Length 全长 | Capacity 生产量 |
|---|---|---|---|---|---|---|
| HSSCo8 | HSS | α | D1 | D2 | L(±1) | min最小/max最大 |
| **C1119100** | **C3119100** | 90° | **10.0** | 6 | 45 | 1 - 10 |
| **C1119150** | **C3119150** | 90° | **15.0** | 8 | 55 | 2 - 15 |
| **C1119200** | **C3119200** | 90° | **20.0** | 10 | 65 | 2 - 20 |
| **C1119250** | **C3119250** | 90° | **25.0** | 12 | 78 | 3 - 25 |
| **C1119300** | **C3119300** | 90° | **30.0** | 12 | 88 | 3 - 30 |
| **C1119350** | **C3119350** | 90° | **35.0** | 16 | 110 | 4 - 35 |
| **C1119400** | **C3119400** | 90° | **40.0** | 16 | 115 | 5 - 40 |
| **C1119450** | **C3119450** | 90° | **45.0** | 16 | 120 | 10 - 45 |
| **C1119500** | **C3119500** | 90° | **50.0** | 16 | 130 | 12 - 50 |

▶ TiN & TiCN coating are available on your request.
TiN&TiCN涂层可根据客户要求进行加工.

| Cutter Dia. Tolerance(mm) 刃部直径公差 | Shank Dia.Tolerance(mm) 柄部公差 | Point Angle Tolerance(°) 钻尖角度公差 |
|---|---|---|
| +0.3/-0 | h9 | +0/-1 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ○ | ○ | ○ | ○ | ○ | | | | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400Rm | 1050Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | | |

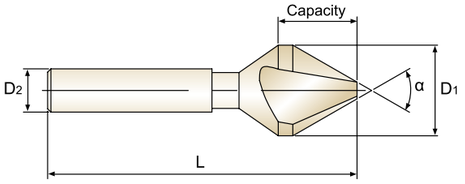
# COUNTERSINKS

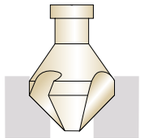
**C1136 SERIES**
**C3136 SERIES**

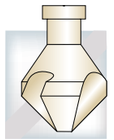
## HSS & HSSCo8, THREE FLUTE COUNTERSINKS (60°)
## HSS & HSSCo8, 3槽沉孔刀（60°）

▶ Self-centering(3 flutes)
▶ For deburring, chamfering and countersinking
▶ Hand using
▶ Longitudinal chamfers and contouring
▶ Works without vibrations

▶ 自定心（3槽）
▶ 去毛刺，倒角和沉孔
▶ 手用
▶ 倒角和修形
▶ 加工时没有振动





DIN 334C

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Recommended ToolHolder — Plain Shank: ER COLLET CHUCK — Page: D73 - 115

Unit(单位) : mm

| EDP No. (uncoating) 型号 | | Point Angle 钻尖角度 | Cutter Diameter 刃部直径 | Shank Diameter 柄部直径 | Overall Length 全长 | Capacity 生产量 |
|---|---|---|---|---|---|---|
| HSSCo8 | HSS | α | D1 | D2 | L(±1) | min最小/max最大 |
| **C1136063** | **C3136063** | 60° | **6.3** | 5 | 45 | 1.6~6.3 |
| **C1136080** | **C3136080** | 60° | **8.0** | 6 | 50 | 2.0~8.0 |
| **C1136100** | **C3136100** | 60° | **10.0** | 6 | 50 | 2.5~10.0 |
| **C1136125** | **C3136125** | 60° | **12.5** | 8 | 56 | 3.2~12.5 |
| **C1136160** | **C3136160** | 60° | **16.0** | 10 | 63 | 4.0~16.0 |
| **C1136200** | **C3136200** | 60° | **20.0** | 10 | 67 | 5.0~20.0 |
| **C1136250** | **C3136250** | 60° | **25.0** | 10 | 71 | 6.3~25.0 |

▶ TiN & TiCN coating are available on your request.
TiN&TiCN涂层可根据客户要求进行加工.

| Cutter Dia. Tolerance(mm) 刃部直径公差 | Shank Dia.Tolerance(mm) 柄部公差 | Point Angle Tolerance(°) 钻尖角度公差 |
|---|---|---|
| ±0.05 | h9 | +0/-1 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ○ | ○ | ○ | | | | | | | ○ | ○ | ○ | ◎ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400Rm | 1050Rm | 550 | 630 | 400 | 550 |
| Recommended | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | | |





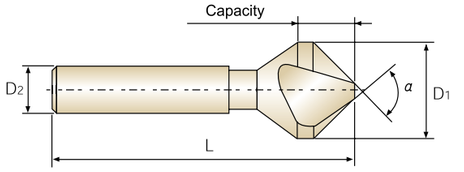
# COUNTERSINKS

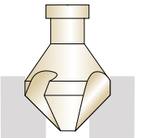
**C1139 SERIES**
**C3139 SERIES**

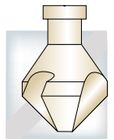
## HSS & HSSCo8, THREE FLUTE COUNTERSINKS (90°)
## HSS & HSSCo8, 3刃沉孔刀

▶ Self-centering(3 flutes).
▶ Designed for 90°capscrews countersinking.
▶ Hand using.
▶ Longitudinal chamfers and contouring.
▶ Works without vibrations

▶ 自定心 (3槽)
▶ 为90° 螺帽钉做埋头孔而设计的
▶ 手用
▶ 倒角和修形
▶ 加工时没有振动





DIN 335C

p. A410

Recommended ToolHolder — Plain Shank: ER COLLET CHUCK — Page: D73 - 115

Unit(单位) : mm

| EDP No. (uncoating) 型号 | | Point Angle 钻尖角度 | Cutter Diameter 刃部直径 | Shank Diameter 柄部直径 | Overall Length 全长 | Capacity 生产量 |
|---|---|---|---|---|---|---|
| HSSCo8 | HSS | α | D1 | D2 | L(±1) | min最小/max最大 |
| **C1139043** | **C3139043** | 90° | **4.3** | 4 | 40 | 1.3 - 4.3 |
| **C1139050** | **C3139050** | 90° | **5.0** | 4 | 40 | 1.5 - 5.0 |
| **C1139060** | **C3139060** | 90° | **6.0** | 5 | 45 | 1.5 - 6.0 |
| **C1139063** | **C3139063** | 90° | **6.3** | 5 | 45 | 1.5 - 6.3 |
| **C1139070** | **C3139070** | 90° | **7.0** | 6 | 50 | 1.8 - 7.0 |
| **C1139080** | **C3139080** | 90° | **8.0** | 6 | 50 | 2.0 - 8.0 |
| **C1139083** | **C3139083** | 90° | **8.3** | 6 | 50 | 2.0 - 8.3 |
| **C1139100** | **C3139100** | 90° | **10.0** | 6 | 50 | 2.5 - 10.0 |
| **C1139104** | **C3139104** | 90° | **10.4** | 6 | 50 | 2.5 - 10.4 |
| **C1139115** | **C3139115** | 90° | **11.5** | 8 | 56 | 2.8 - 11.5 |
| **C1139124** | **C3139124** | 90° | **12.4** | 8 | 56 | 2.8 - 12.4 |
| **C1139150** | **C3139150** | 90° | **15.0** | 10 | 60 | 3.2 - 15.0 |
| **C1139165** | **C3139165** | 90° | **16.5** | 10 | 60 | 3.2 - 16.5 |
| **C1139190** | **C3139190** | 90° | **19.0** | 10 | 63 | 3.5 - 19.0 |
| **C1139205** | **C3139205** | 90° | **20.5** | 10 | 63 | 3.5 - 20.5 |
| **C1139230** | **C3139230** | 90° | **23.0** | 10 | 67 | 3.8 - 23.0 |
| **C1139250** | **C3139250** | 90° | **25.0** | 10 | 67 | 3.8 - 25.0 |
| **C1139300** | **C3139300** | 90° | **30.0** | 12 | 71 | 4.2 - 30.0 |
| **C1139310** | **C3139310** | 90° | **31.0** | 12 | 71 | 4.2 - 31.0 |

▶ TiN & TiCN coating are available on your request.
TiN&TiCN涂层可根据客户要求进行加工.

| Cutter Dia. Tolerance(mm) 刃部直径公差 | Shank Dia.Tolerance(mm) 柄部公差 | Point Angle Tolerance(°) 钻尖角度公差 |
|---|---|---|
| ±0.05 | h9 | +0/-1 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ○ | ○ | ○ | | | | | | | ○ | ○ | ○ | ◎ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400Rm | 1050Rm | 550 | 630 | 400 | 550 |
| Recommended | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | | |

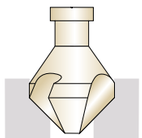
# COUNTERSINKS

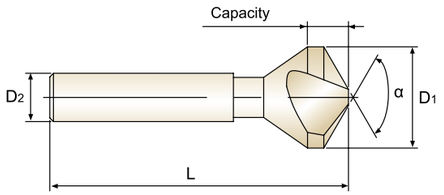
**C1132 SERIES**
**C3132 SERIES**

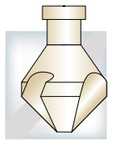
## HSS & HSSCo8, THREE FLUTE COUNTERSINKS (120°)
## HSS & HSSCo8, 3槽沉孔刀（120°）

- ▶ Self-centering(3 flutes)
- ▶ For deburring, chamfering and countersinking
- ▶ Hand using
- ▶ Longitudinal chamfers and contouring
- ▶ Works without vibrations

- ▶ 自定心（3槽）
- ▶ 去毛刺和小的倒角
- ▶ 手用
- ▶ 倒角和修形
- ▶ 加工时没有振动





YG STD

p. A410

Recommended ToolHolder — Plain Shank: ER COLLET CHUCK — Page: D73 - 115

Unit(单位) : mm

| EDP No. (uncoating) 型号 | | Point Angle 钻尖角度 | Cutter Diameter 刃部直径 | Shank Diameter 柄部直径 | Overall Length 全长 | Capacity 生产量 |
|---|---|---|---|---|---|---|
| HSSCo8 | HSS | α | $D_1$ | $D_2$ | L(±1) | min最小/max最大 |
| **C1132080** | **C3132080** | 120° | **8.0** | 6 | 49 | 2.0~8.0 |
| **C1132125** | **C3132125** | 120° | **12.5** | 8 | 54 | 2.8~12.5 |
| **C1132160** | **C3132160** | 120° | **16.0** | 10 | 57 | 3.2~16.0 |
| **C1132200** | **C3132200** | 120° | **20.0** | 10 | 59 | 3.5~20.0 |
| **C1132250** | **C3132250** | 120° | **25.0** | 10 | 65 | 3.8~25.0 |

▶ TiN & TiCN coating are available on your request.
TiN&TiCN涂层可根据客户要求进行加工.

| Cutter Dia. Tolerance(mm) 刃部直径公差 | Shank Dia.Tolerance(mm) 柄部公差 | Point Angle Tolerance(°) 钻尖角度公差 |
|---|---|---|
| ±0.05 | h9 | +0/-1 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ○ | ○ | ○ | | | | | | | ○ | ○ | ○ | ◎ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400Rm | 1050Rm | 550 | 630 | 400 | 550 |
| Recommended | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | | |



# COUNTERSINKS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工条件

**C1109, C3109, C1119, C3119 SERIES**

## DEBURRING TOOL with HOLE
## 1 FLUTE CHAMFERING CUTTERS

Vc (切削速度)= (m/min.)
FEED (进给) = (mm/rev.)

| ISO 公制 | VDI 3323 | Material Description 材料描述 | Vc 钻削速度 (m/min) | Feed 进给 (mm/rev) 10.0 | 15.0 | 20.0 | 25.0 | 30.0 | 40.0 | 50.0 |
|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | **40** | 0.10-0.12 | 0.12-0.15 | 0.15-0.18 | 0.18-0.21 | 0.21-0.24 | 0.24-0.27 | 0.27-0.30 |
| | 2 | | **40** | 0.10-0.12 | 0.12-0.15 | 0.15-0.18 | 0.18-0.21 | 0.21-0.24 | 0.24-0.27 | 0.27-0.30 |
| | 3 | | **25** | 0.08-0.10 | 0.10-0.12 | 0.12-0.15 | 0.15-0.18 | 0.18-0.21 | 0.21-0.24 | 0.24-0.27 |
| | 4 | | **18** | 0.06-0.08 | 0.08-0.10 | 0.10-0.12 | 0.12-0.14 | 0.14-0.16 | 0.16-0.18 | 0.18-0.20 |
| | 5 | | **18** | 0.06-0.08 | 0.08-0.10 | 0.10-0.12 | 0.12-0.14 | 0.14-0.16 | 0.16-0.18 | 0.18-0.20 |
| M | 12 | Stainless steel | **8** | 0.05-0.07 | 0.07-0.09 | 0.07-0.09 | 0.09-0.11 | 0.09-0.11 | 0.11-0.14 | 0.11-0.14 |
| | 13 | | **7** | 0.05-0.07 | 0.07-0.09 | 0.07-0.09 | 0.09-0.11 | 0.09-0.11 | 0.11-0.14 | 0.11-0.14 |
| | 14 | | **6** | 0.05-0.07 | 0.07-0.09 | 0.07-0.09 | 0.09-0.11 | 0.09-0.11 | 0.11-0.14 | 0.11-0.14 |
| K | 15 | Grey cast iron | **28** | 0.13-0.15 | 0.15-0.18 | 0.18-0.21 | 0.21-0.24 | 0.24-0.27 | 0.27-0.30 | 0.30-0.34 |
| | 16 | | **24** | 0.12-0.14 | 0.14-0.17 | 0.17-0.20 | 0.20-0.23 | 0.23-0.26 | 0.26-0.29 | 0.29-0.33 |
| | 17 | Nodular cast iron | **24** | 0.13-0.15 | 0.15-0.18 | 0.18-0.21 | 0.21-0.24 | 0.24-0.27 | 0.27-0.30 | 0.30-0.34 |
| | 18 | | **20** | 0.12-0.14 | 0.14-0.17 | 0.17-0.20 | 0.20-0.23 | 0.23-0.26 | 0.26-0.29 | 0.29-0.33 |
| | 19 | Malleable cast iron | **24** | 0.13-0.15 | 0.15-0.18 | 0.18-0.21 | 0.21-0.24 | 0.24-0.27 | 0.27-0.30 | 0.30-0.34 |
| | 20 | | **20** | 0.12-0.14 | 0.14-0.17 | 0.17-0.20 | 0.20-0.23 | 0.23-0.26 | 0.26-0.29 | 0.29-0.33 |
| N | 21 | Aluminum-wrought alloy | **56** | 0.15-0.18 | 0.18-0.21 | 0.21-0.24 | 0.24-0.27 | 0.27-0.30 | 0.30-0.33 | 0.33-0.36 |
| | 22 | | **56** | 0.15-0.18 | 0.18-0.21 | 0.21-0.24 | 0.24-0.27 | 0.27-0.30 | 0.30-0.33 | 0.33-0.36 |
| | 23 | Aluminum-cast, alloyed | **54** | 0.15-0.18 | 0.18-0.21 | 0.21-0.24 | 0.24-0.27 | 0.27-0.30 | 0.30-0.33 | 0.33-0.36 |
| | 24 | | **52** | 0.15-0.18 | 0.18-0.21 | 0.21-0.24 | 0.24-0.27 | 0.27-0.30 | 0.30-0.33 | 0.33-0.36 |
| | 25 | | **50** | 0.15-0.18 | 0.18-0.21 | 0.21-0.24 | 0.24-0.27 | 0.27-0.30 | 0.30-0.33 | 0.33-0.36 |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | **38** | 0.16-0.19 | 0.19-0.22 | 0.22-0.25 | 0.25-0.28 | 0.28-0.31 | 0.31-0.34 | 0.34-0.37 |
| | 27 | | **35** | 0.16-0.19 | 0.19-0.22 | 0.22-0.25 | 0.25-0.28 | 0.28-0.31 | 0.31-0.34 | 0.34-0.37 |
| | 28 | | **25** | 0.15-0.18 | 0.18-0.21 | 0.21-0.24 | 0.24-0.27 | 0.27-0.30 | 0.30-0.33 | 0.33-0.36 |

# COUNTERSINKS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工条件

### C1136, C3136, C1139, C3139, C1132, C3132 SERIES

### 3 FLUTE COUNTERSINKS

Vc (切削速度)= (m/min.)
FEED (进给) = (mm/rev.)

| ISO 公制 | VDI 3323 | Material Description 材料描述 | Vc 钻削速度 (m/min) | Feed 进给 (mm/rev) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 5.0 | 10.0 | 15.0 | 20.0 | 25.0 | 30.0 | 40.0 | 50.0 |
| P | 1 | Non-alloy steel | 20 | 0.12-0.16 | 0.16-0.20 | 0.20-0.23 | 0.23-0.26 | 0.26-0.29 | 0.29-0.33 | 0.33-0.37 | 0.37-0.41 |
| | 2 | | 20 | 0.12-0.16 | 0.16-0.20 | 0.20-0.23 | 0.23-0.26 | 0.26-0.29 | 0.29-0.33 | 0.33-0.37 | 0.37-0.41 |
| | 3 | | 13 | 0.10-0.14 | 0.14-0.18 | 0.18-0.21 | 0.21-0.24 | 0.24-0.27 | 0.27-0.31 | 0.31-0.35 | 0.35-0.39 |
| | 4 | | 10 | 0.06-0.10 | 0.10-0.14 | 0.14-0.17 | 0.17-0.21 | 0.21-0.24 | 0.24-0.27 | 0.27-0.31 | 0.31-0.35 |
| | 5 | | 10 | 0.06-0.10 | 0.10-0.14 | 0.14-0.17 | 0.17-0.21 | 0.21-0.24 | 0.24-0.27 | 0.27-0.31 | 0.31-0.35 |
| M | 12 | Stainless steel | 6 | 0.06-0.08 | 0.06-0.08 | 0.08-0.10 | 0.08-0.10 | 0.10-0.12 | 0.10-0.12 | 0.12-0.15 | 0.12-0.15 |
| | 13 | | 5 | 0.06-0.08 | 0.06-0.08 | 0.08-0.10 | 0.08-0.10 | 0.10-0.12 | 0.10-0.12 | 0.12-0.15 | 0.12-0.15 |
| | 14 | | 4 | 0.06-0.08 | 0.06-0.08 | 0.08-0.10 | 0.08-0.10 | 0.10-0.12 | 0.10-0.12 | 0.12-0.15 | 0.12-0.15 |
| K | 15 | Grey cast iron | 22 | 0.09-0.11 | 0.11-0.13 | 0.13-0.16 | 0.16-0.19 | 0.19-0.22 | 0.22-0.25 | 0.25-0.28 | 0.28-0.32 |
| | 16 | | 17 | 0.08-0.10 | 0.10-0.12 | 0.12-0.15 | 0.15-0.18 | 0.18-0.21 | 0.21-0.24 | 0.24-0.27 | 0.27-0.31 |
| | 17 | Nodular cast iron | 17 | 0.09-0.11 | 0.11-0.13 | 0.13-0.16 | 0.16-0.19 | 0.19-0.22 | 0.22-0.25 | 0.25-0.28 | 0.28-0.32 |
| | 18 | | 15 | 0.08-0.10 | 0.10-0.12 | 0.12-0.15 | 0.15-0.18 | 0.18-0.21 | 0.21-0.24 | 0.24-0.27 | 0.27-0.31 |
| | 19 | Malleable cast iron | 17 | 0.09-0.11 | 0.11-0.13 | 0.13-0.16 | 0.16-0.19 | 0.19-0.22 | 0.22-0.25 | 0.25-0.28 | 0.28-0.32 |
| | 20 | | 15 | 0.08-0.10 | 0.10-0.12 | 0.12-0.15 | 0.15-0.18 | 0.18-0.21 | 0.21-0.24 | 0.24-0.27 | 0.27-0.31 |
| N | 21 | Aluminum-wrought alloy | 42 | 0.15-0.18 | 0.18-0.21 | 0.21-0.24 | 0.24-0.27 | 0.27-0.31 | 0.31-0.35 | 0.35-0.40 | 0.40-0.45 |
| | 22 | | 42 | 0.15-0.18 | 0.18-0.21 | 0.21-0.24 | 0.24-0.27 | 0.27-0.31 | 0.31-0.35 | 0.35-0.40 | 0.40-0.45 |
| | 23 | Aluminum-cast, alloyed | 39 | 0.15-0.18 | 0.18-0.21 | 0.21-0.24 | 0.24-0.27 | 0.27-0.31 | 0.31-0.35 | 0.35-0.40 | 0.40-0.45 |
| | 24 | | 37 | 0.12-0.15 | 0.15-0.18 | 0.18-0.21 | 0.21-0.24 | 0.24-0.28 | 0.28-0.32 | 0.32-0.37 | 0.37-0.42 |
| | 25 | | 35 | 0.15-0.18 | 0.18-0.21 | 0.21-0.24 | 0.24-0.27 | 0.27-0.31 | 0.31-0.35 | 0.35-0.40 | 0.40-0.45 |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | 28 | 0.12-0.15 | 0.15-0.18 | 0.18-0.21 | 0.21-0.24 | 0.24-0.28 | 0.28-0.32 | 0.32-0.37 | 0.37-0.42 |
| | 27 | | 25 | 0.12-0.15 | 0.15-0.18 | 0.18-0.21 | 0.21-0.24 | 0.24-0.28 | 0.28-0.32 | 0.32-0.37 | 0.37-0.42 |
| | 28 | | 15 | 0.12-0.15 | 0.15-0.18 | 0.18-0.21 | 0.21-0.24 | 0.24-0.28 | 0.28-0.32 | 0.32-0.37 | 0.37-0.42 |

Leading Through Innovation

HSS-E

# COUNTERBORES

- For Machining Screw Head Seats
- 用于加工螺钉头座

## SELECTION GUIDE
## 选用指南

HOLEMAKING TOOLS

| SERIES 系列 | EL950 | | |
|---|---|---|---|
| TYPE 类型 | MEDIUM | FINE | BEOFRE THREADING |
| PILOT DIA. 导柱直径 | 3.4~14.0 | 3.2~13.0 | 2.5~10.2 |
| CUTTER DIA. 刀部直径 | 6.0~20.0 | | |
| PAGE 页数 | A413 | | |
| SURFACE TREATMENT 表面处理 | Bright | | |

# HSS-E
# COUNTERBORES

For Machining Screw Head Seats
用于加工螺钉头座

Please visit 请访问 globalyg1.com/mat for material search 查看产品材料

◎ : Excellent (优秀) ○ : Good (良好)

Recommended cutting conditions (推荐加工条件) : p. A415

| ISO 公制 | VDI 3323 | Material Description 材料描述 | Composition / Structure / Heat Treatment 成分 / 组织 / 热处理 | | HB 布氏硬度 | HRc 硬度 | |
|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | About 0.15% C | Annealed | 125 | | ◎ |
| | 2 | | About 0.45% C | Annealed | 190 | 13 | ◎ |
| | 3 | | About 0.45% C | Quenched & Tempered | 250 | 25 | ◎ |
| | 4 | | About 0.75% C | Annealed | 270 | 28 | ◎ |
| | 5 | | About 0.75% C | Quenched & Tempered | 300 | 32 | ◎ |
| | 6 | Low alloy steel | | Annealed | 180 | 10 | ◎ |
| | 7 | | | Quenched & Tempered | 275 | 29 | ◎ |
| | 8 | | | Quenched & Tempered | 300 | 32 | ◎ |
| | 9 | | | Quenched & Tempered | 350 | 38 | ○ |
| | 10 | High alloyed steel, and tool steel | | Annealed | 200 | 15 | ◎ |
| | 11 | | | Quenched & Tempered | 325 | 35 | ○ |
| M | 12 | Stainless steel | Ferritic / Martensitic | Annealed | 200 | 15 | |
| | 13 | | Martensitic | Quenched & Tempered | 240 | 23 | |
| | 14 | | Austenitic | | 180 | 10 | |
| K | 15 | Grey cast iron | Pearlitic / ferritic | | 180 | 10 | |
| | 16 | | Pearlitic (Martensitic) | | 260 | 26 | |
| | 17 | Nodular cast iron | Ferritic | | 160 | 3 | |
| | 18 | | Pearlitic | | 250 | 25 | |
| | 19 | Malleable cast iron | Ferritic | | 130 | | |
| | 20 | | Pearlitic | | 230 | 21 | |
| N | 21 | Aluminum-wrought alloy | Not Curable | | 60 | | ○ |
| | 22 | | Curable | Hardened | 100 | | ○ |
| | 23 | Aluminum-cast, alloyed | ≤ 12% Si, Not Curable | | 75 | | ○ |
| | 24 | | ≤ 12% Si, Curable | Hardened | 90 | | ○ |
| | 25 | | > 12% Si, Not Curable | | 130 | | |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | Cutting Alloys, PB>1% | | 110 | | |
| | 27 | | CuZn, CuSnZn (Brass) | | 90 | | |
| | 28 | | CuSn, lead-free copper and electrolytic copper | | 100 | | |
| | 29 | Non Metallic Materials | Duroplastic, Fiber Reinforced Plastic | | | | |
| | 30 | | Rubber, Wood, etc. | | | | |
| S | 31 | Heat Resistant Super Alloys | Fe Based | Annealed | 200 | 15 | |
| | 32 | | | Cured | 280 | 30 | |
| | 33 | | Ni or Co Based | Annealed | 250 | 25 | |
| | 34 | | | Cured | 350 | 38 | |
| | 35 | | | Cast | 320 | 34 | |
| | 36 | Titanium Alloys | Pure Titanium | | 400 Rm | | |
| | 37 | | Alpha + Beta Alloys | Hardened | 1050 Rm | | |
| H | 38 | Hardened steel | | Hardened | 550 | 55 | |
| | 39 | | | Hardened | 630 | 60 | |
| | 40 | Chilled Cast Iron | | Cast | 400 | 42 | |
| | 41 | Hardened Cast Iron | | Hardened | 550 | 55 | |



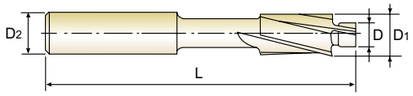
# COUNTERBORES

EL950 SERIES

## HSS-E, 3 FLUTE COUNTERBORES for 180° CAPSCREW
## HSS-E, 平头螺钉(180°)用三刃沉孔锪刀

▶ The counterbores with solid pilot are designed for machining as fillister screw caps or ejector caps in molds.

▶ 带整体导柱锪刀用于模具加工中螺帽或导管安装面的加工.




HSS-E | DIN 373 | 3 | PLAIN

p. A415

Recommended ToolHolder — Plain Shank: ER COLLET CHUCK — Page: D73 - 115

### MEDIUM

Unit(单位) : mm

| EDP No. 型号 | ITEM No. 系列号 | Screw Size 螺丝尺寸 | Pilot Diameter 导杆直径 | Cutter Diameter 刃部直径 | Shank Diameter 柄部直径 | Overall Length 全长 |
|---|---|---|---|---|---|---|
| PLAIN | PLAIN | | D(e8) | D1(z9) | D2(h9) | L |
| EL950003 | YG54M3-M | M3 | 3.4 | 6.0 | 5 | 71 |
| EL950035 | YG54M3.5-M | M3.5 | 3.9 | 6.5 | 5 | 71 |
| EL950004 | YG54M4-M | M4 | 4.5 | 8.0 | 5 | 71 |
| EL950005 | YG54M5-M | M5 | 5.5 | 10.0 | 8 | 80 |
| EL950006 | YG54M6-M | M6 | 6.6 | 11.0 | 8 | 80 |
| EL950008 | YG54M8-M | M8 | 9.0 | 15.0 | 12.5 | 100 |
| EL950010 | YG54M10-M | M10 | 11.0 | 18.0 | 12.5 | 100 |
| EL950012 | YG54M12-M | M12 | 14.0 | 20.0 | 12.5 | 100 |

### FINE

Unit(单位) : mm

| EDP No. 型号 | ITEM No. 系列号 | Screw Size 螺丝尺寸 | Pilot Diameter 导杆直径 | Cutter Diameter 刃部直径 | Shank Diameter 柄部直径 | Overall Length 全长 |
|---|---|---|---|---|---|---|
| PLAIN | PLAIN | | D(e8) | D1(z9) | D2(h9) | L |
| EL950901 | YG54M3-F | M3 | 3.2 | 6.0 | 5 | 71 |
| EL950902 | YG54M3.5-F | M3.5 | 3.7 | 6.5 | 5 | 71 |
| EL950903 | YG54M4-F | M4 | 4.3 | 8.0 | 5 | 71 |
| EL950904 | YG54M5-F | M5 | 5.3 | 10.0 | 8 | 80 |
| EL950905 | YG54M6-F | M6 | 6.4 | 11.0 | 8 | 80 |
| EL950906 | YG54M8-F | M8 | 8.4 | 15.0 | 12.5 | 100 |
| EL950907 | YG54M10-F | M10 | 10.5 | 18.0 | 12.5 | 100 |
| EL950908 | YG54M12-F | M12 | 13.0 | 20.0 | 12.5 | 100 |

▶ NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ○ | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | ○ | | | | | | | | | | | | | | | | | |

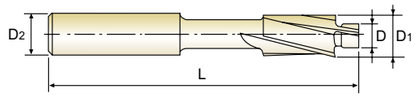
# COUNTERBORES

**EL950** SERIES

## HSS-E, 3 FLUTE COUNTERBORES for 180° CAPSCREW
## HSS-E, 平头螺钉(180°)用三刃沉孔锪刀

▶ The counterbores with solid pilot are designed for machining as fillister screw caps or ejector caps in molds.

▶ 带整体导柱锪刀用于模具加工中螺帽或导管安装面的加工.




HSS-E | DIN 373 | 3 | PLAIN

p. A415

Recommended ToolHolder — Plain Shank — ER COLLET CHUCK — Page D73 - 115

### BEFORE THREADING

Unit(单位) : mm

| EDP No.<br>型号 | ITEM No.<br>系列号 | Screw Size<br>螺丝尺寸 | Pilot Diameter<br>导杆直径 | Cutter Diameter<br>刃部直径 | Shank Diameter<br>柄部直径 | Overall Length<br>全长 |
|---|---|---|---|---|---|---|
| PLAIN | PLAIN | | D(e8) | D1(z9) | D2(h9) | L |
| **EL950909** | **YG54M3-T** | M3 | **2.5** | **6.0** | 5 | 71 |
| **EL950910** | **YG54M3.5-T** | M3.5 | **2.9** | **6.5** | 5 | 71 |
| **EL950911** | **YG54M4-T** | M4 | **3.3** | **8.0** | 5 | 71 |
| **EL950912** | **YG54M5-T** | M5 | **4.2** | **10.0** | 8 | 80 |
| **EL950913** | **YG54M6-T** | M6 | **5.0** | **11.0** | 8 | 80 |
| **EL950914** | **YG54M8-T** | M8 | **6.8** | **15.0** | 12.5 | 100 |
| **EL950915** | **YG54M10-T** | M10 | **8.5** | **18.0** | 12.5 | 100 |
| **EL950916** | **YG54M12-T** | M12 | **10.2** | **20.0** | 12.5 | 100 |

### Tolerances according to DIN 7160 & 7161
### DIN 7160 & 7161 规定的精度

| Tolerance range in µm / 精度范围单位<br>Nominal-Diameter in mm / 公称直径单位 | | | | |
|---|---|---|---|---|
| | from 1 to 3<br>1~3 | over 3 to 6<br>3~6 | over 6 to 10<br>6~10 | over 10 to 18<br>10~18 |
| e8 | - 14<br>- 28 | - 20<br>- 38 | - 25<br>- 47 | - 32<br>- 59 |
| h9 | 0<br>- 25 | 0<br>- 30 | 0<br>- 36 | 0<br>- 43 |

| Tolerance range in µm / 精度范围单位<br>Nominal-Diameter in mm / 公称直径单位 | | | | |
|---|---|---|---|---|
| | from 6 to 10<br>6~10 | over 10 to 14<br>10~14 | over 14 to 18<br>14~18 | over 18 to 24<br>18~24 |
| z9 | + 78<br>+ 42 | + 93<br>+ 50 | +103<br>+ 60 | +125<br>+ 73 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ○ | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400Rm | 1050Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | ○ | | | | | | | | | | | | | | | | | |



# COUNTERBORES

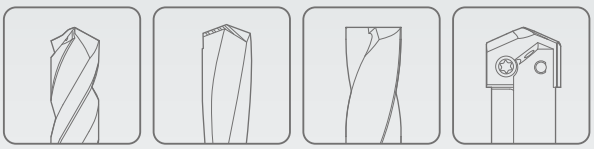
## RECOMMENDED CUTTING CONDITIONS
## 推荐加工条件

**EL950** SERIES — HSS-E, 3 FLUTE COUNTERBORES for 180° CAPSCREW

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/rev.)

| ISO 公制 | VDI 3323 | Material Description 材料描述 | Parameter 参数 | Cutter Diameter 刃部直径 (Ø) 6.0 | 6.5 | 8.0 | 10.0 | 11.0 | 15.0 | 18.0 | 20.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | Vc | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 |
| | | | fz | 0.08 | 0.08 | 0.08 | 0.11 | 0.11 | 0.11 | 0.13 | 0.13 |
| | | | RPM | 1326 | 1224 | 995 | 796 | 723 | 531 | 442 | 398 |
| | | | FEED | 322 | 297 | 242 | 258 | 234 | 172 | 167 | 150 |
| | 2 | | Vc | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 |
| | | | fz | 0.08 | 0.08 | 0.08 | 0.11 | 0.11 | 0.11 | 0.13 | 0.13 |
| | | | RPM | 1273 | 1175 | 955 | 764 | 694 | 509 | 424 | 382 |
| | | | FEED | 309 | 286 | 232 | 248 | 225 | 165 | 160 | 144 |
| | 3 | | Vc | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 |
| | | | fz | 0.08 | 0.08 | 0.08 | 0.11 | 0.11 | 0.11 | 0.13 | 0.13 |
| | | | RPM | 955 | 881 | 716 | 573 | 521 | 382 | 318 | 286 |
| | | | FEED | 232 | 214 | 174 | 186 | 169 | 124 | 120 | 108 |
| | 4 | | Vc | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 |
| | | | fz | 0.08 | 0.08 | 0.08 | 0.11 | 0.11 | 0.11 | 0.13 | 0.13 |
| | | | RPM | 955 | 881 | 716 | 573 | 521 | 382 | 318 | 286 |
| | | | FEED | 232 | 214 | 174 | 186 | 169 | 124 | 120 | 108 |
| | 5 | | Vc | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 |
| | | | fz | 0.08 | 0.08 | 0.08 | 0.11 | 0.11 | 0.11 | 0.13 | 0.13 |
| | | | RPM | 955 | 881 | 716 | 573 | 521 | 382 | 318 | 286 |
| | | | FEED | 232 | 214 | 174 | 186 | 169 | 124 | 120 | 108 |
| | 6 | Low alloy steel | Vc | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 |
| | | | fz | 0.08 | 0.08 | 0.08 | 0.11 | 0.11 | 0.11 | 0.13 | 0.13 |
| | | | RPM | 1273 | 1175 | 955 | 764 | 694 | 509 | 424 | 382 |
| | | | FEED | 309 | 286 | 232 | 248 | 225 | 165 | 160 | 144 |
| | 7 | | Vc | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 |
| | | | fz | 0.08 | 0.08 | 0.08 | 0.11 | 0.11 | 0.11 | 0.13 | 0.13 |
| | | | RPM | 955 | 881 | 716 | 573 | 521 | 382 | 318 | 286 |
| | | | FEED | 232 | 214 | 174 | 186 | 169 | 124 | 120 | 108 |
| | 8 | | Vc | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 |
| | | | fz | 0.08 | 0.08 | 0.08 | 0.11 | 0.11 | 0.11 | 0.13 | 0.13 |
| | | | RPM | 955 | 881 | 716 | 573 | 521 | 382 | 318 | 286 |
| | | | FEED | 232 | 214 | 174 | 186 | 169 | 124 | 120 | 108 |
| | 9 | | Vc | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 |
| | | | fz | 0.08 | 0.08 | 0.08 | 0.11 | 0.11 | 0.11 | 0.13 | 0.13 |
| | | | RPM | 796 | 735 | 597 | 477 | 434 | 318 | 265 | 239 |
| | | | FEED | 193 | 178 | 145 | 155 | 141 | 103 | 100 | 90 |
| | 10 | High alloyed steel, and tool steel | Vc | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 |
| | | | fz | 0.08 | 0.08 | 0.08 | 0.11 | 0.11 | 0.11 | 0.13 | 0.13 |
| | | | RPM | 1273 | 1175 | 955 | 764 | 694 | 509 | 424 | 382 |
| | | | FEED | 309 | 286 | 232 | 248 | 225 | 165 | 160 | 144 |
| | 11 | | Vc | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 |
| | | | fz | 0.08 | 0.08 | 0.08 | 0.11 | 0.11 | 0.11 | 0.13 | 0.13 |
| | | | RPM | 955 | 881 | 716 | 573 | 521 | 382 | 318 | 286 |
| | | | FEED | 232 | 214 | 174 | 186 | 169 | 124 | 120 | 108 |
| N | 21 | Aluminum-wrought alloy | Vc | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 |
| | | | fz | 0.08 | 0.08 | 0.08 | 0.11 | 0.11 | 0.11 | 0.13 | 0.13 |
| | | | RPM | 1592 | 1469 | 1194 | 955 | 868 | 637 | 531 | 477 |
| | | | FEED | 382 | 353 | 286 | 315 | 286 | 210 | 207 | 186 |
| | 22 | | Vc | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 |
| | | | fz | 0.08 | 0.08 | 0.08 | 0.11 | 0.11 | 0.11 | 0.13 | 0.13 |
| | | | RPM | 1592 | 1469 | 1194 | 955 | 868 | 637 | 531 | 477 |
| | | | FEED | 382 | 353 | 286 | 315 | 286 | 210 | 207 | 186 |
| | 23 | Aluminum-cast, alloyed | Vc | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| | | | fz | 0.08 | 0.08 | 0.08 | 0.11 | 0.11 | 0.11 | 0.13 | 0.13 |
| | | | RPM | 1061 | 979 | 796 | 637 | 579 | 424 | 354 | 318 |
| | | | FEED | 255 | 235 | 191 | 210 | 191 | 140 | 138 | 124 |
| | 24 | | Vc | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| | | | fz | 0.08 | 0.08 | 0.08 | 0.11 | 0.11 | 0.11 | 0.13 | 0.13 |
| | | | RPM | 1061 | 979 | 796 | 637 | 579 | 424 | 354 | 318 |
| | | | FEED | 255 | 235 | 191 | 210 | 191 | 140 | 138 | 124 |

Global Cutting Tool Leader **YG-1**



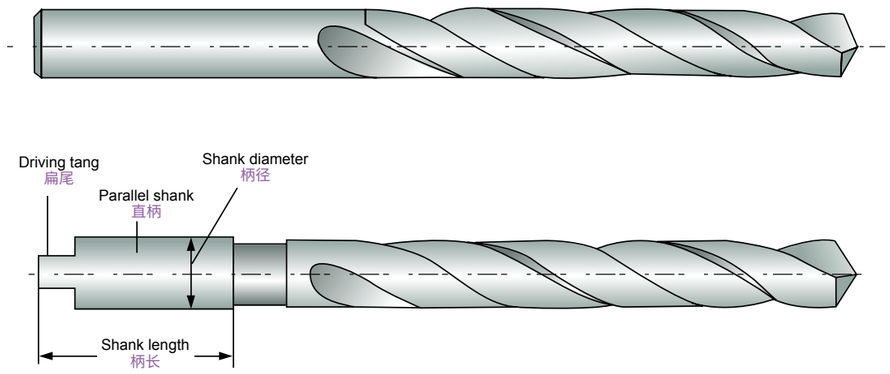
# HOLEMAKING

Being the best through innovation

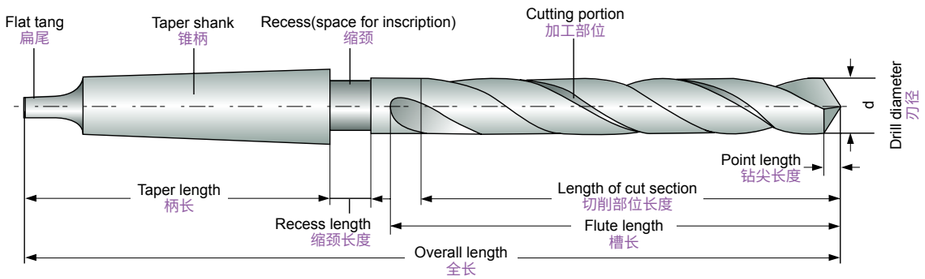
# DRILLS

# TECHNICAL DATA

## 1 Twist Drill with parallel shank
## 直柄螺旋槽钻头



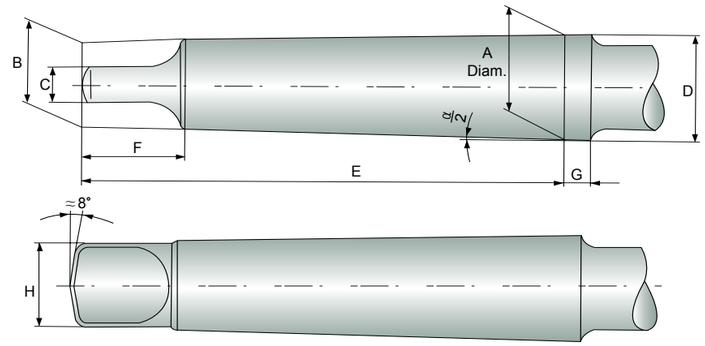

## 2 Twist Drill with taper shank
## 锥柄螺旋槽钻头





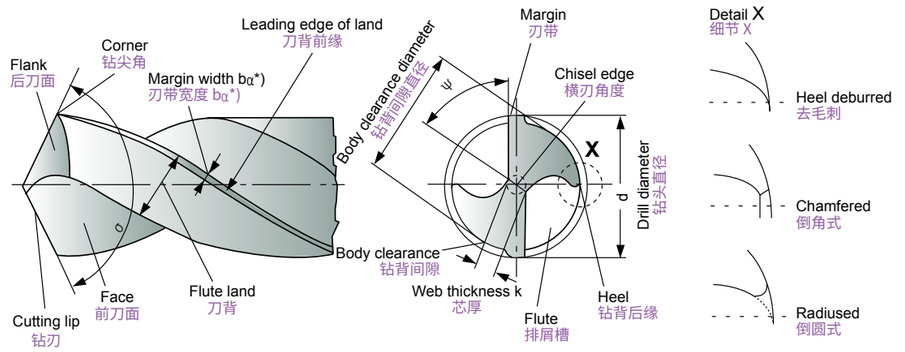



## 3 General dimensions of morse taper shanks
## 莫氏锥柄一般尺寸




| Morse Taper Shank Morsekegelschaft | A mm | B mm | C(h13) mm | D mm | E mm | F(max.) mm | G mm | H(max.) mm | α/2 |
|---|---|---|---|---|---|---|---|---|---|
| **No.1** | 12.065 | 9 | 5.2 | 12.2 | 62 | 13.5 | 3.5 | 8.7 | 1°25'43" |
| **No.2** | 17.780 | 14 | 6.3 | 18.0 | 75 | 16 | 5 | 13.5 | 1°25'50" |
| **No.3** | 23.825 | 19.1 | 7.9 | 24.1 | 94 | 20 | 5 | 18.5 | 1°26'16" |
| **No.4** | 31.267 | 25.2 | 11.9 | 31.6 | 117.5 | 24 | 6.5 | 24.5 | 1°29'15" |
| **No.5** | 44.399 | 36.5 | 15.9 | 44.7 | 149.5 | 29 | 6.5 | 35.7 | 1°30'26" |
| **No.6** | 63.348 | 52.4 | 19 | 63.8 | 210 | 40 | 8 | 51 | 1°29'36" |

## 4 Cutting portion
## 切削部位

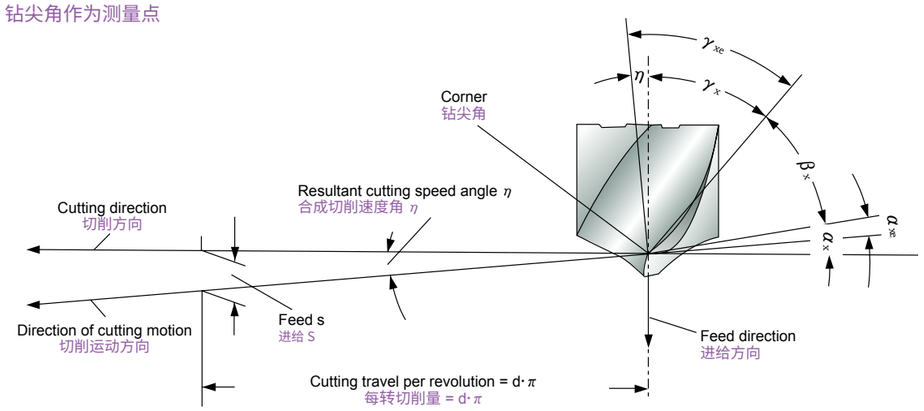



σ = Point angle (sigma) / 钻顶角 (sigma)
Ψ = Chisel edge angle (psi) / 横刃角度 (psi)

In the context of cutting technology, land width $b_\alpha$ is the body clearance land width which is to be by $b_{f\alpha n}$, see DIN 6581.
见DIN 6581，在切削技术资料里， 刃背宽度 bα是钻背间隙宽度bfαn

## 5 Angle at the cutting edges
## 切削刃角度

The corner has been adopted as the observed edge point.
钻尖角作为测量点




$\alpha_x$ = Side clearance angle (alpha) / 后角( $\alpha$ )
$\alpha_{xe}$ = Effective side clearance angle / 工作后角
$\beta_x$ = Side wedge angle (beta) / 楔角( $\beta$ )
$\gamma_x$ = Front rake angle (gamma) / 前角( $\gamma$ )
$\gamma_{xe}$ = Working front rake angle / 工作前角
$\eta$ = Resultant cutting speed angle (eta) / 合成切削速度角( $\eta$ )

Clearance angle **α**, wedge angle **β** and rake angle **ɣ** are measured in the tool orthogonal plane. For details, see DIN 6581, definitions of metal-cutting technology; geometry at the tool edge.
后角 $\alpha$，楔角 $\beta$ 和前角 $\gamma$ 测量是在工具正交平面上测量的. 详情请参阅DIN 6581，
金属切削技术的定义;刀具刃的几何形状.





## 6 Resharpening Twist Drills
## 钻头修磨

**(1) Drills are worn off irregularly. It should be sharpened prior to developing into excessive wear.**
钻头会不时的磨损，在过度磨损前应该进行修磨.

**(2) Resharpening / 再研磨**

① Grind the correct point angle to suit your application. (figure 8)
研磨正确的钻顶角，适应实际应用 (图8)
② Check that both cutting lips have the same angle. On a 130° point, each lip should be 65° toward the axis. The point must be on center, i.e., the chisel edge must produce cutting lips of equal length.(figure 8)
检查两个切割刃角度是否相同. 在一个130度的钻顶角，每个切削刃应该相对轴线65度.
钻顶必须在中心，即横刃必须产生等长的切削刃. (图8)
③ Grind Primary relief and Secondary clearance. (figure 9)
研磨第一后角和第二后角 (图9)
④ Grind web thinning. (figure 10)
修磨横刃 (图10)

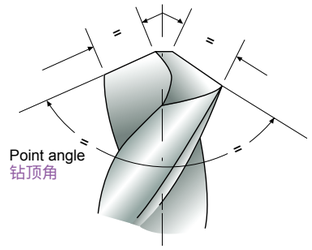



Figure 8
图 8

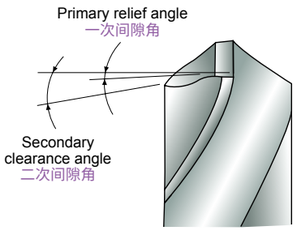



Figure 9
图 9

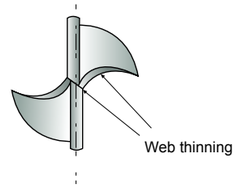
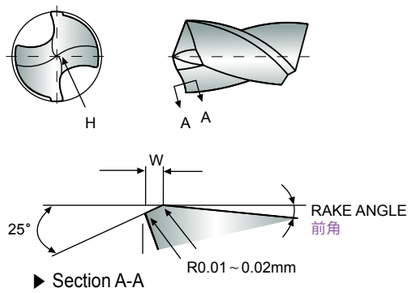



Figure 10
图 10

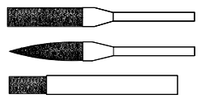
### (3) Honing Guide of Dream Drills
### 梦幻钻头倒棱指导

■ **Dimension of Honing**
**倒棱尺寸**




▶ Section A-A

■ **Scraper**
**金刚锉**



for Roughing (#140)
粗磨
for Finishing (#230～#400)
精磨

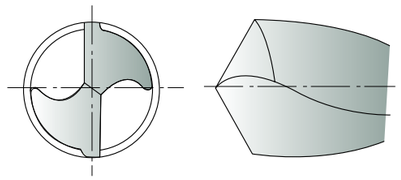
| Work Material | Alloy Steels | Mild Steels | Cast Iron |
|---|---|---|---|
| W(mm) | 0.15～0.2 | 0.1～0.15 | 0.03 |

▶The dimension W of stocked products is 0.1～0.15.
在库品W 值为 0.1~0.15

## Web thinning
## 横刃修磨

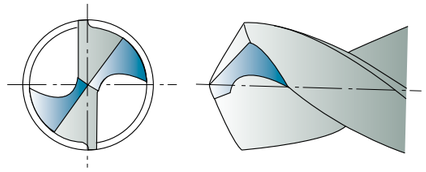
### (1) Without thinning
无横刃修磨

Suitable for drill of general purpose.
Thanks to thin web thickness, web thinning is not need.
This without web thinning type is applied to design of drills for mild steels, alloy steels, cast iron, stainless steels, titanium, inconel, etc. and conventional cutting conditons.
适用于一般用途的钻削得益于小的横刃，不需要修磨
这种无横刃修磨的钻头适合于低碳钢，合金钢，铸铁，不锈钢钛合金，镍合金和传统加工方式



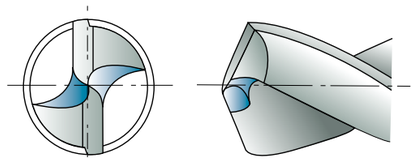
### (2) Type C thinning (DIN1412 FORM C, SPLIT POINT)
类型C (DIN1412 FORM C, SPLIT POINT)

Because Split point enables good centering when drilling and breaks the chips, chip removals are easy.
Suitable for drill design in high hardened tough materials, i.e, heat treated steels, titanium alloys, stainless steels, incoroy inconel, nimonic, etc.
因为在钻孔时，C型钻尖能使钻具良好的定心 和断屑，
排屑容易适用于加工高硬化材料，热处理钢，钛合金，
不锈钢，镍合金，镍铬钛合金等的钻头设计



### (3) Type R thinning (HELICAL THINNING)
类型R (螺旋横刃修磨)

Helical thinning ensures to frequent chip breaking and removal. The different direction force of cutting edges and helical thinning parts enable that chips curl, break and remove through the flutes. In addition, helical thinning makes the chip room up to center, remove the chisel and enables good centering
螺旋横刃修磨可以确保持续断屑和排屑
在切削刃和螺旋横刃不同方向的切削力可以
使切屑卷曲，断裂和脱落并通过排屑槽排出
此外，螺旋型横刃修磨可以将切屑空间增至中心位置，减小横刃，定心更好

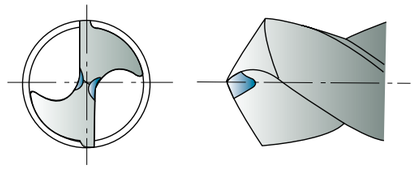






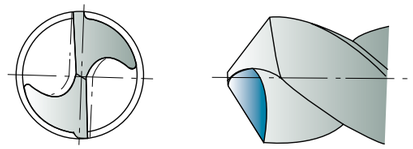
### (4) Type A thinning (DIN1412 FORM A)
类型A (DIN1412 FORM A)

A type thinnings makes thin chisel, good chip removal and favorable centering.
This type is the easiest type to grind the thinning. In narrow web and wide fluted drills, keeping of the rigidity and smooth chip removal are possible.
A型横刃修磨使横刃变薄，去屑性好良好的定心.
这种类型是最容易加工的类型.
对于小芯厚，宽超钻头，可以保持刚性和流畅排屑



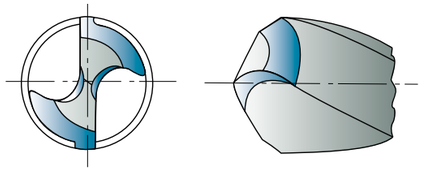
### (5) Type B thinning (DIN1412 FORM B)
类型B (DIN 1412 FORM B)

In case of work materials with low cutting resistance and good chip removal, i.e., cast iron, aluminum, plastic etc., B type thinning is suitable.
Especially when drills for high hardended steels are designed, this type is applied to decrease rake angle and avoid chipping of cutting lips.
该类型适合在工件材料具有低切削阻力和排屑良好的情况下使用
如铸铁，铝合金 和塑料凳尤其适合用于加工高硬度钢钻头可以减小前角，避免切削刃崩刃



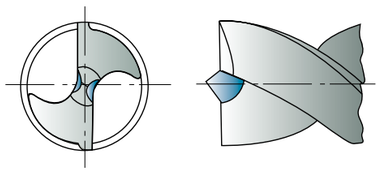
### (6) Type D thinning (DIN1412 FORM D)
类型D (DIN1412 FORM D)

Grey cast iron thinning; bevelling of external edges strengthens the cutting edge.
Used for medium to high grey cast iron hardness and for abrasives.
灰铸铁专用研磨；外刃斜面研磨增强切削刃强度
用于中高硬度的灰铸铁和耐磨损性



### (7) Type E thinning (DIN1412 FORM E)
类型 E (DIN 1412 FORM E)

Center drill bit thinning; ensures optimal center drilling and does not leave burs in through holes.
As the bit and cutting edges are delicate, this bit should be used far drilling thin sheet metal.
中心钻尖研磨，最佳的定心加工，保证通孔时无毛刺
由于钻尖和切削刃精密的，这种钻尖尤其适合钻金属薄板



## Surface Finishes for high speed steels Twist Drills
## 螺旋槽高速钢钻头表面处理

### (1) Bright Finish / 光亮处理

Drills with a bright finish are without surface treatment and ground condition.
Especially bright finished drills are used in machining of non ferrous materials.
钻头光亮处理就是无表面处理，处于磨削状态.
光亮处理的钻头尤其适合加工有色金属

### (2) Coloring (Gold color) / 着色 (金色)

The coloring is a thin oxide layer formed on the tool surfaces.
This is often applied to cobalt high speed steels twist drills.
着色是在工具表面形成的薄氧化层
它经常应用于含钴高速钢麻花钻

### (3) Steam Tempered (black oxide finish) / 蒸汽回火 (黑色氧化物涂层)

This is a black oxide layer 1-2㎛ formed on the tool surfaces.
Steam Tempered treated drill is the result of a steam tempering operation. Because the oxide layer retains some coolant on the tool surface, and aids chip flow, helps to dissipate heat, steam homo treated drills are recommended for ferrous applications.
这是在工具表面形成的黑色氧化层 (1-2u)
蒸汽回火处理的钻头是蒸汽回火操作的结果. 因为氧化层在工具表面保留了一定的冷却效果
有助于切屑流动，有助于散热，所以蒸汽均匀处理的钻头 推荐加工含铁材料

## Coating
## 涂层

The use of coated cutting tools reduce production costs.
涂层刀具的使用可降低生产成本
For example
例如
- Avoidance of machine downtime due to premature tool wear.
  避免因刀具过早磨损导致停机.
- Higher cutting capabilities to reduce actual machining times.
  更高的切削能力，减少实际加工时间.
- Reproducible tool life.
  稳定的刀具寿命.
- Improvement of component surface quality.
  改善工件表面质量.



TECHNICAL DATA

### (1) TiN (Titanium Nitride) coating / TiN 涂层

Titanium Nitride gives the tool a higher performance in comparison to traditional non-coated drills.
TiN coating, with good all-around properties, is recommended for the general application, i.e., attack by abrasive, adhesive and chemical wear in equal proportions.
与传统的无涂层钻头相比，氮化钛赋予该刀具更高的性能.
TiN涂层具有良好的综合性能，建议用于一般应用，兼具耐磨损性，附着性和耐化学性等均衡性能.

### (2) TiCN (Titanium Carbon Nitride) coating / TiCN 涂层

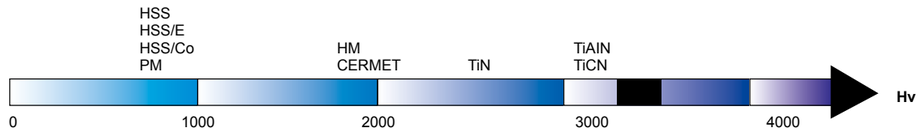
TiCN coating should be employed when severe thermodynamic stress is expected, for example when drilling in high hardened steels or in mild steels with high speed and feed.
当预计会出现严重的热应力时，应采用TiCN涂层，例如在高硬度钢或高速高进给加工低碳钢时.

### (3) TiAlN (Titanium Alumium Nitride) coating / TiAlN 涂层

The addition of Aluminum to the Titanium Nitride produces an increase in hardness and an exceptional increase in resistance to oxidation at high temperature.
TiAlN coating is applied to drilling with severe thermal stress on cutting edges when continuous non-step feed, dry cutting or high speed cutting.
在氮化钛中加入铝会增加硬度，并在高温下显著提高抗氧化能力.
TiAlN涂层适用于连续加工，干式切削或高速切削时切削刃上存在严重热应力的钻孔.

### (4) Properties of coating / 涂层特性

| Properties<br>特征 | TiN | TiCN | TiAlN |
|---|---|---|---|
| Coating color<br>涂层颜色 | gold - yellow<br>金黄 | blue - grey<br>蓝灰 | violet - grey<br>紫灰 |
| Hardness (Hv 0.05)<br>硬度 (HV0.005) | 2300 | 3000 | 3000 |
| Coating thickness(㎛)<br>涂层厚度 (㎛) | 1 ~ 4 | 1 ~ 4 | 1 ~ 5 |
| Max. working temperature (˚C)<br>最大工作温度 (˚C) | 600 | 400 | 800 |
| Coefficient of friction against steels (dry)<br>钢的摩擦系数 (干) | 0.4 | 0.4 | 0.4 |






CARBIDE
HSS
i-ONE DRILLS
i-DREAM DRILLS
DREAM DRILLS -PRO
DREAM DRILLS -GENERAL
DREAM DRILLS -SOFT
DREAM DRILLS -HIGH FEED
DREAM DRILLS -FLAT BOTTOM
DREAM DRILLS -INOX
DREAM DRILLS -ALU
DREAM DRILLS -CFRP
DREAM DRILLS -MQL
DREAM DRILLS for HIGH HARDENED STEELS
GENERAL CARBIDE DRILLS
MULTI-1 DRILLS
GOLD-P DRILLS
SUPER-GP DRILLS
WORM PATTERN DRILLS
STRAIGHT SHANK DRILLS
TAPER SHANK DRILLS
NC-SPOTTING DRILLS
CENTER DRILLS
SPADE DRILLS
REAMERS
COUNTER SINKS
COUNTER BORES
TECHNICAL DATA

### (5) Selection of coating
涂层的选用

| Work-material<br>被加工材料 | HSS TWIST DRILLS<br>高速钢麻花钻 | CARBIDE DRILLS<br>硬质合金钻头 |
|---|---|---|
| Unalloyed steels<br>碳素钢 | TiCN, TiAlN | TiCN, TiAlN |
| Steels < 1000 N/mm$^2$<br>钢<1000N/mm$^2$ | TiCN, TiAlN | TiCN, TiAlN |
| Steels > 1000 N/mm$^2$<br>刚>1000N/mm$^2$ | TiCN, TiAlN | TiCN, TiAlN |
| Stainless steels<br>不锈钢 | TiCN, TiAlN | TiCN, TiAlN |
| Cast iron<br>铸铁 | TiCN, TiAlN | TiAlN |
| Al-wrought alloys<br>铝-锻造合金 | TiN | TiN |
| Al-cast alloys<br>铝-铸件 | TiCN | TiCN |
| Copper (pure)<br>铜 (纯铜) | CrN | CrN |
| Brass<br>黄铜 | TiCN | TiCN |
| Bronze<br>青铜 | TiCN | TiCN |

## 10 Drill sizes before Tapping
螺纹底孔

### (1) Metric - ISO threads coarse pitch
公制-ISO 螺纹粗牙

| Nominal diameter<br>螺纹 | Drill diameter<br>钻头直径 | Nominal diameter<br>螺纹 | Drill diameter<br>钻头直径 | Nominal diameter<br>螺纹 | Drill diameter<br>钻头直径 | Nominal diameter<br>螺纹 | Drill diameter<br>钻头直径 |
|---|---|---|---|---|---|---|---|
| | | **M3** | 2.5 | **M11** | 9.5 | **M30** | 26.5 |
| **M1** | 0.75 | **M3.5** | 2.9 | **M12** | 10.2 | **M33** | 29.5 |
| **M1.2** | 0.95 | **M4** | 3.3 | **M14** | 12.0 | **M36** | 32.0 |
| **M1.4** | 1.1 | **M5** | 4.2 | **M16** | 14.0 | **M39** | 35.0 |
| **M1.6** | 1.25 | **M6** | 5.0 | **M18** | 15.5 | **M42** | 37.5 |
| **M1.8** | 1.45 | **M7** | 6.0 | **M20** | 17.5 | **M45** | 40.5 |
| **M2** | 1.6 | **M8** | 6.8 | **M22** | 19.5 | **M48** | 43.0 |
| **M2.2** | 1.75 | **M9** | 7.8 | **M24** | 21.0 | **M52** | 47.0 |
| **M2.5** | 2.05 | **M10** | 8.5 | **M27** | 24.0 | **M56** | 50.5 |

### (2) Metric ISO threads fine pitch
公制-ISO 螺纹细牙

| Nominal diameter<br>螺纹 | Tap Pitch | Drill diameter<br>钻头直径 | Nominal diameter<br>螺纹 | Tap Pitch | Drill diameter<br>钻头直径 |
|---|---|---|---|---|---|
| 2.5 | 0.35 | 2.15 | 7 | 0.75 | 6.2 |
| 3 | 0.35 | 2.65 | 8 | 0.75 | 7.2 |
| 3.5 | 0.35 | 3.15 | 8 | 1 | 7 |
| 4 | 0.5 | 3.5 | 9 | 0.75 | 8.2 |
| 4.5 | 0.5 | 4 | 9 | 1 | 8 |
| 5 | 0.5 | 4.5 | 10 | 0.75 | 9.2 |
| 5.5 | 0.5 | 5 | 10 | 1 | 9 |
| 6 | 0.75 | 5.2 | 10 | 1.25 | 8.8 |



TECHNICAL DATA

| Nominal diameter<br>螺纹 | Tap Pitch | Drill diameter<br>钻头直径 | Nominal diameter<br>螺纹 | Tap Pitch | Drill diameter<br>钻头直径 |
|---|---|---|---|---|---|
| 11 | 0.75 | 10.2 | 30 | 1 | 29 |
| 11 | 1 | 10 | 30 | 1.5 | 28.5 |
| 12 | 1 | 11 | 30 | 2 | 28 |
| 12 | 1.25 | 10.8 | 30 | 3 | 27 |
| 12 | 1.5 | 10.5 | 32 | 1.5 | 30.5 |
| 14 | 1 | 13 | 32 | 2 | 30 |
| 14 | 1.25 | 12.8 | 33 | 1.5 | 31.5 |
| 14 | 1.5 | 12.5 | 33 | 2 | 31 |
| 15 | 1 | 14 | 33 | 3 | 30 |
| 15 | 1.5 | 13.5 | 35 | 1.5 | 33.5 |
| 16 | 1 | 15 | 36 | 1.5 | 34.5 |
| 16 | 1.5 | 14.5 | 36 | 2 | 34 |
| 17 | 1 | 16 | 36 | 3 | 33 |
| 17 | 1.5 | 15.5 | 38 | 1.5 | 36.5 |
| 18 | 1 | 17 | 39 | 1.5 | 37.5 |
| 18 | 1.5 | 16.5 | 39 | 2 | 37 |
| 18 | 2 | 16 | 39 | 3 | 36 |
| 20 | 1 | 19 | 40 | 1.5 | 38.5 |
| 20 | 1.5 | 18.5 | 40 | 2 | 38 |
| 20 | 2 | 18 | 40 | 3 | 37 |
| 22 | 1 | 21 | 42 | 1.5 | 40.5 |
| 22 | 1.5 | 20.5 | 42 | 2 | 40 |
| 22 | 2 | 20 | 42 | 3 | 39 |
| 24 | 1 | 23 | 45 | 1.5 | 43.5 |
| 24 | 1.5 | 22.5 | 45 | 2 | 43 |
| 24 | 2 | 22 | 45 | 3 | 42 |
| 25 | 1 | 24 | 48 | 1.5 | 46.5 |
| 25 | 1.5 | 23.5 | 48 | 2 | 46 |
| 25 | 2 | 23 | 48 | 3 | 45 |
| 26 | 1.5 | 24.5 | 50 | 1.5 | 48.5 |
| 27 | 1 | 26 | 50 | 2 | 48 |
| 27 | 1.5 | 25.5 | 50 | 3 | 47 |
| 27 | 2 | 25 | 52 | 1.5 | 50.5 |
| 28 | 1 | 27 | 52 | 2 | 50 |
| 28 | 1.5 | 26.5 | 52 | 3 | 49 |
| 28 | 2 | 26 | | | |

### (3) WITHWORTH pipe threads (BSP)
惠氏管螺纹 (BSP)

| Nominal size<br>inches | Drill diameter<br>mm | Nominal size<br>inches | Drill diameter<br>mm |
|---|---|---|---|
| G1/8 | 8.8 | G1 * 1/4 | 39.5 |
| G1/4 | 11.8 | G1 * 3/8 | 42.0 |
| G3/8 | 15.25 | G1 * 1/2 | 45.0 |
| G1/2 | 19.0 | G1 * 3/4 | 51.0 |
| G5/8 | 21.0 | G2 | 57.0 |
| G3/4 | 24.5 | G2 * 1/4 | 63.0 |
| G7/8 | 28.25 | G2 * 1/2 | 73.0 |
| G1 | 30.75 | G2 * 3/4 | 79.0 |
| G11/8 | 35.5 | G3 | 85.0 |

### (4) American unified coarse threads
美制粗牙螺纹

| UNC | Drill diameter | | UNC | Drill diameter | |
|---|---|---|---|---|---|
| | inches | mm | | inches | mm |
| **No. 1** | 53 | 1.51 | **7/16** | U | 9.35 |
| **No. 2** | 50 | 1.78 | **1/2** | 27/64 | 10.71 |
| **No. 3** | 47 | 1.99 | **9/16** | 31/64 | 12.30 |
| **No. 4** | 43 | 2.26 | **5/8** | 17/32 | 13.49 |
| **No. 5** | 38 | 2.58 | **3/4** | 21/32 | 16.67 |
| **No. 6** | 36 | 2.71 | **7/8** | 49/64 | 19.44 |
| **No. 8** | 29 | 3.45 | **1** | 7/8 | 22.22 |
| **No. 10** | 25 | 3.8 | **1 ∗ 1/8** | 63/64 | 25.00 |
| **No. 12** | 16 | 4.5 | **1 ∗ 1/4** | 1 ∗ 7/64 | 28.18 |
| **1/4** | 7 | 5.11 | **1 ∗ 3/8** | 1 ∗ 7/32 | 30.95 |
| **5/16** | F | 6.53 | **1 ∗ 1/2** | 1 ∗ 11/32 | 34.13 |
| **3/8** | 5/16 | 7.94 | | | |

### (5) American unified fine threads
美制细牙螺纹

| NF | Drill diameter | | NF | Drill diameter | |
|---|---|---|---|---|---|
| | inches | mm | | inches | mm |
| **No. 0** | 3/64 | 1.19 | **3/8** | Q | 8.43 |
| **No. 1** | 53 | 1.51 | **7/16** | 25/64 | 9.92 |
| **No. 2** | 50 | 1.78 | **1/2** | 29/64 | 11.51 |
| **No. 3** | 45 | 2.08 | **9/16** | 33/64 | 13.10 |
| **No. 4** | 42 | 2.37 | **5/8** | 37/64 | 14.86 |
| **No. 5** | 37 | 2.64 | **3/4** | 11/16 | 17.46 |
| **No. 6** | 33 | 2.87 | **7/8** | 13/16 | 20.64 |
| **No. 8** | 29 | 3.45 | **1** | 59/64 | 23.42 |
| **No. 10** | 21 | 4.04 | **1 ∗ 1/8** | 1 ∗ 3/64 | 26.59 |
| **No. 12** | 14 | 4.62 | **1 ∗ 1/4** | 1 ∗ 11/32 | 29.76 |
| **1/4** | 3 | 5.41 | **1 ∗ 3/8** | 1 ∗ 19/32 | 32.94 |
| **5/16** | 1 | 6.91 | **1 ∗ 1/2** | 1 ∗ 27/64 | 36.11 |

## ISO Tolerance
## ISO 公差

㎛=1/1000mm

| Diameter / 直径 (mm) | 1 - 3 from to | 3 - 6 over to | 6 - 10 over to | 10 - 18 over to | 18 - 30 over to | 30 - 50 over to |
|---|---|---|---|---|---|---|
| Tolerance range in ㎛ / 公差范围 ㎛ | | | | | | |
| **h6** | 0<br>- 6 | 0<br>- 8 | 0<br>- 9 | 0<br>- 11 | 0<br>-13 | 0<br>-16 |
| **h7** | 0<br>- 10 | 0<br>- 12 | 0<br>- 15 | 0<br>- 18 | 0<br>- 21 | 0<br>- 25 |
| **h8** | 0<br>- 14 | 0<br>- 18 | 0<br>- 22 | 0<br>- 27 | 0<br>- 33 | 0<br>- 39 |
| **m7** | +12<br>+ 2 | +16<br>+ 4 | + 21<br>+ 6 | + 25<br>+ 7 | + 29<br>+ 8 | + 34<br>+ 9 |





## Trouble Shooting in Drilling
## 钻孔时的问题答疑

| Occurrence of trouble<br>问题 | Cause of trouble<br>原因 | Countermeasures<br>对策 |
|---|---|---|
| **Drill will not enter work**<br>钻头无法钻进工件 | 1. Drill is dull.<br>2. Lip relief too small.<br>3. Too thick a web.<br>1. 钻头太顿了<br>2. 钻尖后角小<br>3. 芯厚过大 | 1. Grind lip relief sufficiently.<br>2. Grind web thinning.<br>3. Choose a drill with narrow web.<br>1.研磨至足够大的后角<br>2.减下芯厚<br>3.选用芯厚小的产品 |
| **Margin chipping**<br>刃带崩边 | 1.Oversized jig bushing.<br>1. 钻套过大 | 1. Choose the suitable jig bushing for drill diameter<br>1. 根据钻头直径选用合适的钻套 |
| **Cutting lip breaks**<br>钻尖崩刃 | 1. Lip relief too much.<br>2. Feed too heavy.<br>1. 后角过大<br>2. 进给过快 | 1. Grind lip relief sufficiently.<br>2. Decrease feed rate.<br>1. 合适的后角<br>2. 减小进给速度 |
| **Tang breaks**<br>**Bruch der**<br>扁尾折断 | 1. Imperfect fit between taper shank and socket.<br>2. Burred or Badly worn sockets.<br>1. 钻柄和套筒配合不好<br>2. 套筒有毛刺或磨损 | 1. Clean the dirt or chips in sockets.<br>2. Change the worn sockets to new ones.<br>1.清理套筒的污垢或切屑<br>2.更换磨损的套筒 |
| **Drill breaks in brass**<br>钻铜折断 | 1. Unsuitable drill<br>2. Flutes clogged with chips<br>1. 使用不合适的钻头<br>2. 堵屑 | 1. Choose the suitable drill for work material.<br>1. 根据工件材料选用合适的钻头 |
| **Chipping of drill center**<br>钻尖破损 | 1. Lip relief too much.<br>2. Feed too heavy.<br>1. 后角过大<br>2. 进给过大 | 1. Grind lip relief sufficiently.<br>2. Decrease feed rate.<br>1. 钻刃充分研磨<br>2. 减小进给 |
| **Hole oversize**<br>孔径过大 | 1. Unequal angle or length of cutting edges.<br>2. Loosen spindle.<br>1. 切削刃不对称或不等长<br>2. 主轴晃动 | 1. Resharpening point, choose correct drills.<br>2. Tighten spindle sufficiently.<br>1. 重新研磨钻顶角，选择合适的钻头<br>2. 充分紧固主轴 |
| **Outer corners broken down.**<br>钻角破损 | 1. Cutting speed too high.<br>2. Hard spots in work material.<br>3. Flutes clogged with chips.<br>4. Too wear of drills.<br>1. 切削速度太高<br>2. 工件材料有硬点<br>3. 排屑槽堵塞<br>4. 钻头过度磨损 | 1. Grind point to suit work material.<br>2. Decrease the feed rates.<br>3. Resharpening early beforce too wear.<br>1. 根据材料研磨合适的钻顶角<br>2. 减小进给速度<br>3. 及时修磨 |

## Trouble Shooting in Drilling
## 钻孔时的问题答疑

| Occurrence of trouble<br>问题 | Cause of trouble<br>原因 | Countermeasures<br>对策 |
|---|---|---|
| **Large chip of one flute and small chip of other flute**<br>一个槽切屑长，<br>一个槽切屑短 | 1. Improperly ground point.<br>2. Only one lip doing all the cutting<br>1. 钻顶角研磨不合适<br>2. 只有一个刃切削 | 1. Properly grind point.<br>2. Grind point with same point angle and length of lip<br>3. Grind with small lip height.<br>1. 正确的研磨钻顶角<br>2. 研磨具有相同角度和切削刃长度的钻顶角<br>3. 及时修磨 |
| **Hole rough**<br>孔粗糙 | 1. Improperly ground point.<br>2. Unenough coolant supply<br>3. Too much feed.<br>4. Fixture not rigid.<br>1. 钻顶角研磨不合适<br>2. 冷却液不充分<br>3. 进给太大<br>4. 夹具刚性差 | 1. Properly grind point.<br>2. Supply coolant enough.<br>3. Decrease the feed rate.<br>4. Tighten the fixture or replace.<br>1. 正确的研磨钻顶角<br>2. 提供充足的冷却液<br>3. 减小进给速度<br>4. 拧紧夹具或重新安装 |

## 13 Characteristic of DREAM DRILLS
## 梦幻钻特征

- YG-1's Dream Drill Series are suitable for high speed and accurate drilling operations by special design and high quality.
  采用特殊的设计和高品质，YG 的梦幻钻头适合高速和高精度钻孔加工

- Good performance for Steels, Cast Irons, Tool steels, Alloy steels and Stainless steels.
  加工钢，铸铁，工具钢，合金钢和不锈钢具有高性能

- Rapid chip evacuation and excellent chip breaking can be achived by special designed cutting edges on point and chip breakers on leading edges.
  钻尖采用特殊的设计和断屑，可以确保断屑和快速排屑

- High accuracy and stability.
  高精度和稳定性

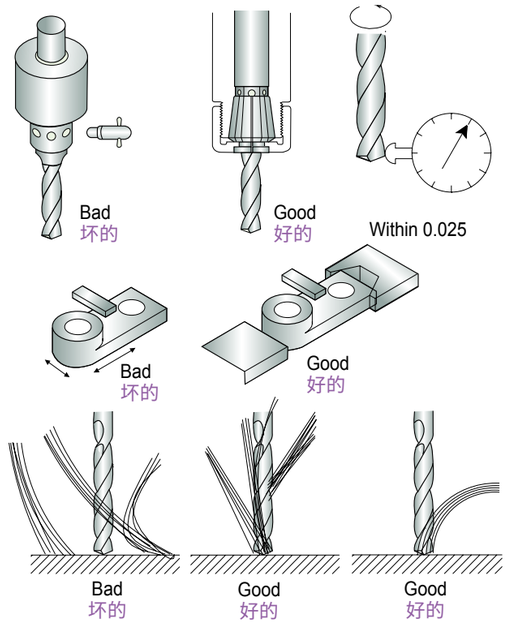
- Longer tool life with TiAlN coating.
  采用 TIALN 涂层，确保长刀具寿命

- Self-centering
  自定心



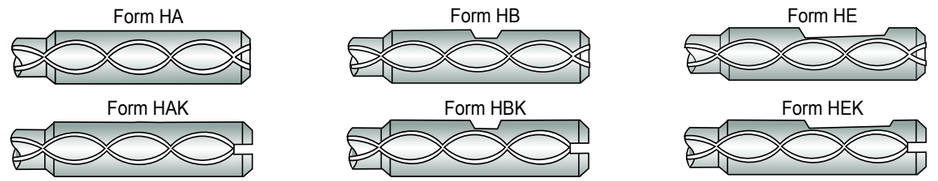


## 14 Use of DREAM DRILLS
## 梦幻钻头的使用




- ▶ Chucking with spring collet correctly.
  正确安装
- ▶ Radial run out at cutting lip must not exceed 0.025 mm.
  钻尖跳动不要大于 0.025mm
- ▶ Tighten clamp of work piece.
  工具加紧
- ▶ Supply coolant enoughly to the entrance of hole.
  供应冷却液
- ▶ When using Dream Drills with Coolant holes, Supply high pressure coolant.
  使用高压冷却液

## 15 Shank Type DREAM DRILLS with Coolant Holes
## 带内冷梦幻钻头柄部形式




- ▶ Shank Type of stocked products is Form HA.
  在库品采用 HA 类型钻柄
- ▶ If you need other Shank Type, we can supply them.
  其他类型钻柄可定制

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# THREADING TOOLS


| | |
|---|---|
| 整体硬质合金螺纹铣刀 | SOLID CARBIDE THREAD MILLS |
| 粉末高速钢同步丝锥 | HSS-PM SYNCHRO TAPS |
| HSS-E Combo 丝锥 | HSS-E COMBO TAPS |
| YG 普通用途HSS&HSS-E丝锥 | HSS & HSS-E YG TAP GENERAL |
| YG 钢用HSS-E丝锥 | HSS-E YG TAP STEEL |
| YG 高硬度钢用粉末高速钢丝锥 | HSS-PM YG TAP HARDENED |
| YG 不锈钢用HSS-E丝锥 | HSS-E YG TAP INOX |
| YG 铸铁用硬质合金&HSS-E丝锥 | SOLID CARBIDE & HSS-E YG TAP CAST IRON |
| YG 铝用硬质合金&HSS-E丝锥 | SOLID CARBIDE & HSS-E YG TAP ALU |
| YG钛镍用粉末高速钢丝锥 | HSS-PM YG TAP Ti Ni |
| YG HSS-E 挤压丝锥 | HSS-E YG TAP FORMING |
| HSS-E& HSS 嵌套丝锥 | HSS-E & HSS SCREW THREAD INSERT TAPS |
| HSS-E&HSS 管用丝锥 | HSS-E & HSS PIPE TAPS |
| SKS21手用丝锥 | SKS21 HAND TAPS |
| SKS21管用丝锥 | SKS21 PIPE TAPS |
| 技术参数 | TECHNICAL DATA |


YG-1 CO., LTD.

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## SOLID CARBIDE
## HSS
## HSS-E
## HSS-PM
## MACHINE TAPS

## HSS-E & HSS PIPE TAPS

## SKS21 HAND TAPS & PIPE TAPS

## TECHNICAL DATA


| | | |
|---|---|---|
| 整体硬质合金螺纹铣刀<br>大直径高质量螺纹加工/倒角功能可选 | SOLID CARBIDE **THREAD MILLS** (with & without Coolant Holes)<br>Threading Large Diameter in High Quality / Available with Chamfer | THREAD MILLS |
| 粉末高速钢同步丝锥<br>刚性数控机床高速攻丝 | HSS-PM **SYNCHRO TAPS**<br>(Spiral Flute, Spiral Point, Straight Flute & Cold Forming)<br>For High Speed Tapping on Rigid CNC Machine | SYNCHRO TAPS |
| HSS-E Combo 丝锥<br>多用途丝锥 | HSS-E **COMBO TAPS**<br>For Multi Purpose Tapping | COMBO TAPS |
| YG 普通用途HSS&HSS-E丝锥<br>独特的槽形设计和排屑能力，适合通，盲孔加工 | HSS & HSS-E **YG TAP GENERAL**<br>Suitable for Tapping Blind / Through Holes due to Flute Geometry and Excellent Chip Evacuation | YG TAP GENERAL |
| YG 钢用HSS-E丝锥<br>适合钢及其它长屑材料 | HSS-E **YG TAP STEEL**<br>For Steel Materials but also other Long Chip Forming Materials | YG TAP STEEL |
| YG 高硬度钢用粉末高速钢丝锥<br>淬硬钢用丝锥 | HSS-PM **YG TAP HARDENED**<br>For Hardened Steels Applications to Control the Continuous and Red-glowing Chips | YG TAP HARDENED |
| YG 不锈钢用HSS-E丝锥<br>不锈钢专用丝锥 | HSS-E **YG TAP INOX**<br>For Stainless Steels with Lamellar, Irregular Chip Formation where the Cutting Forces are Higher | YG TAP INOX |
| YG 铸铁用硬质合金&HSS-E丝锥<br>对于铸铁或类似材料 | SOLID CARBIDE & HSS-E **YG TAP CAST IRON**<br>For Cast Iron or Similar Work Materials | YG TAP CAST IRON |
| YG 铝用硬质合金&HSS-E丝锥<br>采用大排屑槽设计, 适合长屑铝合金攻丝, 避免缠屑 | SOLID CARBIDE & HSS-E **YG TAP ALU**<br>For long-chipping Aluminum Wrought Alloys with Large Chip Gullets to Avoid Clogging in the Threading Operations | YG TAP ALU |
| YG钛镍用粉末高速钢丝锥<br>耐热超合金和钛合金用丝锥 | HSS-PM **YG TAP Ti Ni**<br>For Heat Resistent Super Alloys and Titanium Alloys Applied with Cutting Edge Rake Angles and Thread Relief | YG TAP Ti Ni |
| YG HSS-E 挤压丝锥<br>软材料挤压成形攻丝 | HSS-E **YG TAP FORMING**<br>Tapping by Forming Soft Materials | YG TAP FORMING |
| HSS-E& HSS 嵌套丝锥<br>软材料加工嵌套螺纹 | HSS-E & HSS **SCREW THREAD INSERT TAPS**<br>Tapping STI Threads of Soft Materials | STI TAPS |
| HSS-E&HSS 管用丝锥<br>惠氏管用螺纹加工 | HSS-E & HSS **PIPE TAPS**<br>Tapping Whitworth Pipe threads | PIPE TAPS |
| SKS21手用丝锥<br>实现高强度加工，易装配 | **SKS21 HAND TAPS**<br>To Achieve High Strength.<br>Easy Assembling. | SKS21 HAND TAPS |
| SKS21管用丝锥<br>实现高强度加工, 易装配 | **SKS21 PIPE TAPS**<br>To Achieve High Strength.<br>Easy Assembling. | SKS21 PIPE TAPS |
| 技术参数 | TECHNICAL DATA | TECHNICAL DATA |

# SELECTION GUIDE

YG THREADING TOOLS

## THREAD MILLS

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| TYPE 类型 | Thread Mill without Coolant Hole 带内冷却孔螺纹铣刀 | | | | Thread Mill with Coolant Hole 带内冷却孔螺纹铣刀&倒角 | | |
| THREAD FORM 螺纹形状 | M | MF | UNC | UNF | M | MF | BSP(G) |
| HOLE TYPE 孔类型 | Max. 2.0xD Blind /Through Hole盲孔/通孔 | Max. 1.5xD Blind /Through Hole盲孔/通孔 | Max. 2.0xD Blind /Through Hole盲孔/通孔 | Max. 2.0xD Blind /Through Hole盲孔/通孔 | Max. 2.0xD Blind /Through Hole盲孔/通孔 | Max. 1.5xD Blind /Through Hole盲孔/通孔 | - |
| TOOL MATERIAL 刀具材料 | CARBIDE | | | | | | |
| FLUTE TYPE 槽型 | Helix 螺旋 | | | | | | |
| HELIX ANGLE 螺旋角 | R15 | | | | | | |
| SERIES NO. 系列号 (page 页数) | L1211 (p. B20) | L1212 (p. B21) | L1213 (p. B22) | L1214 (p. B23) | L4211 (p. B24) | L4212 (p. B25) | L6215 (p. B26) |
| SURFACE TREATMENT表面处理 | TiAlN | TiAlN | TiAlN | TiAlN | TiAlN | TiAlN | TiAlN |
| MODEL 模型 | | | | | | | |

Please visit globalyg1.com/mat for material search

◎ : Excellent ○ : Good

| ISO 公制 | VDI 3323 | Material Description 材料描述 | HB 布氏硬度 | HRc 硬度 | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | 125 | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 2 | | 190 | 13 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 3 | | 250 | 25 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 4 | | 270 | 28 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 5 | | 300 | 32 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 6 | Low alloy steel | 180 | 10 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 7 | | 275 | 29 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 8 | | 300 | 32 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 9 | | 350 | 38 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 10 | High alloyed steel, and tool steel | 200 | 15 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 11 | | 325 | 35 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| M | 12 | Stainless steel | 200 | 15 | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | 13 | | 240 | 23 | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | 14 | | 180 | 10 | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| K | 15 | Grey cast iron | 180 | 10 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 16 | | 260 | 26 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 17 | Nodular Cast Iron | 160 | 3 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 18 | | 250 | 25 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 19 | Malleable cast iron | 130 | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 20 | | 230 | 21 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| N | 21 | Aluminum-wrought alloy | 60 | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 22 | | 100 | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 23 | Aluminum-cast, alloyed | 75 | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 24 | | 90 | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 25 | | 130 | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | 110 | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 27 | | 90 | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 28 | | 100 | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 29 | Non Metallic Materials | | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 30 | | | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| S | 31 | Heat Resistant Super Alloys | 200 | 15 | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | 32 | | 280 | 30 | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | 33 | | 250 | 25 | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | 34 | | 350 | 38 | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | 35 | | 320 | 34 | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | 36 | Titanium Alloys | 400 Rm | | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | 37 | | 1050 Rm | | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| H | 38 | Hardened steel | 550 | 55 | | | | | | | |
| | 39 | | 630 | 60 | | | | | | | |
| | 40 | Chilled Cast Iron | 400 | 42 | | | | | | | |
| | 41 | Hardened Cast Iron | 550 | 55 | | | | | | | |



## THREAD MILLS

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Thread Mill with Coolant Hole & Chamfer 带内冷却孔螺纹铣刀 | | | | | Miniature Thread Mill 微型螺纹铣刀 | | Miniature Thread Mill for Hard Materials 高硬质材料用微型铣刀 | | Drill & Thread Mill with Chamfer 带倒角钻&螺纹一体铣刀 |
| | M | MF | UNC | UNF | NPT | M | UNC | M | UNC | M |
| | Max. 2.0xD Blind /Through Hole盲孔/通孔 | Max. 1.5xD Blind /Through Hole盲孔/通孔 | Max. 2.0xD Blind /Through Hole盲孔/通孔 | Max. 2.0xD Blind /Through Hole盲孔/通孔 | - | Max. 2.0xD Blind /Through Hole盲孔/通孔 | Max. 2.0xD Blind /Through Hole盲孔/通孔 | Max. 2.0xD Blind /Through Hole盲孔/通孔 | Max. 2.0xD Blind /Through Hole盲孔/通孔 | Max. 2.0xD Blind /Through Hole盲孔/通孔 |
| | CARBIDE | | | | | | | | | |
| | Helix 螺旋 | | | | | Helix 螺旋 | | Straight 直槽旋 | | Helix 螺旋 |
| | R15 | | | | | R15 | | - | | R25 |
| | L4271 (p. B27) | L4272 (p. B28) | L4273 (p. B29) | L4274 (p. B30) | L4276 (p. B31) | L12D1 (p. B32) | L12D3 (p. B33) | L19E1 (p. B34) | L19E3 (p. B35) | L41A1 / L42A1 (p. B36) |
| | TiAlN | TiAlN | TiAlN | TiAlN | TiAlN | TiAlN | TiAlN | AlTiN | AlTiN | Bright / TiAlN |
| | | | | | | | | | | |

| | | | | | | | | | | | | |
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# SELECTION GUIDE

YG THREADING TOOLS

| | SYNCHRO TAPS | | | | COMBO TAPS | |
|---|---|---|---|---|---|---|
| HOLE TYPE 孔类型 | Max. 2.5xD Blind Hole | Max. 3.0xD Through Hole | Max. 2.0xD Blind/Through Hole | Max. 3.0xD Blind/Through Hole | Max. 2.5xD Blind Hole | Max. 3.0xD Through Hole |
| TOOL MATERIAL 刀具材料 | HSS-PM | | | | HSS-E | |
| CHAMFER LEAD ACC.TO DIN2197 倒角长度 | 2P~3P | 4P~5P | 2P~3P | 2P~3P | 2.5P | 5.0P |
| FLUTE TYPE 槽型 | Spiral Flute 螺旋 | Spiral Point 螺尖 | Straight Flute 直槽旋 | Fluteless 挤压 | Spiral Flute 螺旋 | Spiral Point 螺尖 |
| SPIRAL FLUTE ANGLE 螺旋槽夹角 | R45 | - | - | - | R40 | - |
| SERIES NO. 系列号 (page 页数) JISType | - | - | - | - | I | I |
| M/MF | TT437 (p. B41) | TTS01 (p. B42) | TKS02 (p. B43) | TTS03 (p. B44) | T2809 (p. B47) | T2829 (p. B54) |
| UNC/F | | | | | T2839 (p. B52) | T2849 (p. B58) |
| W | | | | | | |
| M-LH W-LH | | | | | | |
| PIPE TAPS | | | | | | |
| SURFACE TREATMENT表面处理 | TiN | TiN | TiCN | TiN | Bright | Bright |
| MODEL 模型 | | | | | | |

Please visit globalyg1.com/mat for material search

◎ : Excellent ○ : Good

| | ISO 公制 | VDI 3323 | Material Description 材料描述 | HB 布氏硬度 | HRc 硬度 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| P | | 1 | Non-alloy steel | 125 | | ◎ | ◎ | ○ | ◎ | ○ | ○ |
| | | 2 | | 190 | 13 | ◎ | ◎ | ○ | ◎ | ◎ | ◎ |
| | | 3 | | 250 | 25 | ◎ | ◎ | ○ | ◎ | ◎ | ◎ |
| | | 4 | | 270 | 28 | ◎ | ◎ | ○ | ◎ | ◎ | ◎ |
| | | 5 | | 300 | 32 | | | | | ◎ | ◎ |
| | | 6 | Low alloy steel | 180 | 10 | ◎ | ◎ | ○ | ◎ | ◎ | ◎ |
| | | 7 | | 275 | 29 | ◎ | ◎ | ○ | ○ | ◎ | ◎ |
| | | 8 | | 300 | 32 | | | | | ○ | ○ |
| | | 9 | | 350 | 38 | | | | | | |
| | | 10 | High alloyed steel, and tool steel | 200 | 15 | ○ | ○ | | | ○ | ○ |
| | | 11 | | 325 | 35 | | | | | | |
| M | | 12 | Stainless steel | 200 | 15 | ○ | ○ | | ◎ | ◎ | ◎ |
| | | 13 | | 240 | 23 | ○ | ○ | | ◎ | ◎ | ◎ |
| | | 14 | | 180 | 10 | ○ | ○ | | ◎ | ◎ | ◎ |
| K | | 15 | Grey cast iron | 180 | 10 | ○ | ◎ | ◎ | | ○ | ◎ |
| | | 16 | | 260 | 26 | ○ | ◎ | ◎ | | ○ | ◎ |
| | | 17 | Nodular cast iron | 160 | 3 | ◎ | ◎ | ◎ | | ○ | ◎ |
| | | 18 | | 250 | 25 | ○ | ◎ | ◎ | | ○ | ◎ |
| | | 19 | Malleable cast iron | 130 | | | | ○ | | | ○ |
| | | 20 | | 230 | 21 | | | ○ | | | ○ |
| N | | 21 | Aluminum-wrought alloy | 60 | | ○ | ○ | | ○ | ◎ | ◎ |
| | | 22 | | 100 | | ○ | ○ | | ○ | ◎ | ◎ |
| | | 23 | Aluminum-cast, alloyed | 75 | | ○ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | | 24 | | 90 | | | ◎ | ◎ | ◎ | ◎ | ◎ |
| | | 25 | | 130 | | | ◎ | ◎ | ○ | ○ | ○ |
| | | 26 | Copper and Copper Alloys (Bronze / Brass) | 110 | | ○ | ◎ | ○ | ◎ | ◎ | ◎ |
| | | 27 | | 90 | | | ◎ | ○ | ◎ | ◎ | ◎ |
| | | 28 | | 100 | | | | | | | |
| | | 29 | Non Metallic Materials | | | | | | | | |
| | | 30 | | | | | | | | | |
| S | | 31 | Heat Resistant Super Alloys | 200 | 15 | | | | | | |
| | | 32 | | 280 | 30 | | | | | | |
| | | 33 | | 250 | 25 | | | | | | |
| | | 34 | | 350 | 38 | | | | | | |
| | | 35 | | 320 | 34 | | | | | | |
| | | 36 | Titanium Alloys | 400 Rm | | | | | | | |
| | | 37 | | 1050 Rm | | | | | | | |
| H | | 38 | Hardened steel | 550 | 55 | | | | | | |
| | | 39 | | 630 | 60 | | | | | | |
| | | 40 | Chilled Cast Iron | 400 | 42 | | | | | | |
| | | 41 | Hardened Cast Iron | 550 | 55 | | | | | | |



# YG TAP GENERAL

| | Max. 2.0xD Blind/Through Hole | Max. 2.5xD Blind Hole | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | HSS | HSS-E | | | | | | |
| | 1.5P/5.0P/9.0P | 2.5P | 2.5P | 2.5P | 2.5P | 2.5P | 2.5P | 2.5P |
| | Spiral Flute 螺旋 | Spiral Flute 螺旋 | Spiral Flute 螺旋 | Spiral Flute 螺旋 | Straight Flute 直槽旋 | Straight Flute 直槽旋 | Straight Flute 直槽旋 | Straight Flute 直槽旋 |
| | - | R40 | R40 | R40 | R40 | R40 | R40 | R40 |
| JISType | HT | I | J | S | I | J | S | Long Shank |
| M/MF | T7099 (p. B66) | T1121 (p. B73) | T1132 (p. B80) | T1112 (p. B87) | T3121 (p. B93) | T3132 (p. B94) | T3112 (p. B95) | T1103~6 (p. B96-99) |
| UNC/F | T7199 (p. B70) | T1152 (p. B77) | T1232 (p. B84) | T1172 (p. B90) | | | | |
| W | T7299 (p. B72) | T1251 (p. B79) | T1162 (p. B86) | T1182 (p. B92) | | | | T1130~60 (p. B100-101) |
| M-LH W-LH | | | | | | | | |
| PIPE TAPS | | | | | | | | |
| | Bright | Steam Homo | Steam Homo | Steam Homo | TiN | TiN | TiN | Steam Homo |
| HAND TAP | | | | | | | | |
| P | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | ○ | | | | | | | |
| | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | | | | | | | | |
| | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | | | | | | | | |
| M | | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | | | | | | | | |
| K | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | ○ | | | | | | | |
| | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | ○ | | | | | | | |
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| N | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
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| | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
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# SELECTION GUIDE

YG
THREADING TOOLS

| | YG TAP GENERAL | | | | | | |
|---|---|---|---|---|---|---|---|
| HOLE TYPE 孔类型 | Max. 3.0xD Through Hole | | | | | Max. 2.0xD Blind/Through Hole | |
| TOOL MATERIAL 刀具材料 | HSS-E | | | | | | |
| CHAMFER LEAD ACC.TO DIN2197 倒角长度 | 5.0P | 5.0P | 5.0P | 5.0P | 5.0P | 1.5P/5.0P | 1.5P/5.0P |
| FLUTE TYPE 槽型 | Spiral Point 螺尖 | Spiral Point 螺尖 | Spiral Point 螺尖 | Spiral Point 螺尖 | Spiral Point 螺尖 | Straight Flute 直槽旋 | Straight Flute 直槽旋 |
| SPIRAL FLUTE ANGLE 螺旋槽夹角 | - | - | - | - | - | - | - |
| SERIES NO. 系列号 (page 页数) JISType | I | J | I | J | Long Shank | I | Long Shank |
| M/MF | T1022 (p. B102) | T1042 (p. B109) | T3022 (p. B116) | T3042 (p. B117) | T1203~6 (p. B118-121) | T3492 T3491 (p. B124) | T1323~6 T1303~6 (p. B125-128) |
| UNC/F | T1272 (p. B106) | T1142 (p. B113) | | | | | |
| W | T1282 (p. B108) | T1262 (p. B115) | | | T1230~60 (p. B122-123) | | T1331~61 T1330~60 (p. B129-130) |
| M-LH W-LH | | | | | | | |
| PIPE TAPS | | | | | | | |
| SURFACE TREATMENT表面处理 | Steam Homo | Steam Homo | TiN | TiN | Steam Homo | TiN | Steam Homo |
| MODEL 模型 | | | | | | | |

Please visit globalyg1.com/mat for material search

◎ : Excellent ○ : Good

| ISO 公制 | VDI 3323 | Material Description 材料描述 | HB 布氏硬度 | HRc 硬度 | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | 125 | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 2 | | 190 | 13 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 3 | | 250 | 25 | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | 4 | | 270 | 28 | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | 5 | | 300 | 32 | | | | | | ○ | ○ |
| | 6 | Low alloy steel | 180 | 10 | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | 7 | | 275 | 29 | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | 8 | | 300 | 32 | | | | | | ○ | ○ |
| | 9 | | 350 | 38 | | | | | | ○ | ○ |
| | 10 | High alloyed steel, and tool steel | 200 | 15 | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | 11 | | 325 | 35 | | | | | | | |
| M | 12 | Stainless steel | 200 | 15 | ○ | ○ | ○ | ○ | ○ | | |
| | 13 | | 240 | 23 | ○ | ○ | ○ | ○ | ○ | | |
| | 14 | | 180 | 10 | | | | | | | |
| K | 15 | Grey cast iron | 180 | 10 | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | 16 | | 260 | 26 | | ○ | ○ | ○ | ○ | ○ | ○ |
| | 17 | Nodular cast iron | 160 | 3 | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | 18 | | 250 | 25 | | ○ | ○ | ○ | ○ | ○ | ○ |
| | 19 | Malleable cast iron | 130 | | | | | | | | |
| | 20 | | 230 | 21 | | | | | | | |
| N | 21 | Aluminum-wrought alloy | 60 | | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | 22 | | 100 | | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | 23 | Aluminum-cast, alloyed | 75 | | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | 24 | | 90 | | | | | | | | |
| | 25 | | 130 | | | | | | | | |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | 110 | | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | 27 | | 90 | | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | 28 | | 100 | | | | | | | | |
| | 29 | Non Metallic Materials | | | | | | | | | |
| | 30 | | | | | | | | | | |
| S | 31 | Heat Resistant Super Alloys | 200 | 15 | | | | | | | |
| | 32 | | 280 | 30 | | | | | | | |
| | 33 | | 250 | 25 | | | | | | | |
| | 34 | | 350 | 38 | | | | | | | |
| | 35 | | 320 | 34 | | | | | | | |
| | 36 | Titanium Alloys | 400 Rm | | | | | | | | |
| | 37 | | 1050 Rm | | | | | | | | |
| H | 38 | Hardened steel | 550 | 55 | | | | | | | |
| | 39 | | 630 | 60 | | | | | | | |
| | 40 | Chilled Cast Iron | 400 | 42 | | | | | | | |
| | 41 | Hardened Cast Iron | 550 | 55 | | | | | | | |



| | YG TAP STEEL | | | YG TAP HARDENED | YG TAP INOX | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Max. 2.5xD Blind Hole | | Max. 3.0xD Through Hole | Max. 2.0xD Blind / Through Hole | Max. 2.5xD Blind Hole | | Max. 3.0xD Through Hole | Max. 2.0xD Blind / Through Hole | | |
| | HSS-E | | | HSS-PM | HSS-E | | | | | |
| | 2.5P | 2.5P | 5.0P | 2.5P/5.0P | 2.5P | 2.5P | 2.5P | 4.0P | 4.0P | 1.5P/5.0P |
| | Spiral Flute 螺旋 | Spiral Flute 螺旋 | Spiral Point 螺尖 | Straight Flute 直槽旋 | Spiral Flute 螺旋 | Spiral Flute 螺旋 | Spiral Flute 螺旋 | Spiral Point 螺尖 | Spiral Point 螺尖 | Straight Flute 直槽旋 |
| | R40 | R40 | - | - | R45 | R45 | R45 | - | - | - |
| JISType | I | J | I | I | I | J | S | I | J | I |
| M/MF | T1151 (p. B133) | T1131 (p. B134) | TW201 (p. B135) | TM482 TM481 (p. B139) | T1191 (p. B144) | T1133 (p. B146) | T1113 (p. B148) | T1023 (p. B149) | T1043 (p. B151) | T1402 T1401 (p. B153) |
| UNC/F | | | | | | | | | | |
| W | | | | | | | | | | |
| M-LH W-LH | | | | | | | | | | |
| PIPE TAPS | | | | | | | | | | |
| | Steam Homo | Steam Homo | TiAlN | Bright | Steam Homo | Steam Homo | Steam Homo | Steam Homo | Steam Homo | Steam Homo |
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|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | ◎ | ○ | ○ | | ○ | ○ | ○ | ○ | ○ | ○ | 1 | P |
| 2 | ◎ | ◎ | ○ | | ○ | ○ | ○ | ○ | ○ | ○ | 2 | |
| 3 | ◎ | ◎ | ◎ | | ○ | ○ | ○ | ○ | ○ | ○ | 3 | |
| 4 | ○ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 4 | |
| 5 | ○ | ◎ | ◎ | ○ | | | | | | | 5 | |
| 6 | ○ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 6 | |
| 7 | ○ | ◎ | ○ | | | | | | | | 7 | |
| 8 | ○ | ○ | ○ | ◎ | | | | | | | 8 | |
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| 10 | | | ○ | ○ | | | | | | | 10 | |
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| 12 | ○ | ○ | | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 12 | M |
| 13 | | | | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 13 | |
| 14 | | | | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 14 | |
| 15 | | | | | | | | | | | 15 | K |
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| 18 | | | | ○ | | | | | | | 18 | |
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| 21 | ○ | ○ | | | | | | ○ | ○ | | 21 | N |
| 22 | ○ | ○ | | | | | | ○ | ○ | | 22 | |
| 23 | ○ | ○ | | | | | | ○ | ○ | | 23 | |
| 24 | | | | | | | | | | | 24 | |
| 25 | | | | | | | | | | | 25 | |
| 26 | ○ | ○ | | | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | 26 | |
| 27 | ○ | ○ | | | | | | | | | 27 | |
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# SELECTION GUIDE

YG
THREADING TOOLS

| | YG TAP CAST IRON | | YG TAP ALU | | | | | |
|---|---|---|---|---|---|---|---|---|
| HOLE TYPE 孔类型 | Max. 2.0xD Blind / Through Hole | | Max. 2.5xD Blind Hole | | | | Max. 3.0xD Through Hole | |
| TOOL MATERIAL 刀具材料 | CARBIDE | HSS-E | CARBIDE | HSS-E | | | | |
| CHAMFER LEAD ACC.TO DIN2197 倒角长度 | 1.5P/3.0P | 1.5P/5.0P | 1.5P/2.5P | 2.5P | 2.5P | 2.5P | 5.0P | 5.0P |
| FLUTE TYPE 槽型 | Straight Flute 直槽旋 | Straight Flute 直槽旋 | Spiral Flute 螺旋 | Spiral Flute 螺旋 | Spiral Flute 螺旋 | Spiral Flute 螺旋 | Spiral Point 螺尖 | Spiral Point 螺尖 |
| SPIRAL FLUTE ANGLE 螺旋槽夹角 | - | - | R15 | R40 | R40 | R40 | - | - |
| SERIES NO. 系列号 (page 页数) JIS Type | I | I | I | I | J | S | I | J |
| M/MF | T0451<br>T0441<br>(p. B157) | T4471<br>T4461<br>(p. B159) | T0202<br>T0102<br>(p. B166) | T2120<br>(p. B168) | T2131<br>(p. B170) | T2111<br>(p. B172) | T2021<br>(p. B173) | T2041<br>(p. B175) |
| UNC/F | | | | | | | | |
| W | T0462<br>T0452<br>(p. B158) | T4442<br>T4432<br>(p. B161) | T0164<br>T0154<br>(p. B167) | | | | | |
| M-LH W-LH | | | | | | | | |
| PIPE TAPS | | | | | | | | |
| SURFACE TREATMENT 表面处理 | Bright | Nitrided Steam Homo | Bright | Bright | Bright | Bright | Bright | Bright |
| MODEL 模型 | | | | | | | | |

Please visit globalyg1.com/mat for material search

◎ : Excellent ○ : Good

| ISO 公制 | VDI 3323 | Material Description 材料描述 | HB 布氏硬度 | HRc 硬度 | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | 125 | | | | ○ | ○ | ○ | ○ | ○ |
| | 2 | | 190 | 13 | | | ○ | ○ | ○ | ○ | ○ |
| | 3 | | 250 | 25 | | | | | | | |
| | 4 | | 270 | 28 | | | | | | | |
| | 5 | | 300 | 32 | | | | | | | |
| | 6 | Low alloy steel | 180 | 10 | | | ○ | ○ | ○ | ○ | ○ |
| | 7 | | 275 | 29 | | | | | | | |
| | 8 | | 300 | 32 | | | | | | | |
| | 9 | | 350 | 38 | | | | | | | |
| | 10 | High alloyed steel, and tool steel | 200 | 15 | | | | | | | |
| | 11 | | 325 | 35 | | | | | | | |
| M | 12 | Stainless steel | 200 | 15 | | | | | | ○ | ○ |
| | 13 | | 240 | 23 | | | | | | ○ | ○ |
| | 14 | | 180 | 10 | | | | | | ○ | ○ |
| K | 15 | Grey cast iron | 180 | 10 | ◎ | ◎ | ○ | | | | |
| | 16 | | 260 | 26 | ◎ | ◎ | ○ | | | | |
| | 17 | Nodular cast iron | 160 | 3 | ◎ | ◎ | ○ | | | | |
| | 18 | | 250 | 25 | ◎ | ◎ | ○ | | | | |
| | 19 | Malleable cast iron | 130 | | ○ | ○ | | | | | |
| | 20 | | 230 | 21 | ○ | ○ | | | | | |
| N | 21 | Aluminum-wrought alloy | 60 | | | | ◎ | ◎ | ○ | ○ | ◎ | ◎ |
| | 22 | | 100 | | | | ◎ | ◎ | ○ | ○ | ◎ | ◎ |
| | 23 | Aluminum-cast, alloyed | 75 | | ◎ | ◎ | ◎ | | | | ○ | ○ |
| | 24 | | 90 | | ◎ | ○ | ○ | | | | | |
| | 25 | | 130 | | ○ | ○ | | | | | | |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | 110 | | | | ○ | ○ | ○ | ○ | ○ | ○ |
| | 27 | | 90 | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | 28 | | 100 | | | | | | | | | |
| | 29 | Non Metallic Materials | | | | | | | | | | |
| | 30 | | | | | | | | | | | |
| S | 31 | Heat Resistant Super Alloys | 200 | 15 | | | | | | | | |
| | 32 | | 280 | 30 | | | | | | | | |
| | 33 | | 250 | 25 | | | | | | | | |
| | 34 | | 350 | 38 | | | | | | | | |
| | 35 | | 320 | 34 | | | | | | | | |
| | 36 | Titanium Alloys | 400 Rm | | | | | | | | | |
| | 37 | | 1050 Rm | | | | | | | | | |
| H | 38 | Hardened steel | 550 | 55 | | | | | | | | |
| | 39 | | 630 | 60 | | | | | | | | |
| | 40 | Chilled Cast Iron | 400 | 42 | | | | | | | | |
| | 41 | Hardened Cast Iron | 550 | 55 | | | | | | | | |



| | YG TAP Ti Ni | | YG TAP FORMING | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| HOLE TYPE 孔类型 | Max. 2.5xD Blind Hole | Max. 3.0xD Through Hole | Max. 3.0xD Blind / Through Hole | | | | | | |
| TOOL MATERIAL 刀具材料 | HSS-PM | | HSS-E | | | | | | |
| CHAMFER LEAD ACC.TO DIN2197 倒角长度 | 3.0P | 5.0P | 2.0P/4.0P | 2.0P/4.0P | 2.0P/4.0P | 2.0P/4.0P | 2.0P/4.0P | 2.0P/4.0P | 2.0P/4.0P |
| FLUTE TYPE 槽型 | Spiral Flute 螺旋 | Spiral Point 螺尖 | - | with Oil Groove | - | - | with Oil Groove | - | with Oil Groove |
| SPIRAL FLUTE ANGLE 螺旋槽夹角 | R15 | - | - | - | - | - | - | - | - |
| SERIES NO. 系列号 (page 页数) JIS Type | I | I | I | I | I | J | I | I | I |
| M/MF | TZ181<br>(p. B179) | TL231<br>(p. B180) | T1791<br>T1781<br>(p. B184) | T1771<br>T1761<br>(p. B185) | T2731<br>T2701<br>(p. B186) | T2759<br>T2749<br>(p. B187) | T2751<br>T2741<br>(p. B188) | T3731<br>T3701<br>(p. B189) | T3751<br>T3741<br>(p. B190) |
| UNC/F | | | | | T2732<br>T2702<br>(p. B191) | | | | |
| W | | | | | | | | | |
| M-LH W-LH | | | | | | | | | |
| PIPE TAPS | | | | | | | | | |
| SURFACE TREATMENT 表面处理 | TiAlN | Steam Homo | Steam Homo | Steam Homo | Bright | Bright | Bright | TiN | TiN |
| MODEL 模型 | | | | | | | | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 1 |
| | 2 | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 2 |
| | 3 | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 3 |
| | 4 | | | | | | | | | | 4 |
| | 5 | | | | | | | | | | 5 |
| | 6 | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 6 |
| | 7 | | ○ | | | | | | | | 7 |
| | 8 | ○ | ○ | | | | | | | | 8 |
| | 9 | ○ | ◎ | | | | | | | | 9 |
| | 10 | ○ | ○ | | | | | | | | 10 |
| | 11 | ○ | ○ | | | | | | | | 11 |
| M | 12 | | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 12 |
| | 13 | | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 13 |
| | 14 | | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 14 |
| K | 15 | | | | | | | | | | 15 |
| | 16 | | | | | | | | | | 16 |
| | 17 | | | | | | | | | | 17 |
| | 18 | | | | | | | | | | 18 |
| | 19 | | | | | | | | | | 19 |
| | 20 | | | | | | | | | | 20 |
| N | 21 | | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 21 |
| | 22 | | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 22 |
| | 23 | | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 23 |
| | 24 | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 24 |
| | 25 | | | | | | | | | | 25 |
| | 26 | | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 26 |
| | 27 | | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 27 |
| | 28 | | | | | | | | | | 28 |
| | 29 | | | | | | | | | | 29 |
| | 30 | | | | | | | | | | 30 |
| S | 31 | | ◎ | | | | | | | | 31 |
| | 32 | | ◎ | | | | | | | | 32 |
| | 33 | ○ | ◎ | | | | | | | | 33 |
| | 34 | ○ | ◎ | | | | | | | | 34 |
| | 35 | ○ | ○ | | | | | | | | 35 |
| | 36 | ◎ | ○ | | | | | | | | 36 |
| | 37 | ◎ | ◎ | | | | | | | | 37 |
| H | 38 | | | | | | | | | | 38 |
| | 39 | | | | | | | | | | 39 |
| | 40 | | ○ | | | | | | | | 40 |
| | 41 | | | | | | | | | | 41 |

# SELECTION GUIDE

YG THREADING TOOLS

| | | SCREW THREAD INSERT TAPS | | PIPE TAPS | |
|---|---|---|---|---|---|
| HOLE TYPE 孔类型 | | Max. 2.5xD Blind Hole | Max. 2.0xD Blind / Through Hole | Max. 2.5xD Blind Hole | |
| TOOL MATERIAL 刀具材料 | | HSS-E | HSS | HSS-E | |
| CHAMFER LEAD ACC.TO DIN2197 倒角长度 | | 2.5P | 1.5P/5.0P | 2.5P | 3.0P |
| FLUTE TYPE 槽型 | | Spiral Flute 螺旋 | Straight Flute 直槽旋 | Spiral Flute 螺旋 | Spiral Flute 螺旋 |
| SPIRAL FLUTE ANGLE 螺旋槽夹角 | | R40 | - | R30 | R35 |
| SERIES | JISType | STI | STI | PT | PS |
| | M/MF | T2197 (p. B195) | T7399 (p. B197) | | |
| | UNC/F | T2198 (p. B196) | T7322 (p. B198) | | |
| | W | | | | |
| | M-LH W-LH | | | | |
| | PIPE TAPS | | | T2518 (p. B202) | T2538 (p. B203) |
| SURFACE TREATMENT表面处理 | | Bright | Bright | Bright | Bright |
| MODEL 模型 | | | HAND TAP | | |

Please visit globalyg1.com/mat for material search

◎ : Excellent ○ : Good

| ISO 公制 | VDI 3323 | Material Description 材料描述 | HB 布氏硬度 | HRc 硬度 | | | | |
|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | 125 | | ○ | ○ | ◎ | ◎ |
| | 2 | | 190 | 13 | ○ | ○ | ◎ | ◎ |
| | 3 | | 250 | 25 | ○ | ○ | ○ | ○ |
| | 4 | | 270 | 28 | | | | |
| | 5 | | 300 | 32 | | | | |
| | 6 | Low alloy steel | 180 | 10 | | | ◎ | ◎ |
| | 7 | | 275 | 29 | | | ○ | ○ |
| | 8 | | 300 | 32 | | | | |
| | 9 | | 350 | 38 | | | | |
| | 10 | High alloyed steel, and tool steel | 200 | 15 | | | ○ | ○ |
| | 11 | | 325 | 35 | | | | |
| M | 12 | Stainless steel | 200 | 15 | | | ○ | ○ |
| | 13 | | 240 | 23 | | | | |
| | 14 | | 180 | 10 | | | ○ | ○ |
| K | 15 | Grey cast iron | 180 | 10 | | | | |
| | 16 | | 260 | 26 | | | | |
| | 17 | Nodular cast iron | 160 | 3 | | | ○ | ○ |
| | 18 | | 250 | 25 | | | | |
| | 19 | Malleable cast iron | 130 | | | | | |
| | 20 | | 230 | 21 | | | | |
| N | 21 | Aluminum-wrought alloy | 60 | | ◎ | ◎ | ○ | ○ |
| | 22 | | 100 | | ◎ | ◎ | ○ | ○ |
| | 23 | Aluminum-cast, alloyed | 75 | | ◎ | ◎ | ○ | ○ |
| | 24 | | 90 | | ○ | ○ | | |
| | 25 | | 130 | | | | | |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | 110 | | | | ○ | ○ |
| | 27 | | 90 | | ◎ | ◎ | ○ | ○ |
| | 28 | | 100 | | | | | |
| | 29 | Non Metallic Materials | | | | | | |
| | 30 | | | | | | | |
| S | 31 | Heat Resistant Super Alloys | 200 | 15 | | | | |
| | 32 | | 280 | 30 | | | | |
| | 33 | | 250 | 25 | | | | |
| | 34 | | 350 | 38 | | | | |
| | 35 | | 320 | 34 | | | | |
| | 36 | Titanium Alloys | 400 Rm | | | | | |
| | 37 | | 1050 Rm | | | | | |
| H | 38 | Hardened steel | 550 | 55 | | | | |
| | 39 | | 630 | 60 | | | | |
| | 40 | Chilled Cast Iron | 400 | 42 | | | | |
| | 41 | Hardened Cast Iron | 550 | 55 | | | | |



| | PIPE TAPS | | | | | | SKS21 HAND TAPS | |
|---|---|---|---|---|---|---|---|---|
| | Max. 2.5xD Blind Hole | Max. 2.0xD Blind /Through Hole | | | | | Max. 2.0xD Blind /Through Hole | |
| | HSS-E | HSS, HSS-E | | | HSS-E | | SKS21 | |
| | 3.0P | 2.5P | 3.5P | 3.5P | 3.0P | 3.0P | 1.5P/5.0P/9.0P | |
| | Spiral Flute 螺旋 | Straight Flute 直槽旋 | Straight Flute 直槽旋 | Straight Flute 直槽旋 | Straight Flute 直槽旋 | Straight Flute 直槽旋 | Straight Flute 直槽旋 | |
| | R35 | - | - | - | - | - | - | |
| | PF | PT | PS | PF | NPT | NPTF | HT | JISType |
| | | | | | | | TSK11 (p. B213) | M/MF |
| | | | | | | | TSK12 (p. B216) | UNC/F |
| | | | | | | | TSK13 (p. B218) | W |
| | | | | | | | TSK21 (p. B219) TSK23 (p. B220) | M-LH W-LH |
| | T2539 (p. B204) | T7532 T2532 (p. B205) | T7552 T2552 (p. B206) | T7562 T2562 (p. B207) | T2527 (p. B208) | T2537 (p. B209) | | PIPE TAPS |
| | Bright | Bright | Bright | Bright | Bright | Bright | Bright | |
| | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | 1 |
| | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | 2 |
| | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | 3 |
| | | | | | | | | 4 |
| | | | | | | | | 5 |
| P | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | 6 |
| | ○ | ○ | ○ | ○ | ○ | ○ | | 7 |
| | | | | | | | | 8 |
| | | | | | | | | 9 |
| | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 10 |
| | | | | | | | | 11 |
| | ○ | ○ | | | | | | 12 |
| M | | | | | | | | 13 |
| | ○ | ○ | | | | | | 14 |
| | | | ○ | ○ | ○ | ○ | ○ | 15 |
| | | | ○ | ○ | ○ | ○ | ○ | 16 |
| K | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 17 |
| | | | | | | | ○ | 18 |
| | | | | | | | | 19 |
| | | | | | | | | 20 |
| | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 21 |
| | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 22 |
| | ○ | ○ | ○ | ○ | ○ | ○ | | 23 |
| | | | | | | | | 24 |
| | | | | | | | | 25 |
| N | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 26 |
| | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 27 |
| | | | | | | | | 28 |
| | | | | | | | | 29 |
| | | | | | | | | 30 |
| | | | | | | | | 31 |
| | | | | | | | | 32 |
| | | | | | | | | 33 |
| S | | | | | | | | 34 |
| | | | | | | | | 35 |
| | | | | | | | | 36 |
| | | | | | | | | 37 |
| | | | | | | | | 38 |
| H | | | | | | | | 39 |
| | | | | | | | | 40 |
| | | | | | | | | 41 |

# SELECTION GUIDE

YG THREADING TOOLS

## SKS21 PIPE TAPS

| | | | | | | |
|---|---|---|---|---|---|---|
| HOLE TYPE 孔类型 | | Max. 2.0xD Blind /Through Hole | | | | |
| TOOL MATERIAL 刀具材料 | | SKS21 | | | | |
| CHAMFER LEAD ACC.TO DIN2197 倒角长度 | | 3.0P | 3.0P | 3.0P | 3.0P | 3.0P |
| FLUTE TYPE 槽型 | | Straight Flute 直槽旋 | Straight Flute 直槽旋 | Straight Flute 直槽旋 | Straight Flute 直槽旋 | Straight Flute 直槽旋 |
| SPIRAL FLUTE ANGLE 螺旋槽夹角 | | - | - | - | - | - |
| SERIES NO.系列号 (page 页数) | JIS Type | PT | PS | PF | NPT | NPS |
| | M/MF | | | | | |
| | UNC/F | | | | | |
| | W | | | | | |
| | M-LH W-LH | | | | | |
| | PIPE TAPS | TSK34 (p. B224) | TSK35 (p. B225) | TSK36 (p. B226) | TSK37 (p. B227) | TSK38 (p. B228) |
| SURFACE TREATMENT表面处理 | | Bright | Bright | Bright | Bright | Bright |
| MODEL 模型 | | | | | | |

Please visit globalyg1.com/mat for material search

◎ : Excellent ○ : Good

| ISO 公制 | VDI 3323 | Material Description 材料描述 | HB 布氏硬度 | HRc 硬度 | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | 125 | | ○ | ○ | ○ | ○ | ○ |
| | 2 | | 190 | 13 | ○ | ○ | ○ | ○ | ○ |
| | 3 | | 250 | 25 | ○ | ○ | ○ | ○ | ○ |
| | 4 | | 270 | 28 | | | | | |
| | 5 | | 300 | 32 | | | | | |
| | 6 | Low alloy steel | 180 | 10 | ○ | ○ | ○ | ○ | ○ |
| | 7 | | 275 | 29 | | | | | |
| | 8 | | 300 | 32 | | | | | |
| | 9 | | 350 | 38 | | | | | |
| | 10 | High alloyed steel, and tool steel | 200 | 15 | ○ | ○ | ○ | ○ | ○ |
| | 11 | | 325 | 35 | | | | | |
| M | 12 | Stainless steel | 200 | 15 | | | | | |
| | 13 | | 240 | 23 | | | | | |
| | 14 | | 180 | 10 | | | | | |
| K | 15 | Grey cast iron | 180 | 10 | ○ | ○ | ○ | ○ | ○ |
| | 16 | | 260 | 26 | ○ | ○ | ○ | ○ | ○ |
| | 17 | Nodular cast iron | 160 | 3 | ○ | ○ | ○ | ○ | ○ |
| | 18 | | 250 | 25 | | | | | |
| | 19 | Malleable cast iron | 130 | | | | | | |
| | 20 | | 230 | 21 | | | | | |
| N | 21 | Aluminum-wrought alloy | 60 | | ○ | ○ | ○ | ○ | ○ |
| | 22 | | 100 | | ○ | ○ | ○ | ○ | ○ |
| | 23 | Aluminum-cast, alloyed | 75 | | ○ | ○ | ○ | ○ | ○ |
| | 24 | | 90 | | | | | | |
| | 25 | | 130 | | | | | | |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | 110 | | ○ | ○ | ○ | ○ | ○ |
| | 27 | | 90 | | ○ | ○ | ○ | ○ | ○ |
| | 28 | | 100 | | | | | | |
| | 29 | Non Metallic Materials | | | | | | | |
| | 30 | | | | | | | | |
| S | 31 | Heat Resistant Super Alloys | 200 | 15 | | | | | |
| | 32 | | 280 | 30 | | | | | |
| | 33 | | 250 | 25 | | | | | |
| | 34 | | 350 | 38 | | | | | |
| | 35 | | 320 | 34 | | | | | |
| | 36 | Titanium Alloys | 400 Rm | | | | | | |
| | 37 | | 1050 Rm | | | | | | |
| H | 38 | Hardened steel | 550 | 55 | | | | | |
| | 39 | | 630 | 60 | | | | | |
| | 40 | Chilled Cast Iron | 400 | 42 | | | | | |
| | 41 | Hardened Cast Iron | 550 | 55 | | | | | |



# CUTTING SPEED TABLE

## CUTTING SPEED TABLE / 切削速度表
## Cutting Speeds m/min. into revolutions per minute / 切削速度mm

### TOOL R.P.M. (rev/min)

| Tool Dia. | Cutting Speed (m/min) | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 8 | 10 | 12 | 15 | 20 | 25 | 30 | 40 | 50 | 60 |
| 1 | 318 | 637 | 955 | 1274 | 1592 | 1910 | 2548 | 3185 | 3822 | 4777 | 6396 | 7962 | 9554 | 12739 | 15924 | 19108 |
| 2 | 159 | 318 | 478 | 637 | 796 | 955 | 1274 | 1592 | 1911 | 2388 | 3185 | 3981 | 4777 | 6369 | 7962 | 9554 |
| 3 | 106 | 212 | 318 | 425 | 531 | 637 | 849 | 1062 | 1274 | 1592 | 2123 | 2654 | 3185 | 4246 | 5308 | 6369 |
| 4 | 80 | 159 | 239 | 318 | 398 | 478 | 637 | 796 | 955 | 1194 | 1592 | 1990 | 2389 | 3185 | 3981 | 4777 |
| 5 | 64 | 127 | 191 | 255 | 318 | 382 | 510 | 637 | 764 | 955 | 1274 | 1592 | 1911 | 2548 | 3185 | 3822 |
| 6 | 53 | 106 | 159 | 212 | 265 | 318 | 425 | 531 | 637 | 796 | 1062 | 1327 | 1592 | 2123 | 2653 | 3185 |
| 8 | 40 | 80 | 119 | 159 | 199 | 239 | 318 | 398 | 478 | 597 | 796 | 955 | 1194 | 1592 | 1990 | 2388 |
| 10 | 31 | 64 | 96 | 127 | 159 | 191 | 255 | 318 | 382 | 478 | 637 | 796 | 955 | 1274 | 1592 | 1911 |
| 12 | 26 | 53 | 80 | 106 | 133 | 159 | 212 | 265 | 318 | 398 | 531 | 663 | 796 | 1062 | 1327 | 1592 |
| 14 | 23 | 45 | 68 | 91 | 114 | 136 | 182 | 227 | 273 | 341 | 455 | 569 | 682 | 910 | 1137 | 1365 |
| 16 | 20 | 40 | 60 | 80 | 100 | 119 | 159 | 199 | 239 | 299 | 398 | 498 | 597 | 796 | 995 | 1194 |
| 18 | 18 | 35 | 53 | 71 | 88 | 106 | 142 | 177 | 212 | 265 | 354 | 442 | 531 | 708 | 885 | 1062 |
| 20 | 16 | 32 | 48 | 64 | 80 | 96 | 127 | 159 | 191 | 239 | 318 | 398 | 478 | 637 | 796 | 955 |
| 25 | 13 | 25 | 38 | 51 | 64 | 76 | 102 | 127 | 153 | 191 | 255 | 318 | 382 | 510 | 637 | 764 |
| 30 | 11 | 21 | 32 | 42 | 53 | 64 | 85 | 106 | 127 | 159 | 212 | 265 | 318 | 425 | 531 | 637 |
| 35 | 9 | 18 | 27 | 36 | 45 | 55 | 73 | 91 | 109 | 136 | 182 | 227 | 273 | 364 | 455 | 546 |
| 40 | 8 | 16 | 24 | 32 | 40 | 48 | 64 | 80 | 96 | 119 | 159 | 199 | 239 | 118 | 398 | 478 |

RPM = rev/min
V = m/min
D = Dia.(mm)

$$V = \frac{RPM \cdot \pi \cdot D}{1000}$$

$$RPM = \frac{1000 \cdot V}{\pi \cdot D}$$

The applied High Speed Steels holds a grant of good wear resistance and toughness.
Therefore YG-1 normally delivers taps with bright and unfinished surface.
For certain materials, various surface treatments provide higher advantage in machining.
高速钢具有良好的耐磨性和韧性，因此，YG-1通常交货的丝锥表面只有光亮处理。
对于某些材料，各种表面处理在机械加工中具有更高的优势。

## STEAM TEMPERED - Vap

Steam Tempered is a Fe3O4-oxyd-coating which reduces friction between the tool and workpiece, also preventing cold welding.
蒸汽处理是一种Fe3O4氧化涂层，减少了工具和工件之间的摩擦，也防止冷焊。

## NITRIDING - NI

Recommend surface treatment for machining materials that affect wear abrasion, such as grey cast iron, alu-alloys with high Si-percentages (more than 10%).
建议对影响磨损的机械加工材料进行的表面处理，如灰铸铁，高硅含量(超过10%)的铝合金。

Below are the various surface treatments for excellent finish surfaces suitable for many applications.
The surface treatments are produced and developed within the company.
下面是各种表面处理，为优秀的表面处理，适合多种应用。表面处理由公司自行生产和开发。

## TiN-COATING TiN-涂层

TiN-coating yields a hardness of approx. 2,300 HV and also a heat resistant up to approx. 600°C.
The current coating is an excellent all-round coating for normal applications.
Colour : Golden Coefficient of friction against steel : 0.4
TiN的硬度约 2,300 HV, 耐热温度约600°C。
当前的涂料是一种优秀的全方位涂层，适用于普通应用。颜色:金色，与钢的摩擦系数:0.4

## TiCN-COATING TiCN-涂层

TiCN takes place of TiN when the conditions require the coating to have a different hardness and toughness.
The TiCN brings advantages for machining very difficult steels or cutting interrupted bores.
The TiCN-coating has a hardness of approx. 3,000 HV, but is heat resistance only holds up to approx. 400°C, meaning that the TiCN needs an excellent cooling system for a long service life.
Colour : Blue-Grey Coefficient of friction against steel : 0.4
当条件要求涂层具有更高的硬度和韧性时，采用TiCN替代TiN。
TiCN对于加工非常难加工的钢或切削中断孔具有优势。
TiCN涂层的硬度约为 3,000 HV，但它的耐热性只能维持到大约400°C，这意味着TiCN需要一个优秀的冷却系统，以延长使用寿命。
颜色:蓝灰色与钢的摩擦系数:0.4。

## TiAlN-COATING TiAlN-涂层

A special coating for machining abrasive materials such as grey cast iron, alu-alloys with silicon, fiber reinforced plastics, etc., or machining at high temperatures with insufficient cooling, or at high speeds ≥ 600m/min.
TiAlN has a hardness of approx. 3,000 HV and is heat resistant up to approx. 800°C.
Colour : Violet-Grey Coefficient of friction against steel : 0.4
适用于磨削灰铸铁、含硅铝合金、纤维增强塑料等研磨材料，或在冷却不足的高温或高速下加工。
TiAlN的硬度约为 3,000 HV，耐热高达约800°C。
颜色:紫灰色与钢的摩擦系数:0.4

## Hardslick-COATING Hardslick-涂层

Hardslick combines the advantages of an extremely hard, thermally stable TiAlN-coating with the sliding and lubricating properties of an outer WC/C(Tungsten carbide/carbon)-coating in a novel way.
The Hardslick coating has a hardness of approx. 3,000 HV and is temperature-resistant up to approx. 800°C.
Colour : Violet-Grey Coefficient of friction against steel : 0.2
Hardslick以一种特殊的方式结合了TiAlN涂层极其坚硬、热稳定的的优点，和外层WC/C(碳化钨/碳)涂层的滑动和润滑性能。
Hardslick涂层的硬度约为 3,000 HV，耐温度高达约800°C。
颜色:紫灰色与钢的摩擦系数:0.2

Leading Through Innovation

# SOLID CARBIDE

# THREAD MILLS

- **Threading Large Diameter in High Quality Available with Chamfer**
- **高质量大直径螺纹加工 可带倒角加工**

# SELECTION GUIDE 选用指南

YG THREADING TOOLS

## SOLID CARBIDE THREAD MILLS

Threading Large Diameter in High Quality Available with Chamfer

高质量大直径螺纹加工 可带倒角加工

Scan this QR code to see our

**YG-1 TM Xpert**

Threading Mill CNC Program Generator

◎ : Excellent (优秀) ○ : Good (良好)

| TYPE 类型 | Thread Mill without Coolant Hole 带内冷却孔螺纹铣刀 | | | |
|---|---|---|---|---|
| THREAD FORM 螺纹形状 | M | MF | UNC | UNF |
| HOLE TYPE 孔类型 | Max. 2.0xD Blind /Through Hole盲孔 / 通孔 | Max. 1.5xD Blind /Through Hole盲孔 / 通孔 | Max. 2.0xD Blind /Through Hole盲孔 / 通孔 | Max. 2.0xD Blind /Through Hole盲孔 / 通孔 |
| TOOL MATERIAL 刀具材料 | CARBIDE | | | |
| FLUTE TYPE 槽型 | Helix 螺旋 | | | |
| HELIX ANGLE 螺旋角 | R15 | | | |
| SERIES NO. 系列号 (page 页数) | L1211 (p. B20) | L1212 (p. B21) | L1213 (p. B22) | L1214 (p. B23) |
| SURFACE TREATMENT表面处理 | TiAlN | TiAlN | TiAlN | TiAlN |
| MODEL 模型 | | | | |

| ISO 公制 | VDI 3323 | Material Description 材料描述 | Composition / Structure / Heat Treatment 成分 / 组织 / 热处理 | | HB 布氏硬度 | HRc 硬度 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | About 0.15% C | Annealed | 125 | | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 |
| | 2 | | About 0.45% C | Annealed | 190 | 13 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 |
| | 3 | | About 0.45% C | Quenched & Tempered | 250 | 25 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 |
| | 4 | | About 0.75% C | Annealed | 270 | 28 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 |
| | 5 | | About 0.75% C | Quenched & Tempered | 300 | 32 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 |
| | 6 | Low alloy steel | | Annealed | 180 | 10 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 |
| | 7 | | | Quenched & Tempered | 275 | 29 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 |
| | 8 | | | Quenched & Tempered | 300 | 32 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 |
| | 9 | | | Quenched & Tempered | 350 | 38 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 |
| | 10 | High alloyed steel, and tool steel | | Annealed | 200 | 15 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 |
| | 11 | | | Quenched & Tempered | 325 | 35 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 |
| M | 12 | Stainless steel | Ferritic / Martensitic | Annealed | 200 | 15 | ○ 40-80 | ○ 40-80 | ○ 40-80 | ○ 40-80 |
| | 13 | | Martensitic | Quenched & Tempered | 240 | 23 | ○ 40-80 | ○ 40-80 | ○ 40-80 | ○ 40-80 |
| | 14 | | Austenitic | | 180 | 10 | ○ 40-80 | ○ 40-80 | ○ 40-80 | ○ 40-80 |
| K | 15 | Grey cast iron | Pearlitic / ferritic | | 180 | 10 | ◎ 50-100 | ◎ 50-100 | ◎ 50-100 | ◎ 50-100 |
| | 16 | | Pearlitic (Martensitic) | | 260 | 26 | ◎ 50-100 | ◎ 50-100 | ◎ 50-100 | ◎ 50-100 |
| | 17 | Nodular Cast Iron | Ferritic | | 160 | 3 | ◎ 50-100 | ◎ 50-100 | ◎ 50-100 | ◎ 50-100 |
| | 18 | | Pearlitic | | 250 | 25 | ◎ 50-100 | ◎ 50-100 | ◎ 50-100 | ◎ 50-100 |
| | 19 | Malleable cast iron | Ferritic | | 130 | | ◎ 50-100 | ◎ 50-100 | ◎ 50-100 | ◎ 50-100 |
| | 20 | | Pearlitic | | 230 | 21 | ◎ 50-100 | ◎ 50-100 | ◎ 50-100 | ◎ 50-100 |
| N | 21 | Aluminum-wrought alloy | Not Curable | | 60 | | ◎ 100-300 | ◎ 100-300 | ◎ 100-300 | ◎ 100-300 |
| | 22 | | Curable | Hardened | 100 | | ◎ 100-300 | ◎ 100-300 | ◎ 100-300 | ◎ 100-300 |
| | 23 | Aluminum-cast, alloyed | ≤ 12% Si, Not Curable | | 75 | | ◎ 100-300 | ◎ 100-300 | ◎ 100-300 | ◎ 100-300 |
| | 24 | | ≤ 12% Si, Curable | Hardened | 90 | | ◎ 100-300 | ◎ 100-300 | ◎ 100-300 | ◎ 100-300 |
| | 25 | | > 12% Si, Not Curable | | 130 | | ◎ 100-300 | ◎ 100-300 | ◎ 100-300 | ◎ 100-300 |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | Cutting Alloys, PB>1% | | 110 | | ◎ 100-300 | ◎ 100-300 | ◎ 100-300 | ◎ 100-300 |
| | 27 | | CuZn, CuSnZn (Brass) | | 90 | | ◎ 100-300 | ◎ 100-300 | ◎ 100-300 | ◎ 100-300 |
| | 28 | | CuSn, lead-free copper and electrolytic copper | | 100 | | ◎ 100-300 | ◎ 100-300 | ◎ 100-300 | ◎ 100-300 |
| | 29 | Non Metallic Materials | Duroplastic, Fiber Reinforced Plastic | | | | ◎ 100-300 | ◎ 100-300 | ◎ 100-300 | ◎ 100-300 |
| | 30 | | Rubber, Wood, etc. | | | | ◎ 100-300 | ◎ 100-300 | ◎ 100-300 | ◎ 100-300 |
| S | 31 | Heat Resistant Super Alloys | Fe Based | Annealed | 200 | 15 | ○ 20-60 | ○ 20-60 | ○ 20-60 | ○ 20-60 |
| | 32 | | | Cured | 280 | 30 | ○ 20-60 | ○ 20-60 | ○ 20-60 | ○ 20-60 |
| | 33 | | Ni or Co Based | Annealed | 250 | 25 | ○ 20-60 | ○ 20-60 | ○ 20-60 | ○ 20-60 |
| | 34 | | | Cured | 350 | 38 | ○ 20-60 | ○ 20-60 | ○ 20-60 | ○ 20-60 |
| | 35 | | | Cast | 320 | 34 | ○ 20-60 | ○ 20-60 | ○ 20-60 | ○ 20-60 |
| | 36 | Titanium Alloys | Pure Titanium | | 400 Rm | | ○ 20-60 | ○ 20-60 | ○ 20-60 | ○ 20-60 |
| | 37 | | Alpha + Beta Alloys | Hardened | 1050 Rm | | ○ 20-60 | ○ 20-60 | ○ 20-60 | ○ 20-60 |
| H | 38 | Hardened steel | | Hardened | 550 | 55 | | | | |
| | 39 | | | Hardened | 630 | 60 | | | | |
| | 40 | Chilled Cast Iron | | Cast | 400 | 42 | | | | |
| | 41 | Hardened Cast Iron | | Hardened | 550 | 55 | | | | |

Please visit globalyg1.com/mat for material search



CARBIDE
HSS
THREAD MILLS
SYNCHRO TAPS
COMBO TAPS
YG TAP GENERAL
YG TAP STEEL
YG TAP HARDENED
YG TAP INOX
YG TAP CAST IRON
YG TAP ALU
YG TAP Ti Ni
YG TAP FORMING
STI TAPS
PIPE TAPS
SKS21 HAND TAPS
SKS21 PIPE TAPS
TECHNICAL DATA

| TYPE 类型 | Thread Mill with Coolant Hole 带内冷却孔螺纹铣刀&倒角 | | | Thread Mill with Coolant Hole & Chamfer 带内冷却孔螺纹铣刀 | | | | | Miniature Thread Mill 微型螺纹铣刀 | | Miniature Thread Mill for Hard Materials 高硬质材料用微型铣刀 | | Drill & Thread Mill with Chamfer 带倒角钻&螺纹一体铣刀 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| THREAD FORM 螺纹形状 | M | MF | BSP(G) | M | MF | UNC | UNF | NPT | M | UNC | M | UNC | M |
| HOLE TYPE 孔类型 | Max. 2.0xD Blind /Through Hole盲孔/通孔 | Max. 1.5xD Blind /Through Hole盲孔/通孔 | - | Max. 2.0xD Blind /Through Hole盲孔/通孔 | Max. 1.5xD Blind /Through Hole盲孔/通孔 | Max. 2.0xD Blind /Through Hole盲孔/通孔 | Max. 2.0xD Blind /Through Hole盲孔/通孔 | - | Max. 2.0xD Blind /Through Hole盲孔/通孔 | Max. 2.0xD Blind /Through Hole盲孔/通孔 | Max. 2.0xD Blind /Through Hole盲孔/通孔 | Max. 2.0xD Blind /Through Hole盲孔/通孔 | Max. 2.0xD Blind /Through Hole盲孔/通孔 |
| TOOL MATERIAL 刀具材料 | CARBIDE | | | | | | | | | | | | |
| FLUTE TYPE 槽型 | Helix 螺旋 | | | Helix 螺旋 | | | | | Helix 螺旋 | | Straight 直槽旋 | | Helix 螺旋 |
| HELIX ANGLE 螺旋角 | R15 | | | R15 | | | | | R15 | | - | | R25 |
| SERIES NO. 系列号 (page 页数) | L4211 (p. B24) | L4212 (p. B25) | L6215 (p. B26) | L4271 (p. B27) | L4272 (p. B28) | L4273 (p. B29) | L4274 (p. B30) | L4276 (p. B31) | L12D1 (p. B32) | L12D3 (p. B33) | L19E1 (p. B34) | L19E3 (p. B35) | L41A1 / L42A1 (p. B36) |
| SURFACE TREATMENT表面处理 | TiAlN | TiAlN | TiAlN | TiAlN | TiAlN | TiAlN | TiAlN | TiAlN | TiAlN | TiAlN | AlTiN | AlTiN | Bright / TiAlN |
| MODEL 模型 | | | | | | | | | | | | | |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | | | | 1 | P |
| ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | | | | 2 | | |
| ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | | | | 3 | | |
| ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | | | | 4 | | |
| ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | | | | 5 | | |
| ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | ○ 80-120 | ○ 80-120 | | 6 | | |
| ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | ○ 80-120 | ○ 80-120 | | 7 | | |
| ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | ○ 80-120 | ○ 80-120 | | 8 | | |
| ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | ○ 80-120 | ○ 80-120 | | 9 | | |
| ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | ○ 80-120 | ○ 80-120 | | 10 | | |
| ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | ◎ 80-120 | ○ 80-120 | ○ 80-120 | | 11 | | |
| ○ 40-80 | ○ 40-80 | ○ 40-80 | ○ 40-80 | ○ 40-80 | ○ 40-80 | ○ 40-80 | ○ 40-80 | ○ 40-80 | ○ 40-80 | ○ 40-80 | ○ 40-80 | | 12 | M | |
| ○ 40-80 | ○ 40-80 | ○ 40-80 | ○ 40-80 | ○ 40-80 | ○ 40-80 | ○ 40-80 | ○ 40-80 | ○ 40-80 | ○ 40-80 | ○ 40-80 | ○ 40-80 | | 13 | | |
| ○ 40-80 | ○ 40-80 | ○ 40-80 | ○ 40-80 | ○ 40-80 | ○ 40-80 | ○ 40-80 | ○ 40-80 | ○ 40-80 | ○ 40-80 | ○ 40-80 | ○ 40-80 | | 14 | | |
| ◎ 50-100 | ◎ 50-100 | ◎ 50-100 | ◎ 50-100 | ◎ 50-100 | ◎ 50-100 | ◎ 50-100 | ◎ 50-100 | ◎ 50-100 | ◎ 50-100 | ◎ 50-100 | ◎ 50-100 | ◎ 80-150 | 15 | K | |
| ◎ 50-100 | ◎ 50-100 | ◎ 50-100 | ◎ 50-100 | ◎ 50-100 | ◎ 50-100 | ◎ 50-100 | ◎ 50-100 | ◎ 50-100 | ◎ 50-100 | ◎ 50-100 | ◎ 50-100 | ◎ 80-150 | 16 | | |
| ◎ 50-100 | ◎ 50-100 | ◎ 50-100 | ◎ 50-100 | ◎ 50-100 | ◎ 50-100 | ◎ 50-100 | ◎ 50-100 | ◎ 50-100 | ◎ 50-100 | ◎ 50-100 | ◎ 50-100 | ◎ 80-150 | 17 | | |
| ◎ 50-100 | ◎ 50-100 | ◎ 50-100 | ◎ 50-100 | ◎ 50-100 | ◎ 50-100 | ◎ 50-100 | ◎ 50-100 | ◎ 50-100 | ◎ 50-100 | ◎ 50-100 | ◎ 50-100 | ◎ 80-150 | 18 | | |
| ◎ 50-100 | ◎ 50-100 | ◎ 50-100 | ◎ 50-100 | ◎ 50-100 | ◎ 50-100 | ◎ 50-100 | ◎ 50-100 | ◎ 50-100 | ◎ 50-100 | ◎ 50-100 | ◎ 50-100 | ◎ 80-150 | 19 | | |
| ◎ 50-100 | ◎ 50-100 | ◎ 50-100 | ◎ 50-100 | ◎ 50-100 | ◎ 50-100 | ◎ 50-100 | ◎ 50-100 | ◎ 50-100 | ◎ 50-100 | ◎ 50-100 | ◎ 50-100 | ◎ 80-150 | 20 | | |
| ◎ 100-300 | ◎ 100-300 | ◎ 100-300 | ◎ 100-300 | ◎ 100-300 | ◎ 100-300 | ◎ 100-300 | ◎ 100-300 | ◎ 100-300 | ◎ 100-300 | | | ◎ 100-300 | 21 | N | |
| ◎ 100-300 | ◎ 100-300 | ◎ 100-300 | ◎ 100-300 | ◎ 100-300 | ◎ 100-300 | ◎ 100-300 | ◎ 100-300 | ◎ 100-300 | ◎ 100-300 | | | ◎ 100-300 | 22 | | |
| ◎ 100-300 | ◎ 100-300 | ◎ 100-300 | ◎ 100-300 | ◎ 100-300 | ◎ 100-300 | ◎ 100-300 | ◎ 100-300 | ◎ 100-300 | ◎ 100-300 | | | ◎ 100-300 | 23 | | |
| ◎ 100-300 | ◎ 100-300 | ◎ 100-300 | ◎ 100-300 | ◎ 100-300 | ◎ 100-300 | ◎ 100-300 | ◎ 100-300 | ◎ 100-300 | ◎ 100-300 | | | ◎ 100-300 | 24 | | |
| ◎ 100-300 | ◎ 100-300 | ◎ 100-300 | ◎ 100-300 | ◎ 100-300 | ◎ 100-300 | ◎ 100-300 | ◎ 100-300 | ◎ 100-300 | ◎ 100-300 | | | ◎ 100-300 | 25 | | |
| ◎ 100-300 | ◎ 100-300 | ◎ 100-300 | ◎ 100-300 | ◎ 100-300 | ◎ 100-300 | ◎ 100-300 | ◎ 100-300 | ◎ 100-300 | ◎ 100-300 | | | ◎ 100-300 | 26 | | |
| ◎ 100-300 | ◎ 100-300 | ◎ 100-300 | ◎ 100-300 | ◎ 100-300 | ◎ 100-300 | ◎ 100-300 | ◎ 100-300 | ◎ 100-300 | ◎ 100-300 | | | ◎ 100-300 | 27 | | |
| ◎ 100-300 | ◎ 100-300 | ◎ 100-300 | ◎ 100-300 | ◎ 100-300 | ◎ 100-300 | ◎ 100-300 | ◎ 100-300 | ◎ 100-300 | ◎ 100-300 | | | ◎ 100-300 | 28 | | |
| ◎ 100-300 | ◎ 100-300 | ◎ 100-300 | ◎ 100-300 | ◎ 100-300 | ◎ 100-300 | ◎ 100-300 | ◎ 100-300 | ◎ 100-300 | ◎ 100-300 | | | ◎ 80-150 | 29 | | |
| ◎ 100-300 | ◎ 100-300 | ◎ 100-300 | ◎ 100-300 | ◎ 100-300 | ◎ 100-300 | ◎ 100-300 | ◎ 100-300 | ◎ 100-300 | ◎ 100-300 | | | ◎ 80-150 | 30 | | |
| ○ 20-60 | ○ 20-60 | ○ 20-60 | ○ 20-60 | ○ 20-60 | ○ 20-60 | ○ 20-60 | ○ 20-60 | ○ 20-60 | ○ 20-60 | ◎ 20-60 | ◎ 20-60 | | 31 | S | |
| ○ 20-60 | ○ 20-60 | ○ 20-60 | ○ 20-60 | ○ 20-60 | ○ 20-60 | ○ 20-60 | ○ 20-60 | ○ 20-60 | ○ 20-60 | ◎ 20-60 | ◎ 20-60 | | 32 | | |
| ○ 20-60 | ○ 20-60 | ○ 20-60 | ○ 20-60 | ○ 20-60 | ○ 20-60 | ○ 20-60 | ○ 20-60 | ○ 20-60 | ○ 20-60 | ◎ 20-60 | ◎ 20-60 | | 33 | | |
| ○ 20-60 | ○ 20-60 | ○ 20-60 | ○ 20-60 | ○ 20-60 | ○ 20-60 | ○ 20-60 | ○ 20-60 | ○ 20-60 | ○ 20-60 | ◎ 20-60 | ◎ 20-60 | | 34 | | |
| ○ 20-60 | ○ 20-60 | ○ 20-60 | ○ 20-60 | ○ 20-60 | ○ 20-60 | ○ 20-60 | ○ 20-60 | ○ 20-60 | ○ 20-60 | ◎ 20-60 | ◎ 20-60 | | 35 | | |
| ○ 20-60 | ○ 20-60 | ○ 20-60 | ○ 20-60 | ○ 20-60 | ○ 20-60 | ○ 20-60 | ○ 20-60 | ○ 20-60 | ○ 20-60 | ○ 20-60 | ○ 20-60 | | 36 | | |
| ○ 20-60 | ○ 20-60 | ○ 20-60 | ○ 20-60 | ○ 20-60 | ○ 20-60 | ○ 20-60 | ○ 20-60 | ○ 20-60 | ○ 20-60 | ○ 20-60 | ○ 20-60 | | 37 | | |
| | | | | | | | | | | ◎ 25-60 | ◎ 25-60 | | 38 | H | |
| | | | | | | | | | | ◎ 25-50 | ◎ 25-50 | | 39 | | |
| | | | | | | | | | | ◎ 25-70 | ◎ 25-70 | | 40 | | |
| | | | | | | | | | | ◎ 25-60 | ◎ 25-60 | | 41 | | |

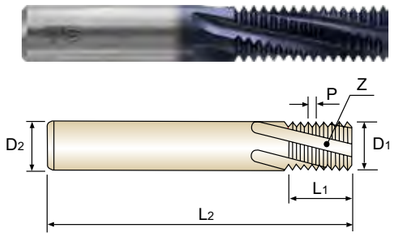
# THREAD MILLS

**L1211** SERIES

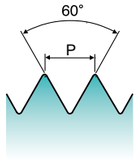
## M SOLID CARBIDE THREAD MILL for ISO METRIC INTERNAL THREAD - DIN 13
## ISO公制内螺纹用整体硬质合金螺纹铣刀-DIN 13

► Easy to cut threads even if exotic materials like Nickel, Titanium or their alloys.

►即使针对是镍, 钛等特殊材料, 可以轻松加工螺纹




**Thread Depth** 齿高
2.0×D




Material groups **MU** | CARBIDE | DIN 6535HA | 60° | R15 | TiAlN | p. B18

Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| END MILL HOLDER | D117 - 137 | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| POWER MILLING CHUCK | | | D161 - 176 |
| ER COLLET CHUCK<br>SK SLIM CHUCK | | | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No.<br>型号 | Nominal Diameter[ D ]<br>通称直径 | Pitch<br>牙距 | Cutter Diameter<br>刃部直径 | Shank Diameter<br>柄径 | Thread Length<br>螺纹长 | Overall Length<br>全长 | No. of Flute<br>槽数 |
|---|---|---|---|---|---|---|---|
| TiAlN | | P | $D_1$ | $D_2$ | $L_1$ | $L_2$ | Z |
| **L1211200** | M3 | 0.5 | **2.2** | 6 | 5 | 57 | 3 |
| **L1211240** | M4 | 0.7 | **2.9** | 6 | 7 | 57 | 3 |
| **L1211280** | M5 | 0.8 | **3.8** | 6 | 8 | 57 | 3 |
| **L1211310** | M6 | 1.0 | **4.5** | 6 | 13 | 57 | 3 |
| **L1211360** | M8 | 1.25 | **6.0** | 6 | 17.5 | 65 | 3 |
| **L1211420** | M10 | 1.5 | **7.5** | 8 | 21 | 72 | 4 |
| **L1211500** | M12 | 1.75 | **9.5** | 10 | 26.25 | 80 | 4 |
| **L1211540** | M14 | 2.0 | **10.0** | 10 | 30 | 83 | 4 |
| **L1211600** | M16 | 2.0 | **12.0** | 12 | 34 | 92 | 4 |
| **L1211650** | M18 | 2.5 | **14.0** | 14 | 37.5 | 92 | 5 |
| **L1211700** | M20 | 2.5 | **16.0** | 16 | 42.5 | 105 | 5 |

* Other coatings are available on your request
可以邀请其他的涂层方式.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | |





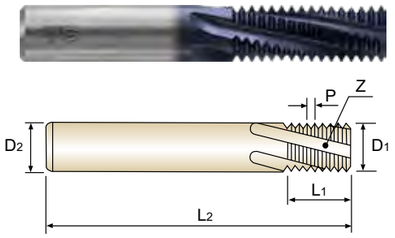
# THREAD MILLS

**L1212** SERIES

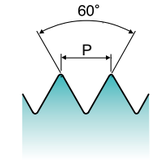
## MF SOLID CARBIDE THREAD MILL for ISO METRIC-FINE INTERNAL THREAD - DIN 13
## ISO公制细牙内螺纹用整体硬质合金螺纹铣刀-DIN 13

► Easy to cut threads even if exotic materials like Nickel, Titanium or their alloys.

►即使针对是镍, 钛等特殊材料, 可以轻松加工螺纹




**Thread Depth** 齿高
1.5×D




Material groups **MU** | CARBIDE | DIN 6535HA | 60° | R15 | TiAlN | p. B18

Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| END MILL HOLDER | D117 - 137 | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| POWER MILLING CHUCK | | | D161 - 176 |
| ER COLLET CHUCK<br>SK SLIM CHUCK | | | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No.<br>型号 | Nominal Diameter[ D ]<br>通称直径 | Pitch<br>牙距 | Cutter Diameter<br>刃部直径 | Shank Diameter<br>柄径 | Thread Length<br>螺纹长 | Overall Length<br>全长 | No. of Flute<br>槽数 |
|---|---|---|---|---|---|---|---|
| TiAlN | | P | $D_1$ | $D_2$ | $L_1$ | $L_2$ | Z |
| **L1212370** | M8 | 1.0 | **6.0** | 6 | 13 | 57 | 3 |
| **L1212380** | M8 | 0.75 | **6.0** | 6 | 12.75 | 57 | 3 |
| **L1212440** | M10 | 1.0 | **8.0** | 8 | 16 | 63 | 4 |
| **L1212510** | M12 | 1.5 | **9.5** | 10 | 19.5 | 72 | 4 |
| **L1212520** | M12 | 1.25 | **9.5** | 10 | 18.75 | 72 | 4 |
| **L1212530** | M12 | 1.0 | **9.5** | 10 | 19 | 72 | 4 |
| **L1212550** | M14 | 1.5 | **10.0** | 10 | 22.5 | 83 | 4 |
| **L1212570** | M14 | 1.0 | **10.0** | 10 | 22 | 83 | 4 |
| **L1212610** | M16 | 1.5 | **12.0** | 12 | 25.5 | 83 | 4 |
| **L1212620** | M16 | 1.0 | **12.0** | 12 | 25 | 83 | 4 |
| **L1212670** | M18 | 1.5 | **14.0** | 14 | 28.5 | 92 | 5 |
| **L1212680** | M18 | 1.0 | **14.0** | 14 | 28 | 92 | 5 |
| **L1212720** | M20 | 1.5 | **16.0** | 16 | 31.5 | 92 | 5 |
| **L1212730** | M20 | 1.0 | **16.0** | 16 | 31 | 92 | 5 |

* Other coatings are available on your request
可以邀请其他的涂层方式.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | |

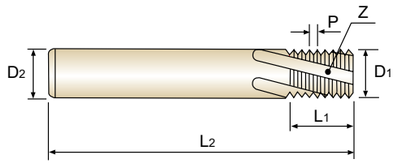
# THREAD MILLS

**L1213 SERIES**

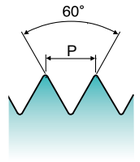
## UNC SOLID CARBIDE THREAD MILL for UNC INTERNAL THREAD - ANSI B 1.1
## 美制内螺纹用整体硬质合金螺纹铣刀- ANSI B 1.1

► Easy to cut threads even if exotic materials like Nickel, Titanium or their alloys.

►即使针对是镍, 钛等特殊材料, 可以轻松加工螺纹




**Thread Depth 齿高**
2.0×D




Material groups **MU** | CARBIDE | DIN 6535HA | 60° | R15 | TiAlN | p. B18

Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| END MILL HOLDER | D117 - 137 | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| POWER MILLING CHUCK | | | D161 - 176 |
| ER COLLET CHUCK<br>SK SLIM CHUCK | | | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No.<br>型号 | Nominal Diameter[ D ]<br>通称直径 | T.P.I<br>牙距 | Cutter Diameter<br>刃部直径 | Shank Diameter<br>柄径 | Thread Length<br>螺纹长 | Overall Length<br>全长 | No. of Flute<br>槽数 |
|---|---|---|---|---|---|---|---|
| TiAlN | | | D1 | D2 | L1 | L2 | Z |
| **L1213400** | 1/4″ | 20 | **4.5** | 6 | 14 | 57 | 3 |
| **L1213440** | 5/16″ | 18 | **5.8** | 6 | 16.9 | 65 | 3 |
| **L1213480** | 3/8″ | 16 | **7.0** | 8 | 20.6 | 72 | 4 |
| **L1213520** | 7/16″ | 14 | **8.0** | 8 | 23.6 | 72 | 4 |
| **L1213560** | 1/2″ | 13 | **9.5** | 10 | 27.4 | 80 | 4 |
| **L1213600** | 9/16″ | 12 | **10.0** | 10 | 31.8 | 83 | 4 |
| **L1213640** | 5/8″ | 11 | **12.0** | 12 | 34.6 | 92 | 4 |
| **L1213700** | 3/4″ | 10 | **14.0** | 14 | 40.6 | 104 | 5 |

* Other coatings are available on your request
可以邀请其他的涂层方式.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | |



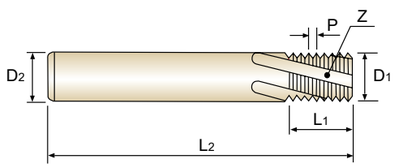
# THREAD MILLS

**L1214 SERIES**

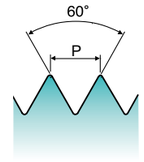
## UNF SOLID CARBIDE THREAD MILL for UNF INTERNAL THREAD - ANSI B 1.1
## 美制细牙内螺纹用整体硬质合金螺纹铣刀- ANSI B 1.1

► Easy to cut threads even if exotic materials like Nickel, Titanium or their alloys.

►即使针对是镍, 钛等特殊材料, 可以轻松加工螺纹




**Thread Depth 齿高**
2.0×D




Material groups **MU** | CARBIDE | DIN 6535HA | 60° | R15 | TiAlN | p. B18

Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| END MILL HOLDER | D117 - 137 | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| POWER MILLING CHUCK | | | D161 - 176 |
| ER COLLET CHUCK<br>SK SLIM CHUCK | | | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No.<br>型号 | Nominal Diameter[ D ]<br>通称直径 | T.P.I<br>牙距 | Cutter Diameter<br>刃部直径 | Shank Diameter<br>柄径 | Thread Length<br>螺纹长 | Overall Length<br>全长 | No. of Flute<br>槽数 |
|---|---|---|---|---|---|---|---|
| TiAlN | | | D1 | D2 | L1 | L2 | Z |
| **L1214420** | 1/4″ | 28 | **5.0** | 6 | 13.6 | 57 | 3 |
| **L1214460** | 5/16″ | 24 | **6.0** | 6 | 16.9 | 65 | 3 |
| **L1214500** | 3/8″ | 24 | **8.0** | 8 | 20.1 | 72 | 4 |
| **L1214540** | 7/16″ | 20 | **8.0** | 8 | 24.1 | 72 | 4 |
| **L1214580** | 1/2″ | 20 | **10.0** | 10 | 26.7 | 80 | 4 |
| **L1214620** | 9/16″ | 18 | **12.0** | 12 | 29.6 | 83 | 4 |
| **L1214660** | 5/8″ | 18 | **12.0** | 12 | 33.9 | 92 | 4 |
| **L1214720** | 3/4″ | 16 | **14.0** | 14 | 39.7 | 104 | 5 |

* Other coatings are available on your request
可以邀请其他的涂层方式.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | |

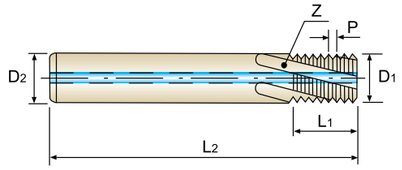
# THREAD MILLS

## L4211 SERIES

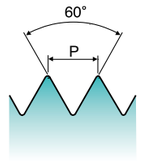
## M SOLID CARBIDE THREAD MILL WITH COOLANT HOLE for ISO METRIC INTERNAL THREAD - DIN 13
## ISO公制内螺纹用带内冷却孔整体合金螺纹铣刀- DIN 13

► Easy to cut threads even if exotic materials like Nickel, Titanium or their alloys.

►即使针对是镍, 钛等特殊材料, 可以轻松加工螺纹




**Thread Depth 齿高**
2.0×D




Material groups **MU** | CARBIDE | DIN 6535HA | 60° | R15 | TiAlN | p. B19

Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| END MILL HOLDER | D117 - 137 | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| POWER MILLING CHUCK | | | D161 - 176 |
| ER COLLET CHUCK<br>SK SLIM CHUCK | | | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No.<br>型号 | Nominal Diameter[ D ]<br>通称直径 | Pitch<br>牙距 | Cutter Diameter<br>刃部直径 | Shank Diameter<br>柄径 | Thread Length<br>螺纹长 | Overall Length<br>全长 | No. of Flute<br>槽数 |
|---|---|---|---|---|---|---|---|
| TiAlN | | P | D1 | D2 | L1 | L2 | Z |
| **L4211310** | M6 | 1.0 | **4.5** | 6 | 13.0 | 57 | 3 |
| **L4211360** | M8 | 1.25 | **6.0** | 6 | 17.5 | 65 | 3 |
| **L4211420** | M10 | 1.5 | **7.5** | 8 | 21.0 | 72 | 4 |
| **L4211500** | M12 | 1.75 | **9.5** | 10 | 26.25 | 80 | 4 |
| **L4211540** | M14 | 2.0 | **10.0** | 10 | 30.0 | 83 | 4 |
| **L4211600** | M16 | 2.0 | **12.0** | 12 | 34.0 | 92 | 4 |
| **L4211700** | M20 | 2.5 | **16.0** | 16 | 42.5 | 105 | 5 |

* Other coatings are available on your request
可以邀请其他的涂层方式.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | |





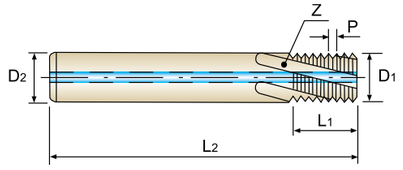
# THREAD MILLS

## L4212 SERIES

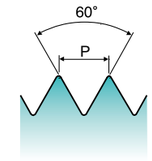
## MF SOLID CARBIDE THREAD MILL WITH COOLANT HOLE for ISO METRIC-FINE INTERNAL THREAD - DIN 13
## ISO公制细牙内螺纹用带内冷却孔整体合金螺纹铣刀- DIN 13

► Easy to cut threads even if exotic materials like Nickel, Titanium or their alloys.

►即使针对是镍, 钛等特殊材料, 可以轻松加工螺纹




**Thread Depth 齿高**
1.5×D




Material groups **MU** | CARBIDE | DIN 6535HA | 60° | R15 | TiAlN | p. B19

Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| END MILL HOLDER | D117 - 137 | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| POWER MILLING CHUCK | | | D161 - 176 |
| ER COLLET CHUCK<br>SK SLIM CHUCK | | | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No.<br>型号 | Nominal Diameter[ D ]<br>通称直径 | Pitch<br>牙距 | Cutter Diameter<br>刃部直径 | Shank Diameter<br>柄径 | Thread Length<br>螺纹长 | Overall Length<br>全长 | No. of Flute<br>槽数 |
|---|---|---|---|---|---|---|---|
| TiAlN | | P | D1 | D2 | L1 | L2 | Z |
| **L4212370** | M8 | 1.0 | **6.0** | 6 | 13.0 | 57 | 3 |
| **L4212380** | M8 | 0.75 | **6.0** | 6 | 12.75 | 57 | 3 |
| **L4212440** | M10 | 1.0 | **8.0** | 8 | 16.0 | 63 | 4 |
| **L4212510** | M12 | 1.5 | **9.5** | 10 | 19.5 | 72 | 4 |
| **L4212520** | M12 | 1.25 | **9.5** | 10 | 18.75 | 72 | 4 |
| **L4212530** | M12 | 1.0 | **9.5** | 10 | 19.0 | 72 | 4 |
| **L4212550** | M14 | 1.5 | **10.0** | 10 | 22.5 | 83 | 4 |
| **L4212570** | M14 | 1.0 | **10.0** | 10 | 22.0 | 83 | 4 |
| **L4212610** | M16 | 1.5 | **12.0** | 12 | 25.5 | 83 | 4 |
| **L4212620** | M16 | 1.0 | **12.0** | 12 | 25.0 | 83 | 4 |
| **L4212670** | M18 | 1.5 | **14.0** | 14 | 28.5 | 92 | 5 |
| **L4212680** | M18 | 1.0 | **14.0** | 14 | 28.0 | 92 | 5 |
| **L4212720** | M20 | 1.5 | **16.0** | 16 | 31.5 | 92 | 5 |
| **L4212730** | M20 | 1.0 | **16.0** | 16 | 31.0 | 92 | 5 |

* Other coatings are available on your request
可以邀请其他的涂层方式.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | |

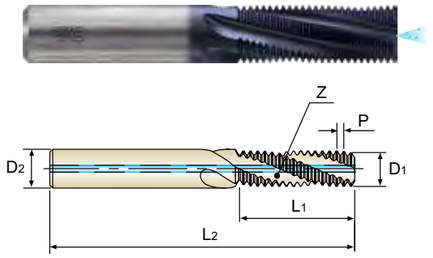
# YG THREAD MILLS

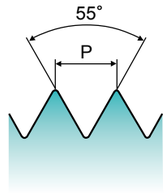
## L6215 SERIES

## BSP(G) SOLID CARBIDE THREAD MILL WITH COOLANT HOLE for BSP(G) INTERNAL/EXTERNAL THREAD
## 惠氏(G)内螺纹用带内冷却孔整体硬质合金铣刀, 带倒角

► Easy to cut threads even if exotic materials like Nickel, Titanium or their alloys.

► 即使针对是镍, 钛等特殊材料, 可以轻松加工螺纹




Material groups **MU** | CARBIDE | DIN 6535HA | 55° | R15 | TiAlN | p. B19

Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| ◎ END MILL HOLDER | D117 - 137 | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| ◎ POWER MILLING CHUCK | | | D161 - 176 |
| ○ ER COLLET CHUCK<br>SK SLIM CHUCK | | | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No.<br>型号 | Nominal Diameter[ D ]<br>通称直径 | T.P.I<br>牙距 | Cutter Diameter<br>刃部直径 | Shank Diameter<br>柄径 | Thread Length<br>螺纹长 | Overall Length<br>全长 | No. of Flute<br>槽数 |
|---|---|---|---|---|---|---|---|
| TiAlN | | | $D_1$ | $D_2$ | $L_1$ | $L_2$ | Z |
| **L6215020** | 1/16″ | 28 | **5.9** | 6 | 16.3 | 65 | 3 |
| **L6215200** | 1/8″ | 28 | **7.9** | 8 | 20.0 | 70 | 4 |
| **L6215400** | 1/4″ | 19 | **9.9** | 10 | 26.7 | 80 | 4 |
| **L6215480** | 3/8″ | 19 | **13.9** | 14 | 33.4 | 92 | 4 |
| **L6215560** | 1/2″ | 14 | **15.9** | 16 | 43.5 | 104 | 5 |
| **L6215700** | 3/4″ | 14 | **17.9** | 18 | 34.5 | 100 | 5 |
| **L6215780** | 1″ | 11 | **19.9** | 20 | 34.6 | 100 | 5 |

* Other coatings are available on your request
可以邀请其他的涂层方式.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | |





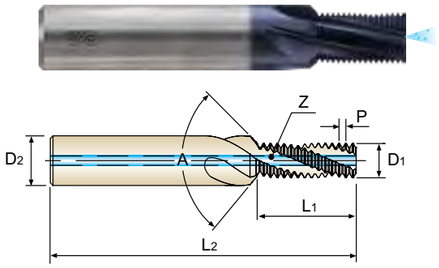
# YG THREAD MILLS

## L4271 SERIES

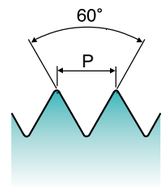
## M SOLID CARBIDE THREAD MILL WITH COOLANT HOLE & CHAMFER for ISO METRIC INTERNAL THREAD - DIN 13
## ISO公制内螺纹用带内冷却孔整体硬质合金铣刀, 带倒角-DIN 13

► Easy to cut threads even if exotic materials like Nickel, Titanium or their alloys.

► 即使针对是镍, 钛等特殊材料, 可以轻松加工螺纹




Thread Depth 齿高
2.0×D




Material groups **MU** | CARBIDE | DIN 6535HA | 60° | R15 | TiAlN | p. B19

Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| ◎ END MILL HOLDER | D117 - 137 | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| ◎ POWER MILLING CHUCK | | | D161 - 176 |
| ○ ER COLLET CHUCK<br>SK SLIM CHUCK | | | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No.<br>型号 | Nominal Diameter[ D ]<br>通称直径 | Pitch<br>牙距 | Cutter Diameter<br>刃部直径 | Shank Diameter<br>柄径 | Thread Length<br>螺纹长 | Overall Length<br>全长 | Angle<br>角度 | No. of Flute<br>槽数 |
|---|---|---|---|---|---|---|---|---|
| TiAlN | | P | $D_1$ | $D_2$ | $L_1$ | $L_2$ | A | Z |
| **L4271310** | M6 | 1.0 | **4.8** | 8 | 12.4 | 62 | 90° | 3 |
| **L4271360** | M8 | 1.25 | **6.5** | 10 | 16.8 | 74 | 90° | 3 |
| **L4271420** | M10 | 1.5 | **8.2** | 12 | 20.15 | 80 | 90° | 4 |
| **L4271500** | M12 | 1.75 | **9.9** | 14 | 25.25 | 90 | 90° | 4 |
| **L4271540** | M14 | 2.0 | **11.6** | 16 | 28.85 | 100 | 90° | 4 |
| **L4271600** | M16 | 2.0 | **13.6** | 18 | 32.85 | 102 | 90° | 4 |

* Other coatings are available on your request
可以邀请其他的涂层方式.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | |

# THREAD MILLS

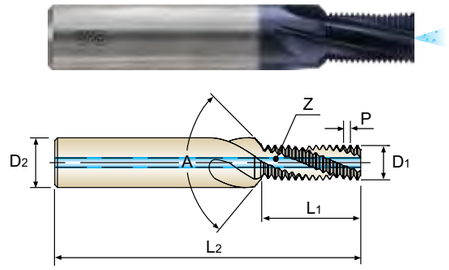
**L4272 SERIES**

## MF SOLID CARBIDE THREAD MILL WITH COOLANT HOLE & CHAMFER for ISO METRIC-FINE INTERNAL THREAD - DIN 13

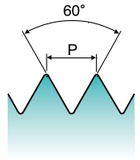
## ISO公制细牙内螺纹用带内冷却孔整体合金铣刀- DIN 13

► Easy to cut threads even if exotic materials like Nickel, Titanium or their alloys.

► 即使针对是镍, 钛等特殊材料, 可以轻松加工螺纹




**Thread Depth 齿高**
1.5×D




Material groups **MU** | CARBIDE | DIN 6535HA | 60° | R15 | TiAlN | p. B19

Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | END MILL HOLDER | D117 - 137 | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| ◎ | POWER MILLING CHUCK | | | D161 - 176 |
| ○ | ER COLLET CHUCK<br>SK SLIM CHUCK | | | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No.<br>型号<br>TiAlN | Nominal Diameter[ D ]<br>通称直径 | Pitch<br>牙距<br>P | Cutter Diameter<br>刃部直径<br>D1 | Shank Diameter<br>柄径<br>D2 | Thread Length<br>螺纹长<br>L1 | Overall Length<br>全长<br>L2 | Angle<br>角度<br>A | No. of Flute<br>槽数<br>Z |
|---|---|---|---|---|---|---|---|---|
| **L4272370** | M8 | 1.0 | **6.7** | 10 | 12.4 | 74 | 90° | 3 |
| **L4272430** | M10 | 1.25 | **8.3** | 12 | 15.9 | 80 | 90° | 4 |
| **L4272440** | M10 | 1.0 | **8.7** | 12 | 15.4 | 80 | 90° | 4 |
| **L4272510** | M12 | 1.5 | **10.0** | 14 | 18.65 | 90 | 90° | 4 |
| **L4272520** | M12 | 1.25 | **10.3** | 14 | 18.3 | 80 | 90° | 4 |
| **L4272530** | M12 | 1.0 | **10.7** | 14 | 18.4 | 90 | 90° | 4 |
| **L4272550** | M14 | 1.5 | **12.0** | 16 | 21.65 | 100 | 90° | 4 |
| **L4272610** | M16 | 1.5 | **14.0** | 18 | 24.65 | 102 | 90° | 5 |

* Other coatings are available on your request
可以邀请其他的涂层方式.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | |





# THREAD MILLS

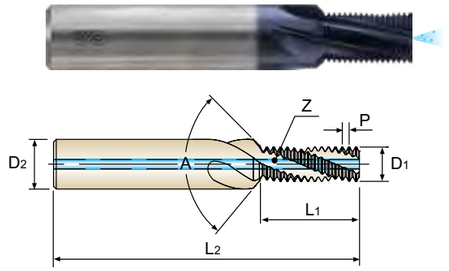
**L4273 SERIES**

## UNC SOLID CARBIDE THREAD MILL WITH COOLANT HOLE & CHAMFER for UNC INTERNAL THREAD - ANSI B 1.1

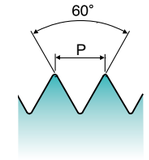
## 美制内螺纹用带内冷却孔整体硬质合金螺纹铣刀, 带倒角- ANSI B 1.1

► Easy to cut threads even if exotic materials like Nickel, Titanium or their alloys.

► 即使针对是镍, 钛等特殊材料, 可以轻松加工螺纹




**Thread Depth 齿高**
2.0×D




Material groups **MU** | CARBIDE | DIN 6535HA | 60° | R15 | TiAlN | p. B19

Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | END MILL HOLDER | D117 - 137 | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| ◎ | POWER MILLING CHUCK | | | D161 - 176 |
| ○ | ER COLLET CHUCK<br>SK SLIM CHUCK | | | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No.<br>型号<br>TiAlN | Nominal Diameter[ D ]<br>通称直径 | T.P.I<br>牙距 | Cutter Diameter<br>刃部直径<br>D1 | Shank Diameter<br>柄径<br>D2 | Thread Length<br>螺纹长<br>L1 | Overall Length<br>全长<br>L2 | Angle<br>角度<br>A | No. of Flute<br>槽数<br>Z |
|---|---|---|---|---|---|---|---|---|
| **L4273400** | 1/4″ | 20 | **4.8** | 8 | 13.3 | 62 | 90° | 3 |
| **L4273440** | 5/16″ | 18 | **6.2** | 10 | 16.18 | 74 | 90° | 3 |
| **L4273480** | 3/8″ | 16 | **7.6** | 12 | 19.8 | 80 | 90° | 4 |
| **L4273520** | 7/16″ | 14 | **8.9** | 12 | 22.62 | 80 | 90° | 4 |
| **L4273560** | 1/2″ | 13 | **10.3** | 14 | 26.32 | 90 | 90° | 4 |
| **L4273600** | 9/16″ | 12 | **11.7** | 16 | 30.63 | 100 | 90° | 4 |
| **L4273640** | 5/8″ | 11 | **13.1** | 18 | 33.41 | 102 | 90° | 4 |
| **L4273700** | 3/4″ | 10 | **16.0** | 20 | 39.29 | 110 | 90° | 5 |

* Other coatings are available on your request
可以邀请其他的涂层方式.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | |

# THREAD MILLS

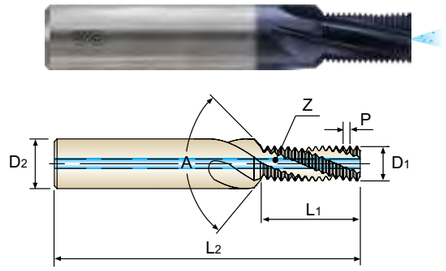
**L4274 SERIES**

## UNF SOLID CARBIDE THREAD MILL WITH COOLANT HOLE & CHAMFER for UNF INTERNAL THREAD - ANSI B 1.1

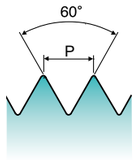
## 美制细牙内螺纹用带内冷却孔整体硬质合金螺纹铣刀, 带倒角- ANSI B 1.1

► Easy to cut threads even if exotic materials like Nickel, Titanium or their alloys.

► 即使针对是镍, 钛等特殊材料, 可以轻松加工螺纹




**Thread Depth 齿高**
2.0×D




Material groups **MU**

CARBIDE | DIN 6535HA | 60° | R15 | TiAlN

p. B19

Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| ◎ END MILL HOLDER | D117 - 137 | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| ◎ POWER MILLING CHUCK | | | D161 - 176 |
| ○ ER COLLET CHUCK<br>SK SLIM CHUCK | | | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No.<br>型号<br>TiAlN | Nominal Diameter[ D ]<br>通称直径 | T.P.I<br>牙距 | Cutter Diameter<br>刃部直径<br>D1 | Shank Diameter<br>柄径<br>D2 | Thread Length<br>螺纹长<br>L1 | Overall Length<br>全长<br>L2 | Angle<br>角度<br>A | No. of Flute<br>槽数<br>Z |
|---|---|---|---|---|---|---|---|---|
| **L4274420** | 1/4″ | 28 | **5.1** | 8 | 13.21 | 62 | 90° | 3 |
| **L4274460** | 5/16″ | 24 | **6.5** | 10 | 16.37 | 74 | 90° | 3 |
| **L4274500** | 3/8″ | 24 | **8.1** | 12 | 19.54 | 80 | 90° | 4 |
| **L4274540** | 7/16″ | 20 | **9.4** | 12 | 22.19 | 80 | 90° | 4 |
| **L4274580** | 1/2″ | 20 | **11.0** | 14 | 26 | 90 | 90° | 4 |
| **L4274620** | 9/16″ | 18 | **12.4** | 16 | 28.88 | 100 | 90° | 4 |
| **L4274660** | 5/8″ | 18 | **14.0** | 18 | 33.12 | 102 | 90° | 5 |
| **L4274720** | 3/4″ | 16 | **17.0** | 20 | 38.86 | 110 | 90° | 5 |

* Other coatings are available on your request
可以邀请其他的涂层方式.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | |





# THREAD MILLS

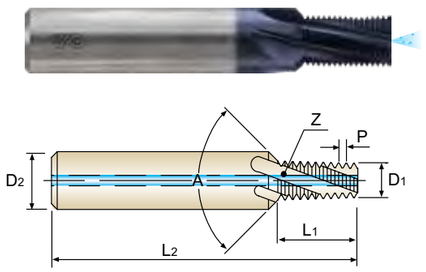
**L4276 SERIES**

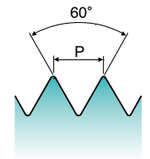
## NPT SOLID CARBIDE THREAD MILL WITH COOLANT HOLE & CHAMFER for NPT THREAD - ANSI B 1.20.1

## NPT螺纹用带内冷却孔整体硬质合金螺纹铣刀, 带倒角- ANSI B 1.20.1

► Easy to cut threads even if exotic materials like Nickel, Titanium or their alloys.

► 即使针对是镍, 钛等特殊材料, 可以轻松加工螺纹




Material groups **MU**

CARBIDE | DIN 6535HA | 60° | R15 | TiAlN

p. B19

Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| ◎ END MILL HOLDER | D117 - 137 | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| ◎ POWER MILLING CHUCK | | | D161 - 176 |
| ○ ER COLLET CHUCK<br>SK SLIM CHUCK | | | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No.<br>型号<br>TiAlN | Nominal Diameter[ D ]<br>通称直径 | T.P.I<br>牙距 | Cutter Diameter<br>刃部直径<br>D1 | Shank Diameter<br>柄径<br>D2 | Thread Length<br>螺纹长<br>L1 | Overall Length<br>全长<br>L2 | Angle<br>角度<br>A | No. of Flute<br>槽数<br>Z |
|---|---|---|---|---|---|---|---|---|
| **L4276020** | NPT1/16″ | 27 | **5.9** | 10 | 8.9 | 64 | 90° | 3 |
| **L4276200** | NPT1/8″ | 27 | **7.8** | 12 | 8.9 | 70 | 90° | 4 |
| **L4276400** | NPT1/4″ | 18 | **10.05** | 16 | 13.4 | 81 | 90° | 4 |
| **L4276480** | NPT3/8″ | 18 | **13.45** | 18 | 13.4 | 81 | 90° | 4 |

* Other coatings are available on your request
可以邀请其他的涂层方式.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |

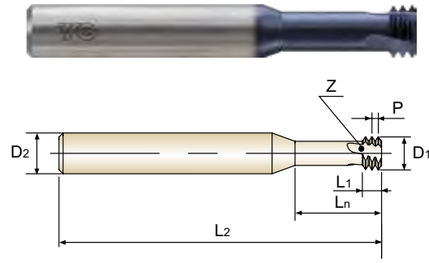
| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | |

# THREAD MILLS

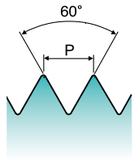
## L12D1 SERIES

## M SOLID CARBIDE MINIATURE THREAD MILI for ISO METRIC INTERNAL THREAD - DIN13
## ISO公制内螺纹用整体硬质合金微型螺纹铣刀- DIN13

▶Short thread length　　▶短牙设计




Thread Depth 齿高
2.0×D




Material groups MU　CARBIDE　DIN 6535HA　60°　R15　TiAlN　p. B19

Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | END MILL HOLDER D117 - 137 | | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| ◎ | POWER MILLING CHUCK | | | D161 - 176 |
| ○ | ER COLLET CHUCK<br>SK SLIM CHUCK | | | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No.<br>型号<br>TiAlN | Nominal Diameter[ D ]<br>通称直径 | Pitch<br>牙距<br>P | Cutter Diameter<br>刃部直径<br>D1 | Shank Diameter<br>柄径<br>D2 | Thread Length<br>螺纹长<br>L1 | Neck Length<br>颈长<br>Ln | Overall Length<br>全长<br>L2 | No. of Flute<br>槽数<br>Z |
|---|---|---|---|---|---|---|---|---|
| **L12D1010** | M1 | 0.25 | **0.70** | 3 | 0.75 | 2.1 | 30 | 3 |
| **L12D1050** | M1.2 | 0.25 | **0.90** | 3 | 0.75 | 2.5 | 30 | 3 |
| **L12D1070** | M1.4 | 0.3 | **1.04** | 3 | 0.90 | 2.9 | 30 | 3 |
| **L12D1090** | M1.6 | 0.35 | **1.18** | 3 | 1.05 | 3.4 | 30 | 3 |
| **L12D1130** | M2 | 0.4 | **1.52** | 6 | 1.2 | 4.2 | 57 | 3 |
| **L12D1150** | M2.2 | 0.45 | **1.66** | 6 | 1.35 | 4.6 | 57 | 3 |
| **L12D1170** | M2.5 | 0.45 | **1.96** | 6 | 1.35 | 5.3 | 57 | 3 |
| **L12D1200** | M3 | 0.5 | **2.4** | 6 | 1.5 | 6.3 | 57 | 3 |
| **L12D1240** | M4 | 0.7 | **3.16** | 6 | 2.1 | 8.4 | 57 | 3 |
| **L12D1280** | M5 | 0.8 | **4.04** | 6 | 2.4 | 10.5 | 57 | 3 |
| **L12D1310** | M6 | 1.0 | **4.8** | 6 | 3.0 | 12.6 | 57 | 3 |
| **L12D1360** | M8 | 1.25 | **6.5** | 8 | 3.75 | 16.8 | 63 | 3 |
| **L12D1420** | M10 | 1.5 | **8.2** | 10 | 4.5 | 21.0 | 73 | 3 |
| **L12D1500** | M12 | 1.75 | **9.9** | 10 | 5.25 | 25.2 | 73 | 3 |

* Other coatings are available on your request
可以邀请其他的涂层方式.

◎ : Excellent (优秀)　○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | |



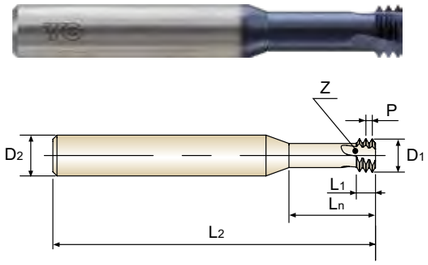


# THREAD MILLS

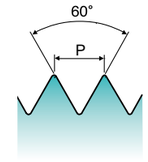
## L12D3 SERIES

## UNC SOLID CARBIDE MINIATURE THREAD MILL for UNC INTERNAL THREAD - ANSI B 1.1
## 美制内螺纹用整体硬质合金微型螺纹铣刀- ANSI B 1.1

▶Short thread length　　▶短牙设计




Thread Depth 齿高
2.0×D




Material groups MU　CARBIDE　DIN 6535HA　60°　R15　TiAlN　p. B19

Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | END MILL HOLDER D117 - 137 | | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| ◎ | POWER MILLING CHUCK | | | D161 - 176 |
| ○ | ER COLLET CHUCK<br>SK SLIM CHUCK | | | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No.<br>型号<br>TiAlN | Nominal Diameter[ D ]<br>通称直径 | T.P.I<br>牙距 | Cutter Diameter<br>刃部直径<br>D1 | Shank Diameter<br>柄径<br>D2 | Thread Length<br>螺纹长<br>L1 | Neck Length<br>颈长<br>Ln | Overall Length<br>全长<br>L2 | No. of Flute<br>槽数<br>Z |
|---|---|---|---|---|---|---|---|---|
| **L12D3040** | #1 | 64 | **1.38** | 6 | 1.19 | 3.9 | 57 | 3 |
| **L12D3080** | #2 | 56 | **1.64** | 6 | 1.36 | 4.6 | 57 | 3 |
| **L12D3160** | #4 | 40 | **2.08** | 6 | 1.91 | 6.0 | 57 | 3 |
| **L12D3240** | #6 | 32 | **2.55** | 6 | 2.38 | 7.4 | 57 | 3 |
| **L12D3280** | #8 | 32 | **3.21** | 6 | 2.38 | 8.7 | 57 | 3 |
| **L12D3320** | #10 | 24 | **3.56** | 6 | 3.18 | 10.1 | 57 | 3 |
| **L12D3360** | #12 | 24 | **4.22** | 6 | 3.18 | 11.5 | 57 | 3 |
| **L12D3400** | 1/4 | 20 | **4.83** | 6 | 3.81 | 13.3 | 57 | 3 |
| **L12D3440** | 5/16 | 18 | **6.24** | 8 | 4.23 | 16.7 | 63 | 3 |
| **L12D3480** | 3/8 | 16 | **7.62** | 8 | 4.76 | 20.0 | 63 | 3 |
| **L12D3520** | 7/16 | 14 | **8.94** | 10 | 5.44 | 23.3 | 73 | 3 |

* Other coatings are available on your request
可以邀请其他的涂层方式.

◎ : Excellent (优秀)　○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | |

# THREAD MILLS

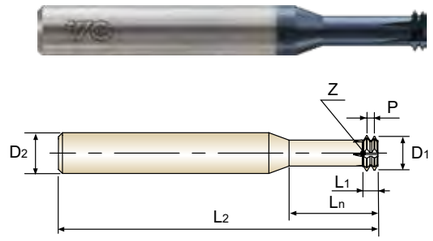
## L19E1 SERIES

## M SOLID CARBIDE MINIATURE THREAD MILL for HARD MATERIALS, ISO METRIC INTERNAL THREAD - DIN13

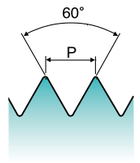
## ISO公制内螺纹用整体硬质合金微型螺纹铣刀，高硬度材料用-DIN13

- ▶ Short thread length
- ▶ Straight Flute
- ▶ Left hand Cut (CNC code : M04)
- ▶ The work direction is from top to bottom (Climb Milling)
- ▶ For hard materials up to HRc62

- ▶短牙设计
- ▶直槽
- ▶逆时针加工(CNC mode : M04)
- ▶加工方向, 从上到下(顺铣)
- ▶最高可加工硬度达 HRc62的材料




**Thread Depth 齿高**
2.0×D




Material groups **HR** | CARBIDE | DIN 6535HA | 60° | AlTiN | p. B19

Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| END MILL HOLDER | D117 - 137 | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| POWER MILLING CHUCK | | | D161 - 176 |
| ER COLLET CHUCK<br>SK SLIM CHUCK | | | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Nominal Diameter[ D ] | Pitch | Cutter Diameter | Shank Diameter | Thread Length | Neck Length | Overall Length | No. of Flute |
|---|---|---|---|---|---|---|---|---|
| 型号 | 通称直径 | 牙距 | 刃部直径 | 柄径 | 螺纹长 | 颈长 | 全长 | 槽数 |
| AlTiN | | P | D1 | D2 | L1 | Ln | L2 | Z |
| **L19E1130** | M2 | 0.4 | **1.52** | 6 | 0.8 | 4.2 | 57 | 4 |
| **L19E1150** | M2.2 | 0.45 | **1.66** | 6 | 0.9 | 4.6 | 57 | 4 |
| **L19E1170** | M2.5 | 0.45 | **1.96** | 6 | 0.9 | 5.3 | 57 | 4 |
| **L19E1200** | M3 | 0.5 | **2.4** | 6 | 1.0 | 6.3 | 57 | 4 |
| **L19E1240** | M4 | 0.7 | **3.16** | 6 | 1.4 | 8.4 | 57 | 4 |
| **L19E1280** | M5 | 0.8 | **4.04** | 6 | 1.6 | 10.5 | 57 | 4 |
| **L19E1310** | M6 | 1.0 | **4.8** | 6 | 2.0 | 12.6 | 57 | 5 |
| **L19E1360** | M8 | 1.25 | **6.5** | 8 | 2.5 | 16.8 | 63 | 5 |
| **L19E1420** | M10 | 1.5 | **8.2** | 10 | 3.0 | 21.0 | 73 | 6 |
| **L19E1500** | M12 | 1.75 | **9.9** | 10 | 3.5 | 25.2 | 73 | 6 |

* Other coatings are available on your request
可以邀请其他的涂层方式.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | | | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | | | | | | | | | | | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ◎ | ◎ | ◎ | ◎ |





# THREAD MILLS

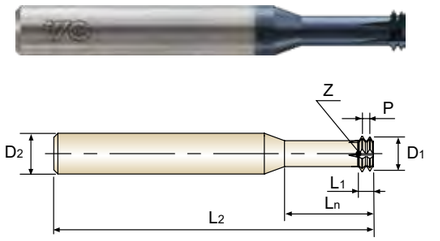
## L19E3 SERIES

## UNC SOLID CARBIDE MINIATURE THREAD MILL for HARD MATERIALS, UNC INTERNAL THREAD - ANSI B 1.1

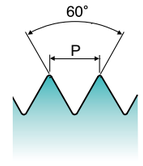
## 美制内螺纹用整体硬质合金微型螺纹铣刀，高硬度材料用- ANSI B 1.1

- ▶ Short thread length
- ▶ Straight Flute
- ▶ Left hand Cut (CNC code : M04)
- ▶ The work direction is from top to bottom (Climb Milling)
- ▶ For hard materials up to HRc62

- ▶短牙设计
- ▶直槽
- ▶逆时针加工(CNC mode : M04)
- ▶加工方向, 从上到下(顺铣)
- ▶最高可加工硬度达 HRc62的材料




**Thread Depth 齿高**
2.0×D




Material groups **HR** | CARBIDE | DIN 6535HA | 60° | AlTiN | p. B19

Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| END MILL HOLDER | D117 - 137 | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| POWER MILLING CHUCK | | | D161 - 176 |
| ER COLLET CHUCK<br>SK SLIM CHUCK | | | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Nominal Diameter[ D ] | T.P.I | Cutter Diameter | Shank Diameter | Thread Length | Neck Length | Overall Length | No. of Flute |
|---|---|---|---|---|---|---|---|---|
| 型号 | 通称直径 | 牙距 | 刃部直径 | 柄径 | 螺纹长 | 颈长 | 全长 | 槽数 |
| AlTiN | | | D1 | D2 | L1 | Ln | L2 | Z |
| **L19E3080** | #2 | 56 | **1.64** | 6 | 0.91 | 4.6 | 57 | 4 |
| **L19E3160** | #4 | 40 | **2.08** | 6 | 1.27 | 6.0 | 57 | 4 |
| **L19E3240** | #6 | 32 | **2.55** | 6 | 1.59 | 7.4 | 57 | 4 |
| **L19E3280** | #8 | 32 | **3.21** | 6 | 1.59 | 8.7 | 57 | 4 |
| **L19E3320** | #10 | 24 | **3.56** | 6 | 2.12 | 10.1 | 57 | 4 |
| **L19E3360** | #12 | 24 | **4.22** | 6 | 2.12 | 11.5 | 57 | 4 |
| **L19E3400** | 1/4 | 20 | **4.83** | 6 | 2.54 | 13.3 | 57 | 5 |
| **L19E3440** | 5/16 | 18 | **6.24** | 8 | 2.82 | 16.7 | 63 | 5 |
| **L19E3480** | 3/8 | 16 | **7.62** | 8 | 3.18 | 20.0 | 63 | 6 |
| **L19E3520** | 7/16 | 14 | **8.94** | 10 | 3.63 | 23.3 | 73 | 6 |

* Other coatings are available on your request
可以邀请其他的涂层方式.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | | | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | | | | | | | | | | | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ◎ | ◎ | ◎ | ◎ |

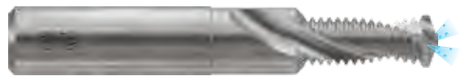
# THREAD MILLS

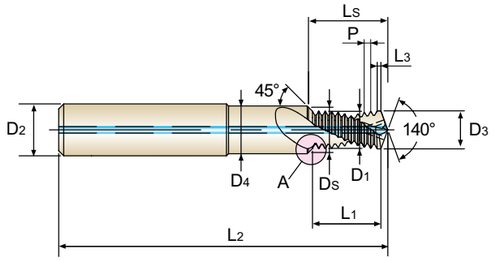
Bright **L41A1** SERIES
TiAlN **L42A1** SERIES

## M SOLID CARBIDE DRILL AND THREAD MILL WITH CHAMFER for ISO METRIC INTERNAL THREAD - DIN 13
## ISO公制内螺纹用钻, 螺纹铣一体刀, 带倒角-DIN 13

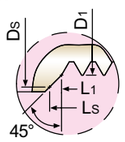
▶ No. of Flute : 2
▶ Drill Point : 140° / Countersink : 90°
▶ Drilling, Chamfering and Thread milling

▶ 2槽
▶ 钻尖 : 140° / 倒角 : 90°
▶ 钻, 倒角和螺纹铣刀一体设计

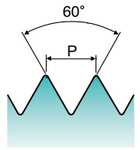





Detail "A"




Thread Depth 齿高
2.0×D




Material groups GG | Material groups Al | CARBIDE | DIN 6535HA | 60° | R25 | Bright | TiAlN | p. B19

Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| END MILL HOLDER | D117 - 137 | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| POWER MILLING CHUCK | | D161 - 176 | |
| ER COLLET CHUCK<br>SK SLIM CHUCK | | D73 - 115<br>D183 - 201 | |

Unit(单位) : mm

| EDP No. 型号 | | Nominal Diameter[ D ] 通称直径 | Pitch 牙距 | Cutter Diameter 刃部直径 | Shank Diameter 柄径 | Effect. Diameter 有效直径 | Drill Diameter 钻头直径 | Max. C'sink 最大锪锥孔 | Thread Length 螺纹长 | Effect. Length 有效长度 | Drill Length 钻头长度 | Overall Length 全长 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bright | TiAlN | | P | D1 | D2 | Ds | D3 | D4 | L1 | Ls | L3 | L2 |
| **L41A1310** | **L42A1310** | M6 | 1.0 | **4.75** | 8 | 6.3 | 5.00 | 6.6 | 13.00 | 14.68 | 1.00 | 62 |
| **L41A1360** | **L42A1360** | M8 | 1.25 | **6.35** | 10 | 8.3 | 6.75 | 9.0 | 16.27 | 18.48 | 1.25 | 74 |
| **L41A1420** | **L42A1420** | M10 | 1.5 | **7.95** | 12 | 10.3 | 8.50 | 11.0 | 21.05 | 23.77 | 1.50 | 79 |
| **L41A1500** | **L42A1500** | M12 | 1.75 | **9.95** | 14 | 12.3 | 10.25 | 13.5 | 24.21 | 27.25 | 1.50 | 89 |
| **L41A1540** | **L42A1540** | M14 | 2.0 | **11.20** | 16 | 14.3 | 12.00 | 15.5 | 29.58 | 33.32 | 1.50 | 102 |

* Other coatings are available on your request
可以邀请其他的涂层方式.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | | | | | | | | | | | | | | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400Rm | 1050Rm | 550 | 630 | 400 | 550 |
| Recommended | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | | | | | | | | | | | |





# THREAD MILLS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工条件

### For Thread Mills 螺纹铣刀

Unit(单位) : mm

| Materials 材料 | Hardness(HB) 硬度(HB) | Strength(N/mm2) 力量 | Feed per Tooth 每齿进给量 (fz) | |
|---|---|---|---|---|
| | | | Cutter Diameter 刃部直径 ≤Ø8.0 | Cutter Diameter 刃部直径 >Ø8.0 |
| **Low Carbon Steels** 低碳钢 | ≤ 200 | ≤ 700 | 0.02 - 0.04 | 0.04 - 0.10 |
| **Medium Carbon Steels** 中碳钢<br>**High Carbon Steels** 高碳钢 | ≤ 250 | ≤ 850 | 0.02 - 0.04 | 0.04 - 0.10 |
| **Alloy Steels** 合金钢 | ≤ 250 | ≤ 850 | 0.02 - 0.04 | 0.04 - 0.10 |
| **Heat Treated Steels** 淬火钢 | ≤ 400 | ≤ 1400 | 0.02 - 0.04 | 0.04 - 0.10 |
| **Stainless Steels** 不锈钢 | ≤ 300 | ≤ 1000 | 0.01 - 0.02 | 0.02 - 0.06 |
| **Cast Iron** 铸铁 | ≤ 300 | ≤ 1000 | 0.02 - 0.04 | 0.04 - 0.10 |
| **Chrome-Nickel Alloys** 铬镍合金<br>**Titanium Alloys** 钛合金 | ≤ 350 | ≤ 1200 | 0.01 - 0.02 | 0.02 - 0.06 |
| **Non Ferrous Materials** 有色金属 | ≤ 200 | ≤ 700 | 0.03 - 0.07 | 0.05 - 0.10 |

### For Drill and Thread Mills 钻&螺纹一体铣刀

Unit(单位) : mm

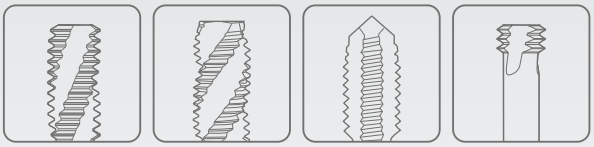
| Materials 材料 | Hardness (HB) 硬度 | Strength (N/mm2) 力量 | Fz(Thread Milling) -Feed per Tooth 每齿进给量 | | Fdr(Drilling) - Feed per revolution 每转走刀量 | |
|---|---|---|---|---|---|---|
| | | | Cutter Diameter 刃部直径 ≤Ø8.0 | Cutter Diameter 刃部直径 >Ø8.0 | Cutter Diameter 刃部直径 ≤Ø8.0 | Cutter Diameter 刃部直径 >Ø8.0 |
| **Cast Iron** 铸铁 | ≤ 200 | ≤ 700 | 0.03-0.08 | 0.08-0.12 | 0.10-0.20 | 0.20-0.25 |
| **Aluminium** 铝<br>**Aluminium-alloy** 铝合金<br>**Magnesium** 镁合金 | ≤ 180 | ≤ 600 | 0.05-0.10 | 0.10-0.15 | 0.10-0.20 | 0.20-0.30 |
| **Plastics** 塑料 | - | - | 0.05-0.10 | 0.10-0.15 | 0.10-0.20 | 0.20-0.30 |

### For Hard Material Miniature Thread Mills 高硬度材料用微型螺纹铣刀

Unit(单位) : mm

| Materials 材料 | Hardness(HB) 硬度 | Strength(N/mm2) 力量 | Feed 进给 (mm/tooth) | |
|---|---|---|---|---|
| | | | Cutter Diameter 刃部直径 ≤Ø6.0 | Cutter Diameter 刃部直径 >Ø6.0 |
| **Alloy Steel** 合金钢 | 295-415HB | 1000-1400 | 0.02-0.04 | 0.04-0.06 |
| **Stainless Steel** 不锈钢 | 280-415HB | 950-1250 | 0.02-0.04 | 0.04-0.06 |
| **Cast Iron** 铸铁 | ≤ HB300 | ≤ 1000 | 0.03-0.05 | 0.05-0.07 |
| **Chrome-Nickel Alloys** 铬铸合金<br>**Titanium Alloys** 钛合金 | ≤ HB445 | ≤ 1500 | 0.02-0.03 | 0.03-0.05 |
| **Hardened Material** 淬火材料 | 45-50HRc | | 0.03-0.05 | 0.05-0.07 |
| | 51-55HRc | | 0.02-0.04 | 0.04-0.06 |
| | 56-62HRc | | 0.01-0.03 | 0.03-0.05 |

Global Cutting Tool Leader **YG-1**



# THREADING

YG

Leading Through Innovation

HSS-PM

# SYNCHRO TAPS

- For High Speed Tapping on Rigid CNC Machine
- 刚性数控机床高速攻丝

# SELECTION GUIDE
# 选用指南

YG THREADING TOOLS

## HSS-PM SYNCHRO TAPS

For High Speed Tapping on Rigid CNC Machine

刚性数控机床高速攻丝

Please visit globalyg1.com/mat for material search

◎ : Excellent (优秀) ○ : Good (良好)

| | | |

# SYNCHRO TAPS

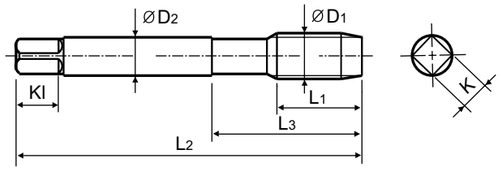
**TTS01** SERIES

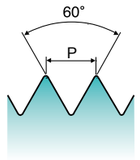
## M SPIRAL POINT for HIGH SPEED TAPPING
## 先端高速攻丝丝锥

- ▶ Coated HSS-PM(Powder Metallurgy) Taps for high-speed tapping on rigid CNC machines or equivalent machines
- ▶ Up to 3 times faster in tapping compared to conventional taps
- ▶ For high-speed synchro tapping, synchro holder for increasing tool life and thread quality is recommended
- ▶ High precision threads

- ▶为坚固的CNC机械或同等的机械高速攻丝而涂层的 HSS-PM 丝锥
- ▶与现有丝锥相比，丝攻处理速度最大提高3倍
- ▶建议使用高速攻丝时，为提高工具寿命和螺纹使用同步刀夹.
- ▶精巧的螺纹

**Hole type** 孔类型
3.0×D




Material groups **GS** | HSS-PM | YH | 60° | 4P~5P | TiN

p. B40

Tap Limits: p.B230

Recommended ToolHolder — Plain Shank — SYNCHRO TAPPING CHUCK D203-210

Page

Unit(单位) : mm

| SIZE 尺寸 | Pitch 牙距 | EDP No. 型号 | Limit 精度 | Thread Length 螺纹长 | Overall Length 全长 | Neck Length 颈长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|---|
| | | TiN | | $L_1$ | $L_2$ | $L_3$ | $ØD_2$ | K | Kl | |
| M3 × | 0.5 | **TTS01203** | YH3 | 5.0 | 46.0 | 18.0 | 4.0 | 3.2 | 6.0 | 3 |
| M4 × | 0.7 | **TTS01243** | YH3 | 7.0 | 52.0 | 20.0 | 6.0 | 4.5 | 7.0 | 3 |
| M5 × | 0.8 | **TTS01283** | YH3 | 8.0 | 60.0 | 25.0 | 6.0 | 4.5 | 7.0 | 3 |
| M6 × | 1.0 | **TTS01313** | YH3 | 10.0 | 62.0 | 28.0 | 6.0 | 4.5 | 7.0 | 3 |
| M8 × | 1.25 | **TTS01364** | YH4 | 13.0 | 70.0 | 35.0 | 8.0 | 6.0 | 9.0 | 3 |
| M10 × | 1.5 | **TTS01424** | YH4 | 15.0 | 75.0 | 39.0 | 8.0 | 6.0 | 9.0 | 3 |
| M12 × | 1.75 | **TTS01504** | YH4 | 18.0 | 82.0 | 42.0 | 10.0 | 8.0 | 11.0 | 4 |
| M14 × | 2.0 | **TTS01545** | YH5 | 20.0 | 88.0 | 46.0 | 12.0 | 9.0 | 12.0 | 4 |
| M16 × | 2.0 | **TTS01605** | YH5 | 20.0 | 95.0 | 50.0 | 16.0 | 12.0 | 15.0 | 4 |
| M18 × | 2.5 | **TTS01655** | YH5 | 25.0 | 100.0 | 55.0 | 16.0 | 12.0 | 15.0 | 4 |
| M20 × | 2.5 | **TTS01705** | YH5 | 25.0 | 105.0 | 56.0 | 16.0 | 12.0 | 15.0 | 4 |

▶Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ◎ | | ◎ | ◎ | | | ○ | | ○ | ○ | ○ | ◎ | ◎ | ◎ | ◎ | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400Rm | 1050Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | | | | | | | | | | | | | | |





# SYNCHRO TAPS

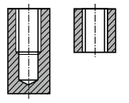
**TKS02** SERIES

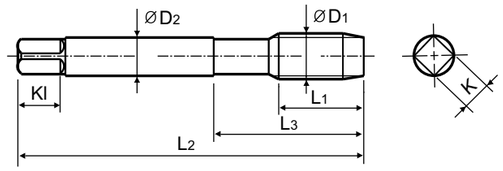
## M STRAIGHT FLUTE for HIGH SPEED TAPPING
## 先端高速攻丝丝锥

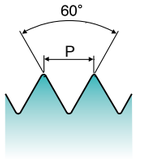
- ▶ Coated HSS-PM(Powder Metallurgy) Taps for high-speed tapping on rigid CNC machines or equivalent machines
- ▶ Up to 3 times faster in tapping compared to conventional taps
- ▶ For high-speed synchro tapping, synchro holder for increasing tool life and thread quality is recommended
- ▶ High precision threads

- ▶为坚固的CNC机械或同等的机械高速攻丝而涂层的 HSS-PM 丝锥
- ▶与现有丝锥相比，丝攻处理速度最大提高3倍
- ▶建议使用高速攻丝时，为提高工具寿命和螺纹使用同步刀夹.
- ▶精巧的螺纹

**Hole type** 孔类型
2.0×D






Material groups **GS** | HSS-PM | YH | 60° | 2P~3P | TiCN

p. B40

Tap Limits: p.B230

Recommended ToolHolder — Plain Shank — SYNCHRO TAPPING CHUCK D203-210

Page

Unit(单位) : mm

| SIZE 尺寸 | Pitch 牙距 | EDP No. 型号 | Limit 精度 | Thread Length 螺纹长 | Overall Length 全长 | Neck Length 颈长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|---|
| | | TiCN | | $L_1$ | $L_2$ | $L_3$ | $ØD_2$ | K | Kl | |
| M3 × | 0.5 | **TKS02203** | YH3 | 5.0 | 46.0 | 18.0 | 4.0 | 3.2 | 6.0 | 3 |
| M4 × | 0.7 | **TKS02243** | YH3 | 7.0 | 52.0 | 20.0 | 6.0 | 4.5 | 7.0 | 3 |
| M5 × | 0.8 | **TKS02283** | YH3 | 8.0 | 60.0 | 25.0 | 6.0 | 4.5 | 7.0 | 3 |
| M6 × | 1.0 | **TKS02313** | YH3 | 10.0 | 62.0 | 28.0 | 6.0 | 4.5 | 7.0 | 3 |
| M8 × | 1.25 | **TKS02364** | YH4 | 13.0 | 70.0 | 35.0 | 8.0 | 6.0 | 9.0 | 3 |
| M10 × | 1.5 | **TKS02424** | YH4 | 15.0 | 75.0 | 39.0 | 8.0 | 6.0 | 9.0 | 4 |
| M12 × | 1.75 | **TKS02504** | YH4 | 18.0 | 82.0 | 42.0 | 10.0 | 8.0 | 11.0 | 4 |
| M14 × | 2.0 | **TKS02545** | YH5 | 20.0 | 88.0 | 46.0 | 12.0 | 9.0 | 12.0 | 4 |
| M16 × | 2.0 | **TKS02605** | YH5 | 20.0 | 95.0 | 50.0 | 16.0 | 12.0 | 15.0 | 4 |
| M18 × | 2.5 | **TKS02655** | YH5 | 25.0 | 100.0 | 55.0 | 16.0 | 12.0 | 15.0 | 4 |
| M20 × | 2.5 | **TKS02705** | YH5 | 25.0 | 105.0 | 56.0 | 16.0 | 12.0 | 15.0 | 4 |

▶Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ○ | ○ | ○ | ○ | | ○ | ○ | | | | | | | | ◎ | ◎ | ◎ | ◎ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400Rm | 1050Rm | 550 | 630 | 400 | 550 |
| Recommended | | | ◎ | ◎ | ◎ | ○ | ○ | | | | | | | | | | | | | | |

# SYNCHRO TAPS

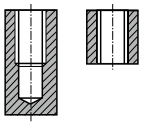
**TTS03 SERIES**

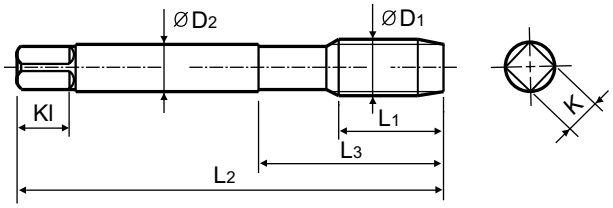
## M FLUTELESS for HIGH SPEED TAPPING
## 高速攻丝挤压丝锥

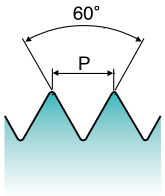
- ▶ Coated HSS-PM(Powder Metallurgy) Taps for high-speed tapping on rigid CNC machines or equivalent machines
- ▶ Up to 3 times faster in tapping compared to conventional taps
- ▶ For high-speed synchro tapping, synchro holder for increasing tool life and thread quality is recommended
- ▶ High precision threads

- ▶ 为坚固的CNC机械或同等的机械高速攻丝而涂层的 HSS-PM 丝锥
- ▶ 与现有丝锥相比，丝攻处理速度最大提高3倍
- ▶ 建议使用高速攻丝时，为提高工具寿命和螺纹使用同步刀夹.
- ▶ 精巧的螺纹

**Hole type 孔类型**
3.0×D






Material groups **GV** | HSS-PM | GH | 60° | 2P~3P | TiN

p. B40

Tap Limits: p.B231

Recommended ToolHolder — Plain Shank — Page — SYNCHRO TAPPING CHUCK D203-210

Unit(单位) : mm

| SIZE<br>尺寸<br>ØD1 | Pitch<br>牙距<br>P | EDP No.<br>型号<br>TiN | Limit<br>精度 | Thread Length<br>螺纹长<br>L1 | Overall Length<br>全长<br>L2 | Neck Length<br>颈长<br>L3 | Shank Diameter<br>柄径<br>ØD2 | Square Size<br>方块 尺寸<br>K | Square Length<br>方块 长度<br>Kl | No. of Lobe<br>槽数 |
|---|---|---|---|---|---|---|---|---|---|---|
| M3 | × 0.5 | **TTS03205** | GH5 | 5.0 | 46.0 | 18.0 | 4.0 | 3.2 | 6.0 | 5 |
| M4 | × 0.7 | **TTS03246** | GH6 | 7.0 | 52.0 | 20.0 | 6.0 | 4.5 | 7.0 | 5 |
| M5 | × 0.8 | **TTS03286** | GH6 | 8.0 | 60.0 | 25.0 | 6.0 | 4.5 | 7.0 | 5 |
| M6 | × 1.0 | **TTS03317** | GH7 | 10.0 | 62.0 | 28.0 | 6.0 | 4.5 | 7.0 | 5 |
| M8 | × 1.25 | **TTS03367** | GH7 | 13.0 | 70.0 | 35.0 | 8.0 | 6.0 | 9.0 | 5 |
| M10 | × 1.5 | **TTS03427** | GH7 | 15.0 | 75.0 | 39.0 | 8.0 | 6.0 | 9.0 | 6 |
| M12 | × 1.75 | **TTS03508** | GH8 | 18.0 | 82.0 | 42.0 | 10.0 | 8.0 | 11.0 | 6 |

▶Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ◎ | | ◎ | ○ | | | | | ◎ | ◎ | ◎ | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400Rm | 1050Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ◎ | ◎ | ○ | ◎ | ◎ | | | | | | | | | | | | | | |

YG

Leading Through Innovation

HSS-E

# COMBO TAPS

- For Multi Purpose Tapping
- 多用途丝锥

# SELECTION GUIDE
# 选用指南

THREADING TOOLS

## HSS-E COMBO TAPS

For Multi Purpose Tapping
多用途丝锥

| | | | |
|---|---|---|---|
| HOLE TYPE 孔类型 | | Max. 2.5xD Blind Hole 盲孔 | Max. 3.0xD Through Hole 通孔 |
| TOOL MATERIAL 刀具材料 | | HSS-E | |
| CHAMFER LEAD ACC. TO DIN2197 倒角长度 | | 2.5P | 5.0P |
| FLUTE TYPE 槽型 | | Spiral Flute 螺旋角 | Spiral Point 螺尖 |
| SPIRAL FLUTE ANGLE 螺旋角 | | R40 | - |
| SERIES NO. 系列号 (page 页数) | JIS Type | I | I |
| | M/MF | T2809 (p. B47) | T2829 (p. B54) |
| | UNC/F | T2839 (p. B52) | T2849 (p. B58) |
| | W | | |
| | M-LH W-LH | | |
| | PIPE TAPS | | |
| SURFACE TREATMENT 表面处理 | | Bright | Bright |
| MODEL 模型 | | | |

Please visit globalyg1.com/mat for material search

◎ : Excellent (优秀) ○ : Good (良好)

| ISO 公制 | VDI 3323 | Material Description 材料描述 | Composition / Structure / Heat Treatment 成分 / 组织 / 热处理 | | HB 布氏硬度 | HRc 硬度 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | About 0.15% C | Annealed | 125 | | ○ | 5~8 | ○ | 15~20 |
| | 2 | | About 0.45% C | Annealed | 190 | 13 | ◎ | 7~12 | ◎ | 10~15 |
| | 3 | | About 0.45% C | Quenched & Tempered | 250 | 25 | ◎ | 7~12 | ◎ | 10~15 |
| | 4 | | About 0.75% C | Annealed | 270 | 28 | ◎ | 7~12 | ◎ | 10~15 |
| | 5 | | About 0.75% C | Quenched & Tempered | 300 | 32 | ◎ | 7~12 | ◎ | 10~15 |
| | 6 | Low alloy steel | | Annealed | 180 | 10 | ◎ | 7~12 | ◎ | 10~15 |
| | 7 | | | Quenched & Tempered | 275 | 29 | ◎ | 7~12 | ◎ | 10~15 |
| | 8 | | | Quenched & Tempered | 300 | 32 | ○ | 5~8 | ○ | 8~10 |
| | 9 | | | Quenched & Tempered | 350 | 38 | | | | |
| | 10 | High alloyed steel, and tool steel | | Annealed | 200 | 15 | ○ | 6~9 | ○ | 7~10 |
| | 11 | | | Quenched & Tempered | 325 | 35 | | | | |
| M | 12 | Stainless steel | Ferritic / Martensitic | Annealed | 200 | 15 | ◎ | 5~8 | ◎ | 8~13 |
| | 13 | | Martensitic | Quenched & Tempered | 240 | 23 | ◎ | 5~8 | ◎ | 8~13 |
| | 14 | | Austenitic | | 180 | 10 | ◎ | 5~8 | ◎ | 8~13 |
| K | 15 | Grey cast iron | Pearlitic / ferritic | | 180 | 10 | ○ | 7~12 | ◎ | 10~15 |
| | 16 | | Pearlitic (Martensitic) | | 260 | 26 | ○ | 7~12 | ◎ | 10~15 |
| | 17 | Nodular cast iron | Ferritic | | 160 | 3 | ○ | 7~12 | ◎ | 10~20 |
| | 18 | | Pearlitic | | 250 | 25 | ○ | 7~12 | ◎ | 10~20 |
| | 19 | Malleable cast iron | Ferritic | | 130 | | | | ○ | 10~15 |
| | 20 | | Pearlitic | | 230 | 21 | | | ○ | 10~15 |
| N | 21 | Aluminum-wrought alloy | Not Curable | | 60 | | ◎ | 10~20 | ◎ | 15~25 |
| | 22 | | Curable | Hardened | 100 | | ◎ | 10~20 | ◎ | 15~25 |
| | 23 | Aluminum-cast, alloyed | ≤ 12% Si, Not Curable | | 75 | | ◎ | 10~15 | ◎ | 15~20 |
| | 24 | | ≤ 12% Si, Curable | Hardened | 90 | | ◎ | 10~15 | ◎ | 15~20 |
| | 25 | | > 12% Si, Not Curable | | 130 | | ○ | 10~15 | ○ | 15~20 |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | Cutting Alloys, PB>1% | | 110 | | ◎ | 6~11 | ◎ | 7~12 |
| | 27 | | CuZn, CuSnZn (Brass) | | 90 | | ◎ | 6~20 | ◎ | 10~25 |
| | 28 | | CuSn, lead-free copper and electrolytic copper | | 100 | | | | | |
| | 29 | Non Metallic Materials | Duroplastic, Fiber Reinforced Plastic | | | | | | | |
| | 30 | | Rubber, Wood, etc. | | | | | | | |
| S | 31 | Heat Resistant Super Alloys | Fe Based | Annealed | 200 | 15 | | | | |
| | 32 | | | Cured | 280 | 30 | | | | |
| | 33 | | Ni or Co Based | Annealed | 250 | 25 | | | | |
| | 34 | | | Cured | 350 | 38 | | | | |
| | 35 | | | Cast | 320 | 34 | | | | |
| | 36 | Titanium Alloys | Pure Titanium | | 400 Rm | | | | | |
| | 37 | | Alpha + Beta Alloys | Hardened | 1050 Rm | | | | | |
| H | 38 | Hardened steel | | Hardened | 550 | 55 | | | | |
| | 39 | | | Hardened | 630 | 60 | | | | |
| | 40 | Chilled Cast Iron | | Cast | 400 | 42 | | | | |
| | 41 | Hardened Cast Iron | | Hardened | 550 | 55 | | | | |



CARBIDE
HSS
THREAD MILLS
SYNCHRO TAPS
COMBO TAPS
YG TAP GENERAL
YG TAP STEEL
YG TAP HARDENED
YG TAP INOX
YG TAP CAST IRON
YG TAP ALU
YG TAP Ti Ni
YG TAP FORMING
STI TAPS
PIPE TAPS
SKS21 HAND TAPS
SKS21 PIPE TAPS
TECHNICAL DATA

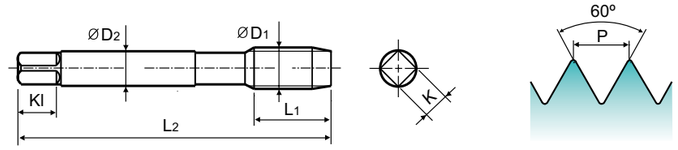
# COMBO TAPS

Bright **T2809** SERIES

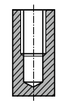
## M I-SP SPIRAL FLUTE TAPS for Multi Purpose
## I-SP 多用途螺旋槽丝锥

▶ For using multi-purpose and correct thread profiles & long tool life due to special tap geometry.

▶ 适合不锈钢加工, 可以修正螺纹形状, 采用独特的设计可以延长丝锥使用寿命




Hole type 孔类型
2.5×D



Material groups **MU** | HSS-E | I | YH | 60° | 2.5P | R40 | Homo Bright TiN | | p. B46

Tap Limits: p.B230

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| ◎ | TAPPING ER CHUCK | D215 -220 |
| ◎ | TAPPING CHUCK | D221 -228 |
| | ONE STEP TAPPING CHUCK | D211 -213 |

Unit(单位) : mm

| SIZE 尺寸 ØD1 | Pitch 牙距 P | EDP No. 型号 Bright | Limit 精度 | Overall Length 全长 L2 | Thread Length 螺纹长 L1 | Shank Diameter 柄径 ØD2 | Square Size 方块 尺寸 K | Square Length 方块 长度 Kl | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|
| M1 | x 0.25 | T2809011 | YH1 | 30.0 | 5.5 | 3.0 | 2.5 | 5.0 | 2 |
| M1.1 | x 0.25 | T2809031 | YH1 | 32.0 | 5.5 | 3.0 | 2.5 | 5.0 | 2 |
| M1.2 | x 0.25 | T2809051 | YH1 | 32.0 | 5.5 | 3.0 | 2.5 | 5.0 | 2 |
| M1.4 | x 0.3 | T2809071 | YH1 | 34.0 | 8.0 | 3.0 | 2.5 | 5.0 | 2 |
| M1.6 | x 0.35 | T2809091 | YH1 | 36.0 | 8.0 | 3.0 | 2.5 | 5.0 | 2 |
| M1.7 | x 0.35 | T2809K51 | YH1 | 36.0 | 8.0 | 3.0 | 2.5 | 5.0 | 2 |
| M1.8 | x 0.35 | T2809111 | YH1 | 36.0 | 8.0 | 3.0 | 2.5 | 5.0 | 2 |
| M2 | x 0.4 | T2809131 | YH1 | 40.0 | 9.5 | 3.0 | 2.5 | 5.0 | 2 |
| M2.2 | x 0.45 | T2809151 | YH1 | 42.0 | 9.5 | 3.0 | 2.5 | 5.0 | 2 |
| M2.3 | x 0.4 | T2809191 | YH1 | 42.0 | 9.5 | 3.0 | 2.5 | 5.0 | 2 |
| M2.5 | x 0.45 | T2809171 | YH1 | 44.0 | 9.5 | 3.0 | 2.5 | 5.0 | 2 |
| M2.5 | x 0.35 | T2809181 | YH1 | 44.0 | 9.5 | 3.0 | 2.5 | 5.0 | 2 |
| M2.6 | x 0.45 | T2809491 | YH1 | 44.0 | 9.5 | 3.0 | 2.5 | 5.0 | 2 |
| M2.6 | x 0.35 | T2809K71 | YH1 | 44.0 | 9.5 | 3.0 | 2.5 | 5.0 | 2 |
| M3 | x 0.5 | T2809202-C | YH2 | 46.0 | 11.0 | 4.0 | 3.2 | 6.0 | 3 |
| M3 | x 0.35 | T2809211-C | YH1 | 46.0 | 11.0 | 4.0 | 3.2 | 6.0 | 3 |
| M3.5 | x 0.6 | T2809222-C | YH2 | 48.0 | 13.0 | 4.0 | 3.2 | 6.0 | 3 |
| M3.5 | x 0.35 | T2809231-C | YH1 | 48.0 | 13.0 | 4.0 | 3.2 | 6.0 | 3 |
| M4 | x 0.7 | T2809242-C | YH2 | 52.0 | 13.0 | 5.0 | 4.0 | 7.0 | 3 |
| M4 | x 0.5 | T2809251-C | YH1 | 52.0 | 13.0 | 5.0 | 4.0 | 7.0 | 3 |
| M4.5 | x 0.75 | T2809262-C | YH2 | 55.0 | 13.0 | 5.0 | 4.0 | 7.0 | 3 |
| M4.5 | x 0.5 | T2809271-C | YH1 | 55.0 | 13.0 | 5.0 | 4.0 | 7.0 | 3 |
| M5 | x 0.8 | T2809282-C | YH2 | 60.0 | 16.0 | 5.5 | 4.5 | 7.0 | 3 |
| M5 | x 0.5 | T2809292-C | YH2 | 60.0 | 16.0 | 5.5 | 4.5 | 7.0 | 3 |
| M5.5 | x 0.5 | T2809301-C | YH1 | 60.0 | 16.0 | 5.5 | 4.5 | 7.0 | 3 |

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▶ Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸

▶ NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | | ○ | | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | | | | | | | | | | | | | | |

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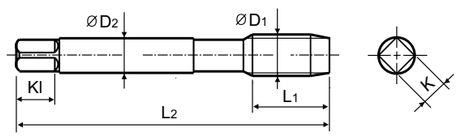


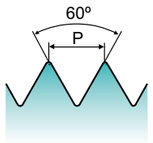


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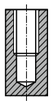

Material groups **MU** | HSS-E | I | YH | 60° | 2.5P | R40 | Bright

p. B46

Tap Limits: p.B230

Recommended ToolHolder

| Plain Shank | Page |
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| TAPPING CHUCK | D221 -228 |
| ONE STEP TAPPING CHUCK | D211 -213 |

Unit(单位) : mm

| SIZE 尺寸 ØD1 | Pitch 牙距 P | EDP No. 型号 Bright | Limit 精度 | Overall Length 全长 L2 | Thread Length 螺纹长 L1 | Shank Diameter 柄径 ØD2 | Square Size 方块 尺寸 K | Square Length 方块 长度 Kl | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|
| M6 | x 1.0 | **T2809312-C** | YH2 | 62.0 | 19.0 | 6.0 | 4.5 | 7.0 | 3 |
| M6 | x 0.75 | **T2809322-C** | YH2 | 62.0 | 19.0 | 6.0 | 4.5 | 7.0 | 3 |
| M6 | x 0.5 | **T2809332-C** | YH2 | 62.0 | 19.0 | 6.0 | 4.5 | 7.0 | 3 |
| M7 | x 1.0 | **T2809342-C** | YH2 | 65.0 | 19.0 | 6.2 | 5.0 | 8.0 | 3 |
| M7 | x 0.75 | **T2809352-C** | YH2 | 65.0 | 19.0 | 6.2 | 5.0 | 8.0 | 3 |
| M8 | x 1.25 | **T2809362-C** | YH2 | 70.0 | 22.0 | 6.2 | 5.0 | 8.0 | 3 |
| M8 | x 1.0 | **T2809372-C** | YH2 | 70.0 | 22.0 | 6.2 | 5.0 | 8.0 | 3 |
| M8 | x 0.75 | **T2809382-C** | YH2 | 70.0 | 22.0 | 6.2 | 5.0 | 8.0 | 3 |
| M9 | x 1.25 | **T2809392-C** | YH2 | 72.0 | 22.0 | 7.0 | 5.5 | 8.0 | 3 |
| M9 | x 1.0 | **T2809402-C** | YH2 | 72.0 | 22.0 | 7.0 | 5.5 | 8.0 | 3 |
| M9 | x 0.75 | **T2809412-C** | YH2 | 72.0 | 22.0 | 7.0 | 5.5 | 8.0 | 3 |
| M10 | x 1.5 | **T2809422-C** | YH2 | 75.0 | 24.0 | 7.0 | 5.5 | 8.0 | 3 |
| M10 | x 1.25 | **T2809432-C** | YH2 | 75.0 | 24.0 | 7.0 | 5.5 | 8.0 | 3 |
| M10 | x 1.0 | **T2809442-C** | YH2 | 75.0 | 24.0 | 7.0 | 5.5 | 8.0 | 3 |
| M10 | x 0.75 | **T2809452-C** | YH2 | 75.0 | 24.0 | 7.0 | 5.5 | 8.0 | 3 |
| M11 | x 1.5 | **T2809462-C** | YH2 | 80.0 | 25.0 | 8.0 | 6.0 | 9.0 | 3 |
| M11 | x 1.0 | **T2809472-C** | YH2 | 80.0 | 25.0 | 8.0 | 6.0 | 9.0 | 3 |
| M11 | x 0.75 | **T2809482-C** | YH2 | 80.0 | 25.0 | 8.0 | 6.0 | 9.0 | 3 |
| M12 | x 1.75 | **T2809502-C** | YH2 | 82.0 | 29.0 | 8.5 | 6.5 | 9.0 | 3 |
| M12 | x 1.5 | **T2809512-C** | YH2 | 82.0 | 29.0 | 8.5 | 6.5 | 9.0 | 3 |
| M12 | x 1.25 | **T2809522-C** | YH2 | 82.0 | 29.0 | 8.5 | 6.5 | 9.0 | 3 |
| M12 | x 1.0 | **T2809532-C** | YH2 | 82.0 | 29.0 | 8.5 | 6.5 | 9.0 | 3 |
| M14 | x 2.0 | **T2809542** | YH2 | 88.0 | 30.0 | 10.5 | 8.0 | 11.0 | 3 |
| M14 | x 1.5 | **T2809552** | YH2 | 88.0 | 30.0 | 10.5 | 8.0 | 11.0 | 3 |
| M14 | x 1.25 | **T2809562** | YH2 | 88.0 | 30.0 | 10.5 | 8.0 | 11.0 | 3 |

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| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | | ○ | | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400Rm | 1050Rm | 550 | 630 | 400 | 550 |
| Recommended | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | | | | | | | | | | | | | | |



CARBIDE
HSS
THREAD MILLS
SYNCHRO TAPS
COMBO TAPS
YG TAP GENERAL
YG TAP STEEL
YG TAP HARDENED
YG TAP INOX
YG TAP CAST IRON
YG TAP ALU
YG TAP Ti Ni
YG TAP FORMING
STI TAPS
PIPE TAPS
SKS21 HAND TAPS
SKS21 PIPE TAPS
TECHNICAL DATA

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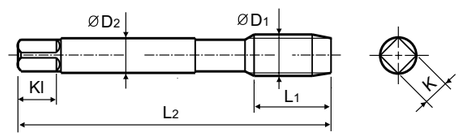


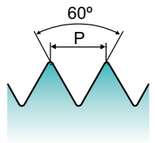


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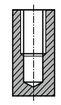

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|---|---|---|---|---|---|---|---|---|---|
| M14 | x 1.0 | **T2809572** | YH2 | 88.0 | 30.0 | 10.5 | 8.0 | 11.0 | 3 |
| M15 | x 1.5 | **T2809582** | YH2 | 90.0 | 30.0 | 10.5 | 8.0 | 11.0 | 3 |
| M15 | x 1.0 | **T2809592** | YH2 | 90.0 | 30.0 | 10.5 | 8.0 | 11.0 | 3 |
| M16 | x 2.0 | **T2809602** | YH2 | 95.0 | 32.0 | 12.5 | 10.0 | 13.0 | 3 |
| M16 | x 1.5 | **T2809612** | YH2 | 95.0 | 32.0 | 12.5 | 10.0 | 13.0 | 3 |
| M16 | x 1.0 | **T2809622** | YH2 | 95.0 | 32.0 | 12.5 | 10.0 | 13.0 | 3 |
| M18 | x 2.5 | **T2809653** | YH3 | 100.0 | 37.0 | 14.0 | 11.0 | 14.0 | 4 |
| M18 | x 2.0 | **T2809663** | YH3 | 100.0 | 37.0 | 14.0 | 11.0 | 14.0 | 4 |
| M18 | x 1.5 | **T2809672** | YH2 | 100.0 | 37.0 | 14.0 | 11.0 | 14.0 | 4 |
| M18 | x 1.0 | **T2809682** | YH2 | 100.0 | 37.0 | 14.0 | 11.0 | 14.0 | 4 |
| M20 | x 2.5 | **T2809703** | YH3 | 105.0 | 37.0 | 15.0 | 12.0 | 15.0 | 4 |
| M20 | x 2.0 | **T2809713** | YH3 | 105.0 | 37.0 | 15.0 | 12.0 | 15.0 | 4 |
| M20 | x 1.5 | **T2809723** | YH3 | 105.0 | 37.0 | 15.0 | 12.0 | 15.0 | 4 |
| M20 | x 1.0 | **T2809732** | YH2 | 105.0 | 37.0 | 15.0 | 12.0 | 15.0 | 4 |
| M22 | x 2.5 | **T2809743** | YH3 | 115.0 | 38.0 | 17.0 | 13.0 | 16.0 | 4 |
| M22 | x 2.0 | **T2809753** | YH3 | 115.0 | 38.0 | 17.0 | 13.0 | 16.0 | 4 |
| M22 | x 1.5 | **T2809763** | YH3 | 115.0 | 38.0 | 17.0 | 13.0 | 16.0 | 4 |
| M22 | x 1.0 | **T2809772** | YH2 | 115.0 | 38.0 | 17.0 | 13.0 | 16.0 | 4 |
| M24 | x 3.0 | **T2809783** | YH3 | 120.0 | 45.0 | 19.0 | 15.0 | 18.0 | 4 |
| M24 | x 2.0 | **T2809793** | YH3 | 120.0 | 45.0 | 19.0 | 15.0 | 18.0 | 4 |
| M24 | x 1.5 | **T2809803** | YH3 | 120.0 | 45.0 | 19.0 | 15.0 | 18.0 | 4 |
| M24 | x 1.0 | **T2809812** | YH2 | 120.0 | 45.0 | 19.0 | 15.0 | 18.0 | 4 |
| M25 | x 2.0 | **T2809823** | YH3 | 125.0 | 45.0 | 19.0 | 15.0 | 18.0 | 4 |
| M25 | x 1.5 | **T2809833** | YH3 | 125.0 | 45.0 | 19.0 | 15.0 | 18.0 | 4 |
| M26 | x 2.0 | **T2809N43** | YH3 | 125.0 | 45.0 | 20.0 | 15.0 | 18.0 | 4 |

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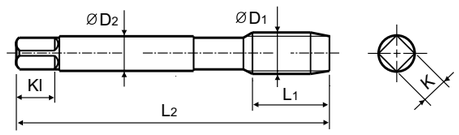
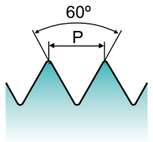
## I-SP 多用途螺旋槽丝锥

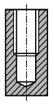
▶ For using multi-purpose and correct thread profiles & long tool life due to special tap geometry.

▶适合不锈钢加工, 可以修正螺纹形状, 采用独特的设计可以延长丝锥使用寿命




Hole type 孔类型
2.5×D



Material groups **MU** | HSS-E | I | YH | 60° | 2.5P | R40 | Bright | p. B46

Tap Limits: p.B230

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| TAPPING ER CHUCK | D215-220 |
| TAPPING CHUCK | D221-228 |
| ONE STEP TAPPING CHUCK | D211-213 |

Unit(单位) : mm

| SIZE 尺寸 ØD1 | Pitch 牙距 P | EDP No. 型号 Bright | Limit 精度 | Overall Length 全长 L2 | Thread Length 螺纹长 L1 | Shank Diameter 柄径 ØD2 | Square Size 方块 尺寸 K | Square Length 方块 长度 Kl | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|
| M26 x | 1.5 | **T2809853** | YH3 | 125.0 | 45.0 | 20.0 | 15.0 | 18.0 | 4 |
| M26 x | 1.0 | **T2809N52** | YH2 | 125.0 | 45.0 | 20.0 | 15.0 | 18.0 | 4 |
| M27 x | 3.0 | **T2809863** | YH3 | 130.0 | 45.0 | 20.0 | 15.0 | 18.0 | 4 |
| M27 x | 2.0 | **T2809873** | YH3 | 130.0 | 45.0 | 20.0 | 15.0 | 18.0 | 4 |
| M27 x | 1.5 | **T2809883** | YH3 | 130.0 | 45.0 | 20.0 | 15.0 | 18.0 | 4 |
| M28 x | 2.0 | **T2809903** | YH3 | 130.0 | 45.0 | 21.0 | 17.0 | 20.0 | 4 |
| M28 x | 1.5 | **T2809913** | YH3 | 130.0 | 45.0 | 21.0 | 17.0 | 20.0 | 4 |
| M30 x | 3.5 | **T2809944** | YH4 | 135.0 | 48.0 | 23.0 | 17.0 | 20.0 | 4 |
| M30 x | 3.0 | **T2809953** | YH3 | 135.0 | 48.0 | 23.0 | 17.0 | 20.0 | 4 |
| M30 x | 2.0 | **T2809963** | YH3 | 135.0 | 48.0 | 23.0 | 17.0 | 20.0 | 4 |
| M30 x | 1.5 | **T2809973** | YH3 | 135.0 | 48.0 | 23.0 | 17.0 | 20.0 | 4 |
| M30 x | 1.0 | **T2809982** | YH2 | 135.0 | 48.0 | 23.0 | 17.0 | 20.0 | 4 |
| M33 x | 3.5 | **T2809A44** | YH4 | 145.0 | 51.0 | 25.0 | 19.0 | 22.0 | 4 |
| M33 x | 3.0 | **T2809A53** | YH3 | 145.0 | 51.0 | 25.0 | 19.0 | 22.0 | 4 |
| M33 x | 2.0 | **T2809A63** | YH3 | 145.0 | 45.0 | 25.0 | 19.0 | 22.0 | 4 |
| M33 x | 1.5 | **T2809A73** | YH3 | 145.0 | 45.0 | 25.0 | 19.0 | 22.0 | 4 |
| M36 x | 4.0 | **T2809B34** | YH4 | 155.0 | 57.0 | 28.0 | 21.0 | 24.0 | 4 |
| M36 x | 3.0 | **T2809B43** | YH3 | 155.0 | 57.0 | 28.0 | 21.0 | 24.0 | 4 |
| M36 x | 2.0 | **T2809B53** | YH3 | 155.0 | 45.0 | 28.0 | 21.0 | 24.0 | 4 |
| M36 x | 1.5 | **T2809B63** | YH3 | 155.0 | 45.0 | 28.0 | 21.0 | 24.0 | 4 |
| M38 x | 1.5 | **T2809B83** | YH3 | 165.0 | 45.0 | 28.0 | 21.0 | 24.0 | 4 |
| M39 x | 4.0 | **T2809C04** | YH4 | 165.0 | 60.0 | 30.0 | 23.0 | 26.0 | 4 |
| M39 x | 2.0 | **T2809C23** | YH3 | 165.0 | 45.0 | 30.0 | 23.0 | 26.0 | 4 |
| M39 x | 1.5 | **T2809C33** | YH3 | 165.0 | 45.0 | 30.0 | 23.0 | 26.0 | 4 |
| M40 x | 3.0 | **T2809C44** | YH4 | 165.0 | 60.0 | 30.0 | 23.0 | 26.0 | 4 |

* The other coating(TiCN or TiAlN) is available on your request 涂层(TiCN or TiAlN)可根据要求定制

▶Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸

▶ NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | | ○ | | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | | | | | | | | | | | | | | |



CARBIDE
HSS
THREAD MILLS
SYNCHRO TAPS
COMBO TAPS
YG TAP GENERAL
YG TAP STEEL
YG TAP HARDENED
YG TAP INOX
YG TAP CAST IRON
YG TAP ALU
YG TAP Ti Ni
YG TAP FORMING
STI TAPS
PIPE TAPS
SKS21 HAND TAPS
SKS21 PIPE TAPS
TECHNICAL DATA

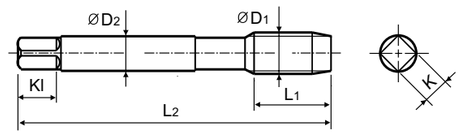
# COMBO TAPS

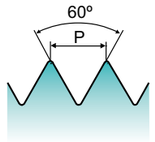
Bright **T2809** SERIES

## M I-SP SPIRAL FLUTE TAPS for Multi Purpose
## I-SP 多用途螺旋槽丝锥

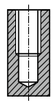
▶ For using multi-purpose and correct thread profiles & long tool life due to special tap geometry.

▶适合不锈钢加工, 可以修正螺纹形状, 采用独特的设计可以延长丝锥使用寿命




Hole type 孔类型
2.5×D



Material groups **MU** | HSS-E | I | YH | 60° | 2.5P | R40 | Bright | p. B46

Tap Limits: p.B230

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| TAPPING ER CHUCK | D215-220 |
| TAPPING CHUCK | D221-228 |
| ONE STEP TAPPING CHUCK | D211-213 |

Unit(单位) : mm

| SIZE 尺寸 ØD1 | Pitch 牙距 P | EDP No. 型号 Bright | Limit 精度 | Overall Length 全长 L2 | Thread Length 螺纹长 L1 | Shank Diameter 柄径 ØD2 | Square Size 方块 尺寸 K | Square Length 方块 长度 Kl | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|
| M40 x | 2.0 | **T2809C53** | YH3 | 165.0 | 45.0 | 30.0 | 23.0 | 26.0 | 4 |
| M40 x | 1.5 | **T2809C63** | YH3 | 165.0 | 45.0 | 30.0 | 23.0 | 26.0 | 4 |
| M42 x | 4.5 | **T2809C84** | YH4 | 175.0 | 60.0 | 32.0 | 26.0 | 30.0 | 4 |
| M42 x | 3.0 | **T2809D04** | YH4 | 175.0 | 60.0 | 32.0 | 26.0 | 30.0 | 4 |
| M42 x | 2.0 | **T2809D13** | YH3 | 175.0 | 45.0 | 32.0 | 26.0 | 30.0 | 4 |
| M42 x | 1.5 | **T2809D23** | YH3 | 175.0 | 45.0 | 32.0 | 26.0 | 30.0 | 4 |
| M45 x | 4.5 | **T2809D54** | YH4 | 180.0 | 67.0 | 35.0 | 26.0 | 30.0 | 4 |
| M45 x | 1.5 | **T2809D93** | YH3 | 180.0 | 45.0 | 35.0 | 26.0 | 30.0 | 4 |
| M48 x | 5.0 | **T2809E24** | YH4 | 185.0 | 67.0 | 38.0 | 29.0 | 32.0 | 4 |
| M48 x | 3.0 | **T2809E54** | YH4 | 185.0 | 67.0 | 38.0 | 29.0 | 32.0 | 4 |
| M48 x | 1.5 | **T2809E73** | YH3 | 185.0 | 45.0 | 38.0 | 29.0 | 32.0 | 4 |
| M50 x | 5.0 | **T2809O34** | YH4 | 195.0 | 70.0 | 40.0 | 32.0 | 35.0 | 4 |
| M52 x | 5.0 | **T2809F34** | YH4 | 195.0 | 70.0 | 42.0 | 32.0 | 35.0 | 4 |
| M64 x | 6.0 | **T2809I75** | YH5 | 225.0 | 79.0 | 48.0 | 38.0 | 42.0 | 4 |

* The other coating(TiCN or TiAlN) is available on your request 涂层(TiCN or TiAlN)可根据要求定制

▶Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | | ○ | | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | | | | | | | | | | | | | | |

# COMBO TAPS

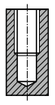
Bright **T2839** SERIES

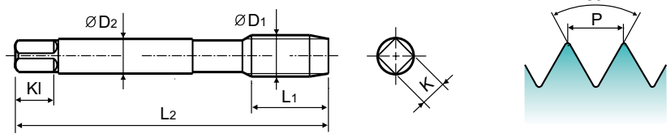
## UNC/F I-SP SPIRAL FLUTE TAPS for Multi Purpose
## I-SP 多用途螺旋槽丝锥

▶ For using multi-purpose and correct thread profiles & long tool life due to special tap geometry.

▶ 适合不锈钢加工, 可以修正螺纹形状, 采用独特的设计可以延长丝锥使用寿命

Hole type 孔类型
2.5×D






Material groups **MU**

HSS-E | I | YH | 60° | 2.5P | R40 | Bright

p. B46

Tap Limits: p.B230

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| TAPPING ER CHUCK | | D215 -220 |
| TAPPING CHUCK | | D221 -228 |
| ONE STEP TAPPING CHUCK | | D211 -213 |

Unit(单位) : mm

| SIZE 尺寸 ØD1 | Pitch 牙距 P | EDP No. 型号 Bright | Limit 精度 | Overall Length 全长 L2 | Thread Length 螺纹长 L1 | Shank Diameter 柄径 ØD2 | Square Size 方块 尺寸 K | Square Length 方块 长度 Kl | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|
| #2 | - 56UNC | **T2839081** | YH1 | 42.0 | 9.5 | 3.0 | 2.5 | 5.0 | 2 |
| #2 | - 64UNF | **T2839101** | YH1 | 42.0 | 9.5 | 3.0 | 2.5 | 5.0 | 2 |
| #3 | - 48UNC | **T2839121** | YH1 | 44.0 | 9.5 | 3.0 | 2.5 | 5.0 | 2 |
| #3 | - 56UNF | **T2839141** | YH1 | 44.0 | 9.5 | 3.0 | 2.5 | 5.0 | 2 |
| #4 | - 40UNC | **T2839161** | YH1 | 44.0 | 9.5 | 3.0 | 2.5 | 5.0 | 3 |
| #4 | - 48UNF | **T2839181** | YH1 | 44.0 | 9.5 | 3.0 | 2.5 | 5.0 | 3 |
| #5 | - 40UNC | **T2839201-C** | YH1 | 46.0 | 11.0 | 4.0 | 3.2 | 6.0 | 3 |
| #5 | - 44UNF | **T2839221-C** | YH1 | 46.0 | 11.0 | 4.0 | 3.2 | 6.0 | 3 |
| #6 | - 32UNC | **T2839242-C** | YH2 | 48.0 | 13.0 | 4.0 | 3.2 | 6.0 | 3 |
| #6 | - 40UNF | **T2839261-C** | YH1 | 48.0 | 13.0 | 4.0 | 3.2 | 6.0 | 3 |
| #8 | - 32UNC | **T2839282-C** | YH2 | 52.0 | 13.0 | 5.0 | 4.0 | 7.0 | 3 |
| #8 | - 36UNF | **T2839302-C** | YH2 | 52.0 | 13.0 | 5.0 | 4.0 | 7.0 | 3 |
| #10 | - 24UNC | **T2839322-C** | YH2 | 60.0 | 16.0 | 5.5 | 4.5 | 7.0 | 3 |
| #10 | - 32UNF | **T2839342-C** | YH2 | 60.0 | 16.0 | 5.5 | 4.5 | 7.0 | 3 |
| #12 | - 24UNC | **T2839362-C** | YH2 | 60.0 | 16.0 | 5.5 | 4.5 | 7.0 | 3 |
| #12 | - 28UNF | **T2839382-C** | YH2 | 60.0 | 16.0 | 5.5 | 4.5 | 7.0 | 3 |
| 1/4 | - 20UNC | **T2839402-C** | YH2 | 62.0 | 19.0 | 6.0 | 4.5 | 7.0 | 3 |
| 1/4 | - 28UNF | **T2839422-C** | YH2 | 62.0 | 19.0 | 6.0 | 4.5 | 7.0 | 3 |
| 5/16 | - 18UNC | **T2839442-C** | YH2 | 70.0 | 22.0 | 6.1 | 5.0 | 8.0 | 3 |
| 5/16 | - 24UNF | **T2839462-C** | YH2 | 70.0 | 22.0 | 6.1 | 5.0 | 8.0 | 3 |
| 3/8 | - 16UNC | **T2839482-C** | YH2 | 75.0 | 24.0 | 7.0 | 5.5 | 8.0 | 3 |
| 3/8 | - 24UNF | **T2839502-C** | YH2 | 75.0 | 24.0 | 7.0 | 5.5 | 8.0 | 3 |
| 7/16 | - 14UNC | **T2839523-C** | YH3 | 80.0 | 25.0 | 8.0 | 6.0 | 9.0 | 3 |
| 7/16 | - 20UNF | **T2839542-C** | YH2 | 80.0 | 25.0 | 8.0 | 6.0 | 9.0 | 3 |

* The other coating(TiCN or TiAIN) is available on your request 涂层(TiCN or TiAIN)可根据要求定制

▶Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸

▶ NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | | ○ | | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400Rm | 1050Rm | 550 | 630 | 400 | 550 |
| Recommended | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | | | | | | | | | | | | | | |



CARBIDE
HSS
THREAD MILLS
SYNCHRO TAPS
COMBO TAPS
YG TAP GENERAL
YG TAP STEEL
YG TAP HARDENED
YG TAP INOX
YG TAP CAST IRON
YG TAP ALU
YG TAP Ti Ni
YG TAP FORMING
STI TAPS
PIPE TAPS
SKS21 HAND TAPS
SKS21 PIPE TAPS
TECHNICAL DATA

# COMBO TAPS

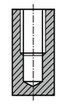
Bright **T2839** SERIES

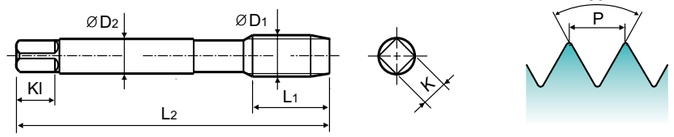
## UNC/F I-SP SPIRAL FLUTE TAPS for Multi Purpose
## I-SP 多用途螺旋槽丝锥

▶ For using multi-purpose and correct thread profiles & long tool life due to special tap geometry.

▶ 适合不锈钢加工, 可以修正螺纹形状, 采用独特的设计可以延长丝锥使用寿命

Hole type 孔类型
2.5×D






Material groups MU

HSS-E | I | YH | 60° | 2.5P | R40 | Bright

p. B46

Tap Limits: p.B230

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| TAPPING ER CHUCK | | D215 -220 |
| TAPPING CHUCK | | D221 -228 |
| ONE STEP TAPPING CHUCK | | D211 -213 |

Unit(单位) : mm

| SIZE 尺寸 ØD1 | Pitch 牙距 P | EDP No. 型号 Bright | Limit 精度 | Overall Length 全长 L2 | Thread Length 螺纹长 L1 | Shank Diameter 柄径 ØD2 | Square Size 方块 尺寸 K | Square Length 方块 长度 Kl | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|
| 1/2 | - 13UNC | **T2839563-C** | YH3 | 85.0 | 29.0 | 9.0 | 7.0 | 10.0 | 3 |
| 1/2 | - 20UNF | **T2839582-C** | YH2 | 85.0 | 29.0 | 9.0 | 7.0 | 10.0 | 3 |
| 9/16 | - 12UNC | **T2839603** | YH3 | 90.0 | 30.0 | 10.5 | 8.0 | 11.0 | 3 |
| 9/16 | - 18UNF | **T2839622** | YH2 | 90.0 | 30.0 | 10.5 | 8.0 | 11.0 | 3 |
| 5/8 | - 11UNC | **T2839643** | YH3 | 95.0 | 32.0 | 12.0 | 9.0 | 12.0 | 3 |
| 5/8 | - 18UNF | **T2839662** | YH2 | 95.0 | 32.0 | 12.0 | 9.0 | 12.0 | 3 |
| 3/4 | - 10UNC | **T2839703** | YH3 | 105.0 | 37.0 | 14.0 | 11.0 | 14.0 | 4 |
| 3/4 | - 16UNF | **T2839723** | YH3 | 105.0 | 37.0 | 14.0 | 11.0 | 14.0 | 4 |
| 7/8 | - 9UNC | **T2839743** | YH3 | 115.0 | 38.0 | 17.0 | 13.0 | 16.0 | 4 |
| 7/8 | - 14UNF | **T2839763** | YH3 | 115.0 | 38.0 | 17.0 | 13.0 | 16.0 | 4 |
| 1" | - 8UNC | **T2839783** | YH3 | 125.0 | 45.0 | 20.0 | 15.0 | 18.0 | 4 |
| 1" | - 12UNF | **T2839803** | YH3 | 125.0 | 45.0 | 20.0 | 15.0 | 18.0 | 4 |

* The other coating(TiCN or TiAIN) is available on your request 涂层(TiCN or TiAIN)可根据要求定制

▶Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | | ○ | | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400Rm | 1050Rm | 550 | 630 | 400 | 550 |
| Recommended | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | | | | | | | | | | | | | | |

# COMBO TAPS

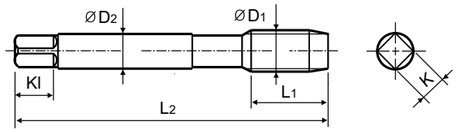
Bright **T2829** SERIES

## M I-GP SPIRAL POINT TAPS for Multi Purpose
## I-GP 多用途先端丝锥

▶ For using multi-purpose and correct thread profiles & long tool life due to special tap geometry.

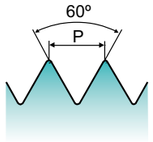
▶ 适合不锈钢加工, 可以修正螺纹形状, 采用独特的设计可以延长丝锥使用寿命

Hole type 孔类型
3.0×D










Material groups **MU** | HSS-E | I | YH | 60° | 5.0P | Bright | | p. B46

Tap Limits: p.B230

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| TAPPING ER CHUCK | | D215 -220 |
| TAPPING CHUCK | | D221 -228 |
| ONE STEP TAPPING CHUCK | | D211 -213 |

Unit(单位) : mm

| SIZE 尺寸 ØD1 | Pitch 牙距 P | EDP No. 型号 Bright | Limit 精度 | Overall Length 全长 L2 | Thread Length 螺纹长 L1 | Shank Diameter 柄径 ØD2 | Square Size 方块 尺寸 K | Square Length 方块 长度 Kl | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|
| M1 | x 0.25 | **T2829011** | YH1 | 30.0 | 5.5 | 3.0 | 2.5 | 5.0 | 2 |
| M1.1 | x 0.25 | **T2829031** | YH1 | 32.0 | 5.5 | 3.0 | 2.5 | 5.0 | 2 |
| M1.2 | x 0.25 | **T2829051** | YH1 | 32.0 | 5.5 | 3.0 | 2.5 | 5.0 | 2 |
| M1.4 | x 0.3 | **T2829071** | YH1 | 34.0 | 8.0 | 3.0 | 2.5 | 5.0 | 2 |
| M1.6 | x 0.35 | **T2829091** | YH1 | 36.0 | 8.0 | 3.0 | 2.5 | 5.0 | 2 |
| M1.7 | x 0.35 | **T2829K51** | YH1 | 36.0 | 8.0 | 3.0 | 2.5 | 5.0 | 2 |
| M1.8 | x 0.35 | **T2829112** | YH2 | 36.0 | 8.0 | 3.0 | 2.5 | 5.0 | 2 |
| M2 | x 0.4 | **T2829132** | YH2 | 40.0 | 9.5 | 3.0 | 2.5 | 5.0 | 2 |
| M2.2 | x 0.45 | **T2829152** | YH2 | 42.0 | 9.5 | 3.0 | 2.5 | 5.0 | 2 |
| M2.3 | x 0.4 | **T2829192** | YH2 | 42.0 | 9.5 | 3.0 | 2.5 | 5.0 | 2 |
| M2.5 | x 0.45 | **T2829172** | YH2 | 44.0 | 9.5 | 3.0 | 2.5 | 5.0 | 2 |
| M2.6 | x 0.45 | **T2829492** | YH2 | 44.0 | 9.5 | 3.0 | 2.5 | 5.0 | 2 |
| M3 | x 0.5 | **T2829202-C** | YH2 | 46.0 | 11.0 | 4.0 | 3.2 | 6.0 | 3 |
| M3 | x 0.35 | **T2829212-C** | YH2 | 46.0 | 11.0 | 4.0 | 3.2 | 6.0 | 3 |
| M3.5 | x 0.6 | **T2829222-C** | YH2 | 48.0 | 13.0 | 4.0 | 3.2 | 6.0 | 3 |
| M3.5 | x 0.35 | **T2829232-C** | YH2 | 48.0 | 13.0 | 4.0 | 3.2 | 6.0 | 3 |
| M4 | x 0.7 | **T2829242-C** | YH2 | 52.0 | 13.0 | 5.0 | 4.0 | 7.0 | 3 |
| M4 | x 0.5 | **T2829252-C** | YH2 | 52.0 | 13.0 | 5.0 | 4.0 | 7.0 | 3 |
| M4.5 | x 0.75 | **T2829262-C** | YH2 | 55.0 | 13.0 | 5.0 | 4.0 | 7.0 | 3 |
| M4.5 | x 0.5 | **T2829272-C** | YH2 | 55.0 | 13.0 | 5.0 | 4.0 | 7.0 | 3 |
| M5 | x 0.8 | **T2829282-C** | YH2 | 60.0 | 16.0 | 5.5 | 4.5 | 7.0 | 3 |
| M5 | x 0.5 | **T2829292-C** | YH2 | 60.0 | 16.0 | 5.5 | 4.5 | 7.0 | 3 |
| M5.5 | x 0.5 | **T2829302-C** | YH2 | 60.0 | 16.0 | 5.5 | 4.5 | 7.0 | 3 |
| M6 | x 1.0 | **T2829312-C** | YH2 | 62.0 | 19.0 | 6.0 | 4.5 | 7.0 | 3 |

* The other Coating(TiCN or TiAlN) is available on your request. 涂层(TiCN or TiAlN)可根据要求定制

▶ NEXT PAGE 下页

▶Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | | ○ | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400Rm | 1050Rm | 550 | 630 | 400 | 550 |
| Recommended | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | | | | | | | | | | | | | | |



CARBIDE
HSS
THREAD MILLS
SYNCHRO TAPS
COMBO TAPS
YG TAP GENERAL
YG TAP STEEL
YG TAP HARDENED
YG TAP INOX
YG TAP CAST IRON
YG TAP ALU
YG TAP Ti Ni
YG TAP FORMING
STI TAPS
PIPE TAPS
SKS21 HAND TAPS
SKS21 PIPE TAPS
TECHNICAL DATA

# COMBO TAPS

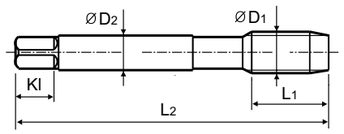
Bright **T2829** SERIES

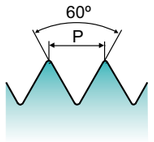
## M I-GP SPIRAL POINT TAPS for Multi Purpose
## I-GP 多用途先端丝锥

▶ For using multi-purpose and correct thread profiles & long tool life due to special tap geometry.

▶ 适合不锈钢加工, 可以修正螺纹形状, 采用独特的设计可以延长丝锥使用寿命

Hole type 孔类型
3.0×D






Material groups **MU** | HSS-E | I | YH | 60° | 5.0P | Bright | | p. B46

Tap Limits: p.B230

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| TAPPING ER CHUCK | | D215 -220 |
| TAPPING CHUCK | | D221 -228 |
| ONE STEP TAPPING CHUCK | | D211 -213 |

Unit(单位) : mm

| SIZE 尺寸 ØD1 | Pitch 牙距 P | EDP No. 型号 Bright | Limit 精度 | Overall Length 全长 L2 | Thread Length 螺纹长 L1 | Shank Diameter 柄径 ØD2 | Square Size 方块 尺寸 K | Square Length 方块 长度 Kl | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|
| M6 | x 0.75 | **T2829322-C** | YH2 | 62.0 | 19.0 | 6.0 | 4.5 | 7.0 | 3 |
| M6 | x 0.5 | **T2829332-C** | YH2 | 62.0 | 19.0 | 6.0 | 4.5 | 7.0 | 3 |
| M7 | x 1.0 | **T2829342-C** | YH2 | 65.0 | 19.0 | 6.2 | 5.0 | 8.0 | 3 |
| M7 | x 0.75 | **T2829352-C** | YH2 | 65.0 | 19.0 | 6.2 | 5.0 | 8.0 | 3 |
| M8 | x 1.25 | **T2829363-C** | YH3 | 70.0 | 22.0 | 6.2 | 5.0 | 8.0 | 3 |
| M8 | x 1.0 | **T2829373-C** | YH3 | 70.0 | 22.0 | 6.2 | 5.0 | 8.0 | 3 |
| M8 | x 0.75 | **T2829383-C** | YH3 | 70.0 | 22.0 | 6.2 | 5.0 | 8.0 | 3 |
| M9 | x 1.25 | **T2829393-C** | YH3 | 72.0 | 22.0 | 7.0 | 5.5 | 8.0 | 3 |
| M9 | x 1.0 | **T2829403-C** | YH3 | 72.0 | 22.0 | 7.0 | 5.5 | 8.0 | 3 |
| M9 | x 0.75 | **T2829413-C** | YH3 | 72.0 | 22.0 | 7.0 | 5.5 | 8.0 | 3 |
| M10 | x 1.5 | **T2829423-C** | YH3 | 75.0 | 24.0 | 7.0 | 5.5 | 8.0 | 3 |
| M10 | x 1.25 | **T2829433-C** | YH3 | 75.0 | 24.0 | 7.0 | 5.5 | 8.0 | 3 |
| M10 | x 1.0 | **T2829443-C** | YH3 | 75.0 | 24.0 | 7.0 | 5.5 | 8.0 | 3 |
| M11 | x 1.5 | **T2829463-C** | YH3 | 80.0 | 25.0 | 8.0 | 6.0 | 9.0 | 3 |
| M11 | x 1.0 | **T2829473-C** | YH3 | 80.0 | 25.0 | 8.0 | 6.0 | 9.0 | 3 |
| M11 | x 0.75 | **T2829483-C** | YH3 | 80.0 | 25.0 | 8.0 | 6.0 | 9.0 | 3 |
| M12 | x 1.75 | **T2829504-C** | YH4 | 82.0 | 29.0 | 8.5 | 6.5 | 9.0 | 3 |
| M12 | x 1.5 | **T2829513-C** | YH3 | 82.0 | 29.0 | 8.5 | 6.5 | 9.0 | 3 |
| M12 | x 1.25 | **T2829523-C** | YH3 | 82.0 | 29.0 | 8.5 | 6.5 | 9.0 | 3 |
| M12 | x 1.0 | **T2829533-C** | YH3 | 82.0 | 29.0 | 8.5 | 6.5 | 9.0 | 3 |
| M14 | x 2.0 | **T2829544** | YH4 | 88.0 | 30.0 | 10.5 | 8.0 | 11.0 | 3 |
| M14 | x 1.5 | **T2829553** | YH3 | 88.0 | 30.0 | 10.5 | 8.0 | 11.0 | 3 |
| M14 | x 1.25 | **T2829563** | YH3 | 88.0 | 30.0 | 10.5 | 8.0 | 11.0 | 3 |
| M14 | x 1.0 | **T2829573** | YH3 | 88.0 | 30.0 | 10.5 | 8.0 | 11.0 | 3 |

* The other Coating(TiCN or TiAlN) is available on your request. 涂层(TiCN or TiAlN)可根据要求定制

▶ NEXT PAGE 下页

▶Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | | ○ | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400Rm | 1050Rm | 550 | 630 | 400 | 550 |
| Recommended | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | | | | | | | | | | | | | | |

# COMBO TAPS

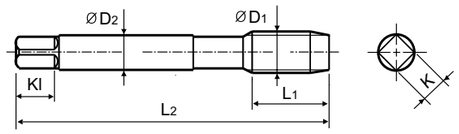
Bright **T2829** SERIES

## M I-GP SPIRAL POINT TAPS for Multi Purpose
## I-GP 多用途先端丝锥

▶ For using multi-purpose and correct thread profiles & long tool life due to special tap geometry.

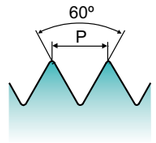
▶ 适合不锈钢加工, 可以修正螺纹形状, 采用独特的设计可以延长丝锥使用寿命

Hole type 孔类型
3.0×D










Material groups **MU** | HSS-E | I | YH | 60° | 5.0P | Bright | p. B46

Tap Limits: p.B230

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| ◎ | TAPPING ER CHUCK | D215 -220 |
| ◎ | TAPPING CHUCK | D221 -228 |
| | ONE STEP TAPPING CHUCK | D211 -213 |

Unit(单位) : mm

| SIZE 尺寸 ØD1 | Pitch 牙距 P | EDP No. 型号 Bright | Limit 精度 | Overall Length 全长 L2 | Thread Length 螺纹长 L1 | Shank Diameter 柄径 ØD2 | Square Size 方块 尺寸 K | Square Length 方块 长度 Kl | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|
| M15 | x 1.5 | **T2829583** | YH3 | 90.0 | 30.0 | 10.5 | 8.0 | 11.0 | 3 |
| M15 | x 1.0 | **T2829593** | YH3 | 90.0 | 30.0 | 10.5 | 8.0 | 11.0 | 3 |
| M16 | x 2.0 | **T2829604** | YH4 | 95.0 | 32.0 | 12.5 | 10.0 | 13.0 | 3 |
| M16 | x 1.5 | **T2829613** | YH3 | 95.0 | 32.0 | 12.5 | 10.0 | 13.0 | 3 |
| M16 | x 1.0 | **T2829623** | YH3 | 95.0 | 32.0 | 12.5 | 10.0 | 13.0 | 3 |
| M18 | x 2.5 | **T2829654** | YH4 | 100.0 | 37.0 | 14.0 | 11.0 | 14.0 | 3 |
| M18 | x 2.0 | **T2829664** | YH4 | 100.0 | 37.0 | 14.0 | 11.0 | 14.0 | 3 |
| M18 | x 1.5 | **T2829674** | YH4 | 100.0 | 37.0 | 14.0 | 11.0 | 14.0 | 3 |
| M18 | x 1.0 | **T2829683** | YH3 | 100.0 | 37.0 | 14.0 | 11.0 | 14.0 | 3 |
| M20 | x 2.5 | **T2829704** | YH4 | 105.0 | 37.0 | 15.0 | 12.0 | 15.0 | 3 |
| M20 | x 2.0 | **T2829714** | YH4 | 105.0 | 37.0 | 15.0 | 12.0 | 15.0 | 3 |
| M20 | x 1.5 | **T2829724** | YH4 | 105.0 | 37.0 | 15.0 | 12.0 | 15.0 | 3 |
| M20 | x 1.0 | **T2829733** | YH3 | 105.0 | 37.0 | 15.0 | 12.0 | 15.0 | 3 |
| M22 | x 2.5 | **T2829744** | YH4 | 115.0 | 38.0 | 17.0 | 13.0 | 16.0 | 3 |
| M22 | x 2.0 | **T2829754** | YH4 | 115.0 | 38.0 | 17.0 | 13.0 | 16.0 | 3 |
| M22 | x 1.5 | **T2829764** | YH4 | 115.0 | 38.0 | 17.0 | 13.0 | 16.0 | 3 |
| M22 | x 1.0 | **T2829773** | YH3 | 115.0 | 38.0 | 17.0 | 13.0 | 16.0 | 3 |
| M24 | x 3.0 | **T2829784** | YH4 | 120.0 | 45.0 | 19.0 | 15.0 | 18.0 | 3 |
| M24 | x 2.0 | **T2829794** | YH4 | 120.0 | 45.0 | 19.0 | 15.0 | 18.0 | 3 |
| M24 | x 1.5 | **T2829804** | YH4 | 120.0 | 45.0 | 19.0 | 15.0 | 18.0 | 3 |
| M24 | x 1.0 | **T2829813** | YH3 | 120.0 | 45.0 | 19.0 | 15.0 | 18.0 | 3 |
| M25 | x 2.0 | **T2829824** | YH4 | 125.0 | 45.0 | 19.0 | 15.0 | 18.0 | 3 |
| M25 | x 1.5 | **T2829834** | YH4 | 125.0 | 45.0 | 19.0 | 15.0 | 18.0 | 3 |
| M26 | x 2.0 | **T2829N44** | YH4 | 125.0 | 45.0 | 20.0 | 15.0 | 18.0 | 4 |

* The other Coating(TiCN or TiAlN) is available on your request. 涂层(TiCN or TiAlN)可根据要求定制

▶ NEXT PAGE 下页

▶ Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | | ○ | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400Rm | 1050Rm | 550 | 630 | 400 | 550 |
| Recommended | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | | | | | | | | | | | | | | |



CARBIDE
HSS
THREAD MILLS
SYNCHRO TAPS
COMBO TAPS
YG TAP GENERAL
YG TAP STEEL
YG TAP HARDENED
YG TAP INOX
YG TAP CAST IRON
YG TAP ALU
YG TAP Ti Ni
YG TAP FORMING
STI TAPS
PIPE TAPS
SKS21 HAND TAPS
SKS21 PIPE TAPS
TECHNICAL DATA

# COMBO TAPS

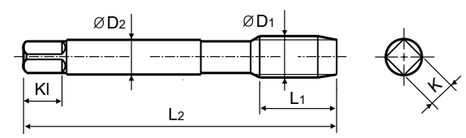
Bright **T2829** SERIES

## M I-GP SPIRAL POINT TAPS for Multi Purpose
## I-GP 多用途先端丝锥

▶ For using multi-purpose and correct thread profiles & long tool life due to special tap geometry.

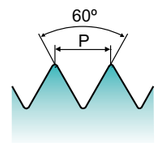
▶ 适合不锈钢加工, 可以修正螺纹形状, 采用独特的设计可以延长丝锥使用寿命

Hole type 孔类型
3.0×D










Material groups **MU** | HSS-E | I | YH | 60° | 5.0P | Bright | p. B46

Tap Limits: p.B230

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| ◎ | TAPPING ER CHUCK | D215 -220 |
| ◎ | TAPPING CHUCK | D221 -228 |
| | ONE STEP TAPPING CHUCK | D211 -213 |

Unit(单位) : mm

| SIZE 尺寸 ØD1 | Pitch 牙距 P | EDP No. 型号 Bright | Limit 精度 | Overall Length 全长 L2 | Thread Length 螺纹长 L1 | Shank Diameter 柄径 ØD2 | Square Size 方块 尺寸 K | Square Length 方块 长度 Kl | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|
| M26 | x 1.5 | **T2829854** | YH4 | 125.0 | 45.0 | 20.0 | 15.0 | 18.0 | 4 |
| M26 | x 1.0 | **T2829N53** | YH3 | 125.0 | 45.0 | 20.0 | 15.0 | 18.0 | 4 |
| M27 | x 3.0 | **T2829864** | YH4 | 130.0 | 45.0 | 20.0 | 15.0 | 18.0 | 4 |
| M27 | x 2.0 | **T2829874** | YH4 | 130.0 | 45.0 | 20.0 | 15.0 | 18.0 | 4 |
| M27 | x 1.5 | **T2829884** | YH4 | 130.0 | 45.0 | 20.0 | 15.0 | 18.0 | 4 |
| M28 | x 2.0 | **T2829904** | YH4 | 130.0 | 45.0 | 21.0 | 17.0 | 20.0 | 4 |
| M28 | x 1.5 | **T2829914** | YH4 | 130.0 | 45.0 | 21.0 | 17.0 | 20.0 | 4 |
| M30 | x 3.5 | **T2829945** | YH5 | 135.0 | 48.0 | 23.0 | 17.0 | 20.0 | 4 |
| M30 | x 3.0 | **T2829954** | YH4 | 135.0 | 48.0 | 23.0 | 17.0 | 20.0 | 4 |
| M30 | x 2.0 | **T2829964** | YH4 | 135.0 | 48.0 | 23.0 | 17.0 | 20.0 | 4 |
| M30 | x 1.5 | **T2829974** | YH4 | 135.0 | 48.0 | 23.0 | 17.0 | 20.0 | 4 |
| M30 | x 1.0 | **T2829982** | YH2 | 135.0 | 48.0 | 23.0 | 17.0 | 20.0 | 4 |
| M33 | x 3.5 | **T2829A45** | YH5 | 145.0 | 51.0 | 25.0 | 19.0 | 22.0 | 4 |
| M33 | x 3.0 | **T2829A54** | YH4 | 145.0 | 51.0 | 25.0 | 19.0 | 22.0 | 4 |
| M33 | x 2.0 | **T2829A63** | YH3 | 145.0 | 45.0 | 25.0 | 19.0 | 22.0 | 4 |
| M33 | x 1.5 | **T2829A74** | YH4 | 145.0 | 45.0 | 25.0 | 19.0 | 22.0 | 4 |
| M36 | x 4.0 | **T2829B35** | YH5 | 155.0 | 57.0 | 28.0 | 21.0 | 24.0 | 4 |
| M36 | x 3.0 | **T2829B44** | YH4 | 155.0 | 57.0 | 28.0 | 21.0 | 24.0 | 4 |
| M36 | x 2.0 | **T2829B53** | YH3 | 155.0 | 45.0 | 28.0 | 21.0 | 24.0 | 4 |
| M36 | x 1.5 | **T2829B64** | YH4 | 155.0 | 45.0 | 28.0 | 21.0 | 24.0 | 4 |

* The other Coating(TiCN or TiAlN) is available on your request. 涂层(TiCN or TiAlN)可根据要求定制

▶ Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | | ○ | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400Rm | 1050Rm | 550 | 630 | 400 | 550 |
| Recommended | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | | | | | | | | | | | | | | |

# COMBO TAPS

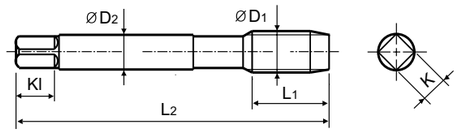
Bright **T2849** SERIES

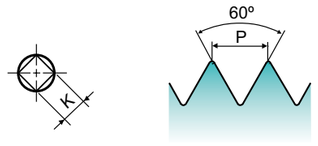
## UNC/F I-GP SPIRAL POINT TAPS for Multi Purpose
## I-GP 多用途先端丝锥

▶ For using multi-purpose and correct thread profiles & long tool life due to special tap geometry.

▶ 适合不锈钢加工, 可以修正螺纹形状, 采用独特的设计可以延长丝锥使用寿命

Hole type 孔类型
3.0×D




Material groups **MU** | HSS-E | I | YH | 60° | 5.0P | Bright | p. B46

Tap Limits: p.B230

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| TAPPING ER CHUCK | | D215 -220 |
| TAPPING CHUCK | | D221 -228 |
| ONE STEP TAPPING CHUCK | | D211 -213 |

Unit(单位) : mm

| SIZE 尺寸 ØD1 | Pitch 牙距 P | EDP No. 型号 Bright | Limit 精度 | Overall Length 全长 L2 | Thread Length 螺纹长 L1 | Shank Diameter 柄径 ØD2 | Square Size 方块 尺寸 K | Square Length 方块 长度 Kl | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|
| #2 | - 56UNC | **T2849081** | YH1 | 42.0 | 9.5 | 3.0 | 2.5 | 5.0 | 2 |
| #2 | - 64UNF | **T2849101** | YH1 | 42.0 | 9.5 | 3.0 | 2.5 | 5.0 | 2 |
| #3 | - 48UNC | **T2849121** | YH1 | 44.0 | 9.5 | 3.0 | 2.5 | 5.0 | 2 |
| #3 | - 56UNF | **T2849141** | YH1 | 44.0 | 9.5 | 3.0 | 2.5 | 5.0 | 2 |
| #4 | - 40UNC | **T2849162** | YH2 | 44.0 | 9.5 | 3.0 | 2.5 | 5.0 | 2 |
| #4 | - 48UNF | **T2849182** | YH2 | 44.0 | 9.5 | 3.0 | 2.5 | 5.0 | 2 |
| #5 | - 40UNC | **T2849202-C** | YH2 | 46.0 | 11.0 | 4.0 | 3.2 | 6.0 | 3 |
| #5 | - 44UNF | **T2849222-C** | YH2 | 46.0 | 11.0 | 4.0 | 3.2 | 6.0 | 3 |
| #6 | - 32UNC | **T2849242-C** | YH2 | 48.0 | 13.0 | 4.0 | 3.2 | 6.0 | 3 |
| #6 | - 40UNF | **T2849262-C** | YH2 | 48.0 | 13.0 | 4.0 | 3.2 | 6.0 | 3 |
| #8 | - 32UNC | **T2849282-C** | YH2 | 52.0 | 13.0 | 5.0 | 4.0 | 7.0 | 3 |
| #8 | - 36UNF | **T2849302-C** | YH2 | 52.0 | 13.0 | 5.0 | 4.0 | 7.0 | 3 |
| #10 | - 24UNC | **T2849322-C** | YH2 | 60.0 | 16.0 | 5.5 | 4.5 | 7.0 | 3 |
| #10 | - 32UNF | **T2849342-C** | YH2 | 60.0 | 16.0 | 5.5 | 4.5 | 7.0 | 3 |
| #12 | - 24UNC | **T2849362-C** | YH2 | 60.0 | 16.0 | 5.5 | 4.5 | 7.0 | 3 |
| #12 | - 28UNF | **T2849382-C** | YH2 | 60.0 | 16.0 | 5.5 | 4.5 | 7.0 | 3 |
| 1/4 | - 20UNC | **T2849402-C** | YH2 | 62.0 | 19.0 | 6.0 | 4.5 | 7.0 | 3 |
| 1/4 | - 28UNF | **T2849422-C** | YH2 | 62.0 | 19.0 | 6.0 | 4.5 | 7.0 | 3 |
| 5/16 | - 18UNC | **T2849442-C** | YH2 | 70.0 | 22.0 | 6.1 | 5.0 | 8.0 | 3 |
| 5/16 | - 24UNF | **T2849462-C** | YH2 | 70.0 | 22.0 | 6.1 | 5.0 | 8.0 | 3 |
| 3/8 | - 16UNC | **T2849483-C** | YH3 | 75.0 | 24.0 | 7.0 | 5.5 | 8.0 | 3 |
| 3/8 | - 24UNF | **T2849502-C** | YH2 | 75.0 | 24.0 | 7.0 | 5.5 | 8.0 | 3 |
| 7/16 | - 14UNC | **T2849523-C** | YH3 | 80.0 | 25.0 | 8.0 | 6.0 | 9.0 | 3 |
| 7/16 | - 20UNF | **T2849543-C** | YH3 | 80.0 | 25.0 | 8.0 | 6.0 | 9.0 | 3 |
| 1/2 | - 13UNC | **T2849563-C** | YH3 | 85.0 | 29.0 | 9.0 | 7.0 | 10.0 | 3 |
| 1/2 | - 20UNF | **T2849582-C** | YH2 | 85.0 | 29.0 | 9.0 | 7.0 | 10.0 | 3 |

* The other coating(TiCN or TiAlN) is available on your request 涂层(TiCN or TiAlN)可根据要求定制

▶ Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸

▶ NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | M | | | K | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | | Malleable cast iron | | | | | | | | | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | | | | | | | | | |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 | | | | | | | | | |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 | | | | | | | | | |
| Recommended | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | | ○ | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400Rm | 1050Rm | 550 | 630 | 400 | 550 |
| Recommended | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | | | | | | | | | | | | | | |



COMBO TAPS

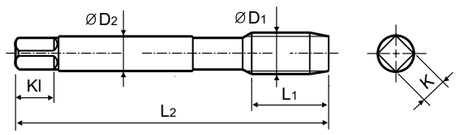
Bright T2849 SERIES

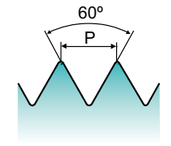
UNC/F I-GP SPIRAL POINT TAPS for Multi Purpose
I-GP 多用途先端丝锥

▶ For using multi-purpose and correct thread profiles & long tool life due to special tap geometry.

▶ 适合不锈钢加工, 可以修正螺纹形状, 采用独特的设计可以延长丝锥使用寿命

Hole type 孔类型
3.0×D




Material groups MU | HSS-E | I | YH | 60° | 5.0P | Bright | p. B46

Tap Limits: p.B230

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| TAPPING ER CHUCK | | D215 -220 |
| TAPPING CHUCK | | D221 -228 |
| ONE STEP TAPPING CHUCK | | D211 -213 |

Unit(单位) : mm

| SIZE 尺寸 ØD1 | Pitch 牙距 P | EDP No. 型号 Bright | Limit 精度 | Overall Length 全长 L2 | Thread Length 螺纹长 L1 | Shank Diameter 柄径 ØD2 | Square Size 方块 尺寸 K | Square Length 方块 长度 Kl | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|
| 9/16 | - 12UNC | **T2849603** | YH3 | 90.0 | 30.0 | 10.5 | 8.0 | 11.0 | 3 |
| 9/16 | - 18UNF | **T2849622** | YH2 | 90.0 | 30.0 | 10.5 | 8.0 | 11.0 | 3 |
| 5/8 | - 11UNC | **T2849643** | YH3 | 95.0 | 32.0 | 12.0 | 9.0 | 12.0 | 3 |
| 5/8 | - 18UNF | **T2849663** | YH3 | 95.0 | 32.0 | 12.0 | 9.0 | 12.0 | 3 |
| 3/4 | - 10UNC | **T2849703** | YH3 | 105.0 | 37.0 | 14.0 | 11.0 | 14.0 | 3 |
| 3/4 | - 16UNF | **T2849723** | YH3 | 105.0 | 37.0 | 14.0 | 11.0 | 14.0 | 3 |
| 7/8 | - 9UNC | **T2849744** | YH4 | 115.0 | 38.0 | 17.0 | 13.0 | 16.0 | 3 |
| 7/8 | - 14UNF | **T2849763** | YH3 | 115.0 | 38.0 | 17.0 | 13.0 | 16.0 | 3 |
| 1" | - 8UNC | **T2849784** | YH4 | 125.0 | 45.0 | 20.0 | 15.0 | 18.0 | 3 |
| 1" | - 12UNF | **T2849803** | YH3 | 125.0 | 45.0 | 20.0 | 15.0 | 18.0 | 3 |

* The other coating(TiCN or TiAlN) is available on your request 涂层(TiCN or TiAlN)可根据要求定制

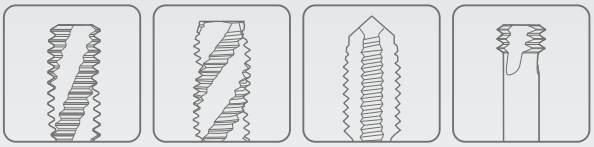
▶ Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | M | | | K | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | | Malleable cast iron | | | | | | | | | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | | | | | | | | | |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 | | | | | | | | | |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 | | | | | | | | | |
| Recommended | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | | ○ | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400Rm | 1050Rm | 550 | 630 | 400 | 550 |
| Recommended | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | | | | | | | | | | | | | | |

Global Cutting Tool Leader **YG-1**



# THREADING

Leading Through Innovation

## HSS-E & HSS

# YG TAP GENERAL

- Suitable for Tapping Blind / Through Holes due to Flute Geometry and Excellent Chip Evacuation
- 独特的槽形设计和排屑能力，适合通，盲孔加工

# SELECTION GUIDE
## 选用指南

YG THREADING TOOLS

# HSS-E & HSS
# YG TAP
# GENERAL

Suitable for Tapping Blind / Through Holes due to Flute Geometry and Excellent Chip Evacuation

独特的槽形设计和排屑能力，适合通，盲孔加工

Please visit globalyg1.com/mat for material search

◎ : Excellent (优秀) ○ : Good (良好)

| | | Max. 2.0xD Blind/Through Hole盲孔 / 通孔 | Max. 2.5xD Blind Hole盲孔 |
|---|---|---|---|
| HOLE TYPE 孔类型 | | | |
| TOOL MATERIAL 刀具材料 | | HSS | HSS-E |
| CHAMFER LEAD ACC. TO DIN2197 倒角长度 | | 1.5P/5.0P/9.0P | 2.5P |
| FLUTE TYPE 槽型 | | Straight Flute 直槽旋 | Spiral Flute 螺旋 |
| SPIRAL FLUTE ANGLE 螺旋角 | | - | R40 |
| SERIES (page) | JIS Type | HT | I |
| | M/MF | T7099 (p. B66) | T1121 (p. B73) |
| | UNC/F | T7199 (p. B70) | T1152 (p. B77) |
| | W | T7299 (p. B72) | T1251 (p. B79) |
| | M-LH W-LH | | |
| | PIPE TAPS | | |
| SURFACE TREATMENT表面处理 | | Bright | Steam Homo |
| MODEL 模型 | | HAND TAP | |

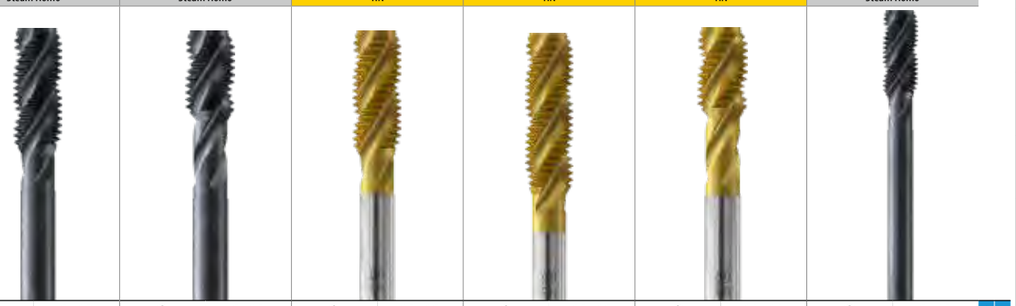
| ISO 公制 | VDI 3323 | Material Description 材料描述 | Composition / Structure / Heat Treatment 成分 / 组织 / 热处理 | | HB 布氏硬度 | HRc 硬度 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | About 0.15% C | Annealed | 125 | | ○ | 8~13 | ◎ | 8~13 |
| | 2 | | About 0.45% C | Annealed | 190 | 13 | ○ | 7~12 | ◎ | 7~12 |
| | 3 | | About 0.45% C | Quenched & Tempered | 250 | 25 | ○ | 7~12 | ○ | 7~12 |
| | 4 | | About 0.75% C | Annealed | 270 | 28 | ○ | 7~12 | ○ | 7~12 |
| | 5 | | About 0.75% C | Quenched & Tempered | 300 | 32 | ○ | 7~12 | | |
| | 6 | Low alloy steel | | Annealed | 180 | 10 | ○ | 7~12 | ○ | 7~12 |
| | 7 | | | Quenched & Tempered | 275 | 29 | ○ | 7~12 | ○ | 7~12 |
| | 8 | | | Quenched & Tempered | 300 | 32 | | | | |
| | 9 | | | Quenched & Tempered | 350 | 38 | | | | |
| | 10 | High alloyed steel, and tool steel | | Annealed | 200 | 15 | ○ | 6~9 | ○ | 6~9 |
| | 11 | | | Quenched & Tempered | 325 | 35 | | | | |
| M | 12 | Stainless steel | Ferritic / Martensitic | Annealed | 200 | 15 | | | ○ | 5~8 |
| | 13 | | Martensitic | Quenched & Tempered | 240 | 23 | | | ○ | 5~8 |
| | 14 | | Austenitic | | 180 | 10 | | | | |
| K | 15 | Grey cast iron | Pearlitic / ferritic | | 180 | 10 | ○ | 10~15 | ○ | 8~13 |
| | 16 | | Pearlitic (Martensitic) | | 260 | 26 | ○ | 10~15 | | |
| | 17 | Nodular cast iron | Ferritic | | 160 | 3 | ○ | 7~12 | ○ | 7~12 |
| | 18 | | Pearlitic | | 250 | 25 | ○ | 7~12 | | |
| | 19 | Malleable cast iron | Ferritic | | 130 | | | | | |
| | 20 | | Pearlitic | | 230 | 21 | | | | |
| N | 21 | Aluminum-wrought alloy | Not Curable | | 60 | | ○ | 10~20 | ○ | 10~20 |
| | 22 | | Curable | Hardened | 100 | | ○ | 10~20 | ○ | 10~20 |
| | 23 | Aluminum-cast, alloyed | ≤ 12% Si, Not Curable | | 75 | | ○ | 10~15 | ○ | 10~15 |
| | 24 | | ≤ 12% Si, Curable | Hardened | 90 | | | | | |
| | 25 | | > 12% Si, Not Curable | | 130 | | | | | |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | Cutting Alloys, PB>1% | | 110 | | ○ | 6~9 | ○ | 6~11 |
| | 27 | | CuZn, CuSnZn (Brass) | | 90 | | ○ | 6~15 | ○ | 6~20 |
| | 28 | | CuSn, lead-free copper and electrolytic copper | | 100 | | | | | |
| | 29 | Non Metallic Materials | Duroplastic, Fiber Reinforced Plastic | | | | | | | |
| | 30 | | Rubber, Wood, etc. | | | | | | | |
| S | 31 | Heat Resistant Super Alloys | Fe Based | Annealed | 200 | 15 | | | | |
| | 32 | | | Cured | 280 | 30 | | | | |
| | 33 | | Ni or Co Based | Annealed | 250 | 25 | | | | |
| | 34 | | | Cured | 350 | 38 | | | | |
| | 35 | | | Cast | 320 | 34 | | | | |
| | 36 | Titanium Alloys | Pure Titanium | | 400 Rm | | | | | |
| | 37 | | Alpha + Beta Alloys | Hardened | 1050 Rm | | | | | |
| H | 38 | Hardened steel | | Hardened | 550 | 55 | | | | |
| | 39 | | | Hardened | 630 | 60 | | | | |
| | 40 | Chilled Cast Iron | | Cast | 400 | 42 | | | | |
| | 41 | Hardened Cast Iron | | Hardened | 550 | 55 | | | | |



Max. 2.5xD Blind Hole盲孔

HSS-E

| | | | | | | |
|---|---|---|---|---|---|---|
| 2.5P | 2.5P | 2.5P | 2.5P | 2.5P | 2.5P | |
| Spiral Flute 螺旋 | Spiral Flute 螺旋 | Spiral Flute 螺旋 | Spiral Flute 螺旋 | Spiral Flute 螺旋 | Spiral Flute 螺旋 | |
| R40 | R40 | R40 | R40 | R40 | R40 | |
| J | S | I | J | S | Long Shank | JIS Type |
| T1132 (p. B80) | T1112 (p. B87) | T3121 (p. B93) | T3132 (p. B94) | T3112 (p. B95) | T1103~6 (p. B96-99) | M/MF |
| T1232 (p. B84) | T1172 (p. B90) | | | | | UNC/F |
| T1162 (p. B86) | T1182 (p. B92) | | | | T1130~60 (p. B100-101) | W |
| | | | | | | M-LH W-LH |
| | | | | | | PIPE TAPS |
| Steam Homo | Steam Homo | TiN | TiN | TiN | Steam Homo | |



| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ◎ | 8~13 | ◎ | 8~13 | ◎ | 13~18 | ◎ | 13~18 | ◎ | 13~18 | ◎ | 8~13 | 1 | | |
| ◎ | 7~12 | ◎ | 7~12 | ◎ | 10~15 | ◎ | 10~15 | ◎ | 10~15 | ◎ | 7~12 | 2 | | |
| ○ | 7~12 | ○ | 7~12 | ○ | 10~15 | ○ | 10~15 | ○ | 10~15 | ○ | 7~12 | 3 | | |
| ○ | 7~12 | ○ | 7~12 | ○ | 10~15 | ○ | 10~15 | ○ | 10~15 | ○ | 7~12 | 4 | | |
| | | | | | | | | | | | | 5 | | |
| ○ | 7~12 | ○ | 7~12 | ○ | 10~15 | ○ | 10~15 | ○ | 10~15 | ○ | 7~12 | 6 | P | |
| ○ | 7~12 | ○ | 7~12 | ○ | 10~15 | ○ | 10~15 | ○ | 10~15 | ○ | 7~12 | 7 | | |
| | | | | | | | | | | | | 8 | | |
| | | | | | | | | | | | | 9 | | |
| ○ | 6~9 | ○ | 6~9 | ○ | 10~15 | ○ | 10~15 | ○ | 10~15 | ○ | 6~9 | 10 | | |
| | | | | | | | | | | | | 11 | | |
| ○ | 5~8 | ○ | 5~8 | ○ | 5~8 | ○ | 5~8 | ○ | 5~8 | ○ | 5~8 | 12 | | |
| ○ | 5~8 | ○ | 5~8 | ○ | 5~8 | ○ | 5~8 | ○ | 5~8 | ○ | 5~8 | 13 | M | |
| | | | | | | | | | | | | 14 | | |
| ○ | 8~13 | ○ | 8~13 | ○ | 13~18 | ○ | 13~18 | ○ | 13~18 | ○ | 8~13 | 15 | | |
| | | | | | | | | | | | | 16 | | |
| ○ | 7~12 | ○ | 7~12 | ○ | 10~15 | ○ | 10~15 | ○ | 10~15 | ○ | 7~12 | 17 | K | |
| | | | | | | | | | | | | 18 | | |
| | | | | | | | | | | | | 19 | | |
| | | | | | | | | | | | | 20 | | |
| ○ | 10~20 | ○ | 10~20 | ○ | 15~22 | ○ | 15~22 | ○ | 15~22 | ○ | 10~20 | 21 | | |
| ○ | 10~20 | ○ | 10~20 | ○ | 15~22 | ○ | 15~22 | ○ | 15~22 | ○ | 10~20 | 22 | | |
| ○ | 10~15 | ○ | 10~15 | ○ | 15~20 | ○ | 15~20 | ○ | 15~20 | ○ | 10~15 | 23 | | |
| | | | | | | | | | | | | 24 | | |
| | | | | | | | | | | | | 25 | | |
| ○ | 6~11 | ○ | 6~11 | ○ | 10~15 | ○ | 10~15 | ○ | 10~15 | ○ | 6~11 | 26 | N | |
| ○ | 6~20 | ○ | 6~20 | ○ | 11~20 | ○ | 11~20 | ○ | 11~20 | ○ | 6~20 | 27 | | |
| | | | | | | | | | | | | 28 | | |
| | | | | | | | | | | | | 29 | | |
| | | | | | | | | | | | | 30 | | |
| | | | | | | | | | | | | 31 | | |
| | | | | | | | | | | | | 32 | | |
| | | | | | | | | | | | | 33 | | |
| | | | | | | | | | | | | 34 | S | |
| | | | | | | | | | | | | 35 | | |
| | | | | | | | | | | | | 36 | | |
| | | | | | | | | | | | | 37 | | |
| | | | | | | | | | | | | 38 | | |
| | | | | | | | | | | | | 39 | | |
| | | | | | | | | | | | | 40 | H | |
| | | | | | | | | | | | | 41 | | |



CARBIDE
HSS
THREAD MILLS
SYNCHRO TAPS
COMBO TAPS
YG TAP GENERAL
YG TAP STEEL
YG TAP HARDENED
YG TAP INOX
YG TAP CAST IRON
YG TAP ALU
YG TAP Ti Ni
YG TAP FORMING
STI TAPS
PIPE TAPS
SKS21 HAND TAPS
SKS21 PIPE TAPS
TECHNICAL DATA

# SELECTION GUIDE
# 选用指南

YG THREADING TOOLS

## HSS-E & HSS
## YG TAP GENERAL

Suitable for Tapping Blind / Through Holes due to Flute Geometry and Excellent Chip Evacuation
独特的槽形设计和排屑能力，适合通，盲孔加工

Please visit globalyg1.com/mat for material search

◎ : Excellent (优秀) ○ : Good (良好)

| | | | |
|---|---|---|---|
| HOLE TYPE 孔类型 | | Max. 3.0xD Through Hole通孔 | |
| TOOL MATERIAL 刀具材料 | | HSS-E | |
| CHAMFER LEAD ACC. TO DIN2197 倒角长度 | | 5.0P | 5.0P |
| FLUTE TYPE 槽型 | | Spiral Point 螺尖 | Spiral Point 螺尖 |
| SPIRAL FLUTE ANGLE 螺旋角 | | - | - |
| SERIES | JIS Type | I | J |
| | M/MF | T1022 (p. B102) | T1042 (p. B109) |
| | UNC/F | T1272 (p. B106) | T1142 (p. B113) |
| | W | T1282 (p. B108) | T1262 (p. B115) |
| | M-LH W-LH | | |
| | PIPE TAPS | | |
| SURFACE TREATMENT表面处理 | | Steam Homo | Steam Homo |
| MODEL 模型 | | |  |

| ISO 公制 | VDI 3323 | Material Description 材料描述 | Composition / Structure / Heat Treatment 成分 / 组织 / 热处理 | | HB 布氏硬度 | HRc 硬度 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | About 0.15% C | Annealed | 125 | | ◎ | 15~25 | ◎ | 15~25 |
| | 2 | | About 0.45% C | Annealed | 190 | 13 | ◎ | 10~15 | ◎ | 10~15 |
| | 3 | | About 0.45% C | Quenched & Tempered | 250 | 25 | ○ | 10~15 | ○ | 10~15 |
| | 4 | | About 0.75% C | Annealed | 270 | 28 | ○ | 10~15 | ○ | 10~15 |
| | 5 | | About 0.75% C | Quenched & Tempered | 300 | 32 | | | | |
| | 6 | Low alloy steel | | Annealed | 180 | 10 | ○ | 10~15 | ○ | 10~15 |
| | 7 | | | Quenched & Tempered | 275 | 29 | ○ | 10~15 | ○ | 10~15 |
| | 8 | | | Quenched & Tempered | 300 | 32 | | | | |
| | 9 | | | Quenched & Tempered | 350 | 38 | | | | |
| | 10 | High alloyed steel, and tool steel | | Annealed | 200 | 15 | ○ | 7~10 | ○ | 7~10 |
| | 11 | | | Quenched & Tempered | 325 | 35 | | | | |
| M | 12 | Stainless steel | Ferritic / Martensitic | Annealed | 200 | 15 | ○ | 8~13 | ○ | 8~13 |
| | 13 | | Martensitic | Quenched & Tempered | 240 | 23 | ○ | 8~13 | ○ | 8~13 |
| | 14 | | Austenitic | | 180 | 10 | | | | |
| K | 15 | Grey cast iron | Pearlitic / ferritic | | 180 | 10 | ○ | 10~15 | ○ | 10~15 |
| | 16 | | Pearlitic (Martensitic) | | 260 | 26 | ○ | 10~15 | ○ | 10~15 |
| | 17 | Nodular cast iron | Ferritic | | 160 | 3 | ○ | 10~20 | ○ | 10~20 |
| | 18 | | Pearlitic | | 250 | 25 | ○ | 10~20 | ○ | 10~20 |
| | 19 | Malleable cast iron | Ferritic | | 130 | | | | | |
| | 20 | | Pearlitic | | 230 | 21 | | | | |
| N | 21 | Aluminum-wrought alloy | Not Curable | | 60 | | ○ | 15~25 | ○ | 15~25 |
| | 22 | | Curable | Hardened | 100 | | ○ | 15~25 | ○ | 15~25 |
| | 23 | Aluminum-cast, alloyed | ≤ 12% Si, Not Curable | | 75 | | ○ | 15~20 | ○ | 15~20 |
| | 24 | | ≤ 12% Si, Curable | Hardened | 90 | | | | | |
| | 25 | | > 12% Si, Not Curable | | 130 | | | | | |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | Cutting Alloys, PB>1% | | 110 | | ○ | 7~12 | ○ | 7~12 |
| | 27 | | CuZn, CuSnZn (Brass) | | 90 | | ○ | 10~25 | ○ | 10~25 |
| | 28 | | CuSn, lead-free copper and electrolytic copper | | 100 | | | | | |
| | 29 | Non Metallic Materials | Duroplastic, Fiber Reinforced Plastic | | | | | | | |
| | 30 | | Rubber, Wood, etc. | | | | | | | |
| S | 31 | Heat Resistant Super Alloys | Fe Based | Annealed | 200 | 15 | | | | |
| | 32 | | | Cured | 280 | 30 | | | | |
| | 33 | | Ni or Co Based | Annealed | 250 | 25 | | | | |
| | 34 | | | Cured | 350 | 38 | | | | |
| | 35 | | | Cast | 320 | 34 | | | | |
| | 36 | Titanium Alloys | Pure Titanium | | 400 Rm | | | | | |
| | 37 | | Alpha + Beta Alloys | Hardened | 1050 Rm | | | | | |
| H | 38 | Hardened steel | | Hardened | 550 | 55 | | | | |
| | 39 | | | Hardened | 630 | 60 | | | | |
| | 40 | Chilled Cast Iron | | Cast | 400 | 42 | | | | |
| | 41 | Hardened Cast Iron | | Hardened | 550 | 55 | | | | |



| | | | | |
|---|---|---|---|---|
| | Max. 3.0xD Through Hole通孔 | | Max. 2.0xD Blind /Through Hole盲孔 / 通孔 | |
| | HSS-E | | | |
| 5.0P | 5.0P | 5.0P | 1.5P/5.0P | 1.5P/5.0P |
| Spiral Point 螺尖 | Spiral Point 螺尖 | Spiral Point 螺尖 | Straight Flute 直槽旋 | Straight Flute 直槽旋 |
| - | - | - | - | - |
| I | J | Long Shank | I | Long Shank |
| T3022 (p. B116) | T3042 (p. B117) | T1203~6 (p. B118-121) | T3492 T3491 (p. B124) | T1323~6 T1303~6 (p. B125-128) |
| | | | | |
| | | T1230~60 (p. B122-123) | | T1331~61 T1330~60 (p. B129-130) |
| | | | | |
| | | | | |
| TiN | TiN | Steam Homo | TiN | Steam Homo |
| | | | | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| ◎ | 15~25 | ◎ | 15~25 | ◎ | 15~25 | ◎ | 13~18 | ◎ | 8~13 |
| ◎ | 15~20 | ◎ | 15~20 | ◎ | 10~15 | ◎ | 10~15 | ◎ | 7~12 |
| ○ | 15~20 | ○ | 15~20 | ○ | 10~15 | ○ | 10~15 | ○ | 7~12 |
| ○ | 15~20 | ○ | 15~20 | ○ | 10~15 | ○ | 10~15 | ○ | 7~12 |
| | | | | | | ○ | 10~15 | ○ | 6~9 |
| ○ | 15~20 | ○ | 15~20 | ○ | 10~15 | ○ | 10~15 | ○ | 7~12 |
| ○ | 15~20 | ○ | 15~20 | ○ | 10~15 | ○ | 10~15 | ○ | 7~12 |
| | | | | | | ○ | 8~13 | ○ | 3~5 |
| | | | | | | ○ | 8~13 | ○ | 3~5 |
| ○ | 10~15 | ○ | 10~15 | ○ | 7~10 | ○ | 10~15 | ○ | 6~9 |
| | | | | | | | | | |
| ○ | 10~15 | ○ | 10~15 | ○ | 8~13 | | | | |
| ○ | 10~15 | ○ | 10~15 | ○ | 8~13 | | | | |
| | | | | | | | | | |
| ○ | 15~20 | ○ | 15~20 | ○ | 10~15 | ○ | 15~20 | ○ | 10~15 |
| ○ | 15~20 | ○ | 15~20 | ○ | 10~15 | ○ | 15~20 | ○ | 10~15 |
| ○ | 15~20 | ○ | 15~20 | ○ | 10~20 | ○ | 10~15 | ○ | 7~12 |
| ○ | 15~20 | ○ | 15~20 | ○ | 10~20 | ○ | 10~15 | ○ | 7~12 |
| | | | | | | | | | |
| | | | | | | | | | |
| ○ | 15~25 | ○ | 15~25 | ○ | 15~25 | ○ | 15~25 | ○ | 10~20 |
| ○ | 15~25 | ○ | 15~25 | ○ | 15~25 | ○ | 15~25 | ○ | 10~20 |
| ○ | 15~20 | ○ | 15~20 | ○ | 15~20 | ○ | 15~20 | ○ | 10~15 |
| | | | | | | | | | |
| | | | | | | | | | |
| ○ | 10~15 | ○ | 10~15 | ○ | 7~12 | ○ | 10~15 | ○ | 6~9 |
| ○ | 15~25 | ○ | 15~25 | ○ | 10~25 | ○ | 11~20 | ○ | 6~15 |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | |

YG TAP GENERAL

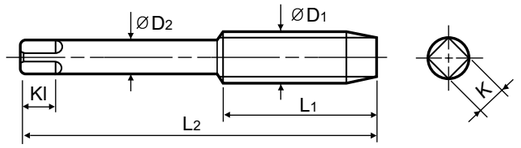
T7099 SERIES

# M I-SP HAND TAPS(SET of 3 PIECES)
## I-SP 手用丝锥(一套3支)

► This tap is a serial hand tap in set, Taper, Plug and Bottoming.

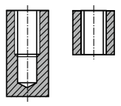
►这丝锥是手丝锥的一套（头锥 / 中锥 / 底锥）

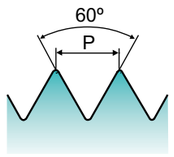
up to M6 : Male Center




Hole type 孔类型

2.0×D






Material groups **GS** | HSS | HT | JIS II | 60° | 1.5P/5.0P/9.0P | Bright | p. B62

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| TAPPING ER CHUCK | D215 -220 |
| TAPPING CHUCK | D221 -228 |
| ONE STEP TAPPING CHUCK | D211 -213 |

Unit(单位) : mm

| SIZE | Pitch | EDP No. | Limit | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | No. of Flute |
|---|---|---|---|---|---|---|---|---|---|
| 尺寸 | 牙距 | 型号 | 精度 | 全长 | 螺纹长 | 柄径 | 方块 尺寸 | 方块 长度 | 槽数 |
| ØD1 | P | | | L2 | L1 | ØD2 | K | Kl | |
| M2 × | 0.4 | T7099139 | JIS II | 40 | 15 | 3 | 2.5 | 5 | 3 |
| M2.2 × | 0.45 | T7099159 | JIS II | 42 | 15 | 3 | 2.5 | 5 | 3 |
| M2.3 × | 0.4 | T7099199 | JIS II | 42 | 15 | 3 | 2.5 | 5 | 3 |
| M2.5 × | 0.45 | T7099179 | JIS II | 44 | 16 | 3 | 2.5 | 5 | 3 |
| M2.6 × | 0.45 | T7099499 | JIS II | 44 | 16 | 3 | 2.5 | 5 | 3 |
| M3 × | 0.5 | T7099209 | JIS II | 46 | 18 | 4 | 3.2 | 6 | 3 |
| M3 × | 0.35 | T7099219 | JIS II | 46 | 18 | 4 | 3.2 | 6 | 3 |
| M3.5 × | 0.6 | T7099229 | JIS II | 48 | 18 | 4 | 3.2 | 6 | 3 |
| M3.5 × | 0.35 | T7099239 | JIS II | 48 | 18 | 4 | 3.2 | 6 | 3 |
| M4 × | 0.7 | T7099249 | JIS II | 52 | 20 | 5 | 4 | 7 | 4 |
| M4 × | 0.5 | T7099259 | JIS II | 52 | 20 | 5 | 4 | 7 | 4 |
| M4.5 × | 0.75 | T7099269 | JIS II | 55 | 20 | 5 | 4 | 7 | 4 |
| M4.5 × | 0.5 | T7099279 | JIS II | 55 | 20 | 5 | 4 | 7 | 4 |
| M5 × | 0.8 | T7099289 | JIS II | 60 | 22 | 5.5 | 4.5 | 7 | 4 |
| M5 × | 0.5 | T7099299 | JIS II | 60 | 22 | 5.5 | 4.5 | 7 | 4 |
| M5.5 × | 0.5 | T7099309 | JIS II | 60 | 22 | 5.5 | 4.5 | 7 | 4 |
| M6 × | 1 | T7099319 | JIS II | 62 | 24 | 6 | 4.5 | 7 | 4 |
| M6 × | 0.75 | T7099329 | JIS II | 62 | 24 | 6 | 4.5 | 7 | 4 |
| M6 × | 0.5 | T7099339 | JIS II | 62 | 22 | 6 | 4.5 | 7 | 4 |
| M7 × | 1 | T7099349 | JIS II | 65 | 26 | 6.2 | 5 | 8 | 4 |
| M7 × | 0.75 | T7099359 | JIS II | 65 | 26 | 6.2 | 5 | 8 | 4 |
| M8 × | 1.25 | T7099369 | JIS II | 70 | 30 | 6.2 | 5 | 8 | 4 |

►Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

►NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | ○ | | | | | ○ | ○ | ○ | ○ | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400Rm | 1050Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | ○ | ○ | | | | | | | | | | | | | | |



CARBIDE
HSS
THREAD MILLS
SYNCHRO TAPS
COMBO TAPS
YG TAP GENERAL
YG TAP STEEL
YG TAP HARDENED
YG TAP INOX
YG TAP CAST IRON
YG TAP ALU
YG TAP Ti Ni
YG TAP FORMING
STI TAPS
PIPE TAPS
SKS21 HAND TAPS
SKS21 PIPE TAPS
TECHNICAL DATA

YG TAP GENERAL

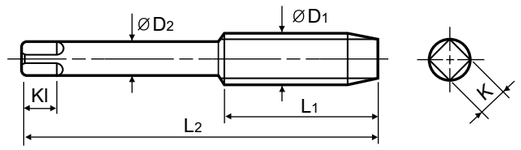
T7099 SERIES

# M I-SP HAND TAPS(SET of 3 PIECES)
## I-SP 手用丝锥(一套3支)

► This tap is a serial hand tap in set, Taper, Plug and Bottoming.

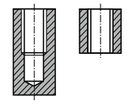
►这丝锥是手丝锥的一套（头锥 / 中锥 / 底锥）

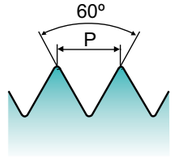
up to M6 : Male Center




Hole type 孔类型

2.0×D






Material groups **GS** | HSS | HT | JIS II | 60° | 1.5P/5.0P/9.0P | Bright | p. B62

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| TAPPING ER CHUCK | D215 -220 |
| TAPPING CHUCK | D221 -228 |
| ONE STEP TAPPING CHUCK | D211 -213 |

Unit(单位) : mm

| SIZE | Pitch | EDP No. | Limit | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | No. of Flute |
|---|---|---|---|---|---|---|---|---|---|
| 尺寸 | 牙距 | 型号 | 精度 | 全长 | 螺纹长 | 柄径 | 方块 尺寸 | 方块 长度 | 槽数 |
| ØD1 | P | | | L2 | L1 | ØD2 | K | Kl | |
| M8 × | 1 | T7099379 | JIS II | 70 | 30 | 6.2 | 5 | 8 | 4 |
| M8 × | 0.75 | T7099389 | JIS II | 65 | 26 | 6.2 | 5 | 8 | 4 |
| M9 × | 1.25 | T7099399 | JIS II | 72 | 30 | 7 | 5.5 | 8 | 4 |
| M9 × | 1 | T7099409 | JIS II | 70 | 30 | 7 | 5.5 | 8 | 4 |
| M9 × | 0.75 | T7099419 | JIS II | 65 | 26 | 7 | 5.5 | 8 | 4 |
| M10 × | 1.5 | T7099429 | JIS II | 75 | 32 | 7 | 5.5 | 8 | 4 |
| M10 × | 1.25 | T7099439 | JIS II | 75 | 32 | 7 | 5.5 | 8 | 4 |
| M10 × | 1 | T7099449 | JIS II | 70 | 30 | 7 | 5.5 | 8 | 4 |
| M10 × | 0.75 | T7099459 | JIS II | 65 | 26 | 7 | 5.5 | 8 | 4 |
| M11 × | 1.5 | T7099469 | JIS II | 80 | 38 | 8 | 6 | 9 | 4 |
| M11 × | 1 | T7099479 | JIS II | 70 | 30 | 8 | 6 | 9 | 4 |
| M11 × | 0.75 | T7099489 | JIS II | 65 | 26 | 8 | 6 | 9 | 4 |
| M12 × | 1.75 | T7099509 | JIS II | 82 | 38 | 8.5 | 6.5 | 9 | 4 |
| M12 × | 1.5 | T7099519 | JIS II | 82 | 38 | 8.5 | 6.5 | 9 | 4 |
| M12 × | 1.25 | T7099529 | JIS II | 80 | 38 | 8.5 | 6.5 | 9 | 4 |
| M12 × | 1 | T7099539 | JIS II | 70 | 30 | 8.5 | 6.5 | 9 | 4 |
| M14 × | 2 | T7099549 | JIS II | 88 | 42 | 10.5 | 8 | 11 | 4 |
| M14 × | 1.5 | T7099559 | JIS II | 88 | 42 | 10.5 | 8 | 11 | 4 |
| M14 × | 1.25 | T7099569 | JIS II | 80 | 38 | 10.5 | 8 | 11 | 4 |
| M14 × | 1 | T7099579 | JIS II | 70 | 30 | 10.5 | 8 | 11 | 4 |
| M15 × | 1.5 | T7099589 | JIS II | 90 | 42 | 10.5 | 8 | 11 | 4 |
| M15 × | 1 | T7099599 | JIS II | 70 | 30 | 10.5 | 8 | 11 | 4 |

►Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

►NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | ○ | | | | | ○ | ○ | ○ | ○ | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | | 200 | 280 | 250 | 350 | 320 | 400Rm | 1050Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | ○ | ○ | | | | | | | | | | | | | | |

YG TAP GENERAL

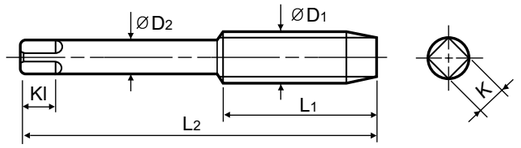
T7099 SERIES

# M I-SP HAND TAPS(SET of 3 PIECES)
## I-SP 手用丝锥(一套3支)

► This tap is a serial hand tap in set, Taper, Plug and Bottoming.

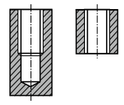
►这丝锥是手丝锥的一套（头锥 / 中锥 / 底锥）

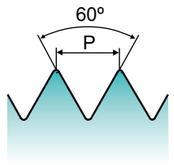
up to M6 : Male Center




Hole type 孔类型

2.0×D






Material groups **GS** | HSS | HT | JIS II | 60° | 1.5P/5.0P/9.0P | Bright

p. B62

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| TAPPING ER CHUCK | D215 -220 |
| TAPPING CHUCK | D221 -228 |
| ONE STEP TAPPING CHUCK | D211 -213 |

Unit(单位) : mm

| SIZE 尺寸 | | Pitch 牙距 | EDP No. 型号 | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|---|
| | | ØD1 | | | L2 | L1 | ØD2 | K | Kl | |
| M16 | × | 2 | T7099609 | JIS II | 95 | 45 | 12.5 | 10 | 13 | 4 |
| M16 | × | 1.5 | T7099619 | JIS II | 95 | 45 | 12.5 | 10 | 13 | 4 |
| M16 | × | 1 | T7099629 | JIS II | 75 | 30 | 12.5 | 10 | 13 | 4 |
| M18 | × | 2.5 | T7099659 | JIS II | 100 | 48 | 14 | 11 | 14 | 4 |
| M18 | × | 2 | T7099669 | JIS II | 95 | 45 | 14 | 11 | 14 | 4 |
| M18 | × | 1.5 | T7099679 | JIS II | 95 | 45 | 14 | 11 | 14 | 4 |
| M18 | × | 1 | T7099689 | JIS II | 80 | 30 | 14 | 11 | 14 | 4 |
| M20 | × | 2.5 | T7099709 | JIS II | 105 | 50 | 15 | 12 | 15 | 4 |
| M20 | × | 2 | T7099719 | JIS II | 95 | 45 | 15 | 12 | 15 | 4 |
| M20 | × | 1.5 | T7099729 | JIS II | 95 | 45 | 15 | 12 | 15 | 4 |
| M20 | × | 1 | T7099739 | JIS II | 80 | 30 | 15 | 12 | 15 | 4 |
| M22 | × | 2.5 | T7099749 | JIS II | 115 | 55 | 17 | 13 | 16 | 4 |
| M22 | × | 2 | T7099759 | JIS II | 95 | 45 | 17 | 13 | 16 | 4 |
| M22 | × | 1.5 | T7099769 | JIS II | 95 | 45 | 17 | 13 | 16 | 4 |
| M22 | × | 1 | T7099779 | JIS II | 85 | 30 | 17 | 13 | 16 | 4 |
| M24 | × | 3 | T7099789 | JIS II | 120 | 58 | 19 | 15 | 18 | 4 |
| M24 | × | 2 | T7099799 | JIS II | 95 | 45 | 19 | 15 | 18 | 4 |
| M24 | × | 1.5 | T7099809 | JIS II | 95 | 45 | 19 | 15 | 18 | 4 |
| M24 | × | 1 | T7099819 | JIS II | 90 | 30 | 19 | 15 | 18 | 4 |
| M25 | × | 2 | T7099829 | JIS II | 95 | 45 | 19 | 15 | 18 | 4 |
| M25 | × | 1.5 | T7099839 | JIS II | 95 | 45 | 19 | 15 | 18 | 4 |
| M26 | × | 2 | T7099N49 | JIS II | 95 | 45 | 20 | 15 | 18 | 4 |

►Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

► NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | ○ | | | | | ○ | ○ | ○ | ○ | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400Rm | 1050Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | ○ | ○ | | | | | | | | | | | | | | |



YG TAP GENERAL

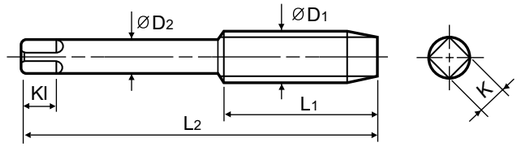
T7099 SERIES

# M I-SP HAND TAPS(SET of 3 PIECES)
## I-SP 手用丝锥(一套3支)

► This tap is a serial hand tap in set, Taper, Plus and Bottoming.

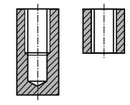
►这丝锥是手丝锥的一套（头锥 / 中锥 / 底锥）

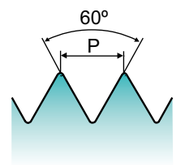
up to M6 : Male Center




Hole type 孔类型

2.0×D






Material groups **GS** | HSS | HT | JIS II | 60° | 1.5P/5.0P/9.0P | Bright

p. B62

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| TAPPING ER CHUCK | D215 -220 |
| TAPPING CHUCK | D221 -228 |
| ONE STEP TAPPING CHUCK | D211 -213 |

Unit(单位) : mm

| SIZE 尺寸 | | Pitch 牙距 | EDP No. 型号 | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|---|
| | | ØD1 | | | L2 | L1 | ØD2 | K | Kl | |
| M26 | × | 1.5 | T7099859 | JIS II | 95 | 45 | 20 | 15 | 18 | 4 |
| M26 | × | 1 | T7099N59 | JIS II | 95 | 30 | 20 | 15 | 18 | 4 |
| M27 | × | 3 | T7099869 | JIS II | 130 | 62 | 20 | 15 | 18 | 4 |
| M27 | × | 2 | T7099879 | JIS II | 95 | 45 | 20 | 15 | 18 | 4 |
| M27 | × | 1.5 | T7099889 | JIS II | 95 | 45 | 20 | 15 | 18 | 4 |
| M28 | × | 2 | T7099909 | JIS II | 105 | 45 | 21 | 17 | 20 | 4 |
| M28 | × | 1.5 | T7099919 | JIS II | 105 | 45 | 21 | 17 | 20 | 4 |
| M30 | × | 3.5 | T7099949 | JIS II | 135 | 65 | 23 | 17 | 20 | 4 |
| M30 | × | 3 | T7099959 | JIS II | 130 | 65 | 23 | 17 | 20 | 4 |
| M30 | × | 2 | T7099969 | JIS II | 105 | 45 | 23 | 17 | 20 | 4 |
| M30 | × | 1.5 | T7099979 | JIS II | 105 | 45 | 23 | 17 | 20 | 4 |
| M30 | × | 1 | T7099989 | JIS II | 105 | 30 | 23 | 17 | 20 | 4 |
| M33 | × | 3.5 | T7099A49 | JIS II | 145 | 70 | 25 | 19 | 22 | 4 |
| M33 | × | 3 | T7099A59 | JIS II | 145 | 70 | 25 | 19 | 22 | 4 |
| M33 | × | 2 | T7099A69 | JIS II | 110 | 45 | 25 | 19 | 22 | 4 |
| M33 | × | 1.5 | T7099A79 | JIS II | 110 | 45 | 25 | 19 | 22 | 4 |
| M36 | × | 4 | T7099B39 | JIS II | 155 | 75 | 28 | 21 | 24 | 4 |
| M36 | × | 3 | T7099B49 | JIS II | 155 | 75 | 28 | 21 | 24 | 4 |
| M36 | × | 2 | T7099B59 | JIS II | 110 | 45 | 28 | 21 | 24 | 4 |
| M36 | × | 1.5 | T7099B69 | JIS II | 110 | 45 | 28 | 21 | 24 | 4 |

►Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | ○ | | | | | ○ | ○ | ○ | ○ | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400Rm | 1050Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | ○ | ○ | | | | | | | | | | | | | | |

YG TAP GENERAL

T7199 SERIES

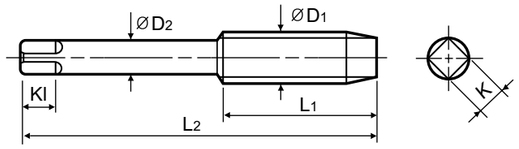
# UNC/F I-SP HAND TAPS(SET of 3 PIECES)

## I-SP 手用丝锥(一套3支)

► This tap is a serial hand tap in set, Taper, Plus and Bottoming.

►这丝锥是手丝锥的一套（头锥 / 中锥 / 底锥）

up to 5/16 : Male Center

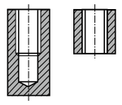


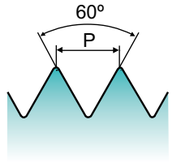




Hole type 孔类型

2.0×D






Material groups **GS** | HSS | HT | JIS II | 60° | 1.5P/5.0P/9.0P | Bright | p. B62

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| ◎ | TAPPING ER CHUCK | D215 -220 |
| | TAPPING CHUCK | D221 -228 |
| | ONE STEP TAPPING CHUCK | D211 -213 |

Unit(单位) : mm

| SIZE 尺寸 ØD1 | TPI 牙距 | EDP No. 型号 | Limit 精度 | Overall Length 全长 L2 | Thread Length 螺纹长 L1 | Shank Diameter 柄径 ØD2 | Square Size 方块 尺寸 K | Square Length 方块 长度 Kl | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|
| #4 | - 40 UNC | T7199169 | JIS II | 44 | 16 | 3 | 2.5 | 5 | 3 |
| #4 | - 48 UNF | T7199189 | JIS II | 44 | 16 | 3 | 2.5 | 5 | 3 |
| #5 | - 40 UNC | T7199209 | JIS II | 46 | 18 | 4 | 3.2 | 6 | 3 |
| #5 | - 44 UNF | T7199229 | JIS II | 46 | 18 | 4 | 3.2 | 6 | 3 |
| #6 | - 32 UNC | T7199249 | JIS II | 48 | 18 | 4 | 3.2 | 6 | 3 |
| #6 | - 40 UNF | T7199269 | JIS II | 48 | 18 | 4 | 3.2 | 6 | 3 |
| #8 | - 32 UNC | T7199289 | JIS II | 52 | 18 | 5 | 4 | 7 | 4 |
| #8 | - 36 UNF | T7199309 | JIS II | 52 | 18 | 5 | 4 | 7 | 4 |
| #10 | - 24 UNC | T7199329 | JIS II | 60 | 22 | 5.5 | 4.5 | 7 | 4 |
| #10 | - 32 UNF | T7199349 | JIS II | 60 | 22 | 5.5 | 4.5 | 7 | 4 |
| #12 | - 24 UNC | T7199369 | JIS II | 60 | 22 | 5.5 | 4.5 | 7 | 4 |
| #12 | - 28 UNF | T7199389 | JIS II | 60 | 22 | 5.5 | 4.5 | 7 | 4 |
| 1/4 | - 20 UNC | T7199409 | JIS II | 62 | 24 | 6 | 4.5 | 7 | 4 |
| 1/4 | - 28 UNF | T7199429 | JIS II | 62 | 24 | 6 | 4.5 | 7 | 4 |
| 5/16 | - 18 UNC | T7199449 | JIS II | 70 | 30 | 6.1 | 5 | 8 | 4 |
| 5/16 | - 24 UNF | T7199469 | JIS II | 70 | 30 | 6.1 | 5 | 8 | 4 |

►Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

►NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | ○ | | | | | ○ | ○ | ○ | ○ | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | ○ | ○ | | | | | | | | | | | | | | |



YG TAP GENERAL

T7199 SERIES

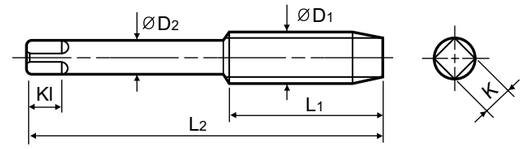
UNC/F I-SP HAND TAPS(SET of 3 PIECES)

I-SP 手用丝锥(一套3支)

► This tap is a serial hand tap in set, Taper, Plus and Bottoming.

►这丝锥是手丝锥的一套（头锥 / 中锥 / 底锥）

up to 5/16 : Male Center

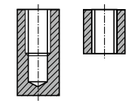


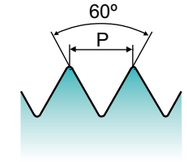




Hole type 孔类型

2.0×D






Material groups GS | HSS | HT | JIS II | 60° | 1.5P/5.0P/9.0P | Bright | p. B62

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| ◎ | TAPPING ER CHUCK | D215 -220 |
| | TAPPING CHUCK | D221 -228 |
| | ONE STEP TAPPING CHUCK | D211 -213 |

Unit(单位) : mm

| SIZE 尺寸 ØD1 | TPI 牙距 | EDP No. 型号 | Limit 精度 | Overall Length 全长 L2 | Thread Length 螺纹长 L1 | Shank Diameter 柄径 ØD2 | Square Size 方块 尺寸 K | Square Length 方块 长度 Kl | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|
| 3/8 | - 16 UNC | T7199489 | JIS II | 75 | 35 | 7 | 5.5 | 8 | 4 |
| 3/8 | - 24 UNF | T7199509 | JIS II | 75 | 32 | 7 | 5.5 | 8 | 4 |
| 7/16 | - 14 UNC | T7199529 | JIS II | 80 | 38 | 8 | 6 | 9 | 4 |
| 7/16 | - 20 UNF | T7199549 | JIS II | 80 | 38 | 8 | 6 | 9 | 4 |
| 1/2 | - 13 UNC | T7199569 | JIS II | 85 | 42 | 9 | 7 | 10 | 4 |
| 1/2 | - 20 UNF | T7199589 | JIS II | 85 | 42 | 9 | 7 | 10 | 4 |
| 9/16 | - 12 UNC | T7199609 | JIS II | 90 | 42 | 10.5 | 8 | 11 | 4 |
| 9/16 | - 18 UNF | T7199629 | JIS II | 90 | 42 | 10.5 | 8 | 11 | 4 |
| 5/8 | - 11 UNC | T7199649 | JIS II | 95 | 45 | 12 | 9 | 12 | 4 |
| 5/8 | - 18 UNF | T7199669 | JIS II | 95 | 45 | 12 | 9 | 12 | 4 |
| 3/4 | - 10 UNC | T7199709 | JIS II | 105 | 50 | 14 | 11 | 14 | 4 |
| 3/4 | - 16 UNF | T7199729 | JIS II | 95 | 45 | 14 | 11 | 14 | 4 |
| 7/8 | - 9 UNC | T7199749 | JIS II | 115 | 55 | 17 | 13 | 16 | 4 |
| 7/8 | - 14 UNF | T7199769 | JIS II | 95 | 45 | 17 | 13 | 16 | 4 |
| 1″ | - 8 UNC | T7199789 | JIS II | 125 | 60 | 20 | 15 | 18 | 4 |
| 1″ | - 12 UNF | T7199809 | JIS II | 95 | 45 | 20 | 15 | 18 | 4 |

►Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | ○ | | | | | ○ | ○ | ○ | ○ | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | ○ | ○ | | | | | | | | | | | | | | |

YG TAP GENERAL

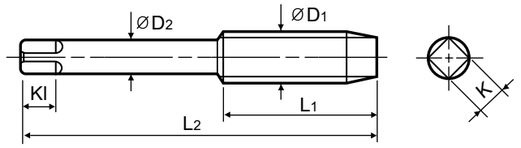
T7299 SERIES

# W I-SP HAND TAPS(SET of 3 PIECES)
## I-SP 手用丝锥(一套3支)

► This tap is a serial hand tap in set, Taper, Plus and Bottoming.

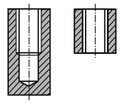
► 这丝锥是手丝锥的一套（头锥 / 中锥 / 底锥）

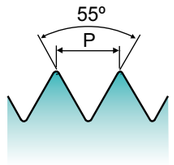
up to W5/16 : Male Center




Hole type 孔类型

2.0×D






Material groups **GS** | HSS | HT | JIS II | 55° | 1.5P/5.0P/9.0P | Bright | p. B62

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| TAPPING ER CHUCK | D215 -220 |
| TAPPING CHUCK | D221 -228 |
| ONE STEP TAPPING CHUCK | D211 -213 |

Unit(单位) : mm

| SIZE 尺寸 | TPI 牙距 | EDP No. 型号 | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|
| | ØD1 | | | L2 | L1 | ØD2 | K | Kl | |
| W1/8 | - 40 | T7299209 | JIS II | 46 | 18 | 4 | 3.2 | 6 | 3 |
| W3/16 | - 24 | T7299329 | JIS II | 60 | 22 | 5.5 | 4.5 | 7 | 4 |
| W1/4 | - 20 | T7299409 | JIS II | 62 | 24 | 6 | 4.5 | 7 | 4 |
| W5/16 | - 18 | T7299449 | JIS II | 70 | 30 | 6.1 | 5 | 8 | 4 |
| W3/8 | - 16 | T7299489 | JIS II | 75 | 35 | 7 | 5.5 | 8 | 4 |
| W7/16 | - 14 | T7299529 | JIS II | 80 | 38 | 8 | 6 | 9 | 4 |
| W1/2 | - 12 | T7299569 | JIS II | 85 | 42 | 9 | 7 | 10 | 4 |
| W9/16 | - 12 | T7299609 | JIS II | 90 | 42 | 10.5 | 8 | 11 | 4 |
| W5/8 | - 11 | T7299649 | JIS II | 95 | 45 | 12 | 9 | 12 | 4 |
| W3/4 | - 10 | T7299709 | JIS II | 105 | 50 | 14 | 11 | 14 | 4 |
| W7/8 | - 9 | T7299749 | JIS II | 115 | 55 | 17 | 13 | 16 | 4 |
| W1″ | - 8 | T7299789 | JIS II | 125 | 60 | 20 | 15 | 18 | 4 |

► Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | ○ | | | | | ○ | ○ | ○ | ○ | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400Rm | 1050Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | ○ | ○ | | | | | | | | | | | | | | |





YG TAP GENERAL

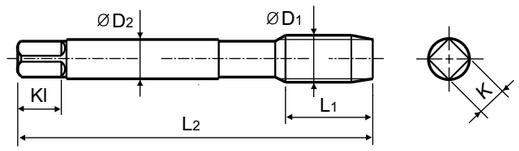
T1121 SERIES

# M I-SP SPIRAL FLUTE TAPS for GENERAL PURPOSE
## I-SP 普通螺旋槽丝锥

► Suitable for tapping Blind holes in Carbon Steels and Alloy Steels, where chips are produced in a continuous coil state.

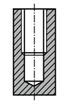
► 适用于碳钢和合金钢的盲孔加工, 优异的排屑.

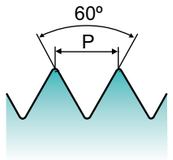
up to M7 : Male Center




Hole type 孔类型

2.5×D






Material groups **GS** | HSS-E | I | YH | 60° | 2.5P | R40 | Homo | p. B62

Tap Limits: p.B230

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| TAPPING ER CHUCK | D215 -220 |
| TAPPING CHUCK | D221 -228 |
| ONE STEP TAPPING CHUCK | D211 -213 |

Unit(单位) : mm

| SIZE 尺寸 | | Pitch 牙距 | EDP No. 型号 | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|---|
| | ØD1 | P | | | L2 | L1 | ØD2 | K | Kl | |
| M2 | × | 0.4 | T1121131 | YH1 | 40 | 9.5 | 3 | 2.5 | 5 | 2 |
| M2.2 | × | 0.45 | T1121151 | YH1 | 42 | 9.5 | 3 | 2.5 | 5 | 2 |
| M2.3 | × | 0.4 | T1121191 | YH1 | 42 | 9.5 | 3 | 2.5 | 5 | 2 |
| M2.5 | × | 0.45 | T1121171 | YH1 | 44 | 9.5 | 3 | 2.5 | 5 | 2 |
| M2.6 | × | 0.45 | T1121491 | YH1 | 44 | 9.5 | 3 | 2.5 | 5 | 2 |
| M3 | × | 0.5 | T1121202 | YH2 | 46 | 11 | 4 | 3.2 | 6 | 3 |
| M3 | × | 0.35 | T1121211 | YH1 | 46 | 9.5 | 4 | 3.2 | 6 | 3 |
| M3.5 | × | 0.6 | T1121222 | YH2 | 48 | 13 | 4 | 3.2 | 6 | 3 |
| M3.5 | × | 0.35 | T1121231 | YH1 | 48 | 9.5 | 4 | 3.2 | 6 | 3 |
| M4 | × | 0.7 | T1121242 | YH2 | 52 | 13 | 5 | 4 | 7 | 3 |
| M4 | × | 0.5 | T1121251 | YH1 | 52 | 13 | 5 | 4 | 7 | 3 |
| M4.5 | × | 0.75 | T1121262 | YH2 | 55 | 13 | 5 | 4 | 7 | 3 |
| M4.5 | × | 0.5 | T1121271 | YH1 | 55 | 13 | 5 | 4 | 7 | 3 |
| M5 | × | 0.8 | T1121282 | YH2 | 60 | 16 | 5.5 | 4.5 | 7 | 3 |
| M5 | × | 0.5 | T1121291 | YH1 | 60 | 16 | 5.5 | 4.5 | 7 | 3 |
| M5.5 | × | 0.5 | T1121301 | YH1 | 55 | 13 | 5.5 | 4.5 | 7 | 3 |
| M6 | × | 1 | T1121312 | YH2 | 62 | 19 | 6 | 4.5 | 7 | 3 |
| M6 | × | 0.75 | T1121322 | YH2 | 62 | 19 | 6 | 4.5 | 7 | 3 |
| M6 | × | 0.5 | T1121331 | YH1 | 55 | 13 | 6 | 4.5 | 7 | 3 |
| M7 | × | 1 | T1121342 | YH2 | 65 | 19 | 6.2 | 5 | 8 | 3 |
| M7 | × | 0.75 | T1121352 | YH2 | 65 | 19 | 6.2 | 5 | 8 | 3 |
| M8 | × | 1.25 | T1121362 | YH2 | 70 | 22 | 6.2 | 5 | 8 | 3 |

► Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

► NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ○ | ○ | | ○ | ○ | | | ○ | | | ○ | ○ | ○ | | ○ | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400Rm | 1050Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | ○ | ○ | | | | | | | | | | | | | | |

YG TAP GENERAL

T1121 SERIES

# M I-SP SPIRAL FLUTE TAPS for GENERAL PURPOSE

## I-SP 普通螺旋槽丝锥

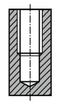
► Suitable for tapping Blind holes in Carbon Steels and Alloy Steels, where chips are produced in a continuous coil state.

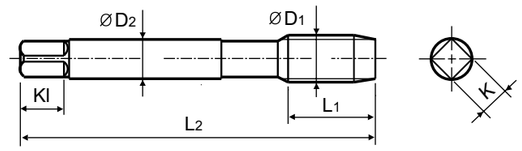
►适用于碳钢和合金钢的盲孔加工, 优异的排屑.

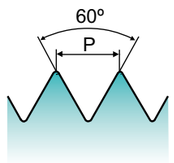
up to M7 : Male Center

Hole type 孔类型

2.5×D






Material groups **GS** | HSS-E | I | YH | 60° | 2.5P | R40 | Homo

p. B62

Tap Limits: p.B230

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| TAPPING ER CHUCK | D215 -220 |
| TAPPING CHUCK | D221 -228 |
| ONE STEP TAPPING CHUCK | D211 -213 |

Unit(单位) : mm

| SIZE 尺寸 | | Pitch 牙距 | EDP No. 型号 | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|---|
| | | ØD1 | | | L2 | L1 | ØD2 | K | Kl | |
| M8 | × | 1 | **T1121372** | YH2 | 70 | 22 | 6.2 | 5 | 8 | 3 |
| M8 | × | 0.75 | **T1121382** | YH2 | 70 | 22 | 6.2 | 5 | 8 | 3 |
| M9 | × | 1.25 | **T1121392** | YH2 | 72 | 22 | 7 | 5.5 | 8 | 3 |
| M9 | × | 1 | **T1121402** | YH2 | 72 | 22 | 7 | 5.5 | 8 | 3 |
| M9 | × | 0.75 | **T1121412** | YH2 | 72 | 22 | 7 | 5.5 | 8 | 3 |
| M10 | × | 1.5 | **T1121422** | YH2 | 75 | 24 | 7 | 5.5 | 8 | 3 |
| M10 | × | 1.25 | **T1121432** | YH2 | 75 | 24 | 7 | 5.5 | 8 | 3 |
| M10 | × | 1 | **T1121442** | YH2 | 75 | 24 | 7 | 5.5 | 8 | 3 |
| M10 | × | 0.75 | **T1121452** | YH2 | 75 | 24 | 7 | 5.5 | 8 | 3 |
| M11 | × | 1.5 | **T1121462** | YH2 | 80 | 25 | 8 | 6 | 9 | 3 |
| M11 | × | 1 | **T1121472** | YH2 | 80 | 25 | 8 | 6 | 9 | 3 |
| M11 | × | 0.75 | **T1121482** | YH2 | 80 | 25 | 8 | 6 | 9 | 3 |
| M12 | × | 1.75 | **T1121502** | YH2 | 82 | 29 | 8.5 | 6.5 | 9 | 3 |
| M12 | × | 1.5 | **T1121512** | YH2 | 82 | 29 | 8.5 | 6.5 | 9 | 3 |
| M12 | × | 1.25 | **T1121522** | YH2 | 82 | 29 | 8.5 | 6.5 | 9 | 3 |
| M12 | × | 1 | **T1121532** | YH2 | 82 | 29 | 8.5 | 6.5 | 9 | 3 |
| M14 | × | 2 | **T1121542** | YH2 | 88 | 30 | 10.5 | 8 | 11 | 3 |
| M14 | × | 1.5 | **T1121552** | YH2 | 88 | 30 | 10.5 | 8 | 11 | 3 |
| M14 | × | 1.25 | **T1121562** | YH2 | 88 | 30 | 10.5 | 8 | 11 | 3 |
| M14 | × | 1 | **T1121572** | YH2 | 88 | 30 | 10.5 | 8 | 11 | 3 |
| M15 | × | 1.5 | **T1121582** | YH2 | 90 | 30 | 10.5 | 8 | 11 | 3 |
| M15 | × | 1 | **T1121592** | YH2 | 90 | 30 | 10.5 | 8 | 11 | 3 |

►Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

► NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ○ | ○ | | ○ | ○ | | | ○ | | ○ | ○ | | ○ | | ○ | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | ○ | ○ | | | | | | | | | | | | | | |



CARBIDE
HSS
THREAD MILLS
SYNCHRO TAPS
COMBO TAPS
YG TAP GENERAL
YG TAP STEEL
YG TAP HARDENED
YG TAP INOX
YG TAP CAST IRON
YG TAP ALU
YG TAP Ti Ni
YG TAP FORMING
STI TAPS
PIPE TAPS
SKS21 HAND TAPS
SKS21 PIPE TAPS
TECHNICAL DATA

YG TAP GENERAL

T1121 SERIES

# M I-SP SPIRAL FLUTE TAPS for GENERAL PURPOSE

## I-SP 普通螺旋槽丝锥

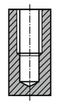
► Suitable for tapping Blind holes in Carbon Steels and Alloy Steels, where chips are produced in a continuous coil state.

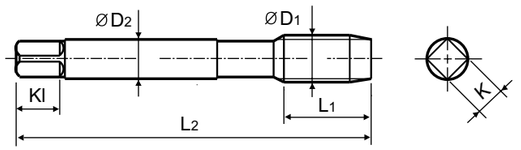
►适用于碳钢和合金钢的盲孔加工, 优异的排屑.

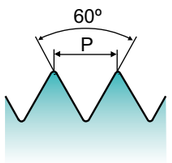
up to M7 : Male Center

Hole type 孔类型

2.5×D






Material groups **GS** | HSS-E | I | YH | 60° | 2.5P | R40 | Homo

p. B62

Tap Limits: p.B230

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| TAPPING ER CHUCK | D215 -220 |
| TAPPING CHUCK | D221 -228 |
| ONE STEP TAPPING CHUCK | D211 -213 |

Unit(单位) : mm

| SIZE 尺寸 | | Pitch 牙距 | EDP No. 型号 | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|---|
| | | ØD1 | | | L2 | L1 | ØD2 | K | Kl | |
| M16 | × | 2 | **T1121602** | YH2 | 95 | 32 | 12.5 | 10 | 13 | 3 |
| M16 | × | 1.5 | **T1121612** | YH2 | 95 | 32 | 12.5 | 10 | 13 | 3 |
| M16 | × | 1 | **T1121622** | YH2 | 95 | 32 | 12.5 | 10 | 13 | 3 |
| M18 | × | 2.5 | **T1121653** | YH3 | 100 | 37 | 14 | 11 | 14 | 4 |
| M18 | × | 2 | **T1121663** | YH3 | 100 | 37 | 14 | 11 | 14 | 4 |
| M18 | × | 1.5 | **T1121672** | YH2 | 100 | 37 | 14 | 11 | 14 | 4 |
| M18 | × | 1 | **T1121682** | YH2 | 100 | 37 | 14 | 11 | 14 | 4 |
| M20 | × | 2.5 | **T1121703** | YH3 | 105 | 37 | 15 | 12 | 15 | 4 |
| M20 | × | 2 | **T1121713** | YH3 | 105 | 37 | 15 | 12 | 15 | 4 |
| M20 | × | 1.5 | **T1121723** | YH3 | 105 | 37 | 15 | 12 | 15 | 4 |
| M20 | × | 1 | **T1121732** | YH2 | 95 | 30 | 15 | 12 | 15 | 4 |
| M22 | × | 2.5 | **T1121743** | YH3 | 115 | 38 | 17 | 13 | 16 | 4 |
| M22 | × | 2 | **T1121753** | YH3 | 115 | 38 | 17 | 13 | 16 | 4 |
| M22 | × | 1.5 | **T1121763** | YH3 | 115 | 38 | 17 | 13 | 16 | 4 |
| M22 | × | 1 | **T1121772** | YH2 | 95 | 30 | 17 | 13 | 16 | 4 |
| M24 | × | 3 | **T1121783** | YH3 | 120 | 45 | 19 | 15 | 18 | 4 |
| M24 | × | 2 | **T1121793** | YH3 | 120 | 45 | 19 | 15 | 18 | 4 |
| M24 | × | 1.5 | **T1121803** | YH3 | 120 | 45 | 19 | 15 | 18 | 4 |
| M24 | × | 1 | **T1121812** | YH2 | 95 | 30 | 19 | 15 | 18 | 4 |
| M25 | × | 2 | **T1121823** | YH3 | 125 | 45 | 19 | 15 | 18 | 4 |
| M25 | × | 1.5 | **T1121833** | YH3 | 125 | 45 | 19 | 15 | 18 | 4 |
| M26 | × | 2 | **T1121N43** | YH3 | 125 | 45 | 20 | 15 | 18 | 4 |

►Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

► NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ○ | ○ | | ○ | ○ | | | ○ | | ○ | ○ | | ○ | | ○ | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | ○ | ○ | | | | | | | | | | | | | | |

YG TAP GENERAL

T1121 SERIES

# M I-SP SPIRAL FLUTE TAPS for GENERAL PURPOSE

## I-SP 普通螺旋槽丝锥

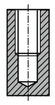
► Suitable for tapping Blind holes in Carbon Steels and Alloy Steels, where chips are produced in a continuous coil state.

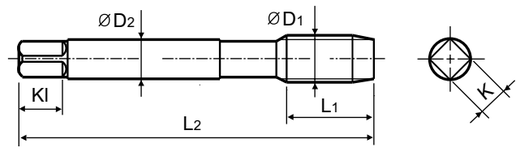
►适用于碳钢和合金钢的盲孔加工, 优异的排屑.

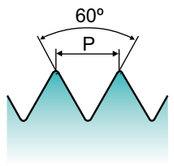
up to M7 : Male Center

Hole type 孔类型

2.5×D






Material groups **GS** | HSS-E | I | YH | 60° | 2.5P | R40 | Homo

p. B62

Tap Limits: p.B230

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| TAPPING ER CHUCK | D215 -220 |
| TAPPING CHUCK | D221 -228 |
| ONE STEP TAPPING CHUCK | D211 -213 |

Unit(单位) : mm

| SIZE 尺寸 | | Pitch 牙距 | | EDP No. 型号 | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ØD1 | | P | | | | L2 | L1 | ØD2 | K | Kl | |
| M26 | × | 1.5 | | T1121853 | YH3 | 125 | 45 | 20 | 15 | 18 | 4 |
| M26 | × | 1 | | T1121N52 | YH2 | 95 | 30 | 20 | 15 | 18 | 4 |
| M27 | × | 3 | | T1121863 | YH3 | 130 | 45 | 20 | 15 | 18 | 4 |
| M27 | × | 2 | | T1121873 | YH3 | 130 | 45 | 20 | 15 | 18 | 4 |
| M27 | × | 1.5 | | T1121883 | YH3 | 130 | 45 | 20 | 15 | 18 | 4 |
| M28 | × | 2 | | T1121903 | YH3 | 130 | 45 | 21 | 17 | 20 | 4 |
| M28 | × | 1.5 | | T1121913 | YH3 | 130 | 45 | 21 | 17 | 20 | 4 |
| M30 | × | 3.5 | | T1121944 | YH4 | 135 | 48 | 23 | 17 | 20 | 4 |
| M30 | × | 3 | | T1121953 | YH3 | 135 | 48 | 23 | 17 | 20 | 4 |
| M30 | × | 2 | | T1121963 | YH3 | 135 | 45 | 23 | 17 | 20 | 4 |
| M30 | × | 1.5 | | T1121973 | YH3 | 135 | 45 | 23 | 17 | 20 | 4 |
| M30 | × | 1 | | T1121982 | YH2 | 105 | 30 | 23 | 17 | 20 | 4 |
| M33 | × | 3.5 | | T1121A44 | YH4 | 145 | 51 | 25 | 19 | 22 | 4 |
| M33 | × | 3 | | T1121A53 | YH3 | 145 | 51 | 25 | 19 | 22 | 4 |
| M33 | × | 2 | | T1121A63 | YH3 | 145 | 45 | 25 | 19 | 22 | 4 |
| M33 | × | 1.5 | | T1121A73 | YH3 | 145 | 45 | 25 | 19 | 22 | 4 |
| M36 | × | 4 | | T1121B34 | YH4 | 155 | 57 | 28 | 21 | 24 | 4 |
| M36 | × | 3 | | T1121B43 | YH3 | 155 | 57 | 28 | 21 | 24 | 4 |
| M36 | × | 2 | | T1121B53 | YH3 | 155 | 45 | 28 | 21 | 24 | 4 |
| M36 | × | 1.5 | | T1121B63 | YH3 | 155 | 45 | 28 | 21 | 24 | 4 |

► Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ○ | ○ | | ○ | ○ | | | ○ | | ○ | ○ | | ○ | | ○ | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400Rm | 1050Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | ○ | ○ | | | | | | | | | | | | | | |



YG TAP GENERAL

T1152 SERIES

# UNC/F I-SP SPIRAL FLUTE TAPS for GENERAL PURPOSE

## I-SP 普通螺旋槽丝锥

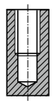
► Suitable for tapping Blind holes in Carbon Steels and Alloy Steels, where chips are produced in a continuous coil state.

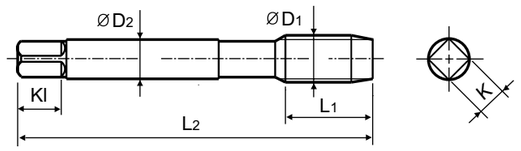
►适用于碳钢和合金钢的盲孔加工, 优异的排屑.

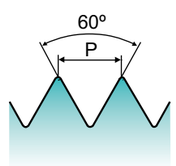
up to 5/16 : Male Center

Hole type 孔类型

2.5×D






Material groups **GS** | HSS-E | I | JIS II | 60° | 2.5P | R40 | Homo

p. B62

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| TAPPING ER CHUCK | D215 -220 |
| TAPPING CHUCK | D221 -228 |
| ONE STEP TAPPING CHUCK | D211 -213 |

Unit(单位) : mm

| SIZE 尺寸 | | TPI 牙距 | | EDP No. 型号 | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ØD1 | | | | | | L2 | L1 | ØD2 | K | Kl | |
| #4 | - | 40 | UNC | T1152162 | JIS II | 44 | 9.5 | 3 | 2.5 | 5 | 3 |
| #4 | - | 48 | UNF | T1152182 | JIS II | 44 | 9.5 | 3 | 2.5 | 5 | 3 |
| #5 | - | 40 | UNC | T1152202 | JIS II | 46 | 11 | 4 | 3.2 | 6 | 3 |
| #5 | - | 44 | UNF | T1152222 | JIS II | 46 | 11 | 4 | 3.2 | 6 | 3 |
| #6 | - | 32 | UNC | T1152242 | JIS II | 48 | 13 | 4 | 3.2 | 6 | 3 |
| #6 | - | 40 | UNF | T1152262 | JIS II | 48 | 13 | 4 | 3.2 | 6 | 3 |
| #8 | - | 32 | UNC | T1152282 | JIS II | 52 | 13 | 5 | 4 | 7 | 3 |
| #8 | - | 36 | UNF | T1152302 | JIS II | 52 | 13 | 5 | 4 | 7 | 3 |
| #10 | - | 24 | UNC | T1152322 | JIS II | 60 | 16 | 5.5 | 4.5 | 7 | 3 |
| #10 | - | 32 | UNF | T1152342 | JIS II | 60 | 16 | 5.5 | 4.5 | 7 | 3 |
| #12 | - | 24 | UNC | T1152362 | JIS II | 60 | 16 | 5.5 | 4.5 | 7 | 3 |
| #12 | - | 28 | UNF | T1152382 | JIS II | 60 | 16 | 5.5 | 4.5 | 7 | 3 |
| 1/4 | - | 20 | UNC | T1152402 | JIS II | 62 | 19 | 6 | 4.5 | 7 | 3 |
| 1/4 | - | 28 | UNF | T1152422 | JIS II | 62 | 19 | 6 | 4.5 | 7 | 3 |
| 5/16 | - | 18 | UNC | T1152442 | JIS II | 70 | 22 | 6.1 | 5 | 8 | 3 |
| 5/16 | - | 24 | UNF | T1152462 | JIS II | 70 | 22 | 6.1 | 5 | 8 | 3 |

► Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

▶ NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ○ | ○ | | ○ | ○ | | | ○ | | ○ | ○ | | ○ | | ○ | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400Rm | 1050Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | ○ | ○ | | | | | | | | | | | | | | |



CARBIDE
HSS
THREAD MILLS
SYNCHRO TAPS
COMBO TAPS
YG TAP GENERAL
YG TAP STEEL
YG TAP HARDENED
YG TAP INOX
YG TAP CAST IRON
YG TAP ALU
YG TAP Ti Ni
YG TAP FORMING
STI TAPS
PIPE TAPS
SKS21 HAND TAPS
SKS21 PIPE TAPS
TECHNICAL DATA

YG TAP GENERAL

T1152 SERIES

# UNC/F I-SP SPIRAL FLUTE TAPS for GENERAL PURPOSE

## I-SP 普通螺旋槽丝锥

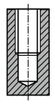
► Suitable for tapping Blind holes in Carbon Steels and Alloy Steels, where chips are produced in a continuous coil state.

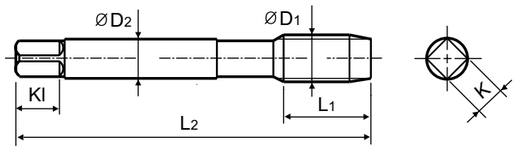
►适用于碳钢和合金钢的盲孔加工, 优异的排屑.

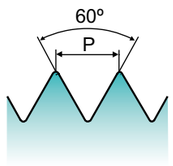
up to 5/16 : Male Center

Hole type 孔类型

2.5×D






Material groups **GS** | HSS-E | I | JIS II | 60° | 2.5P | R40 | Homo

p. B62

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| ◎ | TAPPING ER CHUCK | D215 -220 |
| | TAPPING CHUCK | D221 -228 |
| | ONE STEP TAPPING CHUCK | D211 -213 |

Unit(单位) : mm

| SIZE 尺寸 | TPI 牙距 | EDP No. 型号 | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|
| ØD1 | | | | L2 | L1 | ØD2 | K | Kl | |
| 3/8 - | 16 UNC | T1152482 | JIS II | 75 | 24 | 7 | 5.5 | 8 | 3 |
| 3/8 - | 24 UNF | T1152502 | JIS II | 75 | 24 | 7 | 5.5 | 8 | 3 |
| 7/16 - | 14 UNC | T1152522 | JIS II | 80 | 25 | 8 | 6 | 9 | 3 |
| 7/16 - | 20 UNF | T1152542 | JIS II | 80 | 25 | 8 | 6 | 9 | 3 |
| 1/2 - | 13 UNC | T1152562 | JIS II | 85 | 29 | 9 | 7 | 10 | 3 |
| 1/2 - | 20 UNF | T1152582 | JIS II | 85 | 29 | 9 | 7 | 10 | 3 |
| 9/16 - | 12 UNC | T1152602 | JIS II | 90 | 30 | 10.5 | 8 | 11 | 3 |
| 9/16 - | 18 UNF | T1152622 | JIS II | 90 | 30 | 10.5 | 8 | 11 | 3 |
| 5/8 - | 11 UNC | T1152642 | JIS II | 95 | 32 | 12 | 9 | 12 | 3 |
| 5/8 - | 18 UNF | T1152662 | JIS II | 95 | 32 | 12 | 9 | 12 | 3 |
| 3/4 - | 10 UNC | T1152702 | JIS II | 105 | 37 | 14 | 11 | 14 | 4 |
| 3/4 - | 16 UNF | T1152722 | JIS II | 105 | 37 | 14 | 11 | 14 | 4 |
| 7/8 - | 9 UNC | T1152742 | JIS II | 115 | 38 | 17 | 13 | 16 | 4 |
| 7/8 - | 14 UNF | T1152762 | JIS II | 115 | 38 | 17 | 13 | 16 | 4 |
| 1″ - | 8 UNC | T1152782 | JIS II | 125 | 45 | 20 | 15 | 18 | 4 |
| 1″ - | 12 UNF | T1152802 | JIS II | 125 | 45 | 20 | 15 | 18 | 4 |

►Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ○ | ○ | | ○ | ○ | | | ○ | | ○ | ○ | | ○ | | ○ | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | ○ | ○ | | | | | | | | | | | | | | |





YG TAP GENERAL

T1251 SERIES

# W I-SP SPIRAL FLUTE TAPS for GENERAL PURPOSE

## I-SP 普通螺旋槽丝锥

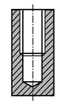
► Suitable for tapping Blind holes in Carbon Steels and Alloy Steels, where chips are produced in a continuous coil state.

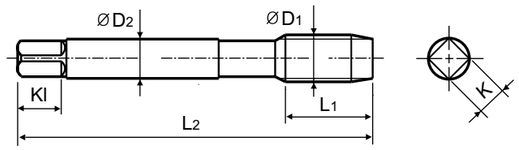
►适用于碳钢和合金钢的盲孔加工, 优异的排屑.

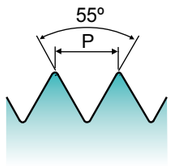
up to W5/16 : Male Center

Hole type 孔类型

2.5×D






Material groups **GS** | HSS-E | I | JIS II | 55° | 2.5P | R40 | Homo

p. B62

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| ◎ | TAPPING ER CHUCK | D215 -220 |
| | TAPPING CHUCK | D221 -228 |
| | ONE STEP TAPPING CHUCK | D211 -213 |

Unit(单位) : mm

| SIZE 尺寸 | TPI 牙距 | EDP No. 型号 | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|
| ØD1 | | | | L2 | L1 | ØD2 | K | Kl | |
| W1/8 - | 40 | T1251202 | JIS II | 46 | 11 | 4 | 3.2 | 6 | 3 |
| W3/16 - | 24 | T1251322 | JIS II | 60 | 16 | 5.5 | 4.5 | 7 | 3 |
| W1/4 - | 20 | T1251402 | JIS II | 62 | 19 | 6 | 4.5 | 7 | 3 |
| W5/16 - | 18 | T1251442 | JIS II | 70 | 22 | 6.1 | 5 | 8 | 3 |
| W3/8 - | 16 | T1251482 | JIS II | 75 | 24 | 7 | 5.5 | 8 | 3 |
| W7/16 - | 14 | T1251522 | JIS II | 80 | 25 | 8 | 6 | 9 | 3 |
| W1/2 - | 12 | T1251562 | JIS II | 85 | 29 | 9 | 7 | 10 | 3 |
| W9/16 - | 12 | T1251602 | JIS II | 90 | 30 | 10.5 | 8 | 11 | 3 |
| W5/8 - | 11 | T1251642 | JIS II | 95 | 32 | 12 | 9 | 12 | 3 |
| W3/4 - | 10 | T1251702 | JIS II | 105 | 37 | 14 | 11 | 14 | 4 |
| W7/8 - | 9 | T1251742 | JIS II | 115 | 38 | 17 | 13 | 16 | 4 |
| W1″ - | 8 | T1251782 | JIS II | 125 | 45 | 20 | 15 | 18 | 4 |

►Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ○ | ○ | | ○ | ○ | | | ○ | | ○ | ○ | | ○ | | ○ | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | ○ | ○ | | | | | | | | | | | | | | |

# YG TAP GENERAL

**T1132 SERIES**

## M I-SP SPIRAL FLUTE TAPS for GENERAL PURPOSE
## I-SP 普通螺旋槽丝锥

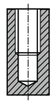
► Suitable for tapping Blind holes in Carbon Steels and Alloy Steels, where chips are produced in a continuous coil state.

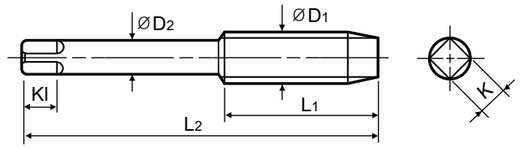
►适用于碳钢和合金钢的盲孔加工, 优异的排屑.

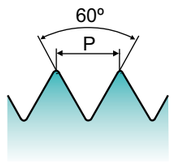
up to M7 : Male Center

Hole type 孔类型

2.5×D






Material groups **GS** | HSS-E | J | YH | 60° | 2.5P | R40 | Homo | p. B63

Tap Limits: p.B230

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| ◎ | TAPPING ER CHUCK | D215 -220 |
| | TAPPING CHUCK | D221 -228 |
| | ONE STEP TAPPING CHUCK | D211 -213 |

Unit(单位) : mm

| SIZE 尺寸 ØD1 | | Pitch 牙距 P | EDP No. 型号 | Limit 精度 | Overall Length 全长 L2 | Thread Length 螺纹长 L1 | Shank Diameter 柄径 ØD2 | Square Size 方块 尺寸 K | Square Length 方块 长度 Kl | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|---|
| M2 | × | 0.4 | **T1132131** | YH1 | 40 | 15 | 3 | 2.5 | 5 | 2 |
| M2.2 | × | 0.45 | **T1132151** | YH1 | 42 | 15 | 3 | 2.5 | 5 | 2 |
| M2.3 | × | 0.4 | **T1132191** | YH1 | 42 | 15 | 3 | 2.5 | 5 | 2 |
| M2.5 | × | 0.45 | **T1132171** | YH1 | 44 | 16 | 3 | 2.5 | 5 | 2 |
| M2.6 | × | 0.45 | **T1132491** | YH1 | 44 | 16 | 3 | 2.5 | 5 | 2 |
| M3 | × | 0.5 | **T1132202** | YH2 | 46 | 18 | 4 | 3.2 | 6 | 3 |
| M3 | × | 0.35 | **T1132211** | YH1 | 46 | 10 | 4 | 3.2 | 6 | 3 |
| M3.5 | × | 0.6 | **T1132222** | YH2 | 48 | 18 | 4 | 3.2 | 6 | 3 |
| M3.5 | × | 0.35 | **T1132231** | YH1 | 48 | 10 | 4 | 3.2 | 6 | 3 |
| M4 | × | 0.7 | **T1132242** | YH2 | 52 | 20 | 5 | 4 | 7 | 3 |
| M4 | × | 0.5 | **T1132251** | YH1 | 52 | 15 | 5 | 4 | 7 | 3 |
| M4.5 | × | 0.75 | **T1132262** | YH2 | 55 | 20 | 5 | 4 | 7 | 3 |
| M4.5 | × | 0.5 | **T1132271** | YH1 | 55 | 15 | 5 | 4 | 7 | 3 |
| M5 | × | 0.8 | **T1132282** | YH2 | 60 | 22 | 5.5 | 4.5 | 7 | 3 |
| M5 | × | 0.5 | **T1132291** | YH1 | 52 | 15 | 5.5 | 4.5 | 7 | 3 |
| M5.5 | × | 0.5 | **T1132301** | YH1 | 52 | 15 | 5.5 | 4.5 | 7 | 3 |
| M6 | × | 1 | **T1132312** | YH2 | 62 | 24 | 6 | 4.5 | 7 | 3 |
| M6 | × | 0.75 | **T1132322** | YH2 | 62 | 20 | 6 | 4.5 | 7 | 3 |
| M6 | × | 0.5 | **T1132331** | YH1 | 55 | 15 | 6 | 4.5 | 7 | 3 |
| M7 | × | 1 | **T1132342** | YH2 | 65 | 26 | 6.2 | 5 | 8 | 3 |
| M7 | × | 0.75 | **T1132352** | YH2 | 62 | 20 | 6.2 | 5 | 8 | 3 |
| M8 | × | 1.25 | **T1132362** | YH2 | 70 | 30 | 6.2 | 5 | 8 | 3 |

►Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

► NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ○ | ○ | | ○ | ○ | | | ○ | | ○ | ○ | | ○ | | ○ | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | ○ | ○ | | | | | | | | | | | | | | |



CARBIDE
HSS
THREAD MILLS
SYNCHRO TAPS
COMBO TAPS
YG TAP GENERAL
YG TAP STEEL
YG TAP HARDENED
YG TAP INOX
YG TAP CAST IRON
YG TAP ALU
YG TAP Ti Ni
YG TAP FORMING
STI TAPS
PIPE TAPS
SKS21 HAND TAPS
SKS21 PIPE TAPS
TECHNICAL DATA

# YG TAP GENERAL

**T1132 SERIES**

## M I-SP SPIRAL FLUTE TAPS for GENERAL PURPOSE
## I-SP 普通螺旋槽丝锥

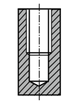
► Suitable for tapping Blind holes in Carbon Steels and Alloy Steels, where chips are produced in a continuous coil state.

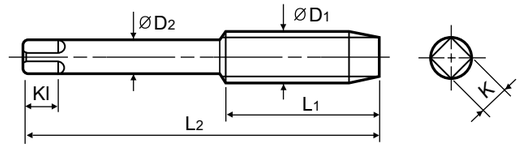
►适用于碳钢和合金钢的盲孔加工, 优异的排屑.

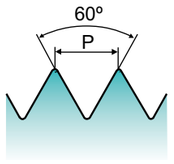
up to M7 : Male Center

Hole type 孔类型

2.5×D






Material groups GS | HSS-E | J | YH | 60° | 2.5P | R40 | Homo | p. B63

Tap Limits: p.B230

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| ◎ | TAPPING ER CHUCK | D215 -220 |
| | TAPPING CHUCK | D221 -228 |
| | ONE STEP TAPPING CHUCK | D211 -213 |

Unit(单位) : mm

| SIZE 尺寸 ØD1 | | Pitch 牙距 P | EDP No. 型号 | Limit 精度 | Overall Length 全长 L2 | Thread Length 螺纹长 L1 | Shank Diameter 柄径 ØD2 | Square Size 方块 尺寸 K | Square Length 方块 长度 Kl | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|---|
| M8 | × | 1 | **T1132372** | YH2 | 70 | 30 | 6.2 | 5 | 8 | 3 |
| M8 | × | 0.75 | **T1132382** | YH2 | 65 | 26 | 6.2 | 5 | 8 | 3 |
| M9 | × | 1.25 | **T1132392** | YH2 | 72 | 30 | 7 | 5.5 | 8 | 3 |
| M9 | × | 1 | **T1132402** | YH2 | 70 | 30 | 7 | 5.5 | 8 | 3 |
| M9 | × | 0.75 | **T1132412** | YH2 | 65 | 26 | 7 | 5.5 | 8 | 3 |
| M10 | × | 1.5 | **T1132422** | YH2 | 75 | 32 | 7 | 5.5 | 8 | 3 |
| M10 | × | 1.25 | **T1132432** | YH2 | 75 | 32 | 7 | 5.5 | 8 | 3 |
| M10 | × | 1 | **T1132442** | YH2 | 70 | 30 | 7 | 5.5 | 8 | 3 |
| M10 | × | 0.75 | **T1132452** | YH2 | 65 | 26 | 7 | 5.5 | 8 | 3 |
| M11 | × | 1.5 | **T1132462** | YH2 | 80 | 38 | 8 | 6 | 9 | 3 |
| M11 | × | 1 | **T1132472** | YH2 | 70 | 30 | 8 | 6 | 9 | 3 |
| M11 | × | 0.75 | **T1132482** | YH2 | 65 | 26 | 8 | 6 | 9 | 3 |
| M12 | × | 1.75 | **T1132502** | YH2 | 82 | 38 | 8.5 | 6.5 | 9 | 3 |
| M12 | × | 1.5 | **T1132512** | YH2 | 82 | 38 | 8.5 | 6.5 | 9 | 3 |
| M12 | × | 1.25 | **T1132522** | YH2 | 80 | 38 | 8.5 | 6.5 | 9 | 3 |
| M12 | × | 1 | **T1132532** | YH2 | 70 | 30 | 8.5 | 6.5 | 9 | 3 |
| M14 | × | 2 | **T1132542** | YH2 | 88 | 42 | 10.5 | 8 | 11 | 3 |
| M14 | × | 1.5 | **T1132552** | YH2 | 88 | 42 | 10.5 | 8 | 11 | 3 |
| M14 | × | 1.25 | **T1132562** | YH2 | 80 | 38 | 10.5 | 8 | 11 | 3 |
| M14 | × | 1 | **T1132572** | YH2 | 70 | 30 | 10.5 | 8 | 11 | 3 |
| M15 | × | 1.5 | **T1132582** | YH2 | 90 | 42 | 10.5 | 8 | 11 | 3 |
| M15 | × | 1 | **T1132592** | YH2 | 70 | 30 | 10.5 | 8 | 11 | 3 |

►Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

► NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ○ | ○ | | ○ | ○ | | | ○ | | ○ | ○ | | ○ | | ○ | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | ○ | ○ | | | | | | | | | | | | | | |

YG TAP GENERAL

T1132 SERIES

# M I-SP SPIRAL FLUTE TAPS for GENERAL PURPOSE
## I-SP 普通螺旋槽丝锥

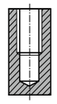
► Suitable for tapping Blind holes in Carbon Steels and Alloy Steels, where chips are produced in a continuous coil state.

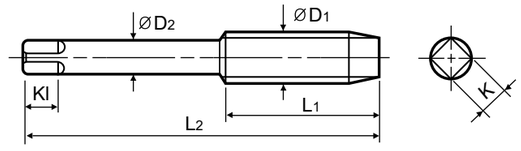
►适用于碳钢和合金钢的盲孔加工, 优异的排屑.

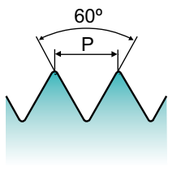
up to M7 : Male Center

Hole type 孔类型

2.5×D






Material groups **GS** | HSS-E | J | YH | 60° | 2.5P | R40 | Homo | p. B63

Tap Limits: p.B230

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| ◎ | TAPPING ER CHUCK | D215 -220 |
| ◎ | TAPPING CHUCK | D221 -228 |
| | ONE STEP TAPPING CHUCK | D211 -213 |

Unit(单位) : mm

| SIZE 尺寸 | | Pitch 牙距 | EDP No. 型号 | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|---|
| | | ØD1 | | | L2 | L1 | ØD2 | K | Kl | |
| M16 | × | 2 | **T1132602** | YH2 | 95 | 45 | 12.5 | 10 | 13 | 3 |
| M16 | × | 1.5 | **T1132612** | YH2 | 95 | 45 | 12.5 | 10 | 13 | 3 |
| M16 | × | 1 | **T1132622** | YH2 | 75 | 30 | 12.5 | 10 | 13 | 3 |
| M18 | × | 2.5 | **T1132653** | YH3 | 100 | 48 | 14 | 11 | 14 | 4 |
| M18 | × | 2 | **T1132663** | YH3 | 95 | 45 | 14 | 11 | 14 | 4 |
| M18 | × | 1.5 | **T1132672** | YH2 | 95 | 45 | 14 | 11 | 14 | 4 |
| M18 | × | 1 | **T1132682** | YH2 | 80 | 30 | 14 | 11 | 14 | 4 |
| M20 | × | 2.5 | **T1132703** | YH3 | 105 | 50 | 15 | 12 | 15 | 4 |
| M20 | × | 2 | **T1132713** | YH3 | 95 | 45 | 15 | 12 | 15 | 4 |
| M20 | × | 1.5 | **T1132723** | YH3 | 95 | 45 | 15 | 12 | 15 | 4 |
| M20 | × | 1 | **T1132732** | YH2 | 80 | 30 | 15 | 12 | 15 | 4 |
| M22 | × | 2.5 | **T1132743** | YH3 | 115 | 55 | 17 | 13 | 16 | 4 |
| M22 | × | 2 | **T1132753** | YH3 | 95 | 45 | 17 | 13 | 16 | 4 |
| M22 | × | 1.5 | **T1132763** | YH3 | 95 | 45 | 17 | 13 | 16 | 4 |
| M22 | × | 1 | **T1132772** | YH2 | 85 | 30 | 17 | 13 | 16 | 4 |
| M24 | × | 3 | **T1132783** | YH3 | 120 | 58 | 19 | 15 | 18 | 4 |
| M24 | × | 2 | **T1132793** | YH3 | 95 | 45 | 19 | 15 | 18 | 4 |
| M24 | × | 1.5 | **T1132803** | YH3 | 95 | 45 | 19 | 15 | 18 | 4 |
| M24 | × | 1 | **T1132812** | YH2 | 90 | 30 | 19 | 15 | 18 | 4 |
| M25 | × | 2 | **T1132823** | YH3 | 95 | 45 | 19 | 15 | 18 | 4 |
| M25 | × | 1.5 | **T1132833** | YH3 | 95 | 45 | 19 | 15 | 18 | 4 |
| M26 | × | 2 | **T1132N43** | YH3 | 95 | 45 | 20 | 15 | 18 | 4 |

► Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

► NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ○ | ○ | | ○ | ○ | | | ○ | | ○ | ○ | | ○ | | ○ | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400Rm | 1050Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | ○ | ○ | | | | | | | | | | | | | | |



CARBIDE
HSS
THREAD MILLS
SYNCHRO TAPS
COMBO TAPS
YG TAP GENERAL
YG TAP STEEL
YG TAP HARDENED
YG TAP INOX
YG TAP CAST IRON
YG TAP ALU
YG TAP Ti Ni
YG TAP FORMING
STI TAPS
PIPE TAPS
SKS21 HAND TAPS
SKS21 PIPE TAPS
TECHNICAL DATA

YG TAP GENERAL

T1132 SERIES

# M I-SP SPIRAL FLUTE TAPS for GENERAL PURPOSE
## I-SP 普通螺旋槽丝锥

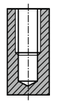
► Suitable for tapping Blind holes in Carbon Steels and Alloy Steels, where chips are produced in a continuous coil state.

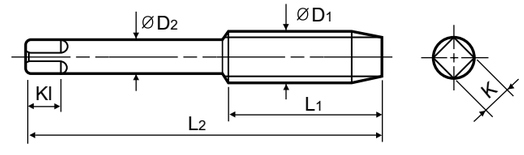
►适用于碳钢和合金钢的盲孔加工, 优异的排屑.

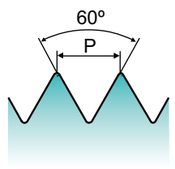
up to M7 : Male Center

Hole type 孔类型

2.5×D






Material groups **GS** | HSS-E | J | YH | 60° | 2.5P | R40 | Homo | p. B63

Tap Limits: p.B230

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| ◎ | TAPPING ER CHUCK | D215 -220 |
| ◎ | TAPPING CHUCK | D221 -228 |
| | ONE STEP TAPPING CHUCK | D211 -213 |

Unit(单位) : mm

| SIZE 尺寸 | | Pitch 牙距 | EDP No. 型号 | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|---|
| | | ØD1 | | | L2 | L1 | ØD2 | K | Kl | |
| M26 | × | 1.5 | **T1132853** | YH3 | 95 | 45 | 20 | 15 | 18 | 4 |
| M26 | × | 1 | **T1132N52** | YH2 | 95 | 30 | 20 | 15 | 18 | 4 |
| M27 | × | 3 | **T1132863** | YH3 | 130 | 62 | 20 | 15 | 18 | 4 |
| M27 | × | 2 | **T1132873** | YH3 | 95 | 45 | 20 | 15 | 18 | 4 |
| M27 | × | 1.5 | **T1132883** | YH3 | 95 | 45 | 20 | 15 | 18 | 4 |
| M28 | × | 2 | **T1132903** | YH3 | 105 | 45 | 21 | 17 | 20 | 4 |
| M28 | × | 1.5 | **T1132913** | YH3 | 105 | 45 | 21 | 17 | 20 | 4 |
| M30 | × | 3.5 | **T1132944** | YH4 | 135 | 65 | 23 | 17 | 20 | 4 |
| M30 | × | 3 | **T1132953** | YH3 | 135 | 65 | 23 | 17 | 20 | 4 |
| M30 | × | 2 | **T1132963** | YH3 | 105 | 45 | 23 | 17 | 20 | 4 |
| M30 | × | 1.5 | **T1132973** | YH3 | 105 | 45 | 23 | 17 | 20 | 4 |
| M30 | × | 1 | **T1132982** | YH2 | 105 | 30 | 23 | 17 | 20 | 4 |
| M33 | × | 3.5 | **T1132A44** | YH4 | 145 | 70 | 25 | 19 | 22 | 4 |
| M33 | × | 3 | **T1132A53** | YH3 | 145 | 70 | 25 | 19 | 22 | 4 |
| M33 | × | 2 | **T1132A63** | YH3 | 110 | 45 | 25 | 19 | 22 | 4 |
| M33 | × | 1.5 | **T1132A73** | YH3 | 110 | 45 | 25 | 19 | 22 | 4 |
| M36 | × | 4 | **T1132B34** | YH4 | 155 | 75 | 28 | 21 | 24 | 4 |
| M36 | × | 3 | **T1132B43** | YH3 | 155 | 75 | 28 | 21 | 24 | 4 |
| M36 | × | 2 | **T1132B53** | YH3 | 110 | 45 | 28 | 21 | 24 | 4 |
| M36 | × | 1.5 | **T1132B63** | YH3 | 110 | 45 | 28 | 21 | 24 | 4 |

► Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ○ | ○ | | ○ | ○ | | | ○ | | ○ | ○ | | ○ | | ○ | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400Rm | 1050Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | ○ | ○ | | | | | | | | | | | | | | |

YG TAP GENERAL

T1232 SERIES

# UNC/F I-SP SPIRAL FLUTE TAPS for GENERAL PURPOSE
## I-SP 普通螺旋槽丝锥

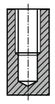
► Suitable for tapping Blind holes in Carbon Steels and Alloy Steels, where chips are produced in a continuous coil state.

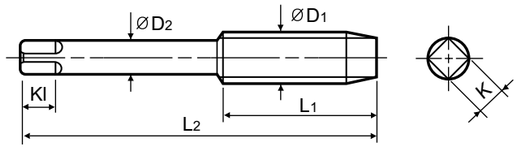
►适用于碳钢和合金钢的盲孔加工, 优异的排屑.

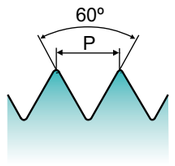
up to 5/16 : Male Center

Hole type 孔类型

2.5×D






Material groups **GS** | HSS-E | J | JIS II | 60° | 2.5P | R40 | Homo

p. B63

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| ◎ | TAPPING ER CHUCK | D215 -220 |
| | TAPPING CHUCK | D221 -228 |
| | ONE STEP TAPPING CHUCK | D211 -213 |

Unit(单位) : mm

| SIZE 尺寸 | TPI 牙距 | EDP No. 型号 | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|
| ØD1 | | | | L2 | L1 | ØD2 | K | Kl | |
| #4 - 40 | UNC | T1232162 | JIS II | 44 | 16 | 3 | 2.5 | 5 | 3 |
| #4 - 48 | UNF | T1232182 | JIS II | 44 | 16 | 3 | 2.5 | 5 | 3 |
| #5 - 40 | UNC | T1232202 | JIS II | 46 | 18 | 4 | 3.2 | 6 | 3 |
| #5 - 44 | UNF | T1232222 | JIS II | 46 | 18 | 4 | 3.2 | 6 | 3 |
| #6 - 32 | UNC | T1232242 | JIS II | 48 | 18 | 4 | 3.2 | 6 | 3 |
| #6 - 40 | UNF | T1232262 | JIS II | 48 | 18 | 4 | 3.2 | 6 | 3 |
| #8 - 32 | UNC | T1232282 | JIS II | 52 | 20 | 5 | 4 | 7 | 3 |
| #8 - 36 | UNF | T1232302 | JIS II | 52 | 20 | 5 | 4 | 7 | 3 |
| #10 - 24 | UNC | T1232322 | JIS II | 60 | 22 | 5.5 | 4.5 | 7 | 3 |
| #10 - 32 | UNF | T1232342 | JIS II | 60 | 22 | 5.5 | 4.5 | 7 | 3 |
| #12 - 24 | UNC | T1232362 | JIS II | 60 | 22 | 5.5 | 4.5 | 7 | 3 |
| #12 - 28 | UNF | T1232382 | JIS II | 60 | 22 | 5.5 | 4.5 | 7 | 3 |
| 1/4 - 20 | UNC | T1232402 | JIS II | 62 | 24 | 6 | 4.5 | 7 | 3 |
| 1/4 - 28 | UNF | T1232422 | JIS II | 62 | 24 | 6 | 4.5 | 7 | 3 |
| 5/16 - 18 | UNC | T1232442 | JIS II | 70 | 30 | 6.1 | 5 | 8 | 3 |
| 5/16 - 24 | UNF | T1232462 | JIS II | 70 | 30 | 6.1 | 5 | 8 | 3 |

►Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

▶ NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ○ | ○ | | ○ | ○ | | | ○ | | ○ | ○ | | ○ | | ○ | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | ○ | ○ | | | | | | | | | | | | | | |



CARBIDE
HSS
THREAD MILLS
SYNCHRO TAPS
COMBO TAPS
YG TAP GENERAL
YG TAP STEEL
YG TAP HARDENED
YG TAP INOX
YG TAP CAST IRON
YG TAP ALU
YG TAP Ti Ni
YG TAP FORMING
STI TAPS
PIPE TAPS
SKS21 HAND TAPS
SKS21 PIPE TAPS
TECHNICAL DATA

YG TAP GENERAL

T1232 SERIES

UNC/F I-SP SPIRAL FLUTE TAPS for GENERAL PURPOSE
I-SP 普通螺旋槽丝锥

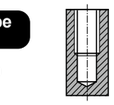
► Suitable for tapping Blind holes in Carbon Steels and Alloy Steels, where chips are produced in a continuous coil state.

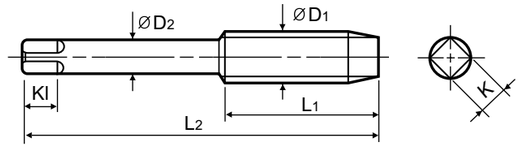
▶适用于碳钢和合金钢的盲孔加工, 优异的排屑.

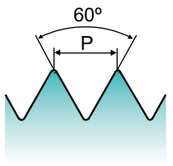
up to 5/16 : Male Center

Hole type 孔类型

2.5×D






Material groups GS | HSS-E | J | JIS II | 60° | 2.5P | R40 | Homo

p. B63

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| ◎ | TAPPING ER CHUCK | D215 -220 |
| | TAPPING CHUCK | D221 -228 |
| | ONE STEP TAPPING CHUCK | D211 -213 |

Unit(单位) : mm

| SIZE 尺寸 | TPI 牙距 | EDP No. 型号 | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|
| ØD1 | | | | L2 | L1 | ØD2 | K | Kl | |
| 3/8 - 16 | UNC | T1232482 | JIS II | 75 | 35 | 7 | 5.5 | 8 | 3 |
| 3/8 - 24 | UNF | T1232502 | JIS II | 75 | 32 | 7 | 5.5 | 8 | 3 |
| 7/16 - 14 | UNC | T1232522 | JIS II | 80 | 38 | 8 | 6 | 9 | 3 |
| 7/16 - 20 | UNF | T1232542 | JIS II | 80 | 38 | 8 | 6 | 9 | 3 |
| 1/2 - 13 | UNC | T1232562 | JIS II | 85 | 42 | 9 | 7 | 10 | 3 |
| 1/2 - 20 | UNF | T1232582 | JIS II | 85 | 42 | 9 | 7 | 10 | 3 |
| 9/16 - 12 | UNC | T1232602 | JIS II | 90 | 42 | 10.5 | 8 | 11 | 3 |
| 9/16 - 18 | UNF | T1232622 | JIS II | 90 | 42 | 10.5 | 8 | 11 | 3 |
| 5/8 - 11 | UNC | T1232642 | JIS II | 95 | 45 | 12 | 9 | 12 | 3 |
| 5/8 - 18 | UNF | T1232662 | JIS II | 95 | 45 | 12 | 9 | 12 | 3 |
| 3/4 - 10 | UNC | T1232702 | JIS II | 105 | 50 | 14 | 11 | 14 | 4 |
| 3/4 - 16 | UNF | T1232722 | JIS II | 95 | 45 | 14 | 11 | 14 | 4 |
| 7/8 - 9 | UNC | T1232742 | JIS II | 115 | 55 | 17 | 13 | 16 | 4 |
| 7/8 - 14 | UNF | T1232762 | JIS II | 95 | 45 | 17 | 13 | 16 | 4 |
| 1" - 8 | UNC | T1232782 | JIS II | 125 | 60 | 20 | 15 | 18 | 4 |
| 1" - 12 | UNF | T1232802 | JIS II | 95 | 45 | 20 | 15 | 18 | 4 |

►Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ○ | ○ | | ○ | ○ | | | ○ | | ○ | ○ | | ○ | | ○ | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | ○ | ○ | | | | | | | | | | | | | | |

YG TAP GENERAL

T1162 SERIES

# W I-SP SPIRAL FLUTE TAPS for GENERAL PURPOSE
## I-SP 普通螺旋槽丝锥

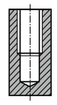
► Suitable for tapping Blind holes in Carbon Steels and Alloy Steels, where chips are produced in a continuous coil state.

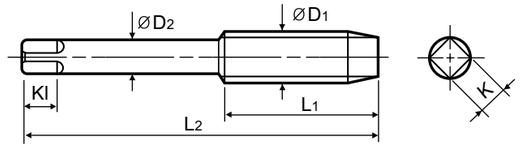
►适用于碳钢和合金钢的盲孔加工, 优异的排屑.

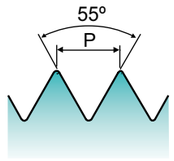
up to W5/16 : Male Center

Hole type 孔类型

2.5×D






Material groups **GS** | HSS-E | J | JIS II | 55º | 2.5P | R40 | Homo

p. B63

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| TAPPING ER CHUCK | D215 -220 |
| TAPPING CHUCK | D221 -228 |
| ONE STEP TAPPING CHUCK | D211 -213 |

Unit(单位) : mm

| SIZE 尺寸 | TPI 牙距 | EDP No. 型号 | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|
| ØD1 | | | | L2 | L1 | ØD2 | K | Kl | |
| W1/8 | - 40 | T1162202 | JIS II | 46 | 18 | 4 | 3.2 | 6 | 3 |
| W3/16 | - 24 | T1162322 | JIS II | 60 | 22 | 5.5 | 4.5 | 7 | 3 |
| W1/4 | - 20 | T1162402 | JIS II | 62 | 24 | 6 | 4.5 | 7 | 3 |
| W5/16 | - 18 | T1162442 | JIS II | 70 | 30 | 6.1 | 5 | 8 | 3 |
| W3/8 | - 16 | T1162482 | JIS II | 75 | 35 | 7 | 5.5 | 8 | 3 |
| W7/16 | - 14 | T1162522 | JIS II | 80 | 38 | 8 | 6 | 9 | 3 |
| W1/2 | - 12 | T1162562 | JIS II | 85 | 42 | 9 | 7 | 10 | 3 |
| W9/16 | - 12 | T1162602 | JIS II | 90 | 42 | 10.5 | 8 | 11 | 3 |
| W5/8 | - 11 | T1162642 | JIS II | 95 | 45 | 12 | 9 | 12 | 3 |
| W3/4 | - 10 | T1162702 | JIS II | 105 | 50 | 14 | 11 | 14 | 4 |
| W7/8 | - 9 | T1162742 | JIS II | 115 | 55 | 17 | 13 | 16 | 4 |
| W1″ | - 8 | T1162782 | JIS II | 125 | 60 | 20 | 15 | 18 | 4 |

►Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ○ | ○ | | ○ | ○ | | | ○ | | ○ | ○ | | ○ | | ○ | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | ○ | ○ | | | | | | | | | | | | | | |



YG TAP GENERAL

T1112 SERIES

# M I-SP SPIRAL FLUTE TAPS for DEEP HOLES(for GENERAL PURPOSE)
## I-SP 深孔螺旋槽丝锥(普通)

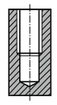
► Suitable for tapping deep Blind holes in Carbon Steels and Alloy Steels, where chips are produced in a continuous coil state.

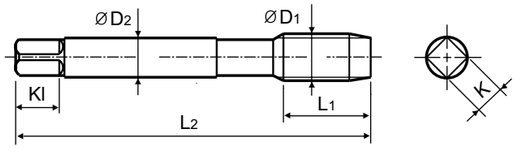
►适用于碳钢和合金钢的盲孔深加工, 优异的排屑.

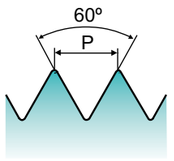
up to M7 : Male Center

Hole type 孔类型

2.5×D






Material groups **GS** | HSS-E | S | YH | 60º | 2.5P | R40 | Homo

p. B63

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| TAPPING ER CHUCK | D215 -220 |
| TAPPING CHUCK | D221 -228 |
| ONE STEP TAPPING CHUCK | D211 -213 |

Tap Limits: p.B230

Unit(单位) : mm

| SIZE 尺寸 | | Pitch 牙距 | EDP No. 型号 | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|---|
| ØD1 | | P | | | L2 | L1 | ØD2 | K | Kl | |
| M2 | × | 0.4 | T1112131 | YH1 | 40 | 4 | 3 | 2.5 | 5 | 2 |
| M2.2 | × | 0.45 | T1112151 | YH1 | 42 | 4 | 3 | 2.5 | 5 | 2 |
| M2.3 | × | 0.4 | T1112191 | YH1 | 42 | 4 | 3 | 2.5 | 5 | 2 |
| M2.5 | × | 0.45 | T1112171 | YH1 | 44 | 4 | 3 | 2.5 | 5 | 2 |
| M2.6 | × | 0.45 | T1112491 | YH1 | 44 | 4 | 3 | 2.5 | 5 | 2 |
| M3 | × | 0.5 | T1112202 | YH2 | 46 | 5 | 4 | 3.2 | 6 | 3 |
| M3 | × | 0.35 | T1112211 | YH1 | 46 | 4 | 4 | 3.2 | 6 | 3 |
| M3.5 | × | 0.6 | T1112222 | YH2 | 48 | 6 | 4 | 3.2 | 6 | 3 |
| M3.5 | × | 0.35 | T1112231 | YH1 | 48 | 4 | 4 | 3.2 | 6 | 3 |
| M4 | × | 0.7 | T1112242 | YH2 | 52 | 7 | 5 | 4 | 7 | 3 |
| M4 | × | 0.5 | T1112251 | YH1 | 52 | 5 | 5 | 4 | 7 | 3 |
| M4.5 | × | 0.75 | T1112262 | YH2 | 55 | 7.5 | 5 | 4 | 7 | 3 |
| M4.5 | × | 0.5 | T1112271 | YH1 | 55 | 5 | 5 | 4 | 7 | 3 |
| M5 | × | 0.8 | T1112282 | YH2 | 60 | 8 | 5.5 | 4.5 | 7 | 3 |
| M5 | × | 0.5 | T1112291 | YH1 | 60 | 5 | 5.5 | 4.5 | 7 | 3 |
| M5.5 | × | 0.5 | T1112301 | YH1 | 60 | 5 | 5.5 | 4.5 | 7 | 3 |
| M6 | × | 1 | T1112312 | YH2 | 62 | 10 | 6 | 4.5 | 7 | 3 |
| M6 | × | 0.75 | T1112322 | YH2 | 62 | 7.5 | 6 | 4.5 | 7 | 3 |
| M6 | × | 0.5 | T1112331 | YH1 | 62 | 5 | 6 | 4.5 | 7 | 3 |
| M7 | × | 1 | T1112342 | YH2 | 65 | 10 | 6.2 | 5 | 8 | 3 |

►Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

▶ NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ○ | ○ | | ○ | ○ | | | ○ | | ○ | ○ | | ○ | | ○ | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | ○ | ○ | | | | | | | | | | | | | | |

YG TAP GENERAL

T1112 SERIES

# M I-SP SPIRAL FLUTE TAPS for DEEP HOLES(for GENERAL PURPOSE)

## I-SP 深孔螺旋槽丝锥(普通)

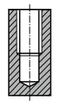
► Suitable for tapping deep Blind holes in Carbon Steels and Alloy Steels, where chips are produced in a continuous coil state.

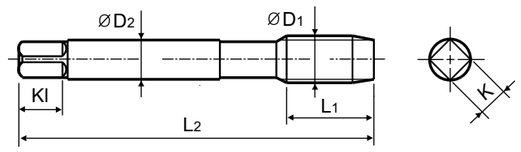
►适用于碳钢和合金钢的盲孔深加工, 优异的排屑.

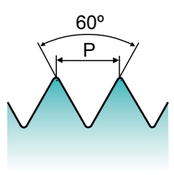
up to M7 : Male Center

Hole type 孔类型

2.5×D






Material groups **GS** | HSS-E | S | YH | 60° | 2.5P | R40 | Homo

p. B63

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| ◎ | TAPPING ER CHUCK | D215 -220 |
| ◎ | TAPPING CHUCK | D221 -228 |
| | ONE STEP TAPPING CHUCK | D211 -213 |

Tap Limits: p.B230

Unit(单位) : mm

| SIZE 尺寸 | | Pitch 牙距 | | EDP No. 型号 | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ØD1 | | P | | | | L2 | L1 | ØD2 | K | Kl | |
| M7 | × | 0.75 | | T1112352 | YH2 | 65 | 7.5 | 6.2 | 5 | 8 | 3 |
| M8 | × | 1.25 | | T1112362 | YH2 | 70 | 13.7 | 6.2 | 5 | 8 | 3 |
| M8 | × | 1 | | T1112372 | YH2 | 70 | 10.9 | 6.2 | 5 | 8 | 3 |
| M8 | × | 0.75 | | T1112382 | YH2 | 70 | 8.2 | 6.2 | 5 | 8 | 3 |
| M9 | × | 1.25 | | T1112392 | YH2 | 72 | 13.7 | 7 | 5.5 | 8 | 3 |
| M9 | × | 1 | | T1112402 | YH2 | 72 | 10.9 | 7 | 5.5 | 8 | 3 |
| M9 | × | 0.75 | | T1112412 | YH2 | 72 | 8.2 | 7 | 5.5 | 8 | 3 |
| M10 | × | 1.5 | | T1112422 | YH2 | 75 | 16.4 | 7 | 5.5 | 8 | 3 |
| M10 | × | 1.25 | | T1112432 | YH2 | 75 | 13.7 | 7 | 5.5 | 8 | 3 |
| M10 | × | 1 | | T1112442 | YH2 | 75 | 10.9 | 7 | 5.5 | 8 | 3 |
| M10 | × | 0.75 | | T1112452 | YH2 | 75 | 8.2 | 7 | 5.5 | 8 | 3 |
| M11 | × | 1.5 | | T1112462 | YH2 | 80 | 16.4 | 8 | 6 | 9 | 3 |
| M11 | × | 1 | | T1112472 | YH2 | 80 | 10.9 | 8 | 6 | 9 | 3 |
| M11 | × | 0.75 | | T1112482 | YH2 | 80 | 8.2 | 8 | 6 | 9 | 3 |
| M12 | × | 1.75 | | T1112502 | YH2 | 82 | 19.2 | 8.5 | 6.5 | 9 | 3 |
| M12 | × | 1.5 | | T1112512 | YH2 | 82 | 16.4 | 8.5 | 6.5 | 9 | 3 |
| M12 | × | 1.25 | | T1112522 | YH2 | 82 | 13.7 | 8.5 | 6.5 | 9 | 3 |
| M12 | × | 1 | | T1112532 | YH2 | 82 | 10.9 | 8.5 | 6.5 | 9 | 3 |
| M14 | × | 2 | | T1112542 | YH2 | 88 | 21.9 | 10.5 | 8 | 11 | 3 |
| M14 | × | 1.5 | | T1112552 | YH2 | 88 | 16.4 | 10.5 | 8 | 11 | 3 |

►Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

▶ NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ○ | ○ | | ○ | ○ | | | ○ | | ○ | ○ | | ○ | | ○ | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400Rm | 1050Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | ○ | ○ | | | | | | | | | | | | | | |



CARBIDE
HSS
THREAD MILLS
SYNCHRO TAPS
COMBO TAPS
YG TAP GENERAL
YG TAP STEEL
YG TAP HARDENED
YG TAP INOX
YG TAP CAST IRON
YG TAP ALU
YG TAP Ti Ni
YG TAP FORMING
STI TAPS
PIPE TAPS
SKS21 HAND TAPS
SKS21 PIPE TAPS
TECHNICAL DATA

YG TAP GENERAL

T1112 SERIES

# M I-SP SPIRAL FLUTE TAPS for DEEP HOLES(for GENERAL PURPOSE)

## I-SP 深孔螺旋槽丝锥(普通)

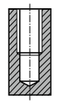
► Suitable for tapping deep Blind holes in Carbon Steels and Alloy Steels, where chips are produced in a continuous coil state.

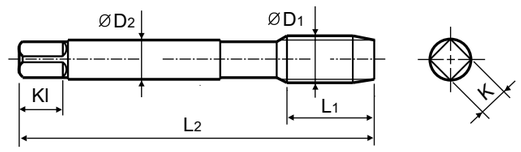
►适用于碳钢和合金钢的盲孔深加工, 优异的排屑.

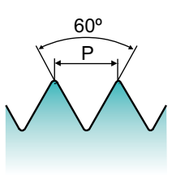
up to M7 : Male Center

Hole type 孔类型

2.5×D






Material groups **GS** | HSS-E | S | YH | 60° | 2.5P | R40 | Homo

p. B63

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| ◎ | TAPPING ER CHUCK | D215 -220 |
| ◎ | TAPPING CHUCK | D221 -228 |
| | ONE STEP TAPPING CHUCK | D211 -213 |

Tap Limits: p.B230

Unit(单位) : mm

| SIZE 尺寸 | | Pitch 牙距 | | EDP No. 型号 | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ØD1 | | P | | | | L2 | L1 | ØD2 | K | Kl | |
| M14 | × | 1.25 | | T1112562 | YH2 | 88 | 13.5 | 10.5 | 8 | 11 | 3 |
| M14 | × | 1 | | T1112572 | YH2 | 88 | 10.9 | 10.5 | 8 | 11 | 3 |
| M15 | × | 1.5 | | T1112582 | YH2 | 90 | 16.4 | 10.5 | 8 | 11 | 3 |
| M15 | × | 1 | | T1112592 | YH2 | 90 | 10.9 | 10.5 | 8 | 11 | 3 |
| M16 | × | 2 | | T1112602 | YH2 | 95 | 21.9 | 12.5 | 10 | 13 | 3 |
| M16 | × | 1.5 | | T1112612 | YH2 | 95 | 16.4 | 12.5 | 10 | 13 | 3 |
| M16 | × | 1 | | T1112622 | YH2 | 95 | 10.9 | 12.5 | 10 | 13 | 3 |
| M18 | × | 2.5 | | T1112653 | YH3 | 100 | 27.4 | 14 | 11 | 14 | 4 |
| M18 | × | 2 | | T1112663 | YH3 | 100 | 21.9 | 14 | 11 | 14 | 4 |
| M18 | × | 1.5 | | T1112672 | YH2 | 100 | 16.4 | 14 | 11 | 14 | 4 |
| M18 | × | 1 | | T1112682 | YH2 | 95 | 10.9 | 14 | 11 | 14 | 4 |
| M20 | × | 2.5 | | T1112703 | YH3 | 105 | 27.4 | 15 | 12 | 15 | 4 |
| M20 | × | 2 | | T1112713 | YH3 | 105 | 21.9 | 15 | 12 | 15 | 4 |
| M20 | × | 1.5 | | T1112723 | YH3 | 105 | 16.4 | 15 | 12 | 15 | 4 |
| M20 | × | 1 | | T1112732 | YH2 | 95 | 10.9 | 15 | 12 | 15 | 4 |
| M22 | × | 2.5 | | T1112743 | YH3 | 115 | 27.4 | 17 | 13 | 16 | 4 |
| M22 | × | 2 | | T1112753 | YH3 | 115 | 21.9 | 17 | 13 | 16 | 4 |
| M22 | × | 1.5 | | T1112763 | YH3 | 115 | 16.4 | 17 | 13 | 16 | 4 |
| M22 | × | 1 | | T1112772 | YH2 | 95 | 10.9 | 17 | 13 | 16 | 4 |

►Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ○ | ○ | | ○ | ○ | | | ○ | | ○ | ○ | | ○ | | ○ | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400Rm | 1050Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | ○ | ○ | | | | | | | | | | | | | | |

YG TAP GENERAL

T1172 SERIES

# UNC/F I-SP SPIRAL FLUTE TAPS for DEEP HOLES(for GENERAL PURPOSE)

## I-SP 深孔螺旋槽丝锥(普通)

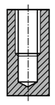
► Suitable for tapping deep Blind holes in Carbon Steels and Alloy Steels, where chips are produced in a continuous coil state.

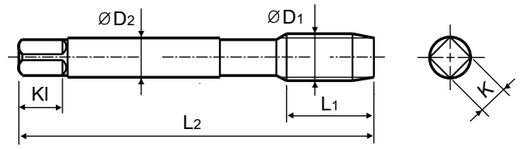
►适用于碳钢和合金钢的盲孔深加工, 优异的排屑.

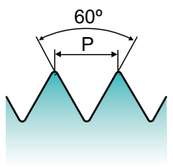
up to 5/16 : Male Center

Hole type 孔类型

2.5×D






Material groups **GS** | HSS-E | S | JIS II | 60° | 2.5P | R40 | Homo

p. B63

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| TAPPING ER CHUCK | D215 -220 | |
| TAPPING CHUCK | D221 -228 | |
| ONE STEP TAPPING CHUCK | D211 -213 | |

Unit(单位) : mm

| SIZE 尺寸 | TPI 牙距 | EDP No. 型号 | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|
| ØD1 | | | | L2 | L1 | ØD2 | K | Kl | |
| #4 | - 40 UNC | T1172162 | JIS II | 44 | 6 | 3 | 2.5 | 5 | 3 |
| #4 | - 48 UNF | T1172182 | JIS II | 44 | 6 | 3 | 2.5 | 5 | 3 |
| #5 | - 40 UNC | T1172202 | JIS II | 46 | 6 | 4 | 3.2 | 6 | 3 |
| #5 | - 44 UNF | T1172222 | JIS II | 46 | 6 | 4 | 3.2 | 6 | 3 |
| #6 | - 32 UNC | T1172242 | JIS II | 48 | 7 | 4 | 3.2 | 6 | 3 |
| #6 | - 40 UNF | T1172262 | JIS II | 48 | 7 | 4 | 3.2 | 6 | 3 |
| #8 | - 32 UNC | T1172282 | JIS II | 52 | 7 | 5 | 4 | 7 | 3 |
| #8 | - 36 UNF | T1172302 | JIS II | 52 | 7 | 5 | 4 | 7 | 3 |
| #10 | - 24 UNC | T1172322 | JIS II | 60 | 10 | 5.5 | 4.5 | 7 | 3 |
| #10 | - 32 UNF | T1172342 | JIS II | 60 | 7 | 5.5 | 4.5 | 7 | 3 |
| #12 | - 24 UNC | T1172362 | JIS II | 60 | 10 | 5.5 | 4.5 | 7 | 3 |
| #12 | - 28 UNF | T1172382 | JIS II | 60 | 9 | 5.5 | 4.5 | 7 | 3 |
| 1/4 | - 20 UNC | T1172402 | JIS II | 62 | 12 | 6 | 4.5 | 7 | 3 |
| 1/4 | - 28 UNF | T1172422 | JIS II | 62 | 9 | 6 | 4.5 | 7 | 3 |
| 5/16 | - 18 UNC | T1172442 | JIS II | 70 | 14 | 6.1 | 5 | 8 | 3 |
| 5/16 | - 24 UNF | T1172462 | JIS II | 70 | 10 | 6.1 | 5 | 8 | 3 |

►Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

►NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ○ | ○ | | ○ | ○ | | | ○ | | ○ | ○ | | ○ | | ○ | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | ○ | ○ | | | | | | | | | | | | | | |



CARBIDE
HSS
THREAD MILLS
SYNCHRO TAPS
COMBO TAPS
YG TAP GENERAL
YG TAP STEEL
YG TAP HARDENED
YG TAP INOX
YG TAP CAST IRON
YG TAP ALU
YG TAP Ti Ni
YG TAP FORMING
STI TAPS
PIPE TAPS
SKS21 HAND TAPS
SKS21 PIPE TAPS
TECHNICAL DATA

YG TAP GENERAL

T1172 SERIES

UNC/F I-SP SPIRAL FLUTE TAPS for DEEP HOLES(for GENERAL PURPOSE)

I-SP 深孔螺旋槽丝锥(普通)

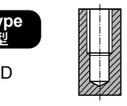
► Suitable for tapping deep Blind holes in Carbon Steels and Alloy Steels, where chips are produced in a continuous coil state.

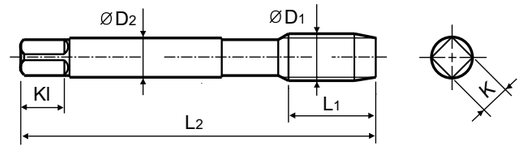
►适用于碳钢和合金钢的盲孔深加工, 优异的排屑.

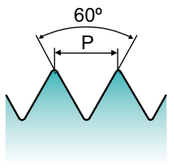
up to 5/16 : Male Center

Hole type 孔类型

2.5×D






Material groups GS | HSS-E | S | JIS II | 60° | 2.5P | R40 | Homo

p. B63

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| TAPPING ER CHUCK | D215 -220 | |
| TAPPING CHUCK | D221 -228 | |
| ONE STEP TAPPING CHUCK | D211 -213 | |

Unit(单位) : mm

| SIZE 尺寸 | TPI 牙距 | EDP No. 型号 | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|
| ØD1 | | | | L2 | L1 | ØD2 | K | Kl | |
| 3/8 | - 16 UNC | T1172482 | JIS II | 75 | 15 | 7 | 5.5 | 8 | 3 |
| 3/8 | - 24 UNF | T1172502 | JIS II | 75 | 10 | 7 | 5.5 | 8 | 3 |
| 7/16 | - 14 UNC | T1172522 | JIS II | 80 | 18 | 8 | 6 | 9 | 3 |
| 7/16 | - 20 UNF | T1172542 | JIS II | 80 | 12 | 8 | 6 | 9 | 3 |
| 1/2 | - 13 UNC | T1172562 | JIS II | 85 | 19 | 9 | 7 | 10 | 3 |
| 1/2 | - 20 UNF | T1172582 | JIS II | 85 | 12 | 9 | 7 | 10 | 3 |
| 9/16 | - 12 UNC | T1172602 | JIS II | 90 | 21 | 10.5 | 8 | 11 | 3 |
| 9/16 | - 18 UNF | T1172622 | JIS II | 90 | 14 | 10.5 | 8 | 11 | 3 |
| 5/8 | - 11 UNC | T1172642 | JIS II | 95 | 23 | 12 | 9 | 12 | 3 |
| 5/8 | - 18 UNF | T1172662 | JIS II | 95 | 14 | 12 | 9 | 12 | 3 |
| 3/4 | - 10 UNC | T1172702 | JIS II | 105 | 25 | 14 | 11 | 14 | 4 |
| 3/4 | - 16 UNF | T1172722 | JIS II | 105 | 15 | 14 | 11 | 14 | 4 |
| 7/8 | - 9 UNC | T1172742 | JIS II | 115 | 28 | 17 | 13 | 16 | 4 |
| 7/8 | - 14 UNF | T1172762 | JIS II | 115 | 18 | 17 | 13 | 16 | 4 |
| 1 | - 8 UNC | T1172782 | JIS II | 125 | 31 | 20 | 15 | 18 | 4 |
| 1 | - 12 UNF | T1172802 | JIS II | 125 | 21 | 20 | 15 | 18 | 4 |

►Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ○ | ○ | | ○ | ○ | | | ○ | | ○ | ○ | | ○ | | ○ | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | ○ | ○ | | | | | | | | | | | | | | |

YG TAP GENERAL

T1182 SERIES

# W I-SP SPIRAL FLUTE TAPS for DEEP HOLES(for GENERAL PURPOSE)
## I-SP 深孔螺旋槽丝锥(普通)

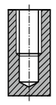
► Suitable for tapping deep Blind holes in Carbon Steels and Alloy Steels, where chips are produced in a continuous coil state.

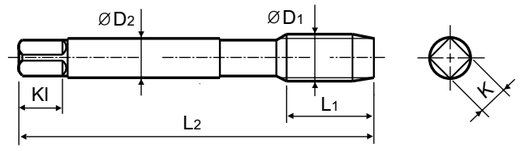
►适用于碳钢和合金钢的盲孔深加工, 优异的排屑.

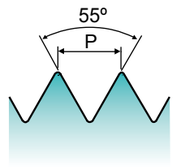
up to W5/16 : Male Center

Hole type 孔类型

2.5×D






Material groups **GS** | HSS-E | S | JIS II | 55° | 2.5P | R40 | Homo | p. B63

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| TAPPING ER CHUCK | D215 -220 |
| TAPPING CHUCK | D221 -228 |
| ONE STEP TAPPING CHUCK | D211 -213 |

Unit(单位) : mm

| SIZE 尺寸 | TPI 牙距 | EDP No. 型号 | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|
| ØD1 | | | | L2 | L1 | ØD2 | K | Kl | |
| W1/8 | - 40 | T1182202 | JIS II | 46 | 6 | 4 | 3.2 | 6 | 3 |
| W3/16 | - 24 | T1182322 | JIS II | 60 | 10 | 5.5 | 4.5 | 7 | 3 |
| W1/4 | - 20 | T1182402 | JIS II | 62 | 12 | 6 | 4.5 | 7 | 3 |
| W5/16 | - 18 | T1182442 | JIS II | 70 | 14 | 6.1 | 5 | 8 | 3 |
| W3/8 | - 16 | T1182482 | JIS II | 75 | 15 | 7 | 5.5 | 8 | 3 |
| W7/16 | - 14 | T1182522 | JIS II | 80 | 18 | 8 | 6 | 9 | 3 |
| W1/2 | - 12 | T1182562 | JIS II | 85 | 19 | 9 | 7 | 10 | 3 |
| W9/16 | - 12 | T1182602 | JIS II | 90 | 21 | 10.5 | 8 | 11 | 3 |
| W5/8 | - 11 | T1182642 | JIS II | 95 | 23 | 12 | 9 | 12 | 3 |
| W3/4 | - 10 | T1182702 | JIS II | 105 | 25 | 14 | 11 | 14 | 4 |
| W7/8 | - 9 | T1182742 | JIS II | 115 | 28 | 17 | 13 | 16 | 4 |
| W1" | - 8 | T1182782 | JIS II | 125 | 31 | 20 | 15 | 18 | 4 |

►Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ○ | ○ | | ○ | ○ | | | ○ | | ○ | ○ | | ○ | | ○ | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | ○ | ○ | | | | | | | | | | | | | | |



YG TAP GENERAL

T3121 SERIES

# M I-SP SPIRAL FLUTE TAPS
## I-SP 螺旋槽丝锥

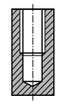
► Suitable for tapping Blind holes in Carbon Steels and Alloy Steels. Long tool life and high speed tapping.

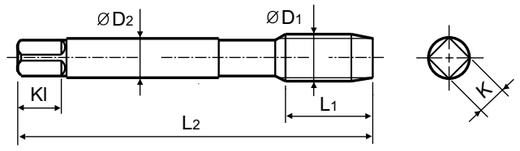
►适用于碳钢和合金钢, 有效长时间的高速盲孔加工. 寿命长和快速 攻丝.

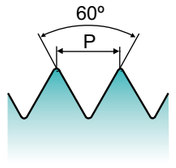
up to M7 : Male Center

Hole type 孔类型

2.5×D






Material groups **GS** | HSS-E | I | YH | 60° | 2.5P | R40 | TiN | p. B63

Tap Limits: p.B230

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| TAPPING ER CHUCK | D215 -220 |
| TAPPING CHUCK | D221 -228 |
| ONE STEP TAPPING CHUCK | D211 -213 |

Unit(单位) : mm

| SIZE 尺寸 | | Pitch 牙距 | EDP No. 型号 | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|---|
| ØD1 | | P | | | L2 | L1 | ØD2 | K | Kl | |
| M3 | × | 0.5 | T3121202 | YH2 | 46 | 11 | 4 | 3.2 | 6 | 3 |
| M3.5 | × | 0.6 | T3121222 | YH2 | 48 | 13 | 4 | 3.2 | 6 | 3 |
| M4 | × | 0.7 | T3121242 | YH2 | 52 | 13 | 5 | 4 | 7 | 3 |
| M5 | × | 0.8 | T3121282 | YH2 | 60 | 16 | 5.5 | 4.5 | 7 | 3 |
| M6 | × | 1 | T3121312 | YH2 | 62 | 19 | 6 | 4.5 | 7 | 3 |
| M8 | × | 1.25 | T3121362 | YH2 | 70 | 22 | 6.2 | 5 | 8 | 3 |
| M10 | × | 1.5 | T3121422 | YH2 | 75 | 24 | 7 | 5.5 | 8 | 3 |
| M10 | × | 1.25 | T3121432 | YH2 | 75 | 24 | 7 | 5.5 | 8 | 3 |
| M12 | × | 1.75 | T3121502 | YH2 | 82 | 29 | 8.5 | 6.5 | 9 | 3 |
| M12 | × | 1.5 | T3121512 | YH2 | 82 | 29 | 8.5 | 6.5 | 9 | 3 |
| M12 | × | 1.25 | T3121522 | YH2 | 82 | 29 | 8.5 | 6.5 | 9 | 3 |
| M14 | × | 2 | T3121542 | YH2 | 88 | 30 | 10.5 | 8 | 11 | 3 |
| M14 | × | 1.5 | T3121552 | YH2 | 88 | 30 | 10.5 | 8 | 11 | 3 |
| M16 | × | 2 | T3121602 | YH2 | 95 | 32 | 12.5 | 10 | 13 | 3 |
| M16 | × | 1.5 | T3121612 | YH2 | 95 | 32 | 12.5 | 10 | 13 | 3 |
| M18 | × | 2.5 | T3121653 | YH3 | 100 | 37 | 14 | 11 | 14 | 4 |
| M18 | × | 1.5 | T3121672 | YH2 | 100 | 37 | 14 | 11 | 14 | 4 |
| M20 | × | 2.5 | T3121703 | YH3 | 105 | 37 | 15 | 12 | 15 | 4 |
| M20 | × | 1.5 | T3121723 | YH3 | 105 | 37 | 15 | 12 | 15 | 4 |

►Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ○ | ○ | | ○ | ○ | | | ○ | | ○ | ○ | | ○ | | ○ | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | ○ | ○ | | | | | | | | | | | | | | |

YG TAP GENERAL

T3132 SERIES

# M I-SP SPIRAL FLUTE TAPS
## I-SP 螺旋槽丝锥

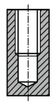
► Suitable for tapping Blind holes in Carbon Steels and Alloy Steels. Capable of efficient, long life, high speed tapping.

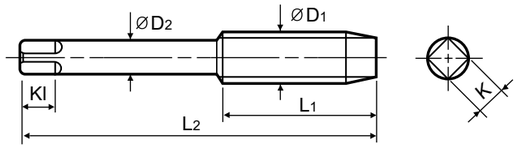
►适用于碳钢和合金钢的通孔加工, 具有高效, 寿命长, 能够快速攻丝.

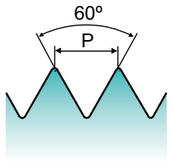
up to M7 : Male Center

Hole type 孔类型

2.5×D






Material groups **GS** | HSS-E | J | YH | 60° | 2.5P | R40 | TiN

p. B63

Tap Limits: p.B230

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| ◎ | TAPPING ER CHUCK | D215 -220 |
| | TAPPING CHUCK | D221 -228 |
| | ONE STEP TAPPING CHUCK | D211 -213 |

Unit(单位) : mm

| SIZE 尺寸 | | Pitch 牙距 | | EDP No. 型号 | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ØD1 | | P | | | | L2 | L1 | ØD2 | K | Kl | |
| M3 | × | 0.5 | | **T3132202** | YH2 | 46 | 18 | 4 | 3.2 | 6 | 3 |
| M3.5 | × | 0.6 | | **T3132222** | YH2 | 48 | 18 | 4 | 3.2 | 6 | 3 |
| M4 | × | 0.7 | | **T3132242** | YH2 | 52 | 20 | 5 | 4 | 7 | 3 |
| M5 | × | 0.8 | | **T3132282** | YH2 | 60 | 22 | 5.5 | 4.5 | 7 | 3 |
| M6 | × | 1 | | **T3132312** | YH2 | 62 | 24 | 6 | 4.5 | 7 | 3 |
| M8 | × | 1.25 | | **T3132362** | YH2 | 70 | 30 | 6.2 | 5 | 8 | 3 |
| M10 | × | 1.5 | | **T3132422** | YH2 | 75 | 32 | 7 | 5.5 | 8 | 3 |
| M10 | × | 1.25 | | **T3132432** | YH2 | 75 | 32 | 7 | 5.5 | 8 | 3 |
| M12 | × | 1.75 | | **T3132502** | YH2 | 82 | 38 | 8.5 | 6.5 | 9 | 3 |
| M12 | × | 1.5 | | **T3132512** | YH2 | 82 | 38 | 8.5 | 6.5 | 9 | 3 |
| M12 | × | 1.25 | | **T3132522** | YH2 | 80 | 38 | 8.5 | 6.5 | 9 | 3 |
| M14 | × | 2 | | **T3132542** | YH2 | 88 | 42 | 10.5 | 8 | 11 | 3 |
| M14 | × | 1.5 | | **T3132552** | YH2 | 88 | 42 | 10.5 | 8 | 11 | 3 |
| M16 | × | 2 | | **T3132602** | YH2 | 95 | 45 | 12.5 | 10 | 13 | 3 |
| M16 | × | 1.5 | | **T3132612** | YH2 | 95 | 45 | 12.5 | 10 | 13 | 3 |
| M18 | × | 2.5 | | **T3132653** | YH3 | 100 | 48 | 14 | 11 | 14 | 4 |
| M18 | × | 1.5 | | **T3132672** | YH2 | 95 | 45 | 14 | 11 | 14 | 4 |
| M20 | × | 2.5 | | **T3132703** | YH3 | 105 | 50 | 15 | 12 | 15 | 4 |
| M20 | × | 1.5 | | **T3132723** | YH3 | 95 | 45 | 15 | 12 | 15 | 4 |

►Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ○ | ○ | | ○ | ○ | | | ○ | | ○ | ○ | | ○ | | ○ | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | ○ | ○ | | | | | | | | | | | | | | |



YG TAP GENERAL

T3112 SERIES

# M I-SP SPIRAL FLUTE TAPS for DEEP HOLES
## I-SP 深孔螺旋槽丝锥

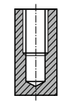
► Suitable for tapping deep Blind holes in Carbon Steels and Alloy Steels. Capable of efficient, long life, high speed tapping.

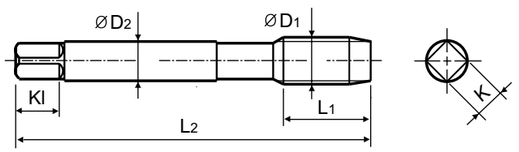
►适用于碳钢和合金钢的通孔加工, 具有高效, 寿命长, 能够快速攻丝.

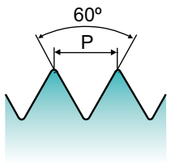
up to M7 : Male Center

Hole type 孔类型

2.5×D






Material groups **GS** | HSS-E | S | YH | 60° | 2.5P | R40 | TiN

p. B63

Tap Limits: p.B230

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| ◎ | TAPPING ER CHUCK | D215 -220 |
| | TAPPING CHUCK | D221 -228 |
| | ONE STEP TAPPING CHUCK | D211 -213 |

Unit(单位) : mm

| SIZE 尺寸 | | Pitch 牙距 | | EDP No. 型号 | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ØD1 | | P | | | | L2 | L1 | ØD2 | K | Kl | |
| M3 | × | 0.5 | | **T3112202** | YH2 | 46 | 5 | 4 | 3.2 | 6 | 3 |
| M4 | × | 0.7 | | **T3112242** | YH2 | 52 | 7 | 5 | 4 | 7 | 3 |
| M5 | × | 0.8 | | **T3112282** | YH2 | 60 | 8 | 5.5 | 4.5 | 7 | 3 |
| M6 | × | 1 | | **T3112312** | YH2 | 62 | 10 | 6 | 4.5 | 7 | 3 |
| M8 | × | 1.25 | | **T3112362** | YH2 | 70 | 13.7 | 6.2 | 5 | 8 | 3 |
| M10 | × | 1.5 | | **T3112422** | YH2 | 75 | 16.4 | 7 | 5.5 | 8 | 3 |
| M10 | × | 1.25 | | **T3112432** | YH2 | 75 | 13.7 | 7 | 5.5 | 8 | 3 |
| M12 | × | 1.75 | | **T3112502** | YH2 | 82 | 19.2 | 8.5 | 6.5 | 9 | 3 |
| M12 | × | 1.5 | | **T3112512** | YH2 | 82 | 16.4 | 8.5 | 6.5 | 9 | 3 |
| M12 | × | 1.25 | | **T3112522** | YH2 | 82 | 13.7 | 8.5 | 6.5 | 9 | 3 |
| M14 | × | 2 | | **T3112542** | YH2 | 88 | 21.9 | 10.5 | 8 | 11 | 3 |
| M14 | × | 1.5 | | **T3112552** | YH2 | 88 | 16.4 | 10.5 | 8 | 11 | 3 |
| M16 | × | 2 | | **T3112602** | YH2 | 95 | 21.9 | 12.5 | 10 | 13 | 3 |
| M16 | × | 1.5 | | **T3112612** | YH2 | 95 | 16.4 | 12.5 | 10 | 13 | 3 |

►Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ○ | ○ | | ○ | ○ | | | ○ | | ○ | ○ | | ○ | | ○ | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | ○ | ○ | | | | | | | | | | | | | | |

# YG TAP GENERAL

## T1103 SERIES

# M I-SP LONG SHANK SPIRAL FLUTE TAPS for GENERAL PURPOSE

## I-SP 长柄普通螺旋槽丝锥

► Suitable for tapping Blind holes in Carbon Steels and Alloy Steels, where chips are produced in a continuous coil state.

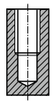
►适用于碳钢和合金钢的通孔加工, 优异的排屑.

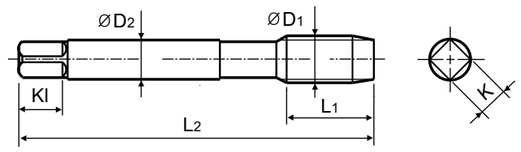
up to M7 : Male Center

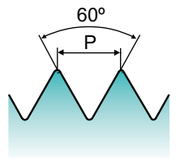
**Long Shank**

**Hole type 孔类型**

2.5×D






Material groups **GS** | HSS-E | LONG | YH | 60° | 2.5P | R40 | Homo

p. B63

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| TAPPING ER CHUCK | D215 -220 |
| TAPPING CHUCK | D221 -228 |
| ONE STEP TAPPING CHUCK | D211 -213 |

► **100mm**

Tap Limits: p.B230

Unit(单位) : mm

| SIZE 尺寸 | | Pitch 牙距 | EDP No. 型号 | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|---|
| | | ØD1 | | | L2 | L1 | ØD2 | K | Kl | |
| M3 | × | 0.5 | **T1103201** | YH1 | 100 | 11 | 4 | 3.2 | 6 | 3 |
| M4 | × | 0.7 | **T1103242** | YH2 | 100 | 13 | 5 | 4 | 7 | 3 |
| M5 | × | 0.8 | **T1103282** | YH2 | 100 | 16 | 5.5 | 4.5 | 7 | 3 |
| M6 | × | 1 | **T1103312** | YH2 | 100 | 19 | 6 | 4.5 | 7 | 3 |
| M8 | × | 1.25 | **T1103362** | YH2 | 100 | 22 | 6.2 | 5 | 8 | 3 |
| M10 | × | 1.5 | **T1103422** | YH2 | 100 | 24 | 7 | 5.5 | 8 | 3 |
| M10 | × | 1.25 | **T1103432** | YH2 | 100 | 24 | 7 | 5.5 | 8 | 3 |
| M12 | × | 1.75 | **T1103502** | YH2 | 100 | 29 | 8.5 | 6.5 | 9 | 3 |
| M12 | × | 1.5 | **T1103512** | YH2 | 100 | 29 | 8.5 | 6.5 | 9 | 3 |
| M12 | × | 1.25 | **T1103522** | YH2 | 100 | 29 | 8.5 | 6.5 | 9 | 3 |
| M14 | × | 2 | **T1103542** | YH2 | 100 | 30 | 10.5 | 8 | 11 | 3 |
| M14 | × | 1.5 | **T1103552** | YH2 | 100 | 30 | 10.5 | 8 | 11 | 3 |

►Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ○ | ○ | | ○ | ○ | | | ○ | | ○ | ○ | | ○ | | ○ | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | ○ | ○ | | | | | | | | | | | | | | |





# YG TAP GENERAL

## T1104 SERIES

# M I-SP LONG SHANK SPIRAL FLUTE TAPS for GENERAL PURPOSE

## I-SP 长柄普通螺旋槽丝锥

► Suitable for tapping Blind holes in Carbon Steels and Alloy Steels, where chips are produced in a continuous coil state.

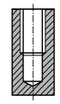
►适用于碳钢和合金钢的通孔加工, 优异的排屑.

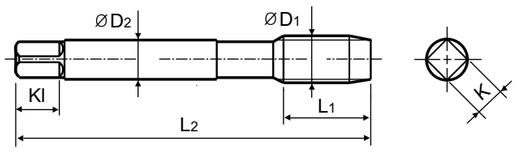
up to M7 : Male Center

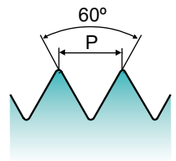
**Long Shank**

**Hole type 孔类型**

2.5×D






Material groups **GS** | HSS-E | LONG | YH | 60° | 2.5P | R40 | Homo

p. B63

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| TAPPING ER CHUCK | D215 -220 |
| TAPPING CHUCK | D221 -228 |
| ONE STEP TAPPING CHUCK | D211 -213 |

► **120mm**

Tap Limits: p.B230

Unit(单位) : mm

| SIZE 尺寸 | | Pitch 牙距 | EDP No. 型号 | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|---|
| | | ØD1 | | | L2 | L1 | ØD2 | K | Kl | |
| M3 | × | 0.5 | **T1104201** | YH1 | 120 | 11 | 4 | 3.2 | 6 | 3 |
| M4 | × | 0.7 | **T1104242** | YH2 | 120 | 13 | 5 | 4 | 7 | 3 |
| M5 | × | 0.8 | **T1104282** | YH2 | 120 | 16 | 5.5 | 4.5 | 7 | 3 |
| M6 | × | 1 | **T1104312** | YH2 | 120 | 19 | 6 | 4.5 | 7 | 3 |
| M8 | × | 1.25 | **T1104362** | YH2 | 120 | 22 | 6.2 | 5 | 8 | 3 |
| M10 | × | 1.5 | **T1104422** | YH2 | 120 | 24 | 7 | 5.5 | 8 | 3 |
| M10 | × | 1.25 | **T1104432** | YH2 | 120 | 24 | 7 | 5.5 | 8 | 3 |
| M12 | × | 1.75 | **T1104502** | YH2 | 120 | 29 | 8.5 | 6.5 | 9 | 3 |
| M12 | × | 1.5 | **T1104512** | YH2 | 120 | 29 | 8.5 | 6.5 | 9 | 3 |
| M12 | × | 1.25 | **T1104522** | YH2 | 120 | 29 | 8.5 | 6.5 | 9 | 3 |
| M14 | × | 2 | **T1104542** | YH2 | 120 | 30 | 10.5 | 8 | 11 | 3 |
| M14 | × | 1.5 | **T1104552** | YH2 | 120 | 30 | 10.5 | 8 | 11 | 3 |
| M16 | × | 2 | **T1104602** | YH2 | 120 | 32 | 12.5 | 10 | 13 | 3 |
| M16 | × | 1.5 | **T1104612** | YH2 | 120 | 32 | 12.5 | 10 | 13 | 3 |

►Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ○ | ○ | | ○ | ○ | | | ○ | | ○ | ○ | | ○ | | ○ | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | ○ | ○ | | | | | | | | | | | | | | |

YG TAP GENERAL

T1105 SERIES

# M I-SP LONG SHANK SPIRAL FLUTE TAPS for GENERAL PURPOSE

## I-SP 长柄普通螺旋槽丝锥

► Suitable for tapping Blind holes in Carbon Steels and Alloy Steels, where chips are produced in a continuous coil state.

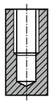
►适用于碳钢和合金钢的通孔加工, 优异的排屑.

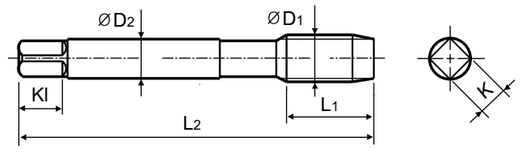
up to M7 : Male Center

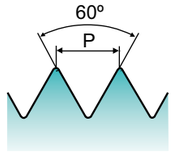
**Long Shank**

Hole type 孔类型

2.5×D






Material groups **GS** | HSS-E | LONG | YH | 60° | 2.5P | R40 | Homo

p. B63

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| TAPPING ER CHUCK | D215 -220 |
| TAPPING CHUCK | D221 -228 |
| ONE STEP TAPPING CHUCK | D211 -213 |

► **150mm**

Tap Limits: p.B230

Unit(单位) : mm

| SIZE 尺寸 | | Pitch 牙距 | | EDP No. 型号 | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ØD1 | | P | | | | L2 | L1 | ØD2 | K | Kl | |
| M3 | × | 0.5 | **T1105201** | YH1 | 150 | 11 | 4 | 3.2 | 6 | 3 | |
| M4 | × | 0.7 | **T1105242** | YH2 | 150 | 13 | 5 | 4 | 7 | 3 | |
| M5 | × | 0.8 | **T1105282** | YH2 | 150 | 16 | 5.5 | 4.5 | 7 | 3 | |
| M6 | × | 1 | **T1105312** | YH2 | 150 | 19 | 6 | 4.5 | 7 | 3 | |
| M8 | × | 1.25 | **T1105362** | YH2 | 150 | 22 | 6.2 | 5 | 8 | 3 | |
| M10 | × | 1.5 | **T1105422** | YH2 | 150 | 24 | 7 | 5.5 | 8 | 3 | |
| M10 | × | 1.25 | **T1105432** | YH2 | 150 | 24 | 7 | 5.5 | 8 | 3 | |
| M12 | × | 1.75 | **T1105502** | YH2 | 150 | 29 | 8.5 | 6.5 | 9 | 3 | |
| M12 | × | 1.5 | **T1105512** | YH2 | 150 | 29 | 8.5 | 6.5 | 9 | 3 | |
| M12 | × | 1.25 | **T1105522** | YH2 | 150 | 29 | 8.5 | 6.5 | 9 | 3 | |
| M14 | × | 2 | **T1105542** | YH2 | 150 | 30 | 10.5 | 8 | 11 | 3 | |
| M14 | × | 1.5 | **T1105552** | YH2 | 150 | 30 | 10.5 | 8 | 11 | 3 | |
| M16 | × | 2 | **T1105602** | YH2 | 150 | 32 | 12.5 | 10 | 13 | 3 | |
| M16 | × | 1.5 | **T1105612** | YH2 | 150 | 32 | 12.5 | 10 | 13 | 3 | |
| M18 | × | 2.5 | **T1105653** | YH3 | 150 | 37 | 14 | 11 | 14 | 4 | |
| M18 | × | 1.5 | **T1105672** | YH2 | 150 | 37 | 14 | 11 | 14 | 4 | |
| M20 | × | 2.5 | **T1105703** | YH3 | 150 | 37 | 15 | 12 | 15 | 4 | |
| M20 | × | 1.5 | **T1105723** | YH3 | 150 | 37 | 15 | 12 | 15 | 4 | |
| M22 | × | 2.5 | **T1105743** | YH3 | 150 | 38 | 17 | 13 | 16 | 4 | |
| M22 | × | 1.5 | **T1105763** | YH3 | 150 | 38 | 17 | 13 | 16 | 4 | |
| M24 | × | 3 | **T1105783** | YH3 | 150 | 45 | 19 | 15 | 18 | 4 | |
| M24 | × | 1.5 | **T1105803** | YH3 | 150 | 45 | 19 | 15 | 18 | 4 | |

►Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ○ | ○ | | ○ | ○ | | | ○ | | ○ | ○ | | ○ | | ○ | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400Rm | 1050Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | ○ | ○ | | | | | | | | | | | | | | |



YG TAP GENERAL

T1106 SERIES

# M I-SP LONG SHANK SPIRAL FLUTE TAPS for GENERAL PURPOSE

## I-SP 长柄普通螺旋槽丝锥

► Suitable for tapping Blind holes in Carbon Steels and Alloy Steels, where chips are produced in a continuous coil state.

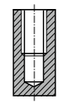
►适用于碳钢和合金钢的通孔加工, 优异的排屑.

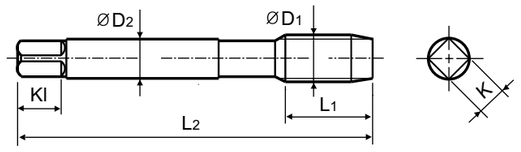
up to M7 : Male Center

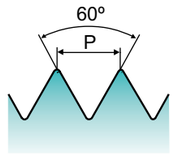
**Long Shank**

Hole type 孔类型

2.5×D






Material groups **GS** | HSS-E | LONG | YH | 60° | 2.5P | R40 | Homo

p. B63

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| TAPPING ER CHUCK | D215 -220 |
| TAPPING CHUCK | D221 -228 |
| ONE STEP TAPPING CHUCK | D211 -213 |

► **200mm**

Tap Limits: p.B230

Unit(单位) : mm

| SIZE 尺寸 | | Pitch 牙距 | | EDP No. 型号 | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ØD1 | | P | | | | L2 | L1 | ØD2 | K | Kl | |
| M8 | × | 1.25 | **T1106362** | YH2 | 200 | 22 | 6.2 | 5 | 8 | 3 | |
| M10 | × | 1.5 | **T1106422** | YH2 | 200 | 24 | 7 | 5.5 | 8 | 3 | |
| M10 | × | 1.25 | **T1106432** | YH2 | 200 | 24 | 7 | 5.5 | 8 | 3 | |
| M12 | × | 1.75 | **T1106502** | YH2 | 200 | 29 | 8.5 | 6.5 | 9 | 3 | |
| M12 | × | 1.5 | **T1106512** | YH2 | 200 | 29 | 8.5 | 6.5 | 9 | 3 | |
| M12 | × | 1.25 | **T1106522** | YH2 | 200 | 29 | 8.5 | 6.5 | 9 | 3 | |
| M14 | × | 2 | **T1106542** | YH2 | 200 | 30 | 10.5 | 8 | 11 | 3 | |
| M14 | × | 1.5 | **T1106552** | YH2 | 200 | 30 | 10.5 | 8 | 11 | 3 | |
| M16 | × | 2 | **T1106602** | YH2 | 200 | 32 | 12.5 | 10 | 13 | 3 | |
| M16 | × | 1.5 | **T1106612** | YH2 | 200 | 32 | 12.5 | 10 | 13 | 3 | |
| M18 | × | 2.5 | **T1106653** | YH3 | 200 | 37 | 14 | 11 | 14 | 4 | |
| M18 | × | 1.5 | **T1106672** | YH2 | 200 | 37 | 14 | 11 | 14 | 4 | |
| M20 | × | 2.5 | **T1106703** | YH3 | 200 | 37 | 15 | 12 | 15 | 4 | |
| M20 | × | 1.5 | **T1106723** | YH3 | 200 | 37 | 15 | 12 | 15 | 4 | |
| M22 | × | 2.5 | **T1106743** | YH3 | 200 | 38 | 17 | 13 | 16 | 4 | |
| M22 | × | 1.5 | **T1106763** | YH3 | 200 | 38 | 17 | 13 | 16 | 4 | |
| M24 | × | 3 | **T1106783** | YH3 | 200 | 45 | 19 | 15 | 18 | 4 | |
| M24 | × | 1.5 | **T1106803** | YH3 | 200 | 45 | 19 | 15 | 18 | 4 | |

►Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ○ | ○ | | ○ | ○ | | | ○ | | ○ | ○ | | ○ | | ○ | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400Rm | 1050Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | ○ | ○ | | | | | | | | | | | | | | |

# YG TAP GENERAL

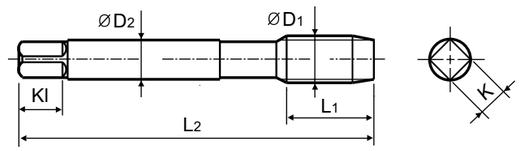
**T1130 SERIES**
**T1140 SERIES**

## W I-SP LONG SHANK SPIRAL FLUTE TAPS for GENERAL PURPOSE
## I-SP 长柄普通螺旋槽丝锥

► Suitable for tapping Blind holes in Carbon Steels and Alloy Steels, where chips are produced in a continuous coil state.

►适用于碳钢和合金钢的通孔加工, 优异的排屑.

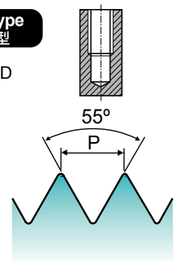
up to W5/16 : Male Center




**Long Shank**

**Hole type 孔类型**

2.5×D




Material groups **GS** | HSS-E | LONG | JIS II | 55º | 2.5P | R40 | Homo

p. B63

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| TAPPING ER CHUCK | D215 -220 |
| TAPPING CHUCK | D221 -228 |
| ONE STEP TAPPING CHUCK | D211 -213 |

### ► 100mm

Unit(单位) : mm

| SIZE 尺寸 | TPI 牙距 | EDP No. 型号 | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|
| ØD1 | | | | L2 | L1 | ØD2 | K | Kl | |
| W1/8 | - 40 | T1130202 | JIS II | 100 | 11 | 4 | 3.2 | 6 | 3 |
| W3/16 | - 24 | T1130322 | JIS II | 100 | 16 | 5.5 | 4.5 | 7 | 3 |
| W1/4 | - 20 | T1130402 | JIS II | 100 | 19 | 6 | 4.5 | 7 | 3 |
| W5/16 | - 18 | T1130442 | JIS II | 100 | 22 | 6.1 | 5 | 8 | 3 |
| W3/8 | - 16 | T1130482 | JIS II | 100 | 24 | 7 | 5.5 | 8 | 3 |
| W7/16 | - 14 | T1130522 | JIS II | 100 | 25 | 8 | 6 | 9 | 3 |
| W1/2 | - 12 | T1130562 | JIS II | 100 | 29 | 9 | 7 | 10 | 3 |

### ► 120mm

Unit(单位) : mm

| SIZE 尺寸 | TPI 牙距 | EDP No. 型号 | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|
| ØD1 | | | | L2 | L1 | ØD2 | K | Kl | |
| W1/8 | - 40 | T1140202 | JIS II | 120 | 11 | 4 | 3.2 | 6 | 3 |
| W3/16 | - 24 | T1140322 | JIS II | 120 | 16 | 5.5 | 4.5 | 7 | 3 |
| W1/4 | - 20 | T1140402 | JIS II | 120 | 19 | 6 | 4.5 | 7 | 3 |
| W5/16 | - 18 | T1140442 | JIS II | 120 | 22 | 6.1 | 5 | 8 | 3 |
| W3/8 | - 16 | T1140482 | JIS II | 120 | 24 | 7 | 5.5 | 8 | 3 |
| W7/16 | - 14 | T1140522 | JIS II | 120 | 25 | 8 | 6 | 9 | 3 |
| W1/2 | - 12 | T1140562 | JIS II | 120 | 29 | 9 | 7 | 10 | 3 |
| W9/16 | - 12 | T1140602 | JIS II | 120 | 30 | 10.5 | 8 | 11 | 3 |
| W5/8 | - 11 | T1140642 | JIS II | 120 | 32 | 12 | 9 | 12 | 3 |

►Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ○ | ○ | | ○ | ○ | | | ○ | | ○ | ○ | | ○ | | ○ | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400Rm | 1050Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | ○ | ○ | | | | | | | | | | | | | | |





# YG TAP GENERAL

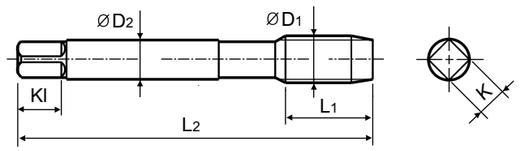
**T1150 SERIES**
**T1160 SERIES**

## W I-SP LONG SHANK SPIRAL FLUTE TAPS for GENERAL PURPOSE
## I-SP 长柄普通螺旋槽丝锥

► Suitable for tapping Blind holes in Carbon Steels and Alloy Steels, where chips are produced in a continuous coil state.

►适用于碳钢和合金钢的通孔加工, 优异的排屑.

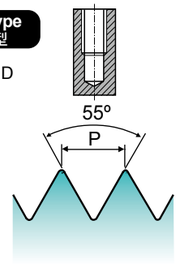
up to W5/16 : Male Center




**Long Shank**

**Hole type 孔类型**

2.5×D




Material groups **GS** | HSS-E | LONG | JIS II | 55º | 2.5P | R40 | Homo

p. B63

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| TAPPING ER CHUCK | D215 -220 |
| TAPPING CHUCK | D221 -228 |
| ONE STEP TAPPING CHUCK | D211 -213 |

### ► 150mm

Unit(单位) : mm

| SIZE 尺寸 | TPI 牙距 | EDP No. 型号 | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|
| ØD1 | | | | L2 | L1 | ØD2 | K | Kl | |
| W1/8 | - 40 | T1150202 | JIS II | 150 | 11 | 4 | 3.2 | 6 | 3 |
| W3/16 | - 24 | T1150322 | JIS II | 150 | 16 | 5.5 | 4.5 | 7 | 3 |
| W1/4 | - 20 | T1150402 | JIS II | 150 | 19 | 6 | 4.5 | 7 | 3 |
| W5/16 | - 18 | T1150442 | JIS II | 150 | 22 | 6.1 | 5 | 8 | 3 |
| W3/8 | - 16 | T1150482 | JIS II | 150 | 24 | 7 | 5.5 | 8 | 3 |
| W7/16 | - 14 | T1150522 | JIS II | 150 | 25 | 8 | 6 | 9 | 3 |
| W1/2 | - 12 | T1150562 | JIS II | 150 | 29 | 9 | 7 | 10 | 3 |
| W9/16 | - 12 | T1150602 | JIS II | 150 | 30 | 10.5 | 8 | 11 | 3 |
| W5/8 | - 11 | T1150642 | JIS II | 150 | 32 | 12 | 9 | 12 | 3 |
| W3/4 | - 10 | T1150702 | JIS II | 150 | 37 | 14 | 11 | 14 | 4 |
| W7/8 | - 9 | T1150742 | JIS II | 150 | 38 | 17 | 13 | 16 | 4 |
| W1″ | - 8 | T1150782 | JIS II | 150 | 45 | 20 | 15 | 18 | 4 |

### ► 200mm

Unit(单位) : mm

| SIZE 尺寸 | TPI 牙距 | EDP No. 型号 | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|
| ØD1 | | | | L2 | L1 | ØD2 | K | Kl | |
| W3/8 | - 16 | T1160482 | JIS II | 200 | 24 | 7 | 5.5 | 8 | 3 |
| W7/16 | - 14 | T1160522 | JIS II | 200 | 25 | 8 | 6 | 9 | 3 |
| W1/2 | - 12 | T1160562 | JIS II | 200 | 29 | 9 | 7 | 10 | 3 |
| W9/16 | - 12 | T1160602 | JIS II | 200 | 30 | 10.5 | 8 | 11 | 3 |
| W5/8 | - 11 | T1160642 | JIS II | 200 | 32 | 12 | 9 | 12 | 3 |
| W3/4 | - 10 | T1160702 | JIS II | 200 | 37 | 14 | 11 | 14 | 4 |
| W7/8 | - 9 | T1160742 | JIS II | 200 | 38 | 17 | 13 | 16 | 4 |
| W1″ | - 8 | T1160782 | JIS II | 200 | 45 | 20 | 15 | 18 | 4 |

►Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ○ | ○ | | ○ | ○ | | | ○ | | ○ | ○ | | ○ | | ○ | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400Rm | 1050Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | ○ | ○ | | | | | | | | | | | | | | |

YG TAP GENERAL

T1022 SERIES

# M I-GP SPIRAL POINT TAPS for GENERAL PURPOSE
## I-GP 普通先端丝锥

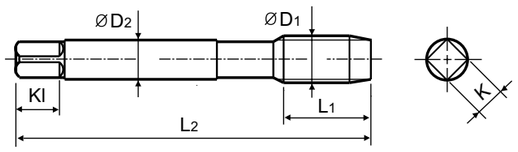
▶ Suitable for tapping Through holes in Carbon Steels and Alloy Steels, where chips are produced in a continuous coil state.

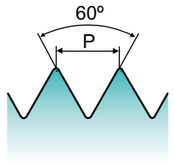
▶适用于碳钢和合金钢的通孔加工, 优异的排屑.

up to M8 : Male Center

Hole type 孔类型

3.0×D




Material groups **GS** | HSS-E | I | YH | 60° | 5.0P | Homo

p. B64

Tap Limits: p.B230

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| TAPPING ER CHUCK | D215 -220 |
| TAPPING CHUCK | D221 -228 |
| ONE STEP TAPPING CHUCK | D211 -213 |

Unit(单位) : mm

| SIZE 尺寸 | | Pitch 牙距 | | EDP No. 型号 | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ØD1 | | P | | | | L2 | L1 | ØD2 | K | Kl | |
| M2 | × | 0.4 | | **T1022132** | YH2 | 40 | 9.5 | 3 | 2.5 | 5 | 2 |
| M2.2 | × | 0.45 | | **T1022152** | YH2 | 42 | 9.5 | 3 | 2.5 | 5 | 2 |
| M2.3 | × | 0.4 | | **T1022192** | YH2 | 42 | 9.5 | 3 | 2.5 | 5 | 2 |
| M2.5 | × | 0.45 | | **T1022172** | YH2 | 44 | 9.5 | 3 | 2.5 | 5 | 2 |
| M2.6 | × | 0.45 | | **T1022492** | YH2 | 44 | 9.5 | 3 | 2.5 | 5 | 2 |
| M3 | × | 0.5 | | **T1022202** | YH2 | 46 | 11 | 4 | 3.2 | 6 | 3 |
| M3 | × | 0.35 | | **T1022212** | YH2 | 46 | 9.5 | 4 | 3.2 | 6 | 3 |
| M3.5 | × | 0.6 | | **T1022222** | YH2 | 48 | 13 | 4 | 3.2 | 6 | 3 |
| M3.5 | × | 0.35 | | **T1022232** | YH2 | 48 | 9.5 | 4 | 3.2 | 6 | 3 |
| M4 | × | 0.7 | | **T1022242** | YH2 | 52 | 13 | 5 | 4 | 7 | 3 |
| M4 | × | 0.5 | | **T1022252** | YH2 | 52 | 13 | 5 | 4 | 7 | 3 |
| M4.5 | × | 0.75 | | **T1022262** | YH2 | 55 | 13 | 5 | 4 | 7 | 3 |
| M4.5 | × | 0.5 | | **T1022272** | YH2 | 55 | 13 | 5 | 4 | 7 | 3 |
| M5 | × | 0.8 | | **T1022282** | YH2 | 60 | 16 | 5.5 | 4.5 | 7 | 3 |
| M5 | × | 0.5 | | **T1022292** | YH2 | 60 | 16 | 5.5 | 4.5 | 7 | 3 |
| M5.5 | × | 0.5 | | **T1022302** | YH2 | 55 | 13 | 5.5 | 4.5 | 7 | 3 |
| M6 | × | 1 | | **T1022312** | YH2 | 62 | 19 | 6 | 4.5 | 7 | 3 |
| M6 | × | 0.75 | | **T1022322** | YH2 | 62 | 19 | 6 | 4.5 | 7 | 3 |
| M6 | × | 0.5 | | **T1022332** | YH2 | 62 | 19 | 6 | 4.5 | 7 | 3 |
| M7 | × | 1 | | **T1022342** | YH2 | 65 | 19 | 6.2 | 5 | 8 | 3 |
| M7 | × | 0.75 | | **T1022352** | YH2 | 65 | 19 | 6.2 | 5 | 8 | 3 |
| M8 | × | 1.25 | | **T1022363** | YH3 | 70 | 22 | 6.2 | 5 | 8 | 3 |

▶Refer to p.B64 for recommended tap drill sizes. 参考p.B64 底孔尺寸.

▶ NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ○ | ○ | | ○ | ○ | | | ○ | | ○ | ○ | | ○ | ○ | ○ | ○ | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | ○ | ○ | | | | | | | | | | | | | | |



CARBIDE
HSS
THREAD MILLS
SYNCHRO TAPS
COMBO TAPS
YG TAP GENERAL
YG TAP STEEL
YG TAP HARDENED
YG TAP INOX
YG TAP CAST IRON
YG TAP ALU
YG TAP Ti Ni
YG TAP FORMING
STI TAPS
PIPE TAPS
SKS21 HAND TAPS
SKS21 PIPE TAPS
TECHNICAL DATA

YG TAP GENERAL

T1022 SERIES

# M I-GP SPIRAL POINT TAPS for GENERAL PURPOSE
## I-GP 普通先端丝锥

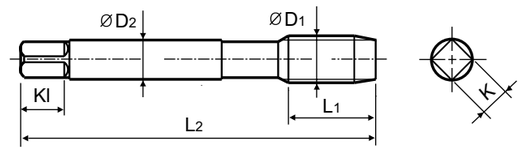
▶ Suitable for tapping Through holes in Carbon Steels and Alloy Steels, where chips are produced in a continuous coil state.

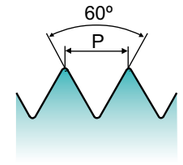
▶适用于碳钢和合金钢的通孔加工, 优异的排屑.

up to M8 : Male Center

Hole type 孔类型

3.0×D




Material groups **GS** | HSS-E | I | YH | 60° | 5.0P | Homo

p. B64

Tap Limits: p.B230

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| TAPPING ER CHUCK | D215 -220 |
| TAPPING CHUCK | D221 -228 |
| ONE STEP TAPPING CHUCK | D211 -213 |

Unit(单位) : mm

| SIZE 尺寸 | | Pitch 牙距 | | EDP No. 型号 | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ØD1 | | P | | | | L2 | L1 | ØD2 | K | Kl | |
| M8 | × | 1 | | **T1022373** | YH3 | 70 | 22 | 6.2 | 5 | 8 | 3 |
| M8 | × | 0.75 | | **T1022383** | YH3 | 70 | 22 | 6.2 | 5 | 8 | 3 |
| M9 | × | 1.25 | | **T1022393** | YH3 | 72 | 22 | 7 | 5.5 | 8 | 3 |
| M9 | × | 1 | | **T1022403** | YH3 | 72 | 22 | 7 | 5.5 | 8 | 3 |
| M9 | × | 0.75 | | **T1022413** | YH3 | 72 | 22 | 7 | 5.5 | 8 | 3 |
| M10 | × | 1.5 | | **T1022423** | YH3 | 75 | 24 | 7 | 5.5 | 8 | 3 |
| M10 | × | 1.25 | | **T1022433** | YH3 | 75 | 24 | 7 | 5.5 | 8 | 3 |
| M10 | × | 1 | | **T1022443** | YH3 | 75 | 24 | 7 | 5.5 | 8 | 3 |
| M10 | × | 0.75 | | **T1022453** | YH3 | 75 | 24 | 7 | 5.5 | 8 | 3 |
| M11 | × | 1.5 | | **T1022463** | YH3 | 80 | 25 | 8 | 6 | 9 | 3 |
| M11 | × | 1 | | **T1022473** | YH3 | 80 | 25 | 8 | 6 | 9 | 3 |
| M11 | × | 0.75 | | **T1022483** | YH3 | 80 | 25 | 8 | 6 | 9 | 3 |
| M12 | × | 1.75 | | **T1022504** | YH4 | 82 | 29 | 8.5 | 6.5 | 9 | 3 |
| M12 | × | 1.5 | | **T1022513** | YH3 | 82 | 29 | 8.5 | 6.5 | 9 | 3 |
| M12 | × | 1.25 | | **T1022523** | YH3 | 82 | 29 | 8.5 | 6.5 | 9 | 3 |
| M12 | × | 1 | | **T1022533** | YH3 | 82 | 29 | 8.5 | 6.5 | 9 | 3 |
| M14 | × | 2 | | **T1022544** | YH4 | 88 | 30 | 10.5 | 8 | 11 | 3 |
| M14 | × | 1.5 | | **T1022553** | YH3 | 88 | 30 | 10.5 | 8 | 11 | 3 |
| M14 | × | 1.25 | | **T1022563** | YH3 | 88 | 30 | 10.5 | 8 | 11 | 3 |
| M14 | × | 1 | | **T1022573** | YH3 | 88 | 30 | 10.5 | 8 | 11 | 3 |
| M15 | × | 1.5 | | **T1022583** | YH3 | 90 | 30 | 10.5 | 8 | 11 | 3 |
| M15 | × | 1 | | **T1022593** | YH3 | 90 | 30 | 10.5 | 8 | 11 | 3 |

▶Refer to p.B64 for recommended tap drill sizes. 参考p.B64 底孔尺寸.

▶ NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ○ | ○ | | ○ | ○ | | | ○ | | ○ | ○ | | ○ | ○ | ○ | ○ | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | ○ | ○ | | | | | | | | | | | | | | |

YG TAP GENERAL

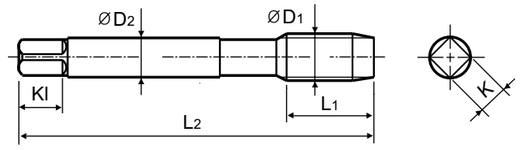
T1022 SERIES

# M I-GP SPIRAL POINT TAPS for GENERAL PURPOSE
## I-GP 普通先端丝锥

► Suitable for tapping Through holes in Carbon Steels and Alloy Steels, where chips are produced in a continuous coil state.

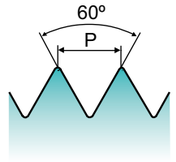
►适用于碳钢和合金钢的通孔加工, 优异的排屑.

up to M8 : Male Center




Hole type 孔类型

3.0×D




Material groups **GS** | HSS-E | I | YH | 60° | 5.0P | Homo

p. B64

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| ◎ | TAPPING ER CHUCK | D215 -220 |
| | TAPPING CHUCK | D221 -228 |
| | ONE STEP TAPPING CHUCK | D211 -213 |

Tap Limits: p.B230

Unit(单位) : mm

| SIZE 尺寸 | | Pitch 牙距 | EDP No. 型号 | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|---|
| | ØD1 | P | | | L2 | L1 | ØD2 | K | Kl | |
| M16 | × 2 | | T1022604 | YH4 | 95 | 32 | 12.5 | 10 | 13 | 3 |
| M16 | × 1.5 | | T1022613 | YH3 | 95 | 32 | 12.5 | 10 | 13 | 3 |
| M16 | × 1 | | T1022623 | YH3 | 95 | 32 | 12.5 | 10 | 13 | 3 |
| M18 | × 2.5 | | T1022654 | YH4 | 100 | 37 | 14 | 11 | 14 | 3 |
| M18 | × 2 | | T1022664 | YH4 | 100 | 37 | 14 | 11 | 14 | 3 |
| M18 | × 1.5 | | T1022674 | YH4 | 100 | 37 | 14 | 11 | 14 | 3 |
| M18 | × 1 | | T1022683 | YH3 | 95 | 30 | 14 | 11 | 14 | 3 |
| M20 | × 2.5 | | T1022704 | YH4 | 105 | 37 | 15 | 12 | 15 | 3 |
| M20 | × 2 | | T1022714 | YH4 | 105 | 37 | 15 | 12 | 15 | 3 |
| M20 | × 1.5 | | T1022724 | YH4 | 105 | 37 | 15 | 12 | 15 | 3 |
| M20 | × 1 | | T1022733 | YH3 | 95 | 30 | 15 | 12 | 15 | 3 |
| M22 | × 2.5 | | T1022744 | YH4 | 115 | 38 | 17 | 13 | 16 | 3 |
| M22 | × 2 | | T1022754 | YH4 | 115 | 38 | 17 | 13 | 16 | 3 |
| M22 | × 1.5 | | T1022764 | YH4 | 115 | 38 | 17 | 13 | 16 | 3 |
| M22 | × 1 | | T1022773 | YH3 | 95 | 30 | 17 | 13 | 16 | 3 |
| M24 | × 3 | | T1022784 | YH4 | 120 | 45 | 19 | 15 | 18 | 3 |
| M24 | × 2 | | T1022794 | YH4 | 120 | 45 | 19 | 15 | 18 | 3 |
| M24 | × 1.5 | | T1022804 | YH4 | 120 | 45 | 19 | 15 | 18 | 3 |
| M24 | × 1 | | T1022813 | YH3 | 95 | 30 | 19 | 15 | 18 | 3 |
| M25 | × 2 | | T1022824 | YH4 | 125 | 45 | 19 | 15 | 18 | 3 |
| M25 | × 1.5 | | T1022834 | YH4 | 125 | 45 | 19 | 15 | 18 | 3 |
| M26 | × 2 | | T1022N44 | YH4 | 125 | 45 | 20 | 15 | 18 | 4 |

►Refer to p.B64 for recommended tap drill sizes. 参考p.B64 底孔尺寸.

► NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ○ | ○ | | ○ | ○ | | | ○ | | ○ | ○ | | ○ | ○ | ○ | ○ | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400Rm | 1050Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | ○ | ○ | | | | | | | | | | | | | | |



CARBIDE
HSS
THREAD MILLS
SYNCHRO TAPS
COMBO TAPS
YG TAP GENERAL
YG TAP STEEL
YG TAP HARDENED
YG TAP INOX
YG TAP CAST IRON
YG TAP ALU
YG TAP Ti Ni
YG TAP FORMING
STI TAPS
PIPE TAPS
SKS21 HAND TAPS
SKS21 PIPE TAPS
TECHNICAL DATA

YG TAP GENERAL

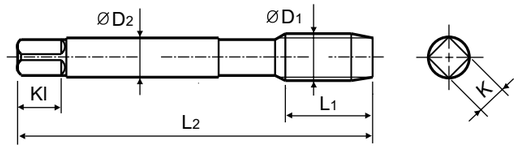
T1022 SERIES

# M I-GP SPIRAL POINT TAPS for GENERAL PURPOSE
## I-GP 普通先端丝锥

► Suitable for tapping Through holes in Carbon Steels and Alloy Steels, where chips are produced in a continuous coil state.

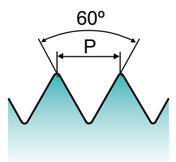
►适用于碳钢和合金钢的通孔加工, 优异的排屑.

up to M8 : Male Center




Hole type 孔类型

3.0×D




Material groups **GS** | HSS-E | I | YH | 60° | 5.0P | Homo

p. B64

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| ◎ | TAPPING ER CHUCK | D215 -220 |
| | TAPPING CHUCK | D221 -228 |
| | ONE STEP TAPPING CHUCK | D211 -213 |

Tap Limits: p.B230

Unit(单位) : mm

| SIZE 尺寸 | | Pitch 牙距 | EDP No. 型号 | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|---|
| | ØD1 | P | | | L2 | L1 | ØD2 | K | Kl | |
| M26 | × 1.5 | | T1022854 | YH4 | 125 | 45 | 20 | 15 | 18 | 4 |
| M26 | × 1 | | T1022N53 | YH3 | 95 | 30 | 20 | 15 | 18 | 4 |
| M27 | × 3 | | T1022864 | YH4 | 130 | 45 | 20 | 15 | 18 | 4 |
| M27 | × 2 | | T1022874 | YH4 | 130 | 45 | 20 | 15 | 18 | 4 |
| M27 | × 1.5 | | T1022884 | YH4 | 130 | 45 | 20 | 15 | 18 | 4 |
| M28 | × 2 | | T1022904 | YH4 | 130 | 45 | 21 | 17 | 20 | 4 |
| M28 | × 1.5 | | T1022914 | YH4 | 130 | 45 | 21 | 17 | 20 | 4 |
| M30 | × 3.5 | | T1022945 | YH5 | 135 | 48 | 23 | 17 | 20 | 4 |
| M30 | × 3 | | T1022954 | YH4 | 135 | 48 | 23 | 17 | 20 | 4 |
| M30 | × 2 | | T1022964 | YH4 | 135 | 45 | 23 | 17 | 20 | 4 |
| M30 | × 1.5 | | T1022974 | YH4 | 135 | 45 | 23 | 17 | 20 | 4 |
| M30 | × 1 | | T1022982 | YH2 | 105 | 30 | 23 | 17 | 20 | 4 |
| M33 | × 3.5 | | T1022A45 | YH5 | 145 | 51 | 25 | 19 | 22 | 4 |
| M33 | × 3 | | T1022A54 | YH4 | 145 | 51 | 25 | 19 | 22 | 4 |
| M33 | × 2 | | T1022A63 | YH3 | 145 | 45 | 25 | 19 | 22 | 4 |
| M33 | × 1.5 | | T1022A74 | YH4 | 145 | 45 | 25 | 19 | 22 | 4 |
| M36 | × 4 | | T1022B35 | YH5 | 155 | 57 | 28 | 21 | 24 | 4 |
| M36 | × 3 | | T1022B44 | YH4 | 155 | 57 | 28 | 21 | 24 | 4 |
| M36 | × 2 | | T1022B53 | YH3 | 155 | 45 | 28 | 21 | 24 | 4 |
| M36 | × 1.5 | | T1022B64 | YH4 | 155 | 45 | 28 | 21 | 24 | 4 |

►Refer to p.B64 for recommended tap drill sizes. 参考p.B64 底孔尺寸.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ○ | ○ | | ○ | ○ | | | ○ | | ○ | ○ | | ○ | ○ | ○ | ○ | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400Rm | 1050Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | ○ | ○ | | | | | | | | | | | | | | |

YG TAP GENERAL

T1272 SERIES

# UNC/F I-GP SPIRAL POINT TAPS for GENERAL PURPOSE

## I-GP 普通先端丝锥

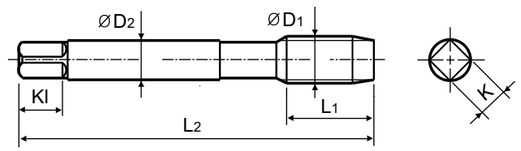
► Suitable for tapping Through holes in Carbon Steels and Alloy Steels, where chips are produced in a continuous coil state.

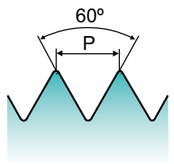
►适用于碳钢和合金钢的通孔加工, 优异的排屑.

up to 5/16 : Male Center

Hole type 孔类型

3.0×D




Material groups **GS** | HSS-E | I | JIS II | 60° | 5.0P | Homo

p. B64

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| ◎ | TAPPING ER CHUCK | D215 -220 |
| | TAPPING CHUCK | D221 -228 |
| | ONE STEP TAPPING CHUCK | D211 -213 |

Unit(单位) : mm

| SIZE 尺寸 | TPI 牙距 | EDP No. 型号 | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|
| ØD1 | | | | L2 | L1 | ØD2 | K | Kl | |
| #4 - 40 | UNC | T1272162 | JIS II | 44 | 9.5 | 3 | 2.5 | 5 | 2 |
| #4 - 48 | UNF | T1272182 | JIS II | 44 | 9.5 | 3 | 2.5 | 5 | 2 |
| #5 - 40 | UNC | T1272202 | JIS II | 46 | 11 | 4 | 3.2 | 6 | 3 |
| #5 - 44 | UNF | T1272222 | JIS II | 46 | 11 | 4 | 3.2 | 6 | 3 |
| #6 - 32 | UNC | T1272242 | JIS II | 48 | 13 | 4 | 3.2 | 6 | 3 |
| #6 - 40 | UNF | T1272262 | JIS II | 48 | 13 | 4 | 3.2 | 6 | 3 |
| #8 - 32 | UNC | T1272282 | JIS II | 52 | 13 | 5 | 4 | 7 | 3 |
| #8 - 36 | UNF | T1272302 | JIS II | 52 | 13 | 5 | 4 | 7 | 3 |
| #10 - 24 | UNC | T1272322 | JIS II | 60 | 16 | 5.5 | 4.5 | 7 | 3 |
| #10 - 32 | UNF | T1272342 | JIS II | 60 | 16 | 5.5 | 4.5 | 7 | 3 |
| #12 - 24 | UNC | T1272362 | JIS II | 60 | 16 | 5.5 | 4.5 | 7 | 3 |
| #12 - 28 | UNF | T1272382 | JIS II | 60 | 16 | 5.5 | 4.5 | 7 | 3 |
| 1/4 - 20 | UNC | T1272402 | JIS II | 62 | 19 | 6 | 4.5 | 7 | 3 |
| 1/4 - 28 | UNF | T1272422 | JIS II | 62 | 19 | 6 | 4.5 | 7 | 3 |
| 5/16 - 18 | UNC | T1272442 | JIS II | 70 | 22 | 6.1 | 5 | 8 | 3 |
| 5/16 - 24 | UNF | T1272462 | JIS II | 70 | 22 | 6.1 | 5 | 8 | 3 |

►Refer to p.B64 for recommended tap drill sizes. 参考p.B64 底孔尺寸.

▶ NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ○ | ○ | | ○ | ○ | | | ○ | | ○ | ○ | | ○ | ○ | ○ | ○ | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | ○ | ○ | | | | | | | | | | | | | | |



CARBIDE
HSS
THREAD MILLS
SYNCHRO TAPS
COMBO TAPS
YG TAP GENERAL
YG TAP STEEL
YG TAP HARDENED
YG TAP INOX
YG TAP CAST IRON
YG TAP ALU
YG TAP Ti Ni
YG TAP FORMING
STI TAPS
PIPE TAPS
SKS21 HAND TAPS
SKS21 PIPE TAPS
TECHNICAL DATA

YG TAP GENERAL

T1272 SERIES

UNC/F I-GP SPIRAL POINT TAPS for GENERAL PURPOSE

I-GP 普通先端丝锥

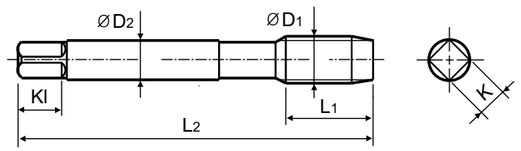
► Suitable for tapping Through holes in Carbon Steels and Alloy Steels, where chips are produced in a continuous coil state.

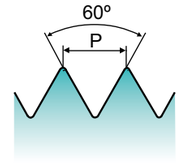
▶适用于碳钢和合金钢的通孔加工, 优异的排屑.

up to 5/16 : Male Center

Hole type 孔类型

3.0×D




Material groups GS | HSS-E | I | JIS II | 60° | 5.0P | Homo

p. B64

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| ◎ | TAPPING ER CHUCK | D215 -220 |
| | TAPPING CHUCK | D221 -228 |
| | ONE STEP TAPPING CHUCK | D211 -213 |

Unit(单位) : mm

| SIZE 尺寸 | TPI 牙距 | EDP No. 型号 | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|
| ØD1 | | | | L2 | L1 | ØD2 | K | Kl | |
| 3/8 - 16 | UNC | T1272482 | JIS II | 75 | 24 | 7 | 5.5 | 8 | 3 |
| 3/8 - 24 | UNF | T1272502 | JIS II | 75 | 24 | 7 | 5.5 | 8 | 3 |
| 7/16 - 14 | UNC | T1272522 | JIS II | 80 | 25 | 8 | 6 | 9 | 3 |
| 7/16 - 20 | UNF | T1272542 | JIS II | 80 | 25 | 8 | 6 | 9 | 3 |
| 1/2 - 13 | UNC | T1272562 | JIS II | 85 | 29 | 9 | 7 | 10 | 3 |
| 1/2 - 20 | UNF | T1272582 | JIS II | 85 | 29 | 9 | 7 | 10 | 3 |
| 9/16 - 12 | UNC | T1272602 | JIS II | 90 | 30 | 10.5 | 8 | 11 | 3 |
| 9/16 - 18 | UNF | T1272622 | JIS II | 90 | 30 | 10.5 | 8 | 11 | 3 |
| 5/8 - 11 | UNC | T1272642 | JIS II | 95 | 32 | 12 | 9 | 12 | 3 |
| 5/8 - 18 | UNF | T1272662 | JIS II | 95 | 32 | 12 | 9 | 12 | 3 |
| 3/4 - 10 | UNC | T1272702 | JIS II | 105 | 37 | 14 | 11 | 14 | 3 |
| 3/4 - 16 | UNF | T1272722 | JIS II | 105 | 37 | 14 | 11 | 14 | 3 |
| 7/8 - 9 | UNC | T1272742 | JIS II | 115 | 38 | 17 | 13 | 16 | 3 |
| 7/8 - 14 | UNF | T1272762 | JIS II | 115 | 38 | 17 | 13 | 16 | 3 |
| 1″ - 8 | UNC | T1272782 | JIS II | 125 | 45 | 20 | 15 | 18 | 3 |
| 1″ - 12 | UNF | T1272802 | JIS II | 125 | 45 | 20 | 15 | 18 | 3 |

►Refer to p.B64 for recommended tap drill sizes. 参考p.B64 底孔尺寸.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ○ | ○ | | ○ | ○ | | | ○ | | ○ | ○ | | ○ | ○ | ○ | ○ | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | ○ | ○ | | | | | | | | | | | | | | |

YG TAP GENERAL

T1282 SERIES

# W I-GP SPIRAL POINT TAPS for GENERAL PURPOSE
## I-GP 普通先端丝锥

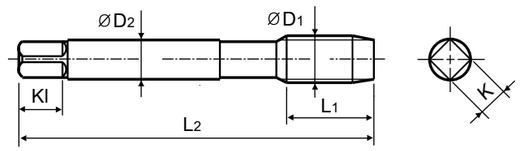
► Suitable for tapping Through holes in Carbon Steels and Alloy Steels, where chips are produced in a continuous coil state.

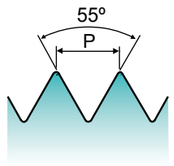
► 适用于碳钢和合金钢的通孔加工, 优异的排屑.

up to W5/16 : Male Center

Hole type 孔类型

3.0×D




Material groups **GS** | HSS-E | I | JIS II | 55° | 5.0P | Homo

p. B64

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| ◎ | TAPPING ER CHUCK | D215 -220 |
| | TAPPING CHUCK | D221 -228 |
| | ONE STEP TAPPING CHUCK | D211 -213 |

Unit(单位) : mm

| SIZE 尺寸 | TPI 牙距 | EDP No. 型号 | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|
| ØD1 | | | | L2 | L1 | ØD2 | K | Kl | |
| W1/8 | - 40 | T1282202 | JIS II | 46 | 11 | 4 | 3.2 | 6 | 3 |
| W3/16 | - 24 | T1282322 | JIS II | 60 | 16 | 5.5 | 4.5 | 7 | 3 |
| W1/4 | - 20 | T1282402 | JIS II | 62 | 19 | 6 | 4.5 | 7 | 3 |
| W5/16 | - 18 | T1282442 | JIS II | 70 | 22 | 6.1 | 5 | 8 | 3 |
| W3/8 | - 16 | T1282482 | JIS II | 75 | 24 | 7 | 5.5 | 8 | 3 |
| W7/16 | - 14 | T1282522 | JIS II | 80 | 25 | 8 | 6 | 9 | 3 |
| W1/2 | - 12 | T1282562 | JIS II | 85 | 29 | 9 | 7 | 10 | 3 |
| W9/16 | - 12 | T1282602 | JIS II | 90 | 30 | 10.5 | 8 | 11 | 3 |
| W5/8 | - 11 | T1282642 | JIS II | 95 | 32 | 12 | 9 | 12 | 3 |
| W3/4 | - 10 | T1282702 | JIS II | 105 | 37 | 14 | 11 | 14 | 3 |
| W7/8 | - 9 | T1282742 | JIS II | 115 | 45 | 17 | 13 | 16 | 3 |
| W1″ | - 8 | T1282782 | JIS II | 125 | 45 | 20 | 15 | 18 | 3 |

► Refer to p.B64 for recommended tap drill sizes. 参考p.B64 底孔尺寸.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ○ | ○ | | ○ | ○ | | | ○ | | ○ | ○ | | ○ | ○ | ○ | ○ | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | ○ | ○ | | | | | | | | | | | | | | |



YG TAP GENERAL

T1042 SERIES

# M I-GP SPIRAL POINT TAPS for GENERAL PURPOSE
## I-GP 普通先端丝锥

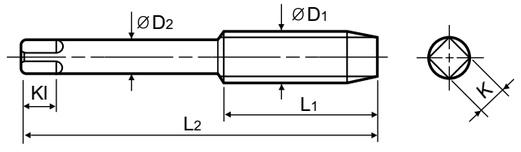
► Suitable for tapping Throug holes in Carbon Steels and Alloy Steels, where chips are produced in a continuous coil state.

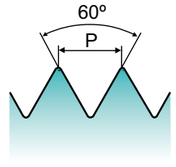
► 适用于碳钢和合金钢的通孔加工, 优异的排屑.

up to M8 : Male Center

Hole type 孔类型

3.0×D




Material groups **GS** | HSS-E | J | YH | 60° | 5.0P | Homo

p. B64

Tap Limits: p.B230

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| ◎ | TAPPING ER CHUCK | D215 -220 |
| | TAPPING CHUCK | D221 -228 |
| | ONE STEP TAPPING CHUCK | D211 -213 |

Unit(单位) : mm

| SIZE 尺寸 | | Pitch 牙距 | EDP No. 型号 | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|---|
| ØD1 | | P | | | L2 | L1 | ØD2 | K | Kl | |
| M2 | × | 0.4 | T1042132 | YH2 | 40 | 15 | 3 | 2.5 | 5 | 2 |
| M2.2 | × | 0.45 | T1042152 | YH2 | 42 | 15 | 3 | 2.5 | 5 | 2 |
| M2.3 | × | 0.4 | T1042192 | YH2 | 42 | 15 | 3 | 2.5 | 5 | 2 |
| M2.5 | × | 0.45 | T1042172 | YH2 | 44 | 16 | 3 | 2.5 | 5 | 2 |
| M2.6 | × | 0.45 | T1042492 | YH2 | 44 | 16 | 3 | 2.5 | 5 | 2 |
| M3 | × | 0.5 | T1042202 | YH2 | 46 | 18 | 4 | 3.2 | 6 | 3 |
| M3 | × | 0.35 | T1042212 | YH2 | 46 | 10 | 4 | 3.2 | 6 | 3 |
| M3.5 | × | 0.6 | T1042222 | YH2 | 48 | 18 | 4 | 3.2 | 6 | 3 |
| M3.5 | × | 0.35 | T1042232 | YH2 | 48 | 10 | 4 | 3.2 | 6 | 3 |
| M4 | × | 0.7 | T1042242 | YH2 | 52 | 20 | 5 | 4 | 7 | 3 |
| M4 | × | 0.5 | T1042252 | YH2 | 52 | 15 | 5 | 4 | 7 | 3 |
| M4.5 | × | 0.75 | T1042262 | YH2 | 55 | 20 | 5 | 4 | 7 | 3 |
| M4.5 | × | 0.5 | T1042272 | YH2 | 55 | 15 | 5 | 4 | 7 | 3 |
| M5 | × | 0.8 | T1042282 | YH2 | 60 | 22 | 5.5 | 4.5 | 7 | 3 |
| M5 | × | 0.5 | T1042292 | YH2 | 52 | 15 | 5.5 | 4.5 | 7 | 3 |
| M5.5 | × | 0.5 | T1042302 | YH2 | 52 | 15 | 5.5 | 4.5 | 7 | 3 |
| M6 | × | 1 | T1042312 | YH2 | 62 | 24 | 6 | 4.5 | 7 | 3 |
| M6 | × | 0.75 | T1042322 | YH2 | 62 | 20 | 6 | 4.5 | 7 | 3 |
| M6 | × | 0.5 | T1042332 | YH2 | 55 | 15 | 6 | 4.5 | 7 | 3 |
| M7 | × | 1 | T1042342 | YH2 | 65 | 26 | 6.2 | 5 | 8 | 3 |
| M7 | × | 0.75 | T1042352 | YH2 | 62 | 20 | 6.2 | 5 | 8 | 3 |
| M8 | × | 1.25 | T1042363 | YH3 | 70 | 30 | 6.2 | 5 | 8 | 3 |

► Refer to p.B64 for recommended tap drill sizes. 参考p.B64 底孔尺寸.

► NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ○ | ○ | | ○ | ○ | | | ○ | | ○ | ○ | | ○ | ○ | ○ | ○ | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | ○ | ○ | | | | | | | | | | | | | | |

YG TAP GENERAL

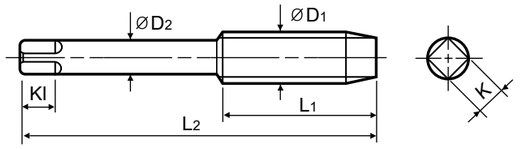
T1042 SERIES

# M I-GP SPIRAL POINT TAPS for GENERAL PURPOSE
## I-GP 普通先端丝锥

► Suitable for tapping Throug holes in Carbon Steels and Alloy Steels, where chips are produced in a continuous coil state.

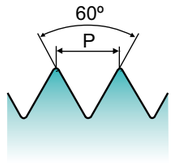
►适用于碳钢和合金钢的通孔加工, 优异的排屑.

up to M8 : Male Center




Hole type
孔类型

3.0×D




Material groups **GS** | HSS-E | J | YH | 60° | 5.0P | Homo

p. B64

Tap Limits: p.B230

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| TAPPING ER CHUCK | D215 -220 |
| TAPPING CHUCK | D221 -228 |
| ONE STEP TAPPING CHUCK | D211 -213 |

Unit(单位) : mm

| SIZE 尺寸 | | Pitch 牙距 | EDP No. 型号 | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|---|
| | | ØD1 | | | L2 | L1 | ØD2 | K | Kl | |
| M8 | × | 1 | **T1042373** | YH3 | 70 | 30 | 6.2 | 5 | 8 | 3 |
| M8 | × | 0.75 | **T1042383** | YH3 | 65 | 26 | 6.2 | 5 | 8 | 3 |
| M9 | × | 1.25 | **T1042393** | YH3 | 72 | 30 | 7 | 5.5 | 8 | 3 |
| M9 | × | 1 | **T1042403** | YH3 | 70 | 30 | 7 | 5.5 | 8 | 3 |
| M9 | × | 0.75 | **T1042413** | YH3 | 65 | 26 | 7 | 5.5 | 8 | 3 |
| M10 | × | 1.5 | **T1042423** | YH3 | 75 | 32 | 7 | 5.5 | 8 | 3 |
| M10 | × | 1.25 | **T1042433** | YH3 | 75 | 32 | 7 | 5.5 | 8 | 3 |
| M10 | × | 1 | **T1042443** | YH3 | 70 | 30 | 7 | 5.5 | 8 | 3 |
| M10 | × | 0.75 | **T1042453** | YH3 | 65 | 26 | 7 | 5.5 | 8 | 3 |
| M11 | × | 1.5 | **T1042463** | YH3 | 80 | 38 | 8 | 6 | 9 | 3 |
| M11 | × | 1 | **T1042474** | YH4 | 70 | 30 | 8 | 6 | 9 | 3 |
| M11 | × | 0.75 | **T1042483** | YH3 | 65 | 26 | 8 | 6 | 9 | 3 |
| M12 | × | 1.75 | **T1042504** | YH4 | 82 | 38 | 8.5 | 6.5 | 9 | 3 |
| M12 | × | 1.5 | **T1042513** | YH3 | 82 | 38 | 8.5 | 6.5 | 9 | 3 |
| M12 | × | 1.25 | **T1042523** | YH3 | 80 | 38 | 8.5 | 6.5 | 9 | 3 |
| M12 | × | 1 | **T1042533** | YH3 | 70 | 30 | 8.5 | 6.5 | 9 | 3 |
| M14 | × | 2 | **T1042544** | YH4 | 88 | 42 | 10.5 | 8 | 11 | 3 |
| M14 | × | 1.5 | **T1042553** | YH3 | 88 | 42 | 10.5 | 8 | 11 | 3 |
| M14 | × | 1.25 | **T1042563** | YH3 | 80 | 38 | 10.5 | 8 | 11 | 3 |
| M14 | × | 1 | **T1042573** | YH3 | 70 | 30 | 10.5 | 8 | 11 | 3 |
| M15 | × | 1.5 | **T1042583** | YH3 | 90 | 42 | 10.5 | 8 | 11 | 3 |
| M15 | × | 1 | **T1042593** | YH3 | 70 | 30 | 10.5 | 8 | 11 | 3 |

►Refer to p.B64 for recommended tap drill sizes. 参考p.B64 底孔尺寸.

► NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ○ | ○ | | ○ | ○ | | | ○ | | ○ | ○ | | ○ | ○ | ○ | ○ | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400Rm | 1050Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | ○ | ○ | | | | | | | | | | | | | | |



CARBIDE
HSS
THREAD MILLS
SYNCHRO TAPS
COMBO TAPS
YG TAP GENERAL
YG TAP STEEL
YG TAP HARDENED
YG TAP INOX
YG TAP CAST IRON
YG TAP ALU
YG TAP Ti Ni
YG TAP FORMING
STI TAPS
PIPE TAPS
SKS21 HAND TAPS
SKS21 PIPE TAPS
TECHNICAL DATA

YG TAP GENERAL

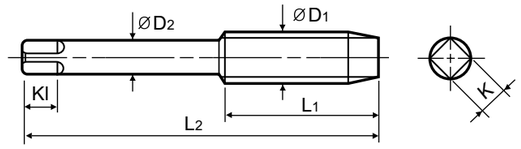
T1042 SERIES

# M I-GP SPIRAL POINT TAPS for GENERAL PURPOSE
## I-GP 普通先端丝锥

► Suitable for tapping Throug holes in Carbon Steels and Alloy Steels, where chips are produced in a continuous coil state.

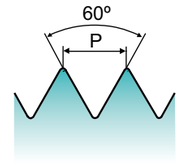
►适用于碳钢和合金钢的通孔加工, 优异的排屑.

up to M8 : Male Center




Hole type
孔类型

3.0×D




Material groups **GS** | HSS-E | J | YH | 60° | 5.0P | Homo

p. B64

Tap Limits: p.B230

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| TAPPING ER CHUCK | D215 -220 |
| TAPPING CHUCK | D221 -228 |
| ONE STEP TAPPING CHUCK | D211 -213 |

Unit(单位) : mm

| SIZE 尺寸 | | Pitch 牙距 | EDP No. 型号 | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|---|
| | | ØD1 | | | L2 | L1 | ØD2 | K | Kl | |
| M16 | × | 2 | **T1042604** | YH4 | 95 | 45 | 12.5 | 10 | 13 | 3 |
| M16 | × | 1.5 | **T1042613** | YH3 | 95 | 45 | 12.5 | 10 | 13 | 3 |
| M16 | × | 1 | **T1042623** | YH3 | 75 | 30 | 12.5 | 10 | 13 | 3 |
| M18 | × | 2.5 | **T1042654** | YH4 | 100 | 48 | 14 | 11 | 14 | 3 |
| M18 | × | 2 | **T1042664** | YH4 | 95 | 45 | 14 | 11 | 14 | 3 |
| M18 | × | 1.5 | **T1042674** | YH4 | 95 | 45 | 14 | 11 | 14 | 3 |
| M18 | × | 1 | **T1042683** | YH3 | 80 | 30 | 14 | 11 | 14 | 3 |
| M20 | × | 2.5 | **T1042704** | YH4 | 105 | 50 | 15 | 12 | 15 | 3 |
| M20 | × | 2 | **T1042714** | YH4 | 95 | 45 | 15 | 12 | 15 | 3 |
| M20 | × | 1.5 | **T1042724** | YH4 | 95 | 45 | 15 | 12 | 15 | 3 |
| M20 | × | 1 | **T1042733** | YH3 | 80 | 30 | 15 | 12 | 15 | 3 |
| M22 | × | 2.5 | **T1042744** | YH4 | 115 | 55 | 17 | 13 | 16 | 3 |
| M22 | × | 2 | **T1042754** | YH4 | 95 | 45 | 17 | 13 | 16 | 3 |
| M22 | × | 1.5 | **T1042764** | YH4 | 95 | 45 | 17 | 13 | 16 | 3 |
| M22 | × | 1 | **T1042773** | YH3 | 85 | 30 | 17 | 13 | 16 | 3 |
| M24 | × | 3 | **T1042784** | YH4 | 120 | 58 | 19 | 15 | 18 | 3 |
| M24 | × | 2 | **T1042794** | YH4 | 95 | 45 | 19 | 15 | 18 | 3 |
| M24 | × | 1.5 | **T1042804** | YH4 | 95 | 45 | 19 | 15 | 18 | 3 |
| M24 | × | 1 | **T1042813** | YH3 | 90 | 30 | 19 | 15 | 18 | 3 |
| M25 | × | 2 | **T1042824** | YH4 | 95 | 45 | 19 | 15 | 18 | 3 |
| M25 | × | 1.5 | **T1042834** | YH4 | 95 | 45 | 19 | 15 | 18 | 3 |
| M26 | × | 2 | **T1042N44** | YH4 | 95 | 45 | 20 | 15 | 18 | 4 |

►Refer to p.B64 for recommended tap drill sizes. 参考p.B64 底孔尺寸.

► NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ○ | ○ | | ○ | ○ | | | ○ | | ○ | ○ | | ○ | ○ | ○ | ○ | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400Rm | 1050Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | ○ | ○ | | | | | | | | | | | | | | |

YG TAP GENERAL

T1042 SERIES

# M I-GP SPIRAL POINT TAPS for GENERAL PURPOSE
## I-GP 普通先端丝锥

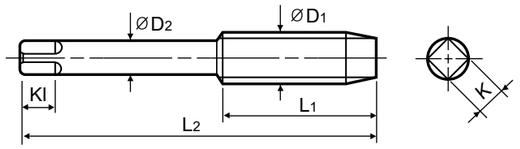
► Suitable for tapping Throug holes in Carbon Steels and Alloy Steels, where chips are produced in a continuous coil state.

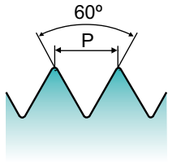
►适用于碳钢和合金钢的通孔加工, 优异的排屑.

up to M8 : Male Center

Hole type 孔类型

3.0×D




Material groups **GS** | HSS-E | J | YH | 60° | 5.0P | Homo

p. B64

Tap Limits: p.B230

Recommended ToolHolder

| | Page |
|---|---|
| TAPPING ER CHUCK | D215 -220 |
| TAPPING CHUCK | D221 -228 |
| ONE STEP TAPPING CHUCK | D211 -213 |

Unit(单位) : mm

| SIZE 尺寸 | Pitch 牙距 | EDP No. 型号 | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|
| | ØD1 | | | L2 | L1 | ØD2 | K | Kl | |
| M26 × | 1.5 | T1042854 | YH4 | 95 | 45 | 20 | 15 | 18 | 4 |
| M26 × | 1 | T1042N53 | YH3 | 95 | 30 | 20 | 15 | 18 | 4 |
| M27 × | 3 | T1042864 | YH4 | 130 | 62 | 20 | 15 | 18 | 4 |
| M27 × | 2 | T1042874 | YH4 | 95 | 45 | 20 | 15 | 18 | 4 |
| M27 × | 1.5 | T1042884 | YH4 | 95 | 45 | 20 | 15 | 18 | 4 |
| M28 × | 2 | T1042904 | YH4 | 105 | 45 | 21 | 17 | 20 | 4 |
| M28 × | 1.5 | T1042914 | YH4 | 105 | 45 | 21 | 17 | 20 | 4 |
| M30 × | 3.5 | T1042945 | YH5 | 135 | 65 | 23 | 17 | 20 | 4 |
| M30 × | 3 | T1042954 | YH4 | 135 | 65 | 23 | 17 | 20 | 4 |
| M30 × | 2 | T1042964 | YH4 | 105 | 45 | 23 | 17 | 20 | 4 |
| M30 × | 1.5 | T1042974 | YH4 | 105 | 45 | 23 | 17 | 20 | 4 |
| M30 × | 1 | T1042982 | YH2 | 105 | 30 | 23 | 17 | 20 | 4 |
| M33 × | 3.5 | T1042A45 | YH5 | 145 | 70 | 25 | 19 | 22 | 4 |
| M33 × | 3 | T1042A54 | YH4 | 145 | 70 | 25 | 19 | 22 | 4 |
| M33 × | 2 | T1042A63 | YH3 | 110 | 45 | 25 | 19 | 22 | 4 |
| M33 × | 1.5 | T1042A74 | YH4 | 110 | 45 | 25 | 19 | 22 | 4 |
| M36 × | 4 | T1042B35 | YH5 | 155 | 75 | 28 | 21 | 24 | 4 |
| M36 × | 3 | T1042B44 | YH4 | 155 | 75 | 28 | 21 | 24 | 4 |
| M36 × | 2 | T1042B53 | YH3 | 110 | 45 | 28 | 21 | 24 | 4 |
| M36 × | 1.5 | T1042B64 | YH4 | 110 | 45 | 28 | 21 | 24 | 4 |

►Refer to p.B64 for recommended tap drill sizes. 参考p.B64 底孔尺寸.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ○ | ○ | | ○ | ○ | | | ○ | | ○ | ○ | | ○ | ○ | ○ | ○ | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | ○ | ○ | | | | | | | | | | | | | | |



YG TAP GENERAL

T1142 SERIES

# UNC/F I-GP SPIRAL POINT TAPS for GENERAL PURPOSE
## I-GP 普通先端丝锥

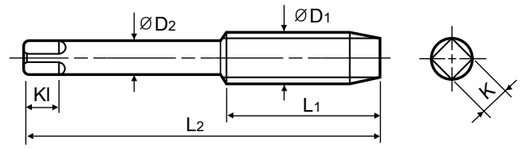
► Suitable for tapping Throug holes in Carbon Steels and Alloy Steels, where chips are produced in a continuous coil state.

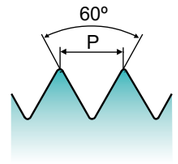
►适用于碳钢和合金钢的通孔加工, 优异的排屑.

up to 5/16 : Male Center

Hole type 孔类型

3.0×D




Material groups **GS** | HSS-E | J | JIS II | 60° | 5.0P | Homo

p. B64

Recommended ToolHolder

| | Page |
|---|---|
| TAPPING ER CHUCK | D215 -220 |
| TAPPING CHUCK | D221 -228 |
| ONE STEP TAPPING CHUCK | D211 -213 |

Unit(单位) : mm

| SIZE 尺寸 | TPI 牙距 | EDP No. 型号 | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|
| | ØD1 | | | L2 | L1 | ØD2 | K | Kl | |
| #4 - | 40 UNC | T1142162 | JIS II | 44 | 16 | 3 | 2.5 | 5 | 3 |
| #4 - | 48 UNF | T1142182 | JIS II | 44 | 16 | 3 | 2.5 | 5 | 3 |
| #5 - | 40 UNC | T1142202 | JIS II | 46 | 18 | 4 | 3.2 | 6 | 3 |
| #5 - | 44 UNF | T1142222 | JIS II | 46 | 18 | 4 | 3.2 | 6 | 3 |
| #6 - | 32 UNC | T1142242 | JIS II | 48 | 18 | 4 | 3.2 | 6 | 3 |
| #6 - | 40 UNF | T1142262 | JIS II | 48 | 18 | 4 | 3.2 | 6 | 3 |
| #8 - | 32 UNC | T1142282 | JIS II | 52 | 20 | 5 | 4 | 7 | 3 |
| #8 - | 36 UNF | T1142302 | JIS II | 52 | 20 | 5 | 4 | 7 | 3 |
| #10 - | 24 UNC | T1142322 | JIS II | 60 | 22 | 5.5 | 4.5 | 7 | 3 |
| #10 - | 32 UNF | T1142342 | JIS II | 60 | 22 | 5.5 | 4.5 | 7 | 3 |
| #12 - | 24 UNC | T1142362 | JIS II | 60 | 22 | 5.5 | 4.5 | 7 | 3 |
| #12 - | 28 UNF | T1142382 | JIS II | 60 | 22 | 5.5 | 4.5 | 7 | 3 |
| 1/4 - | 20 UNC | T1142402 | JIS II | 62 | 24 | 6 | 4.5 | 7 | 3 |
| 1/4 - | 28 UNF | T1142422 | JIS II | 62 | 24 | 6 | 4.5 | 7 | 3 |
| 5/16 - | 18 UNC | T1142442 | JIS II | 70 | 30 | 6.1 | 5 | 8 | 3 |
| 5/16 - | 24 UNF | T1142462 | JIS II | 70 | 30 | 6.1 | 5 | 8 | 3 |

►Refer to p.B64 for recommended tap drill sizes. 参考p.B64 底孔尺寸.

▶ NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ○ | ○ | | ○ | ○ | | | ○ | | ○ | ○ | | ○ | ○ | ○ | ○ | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | ○ | ○ | | | | | | | | | | | | | | |

YG TAP GENERAL

T1142 SERIES

# UNC/F I-GP SPIRAL POINT TAPS for GENERAL PURPOSE

## I-GP 普通先端丝锥

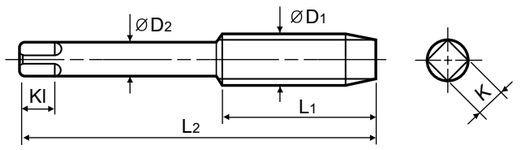
► Suitable for tapping Throug holes in Carbon Steels and Alloy Steels, where chips are produced in a continuous coil state.

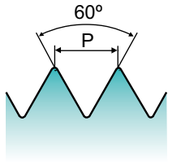
►适用于碳钢和合金钢的通孔加工, 优异的排屑.

up to 5/16 : Male Center

Hole type 孔类型

3.0×D




Material groups **GS** | HSS-E | J | JIS II | 60° | 5.0P | Homo

p. B64

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| TAPPING ER CHUCK | | D215 -220 |
| TAPPING CHUCK | | D221 -228 |
| ONE STEP TAPPING CHUCK | | D211 -213 |

Unit(单位) : mm

| SIZE 尺寸 | TPI 牙距 | EDP No. 型号 | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|
| ØD1 | | | | L2 | L1 | ØD2 | K | Kl | |
| 3/8 - 16 | UNC | T1142482 | JIS II | 75 | 35 | 7 | 5.5 | 8 | 3 |
| 3/8 - 24 | UNF | T1142502 | JIS II | 75 | 32 | 7 | 5.5 | 8 | 3 |
| 7/16 - 14 | UNC | T1142522 | JIS II | 80 | 38 | 8 | 6 | 9 | 3 |
| 7/16 - 20 | UNF | T1142542 | JIS II | 80 | 38 | 8 | 6 | 9 | 3 |
| 1/2 - 13 | UNC | T1142562 | JIS II | 85 | 42 | 9 | 7 | 10 | 3 |
| 1/2 - 20 | UNF | T1142582 | JIS II | 85 | 42 | 9 | 7 | 10 | 3 |
| 9/16 - 12 | UNC | T1142602 | JIS II | 90 | 42 | 10.5 | 8 | 11 | 3 |
| 9/16 - 18 | UNF | T1142622 | JIS II | 90 | 42 | 10.5 | 8 | 11 | 3 |
| 5/8 - 11 | UNC | T1142642 | JIS II | 95 | 45 | 12 | 9 | 12 | 3 |
| 5/8 - 18 | UNF | T1142662 | JIS II | 95 | 45 | 12 | 9 | 12 | 3 |
| 3/4 - 10 | UNC | T1142702 | JIS II | 105 | 50 | 14 | 11 | 14 | 3 |
| 3/4 - 16 | UNF | T1142722 | JIS II | 95 | 45 | 14 | 11 | 14 | 3 |
| 7/8 - 9 | UNC | T1142742 | JIS II | 115 | 55 | 17 | 13 | 16 | 3 |
| 7/8 - 14 | UNF | T1142762 | JIS II | 95 | 45 | 17 | 13 | 16 | 3 |
| 1″ - 8 | UNC | T1142782 | JIS II | 125 | 60 | 20 | 15 | 18 | 3 |
| 1″ - 12 | UNF | T1142802 | JIS II | 95 | 45 | 20 | 15 | 18 | 3 |

►Refer to p.B64 for recommended tap drill sizes. 参考p.B64 底孔尺寸.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ○ | ○ | | ○ | ○ | | | ○ | | ○ | ○ | | ○ | ○ | ○ | ○ | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | ○ | ○ | | | | | | | | | | | | | | |



YG TAP GENERAL

T1262 SERIES

# W I-GP SPIRAL POINT TAPS for GENERAL PURPOSE

## I-GP 普通先端丝锥

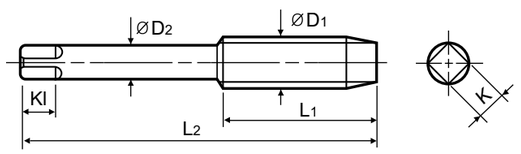
► Suitable for tapping Throug holes in Carbon Steels and Alloy Steels, where chips are produced in a continuous coil state.

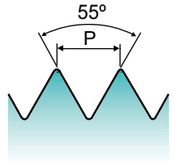
►适用于碳钢和合金钢的通孔加工, 优异的排屑.

up to W5/16 : Male Center

Hole type 孔类型

3.0×D




Material groups **GS** | HSS-E | J | JIS II | 55° | 5.0P | Homo

p. B64

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| TAPPING ER CHUCK | | D215 -220 |
| TAPPING CHUCK | | D221 -228 |
| ONE STEP TAPPING CHUCK | | D211 -213 |

Unit(单位) : mm

| SIZE 尺寸 | TPI 牙距 | EDP No. 型号 | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|
| ØD1 | | | | L2 | L1 | ØD2 | K | Kl | |
| W1/8 - 40 | | T1262202 | JIS II | 46 | 18 | 4 | 3.2 | 6 | 3 |
| W3/16 - 24 | | T1262322 | JIS II | 60 | 22 | 5.5 | 4.5 | 7 | 3 |
| W1/4 - 20 | | T1262402 | JIS II | 62 | 24 | 6 | 4.5 | 7 | 3 |
| W5/16 - 18 | | T1262442 | JIS II | 70 | 30 | 6.1 | 5 | 8 | 3 |
| W3/8 - 16 | | T1262482 | JIS II | 75 | 35 | 7 | 5.5 | 8 | 3 |
| W7/16 - 14 | | T1262522 | JIS II | 80 | 38 | 8 | 6 | 9 | 3 |
| W1/2 - 12 | | T1262562 | JIS II | 85 | 42 | 9 | 7 | 10 | 3 |
| W9/16 - 12 | | T1262602 | JIS II | 90 | 42 | 10.5 | 8 | 11 | 3 |
| W5/8 - 11 | | T1262642 | JIS II | 95 | 45 | 12 | 9 | 12 | 3 |
| W3/4 - 10 | | T1262702 | JIS II | 105 | 50 | 14 | 11 | 14 | 3 |
| W7/8 - 9 | | T1262742 | JIS II | 115 | 55 | 17 | 13 | 16 | 3 |
| W1″ - 8 | | T1262782 | JIS II | 125 | 60 | 20 | 15 | 18 | 3 |

►Refer to p.B64 for recommended tap drill sizes. 参考p.B64 底孔尺寸.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ○ | ○ | | ○ | ○ | | | ○ | | ○ | ○ | | ○ | ○ | ○ | ○ | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | ○ | ○ | | | | | | | | | | | | | | |

YG TAP GENERAL

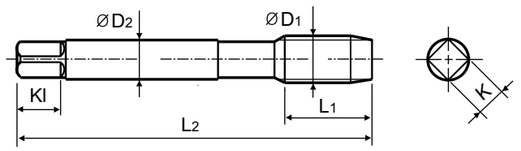
T3022 SERIES

# M I-GP SPIRAL POINT TAPS
## I-GP 先端丝锥

► Suitable for tapping Through holes in Carbon Steels and Alloy Steels. Capable of efficient, long life, high speed tapping.

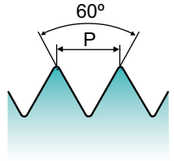
►适用于碳钢和合金钢的通孔加工, 具有高效, 寿命长, 能够快速攻丝.

up to M8 : Male Center




Hole type 孔类型

3.0×D




Material groups **GS** | HSS-E | I | YH | 60° | 5.0P | TiN |

p. B65

Tap Limits: p.B230

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| TAPPING ER CHUCK | D215 -220 |
| TAPPING CHUCK | D221 -228 |
| ONE STEP TAPPING CHUCK | D211 -213 |

Unit(单位) : mm

| SIZE 尺寸 | | Pitch 牙距 | EDP No. 型号 | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|---|
| ØD1 | | P | | | L2 | L1 | ØD2 | K | Kl | |
| M3 | × | 0.5 | **T3022202** | YH2 | 46 | 11 | 4 | 3.2 | 6 | 3 |
| M3.5 | × | 0.6 | **T3022222** | YH2 | 48 | 13 | 4 | 3.2 | 6 | 3 |
| M4 | × | 0.7 | **T3022242** | YH2 | 52 | 13 | 5 | 4 | 7 | 3 |
| M5 | × | 0.8 | **T3022282** | YH2 | 60 | 16 | 5.5 | 4.5 | 7 | 3 |
| M6 | × | 1 | **T3022312** | YH2 | 62 | 19 | 6 | 4.5 | 7 | 3 |
| M8 | × | 1.25 | **T3022363** | YH3 | 70 | 22 | 6.2 | 5 | 8 | 3 |
| M10 | × | 1.5 | **T3022423** | YH3 | 75 | 24 | 7 | 5.5 | 8 | 3 |
| M10 | × | 1.25 | **T3022433** | YH3 | 75 | 24 | 7 | 5.5 | 8 | 3 |
| M12 | × | 1.75 | **T3022504** | YH4 | 82 | 29 | 8.5 | 6.5 | 9 | 3 |
| M12 | × | 1.5 | **T3022513** | YH3 | 82 | 29 | 8.5 | 6.5 | 9 | 3 |
| M12 | × | 1.25 | **T3022523** | YH3 | 82 | 29 | 8.5 | 6.5 | 9 | 3 |
| M14 | × | 2 | **T3022544** | YH4 | 88 | 30 | 10.5 | 8 | 11 | 3 |
| M14 | × | 1.5 | **T3022553** | YH3 | 88 | 30 | 10.5 | 8 | 11 | 3 |
| M16 | × | 2 | **T3022604** | YH4 | 95 | 32 | 12.5 | 10 | 13 | 3 |
| M16 | × | 1.5 | **T3022613** | YH3 | 95 | 32 | 12.5 | 10 | 13 | 3 |
| M18 | × | 2.5 | **T3022654** | YH4 | 100 | 37 | 14 | 11 | 14 | 3 |
| M18 | × | 1.5 | **T3022674** | YH4 | 100 | 37 | 14 | 11 | 14 | 3 |
| M20 | × | 2.5 | **T3022704** | YH4 | 105 | 37 | 15 | 12 | 15 | 3 |
| M20 | × | 1.5 | **T3022724** | YH4 | 105 | 37 | 15 | 12 | 15 | 3 |

►Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ○ | ○ | | ○ | ○ | | | ○ | | ○ | ○ | | ○ | ○ | ○ | ○ | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400Rm | 1050Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | ○ | ○ | | | | | | | | | | | | | | |





YG TAP GENERAL

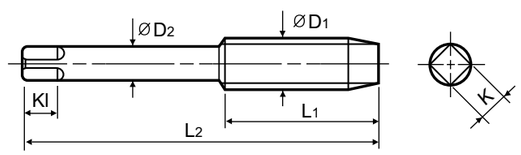
T3042 SERIES

# M I-GP SPIRAL POINT TAPS
## I-GP 先端丝锥

► Suitable for tapping Through holes in Carbon Steels and Alloy Steels. Capable of efficient, long life, high speed tapping.

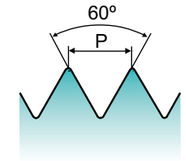
►适用于碳钢和合金钢的通孔加工, 具有高效, 寿命长, 能够快速攻丝.

up to M8 : Male Center




Hole type 孔类型

3.0×D




Material groups **GS** | HSS-E | J | YH | 60° | 5.0P | TiN |

p. B65

Tap Limits: p.B230

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| TAPPING ER CHUCK | D215 -220 |
| TAPPING CHUCK | D221 -228 |
| ONE STEP TAPPING CHUCK | D211 -213 |

Unit(单位) : mm

| SIZE 尺寸 | | Pitch 牙距 | EDP No. 型号 | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|---|
| ØD1 | | P | | | L2 | L1 | ØD2 | K | Kl | |
| M3 | × | 0.5 | **T3042202** | YH2 | 46 | 18 | 4 | 3.2 | 6 | 3 |
| M3.5 | × | 0.6 | **T3042222** | YH2 | 48 | 18 | 4 | 3.2 | 6 | 3 |
| M4 | × | 0.7 | **T3042242** | YH2 | 52 | 20 | 5 | 4 | 7 | 3 |
| M5 | × | 0.8 | **T3042282** | YH2 | 60 | 22 | 5.5 | 4.5 | 7 | 3 |
| M6 | × | 1 | **T3042312** | YH2 | 62 | 24 | 6 | 4.5 | 7 | 3 |
| M8 | × | 1.25 | **T3042363** | YH2 | 70 | 30 | 6.2 | 5 | 8 | 3 |
| M10 | × | 1.5 | **T3042423** | YH3 | 75 | 32 | 7 | 5.5 | 8 | 3 |
| M10 | × | 1.25 | **T3042433** | YH3 | 75 | 32 | 7 | 5.5 | 8 | 3 |
| M12 | × | 1.75 | **T3042504** | YH4 | 82 | 38 | 8.5 | 6.5 | 9 | 3 |
| M12 | × | 1.5 | **T3042513** | YH3 | 82 | 38 | 8.5 | 6.5 | 9 | 3 |
| M12 | × | 1.25 | **T3042523** | YH3 | 80 | 38 | 8.5 | 6.5 | 9 | 3 |
| M14 | × | 2 | **T3042544** | YH4 | 88 | 42 | 10.5 | 8 | 11 | 3 |
| M14 | × | 1.5 | **T3042553** | YH3 | 88 | 42 | 10.5 | 8 | 11 | 3 |
| M16 | × | 2 | **T3042604** | YH4 | 95 | 45 | 12.5 | 10 | 13 | 3 |
| M16 | × | 1.5 | **T3042613** | YH3 | 95 | 45 | 12.5 | 10 | 13 | 3 |
| M18 | × | 2.5 | **T3042654** | YH4 | 100 | 48 | 14 | 11 | 14 | 3 |
| M18 | × | 1.5 | **T3042674** | YH4 | 95 | 45 | 14 | 11 | 14 | 3 |
| M20 | × | 2.5 | **T3042704** | YH4 | 105 | 50 | 15 | 12 | 15 | 3 |
| M20 | × | 1.5 | **T3042724** | YH4 | 95 | 45 | 15 | 12 | 15 | 3 |

►Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ○ | ○ | | ○ | ○ | | | ○ | | ○ | ○ | | ○ | ○ | ○ | ○ | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400Rm | 1050Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | ○ | ○ | | | | | | | | | | | | | | |

YG TAP GENERAL

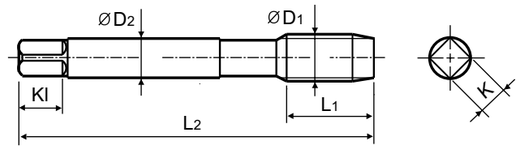
T1203 SERIES

# M I-GP LONG SHANK SPIRAL POINT TAPS for GENERAL PURPOSE
## I-GP 长柄普通先端丝锥

► Suitable for tapping Through holes in Carbon Steels and Alloy Steels, where chips are produced in a continuous coil state.

►适用于碳钢和合金钢的通孔加工, 优异排屑

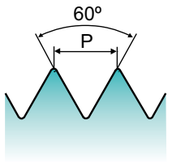
up to M8 : Male Center




**Long Shank**

Hole type 孔类型

3.0×D




Material groups **GS** | HSS-E | LONG | YH | 60° | 5.0P | Homo

p. B65

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| ◎ | TAPPING ER CHUCK | D215 -220 |
| | TAPPING CHUCK | D221 -228 |
| | ONE STEP TAPPING CHUCK | D211 -213 |

**► 100mm**

Tap Limits: p.B230

Unit(单位) : mm

| SIZE 尺寸 | | Pitch 牙距 | | EDP No. 型号 | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ØD1 | | P | | | | L2 | L1 | ØD2 | K | Kl | |
| M3 | × | 0.5 | | **T1203202** | YH2 | 100 | 11 | 4 | 3.2 | 6 | 3 |
| M4 | × | 0.7 | | **T1203242** | YH2 | 100 | 13 | 5 | 4 | 7 | 3 |
| M5 | × | 0.8 | | **T1203282** | YH2 | 100 | 16 | 5.5 | 4.5 | 7 | 3 |
| M6 | × | 1 | | **T1203312** | YH2 | 100 | 19 | 6 | 4.5 | 7 | 3 |
| M8 | × | 1.25 | | **T1203363** | YH3 | 100 | 22 | 6.2 | 5 | 8 | 3 |
| M10 | × | 1.5 | | **T1203423** | YH3 | 100 | 24 | 7 | 5.5 | 8 | 3 |
| M10 | × | 1.25 | | **T1203433** | YH3 | 100 | 24 | 7 | 5.5 | 8 | 3 |
| M12 | × | 1.75 | | **T1203504** | YH4 | 100 | 29 | 8.5 | 6.5 | 9 | 3 |
| M12 | × | 1.5 | | **T1203513** | YH3 | 100 | 29 | 8.5 | 6.5 | 9 | 3 |
| M12 | × | 1.25 | | **T1203523** | YH3 | 100 | 29 | 8.5 | 6.5 | 9 | 3 |
| M14 | × | 2 | | **T1203544** | YH4 | 100 | 30 | 10.5 | 8 | 11 | 3 |
| M14 | × | 1.5 | | **T1203553** | YH3 | 100 | 30 | 10.5 | 8 | 11 | 3 |

►Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ○ | ○ | | ○ | ○ | | | ○ | | ○ | ○ | | ○ | ○ | ○ | ○ | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | ○ | ○ | | | | | | | | | | | | | | |





YG TAP GENERAL

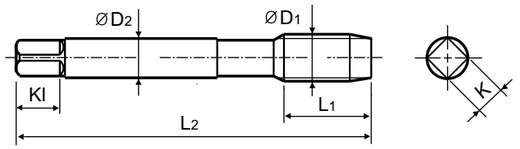
T1204 SERIES

# M I-GP LONG SHANK SPIRAL POINT TAPS for GENERAL PURPOSE
## I-GP 长柄普通先端丝锥

► Suitable for tapping Through holes in Carbon Steels and Alloy Steels, where chips are produced in a continuous coil state.

►适用于碳钢和合金钢的通孔加工, 优异排屑

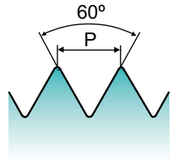
up to M8 : Male Center




**Long Shank**

Hole type 孔类型

3.0×D




Material groups **GS** | HSS-E | LONG | YH | 60° | 5.0P | Homo

p. B65

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| ◎ | TAPPING ER CHUCK | D215 -220 |
| | TAPPING CHUCK | D221 -228 |
| | ONE STEP TAPPING CHUCK | D211 -213 |

**► 120mm**

Tap Limits: p.B230

Unit(单位) : mm

| SIZE 尺寸 | | Pitch 牙距 | | EDP No. 型号 | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ØD1 | | P | | | | L2 | L1 | ØD2 | K | Kl | |
| M3 | × | 0.5 | | **T1204202** | YH2 | 120 | 11 | 4 | 3.2 | 6 | 3 |
| M4 | × | 0.7 | | **T1204242** | YH2 | 120 | 13 | 5 | 4 | 7 | 3 |
| M5 | × | 0.8 | | **T1204282** | YH2 | 120 | 16 | 5.5 | 4.5 | 7 | 3 |
| M6 | × | 1 | | **T1204312** | YH2 | 120 | 19 | 6 | 4.5 | 7 | 3 |
| M8 | × | 1.25 | | **T1204363** | YH3 | 120 | 22 | 6.2 | 5 | 8 | 3 |
| M10 | × | 1.5 | | **T1204423** | YH3 | 120 | 24 | 7 | 5.5 | 8 | 3 |
| M10 | × | 1.25 | | **T1204433** | YH3 | 120 | 24 | 7 | 5.5 | 8 | 3 |
| M12 | × | 1.75 | | **T1204504** | YH4 | 120 | 29 | 8.5 | 6.5 | 9 | 3 |
| M12 | × | 1.5 | | **T1204513** | YH3 | 120 | 29 | 8.5 | 6.5 | 9 | 3 |
| M12 | × | 1.25 | | **T1204523** | YH3 | 120 | 29 | 8.5 | 6.5 | 9 | 3 |
| M14 | × | 2 | | **T1204544** | YH4 | 120 | 30 | 10.5 | 8 | 11 | 3 |
| M14 | × | 1.5 | | **T1204553** | YH3 | 120 | 30 | 10.5 | 8 | 11 | 3 |
| M16 | × | 2 | | **T1204604** | YH4 | 120 | 32 | 12.5 | 10 | 13 | 3 |
| M16 | × | 1.5 | | **T1204613** | YH3 | 120 | 32 | 12.5 | 10 | 13 | 3 |

►Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ○ | ○ | | ○ | ○ | | | ○ | | ○ | ○ | | ○ | ○ | ○ | ○ | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | ○ | ○ | | | | | | | | | | | | | | |

YG TAP GENERAL

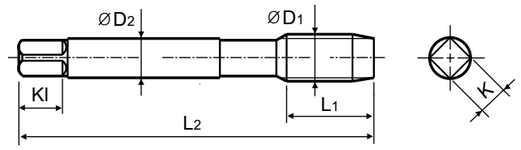
**T1205** SERIES

# M I-GP LONG SHANK SPIRAL POINT TAPS for GENERAL PURPOSE
## I-GP 长柄普通先端丝锥

► Suitable for tapping Through holes in Carbon Steels and Alloy Steels, where chips are produced in a continuous coil state.

►适用于碳钢和合金钢的通孔加工, 优异排屑

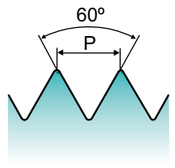
up to M8 : Male Center




**Long Shank**

Hole type 孔类型

3.0×D




Material groups **GS**

HSS-E | LONG | YH | 60° | 5.0P | Homo

p. B65

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| TAPPING ER CHUCK | | D215 -220 |
| TAPPING CHUCK | | D221 -228 |
| ONE STEP TAPPING CHUCK | | D211 -213 |

► **150mm**

Tap Limits: p.B230

Unit(单位) : mm

| SIZE 尺寸 | Pitch 牙距 | EDP No. 型号 | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|
| ØD1 | P | | | L2 | L1 | ØD2 | K | Kl | |
| M3 × | 0.5 | T1205202 | YH2 | 150 | 11 | 4 | 3.2 | 6 | 3 |
| M4 × | 0.7 | T1205242 | YH2 | 150 | 13 | 5 | 4 | 7 | 3 |
| M5 × | 0.8 | T1205282 | YH2 | 150 | 16 | 5.5 | 4.5 | 7 | 3 |
| M6 × | 1 | T1205312 | YH2 | 150 | 19 | 6 | 4.5 | 7 | 3 |
| M8 × | 1.25 | T1205363 | YH3 | 150 | 22 | 6.2 | 5 | 8 | 3 |
| M10 × | 1.5 | T1205423 | YH3 | 150 | 24 | 7 | 5.5 | 8 | 3 |
| M10 × | 1.25 | T1205433 | YH3 | 150 | 24 | 7 | 5.5 | 8 | 3 |
| M12 × | 1.75 | T1205504 | YH4 | 150 | 29 | 8.5 | 6.5 | 9 | 3 |
| M12 × | 1.5 | T1205513 | YH3 | 150 | 29 | 8.5 | 6.5 | 9 | 3 |
| M12 × | 1.25 | T1205523 | YH3 | 150 | 29 | 8.5 | 6.5 | 9 | 3 |
| M14 × | 2 | T1205544 | YH4 | 150 | 30 | 10.5 | 8 | 11 | 3 |
| M14 × | 1.5 | T1205553 | YH3 | 150 | 30 | 10.5 | 8 | 11 | 3 |
| M16 × | 2 | T1205604 | YH4 | 150 | 32 | 12.5 | 10 | 13 | 3 |
| M16 × | 1.5 | T1205613 | YH3 | 150 | 32 | 12.5 | 10 | 13 | 3 |
| M18 × | 2.5 | T1205654 | YH4 | 150 | 37 | 14 | 11 | 14 | 3 |
| M18 × | 1.5 | T1205674 | YH4 | 150 | 37 | 14 | 11 | 14 | 3 |
| M20 × | 2.5 | T1205704 | YH4 | 150 | 37 | 15 | 12 | 15 | 3 |
| M20 × | 1.5 | T1205724 | YH4 | 150 | 37 | 15 | 12 | 15 | 3 |
| M22 × | 2.5 | T1205744 | YH4 | 150 | 38 | 17 | 13 | 16 | 3 |
| M22 × | 1.5 | T1205764 | YH4 | 150 | 38 | 17 | 13 | 16 | 3 |
| M24 × | 3 | T1205784 | YH4 | 150 | 45 | 19 | 15 | 18 | 3 |
| M24 × | 1.5 | T1205804 | YH4 | 150 | 45 | 19 | 15 | 18 | 3 |

►Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ○ | ○ | | ○ | ○ | | | ○ | | ○ | ○ | | ○ | ○ | ○ | ○ | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400Rm | 1050Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | ○ | ○ | | | | | | | | | | | | | | |



CARBIDE
HSS
THREAD MILLS
SYNCHRO TAPS
COMBO TAPS
YG TAP GENERAL
YG TAP STEEL
YG TAP HARDENED
YG TAP INOX
YG TAP CAST IRON
YG TAP ALU
YG TAP Ti Ni
YG TAP FORMING
STI TAPS
PIPE TAPS
SKS21 HAND TAPS
SKS21 PIPE TAPS
TECHNICAL DATA

YG TAP GENERAL

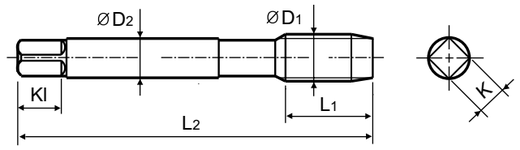
**T1206** SERIES

# M I-GP LONG SHANK SPIRAL POINT TAPS for GENERAL PURPOSE
## I-GP 长柄普通先端丝锥

► Suitable for tapping Through holes in Carbon Steels and Alloy Steels, where chips are produced in a continuous coil state.

►适用于碳钢和合金钢的通孔加工, 优异排屑

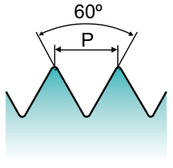
up to M8 : Male Center




**Long Shank**

Hole type 孔类型

3.0×D




Material groups **GS**

HSS-E | LONG | YH | 60° | 5.0P | Homo

p. B65

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| TAPPING ER CHUCK | | D215 -220 |
| TAPPING CHUCK | | D221 -228 |
| ONE STEP TAPPING CHUCK | | D211 -213 |

► **200mm**

Tap Limits: p.B230

Unit(单位) : mm

| SIZE 尺寸 | Pitch 牙距 | EDP No. 型号 | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|
| ØD1 | P | | | L2 | L1 | ØD2 | K | Kl | |
| M8 × | 1.25 | T1206363 | YH3 | 200 | 22 | 6.2 | 5 | 8 | 3 |
| M10 × | 1.5 | T1206423 | YH3 | 200 | 24 | 7 | 5.5 | 8 | 3 |
| M10 × | 1.25 | T1206433 | YH3 | 200 | 24 | 7 | 5.5 | 8 | 3 |
| M12 × | 1.75 | T1206504 | YH4 | 200 | 29 | 8.5 | 6.5 | 9 | 3 |
| M12 × | 1.5 | T1206513 | YH3 | 200 | 29 | 8.5 | 6.5 | 9 | 3 |
| M12 × | 1.25 | T1206523 | YH3 | 200 | 29 | 8.5 | 6.5 | 9 | 3 |
| M14 × | 2 | T1206544 | YH4 | 200 | 30 | 10.5 | 8 | 11 | 3 |
| M14 × | 1.5 | T1206553 | YH3 | 200 | 30 | 10.5 | 8 | 11 | 3 |
| M16 × | 2 | T1206604 | YH4 | 200 | 32 | 12.5 | 10 | 13 | 3 |
| M16 × | 1.5 | T1206613 | YH3 | 200 | 32 | 12.5 | 10 | 13 | 3 |
| M18 × | 2.5 | T1206654 | YH4 | 200 | 37 | 14 | 11 | 14 | 3 |
| M18 × | 1.5 | T1206674 | YH4 | 200 | 37 | 14 | 11 | 14 | 3 |
| M20 × | 2.5 | T1206704 | YH4 | 200 | 37 | 15 | 12 | 15 | 3 |
| M20 × | 1.5 | T1206724 | YH4 | 200 | 37 | 15 | 12 | 15 | 3 |
| M22 × | 2.5 | T1206744 | YH4 | 200 | 38 | 17 | 13 | 16 | 3 |
| M22 × | 1.5 | T1206764 | YH4 | 200 | 38 | 17 | 13 | 16 | 3 |
| M24 × | 3 | T1206784 | YH4 | 200 | 45 | 19 | 15 | 18 | 3 |
| M24 × | 1.5 | T1206804 | YH4 | 200 | 45 | 19 | 15 | 18 | 3 |

►Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ○ | ○ | | ○ | ○ | | | ○ | | ○ | ○ | | ○ | ○ | ○ | ○ | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400Rm | 1050Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | ○ | ○ | | | | | | | | | | | | | | |

YG TAP GENERAL

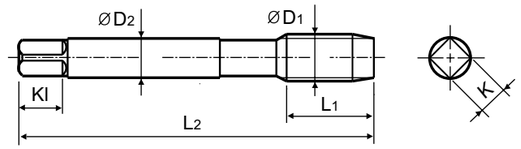
T1230 SERIES
T1240 SERIES

# WI-GP LONG SHANK SPIRAL POINT TAPS for GENERAL PURPOSE
## I-GP 长柄普通先端丝锥

► Suitable for tapping Through holes in Carbon Steels and Alloy Steels, where chips are produced in a continuous coil state.

►适用于碳钢和合金钢的通孔加工, 优异排屑

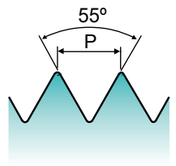
up to W5/16 : Male Center




**Long Shank**

Hole type 孔类型

3.0×D




Material groups **GS** | HSS-E | LONG | JIS II | 55° | 5.0P | Homo

p. B65

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| TAPPING ER CHUCK | D215 -220 |
| TAPPING CHUCK | D221 -228 |
| ONE STEP TAPPING CHUCK | D211 -213 |

### ► 100mm

Unit(单位) : mm

| SIZE 尺寸 | TPI 牙距 | EDP No. 型号 | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|
| ØD1 | | | | L2 | L1 | ØD2 | K | Kl | |
| W1/8 | - 40 | T1230202 | JIS II | 100 | 11 | 4 | 3.2 | 6 | 3 |
| W3/16 | - 24 | T1230322 | JIS II | 100 | 16 | 5.5 | 4.5 | 7 | 3 |
| W1/4 | - 20 | T1230402 | JIS II | 100 | 19 | 6 | 4.5 | 7 | 3 |
| W5/16 | - 18 | T1230442 | JIS II | 100 | 22 | 6.1 | 5 | 8 | 3 |
| W3/8 | - 16 | T1230482 | JIS II | 100 | 24 | 7 | 5.5 | 8 | 3 |
| W7/16 | - 14 | T1230522 | JIS II | 100 | 25 | 8 | 6 | 9 | 3 |
| W1/2 | - 12 | T1230562 | JIS II | 100 | 29 | 9 | 7 | 10 | 3 |

### ► 120mm

Unit(单位) : mm

| SIZE 尺寸 | TPI 牙距 | EDP No. 型号 | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|
| ØD1 | | | | L2 | L1 | ØD2 | K | Kl | |
| W1/8 | - 40 | T1240202 | JIS II | 120 | 11 | 4 | 3.2 | 6 | 3 |
| W3/16 | - 24 | T1240322 | JIS II | 120 | 16 | 5.5 | 4.5 | 7 | 3 |
| W1/4 | - 20 | T1240402 | JIS II | 120 | 19 | 6 | 4.5 | 7 | 3 |
| W5/16 | - 18 | T1240442 | JIS II | 120 | 22 | 6.1 | 5 | 8 | 3 |
| W3/8 | - 16 | T1240482 | JIS II | 120 | 24 | 7 | 5.5 | 8 | 3 |
| W7/16 | - 14 | T1240522 | JIS II | 120 | 25 | 8 | 6 | 9 | 3 |
| W1/2 | - 12 | T1240562 | JIS II | 120 | 29 | 9 | 7 | 10 | 3 |
| W9/16 | - 12 | T1240602 | JIS II | 120 | 30 | 10.5 | 8 | 11 | 3 |
| W5/8 | - 11 | T1240642 | JIS II | 120 | 32 | 12 | 9 | 12 | 3 |

►Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ○ | ○ | | ○ | ○ | | | ○ | | ○ | ○ | | ○ | ○ | ○ | ○ | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400Rm | 1050Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | ○ | ○ | | | | | | | | | | | | | | |



CARBIDE
HSS
THREAD MILLS
SYNCHRO TAPS
COMBO TAPS
YG TAP GENERAL
YG TAP STEEL
YG TAP HARDENED
YG TAP INOX
YG TAP CAST IRON
YG TAP ALU
YG TAP Ti Ni
YG TAP FORMING
STI TAPS
PIPE TAPS
SKS21 HAND TAPS
SKS21 PIPE TAPS
TECHNICAL DATA

YG TAP GENERAL

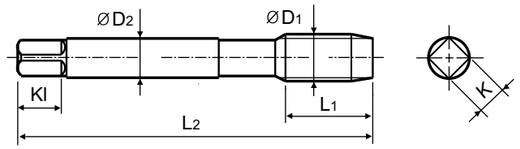
T1250 SERIES
T1260 SERIES

# WI-GP LONG SHANK SPIRAL POINT TAPS for GENERAL PURPOSE
## I-GP 长柄普通先端丝锥

► Suitable for tapping Through holes in Carbon Steels and Alloy Steels, where chips are produced in a continuous coil state.

►适用于碳钢和合金钢的通孔加工, 优异排屑

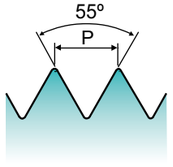
up to W5/16 : Male Center




**Long Shank**

Hole type 孔类型

3.0×D




Material groups **GS** | HSS-E | LONG | JIS II | 55° | 5.0P | Homo

p. B65

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| TAPPING ER CHUCK | D215 -220 |
| TAPPING CHUCK | D221 -228 |
| ONE STEP TAPPING CHUCK | D211 -213 |

### ► 150mm

Unit(单位) : mm

| SIZE 尺寸 | TPI 牙距 | EDP No. 型号 | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|
| ØD1 | | | | L2 | L1 | ØD2 | K | Kl | |
| W1/8 | - 40 | T1250202 | JIS II | 150 | 11 | 4 | 3.2 | 6 | 3 |
| W3/16 | - 24 | T1250322 | JIS II | 150 | 16 | 5.5 | 4.5 | 7 | 3 |
| W1/4 | - 20 | T1250402 | JIS II | 150 | 19 | 6 | 4.5 | 7 | 3 |
| W5/16 | - 18 | T1250442 | JIS II | 150 | 22 | 6.1 | 5 | 8 | 3 |
| W3/8 | - 16 | T1250482 | JIS II | 150 | 24 | 7 | 5.5 | 8 | 3 |
| W7/16 | - 14 | T1250522 | JIS II | 150 | 25 | 8 | 6 | 9 | 3 |
| W1/2 | - 12 | T1250562 | JIS II | 150 | 29 | 9 | 7 | 10 | 3 |
| W9/16 | - 12 | T1250602 | JIS II | 150 | 30 | 10.5 | 8 | 11 | 3 |
| W5/8 | - 11 | T1250642 | JIS II | 150 | 32 | 12 | 9 | 12 | 3 |
| W3/4 | - 10 | T1250702 | JIS II | 150 | 37 | 14 | 11 | 14 | 3 |
| W7/8 | - 9 | T1250742 | JIS II | 150 | 38 | 17 | 13 | 16 | 3 |
| W1″ | - 8 | T1250782 | JIS II | 150 | 45 | 20 | 15 | 18 | 3 |

### ► 200mm

Unit(单位) : mm

| SIZE 尺寸 | TPI 牙距 | EDP No. 型号 | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|
| ØD1 | | | | L2 | L1 | ØD2 | K | Kl | |
| W3/8 | - 16 | T1260482 | JIS II | 200 | 24 | 7 | 5.5 | 8 | 3 |
| W7/16 | - 14 | T1260522 | JIS II | 200 | 25 | 8 | 6 | 9 | 3 |
| W1/2 | - 12 | T1260562 | JIS II | 200 | 29 | 9 | 7 | 10 | 3 |
| W9/16 | - 12 | T1260602 | JIS II | 200 | 30 | 10.5 | 8 | 11 | 3 |
| W5/8 | - 11 | T1260642 | JIS II | 200 | 32 | 12 | 9 | 12 | 3 |
| W3/4 | - 10 | T1260702 | JIS II | 200 | 37 | 14 | 11 | 14 | 3 |
| W7/8 | - 9 | T1260742 | JIS II | 200 | 38 | 17 | 13 | 16 | 3 |
| W1″ | - 8 | T1260782 | JIS II | 200 | 45 | 20 | 15 | 18 | 3 |

►Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ○ | ○ | | ○ | ○ | | | ○ | | ○ | ○ | | ○ | ○ | ○ | ○ | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400Rm | 1050Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | ○ | ○ | | | | | | | | | | | | | | |

# YG TAP GENERAL

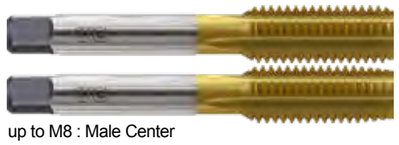
1.5P **T3492** SERIES
5.0P **T3491** SERIES

## M I-SP STARAIGHT FLUTE TAPS
## I-SP 直槽丝锥

► Suitable for tapping Blind & Through holes in Carbon Steels and Alloy Steels. Capable of efficient, long life, high speed tapping.

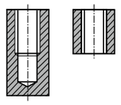
►适用于碳钢和合金钢的盲孔和通孔加工, 具有高效, 寿命长, 能够快 速攻丝.

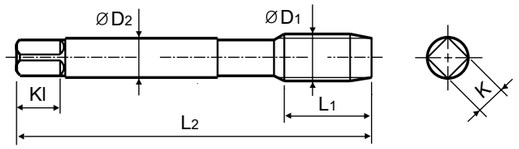
1.5P
5.0P

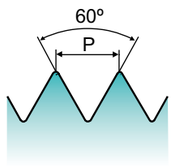


up to M8 : Male Center

Hole type 孔类型
2.0×D






Material groups **GS** | HSS-E | I | YH | 60° | 1.5P/5.0P | TiN

p. B65

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| TAPPING ER CHUCK | D215 -220 |
| TAPPING CHUCK | D221 -228 |
| ONE STEP TAPPING CHUCK | D211 -213 |

Tap Limits: p.B230

Unit(单位) : mm

| SIZE 尺寸 | | Pitch 牙距 | EDP No. 型号 | | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ØD1 | | P | 1.5P | 5.0P | | L2 | L1 | ØD2 | K | Kl | |
| M3 | × | 0.5 | T3492202 | T3491202 | YH2 | 46 | 11 | 4 | 3.2 | 6 | 3 |
| M4 | × | 0.7 | T3492242 | T3491242 | YH2 | 52 | 13 | 5 | 4 | 7 | 3 |
| M5 | × | 0.8 | T3492282 | T3491282 | YH2 | 60 | 16 | 5.5 | 4.5 | 7 | 3 |
| M6 | × | 1 | T3492312 | T3491312 | YH2 | 62 | 19 | 6 | 4.5 | 7 | 3 |
| M8 | × | 1.25 | T3492362 | T3491362 | YH2 | 70 | 22 | 6.2 | 5 | 8 | 4 |
| M10 | × | 1.5 | T3492423 | T3491423 | YH3 | 75 | 24 | 7 | 5.5 | 8 | 4 |
| M10 | × | 1.25 | T3492432 | T3491432 | YH2 | 75 | 24 | 7 | 5.5 | 8 | 4 |
| M12 | × | 1.75 | T3492503 | T3491503 | YH3 | 82 | 29 | 8.5 | 6.5 | 9 | 4 |
| M12 | × | 1.5 | T3492513 | T3491513 | YH3 | 82 | 29 | 8.5 | 6.5 | 9 | 4 |
| M12 | × | 1.25 | T3492522 | T3491522 | YH2 | 82 | 29 | 8.5 | 6.5 | 9 | 4 |
| M12 | × | 1 | T3492532 | T3491532 | YH2 | 82 | 29 | 8.5 | 6.5 | 9 | 4 |
| M14 | × | 2 | T3492543 | T3491543 | YH3 | 88 | 30 | 10.5 | 8 | 11 | 4 |
| M14 | × | 1.5 | T3492553 | T3491553 | YH3 | 88 | 30 | 10.5 | 8 | 11 | 4 |
| M16 | × | 2 | T3492603 | T3491603 | YH3 | 95 | 32 | 12.5 | 10 | 13 | 4 |
| M16 | × | 1.5 | T3492613 | T3491613 | YH3 | 95 | 32 | 12.5 | 10 | 13 | 4 |
| M18 | × | 2.5 | T3492653 | T3491653 | YH3 | 100 | 37 | 14 | 11 | 14 | 4 |
| M18 | × | 1.5 | T3492673 | T3491673 | YH3 | 100 | 37 | 14 | 11 | 14 | 4 |
| M20 | × | 2.5 | T3492703 | T3491703 | YH3 | 105 | 37 | 15 | 12 | 15 | 4 |
| M20 | × | 1.5 | T3492723 | T3491723 | YH3 | 105 | 37 | 15 | 12 | 15 | 4 |

►Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | ○ | ○ | ○ | ○ | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400Rm | 1050Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | ○ | ○ | | | | | | | | | | | | | | |





# YG TAP GENERAL

1.5P **T1323** SERIES
5.0P **T1303** SERIES

## M I-SP LONG SHANK STRAIGHT FLUTE TAPS for GENERAL PURPOSE
## I-SP 长柄普通螺旋槽丝锥

► Suitable for tapping Blind & Through holes in Carbon Steels and Alloy Steels, where chips are produced in a continuous coil state.

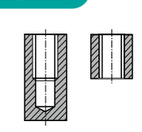
►适用于碳钢和合金钢的盲孔和通孔加工, 优异的排屑.

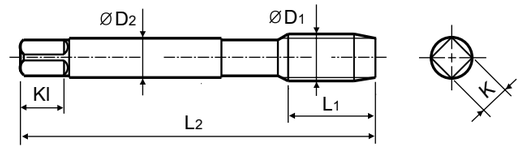
1.5P
5.0P

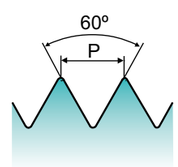
up to M8 : Male Center

Long Shank

Hole type 孔类型
2.0×D






Material groups **GS** | HSS-E | LONG | YH | 60° | 1.5P/5.0P | Homo

p. B65

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| TAPPING ER CHUCK | D215 -220 |
| TAPPING CHUCK | D221 -228 |
| ONE STEP TAPPING CHUCK | D211 -213 |

Tap Limits: p.B230

► 100mm

Unit(单位) : mm

| SIZE 尺寸 | | Pitch 牙距 | EDP No. 型号 | | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ØD1 | | P | 1.5P | 5.0P | | L2 | L1 | ØD2 | K | Kl | |
| M3 | × | 0.5 | T1323201 | T1303201 | YH1 | 100 | 11 | 4 | 3.2 | 6 | 3 |
| M4 | × | 0.7 | T1323242 | T1303242 | YH2 | 100 | 13 | 5 | 4 | 7 | 3 |
| M5 | × | 0.8 | T1323282 | T1303282 | YH2 | 100 | 16 | 5.5 | 4.5 | 7 | 3 |
| M6 | × | 1 | T1323312 | T1303312 | YH2 | 100 | 19 | 6 | 4.5 | 7 | 3 |
| M8 | × | 1.25 | T1323362 | T1303362 | YH2 | 100 | 22 | 6.2 | 5 | 8 | 4 |
| M10 | × | 1.5 | T1323422 | T1303422 | YH2 | 100 | 24 | 7 | 5.5 | 8 | 4 |
| M10 | × | 1.25 | T1323432 | T1303432 | YH2 | 100 | 24 | 7 | 5.5 | 8 | 4 |
| M12 | × | 1.75 | T1323502 | T1303502 | YH2 | 100 | 29 | 8.5 | 6.5 | 9 | 4 |
| M12 | × | 1.5 | T1323512 | T1303512 | YH2 | 100 | 29 | 8.5 | 6.5 | 9 | 4 |
| M12 | × | 1.25 | T1323522 | T1303522 | YH2 | 100 | 29 | 8.5 | 6.5 | 9 | 4 |
| M14 | × | 2 | T1323542 | T1303542 | YH2 | 100 | 30 | 10.5 | 8 | 11 | 4 |
| M14 | × | 1.5 | T1323552 | T1303552 | YH2 | 100 | 30 | 10.5 | 8 | 11 | 4 |

►Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | ○ | ○ | ○ | ○ | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400Rm | 1050Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | ○ | ○ | | | | | | | | | | | | | | |

# YG TAP GENERAL

1.5P **T1324** SERIES
5.0P **T1304** SERIES

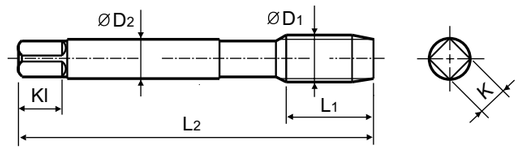
## M I-SP LONG SHANK STRAIGHT FLUTE TAPS for GENERAL PURPOSE
## I-SP 长柄普通螺旋槽丝锥

► Suitable for tapping Blind & Through holes in Carbon Steels and Alloy Steels, where chips are produced in a continuous coil state.

► 适用于碳钢和合金钢的盲孔和通孔加工, 优异的排屑.

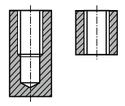
1.5P
5.0P

up to M8 : Male Center

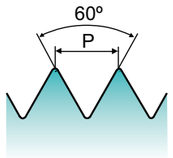



**Long Shank**

Hole type 孔类型



2.0×D




Material groups **GS** | HSS-E | LONG | YH | 60° | 1.5P/5.0P | Homo

p. B65

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| ◎ TAPPING ER CHUCK | | D215 -220 |
| ◎ TAPPING CHUCK | | D221 -228 |
| ONE STEP TAPPING CHUCK | | D211 -213 |

► **120mm**

Tap Limits: p.B230

Unit(单位) : mm

| SIZE 尺寸 | | Pitch 牙距 | EDP No. 型号 | | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ØD1 | | P | 1.5P | 5.0P | | L2 | L1 | ØD2 | K | Kl | |
| M3 | × | 0.5 | T1324201 | T1304201 | YH1 | 120 | 11 | 4 | 3.2 | 6 | 3 |
| M4 | × | 0.7 | T1324242 | T1304242 | YH2 | 120 | 13 | 5 | 4 | 7 | 3 |
| M5 | × | 0.8 | T1324282 | T1304282 | YH2 | 120 | 16 | 5.5 | 4.5 | 7 | 3 |
| M6 | × | 1 | T1324312 | T1304312 | YH2 | 120 | 19 | 6 | 4.5 | 7 | 3 |
| M8 | × | 1.25 | T1324362 | T1304362 | YH2 | 120 | 22 | 6.2 | 5 | 8 | 4 |
| M10 | × | 1.5 | T1324422 | T1304422 | YH2 | 120 | 24 | 7 | 5.5 | 8 | 4 |
| M10 | × | 1.25 | T1324432 | T1304432 | YH2 | 120 | 24 | 7 | 5.5 | 8 | 4 |
| M12 | × | 1.75 | T1324502 | T1304502 | YH2 | 120 | 29 | 8.5 | 6.5 | 9 | 4 |
| M12 | × | 1.5 | T1324512 | T1304512 | YH2 | 120 | 29 | 8.5 | 6.5 | 9 | 4 |
| M12 | × | 1.25 | T1324522 | T1304522 | YH2 | 120 | 29 | 8.5 | 6.5 | 9 | 4 |
| M14 | × | 2 | T1324542 | T1304542 | YH2 | 120 | 30 | 10.5 | 8 | 11 | 4 |
| M14 | × | 1.5 | T1324552 | T1304552 | YH2 | 120 | 30 | 10.5 | 8 | 11 | 4 |
| M16 | × | 2 | T1324602 | T1304602 | YH2 | 120 | 32 | 12.5 | 10 | 13 | 4 |
| M16 | × | 1.5 | T1324612 | T1304612 | YH2 | 120 | 32 | 12.5 | 10 | 13 | 4 |

►Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | ○ | ○ | ○ | ○ | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400Rm | 1050Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | ○ | ○ | | | | | | | | | | | | | | |





# YG TAP GENERAL

1.5P **T1325** SERIES
5.0P **T1305** SERIES

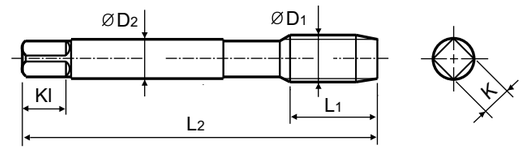
## M I-SP LONG SHANK STRAIGHT FLUTE TAPS for GENERAL PURPOSE
## I-SP 长柄普通螺旋槽丝锥

► Suitable for tapping Blind & Through holes in Carbon Steels and Alloy Steels, where chips are produced in a continuous coil state.

► 适用于碳钢和合金钢的盲孔和通孔加工, 优异的排屑.

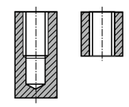
1.5P
5.0P

up to M8 : Male Center

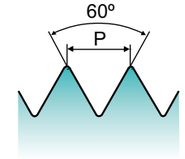



**Long Shank**

Hole type 孔类型



2.0×D




Material groups **GS** | HSS-E | LONG | YH | 60° | 1.5P/5.0P | Homo

p. B65

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| ◎ TAPPING ER CHUCK | | D215 -220 |
| ◎ TAPPING CHUCK | | D221 -228 |
| ONE STEP TAPPING CHUCK | | D211 -213 |

► **150mm**

Tap Limits: p.B230

Unit(单位) : mm

| SIZE 尺寸 | | Pitch 牙距 | EDP No. 型号 | | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ØD1 | | P | 1.5P | 5.0P | | L2 | L1 | ØD2 | K | Kl | |
| M3 | × | 0.5 | T1325201 | T1305201 | YH1 | 150 | 11 | 4 | 3.2 | 6 | 3 |
| M4 | × | 0.7 | T1325242 | T1305242 | YH2 | 150 | 13 | 5 | 4 | 7 | 3 |
| M5 | × | 0.8 | T1325282 | T1305282 | YH2 | 150 | 16 | 5.5 | 4.5 | 7 | 3 |
| M6 | × | 1 | T1325312 | T1305312 | YH2 | 150 | 19 | 6 | 4.5 | 7 | 3 |
| M8 | × | 1.25 | T1325362 | T1305362 | YH2 | 150 | 22 | 6.2 | 5 | 8 | 4 |
| M10 | × | 1.5 | T1325422 | T1305422 | YH2 | 150 | 24 | 7 | 5.5 | 8 | 4 |
| M10 | × | 1.25 | T1325432 | T1305432 | YH2 | 150 | 24 | 7 | 5.5 | 8 | 4 |
| M12 | × | 1.75 | T1325502 | T1305502 | YH2 | 150 | 29 | 8.5 | 6.5 | 9 | 4 |
| M12 | × | 1.5 | T1325512 | T1305512 | YH2 | 150 | 29 | 8.5 | 6.5 | 9 | 4 |
| M12 | × | 1.25 | T1325522 | T1305522 | YH2 | 150 | 29 | 8.5 | 6.5 | 9 | 4 |
| M14 | × | 2 | T1325542 | T1305542 | YH2 | 150 | 30 | 10.5 | 8 | 11 | 4 |
| M14 | × | 1.5 | T1325552 | T1305552 | YH2 | 150 | 30 | 10.5 | 8 | 11 | 4 |
| M16 | × | 2 | T1325602 | T1305602 | YH2 | 150 | 32 | 12.5 | 10 | 13 | 4 |
| M16 | × | 1.5 | T1325612 | T1305612 | YH2 | 150 | 32 | 12.5 | 10 | 13 | 4 |
| M18 | × | 2.5 | T1325653 | T1305653 | YH3 | 150 | 37 | 14 | 11 | 14 | 4 |
| M18 | × | 1.5 | T1325672 | T1305672 | YH2 | 150 | 37 | 14 | 11 | 14 | 4 |
| M20 | × | 2.5 | T1325703 | T1305703 | YH3 | 150 | 37 | 15 | 12 | 15 | 4 |
| M20 | × | 1.5 | T1325723 | T1305723 | YH3 | 150 | 37 | 15 | 12 | 15 | 4 |
| M22 | × | 2.5 | T1325743 | T1305743 | YH3 | 150 | 38 | 17 | 13 | 16 | 4 |
| M22 | × | 1.5 | T1325763 | T1305763 | YH3 | 150 | 38 | 17 | 13 | 16 | 4 |
| M24 | × | 3 | T1325783 | T1305783 | YH3 | 150 | 45 | 19 | 15 | 18 | 4 |
| M24 | × | 1.5 | T1325803 | T1305803 | YH3 | 150 | 45 | 19 | 15 | 18 | 4 |

►Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | ○ | ○ | ○ | ○ | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400Rm | 1050Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | ○ | ○ | | | | | | | | | | | | | | |

# YG TAP GENERAL

1.5P **T1326 SERIES**
5.0P **T1306 SERIES**

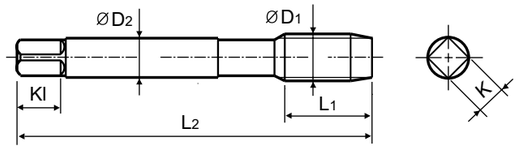
## M I-SP LONG SHANK STRAIGHT FLUTE TAPS for GENERAL PURPOSE
## I-SP 长柄普通螺旋槽丝锥

► Suitable for tapping Blind & Through holes in Carbon Steels and Alloy Steels, where chips are produced in a continuous coil state.

►适用于碳钢和合金钢的盲孔和通孔加工, 优异的排屑.

1.5P
5.0P

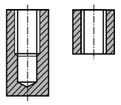
up to M8 : Male Center

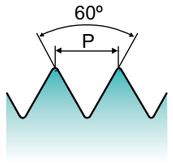



**Long Shank**

Hole type 孔类型

2.0×D






Material groups **GS** | HSS-E | LONG | YH | 60° | 1.5P/5.0P | Homo

p. B65

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| TAPPING ER CHUCK | D215 -220 |
| TAPPING CHUCK | D221 -228 |
| ONE STEP TAPPING CHUCK | D211 -213 |

### ► 200mm

Tap Limits: p.B230

Unit(单位) : mm

| SIZE 尺寸 | Pitch 牙距 | EDP No. 型号 | | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|---|
| ØD1 | P | 1.5P | 5.0P | | L2 | L1 | ØD2 | K | Kl | |
| M8 × | 1.25 | T1326362 | T1306362 | YH2 | 200 | 22 | 6.2 | 5 | 8 | 4 |
| M10 × | 1.5 | T1326422 | T1306422 | YH2 | 200 | 24 | 7 | 5.5 | 8 | 4 |
| M10 × | 1.25 | T1326432 | T1306432 | YH2 | 200 | 24 | 7 | 5.5 | 8 | 4 |
| M12 × | 1.75 | T1326502 | T1306502 | YH2 | 200 | 29 | 8.5 | 6.5 | 9 | 4 |
| M12 × | 1.5 | T1326512 | T1306512 | YH2 | 200 | 29 | 8.5 | 6.5 | 9 | 4 |
| M12 × | 1.25 | T1326522 | T1306522 | YH2 | 200 | 29 | 8.5 | 6.5 | 9 | 4 |
| M14 × | 2 | T1326542 | T1306542 | YH2 | 200 | 30 | 10.5 | 8 | 11 | 4 |
| M14 × | 1.5 | T1326552 | T1306552 | YH2 | 200 | 30 | 10.5 | 8 | 11 | 4 |
| M16 × | 2 | T1326602 | T1306602 | YH2 | 200 | 32 | 12.5 | 10 | 13 | 4 |
| M16 × | 1.5 | T1326612 | T1306612 | YH2 | 200 | 32 | 12.5 | 10 | 13 | 4 |
| M18 × | 2.5 | T1326653 | T1306653 | YH3 | 200 | 37 | 14 | 11 | 14 | 4 |
| M18 × | 1.5 | T1326672 | T1306672 | YH2 | 200 | 37 | 14 | 11 | 14 | 4 |
| M20 × | 2.5 | T1326703 | T1306703 | YH3 | 200 | 37 | 15 | 12 | 15 | 4 |
| M20 × | 1.5 | T1326723 | T1306723 | YH3 | 200 | 37 | 15 | 12 | 15 | 4 |
| M22 × | 2.5 | T1326743 | T1306743 | YH3 | 200 | 38 | 17 | 13 | 16 | 4 |
| M22 × | 1.5 | T1326763 | T1306763 | YH3 | 200 | 38 | 17 | 13 | 16 | 4 |
| M24 × | 3 | T1326783 | T1306783 | YH3 | 200 | 45 | 19 | 15 | 18 | 4 |
| M24 × | 1.5 | T1326803 | T1306803 | YH3 | 200 | 45 | 19 | 15 | 18 | 4 |

►Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | ○ | ○ | ○ | ○ | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | ○ | ○ | | | | | | | | | | | | | | |





# YG TAP GENERAL

1.5P **T1331 SERIES** **T1330 SERIES**
5.0P **T1341 SERIES** **T1340 SERIES**

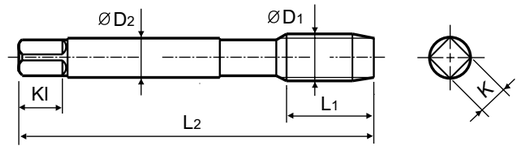
## W I-SP LONG SHANK STRAIGHT FLUTE TAPS for GENERAL PURPOSE
## I-SP 长柄普通螺旋槽丝锥

► Suitable for tapping Blind & Through holes in Carbon Steels and Alloy Steels, where chips are produced in a continuous coil state.

►适用于碳钢和合金钢的盲孔和通孔加工, 优异的排屑.

1.5P
5.0P

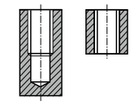
up to W5/16 : Male Center

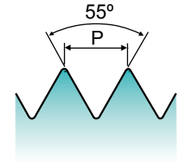



**Long Shank**

Hole type 孔类型

2.0×D






Material groups **GS** | HSS-E | LONG | JIS II | 55° | 1.5P/5.0P | Homo

p. B65

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| TAPPING ER CHUCK | D215 -220 |
| TAPPING CHUCK | D221 -228 |
| ONE STEP TAPPING CHUCK | D211 -213 |

### ► 100mm

Unit(单位) : mm

| SIZE 尺寸 | TPI 牙距 | EDP No. 型号 | | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|---|
| ØD1 | | 1.5P | 5.0P | | L2 | L1 | ØD2 | K | Kl | |
| W1/8 - | 40 | T1331202 | T1330202 | JIS II | 100 | 11 | 4 | 3.2 | 6 | 3 |
| W3/16 - | 24 | T1331322 | T1330322 | JIS II | 100 | 16 | 5.5 | 4.5 | 7 | 3 |
| W1/4 - | 20 | T1331402 | T1330402 | JIS II | 100 | 19 | 6 | 4.5 | 7 | 3 |
| W5/16 - | 18 | T1331442 | T1330442 | JIS II | 100 | 22 | 6.1 | 5 | 8 | 4 |
| W3/8 - | 16 | T1331482 | T1330482 | JIS II | 100 | 24 | 7 | 5.5 | 8 | 4 |
| W7/16 - | 14 | T1331522 | T1330522 | JIS II | 100 | 25 | 8 | 6 | 9 | 4 |
| W1/2 - | 12 | T1331562 | T1330562 | JIS II | 100 | 29 | 9 | 7 | 10 | 4 |

### ► 120mm

Unit(单位) : mm

| SIZE 尺寸 | TPI 牙距 | EDP No. 型号 | | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|---|
| ØD1 | | 1.5P | 5.0P | | L2 | L1 | ØD2 | K | Kl | |
| W1/8 - | 40 | T1341202 | T1340202 | JIS II | 120 | 11 | 4 | 3.2 | 6 | 3 |
| W3/16 - | 24 | T1341322 | T1340322 | JIS II | 120 | 16 | 5.5 | 4.5 | 7 | 3 |
| W1/4 - | 20 | T1341402 | T1340402 | JIS II | 120 | 19 | 6 | 4.5 | 7 | 3 |
| W5/16 - | 18 | T1341442 | T1340442 | JIS II | 120 | 22 | 6.1 | 5 | 8 | 4 |
| W3/8 - | 16 | T1341482 | T1340482 | JIS II | 120 | 24 | 7 | 5.5 | 8 | 4 |
| W7/16 - | 14 | T1341522 | T1340522 | JIS II | 120 | 25 | 8 | 6 | 9 | 4 |
| W1/2 - | 12 | T1341562 | T1340562 | JIS II | 120 | 29 | 9 | 7 | 10 | 4 |
| W9/16 - | 12 | T1341602 | T1340602 | JIS II | 120 | 30 | 10.5 | 8 | 11 | 4 |
| W5/8 - | 11 | T1341642 | T1340642 | JIS II | 120 | 32 | 12 | 9 | 12 | 4 |

►Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | ○ | ○ | ○ | ○ | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | ○ | ○ | | | | | | | | | | | | | | |

# YG TAP GENERAL

1.5P **T1351** SERIES | **T1350** SERIES
5.0P **T1361** SERIES | **T1360** SERIES

## W I-SP LONG SHANK STRAIGHT FLUTE TAPS for GENERAL PURPOSE
## I-SP 长柄普通螺旋槽丝锥

▶ Suitable for tapping Blind & Through holes in Carbon Steels and Alloy Steels, where chips are produced in a continuous coil state.

▶ 适用于碳钢和合金钢的盲孔和通孔加工, 优异的排屑.

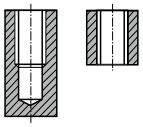
1.5P
5.0P

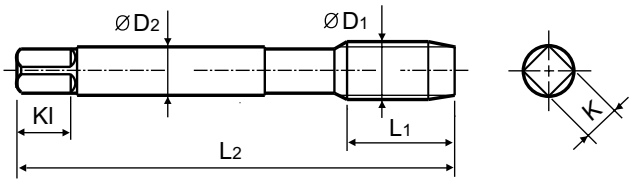
up to W5/16 : Male Center

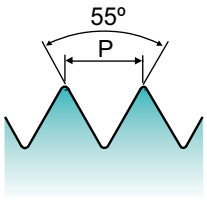
**Long Shank**

**Hole type** 孔类型

2.0×D






Material groups **GS** | HSS-E | LONG | JIS II | 55° | 1.5P/5.0P | Homo

p. B65

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| TAPPING ER CHUCK | D215 -220 |
| TAPPING CHUCK | D221 -228 |
| ONE STEP TAPPING CHUCK | D211 -213 |

### ▶ 150mm

Unit(单位) : mm

| SIZE 尺寸 ØD1 | TPI 牙距 | EDP No. 型号 1.5P | EDP No. 型号 5.0P | Limit 精度 | Overall Length 全长 L2 | Thread Length 螺纹长 L1 | Shank Diameter 柄径 ØD2 | Square Size 方块 尺寸 K | Square Length 方块 长度 Kl | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|---|
| W1/8 | - 40 | T1351202 | T1350202 | JIS II | 150 | 11 | 4 | 3.2 | 6 | 3 |
| W3/16 | - 24 | T1351322 | T1350322 | JIS II | 150 | 16 | 5.5 | 4.5 | 7 | 3 |
| W1/4 | - 20 | T1351402 | T1350402 | JIS II | 150 | 19 | 6 | 4.5 | 7 | 3 |
| W5/16 | - 18 | T1351442 | T1350442 | JIS II | 150 | 22 | 6.1 | 5 | 8 | 4 |
| W3/8 | - 16 | T1351482 | T1350482 | JIS II | 150 | 24 | 7 | 5.5 | 8 | 4 |
| W7/16 | - 14 | T1351522 | T1350522 | JIS II | 150 | 25 | 8 | 6 | 9 | 4 |
| W1/2 | - 12 | T1351562 | T1350562 | JIS II | 150 | 29 | 9 | 7 | 10 | 4 |
| W9/16 | - 12 | T1351602 | T1350602 | JIS II | 150 | 30 | 10.5 | 8 | 11 | 4 |
| W5/8 | - 11 | T1351642 | T1350642 | JIS II | 150 | 32 | 12 | 9 | 12 | 4 |
| W3/4 | - 10 | T1351702 | T1350702 | JIS II | 150 | 37 | 14 | 11 | 14 | 4 |
| W7/8 | - 9 | T1351742 | T1350742 | JIS II | 150 | 38 | 17 | 13 | 16 | 4 |
| W1″ | - 8 | T1351782 | T1350782 | JIS II | 150 | 45 | 20 | 15 | 18 | 4 |

### ▶ 200mm

Unit(单位) : mm

| SIZE 尺寸 ØD1 | TPI 牙距 | EDP No. 型号 1.5P | EDP No. 型号 5.0P | Limit 精度 | Overall Length 全长 L2 | Thread Length 螺纹长 L1 | Shank Diameter 柄径 ØD2 | Square Size 方块 尺寸 K | Square Length 方块 长度 Kl | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|---|
| W3/8 | - 16 | T1361482 | T1360482 | JIS II | 200 | 24 | 7 | 5.5 | 8 | 4 |
| W7/16 | - 14 | T1361522 | T1360522 | JIS II | 200 | 25 | 8 | 6 | 9 | 4 |
| W1/2 | - 12 | T1361562 | T1360562 | JIS II | 200 | 29 | 9 | 7 | 10 | 4 |
| W9/16 | - 12 | T1361602 | T1360602 | JIS II | 200 | 30 | 10.5 | 8 | 11 | 4 |
| W5/8 | - 11 | T1361642 | T1360642 | JIS II | 200 | 32 | 12 | 9 | 12 | 4 |
| W3/4 | - 10 | T1361702 | T1360702 | JIS II | 200 | 37 | 14 | 11 | 14 | 4 |
| W7/8 | - 9 | T1361742 | T1360742 | JIS II | 200 | 38 | 17 | 13 | 16 | 4 |
| W1″ | - 8 | T1361782 | T1360782 | JIS II | 200 | 45 | 20 | 15 | 18 | 4 |

▶ Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | ○ | ○ | ○ | ○ | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400Rm | 1050Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | ○ | ○ | | | | | | | | | | | | | | |

Leading Through Innovation

HSS-E

# YG TAP STEEL

- For Steel Materials but also other Long Chip Forming Materials
- 独

# SELECTION GUIDE
## 选用指南

YG THREADING TOOLS

## HSS-E
# YG TAP STEEL

For Steel Materials but also other
Long Chip Forming Materials

| | | | | |
|---|---|---|---|---|
| HOLE TYPE 孔类型 | | Max. 2.5xD Blind Hole 盲孔 | | Max. 3.0xD Through Hole 通孔 |
| TOOL MATERIAL 刀具材料 | | HSS-E | | |
| CHAMFER LEAD ACC. TO DIN2197 倒角长度 | | 2.5P | 2.5P | 5.0P |
| FLUTE TYPE 槽型 | | Spiral Flute 螺旋 | Spiral Flute 螺旋 | Spiral Point 螺尖 |
| SPIRAL FLUTE ANGLE 螺旋角 | | R40 | R40 | - |
| SERIES NO. 系列号 (page 页数) | JIS Type | I | J | I |
| | M/MF | T1151 (p. B133) | T1131 (p. B134) | TW201 (p. B135) |
| | UNC/F | | | |
| | W | | | |
| | M-LH W-LH | | | |
| | PIPE TAPS | | | |
| SURFACE TREATMENT 表面处理 | | Steam Homo | Steam Homo | TiAlN |
| MODEL 模型 | | | | |

Please visit globalyg1.com/mat for material search

◎ : Excellent (优秀) ○ : Good (良好)

| ISO 公制 | VDI 3323 | Material Description 材料描述 | Composition / Structure / Heat Treatment 成分 / 组织 / 热处理 | | HB 布氏硬度 | HRc 硬度 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | About 0.15% C | Annealed | 125 | | ◎ | 8~13 | ○ | 8~13 | ○ 20~25 |
| | 2 | | About 0.45% C | Annealed | 190 | 13 | ◎ | 7~12 | ◎ | 7~12 | ○ 15~20 |
| | 3 | | About 0.45% C | Quenched & Tempered | 250 | 25 | ◎ | 7~12 | ◎ | 7~12 | ◎ 15~20 |
| | 4 | | About 0.75% C | Annealed | 270 | 28 | ○ | 7~12 | ◎ | 7~12 | ◎ 15~20 |
| | 5 | | About 0.75% C | Quenched & Tempered | 300 | 32 | ○ | 7~12 | ◎ | 7~12 | ◎ 15~20 |
| | 6 | Low alloy steel | | Annealed | 180 | 10 | ○ | 7~12 | ◎ | 7~12 | ○ 15~20 |
| | 7 | | | Quenched & Tempered | 275 | 29 | ○ | 7~12 | ◎ | 7~12 | ○ 15~20 |
| | 8 | | | Quenched & Tempered | 300 | 32 | ○ | 3~5 | ○ | 3~5 | ○ 10~15 |
| | 9 | | | Quenched & Tempered | 350 | 38 | | | | | |
| | 10 | High alloyed steel, and tool steel | | Annealed | 200 | 15 | | | | | ○ 10~15 |
| | 11 | | | Quenched & Tempered | 325 | 35 | | | | | |
| M | 12 | Stainless steel | Ferritic / Martensitic | Annealed | 200 | 15 | ○ | 5~8 | ○ | 5~8 | |
| | 13 | | Martensitic | Quenched & Tempered | 240 | 23 | | | | | |
| | 14 | | Austenitic | | 180 | 10 | | | | | |
| K | 15 | Grey cast iron | Pearlitic / ferritic | | 180 | 10 | | | | | |
| | 16 | | Pearlitic (Martensitic) | | 260 | 26 | | | | | |
| | 17 | Nodular cast iron | Ferritic | | 160 | 3 | | | | | |
| | 18 | | Pearlitic | | 250 | 25 | | | | | |
| | 19 | Malleable cast iron | Ferritic | | 130 | | | | | | |
| | 20 | | Pearlitic | | 230 | 21 | | | | | |
| N | 21 | Aluminum-wrought alloy | Not Curable | | 60 | | ○ | 10~20 | ○ | 10~20 | |
| | 22 | | Curable | Hardened | 100 | | ○ | 10~20 | ○ | 10~20 | |
| | 23 | Aluminum-cast, alloyed | ≤ 12% Si, Not Curable | | 75 | | ○ | 10~15 | ○ | 10~15 | |
| | 24 | | ≤ 12% Si, Curable | Hardened | 90 | | | | | | |
| | 25 | | > 12% Si, Not Curable | | 130 | | | | | | |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | Cutting Alloys, PB>1% | | 110 | | ○ | 6~11 | ○ | 6~11 | |
| | 27 | | CuZn, CuSnZn (Brass) | | 90 | | ○ | 6~20 | ○ | 6~20 | |
| | 28 | | CuSn, lead-free copper and electrolytic copper | | 100 | | | | | | |
| | 29 | Non Metallic Materials | Duroplastic, Fiber Reinforced Plastic | | | | | | | | |
| | 30 | | Rubber, Wood, etc. | | | | | | | | |
| S | 31 | Heat Resistant Super Alloys | Fe Based | Annealed | 200 | 15 | | | | | |
| | 32 | | | Cured | 280 | 30 | | | | | |
| | 33 | | Ni or Co Based | Annealed | 250 | 25 | | | | | |
| | 34 | | | Cured | 350 | 38 | | | | | |
| | 35 | | | Cast | 320 | 34 | | | | | |
| | 36 | Titanium Alloys | Pure Titanium | | 400 Rm | | | | | | |
| | 37 | | Alpha + Beta Alloys | Hardened | 1050 Rm | | | | | | |
| H | 38 | Hardened steel | | Hardened | 550 | 55 | | | | | |
| | 39 | | | Hardened | 630 | 60 | | | | | |
| | 40 | Chilled Cast Iron | | Cast | 400 | 42 | | | | | |
| | 41 | Hardened Cast Iron | | Hardened | 550 | 55 | | | | | |



CARBIDE
HSS
THREAD MILLS
SYNCHRO TAPS
COMBO TAPS
YG TAP GENERAL
YG TAP STEEL
YG TAP HARDENED
YG TAP INOX
YG TAP CAST IRON
YG TAP ALU
YG TAP Ti Ni
YG TAP FORMING
STI TAPS
PIPE TAPS
SKS21 HAND TAPS
SKS21 PIPE TAPS
TECHNICAL DATA

YG TAP STEEL

T1151 SERIES

# M I-SP SPIRAL FLUTE TAPS for SOFT STRUCTURAL STEELS
## I-SP 软钢用螺旋槽丝锥

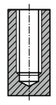
► Suitable for tapping Blind holes in Soft Structural Steels such as SS41, S25C and other low carbon Steels.

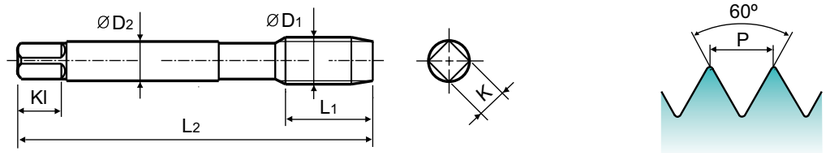
▶适用于类似SS41, S25C等软钢及低碳钢的盲孔加工

up to M7 : Male Center

Hole type 孔类型

2.5×D






Material groups GV | HSS-E | I | YH | 60° | 2.5P | R40 | Homo

p. B132

Tap Limits: p.B230

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| ◎ | TAPPING ER CHUCK | D215 -220 |
| ◎ | TAPPING CHUCK | D221 -228 |
| | ONE STEP TAPPING CHUCK | D211 -213 |

Unit(单位) : mm

| SIZE 尺寸 ØD1 | | Pitch 牙距 P | EDP No. 型号 | Limit 精度 | Overall Length 全长 L2 | Thread Length 螺纹长 L1 | Shank Diameter 柄径 ØD2 | Square Size 方块 尺寸 K | Square Length 方块 长度 Kl | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|---|
| M3 | × | 0.5 | **T1151202** | YH2 | 46 | 11 | 4 | 3.2 | 6 | 3 |
| M3.5 | × | 0.6 | **T1151222** | YH2 | 48 | 13 | 4 | 3.2 | 6 | 3 |
| M4 | × | 0.7 | **T1151242** | YH2 | 52 | 13 | 5 | 4 | 7 | 3 |
| M5 | × | 0.8 | **T1151282** | YH2 | 60 | 16 | 5.5 | 4.5 | 7 | 3 |
| M6 | × | 1 | **T1151312** | YH2 | 62 | 19 | 6 | 4.5 | 7 | 3 |
| M8 | × | 1.25 | **T1151362** | YH2 | 70 | 22 | 6.2 | 5 | 8 | 3 |
| M10 | × | 1.5 | **T1151422** | YH2 | 75 | 24 | 7 | 5.5 | 8 | 3 |
| M10 | × | 1.25 | **T1151432** | YH2 | 75 | 24 | 7 | 5.5 | 8 | 3 |
| M12 | × | 1.75 | **T1151502** | YH2 | 82 | 29 | 8.5 | 6.5 | 9 | 3 |
| M12 | × | 1.5 | **T1151512** | YH2 | 82 | 29 | 8.5 | 6.5 | 9 | 3 |
| M12 | × | 1.25 | **T1151522** | YH2 | 82 | 29 | 8.5 | 6.5 | 9 | 3 |
| M14 | × | 2 | **T1151542** | YH2 | 88 | 30 | 10.5 | 8 | 11 | 3 |
| M14 | × | 1.5 | **T1151552** | YH2 | 88 | 30 | 10.5 | 8 | 11 | 3 |
| M16 | × | 2 | **T1151602** | YH2 | 95 | 32 | 12.5 | 10 | 13 | 3 |
| M16 | × | 1.5 | **T1151612** | YH2 | 95 | 32 | 12.5 | 10 | 13 | 3 |
| M18 | × | 2.5 | **T1151653** | YH3 | 100 | 37 | 14 | 11 | 14 | 4 |
| M18 | × | 1.5 | **T1151672** | YH2 | 100 | 37 | 14 | 11 | 14 | 4 |
| M20 | × | 2.5 | **T1151703** | YH3 | 105 | 37 | 15 | 12 | 15 | 4 |
| M20 | × | 1.5 | **T1151723** | YH3 | 105 | 37 | 15 | 12 | 15 | 4 |
| M22 | × | 2.5 | **T1151743** | YH3 | 115 | 38 | 17 | 13 | 16 | 4 |
| M22 | × | 1.5 | **T1151763** | YH3 | 115 | 38 | 17 | 13 | 16 | 4 |
| M24 | × | 3 | **T1151783** | YH3 | 120 | 45 | 19 | 15 | 18 | 4 |
| M24 | × | 1.5 | **T1151803** | YH3 | 120 | 45 | 19 | 15 | 18 | 4 |

► Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | | | | ○ | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | ○ | ○ | | | | | | | | | | | | | | |

# YG TAP STEEL

**T1131** SERIES

## M I-SP SPIRAL FLUTE TAPS for SOFT STRUCTURAL STEELS
## I-SP 软钢用螺旋槽丝锥

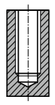
► Suitable for tapping Blind holes in Soft Structural Steels such as SS41, S25C and other low carbon Steels.

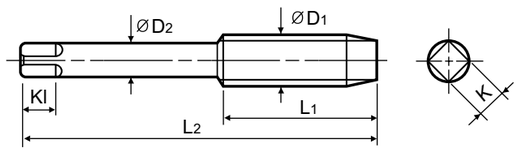
► 适用于类似SS41, S25C等软碳钢及低钢的盲孔加工

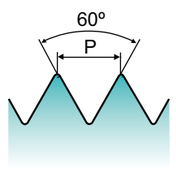
up to M7 : Male Center

Hole type 孔类型

2.5×D






Material groups **GV** | HSS-E | J | YH | 60° | 2.5P | R40 | Homo

p. B132

Tap Limits: p.B230

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| ◎ | TAPPING ER CHUCK | D215 -220 |
| ◎ | TAPPING CHUCK | D221 -228 |
| | ONE STEP TAPPING CHUCK | D211 -213 |

Unit(单位) : mm

| SIZE 尺寸 | | Pitch 牙距 | | EDP No. 型号 | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ØD1 | | P | | | | L2 | L1 | ØD2 | K | Kl | |
| M3 | × | 0.5 | | **T1131202** | YH2 | 46 | 18 | 4 | 3.2 | 6 | 3 |
| M3.5 | × | 0.6 | | **T1131222** | YH2 | 48 | 18 | 4 | 3.2 | 6 | 3 |
| M4 | × | 0.7 | | **T1131242** | YH2 | 52 | 20 | 5 | 4 | 7 | 3 |
| M5 | × | 0.8 | | **T1131282** | YH2 | 60 | 22 | 5.5 | 4.5 | 7 | 3 |
| M6 | × | 1 | | **T1131312** | YH2 | 62 | 24 | 6 | 4.5 | 7 | 3 |
| M8 | × | 1.25 | | **T1131362** | YH2 | 70 | 30 | 6.2 | 5 | 8 | 3 |
| M10 | × | 1.5 | | **T1131422** | YH2 | 75 | 32 | 7 | 5.5 | 8 | 3 |
| M10 | × | 1.25 | | **T1131432** | YH2 | 75 | 32 | 7 | 5.5 | 8 | 3 |
| M12 | × | 1.75 | | **T1131502** | YH2 | 82 | 38 | 8.5 | 6.5 | 9 | 3 |
| M12 | × | 1.5 | | **T1131512** | YH2 | 82 | 38 | 8.5 | 6.5 | 9 | 3 |
| M12 | × | 1.25 | | **T1131522** | YH2 | 80 | 38 | 8.5 | 6.5 | 9 | 3 |
| M14 | × | 2 | | **T1131542** | YH2 | 88 | 42 | 10.5 | 8 | 11 | 3 |
| M14 | × | 1.5 | | **T1131552** | YH2 | 88 | 42 | 10.5 | 8 | 11 | 3 |
| M16 | × | 2 | | **T1131602** | YH2 | 95 | 45 | 12.5 | 10 | 13 | 3 |
| M16 | × | 1.5 | | **T1131612** | YH2 | 95 | 45 | 12.5 | 10 | 13 | 3 |
| M18 | × | 2.5 | | **T1131653** | YH3 | 100 | 48 | 14 | 11 | 14 | 4 |
| M18 | × | 1.5 | | **T1131672** | YH2 | 95 | 45 | 14 | 11 | 14 | 4 |
| M20 | × | 2.5 | | **T1131703** | YH3 | 105 | 50 | 15 | 12 | 15 | 4 |
| M20 | × | 1.5 | | **T1131723** | YH3 | 95 | 45 | 15 | 12 | 15 | 4 |
| M22 | × | 2.5 | | **T1131743** | YH3 | 115 | 55 | 17 | 13 | 16 | 4 |
| M22 | × | 1.5 | | **T1131763** | YH3 | 95 | 45 | 17 | 13 | 16 | 4 |
| M24 | × | 3 | | **T1131783** | YH3 | 120 | 58 | 19 | 15 | 18 | 4 |
| M24 | × | 1.5 | | **T1131803** | YH3 | 95 | 45 | 19 | 15 | 18 | 4 |

►Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | | | | ○ | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400Rm | 1050Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | ○ | ○ | | | | | | | | | | | | | | |





# YG TAP STEEL

**TW201** SERIES

## M SPIRAL POINT TAPS for HARD TO MACHINE MATERIALS
## 难加工材料用先端丝锥

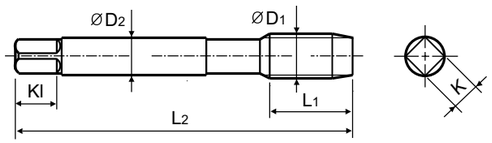
► Suitable for tapping Through holes in High Strength Steels with hardness ranging between 35~45 Rockwell “C”(HRc 35~45), such as forgings of high carbon steels and alloy steels, thermal steels and mold steels.

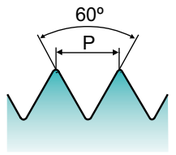
► 适用于高碳钢, 合金钢, 热钢和模具钢等硬度再HRc35~45的高硬 度钢的通孔加工.

up to M8 : Male Center

Hole type 孔类型

3.0×D




Material groups **HR** | HSS-E | I | YH | 60° | 5.0P | TiAlN

p. B132

Tap Limits: p.B230

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| ◎ | TAPPING ER CHUCK | D215 -220 |
| ◎ | TAPPING CHUCK | D221 -228 |
| | ONE STEP TAPPING CHUCK | D211 -213 |

Unit(单位) : mm

| SIZE 尺寸 | | Pitch 牙距 | | EDP No. 型号 | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ØD1 | | P | | | | L2 | L1 | ØD2 | K | Kl | |
| M3 | × | 0.5 | | **TW201203** | YH3 | 46 | 11 | 4 | 3.2 | 6 | 3 |
| M3.5 | × | 0.6 | | **TW201223** | YH3 | 48 | 13 | 4 | 3.2 | 6 | 3 |
| M4 | × | 0.7 | | **TW201243** | YH3 | 52 | 13 | 5 | 4 | 7 | 3 |
| M5 | × | 0.8 | | **TW201283** | YH3 | 60 | 16 | 5.5 | 4.5 | 7 | 3 |
| M6 | × | 1 | | **TW201313** | YH3 | 62 | 19 | 6 | 4.5 | 7 | 3 |
| M8 | × | 1.25 | | **TW201363** | YH3 | 70 | 22 | 6.2 | 5 | 8 | 3 |
| M10 | × | 1.5 | | **TW201423** | YH3 | 75 | 24 | 7 | 5.5 | 8 | 3 |
| M10 | × | 1.25 | | **TW201433** | YH3 | 75 | 24 | 7 | 5.5 | 8 | 3 |
| M12 | × | 1.75 | | **TW201503** | YH3 | 82 | 29 | 8.5 | 6.5 | 9 | 3 |
| M12 | × | 1.5 | | **TW201513** | YH3 | 82 | 29 | 8.5 | 6.5 | 9 | 3 |
| M12 | × | 1.25 | | **TW201524** | YH4 | 82 | 29 | 8.5 | 6.5 | 9 | 3 |
| M14 | × | 2 | | **TW201544** | YH4 | 88 | 30 | 10.5 | 8 | 11 | 3 |
| M14 | × | 1.5 | | **TW201553** | YH3 | 88 | 30 | 10.5 | 8 | 11 | 3 |
| M16 | × | 2 | | **TW201604** | YH4 | 95 | 32 | 12.5 | 10 | 13 | 3 |
| M16 | × | 1.5 | | **TW201613** | YH3 | 95 | 32 | 12.5 | 10 | 13 | 3 |
| M18 | × | 2.5 | | **TW201654** | YH4 | 100 | 37 | 14 | 11 | 14 | 3 |
| M18 | × | 1.5 | | **TW201674** | YH4 | 100 | 37 | 14 | 11 | 14 | 3 |
| M20 | × | 2.5 | | **TW201704** | YH4 | 105 | 37 | 15 | 12 | 15 | 3 |
| M20 | × | 1.5 | | **TW201724** | YH4 | 105 | 37 | 15 | 12 | 15 | 3 |

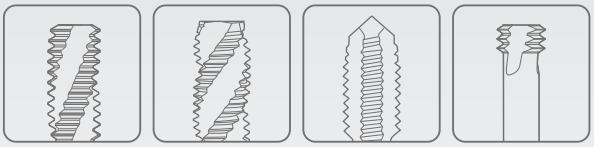
►Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ○ | ○ | ◎ | ◎ | ◎ | ○ | ○ | ○ | | ○ | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400Rm | 1050Rm | 550 | 630 | 400 | 550 |
| Recommended | | | | | | | | | | | | | | | | | | | | | |

Global Cutting Tool Leader **YG-1**



# THREADING

Leading Through Innovation

# HSS-PM

# YG TAP HARDENED

- For Hardened Steels Applications to Control the Continuous and Red-glowing Chipse
- 淬硬钢用丝锥

# SELECTION GUIDE
# 选用指南

YG THREADING TOOLS

## HSS-PM
## YG TAP HARDENED

For Hardened Steels Applications
to Control the Continuous and Red-glowing Chips
淬硬钢用丝锥

Please visit globalyg1.com/mat for material search

◎ : Excellent (优秀) ○ : Good (良好)

| | |
|---|---|
| HOLE TYPE 孔类型 | Max. 2.0xD Blind / Through Hole盲孔 / 通孔 |
| TOOL MATERIAL 刀具材料 | HSS-PM |
| CHAMFER LEAD ACC. TO DIN2197 倒角长度 | 2.5P/5.0P |
| FLUTE TYPE 槽型 | Straight Flute 直槽旋 |
| SPIRAL FLUTE ANGLE 螺旋槽夹角 | - |
| SERIES NO.系列号 (page 页数) JIS Type | I |
| M/MF | TM482 TM481 (p. B139) |
| UNC/F | |
| W | |
| M-LH W-LH | |
| PIPE TAPS | |
| SURFACE TREATMENT表面处理 | Bright |
| MODEL 模型 | |

| ISO 公制 | VDI 3323 | Material Description 材料描述 | Composition / Structure / Heat Treatment 成分 / 组织 / 热处理 | | HB 布氏硬度 | HRc 硬度 | | |
|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | About 0.15% C | Annealed | 125 | | | |
| | 2 | | About 0.45% C | Annealed | 190 | 13 | | |
| | 3 | | About 0.45% C | Quenched & Tempered | 250 | 25 | | |
| | 4 | | About 0.75% C | Annealed | 270 | 28 | ○ | 7~12 |
| | 5 | | About 0.75% C | Quenched & Tempered | 300 | 32 | ○ | 7~12 |
| | 6 | Low alloy steel | | Annealed | 180 | 10 | | |
| | 7 | | | Quenched & Tempered | 275 | 29 | ○ | 7~12 |
| | 8 | | | Quenched & Tempered | 300 | 32 | ◎ | 4~8 |
| | 9 | | | Quenched & Tempered | 350 | 38 | ◎ | 4~8 |
| | 10 | High alloyed steel, and tool steel | | Annealed | 200 | 15 | ○ | 6~9 |
| | 11 | | | Quenched & Tempered | 325 | 35 | ◎ | 6~9 |
| M | 12 | Stainless steel | Ferritic / Martensitic | Annealed | 200 | 15 | | |
| | 13 | | Martensitic | Quenched & Tempered | 240 | 23 | | |
| | 14 | | Austenitic | | 180 | 10 | | |
| K | 15 | Grey cast iron | Pearlitic / ferritic | | 180 | 10 | | |
| | 16 | | Pearlitic (Martensitic) | | 260 | 26 | | |
| | 17 | Nodular cast iron | Ferritic | | 160 | 3 | ○ | 7~12 |
| | 18 | | Pearlitic | | 250 | 25 | ○ | 7~12 |
| | 19 | Malleable cast iron | Ferritic | | 130 | | | |
| | 20 | | Pearlitic | | 230 | 21 | | |
| N | 21 | Aluminum-wrought alloy | Not Curable | | 60 | | | |
| | 22 | | Curable | Hardened | 100 | | | |
| | 23 | Aluminum-cast, alloyed | ≤ 12% Si, Not Curable | | 75 | | | |
| | 24 | | ≤ 12% Si, Curable | Hardened | 90 | | | |
| | 25 | | > 12% Si, Not Curable | | 130 | | | |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | Cutting Alloys, PB>1% | | 110 | | | |
| | 27 | | CuZn, CuSnZn (Brass) | | 90 | | | |
| | 28 | | CuSn, lead-free copper and electrolytic copper | | 100 | | | |
| | 29 | Non Metallic Materials | Duroplastic, Fiber Reinforced Plastic | | | | | |
| | 30 | | Rubber, Wood, etc. | | | | | |
| S | 31 | Heat Resistant Super Alloys | Fe Based | Annealed | 200 | 15 | | |
| | 32 | | | Cured | 280 | 30 | | |
| | 33 | | Ni or Co Based | Annealed | 250 | 25 | | |
| | 34 | | | Cured | 350 | 38 | | |
| | 35 | | | Cast | 320 | 34 | | |
| | 36 | Titanium Alloys | Pure Titanium | | 400 Rm | | | |
| | 37 | | Alpha + Beta Alloys | Hardened | 1050 Rm | | | |
| H | 38 | Hardened steel | | Hardened | 550 | 55 | | |
| | 39 | | | Hardened | 630 | 60 | | |
| | 40 | Chilled Cast Iron | | Cast | 400 | 42 | ○ | 2~4 |
| | 41 | Hardened Cast Iron | | Hardened | 550 | 55 | | |



CARBIDE
HSS
THREAD MILLS
SYNCHRO TAPS
COMBO TAPS
YG TAP GENERAL
YG TAP STEEL
YG TAP HARDENED
YG TAP INOX
YG TAP CAST IRON
YG TAP ALU
YG TAP Ti Ni
YG TAP FORMING
STI TAPS
PIPE TAPS
SKS21 HAND TAPS
SKS21 PIPE TAPS
TECHNICAL DATA

# YG TAP HARDENED

2.5P TM482 SERIES
5.0P TM481 SERIES

## M STRAIGHT FLUTE TAPS for HARD TO MACHINE MATERIALS
## 难加工材料用直槽丝锥

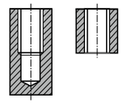
► Suitable for tapping Blind & Through holes in High Strength Steels with hardness ranging between 35~45 Rockwell (HRc 35~45), such as forgings of high carbon steels and alloy steels, thermal steels and mold steels.

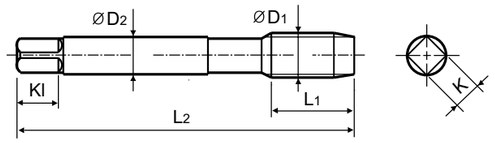
► 适用于高碳钢, 合金钢, 温钢和模具钢等硬度在HRc35~45的高强 硬度钢的盲孔和通孔加工.

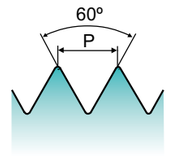
2.5P
5.0P

up to M7 : Male Center

Hole type 孔类型
2.0×D






Material groups HR | HSS-PM | I | YH | 60° | 2.5P/5.0P | Bright

p. B138

Tap Limits: p.B230

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| | TAPPING ER CHUCK | D215 -220 |
| ◎ | TAPPING CHUCK | D221 -228 |
| | ONE STEP TAPPING CHUCK | D211 -213 |

Unit(单位) : mm

| SIZE 尺寸 ØD1 | Pitch 牙距 P | EDP No. 型号 2.5P | EDP No. 型号 5.0P | Limit 精度 | Overall Length 全长 L2 | Thread Length 螺纹长 L1 | Shank Diameter 柄径 ØD2 | Square Size 方块 尺寸 K | Square Length 方块 长度 Kl | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|---|
| M3 | × 0.5 | TM482202 | TM481202 | YH2 | 46 | 11 | 4 | 3.2 | 6 | 3 |
| M4 | × 0.7 | TM482242 | TM481242 | YH2 | 52 | 13 | 5 | 4 | 7 | 3 |
| M5 | × 0.8 | TM482282 | TM481282 | YH2 | 60 | 16 | 5.5 | 4.5 | 7 | 3 |
| M6 | × 1 | TM482312 | TM481312 | YH2 | 62 | 19 | 6 | 4.5 | 7 | 3 |
| M8 | × 1.25 | TM482362 | TM481362 | YH2 | 70 | 22 | 6.2 | 5 | 8 | 4 |
| M10 | × 1.5 | TM482423 | TM481423 | YH3 | 75 | 24 | 7 | 5.5 | 8 | 4 |
| M10 | × 1.25 | TM482432 | TM481432 | YH2 | 75 | 24 | 7 | 5.5 | 8 | 4 |
| M12 | × 1.75 | TM482503 | TM481503 | YH3 | 82 | 29 | 8.5 | 6.5 | 9 | 4 |
| M12 | × 1.5 | TM482513 | TM481513 | YH3 | 82 | 29 | 8.5 | 6.5 | 9 | 4 |
| M12 | × 1.25 | TM482522 | TM481522 | YH2 | 82 | 29 | 8.5 | 6.5 | 9 | 4 |
| M12 | × 1 | TM482532 | TM481532 | YH2 | 82 | 29 | 8.5 | 6.5 | 9 | 4 |
| M14 | × 2 | TM482543 | TM481543 | YH3 | 88 | 30 | 10.5 | 8 | 11 | 4 |
| M14 | × 1.5 | TM482553 | TM481553 | YH3 | 88 | 30 | 10.5 | 8 | 11 | 4 |
| M16 | × 2 | TM482603 | TM481603 | YH3 | 95 | 32 | 12.5 | 10 | 13 | 4 |
| M16 | × 1.5 | TM482613 | TM481613 | YH3 | 95 | 32 | 12.5 | 10 | 13 | 4 |
| M18 | × 2.5 | TM482653 | TM481653 | YH3 | 100 | 37 | 14 | 11 | 14 | 4 |
| M18 | × 1.5 | TM482673 | TM481673 | YH3 | 100 | 37 | 14 | 11 | 14 | 4 |
| M20 | × 2.5 | TM482703 | TM481703 | YH3 | 105 | 37 | 15 | 12 | 15 | 4 |
| M20 | × 1.5 | TM482723 | TM481723 | YH3 | 105 | 37 | 15 | 12 | 15 | 4 |
| M22 | × 2.5 | TM482743 | TM481743 | YH3 | 115 | 38 | 17 | 13 | 16 | 4 |
| M22 | × 1.5 | TM482763 | TM481763 | YH3 | 115 | 38 | 17 | 13 | 16 | 4 |

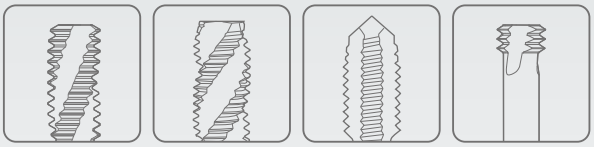
► Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | | | | ○ | ○ | | ○ | ◎ | ◎ | ○ | ◎ | | | | | | ○ | ○ | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | | | | | | | | | | | | | | | | | | | | ○ | |

Global Cutting Tool Leader **YG-1**



# THREADING

Leading Through Innovation

HSS-E

# YG TAP INOX

- For Stainless Steels with Lamellar, Irregular Chip Formation where the Cutting Forces are Higher
- 不锈钢专用丝锥

# SELECTION GUIDE
## 选用指南

YG THREADING TOOLS

# HSS-E
# YG TAP
# INOX

For Stainless Steels with Lamellar, Irregular Chip Formation where the Cutting Forces are Higher

不锈钢专用丝锥

Please visit globalyg1.com/mat for material search

◎ : Excellent (优秀) ○ : Good (良好)

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HOLE TYPE 孔类型 | | | | | Max. 2.5xD Blind Hole 盲孔 | | | | | | | |
| TOOL MATERIAL 刀具材料 | | | | | HSS-E | | | | | | | |
| CHAMFER LEAD ACC. TO DIN2197 倒角长度 | | | | | 2.5P | | 2.5P | | | | | |
| FLUTE TYPE 槽型 | | | | | Spiral Flute 螺旋角 | | Spiral Flute 螺旋角 | | | | | |
| SPIRAL FLUTE ANGLE 螺旋槽夹角 | | | | | R45 | | R45 | | | | | |
| SERIES NO. 系列号 (page 页数) | JIS Type 亚洲规格 | | | | I | | J | | | | | |
| | M/MF | | | | T1191 (p. B144) | | T1133 (p. B146) | | | | | |
| | UNC/F | | | | | | | | | | | |
| | W | | | | | | | | | | | |
| | M-LH W-LH | | | | | | | | | | | |
| | PIPE TAPS | | | | | | | | | | | |
| SURFACE TREATMENT 表面处理 | | | | | Steam Homo | | Steam Homo | | | | | |
| MODEL 模型 | | | | | | | | | | | | |
| ISO 公制 | VDI 3323 | Material Description 材料描述 | Composition / Structure / Heat Treatment 成分 / 组织 / 热处理 | | HB 布氏硬度 | HRc 硬度 | | | | | | |
| P | 1 | Non-alloy steel | About 0.15% C | Annealed | 125 | | ○ | 8~13 | ○ | 8~13 | | |
| | 2 | | About 0.45% C | Annealed | 190 | 13 | ○ | 7~12 | ○ | 7~12 | | |
| | 3 | | About 0.45% C | Quenched & Tempered | 250 | 25 | ○ | 7~12 | ○ | 7~12 | | |
| | 4 | | About 0.75% C | Annealed | 270 | 28 | ○ | 7~12 | ○ | 7~12 | | |
| | 5 | | About 0.75% C | Quenched & Tempered | 300 | 32 | | | | | | |
| | 6 | Low alloy steel | | Annealed | 180 | 10 | ○ | 7~12 | ○ | 7~12 | | |
| | 7 | | | Quenched & Tempered | 275 | 29 | | | | | | |
| | 8 | | | Quenched & Tempered | 300 | 32 | | | | | | |
| | 9 | | | Quenched & Tempered | 350 | 38 | | | | | | |
| | 10 | High alloyed steel, and tool steel | | Annealed | 200 | 15 | | | | | | |
| | 11 | | | Quenched & Tempered | 325 | 35 | | | | | | |
| M | 12 | Stainless steel | Ferritic / Martensitic | Annealed | 200 | 15 | ◎ | 5~8 | ◎ | 5~8 | | |
| | 13 | | Martensitic | Quenched & Tempered | 240 | 23 | ◎ | 5~8 | ◎ | 5~8 | | |
| | 14 | | Austenitic | | 180 | 10 | ◎ | 5~8 | ◎ | 5~8 | | |
| K | 15 | Grey cast iron | Pearlitic / ferritic | | 180 | 10 | | | | | | |
| | 16 | | Pearlitic (Martensitic) | | 260 | 26 | | | | | | |
| | 17 | Nodular cast iron | Ferritic | | 160 | 3 | | | | | | |
| | 18 | | Pearlitic | | 250 | 25 | | | | | | |
| | 19 | Malleable cast iron | Ferritic | | 130 | | | | | | | |
| | 20 | | Pearlitic | | 230 | 21 | | | | | | |
| N | 21 | Aluminum-wrought alloy | Not Curable | | 60 | | | | | | | |
| | 22 | | Curable | Hardened | 100 | | | | | | | |
| | 23 | Aluminum-cast, alloyed | ≤ 12% Si, Not Curable | | 75 | | | | | | | |
| | 24 | | ≤ 12% Si, Curable | Hardened | 90 | | | | | | | |
| | 25 | | > 12% Si, Not Curable | | 130 | | | | | | | |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | Cutting Alloys, PB>1% | | 110 | | ◎ | 6~11 | ◎ | 6~11 | | |
| | 27 | | CuZn, CuSnZn (Brass) | | 90 | | | | | | | |
| | 28 | | CuSn, lead-free copper and electrolytic copper | | 100 | | | | | | | |
| | 29 | Non Metallic Materials | Duroplastic, Fiber Reinforced Plastic | | | | | | | | | |
| | 30 | | Rubber, Wood, etc. | | | | | | | | | |
| S | 31 | Heat Resistant Super Alloys | Fe Based | Annealed | 200 | 15 | | | | | | |
| | 32 | | | Cured | 280 | 30 | | | | | | |
| | 33 | | Ni or Co Based | Annealed | 250 | 25 | | | | | | |
| | 34 | | | Cured | 350 | 38 | | | | | | |
| | 35 | | | Cast | 320 | 34 | | | | | | |
| | 36 | Titanium Alloys | Pure Titanium | | 400 Rm | | | | | | | |
| | 37 | | Alpha + Beta Alloys | Hardened | 1050 Rm | | | | | | | |
| H | 38 | Hardened steel | | Hardened | 550 | 55 | | | | | | |
| | 39 | | | Hardened | 630 | 60 | | | | | | |
| | 40 | Chilled Cast Iron | | Cast | 400 | 42 | | | | | | |
| | 41 | Hardened Cast Iron | | Hardened | 550 | 55 | | | | | | |



| | | | |
|---|---|---|---|
| Max. 2.5xD Blind Hole 盲孔 | Max. 3.0xD Through Hole 通孔 | Max. 2.0xD Blind / Th rough Hole 盲孔 / 通孔 | |
| HSS-E | | | |
| 2.5P | 4.0P | 4.0P | 1.5P/5.0P |
| Spiral Flute 螺旋角 | Spiral Point 螺尖 | Spiral Point 螺尖 | Straight Flute 直槽 |
| R45 | - | - | - |
| S | I | J | I |
| T1113 (p. B148) | T1023 (p. B149) | T1043 (p. B151) | T1402 T1401 (p. B153) |
| Steam Homo | Steam Homo | Steam Homo | Steam Homo |
| | | | |
| ○ 8~13 | ○ 20~25 | ○ 20~25 | ○ 8~13 |
| ○ 7~12 | ○ 15~20 | ○ 15~20 | ○ 15~20 |
| ○ 7~12 | ○ 15~20 | ○ 15~20 | ○ 15~20 |
| ○ 7~12 | ○ 15~20 | ○ 15~20 | ○ 15~20 |
| | | | |
| ○ 7~12 | ○ 15~20 | ○ 15~20 | ○ 7~12 |
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| | | | |
| ◎ 5~8 | ◎ 8~13 | ◎ 8~13 | ◎ 4~7 |
| ◎ 5~8 | ◎ 8~13 | ◎ 8~13 | ◎ 4~7 |
| ◎ 5~8 | ◎ 8~13 | ◎ 8~13 | ◎ 4~7 |
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| | | | |
| | ○ 10~20 | ○ 10~20 | |
| | ○ 10~20 | ○ 10~20 | |
| | ○ 10~15 | ○ 10~15 | |
| | | | |
| | | | |
| ◎ 6~11 | ◎ 7~12 | ◎ 7~12 | ○ 6~9 |
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# YG TAP INOX

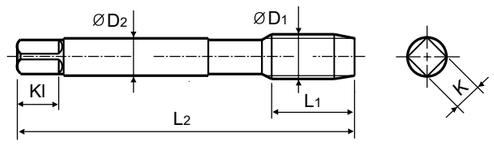
**T1191** SERIES

## M SPIRAL FLUTE TAPS for STAINLESS STEELS
## 不锈钢用螺旋槽丝锥

► Suitable for tapping Blind holes in Stainless Steel, Chrome Steel, Chrome Molybdenum Steel and other ductile materials.

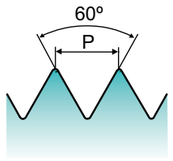
►适用于不锈钢, 铬钢, 铬钼钢和其他逐硬化具有韧性材料的盲孔加 工

up to M7 : Male Center




Hole type 孔类型

2.5×D




Material groups **VA** | HSS-E | I | YH | 60° | 2.5P | R45 | Homo

p. B142

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| ◎ | TAPPING ER CHUCK | D215 -220 |
| ◎ | TAPPING CHUCK | D221 -228 |
| | ONE STEP TAPPING CHUCK | D211 -213 |

Tap Limits: p.B230

Unit(单位) : mm

| SIZE 尺寸 | | Pitch 牙距 | | EDP No. 型号 | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | ØD1 | | | | L2 | L1 | ØD2 | K | Kl | |
| M2 | × | 0.4 | | **T1191131** | YH1 | 40 | 9.5 | 3 | 2.5 | 5 | 2 |
| M2.2 | × | 0.45 | | **T1191151** | YH1 | 42 | 9.5 | 3 | 2.5 | 5 | 2 |
| M2.3 | × | 0.4 | | **T1191191** | YH1 | 42 | 9.5 | 3 | 2.5 | 5 | 2 |
| M2.5 | × | 0.45 | | **T1191172** | YH2 | 44 | 9.5 | 3 | 2.5 | 5 | 2 |
| M2.6 | × | 0.45 | | **T1191492** | YH2 | 44 | 9.5 | 3 | 2.5 | 5 | 2 |
| M3 | × | 0.5 | | **T1191202** | YH2 | 46 | 11 | 4 | 3.2 | 6 | 3 |
| M3.5 | × | 0.6 | | **T1191222** | YH2 | 48 | 13 | 4 | 3.2 | 6 | 3 |
| M4 | × | 0.7 | | **T1191242** | YH2 | 52 | 13 | 5 | 4 | 7 | 3 |
| M5 | × | 0.8 | | **T1191282** | YH2 | 60 | 16 | 5.5 | 4.5 | 7 | 3 |
| M6 | × | 1 | | **T1191312** | YH2 | 62 | 19 | 6 | 4.5 | 7 | 3 |
| M8 | × | 1.25 | | **T1191363** | YH3 | 70 | 22 | 6.2 | 5 | 8 | 3 |
| M10 | × | 1.5 | | **T1191423** | YH3 | 75 | 24 | 7 | 5.5 | 8 | 3 |
| M10 | × | 1.25 | | **T1191433** | YH3 | 75 | 24 | 7 | 5.5 | 8 | 3 |
| M12 | × | 1.75 | | **T1191503** | YH3 | 82 | 29 | 8.5 | 6.5 | 9 | 3 |
| M12 | × | 1.5 | | **T1191513** | YH3 | 82 | 29 | 8.5 | 6.5 | 9 | 3 |
| M12 | × | 1.25 | | **T1191523** | YH3 | 82 | 29 | 8.5 | 6.5 | 9 | 3 |
| M12 | × | 1 | | **T1191532** | YH2 | 82 | 29 | 8.5 | 6.5 | 9 | 3 |
| M14 | × | 2 | | **T1191543** | YH3 | 88 | 30 | 10.5 | 8 | 11 | 3 |

►Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

►NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ○ | ○ | ○ | ○ | | ○ | | | | | | ◎ | ◎ | ◎ | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | | | | | | ◎ | | | | | | | | | | | | | | | |



CARBIDE
HSS
THREAD MILLS
SYNCHRO TAPS
COMBO TAPS
YG TAP GENERAL
YG TAP STEEL
YG TAP HARDENED
YG TAP INOX
YG TAP CAST IRON
YG TAP ALU
YG TAP Ti Ni
YG TAP FORMING
STI TAPS
PIPE TAPS
SKS21 HAND TAPS
SKS21 PIPE TAPS
TECHNICAL DATA

# YG TAP INOX

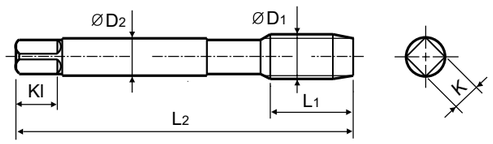
**T1191** SERIES

## M SPIRAL FLUTE TAPS for STAINLESS STEELS
## 不锈钢用螺旋槽丝锥

► Suitable for tapping Blind holes in Stainless Steel, Chrome Steel, Chrome Molybdenum Steel and other ductile materials.

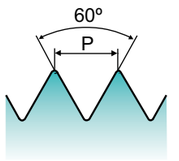
►适用于不锈钢, 铬钢, 铬钼钢和其他逐硬化具有韧性材料的盲孔加 工

up to M7 : Male Center




Hole type 孔类型

2.5×D




Material groups **VA** | HSS-E | I | YH | 60° | 2.5P | R45 | Homo

p. B142

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| ◎ | TAPPING ER CHUCK | D215 -220 |
| ◎ | TAPPING CHUCK | D221 -228 |
| | ONE STEP TAPPING CHUCK | D211 -213 |

Tap Limits: p.B230

Unit(单位) : mm

| SIZE 尺寸 | | Pitch 牙距 | | EDP No. 型号 | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | ØD1 | | | | L2 | L1 | ØD2 | K | Kl | |
| M14 | × | 1.5 | | **T1191553** | YH3 | 88 | 30 | 10.5 | 8 | 11 | 3 |
| M16 | × | 2 | | **T1191603** | YH3 | 95 | 32 | 12.5 | 10 | 13 | 3 |
| M16 | × | 1.5 | | **T1191613** | YH3 | 95 | 32 | 12.5 | 10 | 13 | 3 |
| M18 | × | 2.5 | | **T1191653** | YH3 | 100 | 37 | 14 | 11 | 14 | 4 |
| M18 | × | 1.5 | | **T1191673** | YH3 | 100 | 37 | 14 | 11 | 14 | 4 |
| M20 | × | 2.5 | | **T1191703** | YH3 | 105 | 37 | 15 | 12 | 15 | 4 |
| M20 | × | 1.5 | | **T1191723** | YH3 | 105 | 37 | 15 | 12 | 15 | 4 |
| M22 | × | 2.5 | | **T1191744** | YH4 | 115 | 38 | 17 | 13 | 16 | 4 |
| M22 | × | 1.5 | | **T1191763** | YH3 | 115 | 38 | 17 | 13 | 16 | 4 |
| M24 | × | 3 | | **T1191784** | YH4 | 120 | 45 | 19 | 15 | 18 | 4 |
| M24 | × | 1.5 | | **T1191803** | YH3 | 120 | 45 | 19 | 15 | 18 | 4 |
| M25 | × | 1.5 | | **T1191833** | YH3 | 125 | 45 | 19 | 15 | 18 | 4 |
| M26 | × | 1.5 | | **T1191853** | YH3 | 125 | 45 | 20 | 15 | 18 | 4 |
| M27 | × | 3 | | **T1191864** | YH4 | 130 | 45 | 20 | 15 | 18 | 4 |
| M27 | × | 1.5 | | **T1191883** | YH3 | 130 | 45 | 20 | 15 | 18 | 4 |
| M28 | × | 1.5 | | **T1191913** | YH3 | 130 | 45 | 21 | 17 | 20 | 4 |
| M30 | × | 3.5 | | **T1191944** | YH4 | 135 | 48 | 23 | 17 | 20 | 4 |
| M30 | × | 1.5 | | **T1191973** | YH3 | 135 | 45 | 23 | 17 | 20 | 4 |

►Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ○ | ○ | ○ | ○ | | ○ | | | | | | ◎ | ◎ | ◎ | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | | | | | | ◎ | | | | | | | | | | | | | | | |

# YG TAP INOX

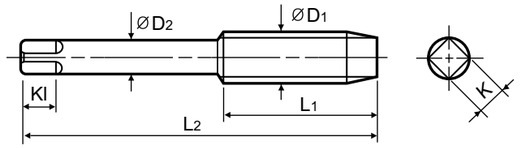
**T1133** SERIES

## M SPIRAL FLUTE TAPS for STAINLESS STEELS
## 不锈钢用螺旋槽丝锥

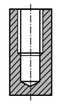
► Suitable for tapping Blind holes in Stainless Steels, Chrome Steels, Chrome Molybdenum Steels and other ductile materials with great tendency to work harden.

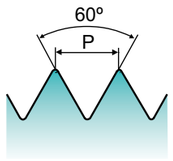
►适用于不锈钢, 铬钢, 铬钼钢和其他逐硬化具有韧性材料的盲孔加 工

up to M7 : Male Center




Hole type 孔类型
2.5×D






Material groups **VA** | HSS-E | J | YH | 60° | 2.5P | R45 | Homo

p. B142

Tap Limits: p.B230

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| TAPPING ER CHUCK | D215 -220 |
| TAPPING CHUCK | D221 -228 |
| ONE STEP TAPPING CHUCK | D211 -213 |

Unit(单位) : mm

| SIZE 尺寸 | | Pitch 牙距 | | EDP No. 型号 | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ØD1 | | P | | | | L2 | L1 | ØD2 | K | Kl | |
| M2 | × | 0.4 | | **T1133131** | YH1 | 40 | 15 | 3 | 2.5 | 5 | 2 |
| M2.2 | × | 0.45 | | **T1133151** | YH1 | 42 | 15 | 3 | 2.5 | 5 | 2 |
| M2.3 | × | 0.4 | | **T1133191** | YH1 | 42 | 15 | 3 | 2.5 | 5 | 2 |
| M2.5 | × | 0.45 | | **T1133172** | YH2 | 44 | 16 | 3 | 2.5 | 5 | 2 |
| M2.6 | × | 0.45 | | **T1133492** | YH2 | 44 | 16 | 3 | 2.5 | 5 | 2 |
| M3 | × | 0.5 | | **T1133202** | YH2 | 46 | 18 | 4 | 3.2 | 6 | 3 |
| M3.5 | × | 0.6 | | **T1133222** | YH2 | 48 | 18 | 4 | 3.2 | 6 | 3 |
| M4 | × | 0.7 | | **T1133242** | YH2 | 52 | 20 | 5 | 4 | 7 | 3 |
| M5 | × | 0.8 | | **T1133282** | YH2 | 60 | 22 | 5.5 | 4.5 | 7 | 3 |
| M6 | × | 1 | | **T1133312** | YH2 | 62 | 24 | 6 | 4.5 | 7 | 3 |
| M8 | × | 1.25 | | **T1133363** | YH3 | 70 | 30 | 6.2 | 5 | 8 | 3 |
| M10 | × | 1.5 | | **T1133423** | YH3 | 75 | 32 | 7 | 5.5 | 8 | 3 |
| M10 | × | 1.25 | | **T1133433** | YH3 | 75 | 32 | 7 | 5.5 | 8 | 3 |
| M12 | × | 1.75 | | **T1133503** | YH3 | 82 | 38 | 8.5 | 6.5 | 9 | 3 |
| M12 | × | 1.5 | | **T1133513** | YH3 | 82 | 38 | 8.5 | 6.5 | 9 | 3 |
| M12 | × | 1.25 | | **T1133523** | YH3 | 80 | 38 | 8.5 | 6.5 | 9 | 3 |
| M12 | × | 1 | | **T1133532** | YH2 | 70 | 30 | 8.5 | 6.5 | 9 | 3 |
| M14 | × | 2 | | **T1133543** | YH3 | 88 | 42 | 10.5 | 8 | 11 | 3 |

►Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

▶ NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ○ | ○ | ○ | ○ | | ○ | | | | | | ◎ | ◎ | ◎ | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | | | | | | ◎ | | | | | | | | | | | | | | | |



CARBIDE
HSS
THREAD MILLS
SYNCHRO TAPS
COMBO TAPS
YG TAP GENERAL
YG TAP STEEL
YG TAP HARDENED
YG TAP INOX
YG TAP CAST IRON
YG TAP ALU
YG TAP Ti Ni
YG TAP FORMING
STI TAPS
PIPE TAPS
SKS21 HAND TAPS
SKS21 PIPE TAPS
TECHNICAL DATA

# YG TAP INOX

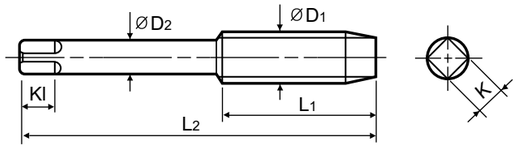
**T1133** SERIES

## M SPIRAL FLUTE TAPS for STAINLESS STEELS
## 不锈钢用螺旋槽丝锥

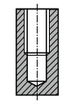
► Suitable for tapping Blind holes in Stainless Steels, Chrome Steels, Chrome Molybdenum Steels and other ductile materials with great tendency to work harden.

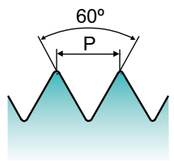
►适用于不锈钢, 铬钢, 铬钼钢和其他逐硬化具有韧性材料的盲孔加 工

up to M7 : Male Center




Hole type 孔类型
2.5×D






Material groups VA | HSS-E | J | YH | 60° | 2.5P | R45 | Homo

p. B142

Tap Limits: p.B230

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| TAPPING ER CHUCK | D215 -220 |
| TAPPING CHUCK | D221 -228 |
| ONE STEP TAPPING CHUCK | D211 -213 |

Unit(单位) : mm

| SIZE 尺寸 | | Pitch 牙距 | | EDP No. 型号 | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ØD1 | | P | | | | L2 | L1 | ØD2 | K | Kl | |
| M14 | × | 1.5 | | **T1133553** | YH3 | 88 | 42 | 10.5 | 8 | 11 | 3 |
| M16 | × | 2 | | **T1133603** | YH3 | 95 | 45 | 12.5 | 10 | 13 | 3 |
| M16 | × | 1.5 | | **T1133613** | YH3 | 95 | 45 | 12.5 | 10 | 13 | 3 |
| M18 | × | 2.5 | | **T1133653** | YH3 | 100 | 48 | 14 | 11 | 14 | 4 |
| M18 | × | 1.5 | | **T1133673** | YH3 | 95 | 45 | 14 | 11 | 14 | 4 |
| M20 | × | 2.5 | | **T1133703** | YH3 | 105 | 50 | 15 | 12 | 15 | 4 |
| M20 | × | 1.5 | | **T1133723** | YH3 | 95 | 45 | 15 | 12 | 15 | 4 |
| M22 | × | 2.5 | | **T1133744** | YH4 | 115 | 55 | 17 | 13 | 16 | 4 |
| M22 | × | 1.5 | | **T1133763** | YH3 | 95 | 45 | 17 | 13 | 16 | 4 |
| M24 | × | 3 | | **T1133784** | YH4 | 120 | 58 | 19 | 15 | 18 | 4 |
| M24 | × | 1.5 | | **T1133803** | YH3 | 95 | 45 | 19 | 15 | 18 | 4 |
| M25 | × | 1.5 | | **T1133833** | YH3 | 95 | 45 | 19 | 15 | 18 | 4 |
| M26 | × | 1.5 | | **T1133853** | YH3 | 95 | 45 | 20 | 15 | 18 | 4 |
| M27 | × | 3 | | **T1133864** | YH4 | 130 | 62 | 20 | 15 | 18 | 4 |
| M27 | × | 1.5 | | **T1133883** | YH3 | 95 | 45 | 20 | 15 | 18 | 4 |
| M28 | × | 1.5 | | **T1133913** | YH3 | 105 | 45 | 21 | 17 | 20 | 4 |
| M30 | × | 3.5 | | **T1133944** | YH4 | 135 | 65 | 23 | 17 | 20 | 4 |
| M30 | × | 1.5 | | **T1133973** | YH3 | 105 | 45 | 23 | 17 | 20 | 4 |

►Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ○ | ○ | ○ | ○ | | ○ | | | | | | ◎ | ◎ | ◎ | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | | | | | | ◎ | | | | | | | | | | | | | | | |

# YG TAP INOX

## T1113 SERIES

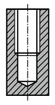
## M SPIRAL FLUTE TAPS for DEEP HOLES(for STAINLESS STEELS)
## 深孔螺旋槽丝锥(不锈钢)

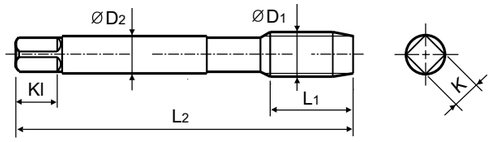
► Suitable for tapping deep Blind holes in Stainless Steels, Chrome Steels, Chrome Molybdenum Steels and other ductile materials with great tendency to work harden.

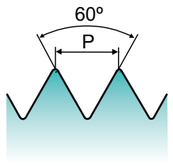
►适用于不锈钢, 铬钢, 铬钼钢和其他逐硬化具有韧性材料的盲孔加 工

up to M7 : Male Center

Hole type 孔类型
2.5×D






Material groups **VA** | HSS-E | S | YH | 60° | 2.5P | R45 | Homo

p. B143

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| TAPPING ER CHUCK | | D215 -220 |
| TAPPING CHUCK | | D221 -228 |
| ONE STEP TAPPING CHUCK | | D211 -213 |

Tap Limits: p.B230

Unit(单位) : mm

| SIZE 尺寸 | | Pitch 牙距 | EDP No. 型号 | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|---|
| ØD1 | | P | | | L2 | L1 | ØD2 | K | Kl | |
| M2 | × | 0.4 | **T1113131** | YH1 | 40 | 4.0 | 3 | 2.5 | 5 | 2 |
| M2.2 | × | 0.45 | **T1113151** | YH1 | 42 | 4.0 | 3 | 2.5 | 5 | 2 |
| M2.3 | × | 0.4 | **T1113191** | YH1 | 42 | 4.0 | 3 | 2.5 | 5 | 2 |
| M2.5 | × | 0.45 | **T1113172** | YH2 | 44 | 4.0 | 3 | 2.5 | 5 | 2 |
| M2.6 | × | 0.45 | **T1113492** | YH2 | 44 | 4.0 | 3 | 2.5 | 5 | 2 |
| M3 | × | 0.5 | **T1113202** | YH2 | 46 | 5.0 | 4 | 3.2 | 6 | 3 |
| M3.5 | × | 0.6 | **T1113222** | YH2 | 48 | 6.0 | 4 | 3.2 | 6 | 3 |
| M4 | × | 0.7 | **T1113242** | YH2 | 52 | 7.0 | 5 | 4 | 7 | 3 |
| M5 | × | 0.8 | **T1113282** | YH2 | 60 | 8.0 | 5.5 | 4.5 | 7 | 3 |
| M6 | × | 1 | **T1113312** | YH2 | 62 | 10.0 | 6 | 4.5 | 7 | 3 |
| M8 | × | 1.25 | **T1113363** | YH3 | 70 | 13.7 | 6.2 | 5 | 8 | 3 |
| M10 | × | 1.5 | **T1113423** | YH3 | 75 | 16.4 | 7 | 5.5 | 8 | 3 |
| M10 | × | 1.25 | **T1113433** | YH3 | 75 | 13.7 | 7 | 5.5 | 8 | 3 |
| M12 | × | 1.75 | **T1113503** | YH3 | 82 | 19.2 | 8.5 | 6.5 | 9 | 3 |
| M12 | × | 1.5 | **T1113513** | YH3 | 82 | 16.4 | 8.5 | 6.5 | 9 | 3 |
| M12 | × | 1.25 | **T1113523** | YH3 | 82 | 13.7 | 8.5 | 6.5 | 9 | 3 |
| M12 | × | 1 | **T1113532** | YH2 | 82 | 10.9 | 8.5 | 6.5 | 9 | 3 |
| M14 | × | 2 | **T1113543** | YH3 | 88 | 21.9 | 10.5 | 8 | 11 | 3 |
| M14 | × | 1.5 | **T1113553** | YH3 | 88 | 16.4 | 10.5 | 8 | 11 | 3 |
| M16 | × | 2 | **T1113603** | YH3 | 95 | 21.9 | 12.5 | 10 | 13 | 3 |
| M16 | × | 1.5 | **T1113613** | YH3 | 95 | 16.4 | 12.5 | 10 | 13 | 3 |
| M18 | × | 2.5 | **T1113653** | YH3 | 100 | 27.4 | 14 | 11 | 14 | 4 |
| M18 | × | 1.5 | **T1113673** | YH3 | 100 | 16.4 | 14 | 11 | 14 | 4 |
| M20 | × | 2.5 | **T1113703** | YH3 | 105 | 27.4 | 15 | 12 | 15 | 4 |
| M20 | × | 1.5 | **T1113723** | YH3 | 105 | 16.4 | 15 | 12 | 15 | 4 |
| M22 | × | 2.5 | **T1113744** | YH4 | 115 | 27.4 | 17 | 13 | 16 | 4 |
| M22 | × | 1.5 | **T1113763** | YH3 | 115 | 16.4 | 17 | 13 | 16 | 4 |

►Refer to p.B143 for recommended tap drill sizes. 参考p.B143 底孔尺寸.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ○ | ○ | ○ | ○ | | ○ | | | | | | ◎ | ◎ | ◎ | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | | | | | | ◎ | | | | | | | | | | | | | | | |





# YG TAP INOX

## T1023 SERIES

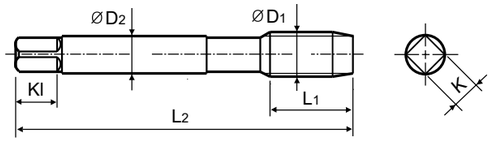
## M SPIRAL POINT TAPS for STAINLESS STEELS
## 不锈钢用先端丝锥

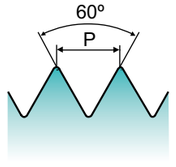
► Suitable for tapping Through holes in Stainless Steels, Chrome steels, Chrome Molybdenum Steels and other ductile materials with great tendency to work harden

►适用于不锈钢, 铬钢, 铬钼钢和其他逐硬化具有韧性材料的通孔加 工

up to M8 : Male Center

Hole type 孔类型
3.0×D




Material groups **VA** | HSS-E | I | YH | 60° | 4.0P | Homo

p. B143

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| TAPPING ER CHUCK | | D215 -220 |
| TAPPING CHUCK | | D221 -228 |
| ONE STEP TAPPING CHUCK | | D211 -213 |

Tap Limits: p.B230

Unit(单位) : mm

| SIZE 尺寸 | | Pitch 牙距 | EDP No. 型号 | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|---|
| ØD1 | | P | | | L2 | L1 | ØD2 | K | Kl | |
| M2 | × | 0.4 | **T1023131** | YH1 | 40 | 9.5 | 3 | 2.5 | 5 | 2 |
| M2.2 | × | 0.45 | **T1023151** | YH1 | 42 | 9.5 | 3 | 2.5 | 5 | 2 |
| M2.3 | × | 0.4 | **T1023191** | YH1 | 42 | 9.5 | 3 | 2.5 | 5 | 2 |
| M2.5 | × | 0.45 | **T1023172** | YH2 | 44 | 9.5 | 3 | 2.5 | 5 | 2 |
| M2.6 | × | 0.45 | **T1023492** | YH2 | 44 | 9.5 | 3 | 2.5 | 5 | 2 |
| M3 | × | 0.5 | **T1023202** | YH2 | 46 | 11 | 4 | 3.2 | 6 | 3 |
| M3.5 | × | 0.6 | **T1023222** | YH2 | 48 | 13 | 4 | 3.2 | 6 | 3 |
| M4 | × | 0.7 | **T1023242** | YH2 | 52 | 13 | 5 | 4 | 7 | 3 |
| M5 | × | 0.8 | **T1023282** | YH2 | 60 | 16 | 5.5 | 4.5 | 7 | 3 |
| M6 | × | 1 | **T1023312** | YH2 | 62 | 19 | 6 | 4.5 | 7 | 3 |
| M8 | × | 1.25 | **T1023363** | YH3 | 70 | 22 | 6.2 | 5 | 8 | 3 |
| M10 | × | 1.5 | **T1023423** | YH3 | 75 | 24 | 7 | 5.5 | 8 | 3 |
| M10 | × | 1.25 | **T1023433** | YH3 | 75 | 24 | 7 | 5.5 | 8 | 3 |
| M12 | × | 1.75 | **T1023504** | YH4 | 82 | 29 | 8.5 | 6.5 | 9 | 3 |
| M12 | × | 1.5 | **T1023513** | YH3 | 82 | 29 | 8.5 | 6.5 | 9 | 3 |
| M12 | × | 1.25 | **T1023523** | YH3 | 82 | 29 | 8.5 | 6.5 | 9 | 3 |
| M12 | × | 1 | **T1023533** | YH3 | 82 | 29 | 8.5 | 6.5 | 9 | 3 |
| M14 | × | 2 | **T1023544** | YH4 | 88 | 30 | 10.5 | 8 | 11 | 3 |

►Refer to p.B143 for recommended tap drill sizes. 参考p.B143 底孔尺寸.

▶ NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ○ | ○ | ○ | ○ | | ○ | | | | | | ◎ | ◎ | ◎ | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | ◎ | | | | | | | | | | | | | | | |

# YG TAP INOX

## T1023 SERIES

# M SPIRAL POINT TAPS for STAINLESS STEELS
## 不锈钢用先端丝锥

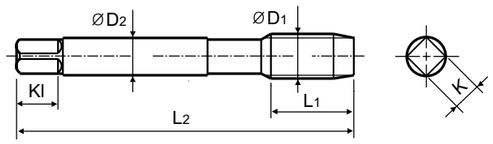
► Suitable for tapping Through holes in Stainless Steels, Chrome steels, Chrome Molybdenum Steels and other ductile materials with great tendency to work harden

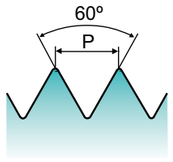
►适用于不锈钢, 铬钢, 铬钼钢和其他逐硬化具有韧性材料的通孔加 工

up to M8 : Male Center

Hole type 孔类型

3.0×D




Material groups **VA** | HSS-E | I | YH | 60° | 4.0P | Homo

p. B143

Tap Limits: p.B230

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| TAPPING ER CHUCK | D215 -220 |
| TAPPING CHUCK | D221 -228 |
| ONE STEP TAPPING CHUCK | D211 -213 |

Unit(单位) : mm

| SIZE 尺寸 | | Pitch 牙距 | EDP No. 型号 | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|---|
| | | ØD1 | | | L2 | L1 | ØD2 | K | Kl | |
| M14 | × | 1.5 | **T1023553** | YH3 | 88 | 30 | 10.5 | 8 | 11 | 3 |
| M16 | × | 2 | **T1023604** | YH4 | 95 | 32 | 12.5 | 10 | 13 | 3 |
| M16 | × | 1.5 | **T1023613** | YH3 | 95 | 32 | 12.5 | 10 | 13 | 3 |
| M18 | × | 2.5 | **T1023654** | YH4 | 100 | 37 | 14 | 11 | 14 | 3 |
| M18 | × | 1.5 | **T1023674** | YH4 | 100 | 37 | 14 | 11 | 14 | 3 |
| M20 | × | 2.5 | **T1023704** | YH4 | 105 | 37 | 15 | 12 | 15 | 3 |
| M20 | × | 1.5 | **T1023724** | YH4 | 105 | 37 | 15 | 12 | 15 | 3 |
| M22 | × | 2.5 | **T1023744** | YH4 | 115 | 38 | 17 | 13 | 16 | 3 |
| M22 | × | 1.5 | **T1023764** | YH4 | 115 | 38 | 17 | 13 | 16 | 3 |
| M24 | × | 3 | **T1023784** | YH4 | 120 | 45 | 19 | 15 | 18 | 3 |
| M24 | × | 1.5 | **T1023804** | YH4 | 120 | 45 | 19 | 15 | 18 | 3 |
| M25 | × | 1.5 | **T1023834** | YH4 | 125 | 45 | 19 | 15 | 18 | 3 |
| M26 | × | 1.5 | **T1023854** | YH4 | 125 | 45 | 20 | 15 | 18 | 4 |
| M27 | × | 3 | **T1023864** | YH4 | 130 | 45 | 20 | 15 | 18 | 4 |
| M27 | × | 1.5 | **T1023884** | YH4 | 130 | 45 | 20 | 15 | 18 | 4 |
| M28 | × | 1.5 | **T1023914** | YH4 | 130 | 45 | 21 | 17 | 20 | 4 |
| M30 | × | 3.5 | **T1023945** | YH5 | 135 | 48 | 23 | 17 | 20 | 4 |
| M30 | × | 1.5 | **T1023974** | YH4 | 135 | 45 | 23 | 17 | 20 | 4 |

►Refer to p.B143 for recommended tap drill sizes. 参考p.B143 底孔尺寸.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ○ | ○ | ○ | ○ | | ○ | | | | | | ◎ | ◎ | ◎ | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | ◎ | | | | | | | | | | | | | | | |



CARBIDE
HSS
THREAD MILLS
SYNCHRO TAPS
COMBO TAPS
YG TAP GENERAL
YG TAP STEEL
YG TAP HARDENED
YG TAP INOX
YG TAP CAST IRON
YG TAP ALU
YG TAP Ti Ni
YG TAP FORMING
STI TAPS
PIPE TAPS
SKS21 HAND TAPS
SKS21 PIPE TAPS
TECHNICAL DATA

# YG TAP INOX

## T1043 SERIES

# M SPIRAL POINT TAPS for STAINLESS STEELS
## 不锈钢用先端丝锥

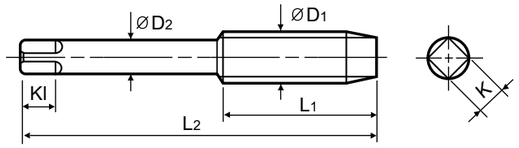
► Suitable for tapping Through holes in Stainless Steels, Chrome steels, Chrome Molybdenum Steels and other ductile materials with great tendency to work harden

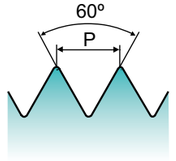
►适用于不锈钢, 铬钢, 铬钼钢和其他逐硬化具有韧性材料的通孔加 工

up to M8 : Male Center

Hole type 孔类型

3.0×D




Material groups **VA** | HSS-E | J | YH | 60° | 4.0P | Homo

p. B143

Tap Limits: p.B230

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| TAPPING ER CHUCK | D215 -220 |
| TAPPING CHUCK | D221 -228 |
| ONE STEP TAPPING CHUCK | D211 -213 |

Unit(单位) : mm

| SIZE 尺寸 | | Pitch 牙距 | EDP No. 型号 | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|---|
| | | ØD1 | | | L2 | L1 | ØD2 | K | Kl | |
| M2 | × | 0.4 | **T1043131** | YH1 | 40 | 15 | 3 | 2.5 | 5 | 2 |
| M2.2 | × | 0.45 | **T1043151** | YH1 | 42 | 15 | 3 | 2.5 | 5 | 2 |
| M2.3 | × | 0.4 | **T1043191** | YH1 | 42 | 15 | 3 | 2.5 | 5 | 2 |
| M2.5 | × | 0.45 | **T1043172** | YH2 | 44 | 16 | 3 | 2.5 | 5 | 2 |
| M2.6 | × | 0.45 | **T1043492** | YH2 | 44 | 16 | 3 | 2.5 | 5 | 2 |
| M3 | × | 0.5 | **T1043202** | YH2 | 46 | 18 | 4 | 3.2 | 6 | 3 |
| M3.5 | × | 0.6 | **T1043222** | YH2 | 48 | 18 | 4 | 3.2 | 6 | 3 |
| M4 | × | 0.7 | **T1043242** | YH2 | 52 | 20 | 5 | 4 | 7 | 3 |
| M5 | × | 0.8 | **T1043282** | YH2 | 60 | 22 | 5.5 | 4.5 | 7 | 3 |
| M6 | × | 1 | **T1043312** | YH2 | 62 | 24 | 6 | 4.5 | 7 | 3 |
| M8 | × | 1.25 | **T1043363** | YH3 | 70 | 30 | 6.2 | 5 | 8 | 3 |
| M10 | × | 1.5 | **T1043423** | YH3 | 75 | 32 | 7 | 5.5 | 8 | 3 |
| M10 | × | 1.25 | **T1043433** | YH3 | 75 | 32 | 7 | 5.5 | 8 | 3 |
| M12 | × | 1.75 | **T1043504** | YH4 | 82 | 38 | 8.5 | 6.5 | 9 | 3 |
| M12 | × | 1.5 | **T1043513** | YH3 | 82 | 38 | 8.5 | 6.5 | 9 | 3 |
| M12 | × | 1.25 | **T1043523** | YH3 | 80 | 38 | 8.5 | 6.5 | 9 | 3 |
| M12 | × | 1 | **T1043533** | YH3 | 70 | 30 | 8.5 | 6.5 | 9 | 3 |
| M14 | × | 2 | **T1043544** | YH4 | 88 | 42 | 10.5 | 8 | 11 | 3 |

►Refer to p.B143 for recommended tap drill sizes. 参考p.B143 底孔尺寸.

▶ NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ○ | ○ | ○ | ○ | | ○ | | | | | | ◎ | ◎ | ◎ | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | ◎ | | | | | | | | | | | | | | | |

# YG TAP INOX

**T1043 SERIES**

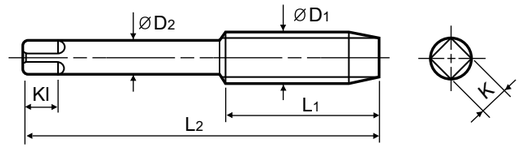
## M SPIRAL POINT TAPS for STAINLESS STEELS
## 不锈钢用先端丝锥

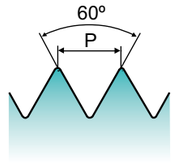
► Suitable for tapping Through holes in Stainless Steels, Chrome steels, Chrome Molybdenum Steels and other ductile materials with great tendency to work harden

►适用于不锈钢, 铬钢, 铬钼钢和其他逐硬化具有韧性材料的通孔加 工

up to M8 : Male Center

**Hole type** 孔类型
3.0×D




Material groups **VA** | HSS-E | J | YH | 60° | 4.0P | Homo

p. B143

Tap Limits: p.B230

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| ◎ | TAPPING ER CHUCK | D215 -220 |
| ◎ | TAPPING CHUCK | D221 -228 |
| | ONE STEP TAPPING CHUCK | D211 -213 |

Unit(单位) : mm

| SIZE 尺寸 | Pitch 牙距 | EDP No. 型号 | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|
| ØD1 | P | | | L2 | L1 | ØD2 | K | Kl | |
| M14 × | 1.5 | **T1043553** | YH3 | 88 | 42 | 10.5 | 8 | 11 | 3 |
| M16 × | 2 | **T1043604** | YH4 | 95 | 45 | 12.5 | 10 | 13 | 3 |
| M16 × | 1.5 | **T1043613** | YH3 | 95 | 45 | 12.5 | 10 | 13 | 3 |
| M18 × | 2.5 | **T1043654** | YH4 | 100 | 48 | 14 | 11 | 14 | 3 |
| M18 × | 1.5 | **T1043674** | YH4 | 95 | 45 | 14 | 11 | 14 | 3 |
| M20 × | 2.5 | **T1043704** | YH4 | 105 | 50 | 15 | 12 | 15 | 3 |
| M20 × | 1.5 | **T1043724** | YH4 | 95 | 45 | 15 | 12 | 15 | 3 |
| M22 × | 2.5 | **T1043744** | YH4 | 115 | 55 | 17 | 13 | 16 | 3 |
| M22 × | 1.5 | **T1043764** | YH4 | 95 | 45 | 17 | 13 | 16 | 3 |
| M24 × | 3 | **T1043784** | YH4 | 120 | 58 | 19 | 15 | 18 | 3 |
| M24 × | 1.5 | **T1043804** | YH4 | 95 | 45 | 19 | 15 | 18 | 3 |
| M25 × | 1.5 | **T1043834** | YH4 | 95 | 45 | 19 | 15 | 18 | 3 |
| M26 × | 1.5 | **T1043854** | YH4 | 95 | 45 | 20 | 15 | 18 | 4 |
| M27 × | 3 | **T1043864** | YH4 | 130 | 62 | 20 | 15 | 18 | 4 |
| M27 × | 1.5 | **T1043884** | YH4 | 95 | 45 | 20 | 15 | 18 | 4 |
| M28 × | 1.5 | **T1043914** | YH4 | 105 | 45 | 21 | 17 | 20 | 4 |
| M30 × | 3.5 | **T1043945** | YH5 | 135 | 65 | 23 | 17 | 20 | 4 |
| M30 × | 1.5 | **T1043974** | YH4 | 105 | 45 | 23 | 17 | 20 | 4 |

►Refer to p.B143 for recommended tap drill sizes. 参考p.B143 底孔尺寸.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ○ | ○ | ○ | ○ | | ○ | | | | | | ◎ | ◎ | ◎ | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | ◎ | | | | | | | | | | | | | | | |



# YG TAP INOX

**1.5P T1402 SERIES**
**5.0P T1401 SERIES**

## M STRAIGHT FLUTE TAPS for STAINLESS STEELS
## 不锈钢用直槽丝锥

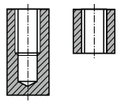
► Suitable for tapping Blind & Through holes in Stainless Steels Chrome Steels, Chrome Molybdenum Steels and other ductile materials with great tendency to work harden.

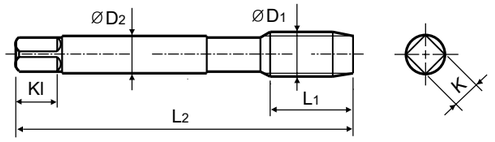
►适用于不碳钢, 铬钢, 铬钼钢和其他逐硬化的具有韧性材料的盲孔和通孔加工

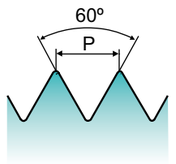
1.5P
5.0P

up to M7 : Male Center

**Hole type** 孔类型
2.0×D






Material groups **VA** | HSS-E | I | YH | 60° | 1.5P/5.0P | Homo

p. B143

Tap Limits: p.B230

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| ◎ | TAPPING ER CHUCK | D215 -220 |
| ◎ | TAPPING CHUCK | D221 -228 |
| | ONE STEP TAPPING CHUCK | D211 -213 |

Unit(单位) : mm

| SIZE 尺寸 | Pitch 牙距 | EDP No. 型号 | | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|---|
| ØD1 | P | 1.5P | 5.0P | | L2 | L1 | ØD2 | K | Kl | |
| M3 × | 0.5 | **T1402202** | **T1401202** | YH2 | 46 | 11 | 4 | 3.2 | 6 | 3 |
| M4 × | 0.7 | **T1402242** | **T1401242** | YH2 | 52 | 13 | 5 | 4 | 7 | 3 |
| M5 × | 0.8 | **T1402282** | **T1401282** | YH2 | 60 | 16 | 5.5 | 4.5 | 7 | 3 |
| M6 × | 1 | **T1402312** | **T1401312** | YH2 | 62 | 19 | 6 | 4.5 | 7 | 3 |
| M8 × | 1.25 | **T1402362** | **T1401362** | YH2 | 70 | 22 | 6.2 | 5 | 8 | 3 |
| M10 × | 1.5 | **T1402423** | **T1401423** | YH3 | 75 | 24 | 7 | 5.5 | 8 | 3 |
| M10 × | 1.25 | **T1402432** | **T1401432** | YH2 | 75 | 24 | 7 | 5.5 | 8 | 3 |
| M12 × | 1.75 | **T1402503** | **T1401503** | YH3 | 82 | 29 | 8.5 | 6.5 | 9 | 3 |
| M12 × | 1.5 | **T1402513** | **T1401513** | YH3 | 82 | 29 | 8.5 | 6.5 | 9 | 3 |
| M12 × | 1.25 | **T1402522** | **T1401522** | YH3 | 82 | 29 | 8.5 | 6.5 | 9 | 3 |
| M12 × | 1 | **T1402532** | **T1401532** | YH2 | 82 | 29 | 8.5 | 6.5 | 9 | 3 |
| M14 × | 2 | **T1402543** | **T1401543** | YH3 | 88 | 30 | 10.5 | 8 | 11 | 4 |
| M14 × | 1.5 | **T1402553** | **T1401553** | YH3 | 88 | 30 | 10.5 | 8 | 11 | 4 |
| M16 × | 2 | **T1402603** | **T1401603** | YH3 | 95 | 32 | 12.5 | 10 | 13 | 4 |
| M16 × | 1.5 | **T1402613** | **T1401613** | YH3 | 95 | 32 | 12.5 | 10 | 13 | 4 |
| M18 × | 2.5 | **T1402653** | **T1401653** | YH3 | 100 | 37 | 14 | 11 | 14 | 4 |
| M18 × | 1.5 | **T1402673** | **T1401673** | YH3 | 100 | 37 | 14 | 11 | 14 | 4 |
| M20 × | 2.5 | **T1402703** | **T1401703** | YH3 | 105 | 37 | 15 | 12 | 15 | 4 |
| M20 × | 1.5 | **T1402723** | **T1401723** | YH3 | 105 | 37 | 15 | 12 | 15 | 4 |
| M22 × | 2.5 | **T1402743** | **T1401743** | YH3 | 115 | 38 | 17 | 13 | 16 | 4 |
| M22 × | 1.5 | **T1402763** | **T1401763** | YH3 | 115 | 38 | 17 | 13 | 16 | 4 |

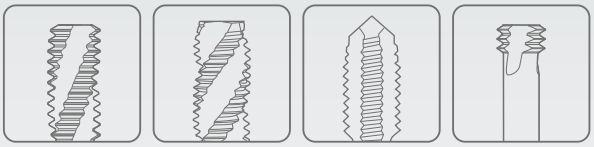
►Refer to p.B143 for recommended tap drill sizes. 参考p.B143 底孔尺寸.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ○ | ○ | ○ | ○ | | ○ | | | | | | ◎ | ◎ | ◎ | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | | | | | | ○ | | | | | | | | | | | | | | | |

Global Cutting Tool Leader **YG-1**



# THREADING

Leading Through Innovation

## SOLID CARBIDE & HSS-E

# YG TAP CAST IRON

- **For Cast Iron or Similar Work Materials**
- 对于铸铁或类似材料

# SELECTION GUIDE
# 选用指南

THREADING TOOLS

## SOLID CARBIDE & HSS-E
## YG TAP
## CAST IRON

For Cast Iron or Similar Work Materials
对于铸铁或类似材料

| | | | |
|---|---|---|---|
| HOLE TYPE 孔类型 | | Max. 2.0xD Blind / Through Hole 盲孔 / 通孔 | |
| TOOL MATERIAL 刀具材料 | | CARBIDE | HSS-E |
| CHAMFER LEAD ACC. TO DIN2197 倒角长度 | | 1.5P/3.0P | 1.5P/5.0P |
| FLUTE TYPE 槽型 | | Straight Flute 直槽 | Straight Flute 直槽 |
| SPIRAL FLUTE ANGLE 螺旋角 | | - | - |
| SERIES NO. 系列号 (page 页数) | JIS Type | I | I |
| | M/MF | T0451 T0441 (p. B157) | T4471 T4461 (p. B159) |
| | UNC/F | | |
| | W | T0462 T0452 (p. B158) | T4442 T4432 (p. B161) |
| | M-LH W-LH | | |
| | PIPE TAPS | | |
| SURFACE TREATMENT 表面处理 | | Bright | Nitrided & Steam Homo |
| MODEL 模型 | | | |

Please visit globalyg1.com/mat for material search

◎ : Excellent (优秀) ○ : Good (良好)

| ISO 公制 | VDI 3323 | Material Description 材料描述 | Composition / Structure / Heat Treatment 成分 / 组织 / 热处理 | | HB 布氏硬度 | HRc 硬度 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | About 0.15% C | Annealed | 125 | | | | | |
| | 2 | | About 0.45% C | Annealed | 190 | 13 | | | | |
| | 3 | | About 0.45% C | Quenched & Tempered | 250 | 25 | | | | |
| | 4 | | About 0.75% C | Annealed | 270 | 28 | | | | |
| | 5 | | About 0.75% C | Quenched & Tempered | 300 | 32 | | | | |
| | 6 | Low alloy steel | | Annealed | 180 | 10 | | | | |
| | 7 | | | Quenched & Tempered | 275 | 29 | | | | |
| | 8 | | | Quenched & Tempered | 300 | 32 | | | | |
| | 9 | | | Quenched & Tempered | 350 | 38 | | | | |
| | 10 | High alloyed steel, and tool steel | | Annealed | 200 | 15 | | | | |
| | 11 | | | Quenched & Tempered | 325 | 35 | | | | |
| M | 12 | Stainless steel | Ferritic / Martensitic | Annealed | 200 | 15 | | | | |
| | 13 | | Martensitic | Quenched & Tempered | 240 | 23 | | | | |
| | 14 | | Austenitic | | 180 | 10 | | | | |
| K | 15 | Grey cast iron | Pearlitic / ferritic | | 180 | 10 | ◎ | 12~20 | ◎ | 10~15 |
| | 16 | | Pearlitic (Martensitic) | | 260 | 26 | ◎ | 12~20 | ◎ | 10~15 |
| | 17 | Nodular cast iron | Ferritic | | 160 | 3 | ◎ | 10~15 | ◎ | 7~12 |
| | 18 | | Pearlitic | | 250 | 25 | ◎ | 10~15 | ◎ | 7~12 |
| | 19 | Malleable cast iron | Ferritic | | 130 | | ○ | 7~12 | ○ | 7~12 |
| | 20 | | Pearlitic | | 230 | 21 | ○ | 7~12 | ○ | 7~12 |
| N | 21 | Aluminum-wrought alloy | Not Curable | | 60 | | | | | |
| | 22 | | Curable | Hardened | 100 | | | | | |
| | 23 | Aluminum-cast, alloyed | ≤ 12% Si, Not Curable | | 75 | | ◎ | 15~20 | ◎ | 10~15 |
| | 24 | | ≤ 12% Si, Curable | Hardened | 90 | | ◎ | 15~20 | ○ | 10~15 |
| | 25 | | > 12% Si, Not Curable | | 130 | | ○ | 10~15 | ○ | 10~15 |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | Cutting Alloys, PB>1% | | 110 | | | | | |
| | 27 | | CuZn, CuSnZn (Brass) | | 90 | | ○ | 6~15 | ○ | 6~15 |
| | 28 | | CuSn, lead-free copper and electrolytic copper | | 100 | | | | | |
| | 29 | Non Metallic Materials | Duroplastic, Fiber Reinforced Plastic | | | | | | | |
| | 30 | | Rubber, Wood, etc. | | | | | | | |
| S | 31 | Heat Resistant Super Alloys | Fe Based | Annealed | 200 | 15 | | | | |
| | 32 | | | Cured | 280 | 30 | | | | |
| | 33 | | Ni or Co Based | Annealed | 250 | 25 | | | | |
| | 34 | | | Cured | 350 | 38 | | | | |
| | 35 | | | Cast | 320 | 34 | | | | |
| | 36 | Titanium Alloys | Pure Titanium | | 400 Rm | | | | | |
| | 37 | | Alpha + Beta Alloys | Hardened | 1050 Rm | | | | | |
| H | 38 | Hardened steel | | Hardened | 550 | 55 | | | | |
| | 39 | | | Hardened | 630 | 60 | | | | |
| | 40 | Chilled Cast Iron | | Cast | 400 | 42 | | | | |
| | 41 | Hardened Cast Iron | | Hardened | 550 | 55 | | | | |



CARBIDE
HSS
THREAD MILLS
SYNCHRO TAPS
COMBO TAPS
YG TAP GENERAL
YG TAP STEEL
YG TAP HARDENED
YG TAP INOX
YG TAP CAST IRON
YG TAP ALU
YG TAP Ti Ni
YG TAP FORMING
STI TAPS
PIPE TAPS
SKS21 HAND TAPS
SKS21 PIPE TAPS
TECHNICAL DATA

# YG TAP CAST IRON

1.5P T0451 SERIES
3.0P T0441 SERIES

## M SOLID CARBIDE STRAIGHT FLUTE TAPS for CAST IRONS
## 铸铁用硬质合金直槽丝锥

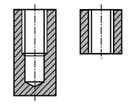
► Suitable for tapping Blind & Through holes in Grey Cast Iron, Nodular Cast Iron, Malleable Cast Iron, Brass Casting and other similar materials.

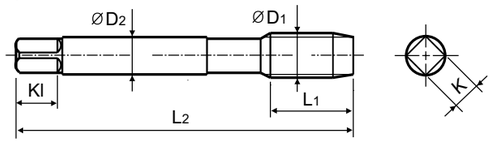
►适用于灰铸铁, 球状石黑铸铁, 可锻铸铁, 黄铜铸件及具有相同性 质的材料的盲孔和通孔的加工.

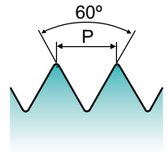
1.5P
3.0P

up to M6 : Male Center

Hole type 孔类型
2.0×D






Material groups GG | CARBIDE | I | YH | 60° | 1.5P/3.0P | Bright

p. B156

Tap Limits: p.B230

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| TAPPING ER CHUCK | D215 -220 |
| TAPPING CHUCK | D221 -228 |
| ONE STEP TAPPING CHUCK | D211 -213 |

Unit(单位) : mm

| SIZE 尺寸 ØD1 | | Pitch 牙距 P | EDP No. 型号 1.5P | EDP No. 型号 3.0P | Limit 精度 | Overall Length 全长 L2 | Thread Length 螺纹长 L1 | Shank Diameter 柄径 ØD2 | Square Size 方块 尺寸 K | Square Length 方块 长度 Kl | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| M3 | × | 0.5 | T0451203 | T0441203 | YH3 | 46 | 11 | 4 | 3.2 | 6 | 3 |
| M4 | × | 0.7 | T0451243 | T0441243 | YH3 | 52 | 13 | 5 | 4 | 7 | 3 |
| M5 | × | 0.8 | T0451283 | T0441283 | YH3 | 60 | 16 | 5.5 | 4.5 | 7 | 3 |
| M6 | × | 1 | T0451313 | T0441313 | YH3 | 62 | 19 | 6 | 4.5 | 7 | 3 |
| M8 | × | 1.25 | T0451364 | T0441364 | YH4 | 70 | 22 | 6.2 | 5 | 8 | 4 |
| M10 | × | 1.5 | T0451424 | T0441424 | YH4 | 75 | 24 | 7 | 5.5 | 8 | 4 |
| M12 | × | 1.75 | T0451505 | T0441505 | YH5 | 82 | 29 | 8.5 | 6.5 | 9 | 4 |

►Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | | | | | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | | | | |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 | | | | |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 | | | | |
| Recommended | | | | | | | | | | | | | | | ◎ | ◎ | ◎ | ◎ | ○ | ○ | | | | |
| ISO | N | | | | | | | | | | S | | | | | | | | H | | | | | |
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | | Hardened steel | | Chilled Cast Iron | | Hardened Cast Iron | |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | | 38 | 39 | 40 | | 41 | |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | | 55 | 60 | 42 | | 55 | |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | | 550 | 630 | 400 | | 550 | |
| Recommended | | | ◎ | ◎ | ○ | | ○ | | | | | | | | | | | | | | | | | |

YG TAP CAST IRON

1.5P **T0462 SERIES**
3.0P **T0452 SERIES**

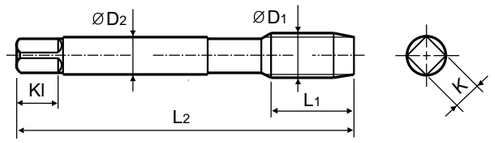
# W SOLID CARBIDE STRAIGHT FLUTE TAPS for CAST IRONS
## 铸铁用硬质合金直槽丝锥

► Suitable for tapping Blind & Through holes in Grey Cast Iron, Nodular Cast Iron, Malleable Cast Iron, Brass Casting and other similar materials.

►适用于灰铸铁, 球状石黑铸铁, 可锻铸铁, 黄铜铸件及具有相同性 质的材料的盲孔和通孔的加工.

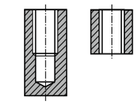
1.5P
3.0P

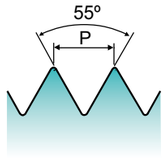
up to W1/4 : Male Center




**Hole type** 孔类型

2.0×D






Material groups **GG** | CARBIDE | I | YH | 55° | 1.5P/3.0P | Bright

p. B156

Tap Limits: p.B230

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| ◎ | TAPPING ER CHUCK | D215 -220 |
| ◎ | TAPPING CHUCK | D221 -228 |
| | ONE STEP TAPPING CHUCK | D211 -213 |

Unit(单位) : mm

| SIZE 尺寸 | TPI 牙距 | EDP No. 型号 1.5P | EDP No. 型号 3.0P | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|---|
| ØD1 | | | | | L2 | L1 | ØD2 | K | Kl | |
| W1/8 | - 40 | T0462203 | T0452203 | YH3 | 46 | 11 | 4 | 3.2 | 6 | 3 |
| W3/16 | - 24 | T0462323 | T0452323 | YH3 | 60 | 16 | 5.5 | 4.5 | 7 | 3 |
| W1/4 | - 20 | T0462404 | T0452404 | YH4 | 62 | 19 | 6 | 4.5 | 7 | 3 |
| W5/16 | - 18 | T0462444 | T0452444 | YH4 | 70 | 22 | 6.1 | 5 | 8 | 4 |
| W3/8 | - 16 | T0462484 | T0452484 | YH4 | 75 | 24 | 7 | 5.5 | 8 | 4 |
| W7/16 | - 14 | T0462524 | T0452524 | YH4 | 80 | 25 | 8 | 6 | 9 | 4 |
| W1/2 | - 12 | T0462565 | T0452565 | YH5 | 85 | 29 | 9 | 7 | 10 | 4 |

►Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | | | | | | | | | | | | | | | ◎ | ◎ | ◎ | ◎ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | | | ◎ | ◎ | ○ | | ○ | | | | | | | | | | | | | | |



YG TAP CAST IRON

1.5P **T4471 SERIES**
5.0P **T4461 SERIES**

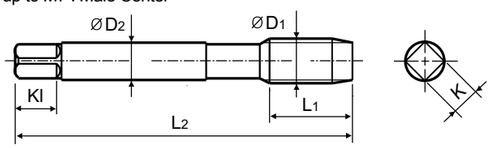
# M STRAIGHT FLUTE TAPS for CAST IRONS
## 铸铁用直槽丝锥

► Suitable for tapping Blind & Through holes in Grey Cast Iron, Nodular Cast Iron Malleable Cast Iron Brass Casting and other similar materials.

►适用于灰铸铁, 球状石墨铸铁, 可锻造铸铁及具有同性质的材料的 盲孔和通孔的加工

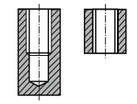
1.5P
5.0P

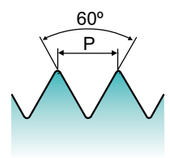
up to M7 : Male Center




**Hole type** 孔类型

2.0×D






Material groups **GG** | HSS-E | I | YH | 60° | 1.5P/5.0P | Nitrided & Homo

p. B156

Tap Limits: p.B230

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| ◎ | TAPPING ER CHUCK | D215 -220 |
| ◎ | TAPPING CHUCK | D221 -228 |
| | ONE STEP TAPPING CHUCK | D211 -213 |

Unit(单位) : mm

| SIZE 尺寸 | | Pitch 牙距 | EDP No. 型号 1.5P | EDP No. 型号 5.0P | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ØD1 | | P | | | | L2 | L1 | ØD2 | K | Kl | |
| M2 | × 0.4 | | T4471133 | T4461133 | YH3 | 40 | 9.5 | 3 | 2.5 | 5 | 3 |
| M2.2 | × 0.45 | | T4471153 | T4461153 | YH3 | 42 | 9.5 | 3 | 2.5 | 5 | 3 |
| M2.3 | × 0.4 | | T4471193 | T4461193 | YH3 | 42 | 9.5 | 3 | 2.5 | 5 | 3 |
| M2.5 | × 0.45 | | T4471173 | T4461173 | YH3 | 44 | 9.5 | 3 | 2.5 | 5 | 3 |
| M2.6 | × 0.45 | | T4471493 | T4461493 | YH3 | 44 | 9.5 | 3 | 2.5 | 5 | 3 |
| M3 | × 0.5 | | T4471203 | T4461203 | YH3 | 46 | 11 | 4 | 3.2 | 6 | 3 |
| M3.5 | × 0.6 | | T4471223 | T4461223 | YH3 | 48 | 13 | 4 | 3.2 | 6 | 3 |
| M4 | × 0.7 | | T4471243 | T4461243 | YH3 | 52 | 13 | 5 | 4 | 7 | 4 |
| M5 | × 0.8 | | T4471283 | T4461283 | YH3 | 60 | 16 | 5.5 | 4.5 | 7 | 4 |
| M6 | × 1 | | T4471313 | T4461313 | YH3 | 62 | 19 | 6 | 4.5 | 7 | 4 |
| M8 | × 1.25 | | T4471364 | T4461364 | YH4 | 70 | 22 | 6.2 | 5 | 8 | 4 |
| M10 | × 1.5 | | T4471424 | T4461424 | YH4 | 75 | 24 | 7 | 5.5 | 8 | 4 |
| M10 | × 1.25 | | T4471434 | T4461434 | YH4 | 75 | 24 | 7 | 5.5 | 8 | 4 |
| M12 | × 1.75 | | T4471505 | T4461505 | YH5 | 82 | 29 | 8.5 | 6.5 | 9 | 4 |
| M12 | × 1.5 | | T4471514 | T4461514 | YH4 | 82 | 29 | 8.5 | 6.5 | 9 | 4 |
| M12 | × 1.25 | | T4471524 | T4461524 | YH4 | 82 | 29 | 8.5 | 6.5 | 9 | 4 |
| M12 | × 1 | | T4471533 | T4461533 | YH3 | 82 | 29 | 8.5 | 6.5 | 9 | 4 |
| M14 | × 2 | | T4471545 | T4461545 | YH5 | 88 | 30 | 10.5 | 8 | 11 | 4 |

►Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

▶ NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | | | | | | | | | | | | | | | ◎ | ◎ | ◎ | ◎ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | | | ◎ | ◎ | ○ | | ○ | | | | | | | | | | | | | | |

# YG TAP CAST IRON

1.5P **T4471** SERIES
5.0P **T4461** SERIES

## M STRAIGHT FLUTE TAPS for CAST IRONS
## 铸铁用直槽丝锥

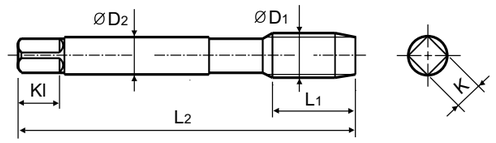
► Suitable for tapping Blind & Through holes in Grey Cast Iron, Nodular Cast Iron, Malleable Cast Iron Brass Casting and other similar materials.

►适用于灰铸铁, 球状石墨铸铁, 可锻造铸铁及具有同性质的材料的 盲孔和通孔的加工

1.5P

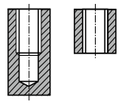
5.0P

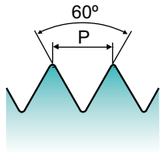
up to M7 : Male Center




**Hole type** 孔类型

2.0×D






Material groups **GG**

HSS-E | I | YH | 60° | 1.5P/5.0P | Nitrided & Homo

p. B156

Tap Limits: p.B230

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| TAPPING ER CHUCK | D215 -220 |
| TAPPING CHUCK | D221 -228 |
| ONE STEP TAPPING CHUCK | D211 -213 |

Unit(单位) : mm

| SIZE 尺寸 | | Pitch 牙距 | EDP No. 型号 | | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ØD1 | | P | 1.5P | 5.0P | | L2 | L1 | ØD2 | K | Kl | |
| M14 | × | 1.5 | **T4471554** | **T4461554** | YH4 | 88 | 30 | 10.5 | 8 | 11 | 4 |
| M16 | × | 2 | **T4471605** | **T4461605** | YH5 | 95 | 32 | 12.5 | 10 | 13 | 4 |
| M16 | × | 1.5 | **T4471614** | **T4461614** | YH4 | 95 | 32 | 12.5 | 10 | 13 | 4 |
| M18 | × | 2.5 | **T4471655** | **T4461655** | YH5 | 100 | 37 | 14 | 11 | 14 | 4 |
| M18 | × | 1.5 | **T4471674** | **T4461674** | YH4 | 100 | 37 | 14 | 11 | 14 | 4 |
| M20 | × | 2.5 | **T4471705** | **T4461705** | YH5 | 105 | 37 | 15 | 12 | 15 | 4 |
| M20 | × | 1.5 | **T4471724** | **T4461724** | YH4 | 105 | 37 | 15 | 12 | 15 | 4 |
| M22 | × | 2.5 | **T4471745** | **T4461745** | YH5 | 115 | 38 | 17 | 13 | 16 | 4 |
| M22 | × | 1.5 | **T4471764** | **T4461764** | YH4 | 115 | 38 | 17 | 13 | 16 | 4 |
| M24 | × | 3 | **T4471785** | **T4461785** | YH5 | 120 | 45 | 19 | 15 | 18 | 4 |
| M24 | × | 1.5 | **T4471804** | **T4461804** | YH5 | 120 | 45 | 19 | 15 | 18 | 4 |
| M25 | × | 1.5 | **T4471834** | **T4461834** | YH4 | 125 | 45 | 19 | 15 | 18 | 4 |
| M26 | × | 1.5 | **T4471854** | **T4461854** | YH4 | 125 | 45 | 20 | 15 | 18 | 4 |
| M27 | × | 3 | **T4471865** | **T4461865** | YH5 | 130 | 45 | 20 | 15 | 18 | 4 |
| M27 | × | 1.5 | **T4471884** | **T4461884** | YH4 | 130 | 45 | 20 | 15 | 18 | 4 |
| M28 | × | 1.5 | **T4471914** | **T4461914** | YH4 | 130 | 45 | 21 | 17 | 20 | 4 |
| M30 | × | 3.5 | **T4471946** | **T4461946** | YH6 | 135 | 48 | 23 | 17 | 20 | 4 |
| M30 | × | 1.5 | **T4471974** | **T4461974** | YH4 | 135 | 45 | 23 | 17 | 20 | 4 |

►Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | | | | | | | | | | | | | | | ◎ | ◎ | ◎ | ◎ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | | | ◎ | ○ | ○ | | ○ | | | | | | | | | | | | | | |



CARBIDE
HSS
THREAD MILLS
SYNCHRO TAPS
COMBO TAPS
YG TAP GENERAL
YG TAP STEEL
YG TAP HARDENED
YG TAP INOX
YG TAP CAST IRON
YG TAP ALU
YG TAP Ti Ni
YG TAP FORMING
STI TAPS
PIPE TAPS
SKS21 HAND TAPS
SKS21 PIPE TAPS
TECHNICAL DATA

# YG TAP CAST IRON

1.5P **T4442** SERIES
5.0P **T4432** SERIES

## W STRAIGHT FLUTE TAPS for CAST IRONS
## 铸铁用直槽丝锥

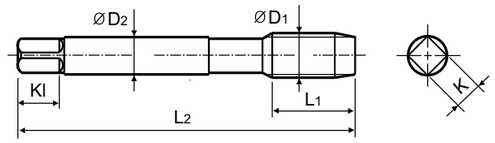
► Suitable for tapping Blind & Through holes in Grey Cast Iron, Nodular Cast Iron, Malleable Cast Iron Brass Casting, and other similar materials.

►适用于灰铸铁, 球状石墨铸铁, 可锻造铸铁及具有同性质的材料的 盲孔和通孔的加工

1.5P

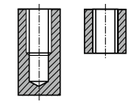
5.0P

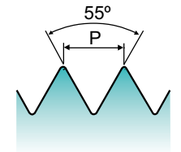
up to W5/16 : Male Center




**Hole type** 孔类型

2.0×D






Material groups **GG**

HSS-E | I | YH | 55° | 1.5P/5.0P | Nitrided & Homo

p. B156

Tap Limits: p.B230

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| TAPPING ER CHUCK | D215 -220 |
| TAPPING CHUCK | D221 -228 |
| ONE STEP TAPPING CHUCK | D211 -213 |

Unit(单位) : mm

| SIZE 尺寸 | | TPI 牙距 | EDP No. 型号 | | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ØD1 | | | 1.5P | 5.0P | | L2 | L1 | ØD2 | K | Kl | |
| W1/8 | - | 40 | **T4442203** | **T4432203** | YH3 | 46 | 11 | 4 | 3.2 | 6 | 3 |
| W3/16 | - | 24 | **T4442323** | **T4432323** | YH3 | 60 | 16 | 5.5 | 4.5 | 7 | 4 |
| W1/4 | - | 20 | **T4442404** | **T4432404** | YH4 | 62 | 19 | 6 | 4.5 | 7 | 4 |
| W5/16 | - | 18 | **T4442444** | **T4432444** | YH4 | 70 | 22 | 6.1 | 5 | 8 | 4 |
| W3/8 | - | 16 | **T4442484** | **T4432484** | YH4 | 75 | 24 | 7 | 5.5 | 8 | 4 |
| W7/16 | - | 14 | **T4442525** | **T4432525** | YH5 | 80 | 25 | 8 | 6 | 9 | 4 |
| W1/2 | - | 12 | **T4442565** | **T4432565** | YH5 | 85 | 29 | 9 | 7 | 10 | 4 |
| W9/16 | - | 12 | **T4442605** | **T4432605** | YH5 | 90 | 30 | 10.5 | 8 | 11 | 4 |
| W5/8 | - | 11 | **T4442645** | **T4432645** | YH5 | 95 | 32 | 12 | 9 | 12 | 4 |
| W3/4 | - | 10 | **T4442705** | **T4432705** | YH5 | 105 | 37 | 14 | 11 | 14 | 4 |
| W7/8 | - | 9 | **T4442746** | **T4432746** | YH6 | 115 | 38 | 17 | 13 | 16 | 4 |
| W1″ | - | 8 | **T4442786** | **T4432786** | YH6 | 125 | 45 | 20 | 15 | 18 | 4 |

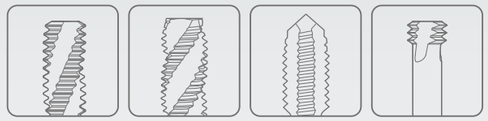
►Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | | | | | | | | | | | | | | | ◎ | ◎ | ◎ | ◎ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | | | ◎ | ○ | ○ | | ○ | | | | | | | | | | | | | | | |

Global Cutting Tool Leader **YG-1**



# THREADING

Leading Through Innovation

## SOLID CARBIDE & HSS-E

# YG TAP ALU

- **For long-chipping Aluminum Wrought Alloys with Large Chip Gullets to Avoid Clogging in the Threading Operations**
- 采用大排屑槽设计, 适合长屑铝合金攻丝, 避免缠屑-

# SELECTION GUIDE
## 选用指南

YG THREADING TOOLS

# SOLID CARBIDE & HSS-E
# YG TAP
# ALU

For long-chipping Aluminum Wrought Alloys with Large Chip Gullets to Avoid Clogging in the Threading Operations

采用大排屑槽设计, 适合长屑铝合金攻丝, 避免缠屑

Please visit globalyg1.com/mat for material search

◎ : Excellent (优秀) ○ : Good (良好)

| | | | CARBIDE | HSS-E |
|---|---|---|---|---|
| HOLE TYPE 孔类型 | | | Max. 2.5xD Blind Hole盲孔 | |
| TOOL MATERIAL 刀具材料 | | | | |
| CHAMFER LEAD ACC. TO DIN2197 倒角长度 | | | 1.5P/2.5P | 2.5P |
| FLUTE TYPE 槽型 | | | Spiral Flute 螺旋角 | Spiral Flute 螺旋角 |
| SPIRAL FLUTE ANGLE 螺旋角 | | | R15 | R40 |
| SERIES NO. 系列号 (page 页数) | JIS Type | | I | I |
| | M/MF | | T0202 T0102 (p. B166) | T2120 (p. B168) |
| | UNC/F | | | |
| | W | | T0164 T0154 (p. B167) | |
| | M-LH W-LH | | | |
| | PIPE TAPS | | | |
| SURFACE TREATMENT表面处理 | | | Bright | Bright |
| MODEL 模型 | | | | |

| ISO 公制 | VDI 3323 | Material Description 材料描述 | Composition / Structure / Heat Treatment 成分 / 组织 / 热处理 | | HB 布氏硬度 | HRc 硬度 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | About 0.15% C | Annealed | 125 | | | | ○ | 8~13 |
| | 2 | | About 0.45% C | Annealed | 190 | 13 | | | ○ | 7~12 |
| | 3 | | About 0.45% C | Quenched & Tempered | 250 | 25 | | | | |
| | 4 | | About 0.75% C | Annealed | 270 | 28 | | | | |
| | 5 | | About 0.75% C | Quenched & Tempered | 300 | 32 | | | | |
| | 6 | Low alloy steel | | Annealed | 180 | 10 | | | ○ | 7~12 |
| | 7 | | | Quenched & Tempered | 275 | 29 | | | | |
| | 8 | | | Quenched & Tempered | 300 | 32 | | | | |
| | 9 | | | Quenched & Tempered | 350 | 38 | | | | |
| | 10 | High alloyed steel, and tool steel | | Annealed | 200 | 15 | | | | |
| | 11 | | | Quenched & Tempered | 325 | 35 | | | | |
| M | 12 | Stainless steel | Ferritic / Martensitic | Annealed | 200 | 15 | | | | |
| | 13 | | Martensitic | Quenched & Tempered | 240 | 23 | | | | |
| | 14 | | Austenitic | | 180 | 10 | | | | |
| K | 15 | Grey cast iron | Pearlitic / ferritic | | 180 | 10 | ○ | 10~20 | | |
| | 16 | | Pearlitic (Martensitic) | | 260 | 26 | ○ | 10~20 | | |
| | 17 | Nodular cast iron | Ferritic | | 160 | 3 | ○ | 10~20 | | |
| | 18 | | Pearlitic | | 250 | 25 | ○ | 10~20 | | |
| | 19 | Malleable cast iron | Ferritic | | 130 | | | | | |
| | 20 | | Pearlitic | | 230 | 21 | | | | |
| N | 21 | Aluminum-wrought alloy | Not Curable | | 60 | | ◎ | 10~15 | ◎ | 10~20 |
| | 22 | | Curable | Hardened | 100 | | ◎ | 10~15 | ◎ | 10~20 |
| | 23 | Aluminum-cast, alloyed | ≤ 12% Si, Not Curable | | 75 | | ◎ | 10~20 | | |
| | 24 | | ≤ 12% Si, Curable | Hardened | 90 | | ○ | 10~20 | | |
| | 25 | | > 12% Si, Not Curable | | 130 | | | | | |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | Cutting Alloys, PB>1% | | 110 | | ○ | 10~20 | ○ | 6~11 |
| | 27 | | CuZn, CuSnZn (Brass) | | 90 | | ○ | 15~25 | ○ | 6~20 |
| | 28 | | CuSn, lead-free copper and electrolytic copper | | 100 | | | | | |
| | 29 | Non Metallic Materials | Duroplastic, Fiber Reinforced Plastic | | | | | | | |
| | 30 | | Rubber, Wood, etc. | | | | | | | |
| S | 31 | Heat Resistant Super Alloys | Fe Based | Annealed | 200 | 15 | | | | |
| | 32 | | | Cured | 280 | 30 | | | | |
| | 33 | | Ni or Co Based | Annealed | 250 | 25 | | | | |
| | 34 | | | Cured | 350 | 38 | | | | |
| | 35 | | | Cast | 320 | 34 | | | | |
| | 36 | Titanium Alloys | Pure Titanium | | 400 Rm | | | | | |
| | 37 | | Alpha + Beta Alloys | Hardened | 1050 Rm | | | | | |
| H | 38 | Hardened steel | | Hardened | 550 | 55 | | | | |
| | 39 | | | Hardened | 630 | 60 | | | | |
| | 40 | Chilled Cast Iron | | Cast | 400 | 42 | | | | |
| | 41 | Hardened Cast Iron | | Hardened | 550 | 55 | | | | |



| | Max. 2.5xD Blind Hole盲孔 | | Max. 3.0xD Through Hole通孔 | | |
|---|---|---|---|---|---|
| | HSS-E | | | | |
| | 2.5P | 2.5P | 5.0P | 5.0P | |
| | Spiral Flute 螺旋角 | Spiral Flut 螺旋角 | Spiral Point 螺尖 | Spiral Point 螺尖 | |
| | R40 | R40 | - | - | |
| | J | S | I | J | JIS Type |
| | T2131 (p. B170) | T2111 (p. B172) | T2021 (p. B173) | T2041 (p. B175) | M/MF |
| | | | | | UNC/F |
| | | | | | W |
| | | | | | M-LH W-LH |
| | | | | | PIPE TAPS |
| | Bright | Bright | Bright | Bright | |
| | | | | | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| ○ | 8~13 | ○ | 8~13 | ○ | 8~13 | ○ | 8~13 | 1 | |
| ○ | 7~12 | ○ | 7~12 | ○ | 7~12 | ○ | 7~12 | 2 | |
| | | | | | | | | 3 | |
| | | | | | | | | 4 | |
| | | | | | | | | 5 | |
| ○ | 7~12 | ○ | 7~12 | ○ | 7~12 | ○ | 7~12 | 6 | P |
| | | | | | | | | 7 | |
| | | | | | | | | 8 | |
| | | | | | | | | 9 | |
| | | | | | | | | 10 | |
| | | | | | | | | 11 | |
| | | | | ○ | 8~13 | ○ | 8~13 | 12 | |
| | | | | ○ | 8~13 | ○ | 8~13 | 13 | M |
| | | | | ○ | 8~13 | ○ | 8~13 | 14 | |
| | | | | | | | | 15 | |
| | | | | | | | | 16 | |
| | | | | | | | | 17 | K |
| | | | | | | | | 18 | |
| | | | | | | | | 19 | |
| | | | | | | | | 20 | |
| ○ | 10~20 | ○ | 10~20 | ◎ | 15~25 | ◎ | 15~25 | 21 | |
| ○ | 10~20 | ○ | 10~20 | ◎ | 15~25 | ◎ | 15~25 | 22 | |
| | | | | ○ | 15~20 | ○ | 15~20 | 23 | |
| | | | | | | | | 24 | |
| | | | | | | | | 25 | |
| ○ | 6~11 | ○ | 6~11 | ○ | 7~12 | ○ | 7~12 | 26 | N |
| ○ | 6~20 | ○ | 6~20 | ○ | 10~25 | ○ | 10~25 | 27 | |
| | | | | | | | | 28 | |
| | | | | | | | | 29 | |
| | | | | | | | | 30 | |
| | | | | | | | | 31 | |
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| | | | | | | | | 37 | |
| | | | | | | | | 38 | |
| | | | | | | | | 39 | H |
| | | | | | | | | 40 | |
| | | | | | | | | 41 | |



CARBIDE
HSS
THREAD MILLS
SYNCHRO TAPS
COMBO TAPS
YG TAP GENERAL
YG TAP STEEL
YG TAP HARDENED
YG TAP INOX
YG TAP CAST IRON
YG TAP ALU
YG TAP Ti Ni
YG TAP FORMING
STI TAPS
PIPE TAPS
SKS21 HAND TAPS
SKS21 PIPE TAPS
TECHNICAL DATA

# YG TAP ALU

1.5P **T0202 SERIES**
2.5P **T0102 SERIES**

## M SOLID CARBIDE SPIRAL FLUTE TAPS for NON-FERROUS METALS
## 有色金属用硬质合金螺旋槽丝锥

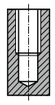
► Suitable for tapping Blind holes in Aluminum, Magnesium, Zinc, Copper as well as Non-Ferrous metal alloys.

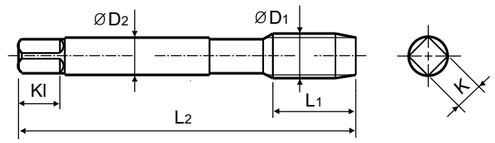
►适用于铝, 镁, 锌, 铜及有色金属的盲孔加工.

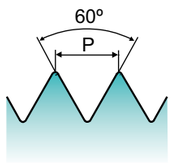
1.5P
2.5P

up to M6 : Male Center

Hole type 孔类型
2.5×D






Material groups: Al | CARBIDE | I | YH | 60° | 1.5P/2.5P | R15 | Bright

p. B164

Tap Limits: p.B230

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| TAPPING ER CHUCK | D215 -220 |
| TAPPING CHUCK | D221 -228 |
| ONE STEP TAPPING CHUCK | D211 -213 |

Unit(单位) : mm

| SIZE 尺寸 | | Pitch 牙距 | EDP No. 型号 | | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ØD1 | | P | 1.5P | 2.5P | | L2 | L1 | ØD2 | K | Kl | |
| M3 | × | 0.5 | T0202203 | T0102203 | YH3 | 46 | 11 | 4 | 3.2 | 6 | 3 |
| M4 | × | 0.7 | T0202243 | T0102243 | YH3 | 52 | 13 | 5 | 4 | 7 | 3 |
| M5 | × | 0.8 | T0202283 | T0102283 | YH3 | 60 | 16 | 5.5 | 4.5 | 7 | 3 |
| M6 | × | 1 | T0202313 | T0102313 | YH3 | 62 | 19 | 6 | 4.5 | 7 | 3 |
| M8 | × | 1.25 | T0202364 | T0102364 | YH4 | 70 | 22 | 6.2 | 5 | 8 | 3 |
| M10 | × | 1.5 | T0202424 | T0102424 | YH4 | 75 | 24 | 7 | 5.5 | 8 | 3 |
| M12 | × | 1.75 | T0202504 | T0102504 | YH4 | 82 | 29 | 8.5 | 6.5 | 9 | 3 |

►Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | | | | | | | | | | | | | | | ○ | ○ | ○ | ○ | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ◎ | ◎ | ◎ | ○ | | ○ | ○ | | | | | | | | | | | | | | |



# YG TAP ALU

1.5P **T0164 SERIES**
2.5P **T0154 SERIES**

## W SOLID CARBIDE SPIRAL FLUTE TAPS for NON-FERROUS METALS
## 有色金属用硬质合金螺旋槽丝锥

► Suitable for tapping Blind holes in Aluminum, Magnesium, Zinc, Copper as well as Non-Ferrous metal alloys.

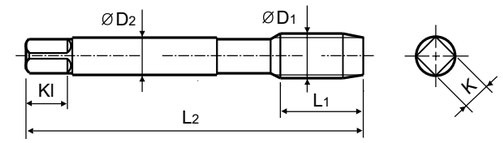
►适用于铝, 镁, 锌, 铜及有色金属的盲孔加工.

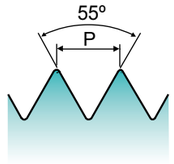
1.5P
2.5P

up to W1/4 : Male Center

Hole type 孔类型
2.5×D






Material groups: Al | CARBIDE | I | YH | 55° | 1.5P/2.5P | R15 | Bright

p. B164

Tap Limits: p.B230

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| TAPPING ER CHUCK | D215 -220 |
| TAPPING CHUCK | D221 -228 |
| ONE STEP TAPPING CHUCK | D211 -213 |

Unit(单位) : mm

| SIZE 尺寸 | | TPI 牙距 | EDP No. 型号 | | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ØD1 | | | 1.5P | 2.5P | | L2 | L1 | ØD2 | K | Kl | |
| W1/8 | - | 40 | T0164203 | T0154203 | YH3 | 46 | 11 | 4 | 3.2 | 6 | 3 |
| W3/16 | - | 24 | T0164323 | T0154323 | YH3 | 60 | 16 | 5.5 | 4.5 | 7 | 3 |
| W1/4 | - | 20 | T0164404 | T0154404 | YH4 | 62 | 19 | 6 | 4.5 | 7 | 3 |
| W5/16 | - | 18 | T0164444 | T0154444 | YH4 | 70 | 22 | 6.1 | 5 | 8 | 3 |
| W3/8 | - | 16 | T0164484 | T0154484 | YH4 | 75 | 24 | 7 | 5.5 | 8 | 3 |
| W7/16 | - | 14 | T0164524 | T0154524 | YH4 | 80 | 25 | 8 | 6 | 9 | 3 |
| W1/2 | - | 12 | T0164564 | T0154564 | YH4 | 85 | 29 | 9 | 7 | 10 | 3 |

►Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | | | | | | | | | | | | | | | ○ | ○ | ○ | ○ | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ◎ | ◎ | ◎ | ○ | | ○ | ○ | | | | | | | | | | | | | | |

# YG TAP ALU

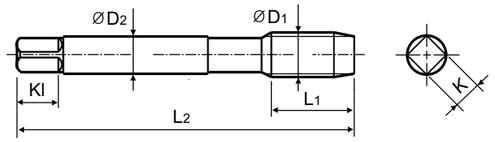
**T2120 SERIES**

## M SPIRAL FLUTE TAPS for NON-FERROUS METALS
## 有色金属用螺旋槽丝锥

► Suitable for tapping Blind holes in Aluminum, Magnesium, Zinc, Copper as well as Non-Ferrous metal alloys.

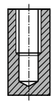
►适用于铝, 镁, 锌, 铜及有色金属的盲孔加工

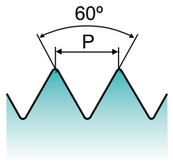
up to M7 : Male Center




**Hole type 孔类型**

2.5×D






Material groups **Al**

HSS-E | I | YH | 60° | 2.5P | R40 | Bright

p. B164

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| TAPPING ER CHUCK | D215 -220 |
| TAPPING CHUCK | D221 -228 |
| ONE STEP TAPPING CHUCK | D211 -213 |

Tap Limits: p.B230

Unit(单位) : mm

| SIZE 尺寸 | | Pitch 牙距 | | EDP No. 型号 | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ØD1 | | P | | | | L2 | L1 | ØD2 | K | Kl | |
| M2 | × | 0.4 | | T2120131 | YH1 | 40 | 9.5 | 3 | 2.5 | 5 | 2 |
| M2.2 | × | 0.45 | | T2120151 | YH1 | 42 | 9.5 | 3 | 2.5 | 5 | 2 |
| M2.3 | × | 0.4 | | T2120191 | YH1 | 42 | 9.5 | 3 | 2.5 | 5 | 2 |
| M2.5 | × | 0.45 | | T2120171 | YH1 | 44 | 9.5 | 3 | 2.5 | 5 | 2 |
| M2.6 | × | 0.45 | | T2120491 | YH1 | 44 | 9.5 | 3 | 2.5 | 5 | 2 |
| M3 | × | 0.5 | | T2120202 | YH2 | 46 | 11 | 4 | 3.2 | 6 | 3 |
| M3.5 | × | 0.6 | | T2120222 | YH2 | 48 | 13 | 4 | 3.2 | 6 | 3 |
| M4 | × | 0.7 | | T2120242 | YH2 | 52 | 13 | 5 | 4 | 7 | 3 |
| M5 | × | 0.8 | | T2120282 | YH2 | 60 | 16 | 5.5 | 4.5 | 7 | 3 |
| M6 | × | 1 | | T2120312 | YH2 | 62 | 19 | 6 | 4.5 | 7 | 3 |
| M8 | × | 1.25 | | T2120363 | YH3 | 70 | 22 | 6.2 | 5 | 8 | 3 |
| M10 | × | 1.5 | | T2120423 | YH3 | 75 | 24 | 7 | 5.5 | 8 | 3 |
| M10 | × | 1.25 | | T2120433 | YH3 | 75 | 24 | 7 | 5.5 | 8 | 3 |
| M12 | × | 1.75 | | T2120503 | YH3 | 82 | 29 | 8.5 | 6.5 | 9 | 3 |
| M12 | × | 1.5 | | T2120513 | YH3 | 82 | 29 | 8.5 | 6.5 | 9 | 3 |
| M12 | × | 1.25 | | T2120523 | YH3 | 82 | 29 | 8.5 | 6.5 | 9 | 3 |
| M12 | × | 1 | | T2120532 | YH2 | 82 | 29 | 8.5 | 6.5 | 9 | 3 |
| M14 | × | 2 | | T2120543 | YH3 | 88 | 30 | 10.5 | 8 | 11 | 3 |

►Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

► NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ○ | ○ | | | | ○ | | | | | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ◎ | ◎ | | | | ○ | ○ | | | | | | | | | | | | | | |



CARBIDE
HSS
THREAD MILLS
SYNCHRO TAPS
COMBO TAPS
YG TAP GENERAL
YG TAP STEEL
YG TAP HARDENED
YG TAP INOX
YG TAP CAST IRON
YG TAP ALU
YG TAP Ti Ni
YG TAP FORMING
STI TAPS
PIPE TAPS
SKS21 HAND TAPS
SKS21 PIPE TAPS
TECHNICAL DATA

# YG TAP ALU

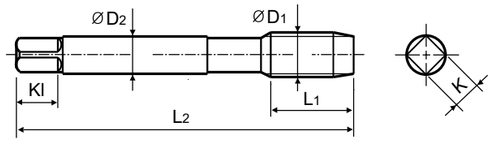
**T2120 SERIES**

## M SPIRAL FLUTE TAPS for NON-FERROUS METALS
## 有色金属用螺旋槽丝锥

► Suitable for tapping Blind holes in Aluminum, Magnesium, Zinc, Copper as well as Non-Ferrous metal alloys.

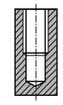
►适用于铝, 镁, 锌, 铜及有色金属的盲孔加工.

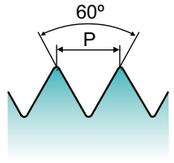
up to M7 : Male Center




**Hole type 孔类型**

2.5×D






Material groups **Al**

HSS-E | I | YH | 60° | 2.5P | R40 | Bright

p. B164

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| TAPPING ER CHUCK | D215 -220 |
| TAPPING CHUCK | D221 -228 |
| ONE STEP TAPPING CHUCK | D211 -213 |

Tap Limits: p.B230

Unit(单位) : mm

| SIZE 尺寸 | | Pitch 牙距 | | EDP No. 型号 | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ØD1 | | P | | | | L2 | L1 | ØD2 | K | Kl | |
| M14 | × | 1.5 | | T2120553 | YH3 | 88 | 30 | 10.5 | 8 | 11 | 3 |
| M16 | × | 2 | | T2120603 | YH3 | 95 | 32 | 12.5 | 10 | 13 | 3 |
| M16 | × | 1.5 | | T2120613 | YH3 | 95 | 32 | 12.5 | 10 | 13 | 3 |
| M18 | × | 2.5 | | T2120653 | YH3 | 100 | 37 | 14 | 11 | 14 | 4 |
| M18 | × | 1.5 | | T2120673 | YH3 | 100 | 37 | 14 | 11 | 14 | 4 |
| M20 | × | 2.5 | | T2120703 | YH3 | 105 | 37 | 15 | 12 | 15 | 4 |
| M20 | × | 1.5 | | T2120723 | YH3 | 105 | 37 | 15 | 12 | 15 | 4 |
| M22 | × | 2.5 | | T2120744 | YH4 | 115 | 38 | 17 | 13 | 16 | 4 |
| M22 | × | 1.5 | | T2120763 | YH3 | 115 | 38 | 17 | 13 | 16 | 4 |
| M24 | × | 3 | | T2120784 | YH4 | 120 | 45 | 19 | 15 | 18 | 4 |
| M24 | × | 1.5 | | T2120803 | YH3 | 120 | 45 | 19 | 15 | 18 | 4 |
| M25 | × | 1.5 | | T2120833 | YH3 | 125 | 45 | 19 | 15 | 18 | 4 |
| M26 | × | 1.5 | | T2120853 | YH3 | 125 | 45 | 20 | 15 | 18 | 4 |
| M27 | × | 3 | | T2120864 | YH4 | 130 | 45 | 20 | 15 | 18 | 4 |
| M27 | × | 1.5 | | T2120883 | YH3 | 130 | 45 | 20 | 15 | 18 | 4 |
| M28 | × | 1.5 | | T2120913 | YH3 | 130 | 45 | 21 | 17 | 20 | 4 |
| M30 | × | 3.5 | | T2120944 | YH4 | 135 | 48 | 23 | 17 | 20 | 4 |
| M30 | × | 1.5 | | T2120973 | YH3 | 135 | 45 | 23 | 17 | 20 | 4 |

►Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ○ | ○ | | | | ○ | | | | | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ◎ | ◎ | | | | ○ | ○ | | | | | | | | | | | | | | |

# YG TAP ALU

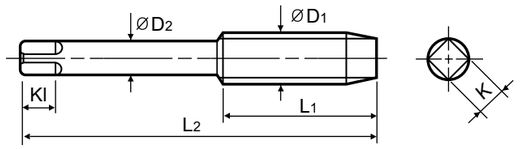
**T2131 SERIES**

## M SPIRAL FLUTE TAPS for NON-FERROUS METALS
## 有色金属用螺旋槽丝锥

► Suitable for tapping Blind holes in Aluminum, Magnesium, Zinc, Copper as well as Non-Ferrous metal alloys.

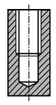
►适用于铝, 镁, 锌, 铜及有色金属的盲孔加工.

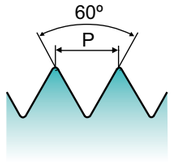
up to M7 : Male Center




**Hole type 孔类型**

2.5×D






Material groups **Al** | HSS-E | J | YH | 60° | 2.5P | R40 | Bright

p. B165

Tap Limits: p.B230

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| TAPPING ER CHUCK | D215 -220 |
| TAPPING CHUCK | D221 -228 |
| ONE STEP TAPPING CHUCK | D211 -213 |

Unit(单位) : mm

| SIZE 尺寸 | | Pitch 牙距 | | EDP No. 型号 | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ØD1 | | P | | | | L2 | L1 | ØD2 | K | Kl | |
| M2 | × | 0.4 | | **T2131131** | YH1 | 40 | 15 | 3 | 2.5 | 5 | 2 |
| M2.2 | × | 0.45 | | **T2131151** | YH1 | 42 | 15 | 3 | 2.5 | 5 | 2 |
| M2.3 | × | 0.4 | | **T2131191** | YH1 | 42 | 15 | 3 | 2.5 | 5 | 2 |
| M2.5 | × | 0.45 | | **T2131171** | YH1 | 44 | 16 | 3 | 2.5 | 5 | 2 |
| M2.6 | × | 0.45 | | **T2131491** | YH1 | 44 | 16 | 3 | 2.5 | 5 | 2 |
| M3 | × | 0.5 | | **T2131202** | YH2 | 46 | 18 | 4 | 3.2 | 6 | 3 |
| M3.5 | × | 0.6 | | **T2131222** | YH2 | 48 | 18 | 4 | 3.2 | 6 | 3 |
| M4 | × | 0.7 | | **T2131242** | YH2 | 52 | 20 | 5 | 4 | 7 | 3 |
| M5 | × | 0.8 | | **T2131282** | YH2 | 60 | 22 | 5.5 | 4.5 | 7 | 3 |
| M6 | × | 1 | | **T2131312** | YH2 | 62 | 24 | 6 | 4.5 | 7 | 3 |
| M8 | × | 1.25 | | **T2131363** | YH3 | 70 | 30 | 6.2 | 5 | 8 | 3 |
| M10 | × | 1.5 | | **T2131423** | YH3 | 75 | 32 | 7 | 5.5 | 8 | 3 |
| M10 | × | 1.25 | | **T2131433** | YH3 | 75 | 32 | 7 | 5.5 | 8 | 3 |
| M12 | × | 1.75 | | **T2131503** | YH3 | 82 | 38 | 8.5 | 6.5 | 9 | 3 |
| M12 | × | 1.5 | | **T2131513** | YH3 | 82 | 38 | 8.5 | 6.5 | 9 | 3 |
| M12 | × | 1.25 | | **T2131523** | YH3 | 80 | 38 | 8.5 | 6.5 | 9 | 3 |
| M12 | × | 1 | | **T2131532** | YH2 | 70 | 30 | 8.5 | 6.5 | 9 | 3 |
| M14 | × | 2 | | **T2131543** | YH3 | 88 | 42 | 10.5 | 8 | 11 | 3 |

►Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

► NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ○ | ○ | | | | ○ | | | | | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | | | | ○ | ○ | | | | | | | | | | | | | | |



CARBIDE
HSS
THREAD MILLS
SYNCHRO TAPS
COMBO TAPS
YG TAP GENERAL
YG TAP STEEL
YG TAP HARDENED
YG TAP INOX
YG TAP CAST IRON
YG TAP ALU
YG TAP Ti Ni
YG TAP FORMING
STI TAPS
PIPE TAPS
SKS21 HAND TAPS
SKS21 PIPE TAPS
TECHNICAL DATA

# YG TAP ALU

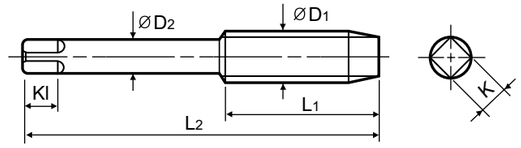
**T2131 SERIES**

## M SPIRAL FLUTE TAPS for NON-FERROUS METALS
## 有色金属用螺旋槽丝锥

► Suitable for tapping Blind holes in Aluminum, Magnesium, Zinc, Copper as well as Non-Ferrous metal alloys.

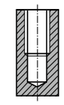
►适用于铝, 镁, 锌, 铜及有色金属的盲孔加工.

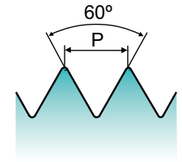
up to M7 : Male Center




**Hole type 孔类型**

2.5×D






Material groups **Al** | HSS-E | J | YH | 60° | 2.5P | R40 | Bright

p. B165

Tap Limits: p.B230

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| TAPPING ER CHUCK | D215 -220 |
| TAPPING CHUCK | D221 -228 |
| ONE STEP TAPPING CHUCK | D211 -213 |

Unit(单位) : mm

| SIZE 尺寸 | | Pitch 牙距 | | EDP No. 型号 | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ØD1 | | P | | | | L2 | L1 | ØD2 | K | Kl | |
| M14 | × | 1.5 | | **T2131553** | YH3 | 88 | 42 | 10.5 | 8 | 11 | 3 |
| M16 | × | 2 | | **T2131603** | YH3 | 95 | 45 | 12.5 | 10 | 13 | 3 |
| M16 | × | 1.5 | | **T2131613** | YH3 | 95 | 45 | 12.5 | 10 | 13 | 3 |
| M18 | × | 2.5 | | **T2131653** | YH3 | 100 | 48 | 14 | 11 | 14 | 4 |
| M18 | × | 1.5 | | **T2131673** | YH3 | 95 | 45 | 14 | 11 | 14 | 4 |
| M20 | × | 2.5 | | **T2131703** | YH3 | 105 | 50 | 15 | 12 | 15 | 4 |
| M20 | × | 1.5 | | **T2131723** | YH3 | 95 | 45 | 15 | 12 | 15 | 4 |
| M22 | × | 2.5 | | **T2131744** | YH4 | 115 | 55 | 17 | 13 | 16 | 4 |
| M22 | × | 1.5 | | **T2131763** | YH3 | 95 | 45 | 17 | 13 | 16 | 4 |
| M24 | × | 3 | | **T2131784** | YH4 | 120 | 58 | 19 | 15 | 18 | 4 |
| M24 | × | 1.5 | | **T2131803** | YH3 | 95 | 45 | 19 | 15 | 18 | 4 |
| M25 | × | 1.5 | | **T2131833** | YH3 | 95 | 45 | 19 | 15 | 18 | 4 |
| M26 | × | 1.5 | | **T2131853** | YH3 | 95 | 45 | 20 | 15 | 18 | 4 |
| M27 | × | 3 | | **T2131864** | YH4 | 130 | 62 | 20 | 15 | 18 | 4 |
| M27 | × | 1.5 | | **T2131883** | YH3 | 95 | 45 | 20 | 15 | 18 | 4 |
| M28 | × | 1.5 | | **T2131913** | YH3 | 105 | 45 | 21 | 17 | 20 | 4 |
| M30 | × | 3.5 | | **T2131944** | YH4 | 135 | 65 | 23 | 17 | 20 | 4 |
| M30 | × | 1.5 | | **T2131973** | YH3 | 105 | 45 | 23 | 17 | 20 | 4 |

►Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ○ | ○ | | | | ○ | | | | | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | | | | ○ | ○ | | | | | | | | | | | | | | |

# YG TAP ALU

**T2111** SERIES

## M SPIRAL FLUTE TAPS for DEEP HOLES(for NON-FERROUS METALS)
## 深孔螺旋槽丝锥(有色金属)

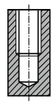
► Suitable for tapping deep Blind holes in Aluminum, Magnesium Zinc, Copper as well as Non-Ferrous metal alloys.

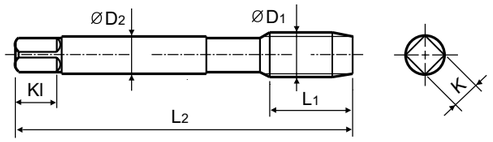
►适用于铝, 镁, 锌, 铜及有色金属的盲孔加工.

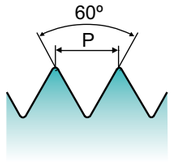
up to M7 : Male Center

Hole type 孔类型

2.5×D






Material groups **Al** | HSS-E | S | YH | 60° | 2.5P | R40 | Bright

p. B165

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| TAPPING ER CHUCK | D215 -220 | |
| TAPPING CHUCK | D221 -228 | |
| ONE STEP TAPPING CHUCK | D211 -213 | |

Tap Limits: p.B230

Unit(单位) : mm

| SIZE 尺寸 | | Pitch 牙距 | EDP No. 型号 | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|---|
| | | ØD1 | | | L2 | L1 | ØD2 | K | Kl | |
| M2 | × | 0.4 | T2111131 | YH1 | 40 | 4.0 | 3 | 2.5 | 5 | 2 |
| M2.2 | × | 0.45 | T2111151 | YH1 | 42 | 4.0 | 3 | 2.5 | 5 | 2 |
| M2.3 | × | 0.4 | T2111191 | YH1 | 42 | 4.0 | 3 | 2.5 | 5 | 2 |
| M2.5 | × | 0.45 | T2111171 | YH1 | 44 | 4.0 | 3 | 2.5 | 5 | 2 |
| M2.6 | × | 0.45 | T2111491 | YH1 | 44 | 4.0 | 3 | 2.5 | 5 | 2 |
| M3 | × | 0.5 | T2111202 | YH2 | 46 | 5.0 | 4 | 3.2 | 6 | 3 |
| M3.5 | × | 0.6 | T2111222 | YH2 | 48 | 6.0 | 4 | 3.2 | 6 | 3 |
| M4 | × | 0.7 | T2111242 | YH2 | 52 | 7.0 | 5 | 4 | 7 | 3 |
| M5 | × | 0.8 | T2111282 | YH2 | 60 | 8.0 | 5.5 | 4.5 | 7 | 3 |
| M6 | × | 1 | T2111312 | YH2 | 62 | 10.0 | 6 | 4.5 | 7 | 3 |
| M8 | × | 1.25 | T2111363 | YH3 | 70 | 13.7 | 6.2 | 5 | 8 | 3 |
| M10 | × | 1.5 | T2111423 | YH3 | 75 | 16.4 | 7 | 5.5 | 8 | 3 |
| M10 | × | 1.25 | T2111433 | YH3 | 75 | 13.7 | 7 | 5.5 | 8 | 3 |
| M12 | × | 1.75 | T2111503 | YH3 | 82 | 19.2 | 8.5 | 6.5 | 9 | 3 |
| M12 | × | 1.5 | T2111513 | YH3 | 82 | 16.4 | 8.5 | 6.5 | 9 | 3 |
| M12 | × | 1.25 | T2111523 | YH3 | 82 | 13.7 | 8.5 | 6.5 | 9 | 3 |
| M12 | × | 1 | T2111532 | YH2 | 82 | 10.9 | 8.5 | 6.5 | 9 | 3 |
| M14 | × | 2 | T2111543 | YH3 | 88 | 21.9 | 10.5 | 8 | 11 | 3 |
| M14 | × | 1.5 | T2111553 | YH3 | 88 | 16.4 | 10.5 | 8 | 11 | 3 |
| M16 | × | 2 | T2111603 | YH3 | 95 | 21.9 | 12.5 | 10 | 13 | 3 |
| M16 | × | 1.5 | T2111613 | YH3 | 95 | 16.4 | 12.5 | 10 | 13 | 3 |
| M18 | × | 2.5 | T2111653 | YH3 | 100 | 27.4 | 14 | 11 | 14 | 4 |
| M18 | × | 1.5 | T2111673 | YH3 | 100 | 16.4 | 14 | 11 | 14 | 4 |
| M20 | × | 2.5 | T2111703 | YH3 | 105 | 27.4 | 15 | 12 | 15 | 4 |
| M20 | × | 1.5 | T2111723 | YH3 | 105 | 16.4 | 15 | 12 | 15 | 4 |
| M22 | × | 2.5 | T2111744 | YH4 | 115 | 27.4 | 17 | 13 | 16 | 4 |
| M22 | × | 1.5 | T2111763 | YH3 | 115 | 16.4 | 17 | 13 | 16 | 4 |

►Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ○ | ○ | | | | ○ | | | | | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | | | | ○ | ○ | | | | | | | | | | | | | | |



CARBIDE
HSS
THREAD MILLS
SYNCHRO TAPS
COMBO TAPS
YG TAP GENERAL
YG TAP STEEL
YG TAP HARDENED
YG TAP INOX
YG TAP CAST IRON
YG TAP ALU
YG TAP Ti Ni
YG TAP FORMING
STI TAPS
PIPE TAPS
SKS21 HAND TAPS
SKS21 PIPE TAPS
TECHNICAL DATA

# YG TAP ALU

**T2021** SERIES

## M SPIRAL POINT TAPS for NON-FERROUS METALS
## 有色金属用先端丝锥

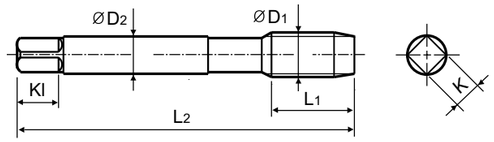
► Suitable for tapping Through holes in Aluminum, Magnesium, Zinc, Copper as well as Non-Ferrous metal alloys.

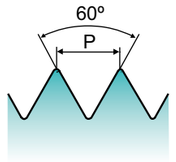
►适用于铝, 镁, 锌, 铜及有色金属的通孔加工.

up to M8 : Male Center

Hole type 孔类型

3.0×D




Material groups **Al** | HSS-E | I | YH | 60° | 5.0P | Bright

p. B165

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| TAPPING ER CHUCK | D215 -220 | |
| TAPPING CHUCK | D221 -228 | |
| ONE STEP TAPPING CHUCK | D211 -213 | |

Tap Limits: p.B230

Unit(单位) : mm

| SIZE 尺寸 | | Pitch 牙距 | EDP No. 型号 | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|---|
| | | ØD1 | | | L2 | L1 | ØD2 | K | Kl | |
| M2 | × | 0.4 | T2021132 | YH2 | 40 | 9.5 | 3 | 2.5 | 5 | 2 |
| M2.2 | × | 0.45 | T2021152 | YH2 | 42 | 9.5 | 3 | 2.5 | 5 | 2 |
| M2.3 | × | 0.4 | T2021192 | YH2 | 42 | 9.5 | 3 | 2.5 | 5 | 2 |
| M2.5 | × | 0.45 | T2021172 | YH2 | 44 | 9.5 | 3 | 2.5 | 5 | 2 |
| M2.6 | × | 0.45 | T2021492 | YH2 | 44 | 9.5 | 3 | 2.5 | 5 | 2 |
| M3 | × | 0.5 | T2021202 | YH2 | 46 | 11 | 4 | 3.2 | 6 | 3 |
| M3.5 | × | 0.6 | T2021222 | YH2 | 48 | 13 | 4 | 3.2 | 6 | 3 |
| M4 | × | 0.7 | T2021242 | YH2 | 52 | 13 | 5 | 4 | 7 | 3 |
| M5 | × | 0.8 | T2021282 | YH2 | 60 | 16 | 5.5 | 4.5 | 7 | 3 |
| M6 | × | 1 | T2021312 | YH2 | 62 | 19 | 6 | 4.5 | 7 | 3 |
| M8 | × | 1.25 | T2021363 | YH3 | 70 | 22 | 6.2 | 5 | 8 | 3 |
| M10 | × | 1.5 | T2021423 | YH3 | 75 | 24 | 7 | 5.5 | 8 | 3 |
| M10 | × | 1.25 | T2021433 | YH3 | 75 | 24 | 7 | 5.5 | 8 | 3 |
| M12 | × | 1.75 | T2021504 | YH4 | 82 | 29 | 8.5 | 6.5 | 9 | 3 |
| M12 | × | 1.5 | T2021513 | YH3 | 82 | 29 | 8.5 | 6.5 | 9 | 3 |
| M12 | × | 1.25 | T2021523 | YH3 | 82 | 29 | 8.5 | 6.5 | 9 | 3 |
| M12 | × | 1 | T2021533 | YH3 | 82 | 29 | 8.5 | 6.5 | 9 | 3 |
| M14 | × | 2 | T2021544 | YH4 | 88 | 30 | 10.5 | 8 | 11 | 3 |

►Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

►NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ○ | ○ | | | | ○ | | | | | | ○ | ○ | ○ | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ◎ | ◎ | ○ | | | ○ | ○ | | | | | | | | | | | | | | |

# YG TAP ALU

**T2021** SERIES

## M SPIRAL POINT TAPS for NON-FERROUS METALS
## 有色金属用先端丝锥

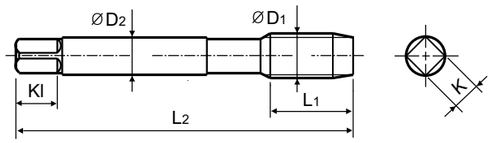
► Suitable for tapping Through holes in Aluminum, Magnesium, Zinc, Copper as well as Non-Ferrous metal alloys.

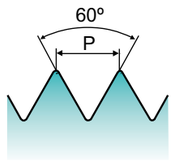
►适用于铝, 镁, 锌, 铜及有色金属的通孔加工.

up to M8 : Male Center

Hole type 孔类型

3.0×D




Material groups **Al** | HSS-E | I | YH | 60° | 5.0P | Bright

p. B165

Tap Limits: p.B230

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| TAPPING ER CHUCK | D215 -220 |
| TAPPING CHUCK | D221 -228 |
| ONE STEP TAPPING CHUCK | D211 -213 |

Unit(单位) : mm

| SIZE 尺寸 | Pitch 牙距 | EDP No. 型号 | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|
| | ØD1 | P | | L2 | L1 | ØD2 | K | Kl | |
| M14 × | 1.5 | T2021553 | YH3 | 88 | 30 | 10.5 | 8 | 11 | 3 |
| M16 × | 2 | T2021604 | YH4 | 95 | 32 | 12.5 | 10 | 13 | 3 |
| M16 × | 1.5 | T2021613 | YH3 | 95 | 32 | 12.5 | 10 | 13 | 3 |
| M18 × | 2.5 | T2021654 | YH4 | 100 | 37 | 14 | 11 | 14 | 3 |
| M18 × | 1.5 | T2021674 | YH4 | 100 | 37 | 14 | 11 | 14 | 3 |
| M20 × | 2.5 | T2021704 | YH4 | 105 | 37 | 15 | 12 | 15 | 3 |
| M20 × | 1.5 | T2021724 | YH4 | 105 | 37 | 15 | 12 | 15 | 3 |
| M22 × | 2.5 | T2021744 | YH4 | 115 | 38 | 17 | 13 | 16 | 3 |
| M22 × | 1.5 | T2021764 | YH4 | 115 | 38 | 17 | 13 | 16 | 3 |
| M24 × | 3 | T2021784 | YH4 | 120 | 45 | 19 | 15 | 18 | 3 |
| M24 × | 1.5 | T2021804 | YH4 | 120 | 45 | 19 | 15 | 18 | 3 |
| M25 × | 1.5 | T2021834 | YH4 | 125 | 45 | 19 | 15 | 18 | 3 |
| M26 × | 1.5 | T2021854 | YH4 | 125 | 45 | 20 | 15 | 18 | 4 |
| M27 × | 3 | T2021864 | YH4 | 130 | 45 | 20 | 15 | 18 | 4 |
| M27 × | 1.5 | T2021884 | YH4 | 130 | 45 | 20 | 15 | 18 | 4 |
| M28 × | 1.5 | T2021914 | YH4 | 130 | 45 | 21 | 17 | 20 | 4 |
| M30 × | 3.5 | T2021945 | YH5 | 135 | 48 | 23 | 17 | 20 | 4 |
| M30 × | 1.5 | T2021974 | YH4 | 135 | 45 | 23 | 17 | 20 | 4 |

►Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ○ | ○ | | | | ○ | | | | | | ○ | ○ | ○ | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ◎ | ◎ | ○ | | | ○ | ○ | | | | | | | | | | | | | | |



CARBIDE
HSS
THREAD MILLS
SYNCHRO TAPS
COMBO TAPS
YG TAP GENERAL
YG TAP STEEL
YG TAP HARDENED
YG TAP INOX
YG TAP CAST IRON
YG TAP ALU
YG TAP Ti Ni
YG TAP FORMING
STI TAPS
PIPE TAPS
SKS21 HAND TAPS
SKS21 PIPE TAPS
TECHNICAL DATA

# YG TAP ALU

**T2041** SERIES

## M SPIRAL POINT TAPS for NON-FERROUS METALS
## 有色金属用先端丝锥

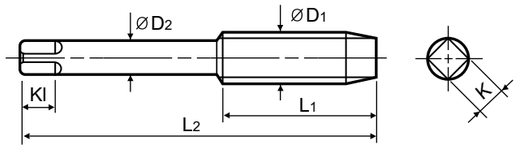
► Suitable for tapping Through holes in Aluminum, Magnesium, Zinc, Copper as well as Non-Ferrous metal alloys.

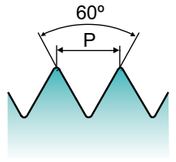
►适用于铝, 镁, 锌, 铜及有色金属的通孔加工.

up to M8 : Male Center

Hole type 孔类型

3.0×D




Material groups **Al** | HSS-E | J | YH | 60° | 5.0P | Bright

p. B165

Tap Limits: p.B230

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| TAPPING ER CHUCK | D215 -220 |
| TAPPING CHUCK | D221 -228 |
| ONE STEP TAPPING CHUCK | D211 -213 |

Unit(单位) : mm

| SIZE 尺寸 | Pitch 牙距 | EDP No. 型号 | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|
| | ØD1 | P | | L2 | L1 | ØD2 | K | Kl | |
| M2 × | 0.4 | T2041132 | YH2 | 40 | 15 | 3 | 2.5 | 5 | 2 |
| M2.2 × | 0.45 | T2041152 | YH2 | 42 | 15 | 3 | 2.5 | 5 | 2 |
| M2.3 × | 0.4 | T2041192 | YH2 | 42 | 15 | 3 | 2.5 | 5 | 2 |
| M2.5 × | 0.45 | T2041172 | YH2 | 44 | 16 | 3 | 2.5 | 5 | 2 |
| M2.6 × | 0.45 | T2041492 | YH2 | 44 | 16 | 3 | 2.5 | 5 | 2 |
| M3 × | 0.5 | T2041202 | YH2 | 46 | 18 | 4 | 3.2 | 6 | 3 |
| M3.5 × | 0.6 | T2041222 | YH2 | 48 | 18 | 4 | 3.2 | 6 | 3 |
| M4 × | 0.7 | T2041242 | YH2 | 52 | 20 | 5 | 4 | 7 | 3 |
| M5 × | 0.8 | T2041282 | YH2 | 60 | 22 | 5.5 | 4.5 | 7 | 3 |
| M6 × | 1 | T2041312 | YH2 | 62 | 24 | 6 | 4.5 | 7 | 3 |
| M8 × | 1.25 | T2041363 | YH3 | 70 | 30 | 6.2 | 5 | 8 | 3 |
| M10 × | 1.5 | T2041423 | YH3 | 75 | 32 | 7 | 5.5 | 8 | 3 |
| M10 × | 1.25 | T2041433 | YH3 | 75 | 32 | 7 | 5.5 | 8 | 3 |
| M12 × | 1.75 | T2041504 | YH4 | 82 | 38 | 8.5 | 6.5 | 9 | 3 |
| M12 × | 1.5 | T2041513 | YH3 | 82 | 38 | 8.5 | 6.5 | 9 | 3 |
| M12 × | 1.25 | T2041523 | YH3 | 80 | 38 | 8.5 | 6.5 | 9 | 3 |
| M12 × | 1 | T2041533 | YH3 | 70 | 30 | 8.5 | 6.5 | 9 | 3 |
| M14 × | 2 | T2041544 | YH4 | 88 | 42 | 10.5 | 8 | 11 | 3 |

►Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

▶ NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ○ | ○ | | | | ○ | | | | | | ○ | ○ | ○ | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ◎ | ◎ | ○ | | | ○ | ○ | | | | | | | | | | | | | | |

# YG TAP ALU

**T2041 SERIES**

## M SPIRAL POINT TAPS for NON-FERROUS METALS
## 有色金属用先端丝锥

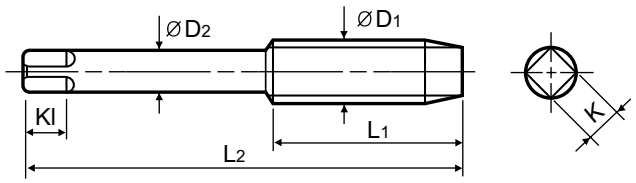
▶ Suitable for tapping Through holes in Aluminum, Magnesium, Zinc, Copper as well as Non-Ferrous metal alloys.

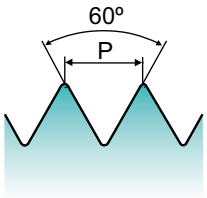
▶适用于铝, 镁, 锌, 铜及有色金属的通孔加工.

up to M8 : Male Center

**Hole type 孔类型**

3.0×D




Material groups: Al | HSS-E | J | YH | 60° | 5.0P | Bright

p. B165

Tap Limits: p.B230

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| TAPPING ER CHUCK | D215 -220 |
| TAPPING CHUCK | D221 -228 |
| ONE STEP TAPPING CHUCK | D211 -213 |

Unit(单位) : mm

| SIZE 尺寸 ØD1 | Pitch 牙距 P | EDP No. 型号 | Limit 精度 | Overall Length 全长 L2 | Thread Length 螺纹长 L1 | Shank Diameter 柄径 ØD2 | Square Size 方块 尺寸 K | Square Length 方块 长度 Kl | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|
| M14 × | 1.5 | T2041553 | YH3 | 88 | 42 | 10.5 | 8 | 11 | 3 |
| M16 × | 2 | T2041604 | YH4 | 95 | 45 | 12.5 | 10 | 13 | 3 |
| M16 × | 1.5 | T2041613 | YH3 | 95 | 45 | 12.5 | 10 | 13 | 3 |
| M18 × | 2.5 | T2041654 | YH4 | 100 | 48 | 14 | 11 | 14 | 3 |
| M18 × | 1.5 | T2041674 | YH4 | 95 | 45 | 14 | 11 | 14 | 3 |
| M20 × | 2.5 | T2041704 | YH4 | 105 | 50 | 15 | 12 | 15 | 3 |
| M20 × | 1.5 | T2041724 | YH4 | 95 | 45 | 15 | 12 | 15 | 3 |
| M22 × | 2.5 | T2041744 | YH4 | 115 | 55 | 17 | 13 | 16 | 3 |
| M22 × | 1.5 | T2041764 | YH4 | 95 | 45 | 17 | 13 | 16 | 3 |
| M24 × | 3 | T2041784 | YH4 | 120 | 58 | 19 | 15 | 18 | 3 |
| M24 × | 1.5 | T2041804 | YH4 | 95 | 45 | 19 | 15 | 18 | 3 |
| M25 × | 1.5 | T2041834 | YH4 | 95 | 45 | 19 | 15 | 18 | 3 |
| M26 × | 1.5 | T2041854 | YH4 | 95 | 45 | 20 | 15 | 18 | 4 |
| M27 × | 3 | T2041864 | YH4 | 130 | 62 | 20 | 15 | 18 | 4 |
| M27 × | 1.5 | T2041884 | YH4 | 95 | 45 | 20 | 15 | 18 | 4 |
| M28 × | 1.5 | T2041914 | YH4 | 105 | 45 | 21 | 17 | 20 | 4 |
| M30 × | 3.5 | T2041945 | YH5 | 135 | 65 | 23 | 17 | 20 | 4 |
| M30 × | 1.5 | T2041974 | YH4 | 105 | 45 | 23 | 17 | 20 | 4 |

▶Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ○ | ○ | | | | ○ | | | | | | ○ | ○ | ○ | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ◎ | ◎ | ○ | | | ○ | ○ | | | | | | | | | | | | | | |

Leading Through Innovation

## HSS-PM

# YG TAP Ti Ni

- For Heat Resistent Super Alloys and Titanium Alloys Applied with Cutting Edge Rake Angles and Thread Relief
- 耐热超合金和钛合金用丝锥

# SELECTION GUIDE
# 选用指南

YG THREADING TOOLS

## HSS-PM
## YG TAP
## Ti Ni

For Heat Resistent Super Alloys and Titanium Alloys
Applied with Cutting Edge Rake Angles and Thread Relief
耐热超合金和钛合金用丝锥

Please visit globalyg1.com/mat for material search

◎ : Excellent (优秀) ○ : Good (良好)

| HOLE TYPE 孔类型 | | Max. 2.5xD Blind Hole盲孔 | Max. 3.0xD Through Hole通孔 |
|---|---|---|---|
| TOOL MATERIAL 刀具材料 | | HSS-PM | |
| CHAMFER LEAD ACC. TO DIN2197 倒角长度 | | 3.0P | 5.0P |
| FLUTE TYPE 槽型 | | Spiral Flute 螺旋角 | Spiral Point 螺尖 |
| SPIRAL FLUTE ANGLE 螺旋角 | | R15 | - |
| SERIES NO. 系列号 (page 页数) | JIS Type | I | I |
| | M/MF | TZ181 (p. B179) | TL231 (p. B180) |
| | UNC/F | | |
| | W | | |
| | M-LH W-LH | | |
| | PIPE TAPS | | |
| SURFACE TREATMENT表面处理 | | TiAlN | Steam Homo |
| MODEL 模型 | | | |

| ISO 公制 | VDI 3323 | Material Description 材料描述 | Composition / Structure / Heat Treatment 成分 / 组织 / 热处理 | | HB 布氏硬度 | HRc 硬度 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | About 0.15% C | Annealed | 125 | | | | | |
| | 2 | | About 0.45% C | Annealed | 190 | 13 | | | | |
| | 3 | | About 0.45% C | Quenched & Tempered | 250 | 25 | | | | |
| | 4 | | About 0.75% C | Annealed | 270 | 28 | | | | |
| | 5 | | About 0.75% C | Quenched & Tempered | 300 | 32 | | | | |
| | 6 | Low alloy steel | | Annealed | 180 | 10 | | | ○ | 10~15 |
| | 7 | | | Quenched & Tempered | 275 | 29 | | | ○ | 10~15 |
| | 8 | | | Quenched & Tempered | 300 | 32 | ○ | 4~8 | ○ | 6~10 |
| | 9 | | | Quenched & Tempered | 350 | 38 | ○ | 4~8 | ◎ | 6~10 |
| | 10 | High alloyed steel, and tool steel | | Annealed | 200 | 15 | ○ | 6~9 | ○ | 7~10 |
| | 11 | | | Quenched & Tempered | 325 | 35 | ○ | 4~8 | ○ | 6~10 |
| M | 12 | Stainless steel | Ferritic / Martensitic | Annealed | 200 | 15 | | | | |
| | 13 | | Martensitic | Quenched & Tempered | 240 | 23 | | | | |
| | 14 | | Austenitic | | 180 | 10 | | | | |
| K | 15 | Grey cast iron | Pearlitic / ferritic | | 180 | 10 | | | | |
| | 16 | | Pearlitic (Martensitic) | | 260 | 26 | | | | |
| | 17 | Nodular cast iron | Ferritic | | 160 | 3 | | | | |
| | 18 | | Pearlitic | | 250 | 25 | | | | |
| | 19 | Malleable cast iron | Ferritic | | 130 | | | | | |
| | 20 | | Pearlitic | | 230 | 21 | | | | |
| N | 21 | Aluminum-wrought alloy | Not Curable | | 60 | | | | | |
| | 22 | | Curable | Hardened | 100 | | | | | |
| | 23 | Aluminum-cast, alloyed | ≤ 12% Si, Not Curable | | 75 | | | | | |
| | 24 | | ≤ 12% Si, Curable | Hardened | 90 | | | | | |
| | 25 | | > 12% Si, Not Curable | | 130 | | | | | |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | Cutting Alloys, PB>1% | | 110 | | | | | |
| | 27 | | CuZn, CuSnZn (Brass) | | 90 | | | | | |
| | 28 | | CuSn, lead-free copper and electrolytic copper | | 100 | | | | | |
| | 29 | Non Metallic Materials | Duroplastic, Fiber Reinforced Plastic | | | | | | | |
| | 30 | | Rubber, Wood, etc. | | | | | | | |
| S | 31 | Heat Resistant Super Alloys | Fe Based | Annealed | 200 | 15 | | | ◎ | 2~4 |
| | 32 | | | Cured | 280 | 30 | | | ◎ | 2~4 |
| | 33 | | Ni or Co Based | Annealed | 250 | 25 | ○ | 1~3 | ◎ | 2~4 |
| | 34 | | | Cured | 350 | 38 | ○ | 1~3 | ◎ | 2~4 |
| | 35 | | | Cast | 320 | 34 | ○ | 1~3 | ○ | 2~4 |
| | 36 | Titanium Alloys | Pure Titanium | | 400 Rm | | ◎ | 3~5 | ○ | 3~5 |
| | 37 | | Alpha + Beta Alloys | Hardened | 1050 Rm | | ◎ | 3~5 | ◎ | 3~5 |
| H | 38 | Hardened steel | | Hardened | 550 | 55 | | | | |
| | 39 | | | Hardened | 630 | 60 | | | | |
| | 40 | Chilled Cast Iron | | Cast | 400 | 42 | | | ○ | 2~4 |
| | 41 | Hardened Cast Iron | | Hardened | 550 | 55 | | | | |



CARBIDE
HSS
THREAD MILLS
SYNCHRO TAPS
COMBO TAPS
YG TAP GENERAL
YG TAP STEEL
YG TAP HARDENED
YG TAP INOX
YG TAP CAST IRON
YG TAP ALU
YG TAP Ti Ni
YG TAP FORMING
STI TAPS
PIPE TAPS
SKS21 HAND TAPS
SKS21 PIPE TAPS
TECHNICAL DATA

# YG TAP Ti Ni

TZ181 SERIES

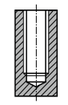
## M SPIRAL FLUTE TAPS for TITANIUM ALLOYS
## 钛合金用螺旋槽丝锥

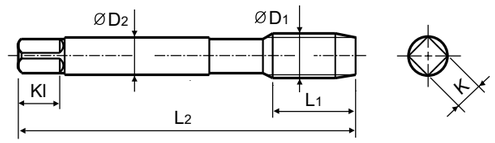
► Suitable for tapping Blind holes in Titanium and Titanium Alloys. This tap compensates for the characteristics of titanium material such as closure and low thermal conductivity.

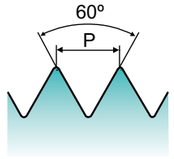
► 适用于钛和钛合金和具有与其相同性质的材料的盲孔加工，也适用于低导热材料的盲孔加工.

up to M7 : Male Center

Hole type 孔类型
2.5×D






Material groups: Ti | HSS-PM | I | YH | 60° | 3.0P | R15 | TiAlN

p. B178

Tap Limits: p.B230

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| TAPPING ER CHUCK | D215 -220 |
| TAPPING CHUCK | D221 -228 |
| ONE STEP TAPPING CHUCK | D211 -213 |

Unit(单位) : mm

| SIZE 尺寸 | | Pitch 牙距 | EDP No. 型号 | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|---|
| ØD1 | | P | | | L2 | L1 | ØD2 | K | Kl | |
| M3 | × | 0.5 | **TZ181203** | YH3 | 46 | 11 | 4 | 3.2 | 6 | 3 |
| M4 | × | 0.7 | **TZ181243** | YH3 | 52 | 13 | 5 | 4 | 7 | 3 |
| M5 | × | 0.8 | **TZ181283** | YH3 | 60 | 16 | 5.5 | 4.5 | 7 | 3 |
| M6 | × | 1 | **TZ181313** | YH3 | 62 | 19 | 6 | 4.5 | 7 | 3 |
| M8 | × | 1.25 | **TZ181363** | YH3 | 70 | 22 | 6.2 | 5 | 8 | 3 |
| M10 | × | 1.5 | **TZ181423** | YH3 | 75 | 24 | 7 | 5.5 | 8 | 3 |
| M12 | × | 1.75 | **TZ181504** | YH4 | 82 | 29 | 8.5 | 6.5 | 9 | 3 |

►Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | | | | | | | | ○ | ○ | ○ | ○ | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | | | | | | | | | | | | | ○ | ○ | ○ | ◎ | ◎ | | | | |

# YG TAP Ti Ni

**TL231 SERIES**

## M SPIRAL POINT TAPS for NICKEL BASE ALLOYS
## 镍合金用先端丝锥

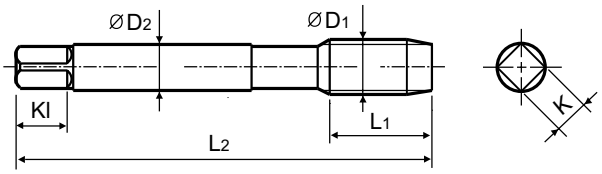
▶ Suitable for tapping Through holes in Nikel Alloys, Inconel 781 and Heat Resistant Alloy Steels.

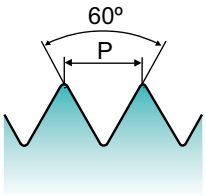
▶适用于镍合金, 铬镍铁合金781和耐热合金钢的通孔加工.

up to M7 : Male Center

**Hole type 孔类型**

3.0×D




Material groups **NI**

HSS-PM | I | YH | 60° | 5.0P | Homo

Tap Limits: p.B230

p. B178

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| TAPPING ER CHUCK | D215 -220 |
| TAPPING CHUCK | D221 -228 |
| ONE STEP TAPPING CHUCK | D211 -213 |

Unit(单位) : mm

| SIZE 尺寸 | Pitch 牙距 | EDP No. 型号 | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|
| ØD1 | P | | | L2 | L1 | ØD2 | K | Kl | |
| M3 × | 0.5 | TL231203 | YH3 | 46 | 11 | 4 | 3.2 | 6 | 3 |
| M4 × | 0.7 | TL231243 | YH3 | 52 | 13 | 5 | 4 | 7 | 3 |
| M5 × | 0.8 | TL231283 | YH3 | 60 | 16 | 5.5 | 4.5 | 7 | 3 |
| M6 × | 1 | TL231313 | YH3 | 62 | 19 | 6 | 4.5 | 7 | 3 |
| M8 × | 1.25 | TL231363 | YH3 | 70 | 22 | 6.2 | 5 | 8 | 3 |
| M10 × | 1.5 | TL231423 | YH3 | 75 | 24 | 7 | 5.5 | 8 | 3 |
| M12 × | 1.75 | TL231504 | YH4 | 82 | 29 | 8.5 | 6.5 | 9 | 3 |

▶Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | | | | | | ○ | ○ | ○ | ◎ | ○ | ○ | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | | | | | | | | | | | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ◎ | | | ○ | |

Leading Through Innovation

HSS-E

# YG TAP FORMING

- Tapping by Forming Soft Materials
- 软材料挤压成形攻丝

# SELECTION GUIDE
## 选用指南

YG THREADING TOOLS

## HSS-E
# YG TAP FORMING

Tapping by Forming Soft Materials
软材料挤压成形攻丝

Please visit globalyg1.com/mat for material search

◎ : Excellent (优秀) ○ : Good (良好)

| | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HOLE TYPE 孔类型 | Max. 3.0xD Blind / Th rough Hole 盲孔 / 通孔 | | | | | | | | | | | | | | | | | | | | |
| TOOL MATERIAL 刀具材料 | HSS-E | | | | | | | | | | | | | | | | | | | | |
| CHAMFER LEAD ACC. TO DIN2197 倒角长度 | 2.0P/4.0P | | 2.0P/4.0P | | 2.0P/4.0P | | 2.0P/4.0P | | 2.0P/4.0P | | 2.0P/4.0P | | 2.0P/4.0P | | 2.0P/4.0P | | 2.0P/4.0P | | 2.0P/4.0P | | |
| FLUTE TYPE 槽型 | Fluteless | | Fluteless | | Fluteless | | J-Fluteless | | with Oil Groove | | Fluteless | | with Oil Groove | | | | | | | | |
| SPIRAL FLUTE ANGLE 螺旋角 | - | | - | | - | | - | | - | | - | | - | | | | | | | | |
| SERIES NO. 系列号 (page 页数) JIS Type | I | | I | | I | | J | | I | | I | | I | | | | | | | | JIS Type |
| M/MF | T1791 T1781 (p. B184) | | T1771 T1761 (p. B185) | | T2731 T2701 (p. B186) | | T2759 T2749 (p. B187) | | T2751 T2741 (p. B188) | | T3731 T3701 (p. B189) | | T3751 T3741 (p. B190) | | | | | | | | M/MF |
| UNC/F | | | | | T2732 T2702 (p. B191) | | | | | | | | | | | | | | | | UNC/F |
| W | | | | | | | | | | | | | | | | | | | | | W |
| M-LH W-LH | | | | | | | | | | | | | | | | | | | | | M-LH W-LH |
| PIPE TAPS | | | | | | | | | | | | | | | | | | | | | PIPE TAPS |
| SURFACE TREATMENT 表面处理 | Steam Homo | | Steam Homo | | Bright | | Bright | | Bright | | TiN | | TiN | | | | | | | | |
| MODEL 模型 | | | | | | | | | | | | | | | | | | | | | |

| ISO 公制 | VDI 3323 | Material Description 材料描述 | Composition / Structure / Heat Treatment 成分 / 组织 / 热处理 | | HB 布氏硬度 | HRc 硬度 | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | About 0.15% C | Annealed | 125 | | ◎ | 8~13 | ◎ | 8~13 | ◎ | 8~13 | ◎ | 8~13 | ◎ | 13~18 | ◎ | 13~18 | | | | P |
| | 2 | | About 0.45% C | Annealed | 190 | 13 | ○ | 7~10 | ○ | 7~10 | ○ | 7~10 | ○ | 7~10 | ○ | 10~15 | ○ | 10~15 | | | | |
| | 3 | | About 0.45% C | Quenched & Tempered | 250 | 25 | ○ | 7~10 | ○ | 7~10 | ○ | 7~10 | ○ | 7~10 | ○ | 10~15 | ○ | 10~15 | | | | |
| | 4 | | About 0.75% C | Annealed | 270 | 28 | | | | | | | | | | | | | | | | |
| | 5 | | About 0.75% C | Quenched & Tempered | 300 | 32 | | | | | | | | | | | | | | | | |
| | 6 | Low alloy steel | | Annealed | 180 | 10 | ○ | 5~8 | ○ | 5~8 | ○ | 5~8 | ○ | 5~8 | ○ | 10~13 | ○ | 10~13 | | | | |
| | 7 | | | Quenched & Tempered | 275 | 29 | | | | | | | | | | | | | | | | |
| | 8 | | | Quenched & Tempered | 300 | 32 | | | | | | | | | | | | | | | | |
| | 9 | | | Quenched & Tempered | 350 | 38 | | | | | | | | | | | | | | | | |
| | 10 | High alloyed steel, and tool steel | | Annealed | 200 | 15 | | | | | | | | | | | | | | | | |
| | 11 | | | Quenched & Tempered | 325 | 35 | | | | | | | | | | | | | | | | |
| M | 12 | Stainless steel | Ferritic / Martensitic | Annealed | 200 | 15 | ◎ | 5~10 | ◎ | 5~10 | ◎ | 5~10 | ◎ | 5~10 | ◎ | 10~15 | ◎ | 10~15 | | | | M |
| | 13 | | Martensitic | Quenched & Tempered | 240 | 23 | ◎ | 5~10 | ◎ | 5~10 | ◎ | 5~10 | ◎ | 5~10 | ◎ | 10~15 | ◎ | 10~15 | | | | |
| | 14 | | Austenitic | | 180 | 10 | ◎ | 5~10 | ◎ | 5~10 | ◎ | 5~10 | ◎ | 5~10 | ◎ | 10~15 | ◎ | 10~15 | | | | |
| K | 15 | Grey cast iron | Pearlitic / ferritic | | 180 | 10 | | | | | | | | | | | | | | | | K |
| | 16 | | Pearlitic (Martensitic) | | 260 | 26 | | | | | | | | | | | | | | | | |
| | 17 | Nodular cast iron | Ferritic | | 160 | 3 | | | | | | | | | | | | | | | | |
| | 18 | | Pearlitic | | 250 | 25 | | | | | | | | | | | | | | | | |
| | 19 | Malleable cast iron | Ferritic | | 130 | | | | | | | | | | | | | | | | | |
| | 20 | | Pearlitic | | 230 | 21 | | | | | | | | | | | | | | | | |
| N | 21 | Aluminum-wrought alloy | Not Curable | | 60 | | ◎ | 10~20 | ◎ | 10~20 | ◎ | 10~20 | ◎ | 10~20 | ◎ | 15~25 | ◎ | 15~25 | | | | N |
| | 22 | | Curable | Hardened | 100 | | ◎ | 10~20 | ◎ | 10~20 | ◎ | 10~20 | ◎ | 10~20 | ◎ | 15~25 | ◎ | 15~25 | | | | |
| | 23 | Aluminum-cast, alloyed | ≤ 12% Si, Not Curable | | 75 | | ◎ | 10~15 | ◎ | 10~15 | ◎ | 10~15 | ◎ | 10~15 | ◎ | 15~20 | ◎ | 15~20 | | | | |
| | 24 | | ≤ 12% Si, Curable | Hardened | 90 | | ○ | 10~15 | ○ | 10~15 | ○ | 10~15 | ○ | 10~15 | ○ | 15~20 | ○ | 15~20 | | | | |
| | 25 | | > 12% Si, Not Curable | | 130 | | | | | | | | | | | | | | | | | |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | Cutting Alloys, PB>1% | | 110 | | ◎ | 7~12 | ◎ | 7~12 | ◎ | 7~12 | ◎ | 7~12 | ◎ | 10~15 | ◎ | 10~15 | | | | |
| | 27 | | CuZn, CuSnZn (Brass) | | 90 | | ◎ | 7~12 | ◎ | 7~12 | ◎ | 7~12 | ◎ | 7~12 | ◎ | 10~15 | ◎ | 10~15 | | | | |
| | 28 | | CuSn, lead-free copper and electrolytic copper | | 100 | | | | | | | | | | | | | | | | | |
| | 29 | Non Metallic Materials | Duroplastic, Fiber Reinforced Plastic | | | | | | | | | | | | | | | | | | | |
| | 30 | | Rubber, Wood, etc. | | | | | | | | | | | | | | | | | | | |
| S | 31 | Heat Resistant Super Alloys | Fe Based | Annealed | 200 | 15 | | | | | | | | | | | | | | | | S |
| | 32 | | | Cured | 280 | 30 | | | | | | | | | | | | | | | | |
| | 33 | | Ni or Co Based | Annealed | 250 | 25 | | | | | | | | | | | | | | | | |
| | 34 | | | Cured | 350 | 38 | | | | | | | | | | | | | | | | |
| | 35 | | | Cast | 320 | 34 | | | | | | | | | | | | | | | | |
| | 36 | Titanium Alloys | Pure Titanium | | 400 Rm | | | | | | | | | | | | | | | | | |
| | 37 | | Alpha + Beta Alloys | Hardened | 1050 Rm | | | | | | | | | | | | | | | | | |
| H | 38 | Hardened steel | | Hardened | 550 | 55 | | | | | | | | | | | | | | | | H |
| | 39 | | | Hardened | 630 | 60 | | | | | | | | | | | | | | | | |
| | 40 | Chilled Cast Iron | | Cast | 400 | 42 | | | | | | | | | | | | | | | | |
| | 41 | Hardened Cast Iron | | Hardened | 550 | 55 | | | | | | | | | | | | | | | | |





CARBIDE
HSS
THREAD MILLS
SYNCHRO TAPS
COMBO TAPS
YG TAP GENERAL
YG TAP STEEL
YG TAP HARDENED
YG TAP INOX
YG TAP CAST IRON
YG TAP ALU
YG TAP Ti Ni
YG TAP FORMING
STI TAPS
PIPE TAPS
SKS21 HAND TAPS
SKS21 PIPE TAPS
TECHNICAL DATA

# YG TAP FORMING

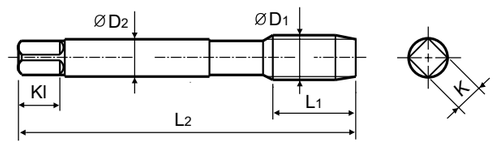
2.0P **T1791** SERIES
4.0P **T1781** SERIES

## M FLUTELESS TAPS for STEELS
## 钢用挤压丝锥

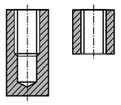
► Suitable for tapping in Low Carbon Steels, Alloy Steels and Stainless Steels.

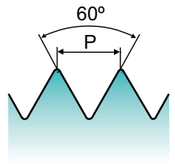
►适用于低碳钢, 合金钢和不锈钢的加工

up to M6 : Male Center




Hole type 孔类型
3.0×D






Material groups **GV** | HSS-E | I | GH Tap Limits: p.243 | 60° | 2.0P/4.0P | Homo | p. B182

Tap Limits: p.B231

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| TAPPING ER CHUCK | | D215 -220 |
| TAPPING CHUCK | | D221 -228 |
| ONE STEP TAPPING CHUCK | | D211 -213 |

Unit(单位) : mm

| SIZE 尺寸 ØD1 | | Pitch 牙距 P | | EDP No. 型号 2.0P | EDP No. 型号 4.0P | Limit 精度 | Overall Length 全长 L2 | Thread Length 螺纹长 L1 | Shank Diameter 柄径 ØD2 | Square Size 方块 尺寸 K | Square Length 方块 长度 Kl | No. of Lobe 槽数 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| M2 | × | 0.4 | | **T1791134** | **T1781134** | GH4 | 40 | 9 | 3 | 2.5 | 5 | |
| M2.3 | × | 0.4 | | **T1791194** | **T1781194** | GH4 | 42 | 10 | 3 | 2.5 | 5 | |
| M2.5 | × | 0.45 | | **T1791175** | **T1781175** | GH5 | 44 | 11 | 3 | 2.5 | 5 | |
| M2.6 | × | 0.45 | | **T1791495** | **T1781495** | GH5 | 44 | 11 | 3 | 2.5 | 5 | |
| M3 | × | 0.5 | | **T1791206** | **T1781206** | GH6 | 46 | 9 | 4 | 3.2 | 6 | |
| M3.5 | × | 0.6 | | **T1791226** | **T1781226** | GH6 | 48 | 9 | 4 | 3.2 | 6 | |
| M4 | × | 0.7 | | **T1791247** | **T1781247** | GH7 | 52 | 10 | 5 | 4 | 7 | |
| M5 | × | 0.8 | | **T1791287** | **T1781287** | GH7 | 60 | 11 | 5.5 | 4.5 | 7 | |
| M6 | × | 1 | | **T1791317** | **T1781317** | GH7 | 62 | 12 | 6 | 4.5 | 7 | |

►Refer to p.B194 for recommended tap drill sizes. 参考p.B194 底孔尺寸.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | M | | | K | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | | | | | | | | | Stainless steel | | | Grey cast iron | Nodular cast iron | Malleable cast iron |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | | | | | | |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 | | | | | | |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 | | | | | | |
| Recommended | ◎ | ○ | ○ | | | ○ | | | | | | ◎ | ◎ | ◎ | | | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ◎ | ◎ | ◎ | ○ | | ◎ | ◎ | | | | | | | | | | | | | | |





# YG TAP FORMING

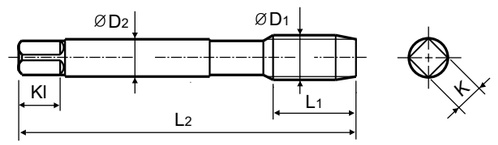
2.0P **T1771** SERIES
4.0P **T1761** SERIES

## M FLUTELESS TAPS with OIL GROOVE for STEELS
## 带油槽钢用挤压丝锥

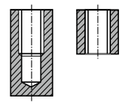
► Suitable for tapping in Low Carbon Steels, Alloy Steels and Stainless Steels.

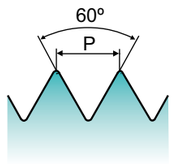
►适用于低碳钢, 合金钢和不锈钢的加工

up to M7 : Male Center




Hole type 孔类型
3.0×D






Material groups **GV** | HSS-E | I | GH Tap Limits: p.243 | 60° | 2.0P/4.0P | Homo | p. B182

Tap Limits: p.B231

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| TAPPING ER CHUCK | | D215 -220 |
| TAPPING CHUCK | | D221 -228 |
| ONE STEP TAPPING CHUCK | | D211 -213 |

Unit(单位) : mm

| SIZE 尺寸 ØD1 | | Pitch 牙距 P | | EDP No. 型号 2.0P | EDP No. 型号 4.0P | Limit 精度 | Overall Length 全长 L2 | Thread Length 螺纹长 L1 | Shank Diameter 柄径 ØD2 | Square Size 方块 尺寸 K | Square Length 方块 长度 Kl | No. of Lobe 槽数 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| M2 | × | 0.4 | | **T1771134** | **T1761134** | GH4 | 40 | 9 | 3 | 2.5 | 5 | |
| M2.3 | × | 0.4 | | **T1771194** | **T1761194** | GH4 | 42 | 10 | 3 | 2.5 | 5 | |
| M2.5 | × | 0.45 | | **T1771174** | **T1761174** | GH4 | 44 | 11 | 3 | 2.5 | 5 | |
| M2.6 | × | 0.45 | | **T1771494** | **T1761494** | GH4 | 44 | 11 | 3 | 2.5 | 5 | |
| M3 | × | 0.5 | | **T1771205** | **T1761205** | GH5 | 46 | 9 | 4 | 3.2 | 6 | |
| M3.5 | × | 0.6 | | **T1771225** | **T1761225** | GH5 | 48 | 9 | 4 | 3.2 | 6 | |
| M4 | × | 0.7 | | **T1771246** | **T1761246** | GH6 | 52 | 10 | 5 | 4 | 7 | |
| M5 | × | 0.8 | | **T1771286** | **T1761286** | GH6 | 60 | 11 | 5.5 | 4.5 | 7 | |
| M6 | × | 1 | | **T1771317** | **T1761317** | GH7 | 62 | 12 | 6 | 4.5 | 7 | |
| M7 | × | 1 | | **T1771347** | **T1761347** | GH7 | 65 | 13 | 6.2 | 5 | 8 | |
| M8 | × | 1.25 | | **T1771367** | **T1761367** | GH7 | 70 | 22 | 6.2 | 5 | 8 | |
| M8 | × | 1 | | **T1771377** | **T1761377** | GH7 | 70 | 22 | 6.2 | 5 | 8 | |
| M10 | × | 1.5 | | **T1771427** | **T1761427** | GH7 | 75 | 24 | 7 | 5.5 | 8 | |
| M10 | × | 1.25 | | **T1771437** | **T1761437** | GH7 | 75 | 24 | 7 | 5.5 | 8 | |
| M10 | × | 1 | | **T1771447** | **T1761447** | GH7 | 75 | 24 | 7 | 5.5 | 8 | |
| M12 | × | 1.75 | | **T1771508** | **T1761508** | GH8 | 82 | 29 | 8.5 | 6.5 | 9 | |
| M12 | × | 1.5 | | **T1771517** | **T1761517** | GH7 | 82 | 29 | 8.5 | 6.5 | 9 | |
| M12 | × | 1.25 | | **T1771527** | **T1761527** | GH7 | 82 | 29 | 8.5 | 6.5 | 9 | |
| M12 | × | 1 | | **T1771537** | **T1761537** | GH7 | 82 | 29 | 8.5 | 6.5 | 9 | |
| M14 | × | 2 | | **T1771540** | **T1761540** | GH10 | 88 | 30 | 10.5 | 8 | 11 | |
| M14 | × | 1.5 | | **T1771559** | **T1761559** | GH9 | 88 | 30 | 10.5 | 8 | 11 | |
| M16 | × | 2 | | **T1771600** | **T1761600** | GH10 | 95 | 32 | 12.5 | 10 | 13 | |
| M16 | × | 1.5 | | **T1771619** | **T1761619** | GH9 | 95 | 32 | 12.5 | 10 | 13 | |
| M18 | × | 2.5 | | **T177165A** | **T176165A** | GH11 | 100 | 37 | 14 | 11 | 14 | |
| M18 | × | 1.5 | | **T1771670** | **T1761670** | GH10 | 100 | 37 | 14 | 11 | 14 | |
| M20 | × | 2.5 | | **T177170A** | **T176170A** | GH11 | 105 | 37 | 15 | 12 | 15 | |
| M20 | × | 1.5 | | **T1771720** | **T1761720** | GH10 | 105 | 37 | 15 | 12 | 15 | |

►Refer to p.B194 for recommended tap drill sizes. 参考p.B194 底孔尺寸.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | M | | | K | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | | | | | | | | | Stainless steel | | | Grey cast iron | Nodular cast iron | Malleable cast iron |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | | | | | | |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 | | | | | | |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 | | | | | | |
| Recommended | ◎ | ○ | ○ | | | ○ | | | | | | ◎ | ◎ | ◎ | | | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ◎ | ◎ | ◎ | ○ | | ◎ | ◎ | | | | | | | | | | | | | | |

# YG TAP FORMING

2.0P **T2731 SERIES**
4.0P **T2701 SERIES**

## M FLUTELESS TAPS for NON-FERROUS METALS
## 有色金属用挤压丝锥

► Suitable for tapping in Aluminum, Magnesium, Zinc, Copper as well as Non-Ferrous metal alloy.

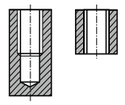
►适用于铝, 镁, 锌, 铜及有色金属的加工

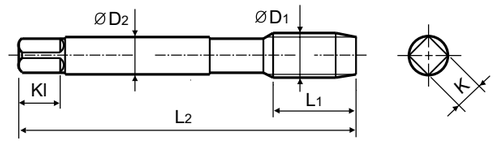
2.0P
4.0P

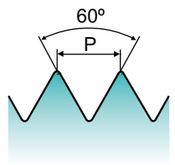
up to M6 : Male Center

Hole type 孔类型

3.0×D






Material groups **GV** | HSS-E | I | GH | 60° | 2.0P/4.0P | Bright

p. B183

Tap Limits: p.B231

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| TAPPING ER CHUCK | D215 -220 |
| TAPPING CHUCK | D221 -228 |
| ONE STEP TAPPING CHUCK | D211 -213 |

Unit(单位) : mm

| SIZE 尺寸 ØD1 | | Pitch 牙距 P | EDP No. 型号 2.0P | EDP No. 型号 4.0P | Limit 精度 | Overall Length 全长 L2 | Thread Length 螺纹长 L1 | Shank Diameter 柄径 ØD2 | Square Size 方块 尺寸 K | Square Length 方块 长度 Kl | No. of Lobe 槽数 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| M2 | × | 0.4 | T2731134 | T2701134 | GH4 | 40 | 9 | 3 | 2.5 | 5 | |
| M2.3 | × | 0.4 | T2731194 | T2701194 | GH4 | 42 | 10 | 3 | 2.5 | 5 | |
| M2.5 | × | 0.45 | T2731175 | T2701175 | GH5 | 44 | 11 | 3 | 2.5 | 5 | |
| M2.6 | × | 0.45 | T2731495 | T2701495 | GH5 | 44 | 11 | 3 | 2.5 | 5 | |
| M3 | × | 0.5 | T2731206 | T2701206 | GH6 | 46 | 9 | 4 | 3.2 | 6 | |
| M3.5 | × | 0.6 | T2731226 | T2701226 | GH6 | 48 | 9 | 4 | 3.2 | 6 | |
| M4 | × | 0.7 | T2731247 | T2701247 | GH7 | 52 | 10 | 5 | 4 | 7 | |
| M5 | × | 0.8 | T2731287 | T2701287 | GH7 | 60 | 11 | 5.5 | 4.5 | 7 | |
| M6 | × | 1 | T2731317 | T2701317 | GH7 | 62 | 12 | 6 | 4.5 | 7 | |

►Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ○ | ○ | | | ○ | | | | | | ◎ | ◎ | ◎ | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ◎ | ◎ | ◎ | ○ | | ◎ | ◎ | | | | | | | | | | | | | | |



CARBIDE
HSS
THREAD MILLS
SYNCHRO TAPS
COMBO TAPS
YG TAP GENERAL
YG TAP STEEL
YG TAP HARDENED
YG TAP INOX
YG TAP CAST IRON
YG TAP ALU
YG TAP Ti Ni
YG TAP FORMING
STI TAPS
PIPE TAPS
SKS21 HAND TAPS
SKS21 PIPE TAPS
TECHNICAL DATA

# YG TAP FORMING

2.0P **T2759 SERIES**
4.0P **T2749 SERIES**

## M FLUTELESS TAPS for NON-FERROUS METALS
## 有色金属用挤压丝锥

► Suitable for tapping in Aluminum, Magnesium, Zinc, Copper as well as Non-Ferrous metal alloy.

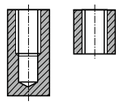
►适用于铝, 镁, 锌, 铜及有色金属的加工

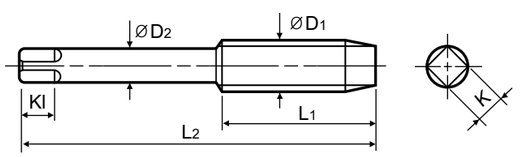
2.0P
4.0P

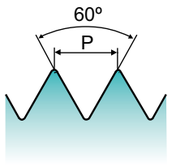
up to M7 : Male Center

Hole type 孔类型

3.0×D






Material groups **GV** | HSS-E | J | GH | 60° | 2.0P/4.0P | Bright

p. B183

Tap Limits: p.B231

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| TAPPING ER CHUCK | D215 -220 |
| TAPPING CHUCK | D221 -228 |
| ONE STEP TAPPING CHUCK | D211 -213 |

Unit(单位) : mm

| SIZE 尺寸 ØD1 | | Pitch 牙距 P | EDP No. 型号 2.0P | EDP No. 型号 4.0P | Limit 精度 | Overall Length 全长 L2 | Thread Length 螺纹长 L1 | Shank Diameter 柄径 ØD2 | Square Size 方块 尺寸 K | Square Length 方块 长度 Kl | No. of Lobe 槽数 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| M1 | × | 0.25 | T2759014 | T2749014 | GH4 | 30 | 6.0 | 3.0 | 2.5 | 5 | |
| M1.4 | × | 0.3 | T2759074 | T2749074 | GH4 | 34 | 6.5 | 3.0 | 2.5 | 5 | |
| M1.6 | × | 0.35 | T2759094 | T2749094 | GH4 | 36 | 7.0 | 3.0 | 2.5 | 5 | |
| M1.7 | × | 0.35 | T2759K54 | T2749K54 | GH4 | 36 | 8.0 | 3.0 | 2.5 | 5 | |
| M1.8 | × | 0.35 | T2759114 | T2749114 | GH4 | 36 | 8.0 | 3.0 | 2.5 | 5 | |
| M2 | × | 0.4 | T2759134 | T2749134 | GH4 | 40 | 9.0 | 3.0 | 2.5 | 5 | |
| M2.3 | × | 0.4 | T2759194 | T2749194 | GH4 | 42 | 10.0 | 3.0 | 2.5 | 5 | |
| M2.5 | × | 0.45 | T2759175 | T2749175 | GH5 | 44 | 11.0 | 3.0 | 2.5 | 5 | |
| M2.6 | × | 0.45 | T2759495 | T2749495 | GH5 | 44 | 11.0 | 3.0 | 2.5 | 5 | |
| M3 | × | 0.5 | T2759206 | T2749206 | GH6 | 46 | 18.0 | 4.0 | 3.2 | 6 | |
| M3.5 | × | 0.6 | T2759226 | T2749226 | GH6 | 48 | 18.0 | 4.0 | 3.2 | 6 | |
| M4 | × | 0.7 | T2759247 | T2749247 | GH7 | 52 | 20.0 | 5.0 | 4.0 | 7 | |
| M5 | × | 0.8 | T2759287 | T2749287 | GH7 | 60 | 22.0 | 5.5 | 4.5 | 7 | |
| M6 | × | 1 | T2759317 | T2749317 | GH7 | 62 | 24.0 | 6.0 | 4.5 | 7 | |

►Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ○ | ○ | | | ○ | | | | | | ◎ | ◎ | ◎ | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ◎ | ◎ | ◎ | ○ | | ◎ | ◎ | | | | | | | | | | | | | | |

# YG TAP FORMING

2.0P **T2751 SERIES**
4.0P **T2741 SERIES**

## M FLUTELESS TAPS with OIL GROOVE for NON-FERROUS METALS
## 带油槽有色金属用挤压丝锥

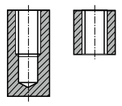
► Suitable for tapping in Aluminum, Magnesium, Zinc, Copper as well as Non-Ferrous metal alloys.

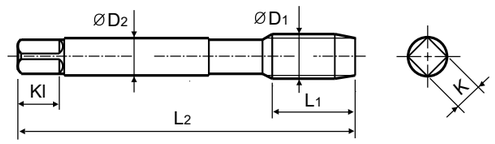
► 适用于铝, 镁, 锌, 铜及有色金属的加工.

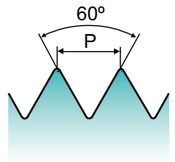
2.0P
4.0P

up to M7 : Male Center

Hole type 孔类型
3.0×D






Material groups **GV** | HSS-E | I | GH | 60° | 2.0P/4.0P | Bright

p. B183

Tap Limits: p.B231

Recommended ToolHolder

| | Page |
|---|---|
| TAPPING ER CHUCK | D215 -220 |
| TAPPING CHUCK | D221 -228 |
| ONE STEP TAPPING CHUCK | D211 -213 |

Unit(单位) : mm

| SIZE 尺寸 ØD1 | Pitch 牙距 P | EDP No. 型号 2.0P | EDP No. 型号 4.0P | Limit 精度 | Overall Length 全长 L2 | Thread Length 螺纹长 L1 | Shank Diameter 柄径 ØD2 | Square Size 方块 尺寸 K | Square Length 方块 长度 Kl | No. of Lobe 槽数 |
|---|---|---|---|---|---|---|---|---|---|---|
| M2 | × 0.4 | T2751134 | T2741134 | GH4 | 40 | 9 | 3 | 2.5 | 5 | |
| M2.3 | × 0.4 | T2751194 | T2741194 | GH4 | 42 | 10 | 3 | 2.5 | 5 | |
| M2.5 | × 0.45 | T2751174 | T2741174 | GH4 | 44 | 11 | 3 | 2.5 | 5 | |
| M2.6 | × 0.45 | T2751494 | T2741494 | GH4 | 44 | 11 | 3 | 2.5 | 5 | |
| M3 | × 0.5 | T2751205 | T2741205 | GH5 | 46 | 9 | 4 | 3.2 | 6 | |
| M3.5 | × 0.6 | T2751225 | T2741225 | GH5 | 48 | 9 | 4 | 3.2 | 6 | |
| M4 | × 0.7 | T2751246 | T2741246 | GH6 | 52 | 10 | 5 | 4 | 7 | |
| M5 | × 0.8 | T2751286 | T2741286 | GH6 | 60 | 11 | 5.5 | 4.5 | 7 | |
| M6 | × 1 | T2751317 | T2741317 | GH7 | 62 | 12 | 6 | 4.5 | 7 | |
| M7 | × 1 | T2751347 | T2741347 | GH7 | 65 | 13 | 6.2 | 5 | 8 | |
| M8 | × 1.25 | T2751367 | T2741367 | GH7 | 70 | 22 | 6.2 | 5 | 8 | |
| M8 | × 1 | T2751377 | T2741377 | GH7 | 70 | 22 | 6.2 | 5 | 8 | |
| M10 | × 1.5 | T2751427 | T2741427 | GH7 | 75 | 24 | 7 | 5.5 | 8 | |
| M10 | × 1.25 | T2751437 | T2741437 | GH7 | 75 | 24 | 7 | 5.5 | 8 | |
| M10 | × 1 | T2751447 | T2741447 | GH7 | 75 | 24 | 7 | 5.5 | 8 | |
| M12 | × 1.75 | T2751508 | T2741508 | GH8 | 82 | 29 | 8.5 | 6.5 | 9 | |
| M12 | × 1.5 | T2751517 | T2741517 | GH7 | 82 | 29 | 8.5 | 6.5 | 9 | |
| M12 | × 1.25 | T2751527 | T2741527 | GH7 | 82 | 29 | 8.5 | 6.5 | 9 | |
| M12 | × 1 | T2751537 | T2741537 | GH7 | 82 | 29 | 8.5 | 6.5 | 9 | |
| M14 | × 2 | T2751540 | T2741540 | GH10 | 88 | 30 | 10.5 | 8 | 11 | |
| M14 | × 1.5 | T2751559 | T2741559 | GH9 | 88 | 30 | 10.5 | 8 | 11 | |
| M16 | × 2 | T2751600 | T2741600 | GH10 | 95 | 32 | 12.5 | 10 | 13 | |
| M16 | × 1.5 | T2751619 | T2741619 | GH9 | 95 | 32 | 12.5 | 10 | 13 | |
| M18 | × 2.5 | T275165A | T274165A | GH11 | 100 | 37 | 14 | 11 | 14 | |
| M18 | × 1.5 | T2751670 | T2741670 | GH10 | 100 | 37 | 14 | 11 | 14 | |
| M20 | × 2.5 | T275170A | T274170A | GH11 | 105 | 37 | 15 | 12 | 15 | |
| M20 | × 1.5 | T2751720 | T2741720 | GH10 | 105 | 37 | 15 | 12 | 15 | |

►Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ○ | ○ | | | ○ | | | | | | ◎ | ◎ | ◎ | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ◎ | ◎ | ◎ | ○ | | ◎ | ◎ | | | | | | | | | | | | | | |



# YG TAP FORMING

2.0P **T3731 SERIES**
4.0P **T3701 SERIES**

## M FLUTELESS TAPS
## 挤压丝锥

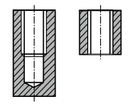
► Suitable for tapping in Steels, Non-Ferrous Metal Alloys and Stainless Steels. Capable of efficient, long life, high speed tapping.

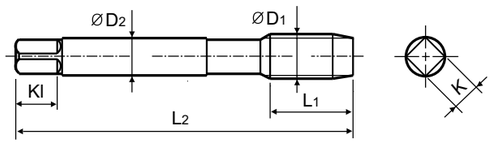
► 适用于钢和非铁金属合金和不锈钢的加工, 具有高效, 寿命长, 能够 快速攻丝.

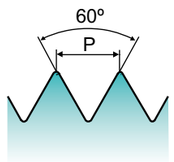
2.0P
4.0P

up to M6 : Male Center

Hole type 孔类型
3.0×D






Material groups **GV** | HSS-E | I | GH | 60° | 2.0P/4.0P | TiN

p. B183

Tap Limits: p.B231

Recommended ToolHolder

| | Page |
|---|---|
| TAPPING ER CHUCK | D215 -220 |
| TAPPING CHUCK | D221 -228 |
| ONE STEP TAPPING CHUCK | D211 -213 |

Unit(单位) : mm

| SIZE 尺寸 ØD1 | Pitch 牙距 P | EDP No. 型号 2.0P | EDP No. 型号 4.0P | Limit 精度 | Overall Length 全长 L2 | Thread Length 螺纹长 L1 | Shank Diameter 柄径 ØD2 | Square Size 方块 尺寸 K | Square Length 方块 长度 Kl | No. of Lobe 槽数 |
|---|---|---|---|---|---|---|---|---|---|---|
| M2 | × 0.4 | T3731134 | T3701134 | GH4 | 40 | 9 | 3 | 2.5 | 5 | |
| M2.3 | × 0.4 | T3731194 | T3701194 | GH4 | 42 | 10 | 3 | 2.5 | 5 | |
| M2.5 | × 0.45 | T3731175 | T3701175 | GH5 | 44 | 11 | 3 | 2.5 | 5 | |
| M2.6 | × 0.45 | T3731495 | T3701495 | GH5 | 44 | 11 | 3 | 2.5 | 5 | |
| M3 | × 0.5 | T3731206 | T3701206 | GH6 | 46 | 9 | 4 | 3.2 | 6 | |
| M3.5 | × 0.6 | T3731226 | T3701226 | GH6 | 48 | 9 | 4 | 3.2 | 6 | |
| M4 | × 0.7 | T3731247 | T3701247 | GH7 | 52 | 10 | 5 | 4 | 7 | |
| M5 | × 0.8 | T3731287 | T3701287 | GH7 | 60 | 11 | 5.5 | 4.5 | 7 | |
| M6 | × 1 | T3731317 | T3701317 | GH7 | 62 | 12 | 6 | 4.5 | 7 | |

►Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ○ | ○ | | | ○ | | | | | | ◎ | ◎ | ◎ | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ◎ | ◎ | ◎ | ○ | | ◎ | ◎ | | | | | | | | | | | | | | |



CARBIDE
HSS
THREAD MILLS
SYNCHRO TAPS
COMBO TAPS
YG TAP GENERAL
YG TAP STEEL
YG TAP HARDENED
YG TAP INOX
YG TAP CAST IRON
YG TAP ALU
YG TAP Ti Ni
YG TAP FORMING
STI TAPS
PIPE TAPS
SKS21 HAND TAPS
SKS21 PIPE TAPS
TECHNICAL DATA

# YG TAP FORMING

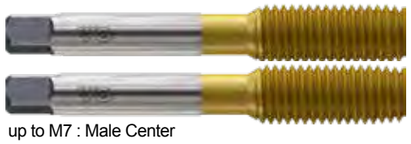
2.0P **T3751** SERIES
4.0P **T3741** SERIES

## M FLUTELESS TAPS with OIL GROOVE
## 带油槽钢用挤压丝锥

► Suitable for tapping in Steels, Non-Ferrous Metal Alloys and Stainless Steels. Capable of efficient, long life, high speed tapping.

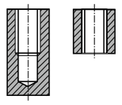
►适用于钢和非铁金属合金和不锈钢的加工, 具有高效, 寿命长, 能够 快速攻丝.

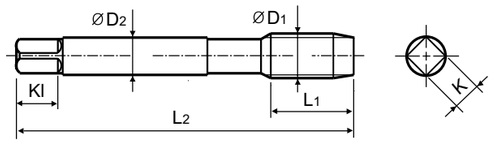
2.0P
4.0P

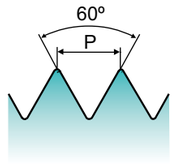


up to M7 : Male Center

Hole type 孔类型
3.0×D






Material groups **GV** | HSS-E | I | GH | 60° | 2.0P/4.0P | TiN | p. B183

Tap Limits: p.B231

Recommended ToolHolder

| | Page |
|---|---|
| TAPPING ER CHUCK | D215 -220 |
| TAPPING CHUCK | D221 -228 |
| ONE STEP TAPPING CHUCK | D211 -213 |

Unit(单位) : mm

| SIZE 尺寸 ØD1 | Pitch 牙距 P | EDP No. 型号 2.0P | EDP No. 型号 4.0P | Limit 精度 | Overall Length 全长 L2 | Thread Length 螺纹长 L1 | Shank Diameter 柄径 ØD2 | Square Size 方块 尺寸 K | Square Length 方块 长度 Kl | No. of Lobe 槽数 |
|---|---|---|---|---|---|---|---|---|---|---|
| M2 | × 0.4 | T3751134 | T3741134 | GH4 | 40 | 9 | 3 | 2.5 | 5 | |
| M2.3 | × 0.4 | T3751194 | T3741194 | GH4 | 42 | 10 | 3 | 2.5 | 5 | |
| M2.5 | × 0.45 | T3751174 | T3741174 | GH4 | 44 | 11 | 3 | 2.5 | 5 | |
| M2.6 | × 0.45 | T3751494 | T3741494 | GH4 | 44 | 11 | 3 | 2.5 | 5 | |
| M3 | × 0.5 | T3751205 | T3741205 | GH5 | 46 | 9 | 4 | 3.2 | 6 | |
| M3.5 | × 0.6 | T3751225 | T3741225 | GH5 | 48 | 9 | 4 | 3.2 | 6 | |
| M4 | × 0.7 | T3751246 | T3741246 | GH6 | 52 | 10 | 5 | 4 | 7 | |
| M5 | × 0.8 | T3751286 | T3741286 | GH6 | 60 | 11 | 5.5 | 4.5 | 7 | |
| M6 | × 1 | T3751317 | T3741317 | GH7 | 62 | 12 | 6 | 4.5 | 7 | |
| M7 | × 1 | T3751347 | T3741347 | GH7 | 65 | 13 | 6.2 | 5 | 8 | |
| M8 | × 1.25 | T3751367 | T3741367 | GH7 | 70 | 22 | 6.2 | 5 | 8 | |
| M8 | × 1 | T3751377 | T3741377 | GH7 | 70 | 22 | 6.2 | 5 | 8 | |
| M10 | × 1.5 | T3751427 | T3741427 | GH7 | 75 | 24 | 7 | 5.5 | 8 | |
| M10 | × 1.25 | T3751437 | T3741437 | GH7 | 75 | 24 | 7 | 5.5 | 8 | |
| M10 | × 1 | T3751447 | T3741447 | GH7 | 75 | 24 | 7 | 5.5 | 8 | |
| M12 | × 1.75 | T3751508 | T3741508 | GH8 | 82 | 29 | 8.5 | 6.5 | 9 | |
| M12 | × 1.5 | T3751517 | T3741517 | GH7 | 82 | 29 | 8.5 | 6.5 | 9 | |
| M12 | × 1.25 | T3751527 | T3741527 | GH7 | 82 | 29 | 8.5 | 6.5 | 9 | |
| M12 | × 1 | T3751537 | T3741537 | GH7 | 82 | 29 | 8.5 | 6.5 | 9 | |
| M14 | × 2 | T3751540 | T3741540 | GH10 | 88 | 30 | 10.5 | 8 | 11 | |
| M14 | × 1.5 | T3751559 | T3741559 | GH9 | 88 | 30 | 10.5 | 8 | 11 | |
| M16 | × 2 | T3751600 | T3741600 | GH10 | 95 | 32 | 12.5 | 10 | 13 | |
| M16 | × 1.5 | T3751619 | T3741619 | GH9 | 95 | 32 | 12.5 | 10 | 13 | |
| M18 | × 2.5 | T375165A | T374165A | GH11 | 100 | 37 | 14 | 11 | 14 | |
| M18 | × 1.5 | T3751670 | T3741670 | GH10 | 100 | 37 | 14 | 11 | 14 | |
| M20 | × 2.5 | T375170A | T374170A | GH11 | 105 | 37 | 15 | 12 | 15 | |
| M20 | × 1.5 | T3751720 | T3741720 | GH10 | 105 | 37 | 15 | 12 | 15 | |

►Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ○ | ○ | | | ○ | | | | | | ◎ | ◎ | ◎ | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ◎ | ◎ | ◎ | ○ | | ◎ | ◎ | | | | | | | | | | | | | | |





# YG TAP FORMING

2.0P **T2732** SERIES
4.0P **T2702** SERIES

## UNC FLUTELESS TAPS for NON-FERROUS METALS
## 有色金属用挤压丝锥

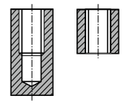
►Suitable for tapping in Aluminum, Magnesium, Zinc, Copper as well as Non-Ferrous metal alloys.

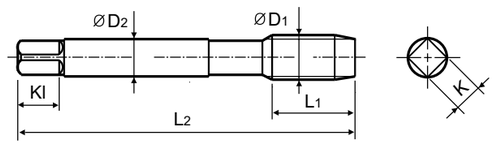
►适用于铝, 镁, 铜及有色金属的加工.

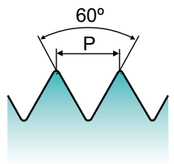
2.0P
4.0P

up to 1/4 : Male Center

Hole type 孔类型
3.0×D






Material groups **GV** | HSS-E | I | GH | 60° | 2.0P/4.0P | Bright | p. B183

Tap Limits: p.B231

Recommended ToolHolder

| | Page |
|---|---|
| TAPPING ER CHUCK | D215 -220 |
| TAPPING CHUCK | D221 -228 |
| ONE STEP TAPPING CHUCK | D211 -213 |

Unit(单位) : mm

| SIZE 尺寸 ØD1 | Pitch 牙距 P | EDP No. 型号 2.0P | EDP No. 型号 4.0P | Limit 精度 | Overall Length 全长 L2 | Thread Length 螺纹长 L1 | Shank Diameter 柄径 ØD2 | Square Size 方块 尺寸 K | Square Length 方块 长度 Kl | No. of Lobe 槽数 |
|---|---|---|---|---|---|---|---|---|---|---|
| #2 | - 56 UNC | T2732085 | T2702085 | GH5 | 42 | 10 | 3 | 2.5 | 5 | |
| #4 | - 40 UNC | T2732166 | T2702166 | GH6 | 44 | 12 | 3 | 2.5 | 5 | |
| #5 | - 40 UNC | T2732206 | T2702206 | GH6 | 46 | 9 | 4 | 3.2 | 6 | |
| #6 | - 32 UNC | T2732247 | T2702247 | GH7 | 48 | 9 | 4 | 3.2 | 6 | |
| #8 | - 32 UNC | T2732287 | T2702287 | GH7 | 52 | 10 | 5 | 4 | 7 | |
| #10 | - 24 UNC | T2732327 | T2702327 | GH7 | 60 | 11 | 5.5 | 4.5 | 7 | |
| #12 | - 24 UNC | T2732367 | T2702367 | GH7 | 60 | 11 | 5.5 | 4.5 | 7 | |
| 1/4 | - 20 UNC | T2732408 | T2702408 | GH8 | 62 | 14 | 6 | 4.5 | 7 | |

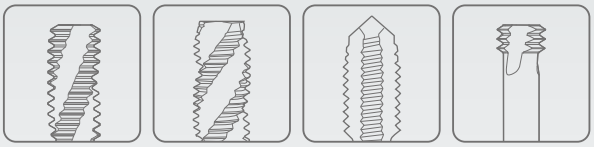
►Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ○ | ○ | | | ○ | | | | | | ◎ | ◎ | ◎ | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ◎ | ◎ | ◎ | ○ | | ◎ | ◎ | | | | | | | | | | | | | | |

Global Cutting Tool Leader **YG-1**



# THREADING

YG

Leading Through Innovation

## HSS-E & HSS

# SCREW THREAD INSERT TAPS

- Tapping STI Threads of Soft Materials
- 软材料加工嵌套螺纹

# SELECTION GUIDE
## 选用指南

YG THREADING TOOLS

# HSS-E & HSS SCREW THREAD INSERT TAPS

Tapping STI Threads of Soft Materials
软材料加工嵌套螺纹

Please visit globalyg1.com/mat for material search

◎ : Excellent (优秀) ○ : Good (良好)

| | | HOLE TYPE 孔类型 | | Max. 2.5xD Blind Hole盲孔 | Max. 2.0xD Blind/Through Hole盲孔 / 通孔 |
|---|---|---|---|---|---|
| | | TOOL MATERIAL 刀具材料 | | HSS-E | HSS |
| | | CHAMFER LEAD ACC. TO DIN2197 倒角长度 | | 2.5P | 1.5P/5.0P |
| | | FLUTE TYPE 槽型 | | Spiral Flute 螺旋角 | Straight Flute 直槽 |
| | | SPIRAL FLUTE ANGLE 螺旋角 | | R40 | - |
| | SERIES NO.系列号 (page 页数) | JIS Type | | STI | STI |
| | | M/MF | | T2197 (p. B195) | T7399 (p. B197) |
| | | UNC/F | | T2198 (p. B196) | T7322 (p. B198) |
| | | W | | | |
| | | M-LH W-LH | | | |
| | | PIPE TAPS | | | |
| | SURFACE TREATMENT表面处理 | | | Bright | Bright |
| | MODEL 模型 | | | | HAND TAP |

| | ISO 公制 | VDI 3323 | Material Description 材料描述 | Composition / Structure / Heat Treatment 成分 / 组织 / 热处理 | | HB 布氏硬度 | HRc 硬度 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| P | | 1 | Non-alloy steel | About 0.15% C | Annealed | 125 | | ○ | 8~13 | ○ | 8~13 |
| | | 2 | | About 0.45% C | Annealed | 190 | 13 | ○ | 7~12 | ○ | 7~12 |
| | | 3 | | About 0.45% C | Quenched & Tempered | 250 | 25 | ○ | 7~12 | ○ | 7~12 |
| | | 4 | | About 0.75% C | Annealed | 270 | 28 | | | | |
| | | 5 | | About 0.75% C | Quenched & Tempered | 300 | 32 | | | | |
| | | 6 | Low alloy steel | | Annealed | 180 | 10 | | | | |
| | | 7 | | | Quenched & Tempered | 275 | 29 | | | | |
| | | 8 | | | Quenched & Tempered | 300 | 32 | | | | |
| | | 9 | | | Quenched & Tempered | 350 | 38 | | | | |
| | | 10 | High alloyed steel, and tool steel | | Annealed | 200 | 15 | | | | |
| | | 11 | | | Quenched & Tempered | 325 | 35 | | | | |
| M | | 12 | Stainless steel | Ferritic / Martensitic | Annealed | 200 | 15 | | | | |
| | | 13 | | Martensitic | Quenched & Tempered | 240 | 23 | | | | |
| | | 14 | | Austenitic | | 180 | 10 | | | | |
| K | | 15 | Grey cast iron | Pearlitic / ferritic | | 180 | 10 | | | | |
| | | 16 | | Pearlitic (Martensitic) | | 260 | 26 | | | | |
| | | 17 | Nodular cast iron | Ferritic | | 160 | 3 | | | | |
| | | 18 | | Pearlitic | | 250 | 25 | | | | |
| | | 19 | Malleable cast iron | Ferritic | | 130 | | | | | |
| | | 20 | | Pearlitic | | 230 | 21 | | | | |
| N | | 21 | Aluminum-wrought alloy | Not Curable | | 60 | | ◎ | 10~20 | ◎ | 10~20 |
| | | 22 | | Curable | Hardened | 100 | | ◎ | 10~20 | ◎ | 10~20 |
| | | 23 | Aluminum-cast, alloyed | ≤ 12% Si, Not Curable | | 75 | | ◎ | 10~15 | ◎ | 10~15 |
| | | 24 | | ≤ 12% Si, Curable | Hardened | 90 | | ○ | 10~15 | ○ | 10~15 |
| | | 25 | | > 12% Si, Not Curable | | 130 | | | | | |
| | | 26 | Copper and Copper Alloys (Bronze / Brass) | Cutting Alloys, PB>1% | | 110 | | | | | |
| | | 27 | | CuZn, CuSnZn (Brass) | | 90 | | ◎ | 6~20 | ◎ | 6~15 |
| | | 28 | | CuSn, lead-free copper and electrolytic copper | | 100 | | | | | |
| | | 29 | Non Metallic Materials | Duroplastic, Fiber Reinforced Plastic | | | | | | | |
| | | 30 | | Rubber, Wood, etc. | | | | | | | |
| S | | 31 | Heat Resistant Super Alloys | Fe Based | Annealed | 200 | 15 | | | | |
| | | 32 | | | Cured | 280 | 30 | | | | |
| | | 33 | | Ni or Co Based | Annealed | 250 | 25 | | | | |
| | | 34 | | | Cured | 350 | 38 | | | | |
| | | 35 | | | Cast | 320 | 34 | | | | |
| | | 36 | Titanium Alloys | Pure Titanium | | 400 Rm | | | | | |
| | | 37 | | Alpha + Beta Alloys | Hardened | 1050 Rm | | | | | |
| H | | 38 | Hardened steel | | Hardened | 550 | 55 | | | | |
| | | 39 | | | Hardened | 630 | 60 | | | | |
| | | 40 | Chilled Cast Iron | | Cast | 400 | 42 | | | | |
| | | 41 | Hardened Cast Iron | | Hardened | 550 | 55 | | | | |





# YG SCREW THREAD INSERT TAPS

T2197 SERIES

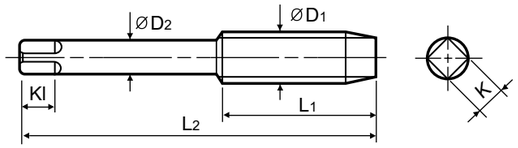
## M SCREW THREAD INSERT SPIRAL FLUTE TAPS
## 嵌套螺纹用螺旋槽丝锥

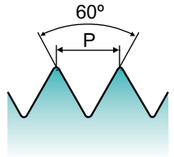
► Suitable for tapping deep Blind holes when a standard Straight Fluted tap is inadequate.

▶适用于标准直槽丝锥加工能力不足时的深盲孔加工.

up to M5 : Male Center

Hole type 孔类型
2.5×D




Material groups: Al | HSS-E | STI | JIS Ib | 60° | 2.5P | R40 | Bright

p. B194

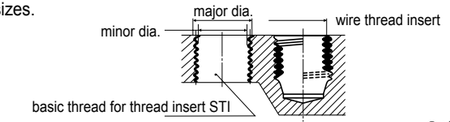
Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| TAPPING ER CHUCK | D215 -220 |
| TAPPING CHUCK | D221 -228 |
| ONE STEP TAPPING CHUCK | D211 -213 |

Unit(单位) : mm

| SIZE 尺寸 | | Pitch 牙距 | EDP No. 型号 | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|---|
| ØD1 | | P | | | L2 | L1 | ØD2 | K | Kl | |
| M3 | × | 0.5 | T2197201 | JIS 1b | 48 | 18 | 4 | 3.2 | 6 | 3 |
| M4 | × | 0.7 | T2197241 | JIS 1b | 60 | 22 | 5.5 | 4.5 | 7 | 3 |
| M5 | × | 0.8 | T2197281 | JIS 1b | 62 | 24 | 6 | 4.5 | 7 | 3 |
| M6 | × | 1 | T2197311 | JIS 1b | 65 | 26 | 6.2 | 5 | 8 | 3 |
| M8 | × | 1.25 | T2197361 | JIS 1b | 75 | 32 | 7 | 5.5 | 8 | 3 |
| M10 | × | 1.5 | T2197421 | JIS 1b | 82 | 38 | 8.5 | 6.5 | 9 | 3 |
| M10 | × | 1.25 | T2197431 | JIS 1b | 82 | 38 | 8.5 | 6.5 | 9 | 3 |
| M12 | × | 1.75 | T2197501 | JIS 1b | 90 | 42 | 10.5 | 8 | 11 | 3 |
| M12 | × | 1.5 | T2197511 | JIS 1b | 88 | 42 | 10.5 | 8 | 11 | 3 |
| M12 | × | 1.25 | T2197521 | JIS 1b | 88 | 42 | 10.5 | 8 | 11 | 3 |
| M14 | × | 2 | T2197541 | JIS 1b | 95 | 45 | 13 | 10 | 13 | 3 |
| M14 | × | 1.5 | T2197551 | JIS 1b | 95 | 45 | 12.5 | 10 | 13 | 3 |
| M16 | × | 2 | T2197601 | JIS 1b | 95 | 45 | 14 | 11 | 14 | 4 |
| M16 | × | 1.5 | T2197611 | JIS 1b | 95 | 45 | 14 | 11 | 14 | 4 |
| M18 | × | 2.5 | T2197651 | JIS 1b | 115 | 55 | 17 | 13 | 16 | 4 |
| M18 | × | 1.5 | T2197671 | JIS 1b | 95 | 45 | 15 | 12 | 15 | 4 |
| M20 | × | 2.5 | T2197701 | JIS 1b | 120 | 58 | 19 | 15 | 18 | 4 |
| M20 | × | 1.5 | T2197721 | JIS 1b | 95 | 45 | 17 | 13 | 16 | 4 |
| M22 | × | 2.5 | T2197741 | JIS 1b | 130 | 62 | 20 | 15 | 18 | 4 |
| M22 | × | 1.5 | T2197761 | JIS 1b | 95 | 45 | 19 | 15 | 18 | 4 |
| M24 | × | 3 | T2197781 | JIS 1b | 135 | 65 | 21 | 17 | 20 | 4 |
| M24 | × | 1.5 | T2197801 | JIS 1b | 95 | 45 | 20 | 15 | 18 | 4 |

► Refer to p.B233-B238 for recommended tap drill sizes.
参考p.B233-B238 底孔尺寸.




◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ○ | ○ | ○ | | | | | | | | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ◎ | ◎ | ◎ | ○ | | | ◎ | | | | | | | | | | | | | | |

# SCREW THREAD INSERT TAPS

**T2198** SERIES

## UNC/F SCREW THREAD INSERT SPIRAL FLUTE TAPS
## 嵌套螺纹用螺旋槽丝锥

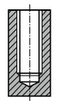
► Suitable for tapping deep Blind holes when a standard Straight Fluted tap is inadequate.

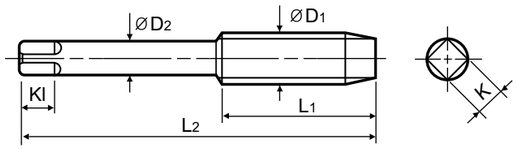
►适用于标准直槽丝锥加工能力不足时的深盲孔加工.

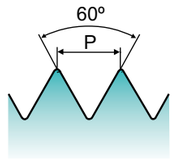
up to 1/4 : Male Center

Hole type 孔类型

2.5×D






Material groups: Al

HSS-E | STI | JIS Ib | 60° | 2.5P | R40 | Bright

p. B194

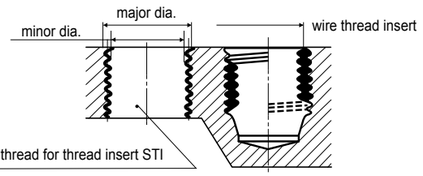
Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| TAPPING ER CHUCK | | D215 -220 |
| TAPPING CHUCK | | D221 -228 |
| ONE STEP TAPPING CHUCK | | D211 -213 |

Unit(单位) : mm

| SIZE 尺寸 | | | TPI 牙距 | EDP No. 型号 | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | L2 | L1 | ØD2 | K | Kl | |
| #4 | - 40 | UNC | | T2198161 | JIS 1b | 48 | 18 | 4 | 3.2 | 6 | 3 |
| #5 | - 40 | UNC | | T2198201 | JIS 1b | 52 | 20 | 5 | 4 | 7 | 3 |
| #6 | - 32 | UNC | | T2198241 | JIS 1b | 55 | 20 | 5 | 4 | 7 | 3 |
| #8 | - 32 | UNC | | T2198281 | JIS 1b | 60 | 22 | 5.5 | 4.5 | 7 | 3 |
| #10 | - 24 | UNC | | T2198321 | JIS 1b | 62 | 24 | 6 | 4.5 | 7 | 3 |
| 1/4 | - 20 | UNC | | T2198401 | JIS 1b | 70 | 30 | 6.1 | 5 | 8 | 3 |
| 5/16 | - 18 | UNC | | T2198441 | JIS 1b | 75 | 32 | 7 | 5.5 | 8 | 3 |
| 3/8 | - 16 | UNC | | T2198481 | JIS 1b | 82 | 38 | 8.5 | 6.5 | 9 | 3 |
| 3/8 | - 24 | UNF | | T2198501 | JIS 1b | 80 | 38 | 8 | 6 | 9 | 3 |
| 1/2 | - 13 | UNC | | T2198561 | JIS 1b | 95 | 45 | 12 | 9 | 12 | 3 |
| 1/2 | - 20 | UNF | | T2198581 | JIS 1b | 90 | 42 | 10.5 | 8 | 11 | 3 |
| 5/8 | - 11 | UNC | | T2198641 | JIS 1b | 105 | 50 | 14 | 11 | 14 | 4 |
| 5/8 | - 18 | UNF | | T2198661 | JIS 1b | 95 | 45 | 14 | 11 | 14 | 4 |
| 3/4 | - 10 | UNC | | T2198701 | JIS 1b | 120 | 55 | 18 | 14 | 17 | 4 |
| 3/4 | - 16 | UNF | | T2198721 | JIS 1b | 95 | 45 | 17 | 13 | 16 | 4 |
| 7/8 | - 9 | UNC | | T2198741 | JIS 1b | 130 | 62 | 20 | 15 | 18 | 4 |
| 7/8 | - 14 | UNF | | T2198761 | JIS 1b | 95 | 45 | 19 | 15 | 18 | 4 |
| 1″ | - 8 | UNC | | T2198781 | JIS 1b | 135 | 65 | 23 | 17 | 20 | 4 |
| 1″ | - 12 | UNF | | T2198801 | JIS 1b | 105 | 45 | 22 | 17 | 20 | 4 |

►Refer to p.B233-B238 for recommended tap drill sizes.
参考p.B233-B238 底孔尺寸.




◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ○ | ○ | ○ | | | | | | | | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400Rm | 1050Rm | 550 | 630 | 400 | 550 |
| Recommended | ◎ | ◎ | ◎ | ○ | | | ◎ | | | | | | | | | | | | | | |



# SCREW THREAD INSERT TAPS

**T7399** SERIES

## M SCREW THREAD INSERT HAND TAPS
## 嵌套螺纹手用丝锥

► Suitable for tapping Blind & Through holes in Aluminum, Alumiunm Alloy Casting and Zinc Alloy Casting.

►适用于铝、铝合金铸件和锌合金铸件的盲孔和通孔攻丝.

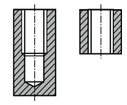
1.5P

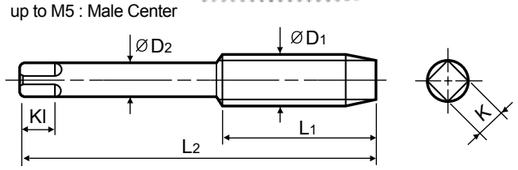
5.0P

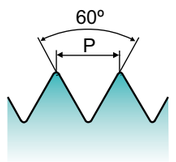
up to M5 : Male Center

Hole type 孔类型

2.0×D






Material groups: Al

HSS | STI | JIS Ib | 60° | 1.5P/5.0P | Bright

p. B194

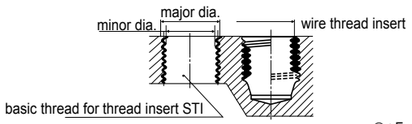
Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| TAPPING ER CHUCK | | D215 -220 |
| TAPPING CHUCK | | D221 -228 |
| ONE STEP TAPPING CHUCK | | D211 -213 |

Unit(单位) : mm

| SIZE 尺寸 | | | Pitch 牙距 | EDP No. 型号 | | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 1.5P | 5.0P | | L2 | L1 | ØD2 | K | Kl | |
| M3 | × | 0.5 | | T7399208 | T7399207 | JIS 1b | 48 | 18 | 4 | 3.2 | 6 | 3 |
| M4 | × | 0.7 | | T7399248 | T7399247 | JIS 1b | 60 | 22 | 5.5 | 4.5 | 7 | 3 |
| M5 | × | 0.8 | | T7399288 | T7399287 | JIS 1b | 62 | 24 | 6 | 4.5 | 7 | 3 |
| M6 | × | 1 | | T7399318 | T7399317 | JIS 1b | 65 | 26 | 6.2 | 5 | 8 | 3 |
| M8 | × | 1.25 | | T7399368 | T7399367 | JIS 1b | 75 | 32 | 7 | 5.5 | 8 | 4 |
| M10 | × | 1.5 | | T7399428 | T7399427 | JIS 1b | 82 | 38 | 8.5 | 6.5 | 9 | 4 |
| M10 | × | 1.25 | | T7399438 | T7399437 | JIS 1b | 82 | 38 | 8.5 | 6.5 | 9 | 4 |
| M12 | × | 1.75 | | T7399508 | T7399507 | JIS 1b | 90 | 42 | 10.5 | 8 | 11 | 4 |
| M12 | × | 1.5 | | T7399518 | T7399517 | JIS 1b | 88 | 42 | 10.5 | 8 | 11 | 4 |
| M12 | × | 1.25 | | T7399528 | T7399527 | JIS 1b | 88 | 42 | 10.5 | 8 | 11 | 4 |
| M14 | × | 2 | | T7399548 | T7399547 | JIS 1b | 95 | 45 | 13 | 10 | 13 | 4 |
| M14 | × | 1.5 | | T7399558 | T7399557 | JIS 1b | 95 | 45 | 12.5 | 10 | 13 | 4 |
| M16 | × | 2 | | T7399608 | T7399607 | JIS 1b | 95 | 45 | 14 | 11 | 14 | 4 |
| M16 | × | 1.5 | | T7399618 | T7399617 | JIS 1b | 95 | 45 | 14 | 11 | 14 | 4 |
| M18 | × | 2.5 | | T7399658 | T7399657 | JIS 1b | 115 | 55 | 17 | 13 | 16 | 4 |
| M18 | × | 1.5 | | T7399678 | T7399677 | JIS 1b | 95 | 45 | 15 | 12 | 15 | 4 |
| M20 | × | 2.5 | | T7399708 | T7399707 | JIS 1b | 120 | 58 | 19 | 15 | 18 | 5 |
| M20 | × | 1.5 | | T7399728 | T7399727 | JIS 1b | 95 | 45 | 17 | 13 | 16 | 5 |
| M22 | × | 2.5 | | T7399748 | T7399747 | JIS 1b | 130 | 62 | 20 | 15 | 18 | 5 |
| M22 | × | 1.5 | | T7399768 | T7399767 | JIS 1b | 95 | 45 | 19 | 15 | 18 | 5 |
| M24 | × | 3 | | T7399788 | T7399787 | JIS 1b | 135 | 65 | 21 | 17 | 20 | 5 |
| M24 | × | 1.5 | | T7399808 | T7399807 | JIS 1b | 95 | 45 | 20 | 15 | 18 | 5 |

►Refer to p.B233-B238 for recommended tap drill sizes.
参考p.B233-B238 底孔尺寸.




◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ○ | ○ | ○ | | | | | | | | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400Rm | 1050Rm | 550 | 630 | 400 | 550 |
| Recommended | ◎ | ◎ | ◎ | ○ | | | ◎ | | | | | | | | | | | | | | |

# SCREW THREAD INSERT TAPS

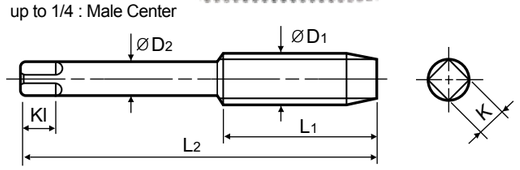
**T7322** SERIES

# UNC/F SCREW THREAD INSERT HAND TAPS
## 嵌套螺纹手用丝锥

► Suitable for tapping Blind & Through holes in Aluminum, Alumiunm Alloy Casting and Zinc Alloy Casting.

► 适用于铝、铝合金铸件和锌合金铸件的盲孔和通孔攻丝.

up to 1/4 : Male Center

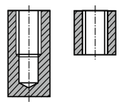


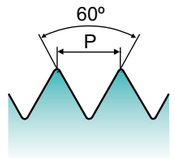




Hole type 孔类型

2.0×D






Material groups **Al** | HSS | STI | JIS Ib | 60° | 1.5P/5.0P | Bright

p. B194

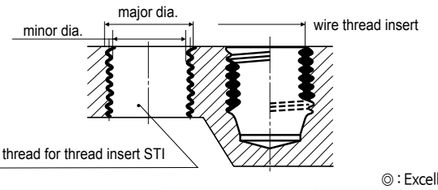
Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| TAPPING ER CHUCK | D215-220 |
| TAPPING CHUCK | D221-228 |
| ONE STEP TAPPING CHUCK | D211-213 |

Unit(单位) : mm

| SIZE 尺寸 ØD1 | TPI 牙距 | EDP No. 型号 1.5P | EDP No. 型号 5.0P | Limit 精度 | Overall Length 全长 L2 | Thread Length 螺纹长 L1 | Shank Diameter 柄径 ØD2 | Square Size 方块 尺寸 K | Square Length 方块 长度 Kl | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|---|
| #4 | - 40 UNC | T7322168 | T7322167 | JIS 1b | 48 | 18 | 4 | 3.2 | 6 | 3 |
| #5 | - 40 UNC | T7322208 | T7322207 | JIS 1b | 52 | 20 | 5 | 4 | 7 | 3 |
| #6 | - 32 UNC | T7322248 | T7322247 | JIS 1b | 55 | 20 | 5 | 4 | 7 | 3 |
| #8 | - 32 UNC | T7322288 | T7322287 | JIS 1b | 60 | 22 | 5.5 | 4.5 | 7 | 3 |
| #10 | - 24 UNC | T7322328 | T7322327 | JIS 1b | 62 | 24 | 6 | 4.5 | 7 | 3 |
| 1/4 | - 20 UNC | T7322408 | T7322407 | JIS 1b | 70 | 30 | 6.1 | 5 | 8 | 3 |
| 5/16 | - 18 UNC | T7322448 | T7322447 | JIS 1b | 75 | 32 | 7 | 5.5 | 8 | 4 |
| 3/8 | - 16 UNC | T7322488 | T7322487 | JIS 1b | 82 | 38 | 8.5 | 6.5 | 9 | 4 |
| 3/8 | - 24 UNC | T7322508 | T7322507 | JIS 1b | 80 | 38 | 8 | 6 | 9 | 4 |
| 1/2 | - 13 UNC | T7322568 | T7322567 | JIS 1b | 95 | 45 | 12 | 9 | 12 | 4 |
| 1/2 | - 20 UNF | T7322588 | T7322587 | JIS 1b | 90 | 42 | 10.5 | 8 | 11 | 4 |
| 5/8 | - 11 UNC | T7322648 | T7322647 | JIS 1b | 105 | 50 | 14 | 11 | 14 | 4 |
| 5/8 | - 18 UNF | T7322668 | T7322667 | JIS 1b | 95 | 45 | 14 | 11 | 14 | 4 |
| 3/4 | - 10 UNC | T7322708 | T7322707 | JIS 1b | 120 | 55 | 18 | 14 | 17 | 4 |
| 3/4 | - 16 UNF | T7322728 | T7322727 | JIS 1b | 95 | 45 | 17 | 13 | 16 | 4 |
| 7/8 | - 9 UNC | T7322748 | T7322747 | JIS 1b | 130 | 62 | 20 | 15 | 18 | 5 |
| 7/8 | - 14 UNF | T7322768 | T7322767 | JIS 1b | 95 | 45 | 19 | 15 | 18 | 5 |
| 1″ | - 8 UNC | T7322788 | T7322787 | JIS 1b | 135 | 65 | 23 | 17 | 20 | 5 |
| 1″ | - 12 UNF | T7322808 | T7322807 | JIS 1b | 105 | 45 | 22 | 17 | 20 | 5 |

►Refer to p.B233-B238 for recommended tap drill sizes.
参考p.B233-B238 底孔尺寸.




◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ○ | ○ | ○ | | | | | | | | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ◎ | ◎ | ◎ | ○ | | | ◎ | | | | | | | | | | | | | | |

Leading Through Innovation

# HSS-E & HSS

# PIPE TAPS

- Tapping Whitworth Pipe Threads
- 惠氏管用螺纹加工

# SELECTION GUIDE
# 选用指南

YG THREADING TOOLS

## HSS-E & HSS PIPE TAPS

Tapping Whitworth Pipe Threads

惠氏管用螺纹加工

Please visit globalyg1.com/mat for material search

◎ : Excellent (优秀) ○ : Good (良好)

| | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HOLE TYPE 孔类型 | | | | | | | Max. 2.5xD Blind Hole盲孔 | | | | | | | | | | | | | | | | |
| TOOL MATERIAL 刀具材料 | | | | | | | HSS-E | | | | | | | | | | | | | | | | |
| CHAMFER LEAD ACC. TO DIN2197 倒角长度 | | | | | | | 2.5P | | | | | | | | | | | | | | | | |
| FLUTE TYPE 槽型 | | | | | | | Spiral Flute 螺旋角 | | | | | | | | | | | | | | | | |
| SPIRAL FLUTE ANGLE 螺旋角 | | | | | | | R30 | | | | | | | | | | | | | | | | |
| SERIES NO. 系列号 (page 页数) | JIS Type | | | | | | PT | | | | | | | | | | | | | | | | |
| | M/MF | | | | | | | | | | | | | | | | | | | | | | |
| | UNC/F | | | | | | | | | | | | | | | | | | | | | | |
| | W | | | | | | | | | | | | | | | | | | | | | | |
| | M-LH W-LH | | | | | | | | | | | | | | | | | | | | | | |
| | PIPE TAPS | | | | | | T2518 (p. B202) | | | | | | | | | | | | | | | | |
| SURFACE TREATMENT 表面处理 | | | | | | | Bright | | | | | | | | | | | | | | | | |
| MODEL 模型 | | | | | | | | | | | | | | | | | | | | | | | |
| ISO 公制 | VDI 3323 | Material Description 材料描述 | Composition / Structure / Heat Treatment 成分 / 组织 / 热处理 | | HB 布氏硬度 | HRc 硬度 | | | | | | | | | | | | | | | | | |
| P | 1 | Non-alloy steel | About 0.15% C | Annealed | 125 | | ◎ | 3~6 | ◎ | 3~6 | | | | | | | | | | | | | |
| | 2 | | About 0.45% C | Annealed | 190 | 13 | ◎ | 3~6 | ◎ | 3~6 | | | | | | | | | | | | | |
| | 3 | | About 0.45% C | Quenched & Tempered | 250 | 25 | ○ | 3~6 | ○ | 3~6 | | | | | | | | | | | | | |
| | 4 | | About 0.75% C | Annealed | 270 | 28 | | | | | | | | | | | | | | | | | |
| | 5 | | About 0.75% C | Quenched & Tempered | 300 | 32 | | | | | | | | | | | | | | | | | |
| | 6 | Low alloy steel | | Annealed | 180 | 10 | ◎ | 3~6 | ◎ | 3~6 | | | | | | | | | | | | | |
| | 7 | | | Quenched & Tempered | 275 | 29 | ○ | 3~6 | ○ | 3~6 | | | | | | | | | | | | | |
| | 8 | | | Quenched & Tempered | 300 | 32 | | | | | | | | | | | | | | | | | |
| | 9 | | | Quenched & Tempered | 350 | 38 | | | | | | | | | | | | | | | | | |
| | 10 | High alloyed steel, and tool steel | | Annealed | 200 | 15 | ○ | 3~6 | ○ | 3~6 | | | | | | | | | | | | | |
| | 11 | | | Quenched & Tempered | 325 | 35 | | | | | | | | | | | | | | | | | |
| M | 12 | Stainless steel | Ferritic / Martensitic | Annealed | 200 | 15 | ○ | 2~5 | ○ | 2~5 | | | | | | | | | | | | | |
| | 13 | | Martensitic | Quenched & Tempered | 240 | 23 | | | | | | | | | | | | | | | | | |
| | 14 | | Austenitic | | 180 | 10 | ○ | 2~5 | ○ | 2~5 | | | | | | | | | | | | | |
| K | 15 | Grey cast iron | Pearlitic / ferritic | | 180 | 10 | | | | | | | | | | | | | | | | | |
| | 16 | | Pearlitic (Martensitic) | | 260 | 26 | | | | | | | | | | | | | | | | | |
| | 17 | Nodular cast iron | Ferritic | | 160 | 3 | ○ | 4~8 | ○ | 4~8 | | | | | | | | | | | | | |
| | 18 | | Pearlitic | | 250 | 25 | | | | | | | | | | | | | | | | | |
| | 19 | Malleable cast iron | Ferritic | | 130 | | | | | | | | | | | | | | | | | | |
| | 20 | | Pearlitic | | 230 | 21 | | | | | | | | | | | | | | | | | |
| N | 21 | Aluminum-wrought alloy | Not Curable | | 60 | | ○ | 5~10 | ○ | 5~10 | | | | | | | | | | | | | |
| | 22 | | Curable | Hardened | 100 | | ○ | 5~10 | ○ | 5~10 | | | | | | | | | | | | | |
| | 23 | Aluminum-cast, alloyed | ≤ 12% Si, Not Curable | | 75 | | ○ | 10~15 | ○ | 10~15 | | | | | | | | | | | | | |
| | 24 | | ≤ 12% Si, Curable | Hardened | 90 | | | | | | | | | | | | | | | | | | |
| | 25 | | > 12% Si, Not Curable | | 130 | | | | | | | | | | | | | | | | | | |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | Cutting Alloys, PB>1% | | 110 | | ○ | 3~6 | ○ | 3~6 | | | | | | | | | | | | | |
| | 27 | | CuZn, CuSnZn (Brass) | | 90 | | ○ | 5~10 | ○ | 5~10 | | | | | | | | | | | | | |
| | 28 | | CuSn, lead-free copper and electrolytic copper | | 100 | | | | | | | | | | | | | | | | | | |
| | 29 | Non Metallic Materials | Duroplastic, Fiber Reinforced Plastic | | | | | | | | | | | | | | | | | | | | |
| | 30 | | Rubber, Wood, etc. | | | | | | | | | | | | | | | | | | | | |
| S | 31 | Heat Resistant Super Alloys | Fe Based | Annealed | 200 | 15 | | | | | | | | | | | | | | | | | |
| | 32 | | | Cured | 280 | 30 | | | | | | | | | | | | | | | | | |
| | 33 | | Ni or Co Based | Annealed | 250 | 25 | | | | | | | | | | | | | | | | | |
| | 34 | | | Cured | 350 | 38 | | | | | | | | | | | | | | | | | |
| | 35 | | | Cast | 320 | 34 | | | | | | | | | | | | | | | | | |
| | 36 | Titanium Alloys | Pure Titanium | | 400 Rm | | | | | | | | | | | | | | | | | | |
| | 37 | | Alpha + Beta Alloys | Hardened | 1050 Rm | | | | | | | | | | | | | | | | | | |
| H | 38 | Hardened steel | | Hardened | 550 | 55 | | | | | | | | | | | | | | | | | |
| | 39 | | | Hardened | 630 | 60 | | | | | | | | | | | | | | | | | |
| | 40 | Chilled Cast Iron | | Cast | 400 | 42 | | | | | | | | | | | | | | | | | |
| | 41 | Hardened Cast Iron | | Hardened | 550 | 55 | | | | | | | | | | | | | | | | | |

| | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HOLE TYPE 孔类型 | | | | | | | Max. 2.5xD Blind Hole盲孔 | | Max. 2.0xD Blind /Through Hole盲孔 / 通孔 | | | | | | | | | | | | | | |
| TOOL MATERIAL 刀具材料 | | | | | | | HSS-E | | HSS HSS-E | | | | | | HSS-E | | | | | | | | |
| CHAMFER LEAD ACC. TO DIN2197 倒角长度 | | | | | | | 3.0P | | 2.5P | | 3.5P | | 3.5P | | 3.0P | | 3.0P | | | | | | |
| FLUTE TYPE 槽型 | | | | | | | Spiral Flute 螺旋角 | | Straight Flute 直槽 | | | | | | | | | | | | | | |
| SPIRAL FLUTE ANGLE 螺旋角 | | | | | | | R35 | | - | | - | | - | | - | | - | | | | | | |
| SERIES NO. 系列号 (page 页数) | JIS Type | | | | | | PF | | PT | | PS | | PF | | NPT | | NPTF | | | | | JIS Type | |
| | M/MF | | | | | | | | | | | | | | | | | | | | | M/MF | |
| | UNC/F | | | | | | | | | | | | | | | | | | | | | UNC/F | |
| | W | | | | | | | | | | | | | | | | | | | | | W | |
| | M-LH W-LH | | | | | | | | | | | | | | | | | | | | | M-LH W-LH | |
| | PIPE TAPS | | | | | | T2539 (p. B204) | | T7532 T2532 (p. B205) | | T7552 T2552 (p. B206) | | T7562 T2562 (p. B207) | | T2527 (p. B208) | | T2537 (p. B209) | | | | | PIPE TAPS | |
| SURFACE TREATMENT 表面处理 | | | | | | | Bright | | Bright | | Bright | | Bright | | Bright | | Bright | | | | | | |
| MODEL 模型 | | | | | | | | | | | | | | | | | | | | | | | |
| ISO 公制 | VDI 3323 | Material Description 材料描述 | Composition / Structure / Heat Treatment 成分 / 组织 / 热处理 | | HB 布氏硬度 | HRc 硬度 | | | | | | | | | | | | | | | | | |
| P | 1 | Non-alloy steel | About 0.15% C | Annealed | 125 | | ◎ | 3~6 | ◎ | 3~6 | ◎ | 3~6 | ◎ | 3~6 | ◎ | 3~6 | ◎ | 3~6 | | | | 1 | P |
| | 2 | | About 0.45% C | Annealed | 190 | 13 | ◎ | 3~6 | ◎ | 3~6 | ◎ | 3~6 | ◎ | 3~6 | ◎ | 3~6 | ◎ | 3~6 | | | | 2 | |
| | 3 | | About 0.45% C | Quenched & Tempered | 250 | 25 | ○ | 3~6 | ◎ | 3~6 | ◎ | 3~6 | ◎ | 3~6 | ◎ | 3~6 | ◎ | 3~6 | | | | 3 | |
| | 4 | | About 0.75% C | Annealed | 270 | 28 | | | | | | | | | | | | | | | | 4 | |
| | 5 | | About 0.75% C | Quenched & Tempered | 300 | 32 | | | | | | | | | | | | | | | | 5 | |
| | 6 | Low alloy steel | | Annealed | 180 | 10 | ◎ | 3~6 | ◎ | 3~6 | ◎ | 3~6 | ◎ | 3~6 | ◎ | 3~6 | ◎ | 3~6 | | | | 6 | |
| | 7 | | | Quenched & Tempered | 275 | 29 | ○ | 3~6 | ○ | 3~6 | ○ | 3~6 | ○ | 3~6 | ○ | 3~6 | ○ | 3~6 | | | | 7 | |
| | 8 | | | Quenched & Tempered | 300 | 32 | | | | | | | | | | | | | | | | 8 | |
| | 9 | | | Quenched & Tempered | 350 | 38 | | | | | | | | | | | | | | | | 9 | |
| | 10 | High alloyed steel, and tool steel | | Annealed | 200 | 15 | ○ | 3~6 | ○ | 3~6 | ○ | 3~6 | ○ | 3~6 | ○ | 3~6 | ○ | 3~6 | | | | 10 | |
| | 11 | | | Quenched & Tempered | 325 | 35 | | | | | | | | | | | | | | | | 11 | |
| M | 12 | Stainless steel | Ferritic / Martensitic | Annealed | 200 | 15 | ○ | 2~5 | | | | | | | | | | | | | | 12 | M |
| | 13 | | Martensitic | Quenched & Tempered | 240 | 23 | | | | | | | | | | | | | | | | 13 | |
| | 14 | | Austenitic | | 180 | 10 | ○ | 2~5 | | | | | | | | | | | | | | 14 | |
| K | 15 | Grey cast iron | Pearlitic / ferritic | | 180 | 10 | | | ○ | 3~6 | ○ | 3~6 | ○ | 3~6 | ○ | 3~6 | ○ | 3~6 | | | | 15 | K |
| | 16 | | Pearlitic (Martensitic) | | 260 | 26 | | | ○ | 3~6 | ○ | 3~6 | ○ | 3~6 | ○ | 3~6 | ○ | 3~6 | | | | 16 | |
| | 17 | Nodular cast iron | Ferritic | | 160 | 3 | ○ | 4~8 | ○ | 4~8 | ○ | 4~8 | ○ | 4~8 | ○ | 4~8 | ○ | 4~8 | | | | 17 | |
| | 18 | | Pearlitic | | 250 | 25 | | | | | | | | | | | | | | | | 18 | |
| | 19 | Malleable cast iron | Ferritic | | 130 | | | | | | | | | | | | | | | | | 19 | |
| | 20 | | Pearlitic | | 230 | 21 | | | | | | | | | | | | | | | | 20 | |
| N | 21 | Aluminum-wrought alloy | Not Curable | | 60 | | ○ | 5~10 | ○ | 5~10 | ○ | 5~10 | ○ | 5~10 | ○ | 5~10 | ○ | 5~10 | | | | 21 | N |
| | 22 | | Curable | Hardened | 100 | | ○ | 5~10 | ○ | 5~10 | ○ | 5~10 | ○ | 5~10 | ○ | 5~10 | ○ | 5~10 | | | | 22 | |
| | 23 | Aluminum-cast, alloyed | ≤ 12% Si, Not Curable | | 75 | | ○ | 10~15 | ○ | 10~15 | ○ | 10~15 | ○ | 10~15 | ○ | 10~15 | ○ | 10~15 | | | | 23 | |
| | 24 | | ≤ 12% Si, Curable | Hardened | 90 | | | | | | | | | | | | | | | | | 24 | |
| | 25 | | > 12% Si, Not Curable | | 130 | | | | | | | | | | | | | | | | | 25 | |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | Cutting Alloys, PB>1% | | 110 | | ○ | 3~6 | ○ | 3~6 | ○ | 3~6 | ○ | 3~6 | ○ | 3~6 | ○ | 3~6 | | | | 26 | |
| | 27 | | CuZn, CuSnZn (Brass) | | 90 | | ○ | 5~10 | ○ | 5~10 | ○ | 5~10 | ○ | 5~10 | ○ | 5~10 | ○ | 5~10 | | | | 27 | |
| | 28 | | CuSn, lead-free copper and electrolytic copper | | 100 | | | | | | | | | | | | | | | | | 28 | |
| | 29 | Non Metallic Materials | Duroplastic, Fiber Reinforced Plastic | | | | | | | | | | | | | | | | | | | 29 | |
| | 30 | | Rubber, Wood, etc. | | | | | | | | | | | | | | | | | | | 30 | |
| S | 31 | Heat Resistant Super Alloys | Fe Based | Annealed | 200 | 15 | | | | | | | | | | | | | | | | 31 | S |
| | 32 | | | Cured | 280 | 30 | | | | | | | | | | | | | | | | 32 | |
| | 33 | | Ni or Co Based | Annealed | 250 | 25 | | | | | | | | | | | | | | | | 33 | |
| | 34 | | | Cured | 350 | 38 | | | | | | | | | | | | | | | | 34 | |
| | 35 | | | Cast | 320 | 34 | | | | | | | | | | | | | | | | 35 | |
| | 36 | Titanium Alloys | Pure Titanium | | 400 Rm | | | | | | | | | | | | | | | | | 36 | |
| | 37 | | Alpha + Beta Alloys | Hardened | 1050 Rm | | | | | | | | | | | | | | | | | 37 | |
| H | 38 | Hardened steel | | Hardened | 550 | 55 | | | | | | | | | | | | | | | | 38 | H |
| | 39 | | | Hardened | 630 | 60 | | | | | | | | | | | | | | | | 39 | |
| | 40 | Chilled Cast Iron | | Cast | 400 | 42 | | | | | | | | | | | | | | | | 40 | |
| | 41 | Hardened Cast Iron | | Hardened | 550 | 55 | | | | | | | | | | | | | | | | 41 | |

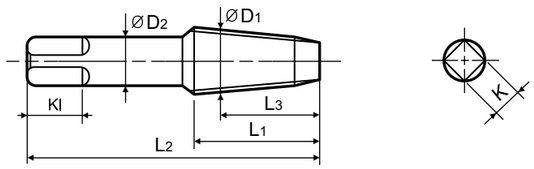
# PIPE TAPS

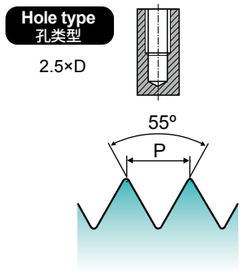
## T2518 SERIES

## PT SPIRAL FLUTE TAPER PIPE TAPS for PT THREADS
## 螺旋槽PT 螺纹用锥管丝锥

► Suitable for process taper pipe internal threads.
PT : Taper pipe threads (for pressure-tight joints)

► 适用于锥管螺纹加工
PT : 锥管螺纹（用于压力密封接头）




Material groups **GS** | HSS-E | PT | JIS II | 55° | 2.5P | R30 | Bright

p. B200

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| ◎ | TAPPING ER CHUCK | D215 -220 |
| ◎ | TAPPING CHUCK | D221 -228 |
| ◎ | ONE STEP TAPPING CHUCK | D211 -213 |

Unit(单位) : mm

| SIZE 尺寸 ØD1 | TPI 牙距 | EDP No. 型号 | Limit 精度 | Basic Maj. Dia. 最大基准直径 | Overall Length 全长 L2 | Thread Length 螺纹长 L1 | Projection Length 基准长度 L3 | Shank Diameter 柄径 ØD2 | Square Size 方块 尺寸 K | Square Length 方块 长度 Kl | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| PT 1/8 | - 28 | **T2518202** | JIS II | 9.728 | 55 | 19 | 13 | 8 | 6 | 9 | 3 |
| PT 1/4 | - 19 | **T2518402** | JIS II | 13.157 | 62 | 28 | 21 | 11 | 9 | 12 | 3 |
| PT 3/8 | - 19 | **T2518482** | JIS II | 16.662 | 65 | 28 | 21 | 14 | 11 | 14 | 3 |
| PT 1/2 | - 14 | **T2518562** | JIS II | 20.955 | 80 | 35 | 25 | 18 | 14 | 17 | 4 |
| PT 3/4 | - 14 | **T2518702** | JIS II | 26.441 | 85 | 35 | 25 | 23 | 17 | 20 | 4 |
| PT 1″ | - 11 | **T2518782** | JIS II | 33.249 | 95 | 45 | 32 | 26 | 21 | 24 | 4 |

►Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ○ | | | ◎ | ○ | | | ○ | | ○ | | ○ | | | ○ | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | ○ | ○ | | | | | | | | | | | | | | |





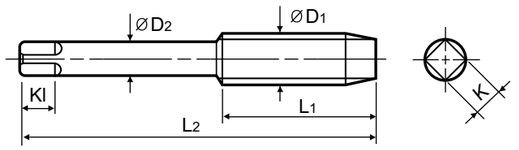
# PIPE TAPS

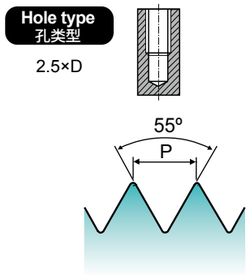
## T2538 SERIES

## PS SPIRAL FLUTE STRAIGHT PIPE TAPS for PS THREADS
## 螺旋槽PS螺纹用直管丝锥

► Suitable for process Straight pipe internal threads.
PS : Straight pipe threads (for pressure-tight joints)

► 适用于锥管螺纹加工
PS : 锥管螺纹（用于压力密封接头）




Material groups **GS** | HSS-E | PS | JIS II | 55° | 3.0P | R35 | Bright

p. B200

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| ◎ | TAPPING ER CHUCK | D215 -220 |
| ◎ | TAPPING CHUCK | D221 -228 |
| ◎ | ONE STEP TAPPING CHUCK | D211 -213 |

Unit(单位) : mm

| SIZE 尺寸 ØD1 | TPI 牙距 | EDP No. 型号 | Limit 精度 | Basic Maj. Dia. 最大基准直径 | Overall Length 全长 L2 | Thread Length 螺纹长 L1 | Shank Diameter 柄径 ØD2 | Square Size 方块 尺寸 K | Square Length 方块 长度 Kl | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|---|
| PS 1/8 | - 28 | **T2538202** | JIS II | 9.728 | 55 | 19 | 8 | 6 | 9 | 3 |
| PS 1/4 | - 19 | **T2538402** | JIS II | 13.157 | 62 | 28 | 11 | 9 | 12 | 3 |
| PS 3/8 | - 19 | **T2538482** | JIS II | 16.662 | 65 | 28 | 14 | 11 | 14 | 3 |
| PS 1/2 | - 14 | **T2538562** | JIS II | 20.955 | 80 | 35 | 18 | 14 | 17 | 4 |
| PS 3/4 | - 14 | **T2538702** | JIS II | 26.441 | 85 | 35 | 23 | 17 | 20 | 4 |
| PS 1″ | - 11 | **T2538782** | JIS II | 33.249 | 95 | 45 | 26 | 21 | 24 | 4 |

►Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ○ | | | ◎ | ○ | | | ○ | | ○ | | ○ | | | ○ | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | ○ | ○ | | | | | | | | | | | | | | |

# PIPE TAPS

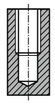
**T2539 SERIES**

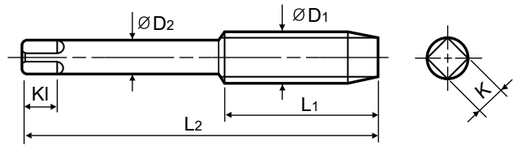
## PF SPIRAL FLUTE STRAIGHT PIPE TAPS for PF THREADS
## 螺旋槽PF 螺纹用直管丝锥

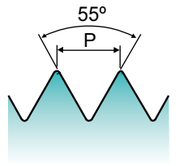
► Suitable for process Straight pipe internal threads.
PF : Straight pipe threads (for mechanical joints)

► 适用于锥管螺纹加工
PF : 锥管螺纹（用于压力密封接头）

Hole type 孔类型
2.5×D






Material groups **GS** | HSS-E | PF | JIS II | 55° | 3.0P | R35 | Bright | p. B201

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| TAPPING ER CHUCK | | D215 -220 |
| TAPPING CHUCK | | D221 -228 |
| ONE STEP TAPPING CHUCK | | D211 -213 |

Unit(单位) : mm

| SIZE 尺寸 ØD1 | TPI 牙距 | EDP No. 型号 | Limit 精度 | Basic Maj. Dia. 最大基准直径 | Overall Length 全长 L2 | Thread Length 螺纹长 L1 | Shank Diameter 柄径 ØD2 | Square Size 方块 尺寸 K | Square Length 方块 长度 Kl | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|---|
| PF 1/8 | - 28 | **T2539202** | JIS II | 9.728 | 55 | 19 | 8 | 6 | 9 | 3 |
| PF 1/4 | - 19 | **T2539402** | JIS II | 13.157 | 62 | 28 | 11 | 9 | 12 | 3 |
| PF 3/8 | - 19 | **T2539482** | JIS II | 16.662 | 65 | 28 | 14 | 11 | 14 | 3 |
| PF 1/2 | - 14 | **T2539562** | JIS II | 20.955 | 80 | 35 | 18 | 14 | 17 | 4 |
| PF 3/4 | - 14 | **T2539702** | JIS II | 26.441 | 85 | 35 | 23 | 17 | 20 | 4 |
| PF 1″ | - 11 | **T2539782** | JIS II | 33.249 | 95 | 45 | 26 | 21 | 24 | 4 |

►Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ○ | | | ◎ | ○ | | | ○ | | ○ | | ○ | | | ○ | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | ○ | ○ | | | | | | | | | | | | | | |



# PIPE TAPS

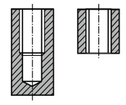
**T7532 SERIES**
**T2532 SERIES**

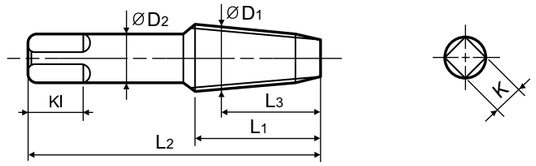
## PT TAPER PIPE TAPS for PT THREADS
## PT 螺纹用锥管丝锥

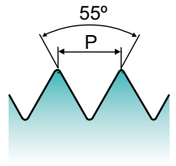
► Suitable for taper pipe internal threads.
PT : Taper pipe threads (for pressure-tight joints)

► 适用于锥管螺纹加工
PT : 锥管螺纹（用于压力密封接头）

Hole type 孔类型
2.0×D






Material groups **GS** | HSS | HSS-E | PT | JIS II | 55° | 2.5P | Bright | p. B201

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| TAPPING ER CHUCK | | D215 -220 |
| TAPPING CHUCK | | D221 -228 |
| ONE STEP TAPPING CHUCK | | D211 -213 |

Unit(单位) : mm

| SIZE 尺寸 ØD1 | TPI 牙距 | EDP No. 型号 HSS | EDP No. 型号 HSS-E | Limit 精度 | Basic Maj. Dia. 最大基准直径 | Overall Length 全长 L2 | Thread Length 螺纹长 L1 | Projection Length 基准长度 L3 | Shank Diameter 柄径 ØD2 | Square Size 方块 尺寸 K | Square Length 方块 长度 Kl | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PT 1/16 | - 28 | **T7532022** | **T2532022** | JIS II | 7.723 | 55 | 18 | 13 | 8 | 6 | 9 | 4 |
| PT 1/8 | - 28 | **T7532202** | **T2532202** | JIS II | 9.728 | 55 | 19 | 13 | 8 | 6 | 9 | 4 |
| PT 1/4 | - 19 | **T7532402** | **T2532402** | JIS II | 13.157 | 62 | 28 | 21 | 11 | 9 | 12 | 4 |
| PT 3/8 | - 19 | **T7532482** | **T2532482** | JIS II | 16.662 | 65 | 28 | 21 | 14 | 11 | 14 | 4 |
| PT 1/2 | - 14 | **T7532562** | **T2532562** | JIS II | 20.955 | 80 | 35 | 25 | 18 | 14 | 17 | 4 |
| PT 3/4 | - 14 | **T7532702** | **T2532702** | JIS II | 26.441 | 85 | 35 | 25 | 23 | 17 | 20 | 4 |
| PT 1″ | - 11 | **T7532782** | **T2532782** | JIS II | 33.249 | 95 | 45 | 32 | 26 | 21 | 24 | 5 |
| PT 1*1/4 | - 11 | **T7532862** | **T2532862** | JIS II | 41.910 | 105 | 45 | 32 | 32 | 26 | 30 | 5 |
| PT 1*1/2 | - 11 | **T7532962** | **T2532962** | JIS II | 47.803 | 110 | 45 | 32 | 38 | 29 | 32 | 6 |
| PT 2″ | - 11 | **T7532D22** | **T2532D22** | JIS II | 59.614 | 120 | 50 | 35 | 46 | 35 | 38 | 6 |

►Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | | | ◎ | ○ | | | ○ | | | | | ○ | ○ | ○ | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | ○ | ○ | | | | | | | | | | | | | | |

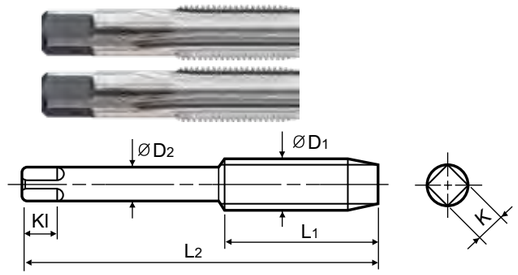
# PIPE TAPS

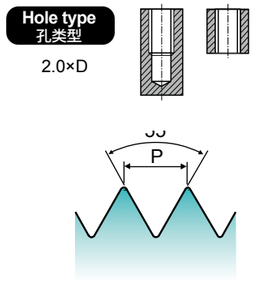
**T7552 SERIES**
**T2552 SERIES**

## PS STRAIGHT PIPE TAPS for PS THREADS
## PS螺纹用直管丝锥

► Suitable for process Straight pipe internal threads.
PS : Straight pipe threads (for pressure-tight joints)

► 适用于锥管螺纹加工
PS : 锥管螺纹（用于压力密封接头）




Material groups **GS** | HSS | HSS-E | PS | JIS II | 55° | 3.5P | Bright

p. B201

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| TAPPING ER CHUCK | D215 -220 | |
| TAPPING CHUCK | D221 -228 | |
| ONE STEP TAPPING CHUCK | D211 -213 | |

Unit(单位) : mm

| SIZE 尺寸 ØD1 | TPI 牙距 | EDP No. 型号 HSS | EDP No. 型号 HSS-E | Limit 精度 | Basic Maj. Dia. 最大基准直径 | Overall Length 全长 L2 | Thread Length 螺纹长 L1 | Shank Diameter 柄径 ØD2 | Square Size 方块 尺寸 K | Square Length 方块 长度 Kl | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| PS 1/8 | - 28 | **T7552202** | **T2552202** | JIS II | 9.728 | 55 | 19 | 8 | 6 | 9 | 4 |
| PS 1/4 | - 19 | **T7552402** | **T2552402** | JIS II | 13.157 | 62 | 28 | 11 | 9 | 12 | 4 |
| PS 3/8 | - 19 | **T7552482** | **T2552482** | JIS II | 16.662 | 65 | 28 | 14 | 11 | 14 | 4 |
| PS 1/2 | - 14 | **T7552562** | **T2552562** | JIS II | 20.955 | 80 | 35 | 18 | 14 | 17 | 4 |
| PS 3/4 | - 14 | **T7552702** | **T2552702** | JIS II | 26.441 | 85 | 35 | 23 | 17 | 20 | 4 |
| PS 1″ | - 11 | **T7552782** | **T2552782** | JIS II | 33.249 | 95 | 45 | 26 | 21 | 24 | 5 |
| PS 1*1/4 | - 11 | **T7552862** | **T2552862** | JIS II | 41.910 | 105 | 45 | 32 | 26 | 30 | 5 |
| PS 1*1/2 | - 11 | **T7552962** | **T2552962** | JIS II | 47.803 | 110 | 45 | 38 | 29 | 32 | 6 |
| PS 2″ | - 11 | **T7552D22** | **T2552D22** | JIS II | 59.614 | 120 | 50 | 46 | 35 | 38 | 6 |

►Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | | | ◎ | ○ | | | ○ | | | | | ○ | ○ | ○ | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | ○ | ○ | | | | | | | | | | | | | | |



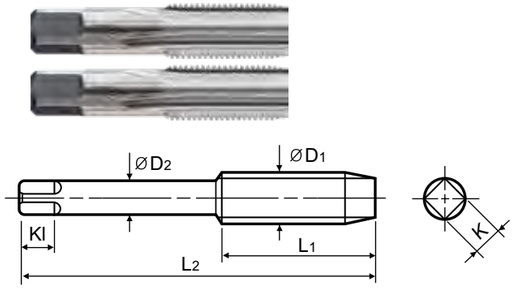
# PIPE TAPS

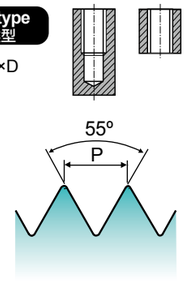
**T7562 SERIES**
**T2562 SERIES**

## PF STRAIGHT PIPE TAPS for PF THREADS
## PF螺纹用直管丝锥

► Suitable for process Straight pipe internal threads.
PF : Straight pipe threads (for mechanical joints)

► 适用于锥管螺纹加工
PF : 锥管螺纹（用于压力密封接头）




Material groups **GS** | HSS | HSS-E | PF | JIS II | 55° | 3.5P | Bright

p. B201

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| TAPPING ER CHUCK | D215 -220 | |
| TAPPING CHUCK | D221 -228 | |
| ONE STEP TAPPING CHUCK | D211 -213 | |

Unit(单位) : mm

| SIZE 尺寸 ØD1 | TPI 牙距 | EDP No. 型号 HSS | EDP No. 型号 HSS-E | Limit 精度 | Basic Maj. Dia. 最大基准直径 | Overall Length 全长 L2 | Thread Length 螺纹长 L1 | Shank Diameter 柄径 ØD2 | Square Size 方块 尺寸 K | Square Length 方块 长度 Kl | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| PF 1/8 | - 28 | **T7562202** | **T2562202** | JIS II | 9.728 | 55 | 19 | 8 | 6 | 9 | 4 |
| PF 1/4 | - 19 | **T7562402** | **T2562402** | JIS II | 13.157 | 62 | 28 | 11 | 9 | 12 | 4 |
| PF 3/8 | - 19 | **T7562482** | **T2562482** | JIS II | 16.662 | 65 | 28 | 14 | 11 | 14 | 4 |
| PF 1/2 | - 14 | **T7562562** | **T2562562** | JIS II | 20.955 | 80 | 35 | 18 | 14 | 17 | 4 |
| PF 3/4 | - 14 | **T7562702** | **T2562702** | JIS II | 26.441 | 85 | 35 | 23 | 17 | 20 | 4 |
| PF 1″ | - 11 | **T7562782** | **T2562782** | JIS II | 33.249 | 95 | 45 | 26 | 21 | 24 | 4 |
| PF 1*1/4 | - 11 | **T7562862** | **T2562862** | JIS II | 41.910 | 105 | 45 | 32 | 26 | 30 | 4 |
| PF 1*1/2 | - 11 | **T7562962** | **T2562962** | JIS II | 47.803 | 110 | 45 | 38 | 29 | 32 | 6 |
| PF 2″ | - 11 | **T7562D22** | **T2562D22** | JIS II | 59.614 | 120 | 50 | 46 | 35 | 38 | 6 |

►Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | | | ◎ | ○ | | | ○ | | | | | ○ | ○ | ○ | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | ○ | ○ | | | | | | | | | | | | | | |

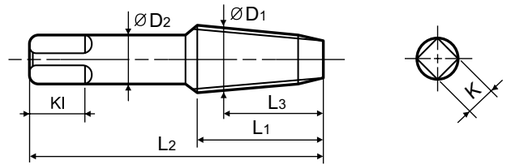
# PIPE TAPS

**T2527** SERIES

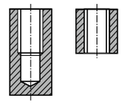
## NPT AMERICAN TAPER PIPE TAPS for NPT THREADS
## 美制NPT螺纹用锥管丝锥

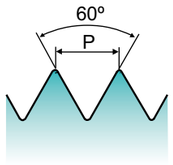
► Suitable for process Taper pipe internal threads.
NPT : American Taper pipe threads (for mechanical joints)

►适用于加工锥管内螺纹。
NPT : 美制锥管螺纹（机械连接用）




Hole type 孔类型
2.0×D






Material groups **GS** | HSS-E | NPT | ANSI G | 60° | 3.0P | Bright

p. B201

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| TAPPING ER CHUCK | | D215 -220 |
| TAPPING CHUCK | | D221 -228 |
| ONE STEP TAPPING CHUCK | | D211 -213 |

Unit(单位) : mm

| SIZE 尺寸 ØD1 | TPI 牙距 | EDP No. 型号 | Limit 精度 | Basic Maj. Dia. 最大基准直径 | Overall Length 全长 L2 | Thread Length 螺纹长 L1 | Projection Length 基准长度 L3 | Shank Diameter 柄径 ØD2 | Square Size 方块 尺寸 K | Square Length 方块 长度 Kl | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NPT 1/16 - | 27 | **T2527020** | ANSI G | 7.770 | 54 | 17 | 12.00 | 8 | 6 | 9 | 4 |
| NPT 1/8 - | 27 | **T2527200** | ANSI G | 10.117 | 55 | 19 | 12.05 | 8 | 6 | 9 | 4 |
| NPT 1/4 - | 18 | **T2527400** | ANSI G | 13.426 | 62 | 28 | 17.45 | 11 | 9 | 12 | 4 |
| NPT 3/8 - | 18 | **T2527480** | ANSI G | 16.866 | 65 | 28 | 17.65 | 14 | 11 | 14 | 4 |
| NPT 1/2 - | 14 | **T2527560** | ANSI G | 20.980 | 80 | 35 | 22.85 | 18 | 14 | 17 | 4 |
| NPT 3/4 - | 14 | **T2527700** | ANSI G | 26.325 | 85 | 35 | 22.95 | 23 | 17 | 20 | 5 |
| NPT 1″ - | 11*1/2 | **T2527780** | ANSI G | 32.934 | 95 | 45 | 27.40 | 26 | 21 | 24 | 5 |

►Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | | | ◎ | ○ | | | ○ | | | | | ○ | ○ | ○ | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | ○ | ○ | | | | | | | | | | | | | | |



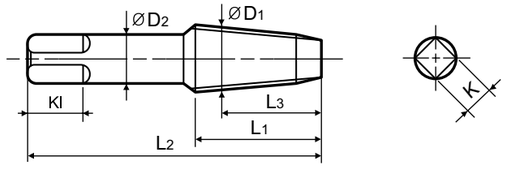
# PIPE TAPS

**T2537** SERIES

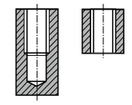
## NPTF AMERICAN TAPER PIPE TAPS for NPTF THREADS
## 美制NPTF螺纹用锥管丝锥

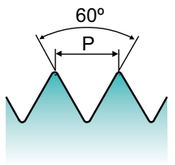
► Suitable for process taper pipe internal threads.
NPTF : American Taper pipe threads (Dry seal)

►适用于加工锥管内螺纹。
NPTF : 美制锥管螺纹（干密封）




Hole type 孔类型
2.0×D






Material groups **GS** | HSS-E | NPTF | ANSI G | 60° | 3.0P | Bright

p. B201

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| TAPPING ER CHUCK | | D215 -220 |
| TAPPING CHUCK | | D221 -228 |
| ONE STEP TAPPING CHUCK | | D211 -213 |

Unit(单位) : mm

| SIZE 尺寸 ØD1 | TPI 牙距 | EDP No. 型号 | Limit 精度 | Basic Maj. Dia. 最大基准直径 | Overall Length 全长 L2 | Thread Length 螺纹长 L1 | Projection Length 基准长度 L3 | Shank Diameter 柄径 ØD2 | Square Size 方块 尺寸 K | Square Length 方块 长度 Kl | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NPTF 1/16 - | 27 | **T2537020** | ANSI G | 7.770 | 54 | 17 | 12.00 | 8 | 6 | 9 | 4 |
| NPTF 1/8 - | 27 | **T2537200** | ANSI G | 10.117 | 55 | 19 | 12.05 | 8 | 6 | 9 | 4 |
| NPTF 1/4 - | 18 | **T2537400** | ANSI G | 13.426 | 62 | 28 | 17.45 | 11 | 9 | 12 | 4 |
| NPTF 3/8 - | 18 | **T2537480** | ANSI G | 16.866 | 65 | 28 | 17.65 | 14 | 11 | 14 | 4 |
| NPTF 1/2 - | 14 | **T2537560** | ANSI G | 20.980 | 80 | 35 | 22.85 | 18 | 14 | 17 | 4 |
| NPTF 3/4 - | 14 | **T2537700** | ANSI G | 26.325 | 85 | 35 | 22.95 | 23 | 17 | 20 | 5 |
| NPTF 1″ - | 11*1/2 | **T2537780** | ANSI G | 32.934 | 95 | 45 | 27.40 | 26 | 21 | 24 | 5 |

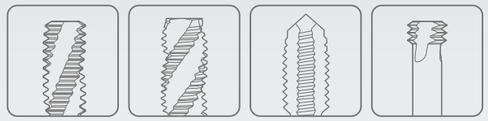
►Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | | | ◎ | ○ | | | ○ | | | | | ○ | ○ | ○ | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | ○ | ○ | | | | | | | | | | | | | | |

Global Cutting Tool Leader **YG-1**



# THREADING

Leading Through Innovation

## SKS21

# SKS21
# HAND TAPS

- To Achieve High Strength.
  Easy Assembling.
- 实现高强度加工，易装配

# SELECTION GUIDE
## 选用指南

YG THREADING TOOLS

## SKS21
# SKS21 HAND TAPS

To Achieve High Strength.
Easy Assembling.
实现高强度加工，易装配

| | | |
|---|---|---|
| HOLE TYPE 孔类型 | | Max. 2.0xD Blind /Through Hole盲孔 / 通孔 |
| TOOL MATERIAL 刀具材料 | | SKS21 |
| CHAMFER LEAD ACC. TO DIN2197 倒角长度 | | 1.5P 5.0P 9.0P |
| FLUTE TYPE 槽型 | | Straight Flute 直槽 |
| SPIRAL FLUTE ANGLE 螺旋角 | | - |
| SERIES NO.系列号 (page 页数) | JIS Type | HT |
| | M/MF | TSK11 (p. B213) |
| | UNC/F | TSK12 (p. B216) |
| | W | TSK13 (p. B218) |
| | M-LH W-LH | TSK21 (p. B219) TSK23 (p. B220) |
| | PIPE TAPS | |
| SURFACE TREATMENT表面处理 | | Bright |
| MODEL 模型 | | |

Please visit globalyg1.com/mat for material search

◎ : Excellent (优秀) ○ : Good (良好)

| ISO 公制 | VDI 3323 | Material Description 材料描述 | Composition / Structure / Heat Treatment 成分 / 组织 / 热处理 | | HB 布氏硬度 | HRc 硬度 | | |
|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | About 0.15% C | Annealed | 125 | | ○ | 8~13 |
| | 2 | | About 0.45% C | Annealed | 190 | 13 | ○ | 7~12 |
| | 3 | | About 0.45% C | Quenched & Tempered | 250 | 25 | ○ | 7~12 |
| | 4 | | About 0.75% C | Annealed | 270 | 28 | | |
| | 5 | | About 0.75% C | Quenched & Tempered | 300 | 32 | | |
| | 6 | Low alloy steel | | Annealed | 180 | 10 | ○ | 7~12 |
| | 7 | | | Quenched & Tempered | 275 | 29 | | |
| | 8 | | | Quenched & Tempered | 300 | 32 | | |
| | 9 | | | Quenched & Tempered | 350 | 38 | | |
| | 10 | High alloyed steel, and tool steel | | Annealed | 200 | 15 | ○ | 6~9 |
| | 11 | | | Quenched & Tempered | 325 | 35 | | |
| M | 12 | Stainless steel | Ferritic / Martensitic | Annealed | 200 | 15 | | |
| | 13 | | Martensitic | Quenched & Tempered | 240 | 23 | | |
| | 14 | | Austenitic | | 180 | 10 | | |
| K | 15 | Grey cast iron | Pearlitic / ferritic | | 180 | 10 | ○ | 10~15 |
| | 16 | | Pearlitic (Martensitic) | | 260 | 26 | ○ | 10~15 |
| | 17 | Nodular cast iron | Ferritic | | 160 | 3 | ○ | 7~12 |
| | 18 | | Pearlitic | | 250 | 25 | ○ | 7~12 |
| | 19 | Malleable cast iron | Ferritic | | 130 | | | |
| | 20 | | Pearlitic | | 230 | 21 | | |
| N | 21 | Aluminum-wrought alloy | Not Curable | | 60 | | ○ | 10~20 |
| | 22 | | Curable | Hardened | 100 | | ○ | 10~20 |
| | 23 | Aluminum-cast, alloyed | ≤ 12% Si, Not Curable | | 75 | | | |
| | 24 | | ≤ 12% Si, Curable | Hardened | 90 | | | |
| | 25 | | > 12% Si, Not Curable | | 130 | | | |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | Cutting Alloys, PB>1% | | 110 | | ○ | 6~9 |
| | 27 | | CuZn, CuSnZn (Brass) | | 90 | | ○ | 6~15 |
| | 28 | | CuSn, lead-free copper and electrolytic copper | | 100 | | | |
| | 29 | Non Metallic Materials | Duroplastic, Fiber Reinforced Plastic | | | | | |
| | 30 | | Rubber, Wood, etc. | | | | | |
| S | 31 | Heat Resistant Super Alloys | Fe Based | Annealed | 200 | 15 | | |
| | 32 | | | Cured | 280 | 30 | | |
| | 33 | | Ni or Co Based | Annealed | 250 | 25 | | |
| | 34 | | | Cured | 350 | 38 | | |
| | 35 | | | Cast | 320 | 34 | | |
| | 36 | Titanium Alloys | Pure Titanium | | 400 Rm | | | |
| | 37 | | Alpha + Beta Alloys | Hardened | 1050 Rm | | | |
| H | 38 | Hardened steel | | Hardened | 550 | 55 | | |
| | 39 | | | Hardened | 630 | 60 | | |
| | 40 | Chilled Cast Iron | | Cast | 400 | 42 | | |
| | 41 | Hardened Cast Iron | | Hardened | 550 | 55 | | |



# SKS21 HAND TAPS

## TSK11(TS923) SERIES

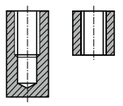
## M HAND TAPS(SET of 3 PIECES)
## 手用丝锥(一套3支)

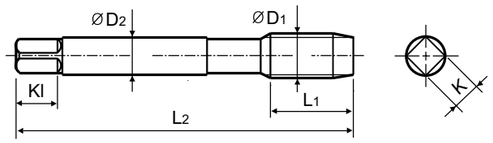
► Standard taps for a variety of application.

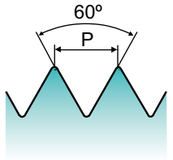
► 多用途标准丝锥

up to M6 : Male Center

Hole type 孔类型
2.0×D






Material groups GS | SKS21 | HT | JIS III | 60° | 1.5P/5.0P/9.0P | Bright | p. B212

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| TAPPING ER CHUCK | D215 -220 |
| TAPPING CHUCK | D221 -228 |
| ONE STEP TAPPING CHUCK | D211 -213 |

Unit(单位) : mm

| SIZE 尺寸 ØD1 | Pitch 牙距 P | EDP No. 型号 | Limit 精度 | Overall Length 全长 L2 | Thread Length 螺纹长 L1 | Shank Diameter 柄径 ØD2 | Square Size 方块 尺寸 K | Square Length 方块 长度 Kl | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|
| M2.5 × | 0.45 | TSK11179 | JIS III | 44 | 16 | 3 | 2.5 | 5 | 3 |
| M2.6 × | 0.45 | TSK11499 | JIS III | 44 | 16 | 3 | 2.5 | 5 | 3 |
| M3 × | 0.5 | TSK11209 | JIS III | 46 | 18 | 4 | 3.2 | 6 | 3 |
| M3.5 × | 0.6 | TSK11229 | JIS III | 48 | 18 | 4 | 3.2 | 6 | 3 |
| M4 × | 0.7 | TSK11249 | JIS III | 52 | 20 | 5 | 4 | 7 | 3 |
| M4 × | 0.5 | TSK11259 | JIS III | 52 | 15 | 5 | 4 | 7 | 3 |
| M4.5 × | 0.75 | TSK11269 | JIS III | 55 | 20 | 5 | 4 | 7 | 3 |
| M5 × | 0.9 | TSK11999 | JIS III | 60 | 22 | 5.5 | 4.5 | 7 | 3 |
| M5 × | 0.8 | TSK11289 | JIS III | 60 | 22 | 5.5 | 4.5 | 7 | 3 |
| M6 × | 1 | TSK11319 | JIS III | 62 | 24 | 6 | 4.5 | 7 | 3 |
| M6 × | 0.75 | TSK11329 | JIS III | 62 | 20 | 6 | 4.5 | 7 | 3 |
| M7 × | 1 | TSK11349 | JIS III | 65 | 26 | 6.2 | 5 | 8 | 4 |
| M7 × | 0.75 | TSK11359 | JIS III | 62 | 20 | 6.2 | 5 | 8 | 4 |
| M8 × | 1.25 | TSK11369 | JIS III | 70 | 30 | 6.2 | 5 | 8 | 4 |
| M8 × | 1 | TSK11379 | JIS III | 70 | 30 | 6.2 | 5 | 8 | 4 |
| M8 × | 0.75 | TSK11389 | JIS III | 62 | 20 | 6.2 | 5 | 8 | 4 |
| M9 × | 1.25 | TSK11399 | JIS III | 72 | 30 | 7 | 5.5 | 8 | 4 |
| M9 × | 1 | TSK11409 | JIS III | 70 | 30 | 7 | 5.5 | 8 | 4 |
| M9 × | 0.75 | TSK11419 | JIS III | 62 | 20 | 7 | 5.5 | 8 | 4 |
| M10 × | 1.5 | TSK11429 | JIS III | 75 | 32 | 7 | 5.5 | 8 | 4 |

► Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

► NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ○ | ○ | ○ | | | ○ | | | | ○ | | | | | ○ | ○ | ○ | ○ | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | | | | ○ | ○ | | | | | | | | | | | | | | |



CARBIDE
HSS
THREAD MILLS
SYNCHRO TAPS
COMBO TAPS
YG TAP GENERAL
YG TAP STEEL
YG TAP HARDENED
YG TAP INOX
YG TAP CAST IRON
YG TAP ALU
YG TAP Ti Ni
YG TAP FORMING
STI TAPS
PIPE TAPS
SKS21 HAND TAPS
SKS21 PIPE TAPS
TECHNICAL DATA

# SKS21 HAND TAPS

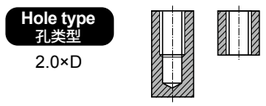
## TSK11(TS923) SERIES

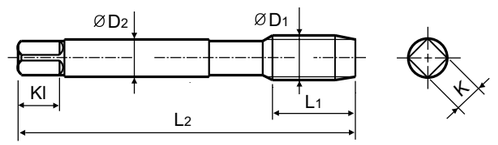
## M HAND TAPS(SET of 3 PIECES)
## 手用丝锥(一套3支)

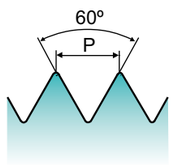
► Standard taps for a variety of application.

► 多用途标准丝锥

up to M6 : Male Center




Material groups **GS** | SKS21 | HT | JIS III | 60° | 1.5P/5.0P/9.0P | Bright

p. B212

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| TAPPING ER CHUCK | | D215 -220 |
| TAPPING CHUCK | | D221 -228 |
| ONE STEP TAPPING CHUCK | | D211 -213 |

Unit(单位) : mm

| SIZE<br>尺寸<br>ØD1 | Pitch<br>牙距<br>P | EDP No.<br>型号 | Limit<br>精度 | Overall Length<br>全长<br>L2 | Thread Length<br>螺纹长<br>L1 | Shank Diameter<br>柄径<br>ØD2 | Square Size<br>方块 尺寸<br>K | Square Length<br>方块 长度<br>Kl | No. of Flute<br>槽数 |
|---|---|---|---|---|---|---|---|---|---|
| M10 × 1.25 | | **TSK11439** | JIS III | 75 | 32 | 7 | 5.5 | 8 | 4 |
| M10 × 1 | | **TSK11449** | JIS III | 70 | 30 | 7 | 5.5 | 8 | 4 |
| M11 × 1.5 | | **TSK11469** | JIS III | 80 | 38 | 8 | 6 | 9 | 4 |
| M11 × 1 | | **TSK11479** | JIS III | 70 | 30 | 8 | 6 | 9 | 4 |
| M12 × 1.75 | | **TSK11509** | JIS III | 82 | 38 | 8.5 | 6.5 | 9 | 4 |
| M12 × 1.5 | | **TSK11519** | JIS III | 82 | 38 | 8.5 | 6.5 | 9 | 4 |
| M12 × 1.25 | | **TSK11529** | JIS III | 80 | 38 | 8.5 | 6.5 | 9 | 4 |
| M14 × 2 | | **TSK11549** | JIS III | 88 | 42 | 10.5 | 8 | 11 | 4 |
| M14 × 1.5 | | **TSK11559** | JIS III | 88 | 42 | 10.5 | 8 | 11 | 4 |
| M14 × 1.25 | | **TSK11569** | JIS III | 80 | 38 | 10.5 | 8 | 11 | 4 |
| M15 × 1.5 | | **TSK11589** | JIS III | 90 | 42 | 10.5 | 8 | 11 | 4 |
| M16 × 2 | | **TSK11609** | JIS III | 95 | 45 | 12.5 | 10 | 13 | 4 |
| M16 × 1.5 | | **TSK11619** | JIS III | 95 | 45 | 12.5 | 10 | 13 | 4 |
| M18 × 2.5 | | **TSK11659** | JIS III | 100 | 48 | 14 | 11 | 14 | 4 |
| M18 × 2 | | **TSK11669** | JIS III | 95 | 45 | 14 | 11 | 14 | 4 |
| M18 × 1.5 | | **TSK11679** | JIS III | 95 | 45 | 14 | 11 | 14 | 4 |
| M20 × 2.5 | | **TSK11709** | JIS III | 105 | 50 | 15 | 12 | 15 | 4 |
| M20 × 2 | | **TSK11719** | JIS III | 95 | 45 | 15 | 12 | 15 | 4 |
| M20 × 1.5 | | **TSK11729** | JIS III | 95 | 45 | 15 | 12 | 15 | 4 |
| M22 × 2.5 | | **TSK11749** | JIS III | 115 | 55 | 17 | 13 | 16 | 4 |

►Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

▶ NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ○ | ○ | ○ | | | ○ | | | | ○ | | | | | ○ | ○ | ○ | ○ | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | | | | ○ | ○ | | | | | | | | | | | | | | |



CARBIDE
HSS
THREAD MILLS
SYNCHRO TAPS
COMBO TAPS
YG TAP GENERAL
YG TAP STEEL
YG TAP HARDENED
YG TAP INOX
YG TAP CAST IRON
YG TAP ALU
YG TAP Ti Ni
YG TAP FORMING
STI TAPS
PIPE TAPS
SKS21 HAND TAPS
SKS21 PIPE TAPS
TECHNICAL DATA

# SKS21 HAND TAPS

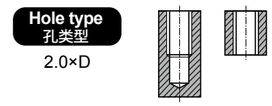
## TSK11(TS923) SERIES

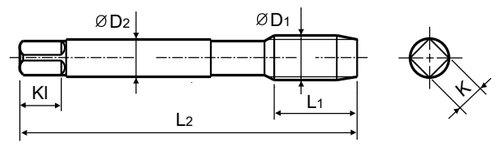
## M HAND TAPS(SET of 3 PIECES)
## 手用丝锥(一套3支)

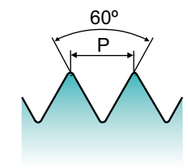
► Standard taps for a variety of application.

▶ 多用途标准丝锥

up to M6 : Male Center




Material groups GS | SKS21 | HT | JIS III | 60° | 1.5P/5.0P/9.0P | Bright

p. B212

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| TAPPING ER CHUCK | | D215 -220 |
| TAPPING CHUCK | | D221 -228 |
| ONE STEP TAPPING CHUCK | | D211 -213 |

Unit(单位) : mm

| SIZE<br>尺寸<br>ØD1 | Pitch<br>牙距<br>P | EDP No.<br>型号 | Limit<br>精度 | Overall Length<br>全长<br>L2 | Thread Length<br>螺纹长<br>L1 | Shank Diameter<br>柄径<br>ØD2 | Square Size<br>方块 尺寸<br>K | Square Length<br>方块 长度<br>Kl | No. of Flute<br>槽数 |
|---|---|---|---|---|---|---|---|---|---|
| M22 × 2 | | **TSK11759** | JIS III | 95 | 45 | 17 | 13 | 16 | 4 |
| M22 × 1.5 | | **TSK11769** | JIS III | 95 | 45 | 17 | 13 | 16 | 4 |
| M24 × 3 | | **TSK11789** | JIS III | 120 | 58 | 19 | 15 | 18 | 4 |
| M24 × 2 | | **TSK11799** | JIS III | 95 | 45 | 19 | 15 | 18 | 4 |
| M24 × 1.5 | | **TSK11809** | JIS III | 95 | 45 | 19 | 15 | 18 | 4 |
| M25 × 2 | | **TSK11829** | JIS III | 95 | 45 | 19 | 15 | 18 | 4 |
| M25 × 1.5 | | **TSK11839** | JIS III | 95 | 45 | 19 | 15 | 18 | 4 |
| M26 × 2 | | **TSK11N49** | JIS III | 95 | 45 | 20 | 15 | 18 | 4 |
| M26 × 1.5 | | **TSK11859** | JIS III | 95 | 45 | 20 | 15 | 18 | 4 |
| M27 × 3 | | **TSK11869** | JIS III | 130 | 62 | 20 | 15 | 18 | 4 |
| M27 × 2 | | **TSK11879** | JIS III | 95 | 45 | 20 | 15 | 18 | 4 |
| M27 × 1.5 | | **TSK11889** | JIS III | 95 | 45 | 20 | 15 | 18 | 4 |
| M28 × 2 | | **TSK11909** | JIS III | 105 | 45 | 21 | 17 | 20 | 4 |
| M28 × 1.5 | | **TSK11919** | JIS III | 105 | 45 | 21 | 17 | 20 | 4 |
| M30 × 3.5 | | **TSK11949** | JIS III | 135 | 65 | 23 | 17 | 20 | 4 |
| M30 × 3 | | **TSK11959** | JIS III | 135 | 65 | 23 | 17 | 20 | 4 |
| M30 × 2 | | **TSK11969** | JIS III | 105 | 45 | 23 | 17 | 20 | 4 |
| M30 × 1.5 | | **TSK11979** | JIS III | 105 | 45 | 23 | 17 | 20 | 4 |

►Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ○ | ○ | ○ | | | ○ | | | | ○ | | | | | ○ | ○ | ○ | ○ | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | | | | ○ | ○ | | | | | | | | | | | | | | |

# SKS21 HAND TAPS

## TSK12(TS943) SERIES

# UNC/F HAND TAPS(SET of 3 PIECES)
## 手用丝锥(一套3支)

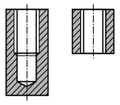
► Standard taps for a variety of application.

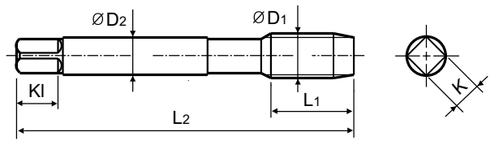
► 多用途标准丝锥

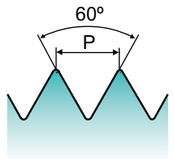
up to 1/4 : Male Center

Hole type 孔类型

2.0×D






Material groups **GS** | SKS21 | HT | JIS III | 60° | 1.5P/5.0P/9.0P | Bright

p. B212

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| TAPPING ER CHUCK | D215 -220 |
| TAPPING CHUCK | D221 -228 |
| ONE STEP TAPPING CHUCK | D211 -213 |

Unit(单位) : mm

| SIZE 尺寸 | TPI 牙距 | EDP No. 型号 | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|
| ØD1 | | | | L2 | L1 | ØD2 | K | Kl | |
| #4 | - 40 UNC | TSK12169 | JIS III | 44 | 16 | 3 | 2.5 | 5 | 3 |
| #4 | - 48 UNF | TSK12189 | JIS III | 44 | 16 | 3 | 2.5 | 5 | 3 |
| #5 | - 40 UNC | TSK12209 | JIS III | 46 | 18 | 4 | 3.2 | 6 | 3 |
| #5 | - 44 UNF | TSK12229 | JIS III | 46 | 18 | 4 | 3.2 | 6 | 3 |
| #6 | - 32 UNC | TSK12249 | JIS III | 48 | 18 | 4 | 3.2 | 6 | 3 |
| #6 | - 40 UNF | TSK12269 | JIS III | 48 | 18 | 4 | 3.2 | 6 | 3 |
| #8 | - 32 UNC | TSK12289 | JIS III | 52 | 20 | 5 | 4 | 7 | 3 |
| #8 | - 36 UNF | TSK12309 | JIS III | 52 | 20 | 5 | 4 | 7 | 3 |
| #10 | - 24 UNC | TSK12329 | JIS III | 60 | 22 | 5.5 | 4.5 | 7 | 3 |
| #10 | - 32 UNF | TSK12349 | JIS III | 60 | 22 | 5.5 | 4.5 | 7 | 3 |
| #12 | - 24 UNC | TSK12369 | JIS III | 60 | 22 | 5.5 | 4.5 | 7 | 3 |
| #12 | - 28 UNF | TSK12389 | JIS III | 60 | 22 | 5.5 | 4.5 | 7 | 3 |
| 1/4 | - 20 UNC | TSK12409 | JIS III | 62 | 24 | 6 | 4.5 | 7 | 3 |
| 1/4 | - 28 UNF | TSK12429 | JIS III | 62 | 24 | 6 | 4.5 | 7 | 3 |
| 5/16 | - 18 UNC | TSK12449 | JIS III | 70 | 30 | 6.1 | 5 | 8 | 4 |
| 5/16 | - 24 UNF | TSK12469 | JIS III | 70 | 30 | 6.1 | 5 | 8 | 4 |

►Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

► NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ○ | ○ | ○ | | | ○ | | | | ○ | | | | | ○ | ○ | ○ | ○ | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | | | | ○ | ○ | | | | | | | | | | | | | | |



CARBIDE
HSS
THREAD MILLS
SYNCHRO TAPS
COMBO TAPS
YG TAP GENERAL
YG TAP STEEL
YG TAP HARDENED
YG TAP INOX
YG TAP CAST IRON
YG TAP ALU
YG TAP Ti Ni
YG TAP FORMING
STI TAPS
PIPE TAPS
SKS21 HAND TAPS
SKS21 PIPE TAPS
TECHNICAL DATA

# SKS21 HAND TAPS

## TSK12(TS943) SERIES

# UNC/F HAND TAPS(SET of 3 PIECES)
## 手用丝锥(一套3支)

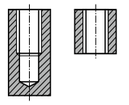
► Standard taps for a variety of application

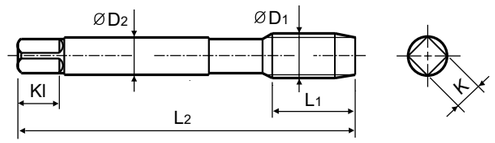
► 多用途标准丝锥

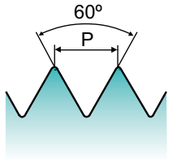
up to 1/4 : Male Center

Hole type 孔类型

2.0×D






Material groups **GS** | SKS21 | HT | JIS III | 60° | 1.5P/5.0P/9.0P | Bright

p. B212

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| TAPPING ER CHUCK | D215 -220 |
| TAPPING CHUCK | D221 -228 |
| ONE STEP TAPPING CHUCK | D211 -213 |

Unit(单位) : mm

| SIZE 尺寸 | TPI 牙距 | EDP No. 型号 | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|
| ØD1 | | | | L2 | L1 | ØD2 | K | Kl | |
| 3/8 | - 16 UNC | TSK12489 | JIS III | 75 | 35 | 7 | 5.5 | 8 | 4 |
| 3/8 | - 24 UNF | TSK12509 | JIS III | 75 | 32 | 7 | 5.5 | 8 | 4 |
| 7/16 | - 14 UNC | TSK12529 | JIS III | 80 | 38 | 8 | 6 | 9 | 4 |
| 7/16 | - 20 UNF | TSK12549 | JIS III | 80 | 38 | 8 | 6 | 9 | 4 |
| 1/2 | - 13 UNC | TSK12569 | JIS III | 85 | 42 | 9 | 7 | 10 | 4 |
| 1/2 | - 20 UNF | TSK12589 | JIS III | 85 | 42 | 9 | 7 | 10 | 4 |
| 9/16 | - 12 UNC | TSK12609 | JIS III | 90 | 42 | 10.5 | 8 | 11 | 4 |
| 9/16 | - 18 UNF | TSK12629 | JIS III | 90 | 42 | 10.5 | 8 | 11 | 4 |
| 5/8 | - 11 UNC | TSK12649 | JIS III | 95 | 45 | 12 | 9 | 12 | 4 |
| 5/8 | - 18 UNF | TSK12669 | JIS III | 95 | 45 | 12 | 9 | 12 | 4 |
| 3/4 | - 10 UNC | TSK12709 | JIS III | 105 | 50 | 14 | 11 | 14 | 4 |
| 3/4 | - 16 UNF | TSK12729 | JIS III | 95 | 45 | 14 | 11 | 14 | 4 |
| 7/8 | - 9 UNC | TSK12749 | JIS III | 115 | 55 | 17 | 13 | 16 | 4 |
| 7/8 | - 14 UNF | TSK12769 | JIS III | 95 | 45 | 17 | 13 | 16 | 4 |
| 1 | - 8 UNC | TSK12789 | JIS III | 125 | 60 | 20 | 15 | 18 | 4 |
| 1 | -12 UNF | TSK12809 | JIS III | 95 | 45 | 20 | 15 | 18 | 4 |

►Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ○ | ○ | ○ | | | ○ | | | | ○ | | | | | ○ | ○ | ○ | ○ | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | | | | ○ | ○ | | | | | | | | | | | | | | |

# SKS21 HAND TAPS

## TSK13(TS933) SERIES

## W HAND TAPS(SET of 3 PIECES)
## 手用丝锥(一套3支)

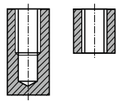
► Standard taps that can be used in for a variety of application.

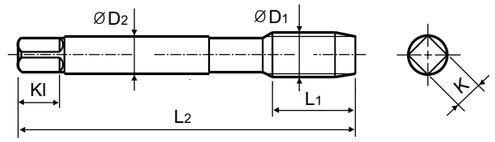
►多用途标准丝锥

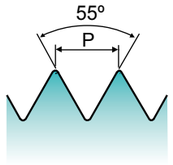
up to 1/4 : Male Center

Hole type 孔类型

2.0×D






Material groups **GS** | SKS21 | HT | JIS III | 55° | 1.5P/5.0P/9.0P | Bright

p. B212

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| TAPPING ER CHUCK | | D215 -220 |
| TAPPING CHUCK | | D221 -228 |
| ONE STEP TAPPING CHUCK | | D211 -213 |

Unit(单位) : mm

| SIZE 尺寸 | TPI 牙距 | EDP No. 型号 | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|
| | ØD1 | | | L2 | L1 | ØD2 | K | Kl | |
| W1/8 | - 40 | TSK13209 | JIS III | 46 | 18 | 4 | 3.2 | 6 | 3 |
| W3/16 | - 24 | TSK13329 | JIS III | 60 | 22 | 5.5 | 4.5 | 7 | 3 |
| W1/4 | - 20 | TSK13409 | JIS III | 62 | 24 | 6 | 4.5 | 7 | 3 |
| W5/16 | - 18 | TSK13449 | JIS III | 70 | 30 | 6.1 | 5 | 8 | 4 |
| W3/8 | - 16 | TSK13489 | JIS III | 75 | 35 | 7 | 5.5 | 8 | 4 |
| W7/16 | - 14 | TSK13529 | JIS III | 80 | 38 | 8 | 6 | 9 | 4 |
| W1/2 | - 12 | TSK13569 | JIS III | 85 | 42 | 9 | 7 | 10 | 4 |
| W9/16 | - 12 | TSK13609 | JIS III | 90 | 42 | 10.5 | 8 | 11 | 4 |
| W5/8 | - 11 | TSK13649 | JIS III | 95 | 45 | 12 | 9 | 12 | 4 |
| W3/4 | - 10 | TSK13709 | JIS III | 105 | 50 | 14 | 11 | 14 | 4 |
| W7/8 | - 9 | TSK13749 | JIS III | 115 | 55 | 17 | 13 | 16 | 4 |
| W1 | - 8 | TSK13789 | JIS III | 125 | 60 | 20 | 15 | 18 | 4 |

►Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ○ | ○ | ○ | | | ○ | | | | ○ | | | | | ○ | ○ | ○ | ○ | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | | | | ○ | ○ | | | | | | | | | | | | | | |





# SKS21 HAND TAPS

## TSK21 SERIES

## M-LH HAND TAPS(SET of 3 PIECES)
## 手用丝锥(一套3支)

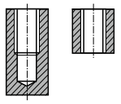
► Standard taps for a variety of application.

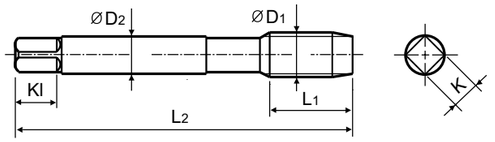
►多用途标准丝锥

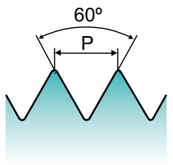
up to M6 : Male Center

Hole type 孔类型

2.0×D






Material groups **GS** | SKS21 | HT | JIS III | 60° | 1.5P/5.0P/9.0P | Bright

p. B212

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| TAPPING ER CHUCK | | D215 -220 |
| TAPPING CHUCK | | D221 -228 |
| ONE STEP TAPPING CHUCK | | D211 -213 |

Unit(单位) : mm

| SIZE 尺寸 | Pitch 牙距 | EDP No. 型号 | Limit 精度 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|
| | ØD1 | P | | L2 | L1 | ØD2 | K | Kl | |
| M3 | × 0.5 | TSK21209 | JIS III | 46 | 18 | 4 | 3.2 | 6 | 3 |
| M4 | × 0.7 | TSK21249 | JIS III | 52 | 20 | 5 | 4 | 7 | 3 |
| M5 | × 0.8 | TSK21289 | JIS III | 60 | 22 | 5.5 | 4.5 | 7 | 3 |
| M6 | × 1 | TSK21319 | JIS III | 62 | 24 | 6 | 4.5 | 7 | 3 |
| M7 | × 1 | TSK21349 | JIS III | 65 | 26 | 6.2 | 5 | 8 | 4 |
| M8 | × 1.25 | TSK21369 | JIS III | 70 | 30 | 6.2 | 5 | 8 | 4 |
| M10 | × 1.5 | TSK21429 | JIS III | 75 | 32 | 7 | 5.5 | 8 | 4 |
| M10 | × 1.25 | TSK21439 | JIS III | 75 | 32 | 7 | 5.5 | 8 | 4 |
| M11 | × 1.5 | TSK21469 | JIS III | 80 | 38 | 8 | 6 | 9 | 4 |
| M12 | × 1.75 | TSK21509 | JIS III | 82 | 38 | 8.5 | 6.5 | 9 | 4 |
| M12 | × 1.5 | TSK21519 | JIS III | 82 | 38 | 8.5 | 6.5 | 9 | 4 |
| M12 | × 1.25 | TSK21529 | JIS III | 80 | 38 | 8.5 | 6.5 | 9 | 4 |
| M14 | × 2 | TSK21549 | JIS III | 88 | 42 | 10.5 | 8 | 11 | 4 |
| M14 | × 1.5 | TSK21559 | JIS III | 88 | 42 | 10.5 | 8 | 11 | 4 |
| M14 | × 1.25 | TSK21569 | JIS III | 80 | 38 | 10.5 | 8 | 11 | 4 |
| M15 | × 1.5 | TSK21589 | JIS III | 90 | 42 | 10.5 | 8 | 11 | 4 |
| M16 | × 2 | TSK21609 | JIS III | 95 | 45 | 12.5 | 10 | 13 | 4 |
| M16 | × 1.5 | TSK21619 | JIS III | 95 | 45 | 12.5 | 10 | 13 | 4 |
| M18 | × 2.5 | TSK21659 | JIS III | 100 | 48 | 14 | 11 | 14 | 4 |
| M18 | × 2 | TSK21669 | JIS III | 95 | 45 | 14 | 11 | 14 | 4 |
| M18 | × 1.5 | TSK21679 | JIS III | 95 | 45 | 14 | 11 | 14 | 4 |
| M20 | × 2.5 | TSK21709 | JIS III | 105 | 50 | 15 | 12 | 15 | 4 |
| M20 | × 2 | TSK21719 | JIS III | 95 | 45 | 15 | 12 | 15 | 4 |
| M20 | × 1.5 | TSK21729 | JIS III | 95 | 45 | 15 | 12 | 15 | 4 |

►Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ○ | ○ | ○ | | | ○ | | | | ○ | | | | | ○ | ○ | ○ | ○ | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | | | | ○ | ○ | | | | | | | | | | | | | | |

# SKS21 HAND TAPS

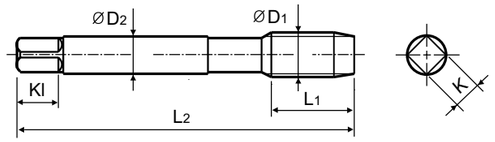
TSK23 SERIES

## W-LH HAND TAPS(SET of 3 PIECES) 手用丝锥(一套3支)

► Standard taps that can be used in for a variety of application.

► 多用途标准丝锥

up to 1/4 : Male Center

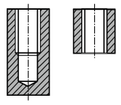


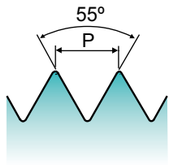




Hole type 孔类型

2.0×D






Material groups **GS** | SKS21 | HT | JIS III | 55° | 1.5P/5.0P/9.0P | Bright

p. B212

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| ◎ | TAPPING ER CHUCK | D215 -220 |
| ◎ | TAPPING CHUCK | D221 -228 |
| | ONE STEP TAPPING CHUCK | D211 -213 |

Unit(单位) : mm

| SIZE 尺寸 ØD1 | TPI 牙距 | EDP No. 型号 | Limit 精度 | Overall Length 全长 L2 | Thread Length 螺纹长 L1 | Shank Diameter 柄径 ØD2 | Square Size 方块 尺寸 K | Square Length 方块 长度 Kl | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|
| W1/8 | - 40 | **TSK23209** | JIS III | 46 | 18 | 4 | 3.2 | 6 | 3 |
| W3/16 | - 24 | **TSK23329** | JIS III | 60 | 22 | 5.5 | 4.5 | 7 | 3 |
| W1/4 | - 20 | **TSK23409** | JIS III | 62 | 24 | 6 | 4.5 | 7 | 3 |
| W5/16 | - 18 | **TSK23449** | JIS III | 70 | 30 | 6.1 | 5 | 8 | 4 |
| W3/8 | - 16 | **TSK23489** | JIS III | 75 | 35 | 7 | 5.5 | 8 | 4 |
| W7/16 | - 14 | **TSK23529** | JIS III | 80 | 38 | 8 | 6 | 9 | 4 |
| W1/2 | - 12 | **TSK23569** | JIS III | 85 | 42 | 9 | 7 | 10 | 4 |
| W9/16 | - 12 | **TSK23609** | JIS III | 90 | 42 | 10.5 | 8 | 11 | 4 |
| W5/8 | - 11 | **TSK23649** | JIS III | 95 | 45 | 12 | 9 | 12 | 4 |
| W3/4 | - 10 | **TSK23709** | JIS III | 105 | 50 | 14 | 11 | 14 | 4 |
| W7/8 | - 9 | **TSK23749** | JIS III | 115 | 55 | 17 | 13 | 16 | 4 |
| W1 | - 8 | **TSK23789** | JIS III | 125 | 60 | 20 | 15 | 18 | 4 |

►Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ○ | ○ | ○ | | | ○ | | | | ○ | | | | | ○ | ○ | ○ | ○ | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400Rm | 1050Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | | | | ○ | ○ | | | | | | | | | | | | | | |



Leading Through Innovation

SKS21

# SKS21 PIPE TAPS

- To Achieve High Strength. Easy Assembling.
- 实现高强度加工，易装配

# SELECTION GUIDE
## 选用指南

YG THREADING TOOLS

## SKS21

# SKS21 PIPE TAPS

To Achieve High Strength.
Easy Assembling.
实现高强度加工, 易装配

Please visit globalyg1.com/mat for material search

◎ : Excellent (优秀) ○ : Good (良好)

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HOLE TYPE 孔类型 | Max. 2.0xD Blind /Through Hole盲孔 / 通孔 | | | | | | | | | | | |
| TOOL MATERIAL 刀具材料 | SKS21 | | | | | | | | | | | |
| CHAMFER LEAD ACC. TO DIN2197 倒角长度 | 3.0P | | | | | | | | | | | |
| FLUTE TYPE 槽型 | Straight Flute 直槽 | | | | | | | | | | | |
| SPIRAL FLUTE ANGLE 螺旋角 | - | | | | | | | | | | | |
| SERIES NO. 系列号 (page 页数) JIS Type | PT | | | | | | | | | | | |
| M/MF | | | | | | | | | | | | |
| UNC/F | | | | | | | | | | | | |
| W | | | | | | | | | | | | |
| M-LH W-LH | | | | | | | | | | | | |
| PIPE TAPS | TSK34 (p. B224) | | | | | | | | | | | |
| SURFACE TREATMENT表面处理 | Bright | | | | | | | | | | | |
| MODEL 模型 | | | | | | | | | | | | |
| ISO 公制 | VDI 3323 | Material Description 材料描述 | Composition / Structure / Heat Treatment 成分 / 组织 / 热处理 | | HB 布氏硬度 | HRc 硬度 | | | | | | |
| P | 1 | Non-alloy steel | About 0.15% C | Annealed | 125 | | ○ | 3~6 | ○ | 3~6 | | |
| | 2 | | About 0.45% C | Annealed | 190 | 13 | ○ | 3~6 | ○ | 3~6 | | |
| | 3 | | About 0.45% C | Quenched & Tempered | 250 | 25 | ○ | 3~6 | ○ | 3~6 | | |
| | 4 | | About 0.75% C | Annealed | 270 | 28 | | | | | | |
| | 5 | | About 0.75% C | Quenched & Tempered | 300 | 32 | | | | | | |
| | 6 | Low alloy steel | | Annealed | 180 | 10 | ○ | 3~6 | ○ | 3~6 | | |
| | 7 | | | Quenched & Tempered | 275 | 29 | | | | | | |
| | 8 | | | Quenched & Tempered | 300 | 32 | | | | | | |
| | 9 | | | Quenched & Tempered | 350 | 38 | | | | | | |
| | 10 | High alloyed steel, and tool steel | | Annealed | 200 | 15 | ○ | 3~6 | ○ | 3~6 | | |
| | 11 | | | Quenched & Tempered | 325 | 35 | | | | | | |
| M | 12 | Stainless steel | Ferritic / Martensitic | Annealed | 200 | 15 | | | | | | |
| | 13 | | Martensitic | Quenched & Tempered | 240 | 23 | | | | | | |
| | 14 | | Austenitic | | 180 | 10 | | | | | | |
| K | 15 | Grey cast iron | Pearlitic / ferritic | | 180 | 10 | ○ | 3~6 | ○ | 3~6 | | |
| | 16 | | Pearlitic (Martensitic) | | 260 | 26 | ○ | 3~6 | ○ | 3~6 | | |
| | 17 | Nodular cast iron | Ferritic | | 160 | 3 | ○ | 4~8 | ○ | 4~8 | | |
| | 18 | | Pearlitic | | 250 | 25 | | | | | | |
| | 19 | Malleable cast iron | Ferritic | | 130 | | | | | | | |
| | 20 | | Pearlitic | | 230 | 21 | | | | | | |
| N | 21 | Aluminum-wrought alloy | Not Curable | | 60 | | ○ | 5~10 | ○ | 5~10 | | |
| | 22 | | Curable | Hardened | 100 | | ○ | 5~10 | ○ | 5~10 | | |
| | 23 | Aluminum-cast, alloyed | ≤ 12% Si, Not Curable | | 75 | | ○ | 10~15 | ○ | 10~15 | | |
| | 24 | | ≤ 12% Si, Curable | Hardened | 90 | | | | | | | |
| | 25 | | > 12% Si, Not Curable | | 130 | | | | | | | |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | Cutting Alloys, PB>1% | | 110 | | ○ | 3~6 | ○ | 3~6 | | |
| | 27 | | CuZn, CuSnZn (Brass) | | 90 | | ○ | 5~10 | ○ | 5~10 | | |
| | 28 | | CuSn, lead-free copper and electrolytic copper | | 100 | | | | | | | |
| | 29 | Non Metallic Materials | Duroplastic, Fiber Reinforced Plastic | | | | | | | | | |
| | 30 | | Rubber, Wood, etc. | | | | | | | | | |
| S | 31 | Heat Resistant Super Alloys | Fe Based | Annealed | 200 | 15 | | | | | | |
| | 32 | | | Cured | 280 | 30 | | | | | | |
| | 33 | | Ni or Co Based | Annealed | 250 | 25 | | | | | | |
| | 34 | | | Cured | 350 | 38 | | | | | | |
| | 35 | | | Cast | 320 | 34 | | | | | | |
| | 36 | Titanium Alloys | Pure Titanium | | 400 Rm | | | | | | | |
| | 37 | | Alpha + Beta Alloys | Hardened | 1050 Rm | | | | | | | |
| H | 38 | Hardened steel | | Hardened | 550 | 55 | | | | | | |
| | 39 | | | Hardened | 630 | 60 | | | | | | |
| | 40 | Chilled Cast Iron | | Cast | 400 | 42 | | | | | | |
| | 41 | Hardened Cast Iron | | Hardened | 550 | 55 | | | | | | |

| | | | | |
|---|---|---|---|---|
| Max. 2.0xD Blind /Through Hole盲孔 / 通孔 | | | | |
| SKS21 | | | | |
| 3.0P | 3.0P | 3.0P | | |
| Straight Flute 直槽 | | | | |
| - | - | - | | |
| PF | NPT | NPS | JIS Type | |
| | | | M/MF | |
| | | | UNC/F | |
| | | | W | |
| | | | M-LH W-LH | |
| TSK36 (p. B226) | TSK37 (p. B227) | TSK38 (p. B228) | PIPE TAPS | |
| Bright | Bright | Bright | | |
| | | | | |
| ○ 3~6 | ○ 3~6 | ○ 3~6 | 1 | |
| ○ 3~6 | ○ 3~6 | ○ 3~6 | 2 | |
| ○ 3~6 | ○ 3~6 | ○ 3~6 | 3 | |
| | | | 4 | |
| | | | 5 | |
| ○ 3~6 | ○ 3~6 | ○ 3~6 | 6 | P |
| | | | 7 | |
| | | | 8 | |
| | | | 9 | |
| ○ 3~6 | ○ 3~6 | ○ 3~6 | 10 | |
| | | | 11 | |
| | | | 12 | |
| | | | 13 | M |
| | | | 14 | |
| ○ 3~6 | ○ 3~6 | ○ 3~6 | 15 | |
| ○ 3~6 | ○ 3~6 | ○ 3~6 | 16 | |
| ○ 4~8 | ○ 4~8 | ○ 4~8 | 17 | K |
| | | | 18 | |
| | | | 19 | |
| | | | 20 | |
| ○ 5~10 | ○ 5~10 | ○ 5~10 | 21 | |
| ○ 5~10 | ○ 5~10 | ○ 5~10 | 22 | |
| ○ 10~15 | ○ 10~15 | ○ 10~15 | 23 | |
| | | | 24 | |
| | | | 25 | N |
| ○ 3~6 | ○ 3~6 | ○ 3~6 | 26 | |
| ○ 5~10 | ○ 5~10 | ○ 5~10 | 27 | |
| | | | 28 | |
| | | | 29 | |
| | | | 30 | |
| | | | 31 | |
| | | | 32 | |
| | | | 33 | |
| | | | 34 | S |
| | | | 35 | |
| | | | 36 | |
| | | | 37 | |
| | | | 38 | |
| | | | 39 | H |
| | | | 40 | |
| | | | 41 | |

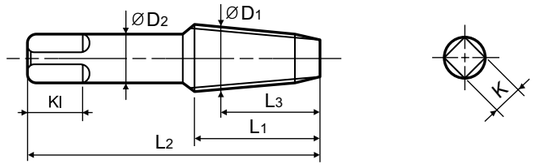
# SKS21 PIPE TAPS

TSK34 SERIES

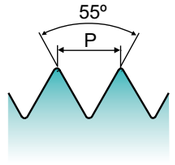
## PT TAPER PIPE TAPS for PT THREADS
## PT 螺纹用锥管丝锥

► Suitable for taper pipe internal threads.
PT : Taper pipe threads (for pressure-tight joints)

► 适用于锥管螺纹加工
PT : 锥管螺纹（用于压力密封接头）




Hole type
孔类型
2.0×D




Material groups **GS** | SKS21 | PT | JIS | 55° | 3.0P | Bright

p. B222

Recommended ToolHolder

| | Page |
|---|---|
| Plain Shank | |
| TAPPING ER CHUCK | D215 -220 |
| TAPPING CHUCK | D221 -228 |
| ONE STEP TAPPING CHUCK | D211 -213 |

Unit(单位) : mm

| SIZE | TPI | EDP No. | Limit | Basic Maj. Dia. | Overall Length | Thread Length | Projection Length | Shank Diameter | Square Size | Square Length | No. of Flute |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 尺寸 | 牙距 | 型号 | 精度 | 最大基准直径 | 全长 | 螺纹长 | 基准长度 | 柄径 | 方块 尺寸 | 方块 长度 | 槽数 |
| ØD1 | | | | | L2 | L1 | L3 | ØD2 | K | Kl | |
| PT 1/16 | - 28 | TSK34022 | JIS | 7.723 | 55 | 19 | 13 | 6.5 | 5 | 8 | 4 |
| PT 1/8 | - 28 | TSK34202 | JIS | 9.728 | 55 | 19 | 13 | 8 | 6 | 9 | 4 |
| PT 1/4 | - 19 | TSK34402 | JIS | 13.157 | 62 | 28 | 21 | 11 | 9 | 12 | 4 |
| PT 3/8 | - 19 | TSK34482 | JIS | 16.662 | 65 | 28 | 21 | 14 | 11 | 14 | 4 |
| PT 1/2 | - 14 | TSK34562 | JIS | 20.955 | 80 | 35 | 25 | 18 | 14 | 17 | 4 |
| PT 3/4 | - 14 | TSK34702 | JIS | 26.441 | 85 | 35 | 25 | 23 | 17 | 20 | 4 |
| PT 1 | - 11 | TSK34782 | JIS | 33.249 | 95 | 45 | 32 | 26 | 21 | 24 | 5 |
| PT 1*1/4 | - 11 | TSK34862 | JIS | 41.910 | 105 | 45 | 32 | 32 | 26 | 30 | 5 |
| PT 1*1/2 | - 11 | TSK34962 | JIS | 47.803 | 110 | 45 | 32 | 38 | 29 | 32 | 6 |
| PT 2 | - 11 | TSK34D22 | JIS | 59.614 | 120 | 50 | 35 | 46 | 35 | 38 | 6 |

►Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ○ | ○ | ○ | | | ○ | | | | ○ | | | | | ○ | ○ | ○ | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | ○ | ○ | | | | | | | | | | | | | | |



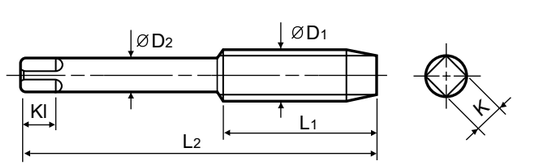
# SKS21 PIPE TAPS

TSK35 SERIES

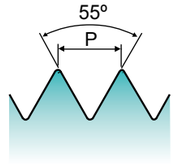
## PS STRAIGHT PIPE TAPS for PS THREADS
## PS螺纹用直管丝锥

► Suitable for process Straight pipe internal threads.
PS : Straight pipe threads (for pressure-tight joints)

► 适用于锥管螺纹加工
PS : 锥管螺纹（用于压力密封接头）




Hole type
孔类型
2.0×D




Material groups **GS** | SKS21 | PS | JIS | 55° | 3.0P | Bright

p. B222

Recommended ToolHolder

| | Page |
|---|---|
| Plain Shank | |
| TAPPING ER CHUCK | D215 -220 |
| TAPPING CHUCK | D221 -228 |
| ONE STEP TAPPING CHUCK | D211 -213 |

Unit(单位) : mm

| SIZE | TPI | EDP No. | Limit | Basic Maj. Dia. | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | No. of Flute |
|---|---|---|---|---|---|---|---|---|---|---|
| 尺寸 | 牙距 | 型号 | 精度 | 最大基准直径 | 全长 | 螺纹长 | 柄径 | 方块 尺寸 | 方块 长度 | 槽数 |
| ØD1 | | | | | L2 | L1 | ØD2 | K | Kl | |
| PS 1/8 | - 28 | TSK35202 | JIS | 9.728 | 55 | 19 | 8 | 6 | 9 | 4 |
| PS 1/4 | - 19 | TSK35402 | JIS | 13.157 | 62 | 28 | 11 | 9 | 12 | 4 |
| PS 3/8 | - 19 | TSK35482 | JIS | 16.662 | 65 | 28 | 14 | 11 | 14 | 4 |
| PS 1/2 | - 14 | TSK35562 | JIS | 20.955 | 80 | 35 | 18 | 14 | 17 | 4 |
| PS 3/4 | - 14 | TSK35702 | JIS | 26.441 | 85 | 35 | 23 | 17 | 20 | 4 |
| PS 1 | - 11 | TSK35782 | JIS | 33.249 | 95 | 45 | 26 | 21 | 24 | 5 |
| PS 1*1/4 | - 11 | TSK35862 | JIS | 41.910 | 105 | 45 | 32 | 26 | 30 | 5 |
| PS 1*1/2 | - 11 | TSK35962 | JIS | 47.803 | 110 | 45 | 38 | 29 | 32 | 6 |
| PS 2 | - 11 | TSK35D22 | JIS | 59.614 | 120 | 50 | 46 | 35 | 38 | 6 |

►Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ○ | ○ | ○ | | | ○ | | | | ○ | | | | | ○ | ○ | ○ | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | ○ | ○ | | | | | | | | | | | | | | |

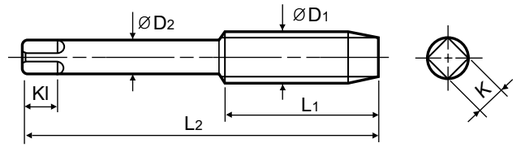
# SKS21 PIPE TAPS

**TSK36** SERIES

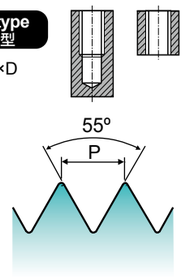
## PF STRAIGHT PIPE TAPS for PF THREADS
## PF螺纹用直管丝锥

► Suitable for process Straight pipe internal threads.
PF : Straight pipe threads (for mechanical joints)

►适用于直管螺纹加工
PF : 直管螺纹（用于压力密封接头）




Hole type 孔类型
2.0×D




Material groups **GS** | SKS21 | PF | JIS | 55° | 3.0P | Bright

p. B223

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| TAPPING ER CHUCK | D215-220 | |
| TAPPING CHUCK | D221-228 | |
| ONE STEP TAPPING CHUCK | D211-213 | |

Unit(单位) : mm

| SIZE 尺寸 | TPI 牙距 | EDP No. 型号 | Limit 精度 | Basic Maj. Dia. 最大基准直径 | Overall Length 全长 | Thread Length 螺纹长 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|---|
| ØD1 | | | | | L2 | L1 | ØD2 | K | Kl | |
| PF 1/8 | - 28 | **TSK36202** | JIS | 9.728 | 55 | 19 | 8 | 6 | 9 | 4 |
| PF 1/4 | - 19 | **TSK36402** | JIS | 13.157 | 62 | 28 | 11 | 9 | 12 | 4 |
| PF 3/8 | - 19 | **TSK36482** | JIS | 16.662 | 65 | 28 | 14 | 11 | 14 | 4 |
| PF 1/2 | - 14 | **TSK36562** | JIS | 20.955 | 80 | 35 | 18 | 14 | 17 | 4 |
| PF 3/4 | - 14 | **TSK36702** | JIS | 26.441 | 85 | 35 | 23 | 17 | 20 | 4 |
| PF 1 | - 11 | **TSK36782** | JIS | 33.249 | 95 | 45 | 26 | 21 | 24 | 5 |
| PF 1*1/4 | - 11 | **TSK36862** | JIS | 41.910 | 105 | 45 | 32 | 26 | 30 | 5 |
| PF 1*1/2 | - 11 | **TSK36962** | JIS | 47.803 | 110 | 45 | 38 | 29 | 32 | 6 |
| PF 2 | - 11 | **TSK36D22** | JIS | 59.614 | 120 | 50 | 46 | 35 | 38 | 6 |

►Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ○ | ○ | ○ | | | ○ | | | | ○ | | | | | ○ | ○ | ○ | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400Rm | 1050Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | ○ | ○ | | | | | | | | | | | | | | |



CARBIDE
HSS
THREAD MILLS
SYNCHRO TAPS
COMBO TAPS
YG TAP GENERAL
YG TAP STEEL
YG TAP HARDENED
YG TAP INOX
YG TAP CAST IRON
YG TAP ALU
YG TAP Ti Ni
YG TAP FORMING
STI TAPS
PIPE TAPS
SKS21 HAND TAPS
SKS21 PIPE TAPS
TECHNICAL DATA

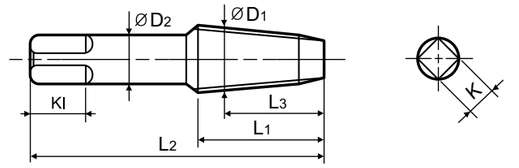
# SKS21 PIPE TAPS

**TSK37** SERIES

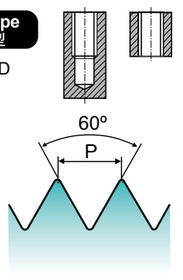
## NPT AMERICAN TAPER PIPE TAPS for NPT THREADS
## 美制NPT螺纹用锥管丝锥

► Suitable for process Taper pipe internal threads.
NPT : American Taper pipe threads (for mechanical joints)

►适用于加工锥管内螺纹。
NPT : 美制锥管螺纹（机械连接用）




Hole type 孔类型
2.0×D




Material groups **GS** | SKS21 | NPT | ANSI | 60° | 3.0P | Bright

p. B223

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| TAPPING ER CHUCK | D215-220 | |
| TAPPING CHUCK | D221-228 | |
| ONE STEP TAPPING CHUCK | D211-213 | |

Unit(单位) : mm

| SIZE 尺寸 | TPI 牙距 | EDP No. 型号 | Limit 精度 | Basic Maj. Dia. 最大基准直径 | Overall Length 全长 | Thread Length 螺纹长 | Projection Length 基准长度 | Shank Diameter 柄径 | Square Size 方块 尺寸 | Square Length 方块 长度 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ØD1 | | | | | L2 | L1 | L3 | ØD2 | K | Kl | |
| NPT 1/8 | - 27 | **TSK37200** | ANSI | 10.117 | 55 | 19 | 12.05 | 8 | 6 | 9 | 4 |
| NPT 1/4 | - 18 | **TSK37400** | ANSI | 13.426 | 62 | 28 | 17.45 | 11 | 9 | 12 | 4 |
| NPT 3/8 | - 18 | **TSK37480** | ANSI | 16.866 | 65 | 28 | 17.65 | 14 | 11 | 14 | 4 |
| NPT 1/2 | - 14 | **TSK37560** | ANSI | 20.980 | 80 | 35 | 22.85 | 18 | 14 | 17 | 4 |
| NPT 3/4 | - 14 | **TSK37700** | ANSI | 26.325 | 85 | 35 | 22.95 | 23 | 17 | 20 | 4 |
| NPT 1 | - 11 1/2 | **TSK37780** | ANSI | 32.934 | 95 | 45 | 27.40 | 26 | 21 | 24 | 5 |

►Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ○ | ○ | ○ | | | ○ | | | | ○ | | | | | ○ | ○ | ○ | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400Rm | 1050Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | ○ | ○ | | | | | | | | | | | | | | |

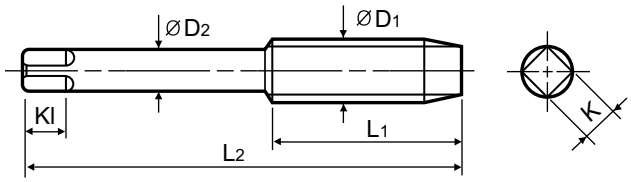
# SKS21 PIPE TAPS

**TSK38 SERIES**

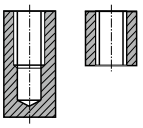
## NPS STRAIGHT PIPE TAPS for NPS THREADS
## NPS螺纹用直管丝锥

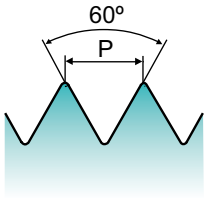
► Suitable for process Straight pipe internal threads.
NPS : American Straight pipe threads (for pressure-tight joints)

► 适用于锥管螺纹加工
NPS : 锥管螺纹（用于压力密封接头）




Hole type
孔类型
2.0×D






Material groups **GS** | SKS21 | NPS | ANSI | 60° | 3.0P | Bright

p. B223

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| TAPPING ER CHUCK | D215 -220 |
| TAPPING CHUCK | D221 -228 |
| ONE STEP TAPPING CHUCK | D211 -213 |

Unit(单位) : mm

| SIZE 尺寸 ØD1 | TPI 牙距 | EDP No. 型号 | Limit 精度 | Basic Maj. Dia. 最大基准直径 | Overall Length 全长 L2 | Thread Length 螺纹长 L1 | Shank Diameter 柄径 ØD2 | Square Size 方块 尺寸 K | Square Length 方块 长度 Kl | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|---|---|---|
| NPS 1/8 | 27 | TSK38202 | ANSI | 10.117 | 55 | 19 | 8 | 6 | 9 | 4 |
| NPS 1/4 | 18 | TSK38402 | ANSI | 13.426 | 62 | 28 | 11 | 9 | 12 | 4 |
| NPS 3/8 | 18 | TSK38482 | ANSI | 16.866 | 65 | 28 | 14 | 11 | 14 | 4 |
| NPS 1/2 | 14 | TSK38562 | ANSI | 20.980 | 80 | 35 | 18 | 14 | 17 | 4 |
| NPS 3/4 | 14 | TSK38702 | ANSI | 26.325 | 85 | 35 | 23 | 17 | 20 | 4 |
| NPS 1 | 11 1/2 | TSK38782 | ANSI | 30.934 | 95 | 45 | 26 | 21 | 24 | 5 |
| NPS 1*1/4 | 11 1/2 | TSK38862 | ANSI | 41.689 | 105 | 45 | 32 | 26 | 30 | 5 |
| NPS 1*1/2 | 11 1/2 | TSK38962 | ANSI | 47.760 | 110 | 45 | 38 | 29 | 32 | 6 |
| NPS 2 | 11 1/2 | TSK38D22 | ANSI | 59.800 | 120 | 50 | 46 | 35 | 38 | 6 |

►Refer to p.B233-B238 for recommended tap drill sizes. 参考p.B233-B238 底孔尺寸.

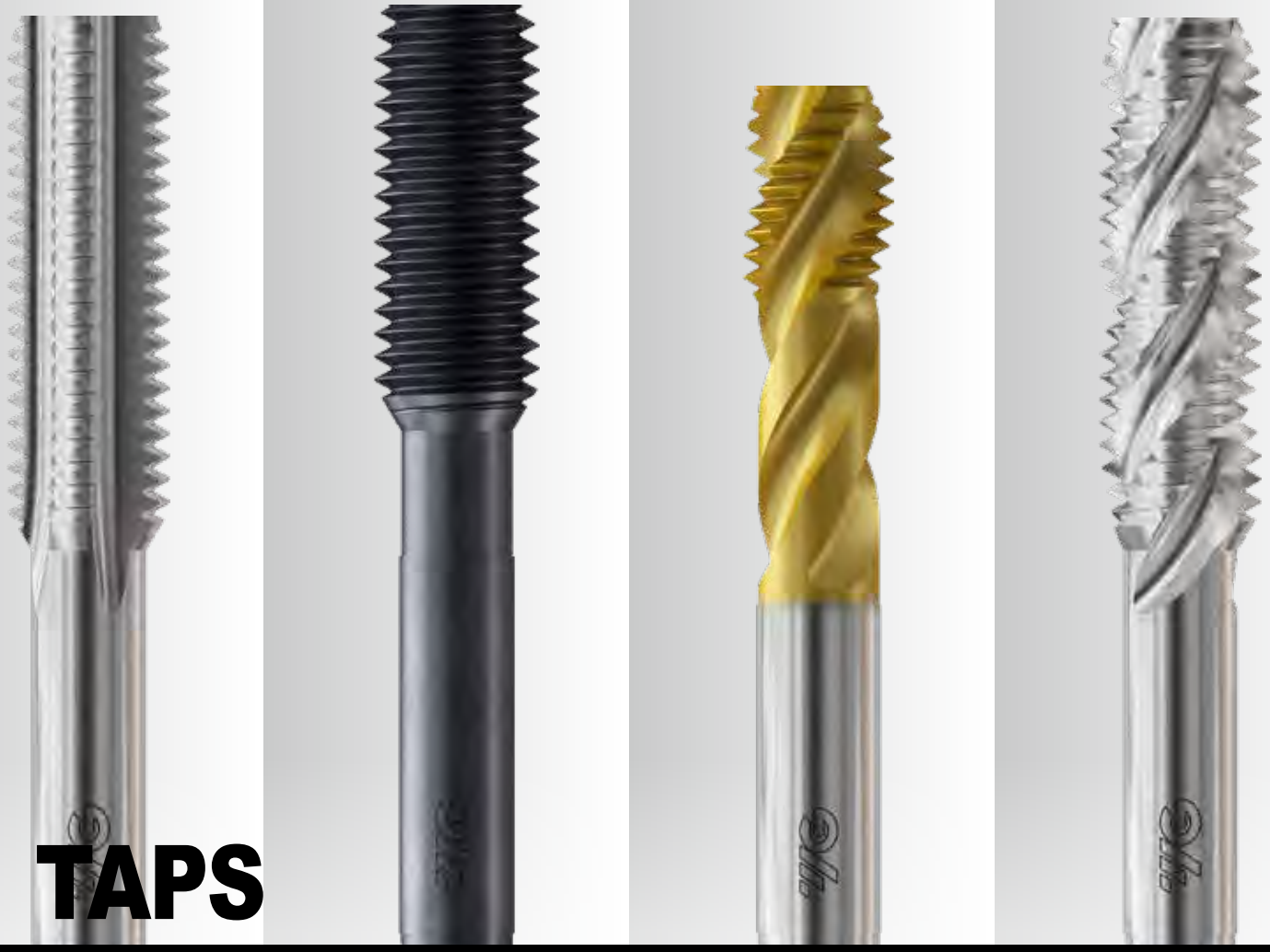
◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ○ | ○ | ○ | | | ○ | | | | ○ | | | | | ○ | ○ | ○ | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400Rm | 1050Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | | | ○ | ○ | | | | | | | | | | | | | | |

YG

Leading Through Innovation



# TAPS

# TECHNICAL DATA

# TECHNICAL DATA SUPER CUTTING TAPS

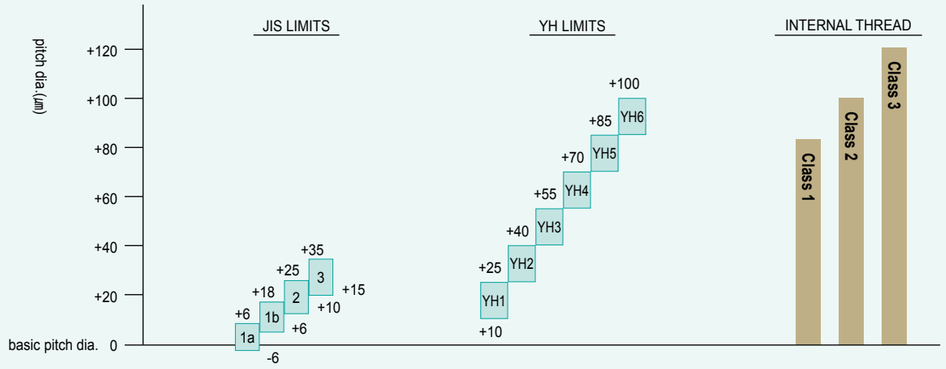
## 1 YG-1 YH LIMIT SYSTEM
## YG-1 YH精度体系

YG-1 applies a unique system of tap pitch diameter limits. We call it the YH limits system. Using the step method, you can select the best tap pitch diameter limits to match your work condition.
YG-1使用一套独特的丝锥中径精度 我们叫它YH精度体系 用等级方法, 你可选择最合适你工件条件的丝锥 中径精度.
YH limit Most of Y.G-1's taps use this limit system. The limits calculated as follows;
YH精度, 为大多数YG-1的丝锥所采用 精度计算如下.

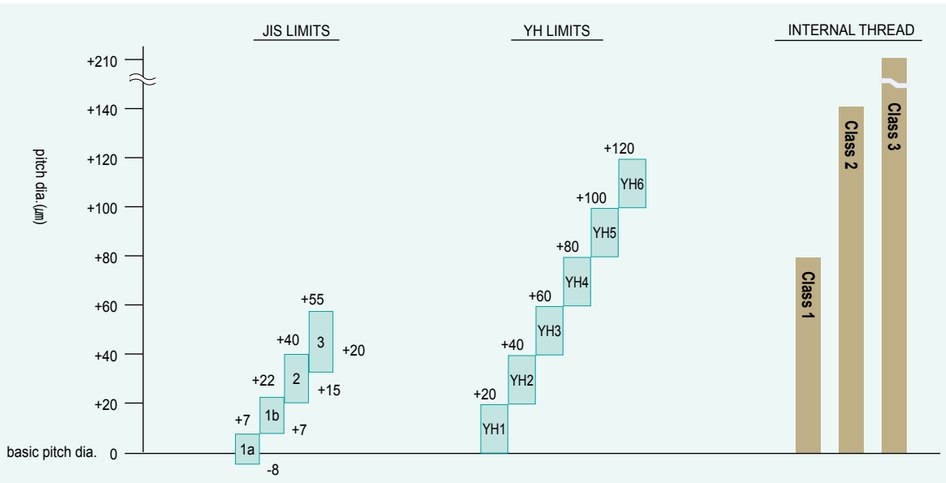
**1. Up to 0.6P (40TPI)**
upper limits : 10㎛+15㎛×n
lower limit : (upper limits) - 15㎛
**n=YH No.**

**2. Above 0.7P (36TPI)**
upper limits : 20㎛×n
lower limit : (upper limits) - 20㎛
**n=YH No.**

**Example M3×0.5 / 例如M3×0.5**




**Example M10×1.5 / 例如M10×1.5**

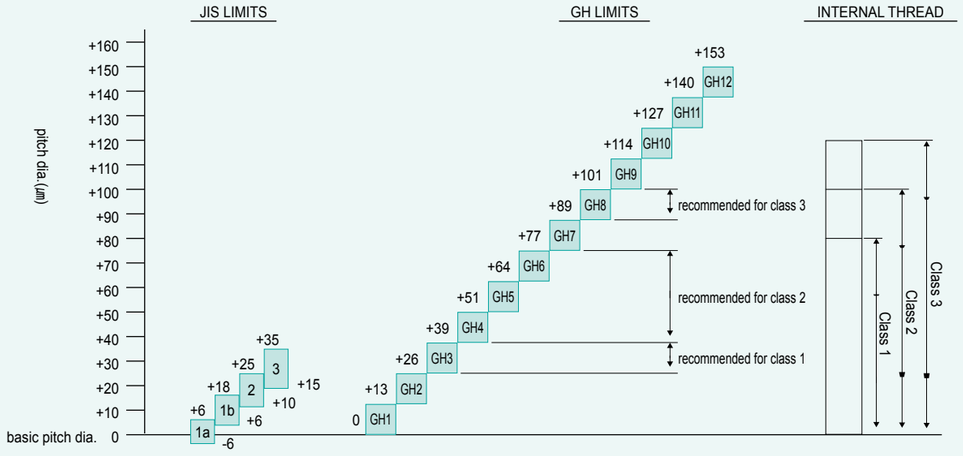




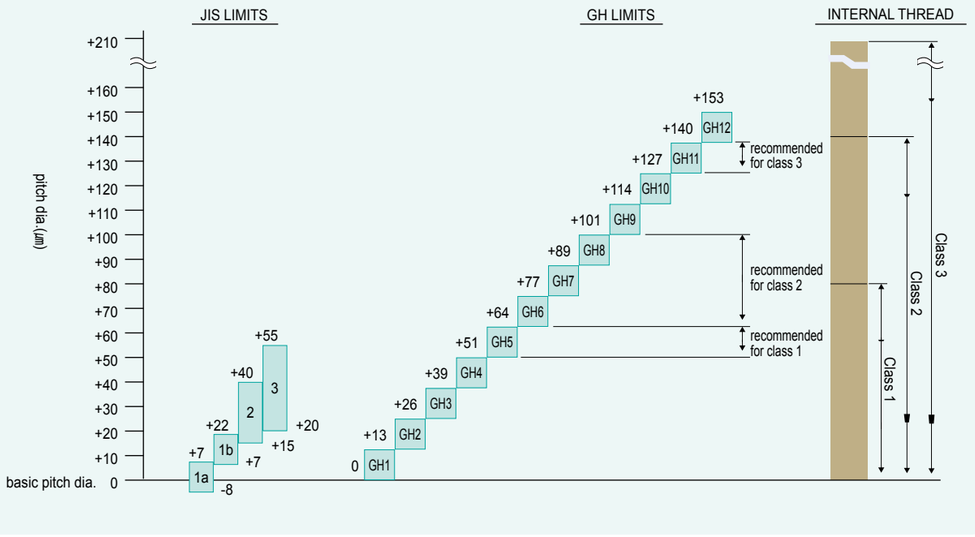

## 2 YG-1 GH LIMIT SYSTEM
## YG-1 GH精度体系

YG-1's fluteless taps are described by the GH limit system. The limits are established by increments of 12.7㎛.
YG-1的挤压丝锥采用GH精度体系 精度是按12.7㎛的增量确定的.

**Example M3×0.5 / 例如M3×0.5**




**Example M10×1.5 / 例如M10×1.5**



## 3 RECOMMENDED TAPPING SPEEDS
## 推荐的攻丝速度

### RECOMMENDED TAPPING SPEED AND CUTTING FLUIDS
### 推荐攻丝速度

This chart shows the recommended tapping speeds and cutting fluids. Tap material, type of tap chamfer length, dimension of drill hole, work materials and cutting fluids are important factors for determining suitable tapping speed.
Lubrication, cooling capability and adhesion Resistance are the three important factors effecting cutting fluid.
表中列出推荐的攻丝速度和切削液 丝锥材质, 丝锥倒角长度的形式底孔尺寸, 工件尺寸和切削液是决定合适的攻丝速度 的重要因素.
润滑, 冷却能力和抗粘合性是影响切削液的3个重要因素

| WORK MATERIALS | | TAPPING SPEED (m/min) | | | | | | CUTTING FLUIDS |
|---|---|---|---|---|---|---|---|---|
| | | SPIRAL FLUTED TAP | GUN POINTED TAP | STRAIGHT FLUTED TAP | FLUTELESS TAP | SOLID CARBIDE TAP | PIPE TAP | |
| LOW CARBON STEELS | ≦C0.2% | 8 ~ 13 | 15 ~ 25 | 8 ~ 13 | 8 ~ 13 | — | 3 ~ 6 | Sulfochlorinated Oil (Active Type) Tapping Paste EP Additive Non-Water-Soluble Cutting Fluid (Emulsion Type) |
| MEDIUM CARBON STEELS | C0.25~0.40% | 7 ~ 12 | 10 ~ 15 | 7 ~ 12 | 7 ~ 10 | — | 3 ~ 6 | |
| HIGH CARBON STEELS | ≧C0.45% | 6 ~ 9 | 8 ~ 13 | 6 ~ 9 | 5 ~ 8 | — | 2 ~ 5 | |
| ALLOY STEELS | SCM | 7 ~ 12 | 10 ~ 15 | 7 ~ 12 | 5 ~ 8 | — | 2 ~ 5 | |
| HARDENED STEELS | HRc 25~40 | 3 ~ 5 (4 ~ 8) | 4 ~ 6 (6 ~ 10) | 3 ~ 5 (4 ~ 8) | — | — | 2 ~ 5 | |
| STAINLESS STEELS | SUS | 5 ~ 8 | 8 ~ 13 | 4 ~ 7 | 5 ~ 10 | — | 5 ~ 10 | |
| TOOL STEELS | SKD | 6 ~ 9 | 7 ~ 10 | 6 ~ 9 | — | — | 2 ~ 5 | |
| CAST STEELS | SC | 6 ~ 11 | 10 ~ 15 | 6 ~ 11 | — | — | 2 ~ 5 | |
| CAST IRON | FC | — | — | 10 ~ 15 | — | 10 ~ 20 | 2 ~ 5 | Water-Soluble Cutting Fluid (Emulsion Type) Non-Water-Soluble Cutting Fluid |
| HIGH TENSION CAST IRON | FCD | 7 ~ 12 | 10 ~ 20 | 7 ~ 12 | — | 10 ~ 20 | 4 ~ 8 | |
| COPPER | Cu | 6 ~ 11 | 7 ~ 12 | 6 ~ 9 | 7 ~ 12 | 10 ~ 20 | 2 ~ 5 | Non-Water-Soluble Cutting Fluid (Inactive Type) Water-Soluble Cutting Fluid (Emulsion Type) |
| BRASS BRASS CASTING | Bs, BsC | 10 ~ 20 | 15 ~ 25 | 10 ~ 15 | 7 ~ 12 | 15 ~ 25 | 5 ~ 10 | |
| BRONZE BORNZE CASTING | PB, PBC | 6 ~ 11 | 10 ~ 20 | 6 ~ 11 | 7 ~ 12 | 10 ~ 20 | 6 ~ 11 | |
| ALUMINUM ROLLED STEELS | AL | 10 ~ 20 | 15 ~ 25 | 10 ~ 20 | 10 ~ 20 | — | 5 ~ 10 | |
| ALUMINUM ALLOY CASTING | AC, ADC | 10 ~ 15 | 15 ~ 20 | 10 ~ 15 | 10 ~ 15 | 10 ~ 20 | 10 ~ 15 | |
| MAGNESIUM ALLOY CASTING | MC | 7 ~ 12 | 10 ~ 15 | 7 ~ 12 | — | 10 ~ 20 | 10 ~ 15 | |
| ZINC ALLOY CASTING | ZDC | 7 ~ 12 | 10 ~ 15 | 7 ~ 12 | 7 ~ 12 | 10 ~ 20 | 10 ~ 15 | |
| THERMOSETTING PLASTIC | BAKELITE PHENOL, EPOXY | — | — | 10 ~ 20 | — | 15 ~ 25 | 5 ~ 10 | Water-Soluble Cutting Fluid Mist Lubrication Air Cooling, Dry |
| THERMOPLASTIC | VINYL CHLORIDE NYLON | 10 ~ 15 | 10 ~ 20 | 10 ~ 20 | — | 10 ~ 20 | 5 ~ 10 | |

1. These are general recommendations which depending upon conditions, may be altered.
2. To select the best taps, please see Tap Recommended Table.
3. ( )=recommendation for HSS-PM taps.
1.这些是一般的建议, 根据实际条件, 可能有变火.
2.要选择最适合的丝锥, 请参考丝锥推荐表
3.( )=是关于HSS-PM丝锥的推荐





## 4 RECOMMENDED TAP DRILL SIZES
## 推荐攻丝底孔尺寸

### FOR METRIC THREADS
### 公制螺纹

| Thread Size | Drill Size (mm) | D1 (mm) | |
|---|---|---|---|
| | | Max. | Min. |
| M2 × 0.4 | 1.60 | 1.679 | 1.567 |
| M2 × 0.25 | 1.75 | (1.785) | (1.729) |
| M2.2 × 0.45 | 1.75 | 1.838 | 1.713 |
| M2.2 × 0.25 | 1.95 | (1.985) | (1.929) |
| M2.2 × 0.4 | 1.90 | 1.979 | 1.867 |
| M2.3 × 0.25 | 2.05 | 2.061 | 2.001 |
| M2.5 × 0.45 | 2.10 | 2.138 | 5.013 |
| M2.5 × 0.35 | 2.20 | 2.221 | 2.121 |
| M2.6 × 0.45 | 2.20 | 2.238 | 2.113 |
| M2.6 × 0.35 | 2.20 | 2.246 | 2.186 |
| M3 × 0.5 | 2.50 | 2.599 | 2.459 |
| M3 × 0.35 | 2.70 | 2.721 | 2.621 |
| M3.5 × 0.6 | 2.90 | 3.010 | 2.850 |
| M3.5 × 0.35 | 3.20 | 3.221 | 3.121 |
| M4 × 0.7 | 3.30 | 3.422 | 3.242 |
| M4 × 0.5 | 3.50 | 3.599 | 3.459 |
| M4.5 × 0.75 | 3.80 | 3.878 | 3.688 |
| M4.5 × 0.5 | 4.00 | 4.099 | 3.959 |
| M5 × 0.8 | 4.20 | 4.334 | 4.134 |
| M5 × 0.5 | 4.50 | 4.599 | 4.459 |
| M6 × 1 | 5.00 | 5.153 | 4.917 |
| M6 × 0.75 | 5.30 | 5.378 | 5.188 |
| M6 × 0.5 | 5.50 | 5.550 | 5.400 |
| M7 × 1 | 6.00 | 6.153 | 5.917 |
| M7 × 0.75 | 6.30 | 6.378 | 6.188 |
| M7 × 0.5 | 6.50 | 6.550 | 6.400 |
| M8 × 1.25 | 6.80 | 6.912 | 6.647 |
| M8 × 1 | 7.00 | 7.153 | 6.917 |
| M8 × 0.75 | 7.30 | 7.378 | 7.188 |
| M8 × 0.5 | 7.50 | 7.520 | 7.400 |
| M9 × 1.25 | 7.80 | 7.912 | 7.647 |
| M9 × 1 | 8.00 | 8.153 | 7.917 |
| M9 × 0.75 | 8.30 | 8.378 | 8.188 |
| M10 × 1.5 | 8.50 | 8.676 | 8.376 |
| M10 × 1.25 | 8.80 | 8.912 | 8.647 |
| M10 × 1 | 9.00 | 9.153 | 8.917 |
| M10 × 0.75 | 9.30 | 9.378 | 9.188 |
| M10 × 0.5 | 9.50 | 9.520 | 9.400 |
| M11 × 1.5 | 9.50 | 9.676 | 9.376 |
| M11 × 1 | 10.00 | 10.153 | 9.917 |
| M11 × 0.75 | 10.30 | 10.378 | 10.188 |
| M12 × 1.75 | 10.30 | 10.441 | 10.106 |
| M12 × 1.5 | 10.50 | 10.676 | 10.376 |
| M12 × 1.25 | 10.80 | 10.912 | 10.647 |
| M12 × 1 | 11.00 | 11.153 | 10.917 |

| Thread Size | Drill Size (mm) | D1 (mm) | |
|---|---|---|---|
| | | Max. | Min. |
| M12 × 0.5 | 11.50 | 11.520 | 11.400 |
| M14 × 2 | 12.00 | 12.210 | 11.835 |
| M14 × 1.5 | 12.50 | 12.676 | 12.376 |
| M14 × 1 | 13.00 | 13.153 | 12.917 |
| M15 × 1.5 | 13.50 | 13.673 | 13.376 |
| M15 × 1 | 14.00 | 14.153 | 13.917 |
| M16 × 2 | 14.00 | 14.210 | 13.835 |
| M16 × 1.5 | 14.50 | 14.676 | 14.376 |
| M16 × 1 | 15.00 | 15.153 | 14.917 |
| M17 × 1.5 | 15.50 | 15.676 | 15.376 |
| M17 × 1 | 16.00 | 16.153 | 15.917 |
| M18 × 2.5 | 15.50 | 15.744 | 15.294 |
| M18 × 2 | 16.00 | 16.210 | 15.835 |
| M18 × 1.5 | 16.50 | 16.676 | 16.376 |
| M18 × 1 | 17.00 | 17.153 | 16.917 |
| M20 × 2.5 | 17.50 | 17.744 | 17.294 |
| M20 × 2 | 18.00 | 18.210 | 17.835 |
| M20 × 1.5 | 18.50 | 18.676 | 18.376 |
| M20 × 1 | 19.00 | 19.153 | 18.917 |
| M22 × 2.5 | 19.50 | 19.744 | 19.294 |
| M22 × 2 | 20.00 | 20.210 | 19.835 |
| M22 × 1.5 | 20.50 | 20.673 | 20.376 |
| M22 × 1 | 21.00 | 21.153 | 20.917 |
| M24 × 3 | 21.00 | 21.252 | 20.752 |
| M24 × 2 | 22.00 | 22.210 | 21.835 |
| M24 × 1.5 | 22.50 | 22.676 | 22.376 |
| M24 × 1 | 23.00 | 23.153 | 22.917 |
| M25 × 2 | 23.00 | 23.210 | 22.835 |
| M25 × 1.5 | 23.50 | 23.676 | 23.376 |
| M25 × 1 | 24.00 | 24.153 | 23.917 |
| M26 × 1.5 | 24.50 | 24.676 | 24.376 |
| M27 × 3 | 24.00 | 24.252 | 23.752 |
| M27 × 2 | 25.00 | 25.210 | 24.835 |
| M27 × 1.5 | 25.50 | 25.676 | 25.376 |
| M27 × 1 | 26.00 | 26.153 | 25.917 |
| M28 × 2 | 26.00 | 26.210 | 25.835 |
| M28 × 1.5 | 26.50 | 26.676 | 26.376 |
| M28 × 1 | 27.00 | 27.153 | 26.917 |
| M30 × 3.5 | 26.50 | 26.771 | 26.211 |
| M30 × 3 | 27.00 | 27.252 | 26.752 |
| M30 × 2 | 28.00 | 28.210 | 27.835 |
| M30 × 1.5 | 28.50 | 28.676 | 28.376 |
| M30 × 1 | 29.00 | 29.153 | 28.917 |
| M32 × 2 | 30.00 | 30.210 | 29.835 |
| M32 × 1.5 | 30.50 | 30.676 | 30.376 |

# TECHNICAL DATA SUPER CUTTING TAPS

## FOR METRIC THREADS
## 公制螺纹

| Thread Size | Drill Size (mm) | D1 (mm) | |
|---|---|---|---|
| | | Max. | Min. |
| M33 × 3.5 | 29.50 | 29.771 | 29.211 |
| M33 × 3 | 30.00 | 30.252 | 29.752 |
| M33 × 2 | 31.00 | 31.210 | 30.835 |
| M33 × 1.5 | 31.50 | 31.676 | 31.376 |
| M35 × 1.5 | 33.50 | 33.676 | 33.376 |
| M36 × 4 | 32.00 | 32.270 | 31.670 |
| M36 × 3 | 33.00 | 33.252 | 32.752 |
| M36 × 2 | 34.00 | 34.210 | 33.835 |
| M36 × 1.5 | 34.50 | 34.676 | 34.376 |
| M38 × 1.5 | 36.50 | 36.676 | 36.376 |
| M39 × 4 | 35.00 | 35.270 | 34.670 |
| M39 × 3 | 36.00 | 36.252 | 35.752 |
| M39 × 2 | 37.00 | 37.210 | 36.835 |
| M39 × 1.5 | 37.50 | 37.676 | 37.376 |
| M40 × 3 | 37.00 | 37.252 | 36.752 |
| M40 × 2 | 38.00 | 38.210 | 37.835 |
| M40 × 1.5 | 38.50 | 38.676 | 38.376 |
| M42 × 4.5 | 37.50 | 37.799 | 37.129 |

| Thread Size | Drill Size (mm) | D1 (mm) | |
|---|---|---|---|
| | | Max. | Min. |
| M42 × 4 | 38.00 | 38.270 | 37.670 |
| M42 × 3 | 39.00 | 39.252 | 38.752 |
| M42 × 2 | 40.00 | 40.210 | 39.835 |
| M42 × 1.5 | 40.50 | 40.676 | 40.376 |
| M45 × 4.5 | 40.50 | 40.799 | 40.129 |
| M45 × 4 | 41.00 | 41.270 | 40.670 |
| M45 × 3 | 42.00 | 42.252 | 41.752 |
| M45 × 2 | 43.00 | 43.210 | 72.835 |
| M45 × 1.5 | 43.50 | 43.676 | 73.376 |
| M48 × 5 | 43.00 | 43.297 | 42.587 |
| M48 × 4 | 44.00 | 44.270 | 43.670 |
| M48 × 3 | 45.00 | 45.252 | 44.752 |
| M48 × 2 | 46.00 | 46.210 | 45.835 |
| M48 × 1.5 | 46.50 | 46.676 | 46.376 |
| M50 × 3 | 47.00 | 47.252 | 46.752 |
| M50 × 2 | 48.00 | 48.210 | 47.835 |
| M50 × 1.5 | 48.50 | 48.676 | 48.376 |

D1 : Minor diameter of JIS calss internal thread. But, the minor diameter D1 shown in ( ) are of JIS class 1 internal threads because their nominal sizes are not specified in JIS Class 2.

D1 : JIS级内螺纹小径 但 ( )内的 D1是JIS 1级内螺纹因为它们的公称尺寸在JIS2级中未指定.

## FOR UNIFIED THREADS
## 英制螺纹

| Thread Size | Drill Size (mm) | D1 (mm) | |
|---|---|---|---|
| | | Max. | Min. |
| #2 - 56 UNC | 1.80 | 1.871 | 1.695 |
| #2 - 64 UNF | 1.85 | 1.912 | 1.756 |
| #3 - 48 UNC | 2.10 | 2.146 | 1.941 |
| #3 - 56 UNF | 2.10 | 2.197 | 2.025 |
| #4 - 40 UNC | 2.30 | 2.385 | 2.157 |
| #4 - 48 UNF | 2.40 | 2.458 | 2.271 |
| #5 - 40 UNC | 2.60 | 2.697 | 2.487 |
| #5 - 44 UNF | 2.70 | 2.740 | 2.551 |
| #6 - 32 UNC | 2.80 | 2.895 | 2.642 |
| #6 - 40 UNF | 2.90 | 3.022 | 2.820 |
| #8 - 32 UNC | 3.40 | 3.530 | 3.302 |
| #8 - 36 UNF | 3.50 | 3.606 | 3.404 |
| #10 - 24 UNC | 3.90 | 3.962 | 3.683 |
| #10 - 32 UNF | 4.10 | 4.165 | 3.963 |
| #12 - 24 UNC | 4.50 | 4.597 | 4.344 |
| #12 - 28 UNF | 4.60 | 4.724 | 4.496 |
| #12 - 32 UNF | 4.70 | 4.826 | 4.623 |
| 1/4 - 20 UNC | 5.10 | 5.257 | 4.979 |

| Thread Size | Drill Size (mm) | D1 (mm) | |
|---|---|---|---|
| | | Max. | Min. |
| 1/4 - 28 UNF | 5.50 | 5.588 | 5.360 |
| 1/4 - 32 UNEF | 5.60 | 5.690 | 5.486 |
| 5/16 - 18 UNC | 6.60 | 6.731 | 6.401 |
| 5/16 - 24 UNF | 6.90 | 7.035 | 6.782 |
| 5/16 - 32 UNEF | 7.10 | 7.264 | 7.087 |
| 3/8 - 16 UNC | 8.00 | 8.153 | 7.798 |
| 3/8 - 24 UNF | 8.50 | 8.636 | 8.382 |
| 3/8 - 32 UNEF | 8.70 | 8.865 | 8.661 |
| 7/16 - 14 UNC | 9.40 | 9.550 | 9.144 |
| 7/16 - 20 UNF | 9.90 | 10.033 | 9.729 |
| 7/16 - 28 UNEF | 10.20 | 10.338 | 10.135 |
| 1/2 - 13 UNC | 10.80 | 11.023 | 10.592 |
| 1/2 - 20 UNF | 11.50 | 11.607 | 11.329 |
| 1/2 - 28 UNEF | 11.80 | 11.938 | 11.709 |
| 9/16 - 12 UNC | 12.20 | 12.446 | 11.989 |
| 9/16 - 18 UNF | 12.90 | 13.081 | 12.751 |
| 9/16 - 24 UNEF | 13.20 | 13.386 | 13.132 |
| 5/8 - 11 UNC | 13.60 | 13.868 | 13.386 |



CARBIDE
HSS
THREAD MILLS
SYNCHRO TAPS
COMBO TAPS
YG TAP GENERAL
YG TAP STEEL
YG TAP HARDENED
YG TAP INOX
YG TAP CAST IRON
YG TAP ALU
YG TAP Ti Ni
YG TAP FORMING
STI TAPS
PIPE TAPS
SKS21 HAND TAPS
SKS21 PIPE TAPS
TECHNICAL DATA

TECHNICAL DATA SUPER CUTTING TAPS

## FOR UNIFIED THREADS
## 英制螺纹

| Thread Size | Drill Size (mm) | D1 (mm) | |
|---|---|---|---|
| | | Max. | Min. |
| 5/8 - 18 UNF | 14.50 | 14.681 | 14.351 |
| 5/8 - 24 UNEF | 14.80 | 14.986 | 14.732 |
| 3/4 - 10 UNC | 16.50 | 16.840 | 16.307 |
| 3/4 - 16 UNF | 17.50 | 17.678 | 17.323 |
| 3/4 - 20 UNEF | 17.80 | 17.958 | 17.678 |
| 7/8 - 9 UNC | 19.50 | 19.761 | 19.177 |
| 7/8 - 14 UNF | 20.50 | 20.675 | 20.270 |
| 7/8 - 20 UNEF | 21.00 | 21.133 | 20.853 |
| 1 - 8 UNC | 22.20 | 22.606 | 21.971 |
| 1 - 12 UNF | 23.20 | 23.571 | 23.114 |
| 1 - 20 UNEF | 24.00 | 24.308 | 24.028 |
| 1∗1/8 - 7 UNC | 25.00 | 25.349 | 24.638 |
| 1∗1/8 - 12 UNF | 26.50 | 26.746 | 26.289 |
| 1∗1/8 - 18 UNEF | 27.20 | 27.381 | 27.051 |
| 1∗1/8 - 8 UN | 25.50 | 25.781 | 25.146 |
| 1∗1/4 - 7 UNC | 28.20 | 28.524 | 27.813 |
| 1∗1/4 - 12 UNF | 29.50 | 29.921 | 29.464 |
| 1∗1/4 - 18 UNEF | 30.20 | 30.556 | 30.226 |

| Thread Size | Drill Size (mm) | D1 (mm) | |
|---|---|---|---|
| | | Max. | Min. |
| 1∗1/4 - 8 UN | 28.50 | 28.956 | 28.321 |
| 1∗3/8 - 6 UNC | 30.80 | 31.115 | 30.353 |
| 1∗3/8 - 12 UNF | 32.80 | 33.096 | 32.639 |
| 1∗3/8 - 18 UNEF | 33.50 | 33.731 | 33.401 |
| 1∗3/8 - 8 UN | 31.80 | 32.131 | 31.496 |
| 1∗1/2 - 6 UNC | 34.00 | 34.290 | 33.528 |
| 1∗1/2 - 12 UNF | 36.00 | 36.271 | 35.814 |
| 1∗1/2 - 18 UNEF | 36.50 | 36.881 | 36.576 |
| 1∗1/2 - 8 UN | 35.00 | 35.306 | 34.671 |
| 1∗5/8 - 18 UNEF | 39.80 | 40.081 | 39.751 |
| 1∗5/8 - 8 UN | 38.20 | 38.481 | 37.846 |
| 1∗5/8 - 12 UN | 39.20 | 39.446 | 38.989 |
| 1∗3/4 - 5 UNC | 39.50 | 39.827 | 38.964 |
| 1∗3/4 - 8 UN | 41.20 | 41.656 | 41.021 |
| 1∗3/4 - 12 UN | 42.20 | 42.621 | 42.164 |
| 2 - 4∗1/2 UNC | 45.20 | 45.593 | 44.679 |
| 2 - 8 UN | 47.80 | 48.006 | 47.371 |
| 2 - 12 UN | 48.50 | 48.971 | 48.514 |

D1 : Minor diameter of internal thread.
For UNC and UNF threads, according to JIS Class 2B ;
For UNEF and UN threads, according to ANSI B1.1 Class 2B

D1 : 内螺纹小径.
对 UNC 和UNF螺纹, 按照JIS 2B级
对UNEF和UN螺纹, 按照 ANSI B1, 1a, 2B级.

## FOR WHITWORTH THREADS
## 惠氏螺纹

| Thread Size | Drill Size (mm) | |
|---|---|---|
| | A | B |
| W1/8 - 40 | 2.65 | 2.60 |
| W5/32 - 32 | 3.25 | 3.20 |
| W3/16 - 24 | 3.75 | 3.70 |
| W1/4 - 20 | 5.10 | 5.00 |
| W5/16 - 18 | 6.60 | 6.50 |
| W3/8 - 16 | 8.00 | 7.90 |
| W7/16 - 14 | 9.40 | 9.30 |
| W1/2 - 12 | 10.70 | 10.50 |
| W9/16 - 12 | 12.30 | 12.00 |
| W5/8 - 11 | 13.70 | 13.50 |
| W3/4 - 10 | 16.70 | 16.50 |

| Thread Size | Drill Size (mm) | |
|---|---|---|
| | A | B |
| W7/8 - 9 | 19.50 | 19.30 |
| W1 - 8 | 22.40 | 22.00 |
| W1∗1/8 - 7 | 25.00 | 24.80 |
| W1∗1/4 - 7 | 28.30 | 28.00 |
| W1∗3/8 - 6 | 30.50 | 30.30 |
| W1∗1/2 - 6 | 33.80 | 33.50 |
| W1∗5/8 - 5 | 36.00 | 35.70 |
| W1∗3/4 - 5 | 39.20 | 39.00 |
| W1∗7/8 - 4∗1/2 | 41.80 | 41.50 |
| W2 - 4∗1/2 | 45.00 | 44.70 |

Generally the tap drill sizes in column A are used for producing holes ; When holes tend to be cut oversized the tap drill sizes in column B should be Selected.
通常A栏的螺纹底孔的钻头尺寸是用于加工孔的 ; 当孔的尺寸趋向变大时应选择B栏的螺纹底孔的钻头尺寸.

# TECHNICAL DATA SUPER CUTTING TAPS

## PT TAPER PIPE THREADS
PT锥形管螺纹

| Thread Size | Drill Size (mm) | | Internal Thread Minor Dia. on [Min] Length of Useful Thread (mm) | Internal Thread Minor Dia. on [Min] Gauge Length (mm) |
|---|---|---|---|---|
| | With Reaming Before Tapping | Without Reaming Before Tapoping | | |
| PT 1/16 - 28 | 6.10 | 6.10 | 6.244 | 6.384 |
| PT 1/8 - 28 | 8.10 | 8.10 | 8.249 | 8.388 |
| PT 1/4 - 19 | 10.70 | 10.70 | 10.962 | 11.174 |
| PT 3/8 - 19 | 14.20 | 14.20 | 14.448 | 14.658 |
| PT 1/2 - 14 | 17.60 | 17.60 | 17.979 | 18.263 |
| PT 3/4 - 14 | 23.00 | 23.00 | 23.378 | 23.663 |
| PT 1 - 11 | 29.00 | 29.00 | 29.459 | 29.822 |
| PT 1＊1/4 - 11 | 37.50 | 37.50 | 37.976 | 38.339 |
| PT 1＊1/2 - 11 | 43.40 | 43.40 | 43.869 | 44.232 |
| PT 2 - 11 | 54.90 | 54.90 | 55.412 | 55.844 |

## PS STRAIGHT PIPE THREADS
PS直形管螺纹

| Thread Size | Drill Size (mm) | D1 (mm) | |
|---|---|---|---|
| | | Max. | Min. |
| PS 1/16 - 28 | 6.50 | 6.632 | 6.490 |
| PS 1/8 - 28 | 8.50 | 8.637 | 8.495 |
| PS 1/4 - 19 | 11.40 | 11.549 | 11.341 |
| PS 3/8 - 19 | 15.00 | 15.054 | 14.846 |
| PS 1/2 - 14 | 18.50 | 18.773 | 18.489 |

| Thread Size | Drill Size (mm) | D1 (mm) | |
|---|---|---|---|
| | | Max. | Min. |
| PS 3/4 - 14 | 24.00 | 24.259 | 23.975 |
| PS 1 - 11 | 30.20 | 30.471 | 30.111 |
| PS 1＊1/4 - 11 | 38.80 | 39.132 | 38.772 |
| PS 1＊1/2 - 11 | 44.80 | 45.025 | 44.665 |
| PS 2 - 11 | 56.50 | 56.836 | 56.476 |

## PF STRAIGHT PIPE THREADS
PF直形管螺纹

| Thread Size | Drill Size (mm) | D1 (mm) | |
|---|---|---|---|
| | | Max. | Min. |
| PS 1/16 - 28 | 6.70 | 6.843 | 6.561 |
| PS 1/8 - 28 | 8.70 | 8.848 | 8.566 |
| PS 1/4 - 19 | 11.70 | 11.890 | 11.445 |
| PS 3/8 - 19 | 15.20 | 15.395 | 14.950 |
| PS 1/2 - 14 | 19.00 | 19.172 | 18.631 |

| Thread Size | Drill Size (mm) | D1 (mm) | |
|---|---|---|---|
| | | Max. | Min. |
| PF 3/4 - 14 | 24.50 | 24.658 | 24.117 |
| PF 1 - 11 | 30.50 | 30.931 | 30.291 |
| PF 1＊1/4 - 11 | 39.20 | 39.592 | 38.952 |
| PF 1＊1/2 - 11 | 45.00 | 45.485 | 44.845 |
| PF 2 - 11 | 57.00 | 57.296 | 56.656 |



TECHNICAL DATA SUPER CUTTING TAPS

## NPT TAPER PIPE THREADS
NPT锥形管螺纹

| Thread Size | Drill Size (mm) | | | |
|---|---|---|---|---|
| | With Reaming Before Tapping | | Without Reaming Before Tapoping | |
| | mm | inch | mm | inch |
| NPT 1/16 - 27 | 5.94 | 0.234 | 6.15 | 0.242 |
| NPT 1/8 - 27 | 8.33 | 0.328 | 8.43 | 0.332 |
| NPT 1/4 - 18 | 10.72 | 0.422 | 11.13 | 0.438 |
| NPT 3/8 - 18 | 14.27 | 0.562 | 14.27 | 0.562 |
| NPT 1/2 - 14 | 17.48 | 0.688 | 17.86 | 0.703 |
| NPT 3/4 - 14 | 22.63 | 0.891 | 23.01 | 0.906 |
| NPT 1 - 11＊1/2 | 28.58 | 1.125 | 28.98 | 1.141 |
| NPT 1＊1/4 - 11＊1/2 | 37.31 | 1.469 | 37.69 | 1.484 |
| NPT 1＊1/2 - 11＊1/2 | 43.26 | 1.703 | 43.66 | 1.719 |
| NPT 2 - 11＊1/2 | 55.17 | 2.172 | 55.58 | 2.188 |
| NPT 2/1/2 - 8 | 65.48 | 2.578 | 66.27 | 2.609 |

## NPTF TAPER PIPE THREADS
NPTF锥形管螺纹

| Thread Size | Drill Size (mm) | | | |
|---|---|---|---|---|
| | With Reaming Before Tapping | | Without Reaming Before Tapoping | |
| | mm | inch | mm | inch |
| NPTF 1/16 - 27 | 5.94 | 0.234 | 6.15 | 0.242 |
| NPTF 1/8 - 27 | 8.33 | 0.328 | 8.43 | 0.332 |
| NPTF 1/4 - 18 | 10.72 | 0.422 | 11.13 | 0.438 |
| NPTF 3/8 - 18 | 14.27 | 0.562 | 14.27 | 0.562 |
| NPTF 1/2 - 14 | 17.48 | 0.688 | 17.86 | 0.703 |
| NPTF 3/4 - 14 | 22.63 | 0.891 | 23.01 | 0.906 |
| NPTF 1 - 11＊1/2 | 28.58 | 1.125 | 28.98 | 1.141 |
| NPTF 1＊1/4 - 11＊1/2 | 37.31 | 1.469 | 37.69 | 1.484 |
| NPTF 1＊1/2 - 11＊1/2 | 43.26 | 1.703 | 43.66 | 1.719 |
| NPTF 2 - 11＊1/2 | 55.17 | 2.172 | 55.58 | 2.188 |
| NPTF 2/1/2 - 8 | 65.48 | 2.578 | 66.27 | 2.609 |

# TECHNICAL DATA SUPER CUTTING TAPS

## FOR FLUTELESS TAPS
## 挤压丝锥

| Thread Size | Drill Size (mm) Tap Limits | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | GH4 | GH5 | GH6 | GH7 | GH8 | GH9 | GH10 | GH11 |
| **M2 × 0.4** | 1.83 | 1.84 | --- | --- | --- | --- | --- | --- |
| **M2.2 × 0.45** | 2.00 | 2.01 | --- | --- | --- | --- | --- | --- |
| **M2.3 × 0.4** | 2.13 | 2.14 | --- | --- | --- | --- | --- | --- |
| **M2.5 × 0.45** | 2.30 | 2.31 | --- | --- | --- | --- | --- | --- |
| **M2.6 × 0.45** | 2.40 | 2.41 | --- | --- | --- | --- | --- | --- |
| **M3 × 0.5** | 2.77 | 2.78 | 2.79 | 2.81 | --- | --- | --- | --- |
| **M3 × 0.35** | 2.85 | 2.87 | 2.88 | 2.89 | --- | --- | --- | --- |
| **M3.5 × 0.6** | --- | 3.23 | 3.24 | 3.25 | --- | --- | --- | --- |
| **M4 × 0.7** | --- | 3.67 | 3.68 | 3.70 | --- | --- | --- | --- |
| **M4 × 0.5** | --- | 3.78 | 3.79 | 3.81 | --- | --- | --- | --- |
| **M5 × 0.8** | --- | 4.61 | 4.63 | 4.64 | --- | --- | --- | --- |
| **M5 × 0.5** | --- | 4.78 | 4.79 | 4.81 | --- | --- | --- | --- |
| **M6 × 1** | --- | 5.50 | 5.51 | 5.53 | --- | --- | --- | --- |
| **M6 × 0.75** | --- | 5.64 | 5.65 | 5.67 | --- | --- | --- | --- |
| **M6 × 0.5** | --- | 5.78 | 5.79 | 5.81 | --- | --- | --- | --- |
| **M7 × 1** | --- | 6.50 | 6.51 | 6.53 | --- | --- | --- | --- |
| **M8 × 1.25** | --- | --- | 7.37 | 7.39 | 7.40 | --- | --- | --- |
| **M8 × 1** | --- | --- | 7.51 | 7.53 | 7.54 | --- | --- | --- |
| **M10 × 1.5** | --- | --- | 9.23 | 9.24 | 9.26 | 9.27 | --- | --- |
| **M10 × 1.25** | --- | --- | 9.37 | 9.39 | 9.40 | 9.41 | --- | --- |
| **M10 × 1** | --- | --- | 9.51 | 9.53 | 9.54 | 9.55 | --- | --- |
| **M12 × 1.75** | --- | --- | --- | 11.10 | 11.12 | 11.13 | 11.14 | --- |
| **M12 × 1.5** | --- | --- | --- | 11.24 | 11.26 | 11.27 | 11.28 | --- |
| **M12 × 1.25** | --- | --- | --- | 11.39 | 11.40 | 11.41 | 11.42 | --- |
| **M12 × 1** | --- | --- | --- | 11.53 | 11.54 | 11.55 | 11.56 | --- |
| **M14 × 2** | --- | --- | --- | --- | 12.98 | 12.99 | 13.00 | 13.01 |
| **M14 × 1.5** | --- | --- | --- | --- | 13.26 | 13.27 | 13.28 | 13.30 |
| **M14 × 1** | --- | --- | --- | --- | 13.54 | 13.55 | 13.56 | 13.58 |
| **M16 × 2** | --- | --- | --- | --- | 14.98 | 14.99 | 15.00 | 15.01 |
| **M16 × 1.5** | --- | --- | --- | --- | 14.26 | 15.27 | 15.28 | 15.30 |
| **M16 × 1** | --- | --- | --- | --- | 15.54 | 15.55 | 15.56 | 15.58 |
| **M18 × 2.5** | --- | --- | --- | --- | --- | 16.71 | 16.72 | 16.73 |
| **M18 × 1.5** | --- | --- | --- | --- | --- | 17.27 | 17.28 | 17.30 |
| **M20 × 2.5** | --- | --- | --- | --- | --- | --- | 18.72 | 18.73 |
| **M20 × 1.5** | --- | --- | --- | --- | --- | --- | 19.28 | 19.30 |

## FOR FLUTELESS TAPS
## 挤压丝锥

| Thread Size | Drill Size (mm) Tap Limits | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | GH4 | GH5 | GH6 | GH7 | GH8 | GH9 | GH10 | GH11 |
| **#2 - 56 UNC** | --- | 1.99 | 2.01 | --- | --- | --- | --- | --- |
| **#4 - 40 UNC** | --- | 2.55 | 2.56 | 2.58 | --- | --- | --- | --- |
| **#5 - 40 UNC** | --- | 2.88 | 2.89 | 2.91 | --- | --- | --- | --- |
| **#6 - 32 UNC** | --- | 3.12 | 3.13 | 3.15 | 3.16 | --- | --- | --- |
| **#8 - 32 UNC** | --- | --- | 3.80 | 3.81 | 3.82 | --- | --- | --- |
| **#10 - 24 UNC** | --- | --- | --- | 4.32 | 4.33 | 4.34 | --- | --- |
| **#12 - 24 UNC** | --- | --- | --- | 4.98 | 4.99 | 5.01 | --- | --- |
| **1/4 - 20 UNC** | --- | --- | --- | 5.72 | 5.74 | 5.75 | --- | --- |



CARBIDE
HSS
THREAD MILLS
SYNCHRO TAPS
COMBO TAPS
YG TAP GENERAL
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YG TAP HARDENED
YG TAP INOX
YG TAP CAST IRON
YG TAP ALU
YG TAP Ti Ni
YG TAP FORMING
STI TAPS
PIPE TAPS
SKS21 HAND TAPS
SKS21 PIPE TAPS
TECHNICAL DATA

TECHNICAL DATA SUPER CUTTING TAPS

## SYMBOL USED FOR STANDARD THREADS (PARTIAL LISTING)
## 标准螺纹规格(部分)

| Thread Symbol | Thread | | Reference Standard | Thread Angle |
|---|---|---|---|---|
| **M** | Metric screw threads | Coarse series | JIS B 0205 | 60° |
| | | Fine series | JIS B 0207 | |
| **S** | Metric screw threads | | JIS B 0201 | |
| **UNC** | Unified threads | Coarse series | JIS B 0206 | |
| | | | ANSI B1.1 | |
| **UNF** | | Fine series | JIS B 0208 | |
| **UNEF** | | Extra-fine series | ANSI B1.1 | |
| **UNS** | | Special diameter, pitch, & length of engagment | | |
| **UN** | | Constant-pitch series | | |
| **UNJC** | Unified threads (MIL Standard) | Coarse series | MIL-S-8879 | |
| **UNJF** | | Fine series | | |
| **UNJEF** | | Extra-fine series | | |
| **UNJ** | | Constant-pitch series | | |
| **Tr** | Metric trapezoidal screw threads | | JIS B 0216 | 30° |
| **TM** | 30° Trapezoidal screw threads | | JIS B 0216 Appendix | |
| **TW** | 29° Trapezoidal screw threads | | JIS B 0222 | 29° |
| **R** | Pipe threads where pressure-tight joints are made on the threads | Taper external pipe threads | JIS B 0203 | 55° 1/16 Taper |
| **Rc** | | Taper internal pipe threads | | |
| **Rp** | | Parallel internal pipe threads | | 55° |
| **G** | Pipe threads where pressure-tight joints are not made on the threads | | JIS B 0202 | |
| **PF** | Parallel pipe threads (For mechanical joints) | | JIS B 0202 Appendix | |
| **PT** | Taper pipe threads | (For pressure-tight joints) | JIS B 0203 Appendix | 55° 1/16 Taper |
| **PS** | Parallel pipe threads | | | 55° |
| **NPT** | American Standard taper pipe threads for general use | | ANSI/ASEM B1.20.1 | 60° 1/16 Taper |
| **NPSC** | American Standard straight pipe threads in pipe couplings | | | 60° |
| **NPSM** | American Standard straight pipe threads for free-fitting mechanical joints for fixtures | | | |
| **NPTF** | Dryseal American Standard taper pipe threads | | ANSI B1.20.3 | 60° 1/16 Taper |
| **NPSF** | Dryseal American Standard fuel internal straight pipe threads | | | 60° |
| **CTG** | Screw threads for rigid metal thick-walled conduits and fittings | | JIS B 0204 | 55° |
| **CTC** | Screw threads for rigid metal thin-walled conduits and fittings | | | 80° |
| **BC** | Cycle threads | | JIS B 0225 | 60° |
| **SM** | Screw threads for sewing machine | | JIS B 0226 | |
| **CTV** | Tyre valve threads of cycle | | JIS D 9422 | |
| **TV** | Tyre valve threads of automobile | | JIS D 4208 | |
| **E** | Electric socket and lamp-base threads | | JIS C 7709 | --- |
| **BA** | British association threads | | BS 93 | 47° 30′ |
| **BSC** | British Standard cycle threads | | BS 811 | 60° |
| **BSW** | British Standard Whitworth threads | | BS 84 | 55° |
| **BSF** | British Standard fine threads | | | |
| **BSMO** | Birtish Standard microscope objective threads | | BS 3569 | |
| **FG** | (Germany) Cycle threads | | DIN 79012 | 80° |
| **Pg** | (Germany) Steel conduit threads | | DIN 40430 | 80° |

## 6 HARDNESS CONVERSION TABLE
## 硬度换算表

| Rockwell ★ C. Scale Hardness | Vickers Hardness | Brinell Hardness | Rockwell A. Scale Hardness | Shore Hardness | Tensile Strength ★★ MPa (Kgf/mm²) |
|---|---|---|---|---|---|
| 58 | 653 | --- | 80.1 | 78 | --- |
| 57 | 633 | --- | 79.6 | 76 | --- |
| 56 | 613 | --- | 79.0 | 75 | --- |
| 55 | 595 | --- | 78.5 | 74 | 2075 (212) |
| 54 | 577 | --- | 78.0 | 72 | 2015 (205) |
| 53 | 560 | --- | 77.4 | 71 | 1950 (199) |
| 52 | 544 | (500) | 76.8 | 69 | 1880 (192) |
| 51 | 528 | (487) | 76.3 | 68 | 1820 (186) |
| 50 | 513 | (475) | 75.9 | 67 | 1760 (179) |
| 49 | 498 | (464) | 75.2 | 66 | 1695 (173) |
| 48 | 484 | 451 | 74.7 | 64 | 1635 (167) |
| 47 | 471 | 442 | 74.1 | 63 | 1580 (161) |
| 46 | 458 | 432 | 73.6 | 62 | 1530 (156) |
| 45 | 446 | 421 | 73.1 | 60 | 1480 (151) |
| 44 | 434 | 409 | 72.5 | 58 | 1435 (146) |
| 43 | 423 | 400 | 72.0 | 57 | 1385 (141) |
| 42 | 412 | 390 | 71.5 | 56 | 1340 (136) |
| 41 | 402 | 381 | 70.9 | 55 | 1295 (132) |
| 40 | 392 | 371 | 70.4 | 54 | 1250 (127) |
| 39 | 382 | 362 | 69.9 | 52 | 1215 (124) |
| 38 | 372 | 353 | 69.4 | 51 | 1180 (120) |
| 37 | 363 | 344 | 68.9 | 50 | 1160 (118) |
| 36 | 354 | 336 | 68.4 | 49 | 1115 (114) |
| 35 | 345 | 327 | 67.9 | 48 | 1080 (110) |
| 34 | 336 | 319 | 67.4 | 47 | 1055 (108) |
| 33 | 327 | 311 | 66.8 | 46 | 1025 (105) |
| 32 | 318 | 301 | 66.3 | 44 | 1000 (102) |
| 31 | 310 | 294 | 65.8 | 43 | 980 (100) |
| 30 | 302 | 286 | 65.3 | 42 | 950 ( 97) |
| 29 | 294 | 279 | 64.7 | 41 | 930 ( 95) |
| 28 | 286 | 271 | 64.3 | 41 | 910 ( 93) |
| 27 | 279 | 264 | 63.8 | 40 | 880 ( 90) |
| 26 | 272 | 258 | 63.3 | 38 | 860 ( 88) |
| 25 | 266 | 253 | 62.8 | 38 | 840 ( 86) |
| 24 | 260 | 247 | 62.4 | 37 | 825 ( 84) |
| 23 | 254 | 243 | 62.0 | 36 | 805 ( 82) |
| 22 | 248 | 237 | 61.5 | 35 | 785 ( 80) |
| 21 | 243 | 231 | 61.0 | 35 | 770 ( 79) |
| 20 | 238 | 226 | 60.5 | 34 | 760 ( 77) |
| (18) | 230 | 219 | --- | 33 | 730 ( 75) |
| (16) | 222 | 212 | --- | 32 | 705 ( 72) |
| (14) | 213 | 203 | --- | 31 | 675 ( 69) |
| (12) | 204 | 194 | --- | 29 | 650 ( 66) |
| (10) | 196 | 187 | --- | 28 | 620 ( 63) |
| ( 8 ) | 188 | 179 | --- | 27 | 600 ( 61) |
| ( 6 ) | 180 | 171 | --- | 26 | 580 ( 59) |
| ( 4 ) | 173 | 165 | --- | 25 | 550 ( 56) |
| ( 2 ) | 166 | 158 | --- | 24 | 530 ( 54) |
| ( 0 ) | 160 | 152 | --- | 24 | 515 ( 53) |

● Hardness conversions should only be used as a rough guide due to variation for different materials.
Figures shown in bold type are based on ASTM E 140 (which being adjusted commonly by SAE-ASM-ASTM).
★ Figure shown in ( ) are provided for reference only.
★★ The unit of tensile strength and figures in ( ) are converted from psi values by using conversion tables in JIS Z 8413 & Z 8438. This table is according to SAE J 417 (partial listing).
● 硬度转换只作为粗略的参考, 因为不同材料会有变化.
黑体字的数字是以ASTM E 140为基准(通常由SAE-ASM-ASTM进行调整)
★ ( )中的数字只供参考
★★ 抗拉强度的单位和( ) 中的数字是用JIS Z 8413 & Z 8438中的转换表由psi值转换的.
此表是根据SAE J 417作成(部分)



TECHNICAL DATA SUPER CUTTING TAPS

## 7 APPLICATION AND USE OF THREADING TAPS
## 攻丝过程中的问题及对策

| Problem / 问题 | Causes / 问题发生 | Solutions / 对策 |
|---|---|---|
| **Tapped hole oversize**<br>攻孔过大 | Incorrect tap in use (cutting geometry unsuitable for application)<br>不正确的丝锥使用(切削参数不适合运用) | Use tap selected from the relevant material group<br>根据相应的材料组选择丝锥 |
| | Faulty alignment<br>同轴性不好 | Ensure that the tap is correctly aligned with the core hole axis<br>确保丝锥和锥孔准确的在一条线上 |
| | Cold welding<br>冷焊 | Improve lubrication and direction of coolant<br>Adjust cutting speed<br>改变冷却油方向, 调整切削速度 |
| | Re-ground tap(lead-in is not concentric)<br>重置丝锥(引入线不是同心的) | Regrind tap lead correctly on a suitable tap grinding machine<br>用合适的研磨机械再研磨丝锥的引入部分 |
| **Stripped threads**<br>带状螺纹 | Incorrect tap in use (cutting geometry incorrect for application)<br>错误使用丝锥(切削参数不适合运用) | Use a tap from the relevant material group.<br>根据相应的材料组选择丝锥 |
| | Spindle speed and feed rate not synchronized<br>主轴速度和进给率不同步 | Check feed rate programming and / or pitch of leading spindle<br>Use a tapping spindle with axial float<br>检查进给率程序和主轴螺距<br>使用带有轴向滑动的攻丝主轴 |
| | Insufficient start pressure exerted on tap with peel-cut<br>不足的启动压力, 促使外面的螺纹脱落 | Increase start pressure<br>增大启动压力 |
| **Bell mouthed tapped hole**<br>攻丝的孔成钟型 | Incorrect start pressure applied to tap<br>启动压力不合适 | Use a tapping spindle with axial float<br>使用带有轴向滑动的攻丝主轴 |
| **Unsatisfactory thread surface finish**<br>不理想的螺纹表面 | Incorrect tap in use (Cutting geometry unsuitable for application)<br>错误使用丝锥<br>(切削参数不适合运用) | Select tap from the relevant material group<br>根据相应的材料组选择丝锥 |
| | The tap is blunt<br>丝锥生硬 | Replace or re-grind tap<br>替换和重新研磨丝锥 |
| | Tap badly re-ground<br>再研磨效果差 | Re-grind tap again.<br>Check that cutting geometry is suitable for material<br>再研磨一遍<br>检查切削参数是否适合被加工材料 |
| | Coolant lacking in lubricating qualities and / or quantity<br>冷却油太少影响润滑质量和产量 | Ensure the use of asuitable coolant and an ample supply<br>确保冷却油使用正确且供应充足 |

# TECHNICAL DATA SUPER CUTTING TAPS

| Problem / 问题 | Causes / 问题发生 | Solutions / 对策 |
|---|---|---|
| **Partial chipping of tap**<br>丝锥的铁屑部分 | Swarf jamming<br>金属屑阻塞 | Check cutting speed<br>Use alternative tap type<br>检查切削速度<br>使用有选择性的丝锥类型 |
| | Tap has jammed against bottom of core hole<br>丝锥碰到孔底部而阻塞 | Check hole and thread depths<br>Drill core hole deeper<br>检查孔和螺纹的深度<br>钻孔要深一些 |
| | Tap incorrectly re-ground (lead-in diameter too small therefore too few cutting teeth)<br>丝锥错误的再研磨<br>(导入的直径太小以至于切齿太少) | Ensure that original values ore maintained when regrinding<br>在再研磨时, 确保它的原始值 |
| | Irregular workpiece material structure<br>无规律的工件原材料结构 | Adjust cutting speed<br>Improve lubricating quality of coolant<br>调整切削速度<br>提高冷却油的润滑质量 |
| **Excessive tap wear**<br>过度的丝锥破损 | Incorrect cutting speed<br>不当的切削速度 | Adjust cutting speed to suit workpiece material<br>调整切削速度以合适被加工材料 |
| | Coolant lacking in lubricating qualities and / or quantity<br>冷却油太少影响润滑质量和产量 | Ensure the use of a suitable coolant and an ample supply<br>确保冷却油使用正确且供应充足<br>Check that coolant is reaching the cutting zone<br>检查冷却油是否到达加工区域 |
| | Surface of the core hole is compacted<br>攻孔太小, 孔的外表面压缩 | Check core hole drilling conditions (drill carefully to reduce risk of surface compacting)<br>检查钻孔情况(仔细钻孔以减少缩孔的风险)<br>Check drill cutting edges<br>检查钻边 |
| **Tap breakage**<br>丝锥破损 | Incorrect tap in use(cutting geometry unsuitable for application)<br>错误使用丝锥(切削参数不适合运用) | Use tap from the relevant material group<br>根据相应的材料组选择丝锥 |
| | Centering error<br>中心误差 | Ensure that axes of tap and core hole are aligned<br>确保丝锥和被加工孔成一条直线 |
| | Blunt tap<br>丝锥生硬 | Re-grind tap<br>再研磨丝锥<br>Ensure that taps are stored carefully<br>确保丝锥的存放安全性 |
| | Tap has reached bottom of core hole<br>丝锥碰到孔的底部 | Use tapping spindle with axial float and slipping clutch<br>用具有轴向滑动制动的攻丝主轴 |
| | Core hole too small<br>攻孔太小 | Select core hole as per chart, pages 533~538 of this catalogue<br>为每一步选择攻孔<br>手册在533-538页 |



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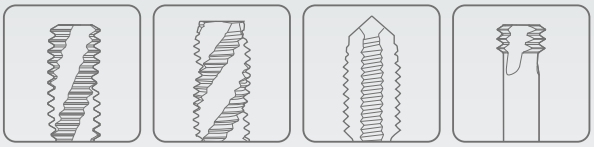
Global Cutting Tool Leader **YG-1**



# THREADING

# MILLING TOOLS


CBN 铣刀
i-Xmill, 硬质合金刀片铣刀
i-Smart， 硬质合金模块铣刀
X5070 纳米硬质合金铣刀
4G 硬质合金铣刀
X-POWER PRO 硬质合金铣刀
TitaNox 硬质合金铣刀
SUS-CUT 硬质合金铣刀
V7 PLUS 硬质合金铣刀
ALU-POWER HPC 硬质合金铣刀
ALU-CUT 硬质合金铣刀
G-CUT 硬质合金铣刀
CRX 硬质合金铣刀
K-2 Plus 硬质合金铣刀
普通硬质合金铣刀
ONLY ONE 粉末高速钢铣刀
TANK-POWER 粉末高速钢铣刀
普通高速钢铣刀
高速钢铣刀
技术参数

CBN END MILLS
i-Xmill END MILLS
i-SMART END MILLS
X5070 NANO SOLID CARBIDE END MILLS
4G Mill SOLID CARBIDE END MILLS
X-POWER PRO SOLID CARBIDE END MILLS
TitaNox-POWER SOLID CARBIDE END MILLS
SUS-CUT SOLID CARBIDE END MILLS
V7 PLUS SOLID CARBIDE END MILLS
ALU-POWER HPC SOLID CARBIDE END MILLS
ALU-CUT SOLID CARBIDE & HSS-PM END MILLS
G-CUT SOLID CARBIDE END MILLS
SOLID CARBIDE ROUTERS (DIAMOND COATED)
CRX S SOLID CARBIDE END MILLS
K-2 Plus SOLID CARBIDE END MILLS
GENERAL CARBIDE END MILLS
ONLY ONE COATED PM60 END MILLS
TANK-POWER HSS-PM END MILLS
GENERAL HSS END MILLS
HSS MILLING CUTTERS
TECHNICAL DATA


YG-1 CO., LTD.

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## CBN END MILLS

## CARBIDE EXCHANGEABLE END MILLS

## SOLID CARBIDE END MILLS

## HSS END MILLS

## TECHNICAL DATA

YG-1 CO., LTD.

# Contents / MILLING TOOLS


| | | |
|---|---|---|
| CBN 铣刀<br>适用于加工高硬钢(~HRc70)，<br>镜面处理的CBN(立方氮化硼)铣刀 | **CBN** END MILLS<br>CBN(Cubic Boron Nitride) Machining High Hardened Steels up to HRc70 / Mirror Finish | CBN END MILLS |
| i-Xmill, 硬质合金刀片铣刀<br>多样类型刀片可用在加工普通钢，<br>预硬钢，高硬钢，不锈钢，石墨 | **i-Xmill,** CARBIDE INSERT END MILLS<br>Various Applications Type of Inserts Available for General Steels, Pre-Hardened Steels, High Hardened Steels, Stainless Steels and Graphite | i-Xmill END MILLS |
| i-Smart， 硬质合金模块铣刀<br>适用于普通钢，高硬钢和铸铁 | **i-Smart** MODULAR TYPE END MILLS<br>For General Steels, Hardened Steels and Cast Iron | i-SMART MODULAR END MILLS |
| X5070 纳米硬质合金铣刀<br>蓝色涂层，整体硬质合金立铣刀(HRc45 to HRc70)<br>用于加工高硬钢, 用于高速切削和干切, 用于模具 | **X5070** NANO SOLID CARBIDE END MILLS<br>For High Hardened Steels (HRc45 to HRc70) / High Speed Machining and Dry Cutting | X5070 END MILLS |
| 4G 硬质合金铣刀<br>适用于高速加工 预硬钢 (~HRc55) | **4G Mill** SOLID CARBIDE END MILLS<br>High Speed Cutting for Pre-Hardened Steels up to HRc55 | 4G MILL END MILLS |
| X-POWER PRO 硬质合金铣刀<br>适用于加工预硬钢(~HRc55)，<br>模具，干&湿切削 | **X-POWER PRO** SOLID CARBIDE END MILLS<br>For Pre-Hardened Steels up to HRc55 | X-POWER PRO END MILLS |
| TitaNox 硬质合金铣刀<br>实现难切材料的高速加工 钛合金和不锈钢 | **TitaNox-POWER** SOLID CARBIDE END MILLS<br>High Speed Machining for Exotic Materials: Titanium and Stainless Steels | Titanox-POWER END MILLS |
| SUS-CUT 硬质合金铣刀<br>加工不锈钢，镍合金和钛合金 | **SUS-CUT** SOLID CARBIDE END MILLS<br>For Exotic materials like Stainless Steels, Nickel Alloys and Titanium | SUS-CUT END MILLS |
| V7 PLUS 硬质合金铣刀<br>高性能 硬质合金 立铣刀<br>适用于钢件,铸铁和不锈钢 | **V7 PLUS** SOLID CARBIDE END MILLS<br>High Performance Carbide End Mills for Steels, Cast Iron and Stainless Steels | V7 PLUS END MILLS |
| ALU-POWER HPC 硬质合金铣刀<br>适用于加工铝，铝合金，非铁金属和塑料 | **ALU-POWER HPC** SOLID CARBIDE END MILLS<br>For Aluminium, Aluminum Die Cast, Non-ferrous Alloys and Plastics | ALU-POWER HPC END MILLS |
| ALU-CUT 硬质合金铣刀<br>适用于加工铝合金而无声切削 | **ALU-CUT** SOLID CARBIDE END MILLS<br>For Aluminium Alloys and Silent Cutting | ALU-CUT END MILLS |
| G-CUT 硬质合金铣刀<br>高性能加工石墨 | **G-CUT** SOLID CARBIDE END MILLS<br>For Graphites | G-CUT END MILLS |
| CRX 硬质合金铣刀<br>加工铜的DLC涂层铣刀 | **CRX S** SOLID CARBIDE END MILLS<br>DLC Coated End Mills for Copper | CRX S END MILLS |
| K-2 Plus 硬质合金铣刀<br>适用于普通加工 / 普通或高速铣削 /<br>湿切&干切削 | **K-2 Plus** SOLID CARBIDE END MILLS<br>General Purpose / Conventional or High Speed Milling / Wet & Dry Cutting | K-2 Plus END MILLS |
| 普通硬质合金铣刀<br>适用于普通加工，<br>非涂层及任何涂层都可以提供 | **GENERAL CARBIDE** END MILLS<br>General Purposes, Non-coated, Any Coating Available | GENERAL CARBIDE END MILLS |
| ONLY ONE 粉末高速钢铣刀<br>在振动工况硬质合金崩刃的完美解决方案 | **ONLY ONE** COATED PM60 END MILLS<br>Perfect Solution of Carbide Chipping under Vibrations | ONLY ONE COATED PM60 END MILLS |
| TANK-POWER 粉末高速钢铣刀<br>适用于不锈钢，碳钢，合金钢<br>可用于普通加工，粗&精加工的高韧性铣刀 | **TANK-POWER** HSS-PM END MILLS<br>High Toughness for Stainless Steels, Carbon steels and Alloy Steels / for General Application, Roughing & Finishing | TANK-POWER END MILLS |
| 普通高速钢铣刀<br>普通加工 / 可以提供涂层 | **GENERAL HSS END MILLS**<br>General Purpose / Coating Available | GENERAL HSS END MILLS |
| 高速钢铣刀<br>普通加工，可提供燕尾槽铣刀，<br>月牙键槽铣刀，T型铣刀，三面刃铣刀，<br>含钴8%的圆角铣刀和圆筒形端铣刀 | HSS **MILLING CUTTERS**<br>General Works. Available Dovetail, Woodruff Keyseat, T-slot, Side Milling Cutters and HSS (8% Cobalt) Corner Rounding, Shell End Mills | MILLING CUTTERS |
| 技术参数 | **TECHNICAL DATA** | TECHNICAL DATA |

## SELECTION GUIDE 选用指南

YG MILLING TOOLS

| | CBN | | i-Xmill Insert | | | |
|---|---|---|---|---|---|---|
| SERIES 系列 | ESB94 | ESD02 | XMB110A | XMB120C | XMB260T | XMB130A |
| FLUTE 槽数 | 2 | 2 | 2 | 2 | 2 | 2 |
| HELIX ANGLE 螺旋角度 | 30° | 0° | - | - | - | - |
| CUTTING EDGE SHAPE 类型 | BALL NOSE | CORNER RADIUS | BALL NOSE | BALL NOSE | BALL NOSE | BALL NOSE |
| SIZE MIN 最小尺寸 | R0.2 | D0.5 | R4.0 | R4.0 | R4.0 | R4.0 |
| SIZE MAX 最大尺寸 | R1.5 | D2.0 | R16.5 | R16.5 | R16.5 | R16.5 |
| PAGE 页数 | C25 | C26 | C32 | | | C33 |
| LENGTH | - | - | - | - | - | - |
| SURFACE TREATMENT | Uncoated | Uncoated | AlTiN | X-Coating | Z-Coating | AlTiN |
| | | | GENERAL PURPOSE | PRE-HARDENED STEELS | HIGH HARDENED STEELS | STAINLESS STEELS |

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◎ : Excellent (优秀)
○ : Good (良好)

| ISO | VDI 3323 | Material Description 工件材料 | HB | HRc | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | 125 | | | | ◎ | | | |
| | 2 | | 190 | 13 | | | ◎ | | | |
| | 3 | | 250 | 25 | | | ◎ | | | |
| | 4 | | 270 | 28 | | | ◎ | | | |
| | 5 | | 300 | 32 | | | ◎ | | | |
| | 6 | Low alloy steel | 180 | 10 | | | ◎ | | | |
| | 7 | | 275 | 29 | | | ◎ | | | |
| | 8 | | 300 | 32 | | | ◎ | | | |
| | 9 | | 350 | 38 | | | | ◎ | | |
| | 10 | High alloyed steel, and tool steel | 200 | 15 | | | | ○ | | |
| | 11 | | 325 | 35 | | | | ◎ | | |
| M | 12 | Stainless steel | 200 | 15 | | | | | | ◎ |
| | 13 | | 240 | 23 | | | | | | ◎ |
| | 14 | | 180 | 10 | | | | | | ◎ |
| K | 15 | Grey cast iron | 180 | 10 | | | | ◎ | | |
| | 16 | | 260 | 26 | | | | ◎ | | |
| | 17 | Nodular cast iron | 160 | 3 | | | | ◎ | | |
| | 18 | | 250 | 25 | | | | ◎ | | |
| | 19 | Malleable cast iron | 130 | | | | | ◎ | | |
| | 20 | | 230 | 21 | | | | ◎ | | |
| N | 21 | Aluminum-wrought alloy | 60 | | | | | | | |
| | 22 | | 100 | | | | | | | |
| | 23 | Aluminum-cast, alloyed | 75 | | | | | | | |
| | 24 | | 90 | | | | | | | |
| | 25 | | 130 | | | | | | | |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | 110 | | | | | | | |
| | 27 | | 90 | | | | | | | |
| | 28 | | 100 | | | | | | | |
| | 29 | Non Metallic Materials Duroplastic, Fiber Reinforced Plastic, Graphite, CFRP, GFRP, etc. | | | | | | | | |
| | 30 | | | | | | | | | |
| S | 31 | Heat Resistant Super Alloys | 200 | 15 | | | | | | |
| | 32 | | 280 | 30 | | | | | | |
| | 33 | | 250 | 25 | | | | | | |
| | 34 | | 350 | 38 | | | | | | |
| | 35 | | 320 | 34 | | | | | | |
| | 36 | Titanium Alloys | 400 Rm | | | | | | | |
| | 37 | | 1050 Rm | | | | | | | |
| H | 38 | Hardened steel | 550 | 55 | ◎ | ◎ | | ○ | ◎ | |
| | 39 | | 630 | 60 | ◎ | ◎ | | | ◎ | |
| | 40 | Chilled Cast Iron | 400 | 42 | | | | | ○ | |
| | 41 | Hardened Cast Iron | 550 | 55 | ◎ | ◎ | | | ◎ | |



| | i-Xmill Insert | | | | | | | i-Xmill Holder | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | XMM110V | XMB110D | XMR110A | XMR120C | XMR260T | XMF110V | XMR110D | ZBC | ZBS | ZBT | ZRC | ZRS | ZRT |
| | 2 | 2 | 2 | 2 | 2 | 2 | 2 | - | - | - | - | - | - |
| | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | BALL NOSE | BALL NOSE | CORNER RADIUS | CORNER RADIUS | CORNER RADIUS | CORNER RADIUS | CORNER RADIUS | BALL NOSE | BALL NOSE | BALL NOSE | CORNER RADIUS | CORNER RADIUS | CORNER RADIUS |
| | R4.0 | R4.0 | D8.0 | D8.0 | D8.0 | D8.0 | D8.0 | - | - | - | - | - | - |
| | R16.5 | R16.5 | D33.0 | D33.0 | D33.0 | D33.0 | D33.0 | - | - | - | - | - | - |
| | C33 | | C34-38 | | | C39-43 | | C44 | C45 | C46 | C47 | C48 | |
| | FULL RADIUS | - | - | - | - | HIGH FEED | - | STRAIGHT NECK | STRAIGHT NECK | TAPER NECK | STRAIGHT NECK | STRAIGHT NECK | TAPER NECK |
| | Y-Coating | Diamond | AlTiN | X-Coating | Z-Coating | Y-Coating | Diamond | Carbide | Steel | Steel | Carbide | Steel | Steel |
| | GENERAL PURPOSE | GRAPHITE | GENERAL PURPOSE STAINLESS STEELS | PRE-HARDENED STEELS | HIGH HARDENED STEELS | GENERAL PURPOSE | GRAPHITE | | | | | | |

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| | ○ | | | | | | ○ | | | | | | | 23 |
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| | | | | ○ | ◎ | | | | | | | | | 38 H |
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## SELECTION GUIDE 选用指南

YG MILLING TOOLS

| | i-Smart Modular Head | | | | | |
|---|---|---|---|---|---|---|
| SERIES 系列 | XSEMD98 | XSEME59 | XSEME60 | XSEME01 | XSEME68 | XSEME36 |
| FLUTE 槽数 | 2 | 3 | 4 | 4 | 6 | 4 |
| HELIX ANGLE 螺旋角度 | 30° | 30° | 30° | 27°/30° (MULTIPLE HELIX) | 45° | 27°/30° (MULTIPLE HELIX) |
| CUTTING EDGE SHAPE 类型 | BALL NOSE | BALL NOSE | BALL NOSE | CORNER RADIUS | CORNER RADIUS | SQUARE |
| SIZE MIN 最小尺寸 | R5.0 | R5.0 | R5.0 | D10.0 | D10.0 | D10.0 |
| SIZE MAX 最大尺寸 | R16.0 | R16.0 | R16.0 | D32.0 | D32.0 | D32.0 |
| PAGE 页数 | C58 | C59 | C60 | C61-62 | C63 | C64 |
| LENGTH | CENTER MATCH | CENTER MATCH | CENTER MATCH | - | - | - |
| SURFACE TREATMENT | Y-Coating | Y-Coating | Y-Coating | Y-Coating | Y-Coating | Y-Coating |

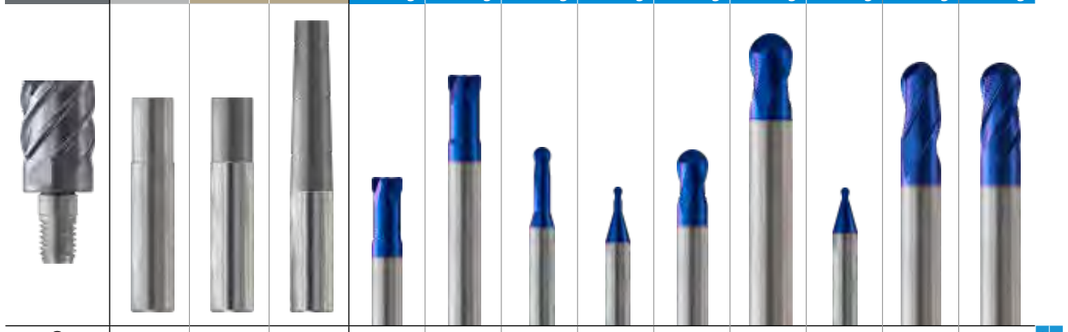
Please visit globalyg1.com/mat for material search

◎ : Excellent (优秀)
○ : Good (良好)

| ISO | VDI 3323 | Material Description 工件材料 | HB | HRc | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | 125 | | ○ | ○ | ○ | ○ | ○ | ○ |
| | 2 | | 190 | 13 | ○ | ○ | ○ | ○ | ○ | ○ |
| | 3 | | 250 | 25 | ○ | ○ | ○ | ◎ | ○ | ◎ |
| | 4 | | 270 | 28 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 5 | | 300 | 32 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 6 | Low alloy steel | 180 | 10 | ○ | ○ | ○ | ○ | ○ | ○ |
| | 7 | | 275 | 29 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 8 | | 300 | 32 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 9 | | 350 | 38 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 10 | High alloyed steel, and tool steel | 200 | 15 | ○ | ○ | ○ | ○ | ○ | ○ |
| | 11 | | 325 | 35 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| M | 12 | Stainless steel | 200 | 15 | | | | | | |
| | 13 | | 240 | 23 | | | | | | |
| | 14 | | 180 | 10 | | | | | | ○ |
| K | 15 | Grey cast iron | 180 | 10 | ○ | ○ | ○ | ○ | ○ | ○ |
| | 16 | | 260 | 26 | ○ | ○ | ○ | ○ | ○ | ○ |
| | 17 | Nodular cast iron | 160 | 3 | ○ | ○ | ○ | ○ | ○ | ○ |
| | 18 | | 250 | 25 | ○ | ○ | ○ | ○ | ○ | ○ |
| | 19 | Malleable cast iron | 130 | | ○ | ○ | ○ | ○ | ○ | ○ |
| | 20 | | 230 | 21 | ○ | ○ | ○ | ○ | ○ | ○ |
| N | 21 | Aluminum-wrought alloy | 60 | | | | | | | |
| | 22 | | 100 | | | | | | | |
| | 23 | Aluminum-cast, alloyed | 75 | | | | | | | |
| | 24 | | 90 | | | | | | | |
| | 25 | | 130 | | | | | | | |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | 110 | | | | | | | |
| | 27 | | 90 | | | | | | | |
| | 28 | | 100 | | | | | | | |
| | 29 | Non Metallic Materials Duroplastic, Fiber Reinforced Plastic, Graphite, CFRP, GFRP, etc. | | | | | | | | |
| | 30 | | | | | | | | | |
| S | 31 | Heat Resistant Super Alloys | 200 | 15 | | | | | | |
| | 32 | | 280 | 30 | | | | | | |
| | 33 | | 250 | 25 | | | | | | |
| | 34 | | 350 | 38 | | | | | | |
| | 35 | | 320 | 34 | | | | | | |
| | 36 | Titanium Alloys | 400 Rm | | | | | | | |
| | 37 | | 1050 Rm | | | | | | | |
| H | 38 | Hardened steel | 550 | 55 | ○ | ○ | ○ | ○ | ○ | ○ |
| | 39 | | 630 | 60 | ○ | ○ | ○ | ○ | ○ | ○ |
| | 40 | Chilled Cast Iron | 400 | 42 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 41 | Hardened Cast Iron | 550 | 55 | ○ | ○ | ○ | ○ | ○ | ○ |



| | i-Smart Modular Holder | | | X5070 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| XSEME75 | ZMC | ZMS | ZMT | G8B59 | G8B54 | G8A46 | G8A54 | G8A28 | G8A38 | G8A53 | G8A59 | G8D62 |
| 6 | - | - | - | 4 | 4 | 2 | 2 | 2 | 2 | 2 | 3 | 4 |
| 45° | - | - | - | 0° | 0° | 30° | 30° | 30° | 30° | 30° | 30° | 30° |
| SQUARE | - | - | - | CORNER RADIUS | CORNER RADIUS | BALL NOSE | BALL NOSE | BALL NOSE | BALL NOSE | BALL NOSE | BALL NOSE | BALL NOSE |
| D10.0 | - | - | - | D2.0 | D2.0 | R0.05 | R0.25 | R0.05 | R0.5 | R0.2 | R1.5 | R1.5 |
| D32.0 | - | - | - | D12.0 | D16.0 | R2.0 | R1.0 | R6.0 | R12.5 | R1.0 | R10.0 | R10.0 |
| C65 | C66 | C67 | C68 | C79 | C80 | C81-84 | C85 | C86-87 | C88 | C89 | C90 | C91 |
| - | STRAIGHT NECK | STRAIGHT NECK | TAPER NECK | HIGH FEED | HIGH FEED LONG SHANK | RIB PROCESSING | RIB PROCESSING | - | EXTENDED NECK | MINIATURE | Center Match | Center Match |
| Y-Coating | Carbide | Steel | Steel | Blue Coating | Blue Coating | Blue Coating | Blue Coating | Blue Coating | Blue Coating | Blue Coating | Blue Coating | Blue Coating |



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| ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 9 |
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| ○ | | | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 38 |
| ○ | | | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 39 |
| ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 40 H |
| ○ | | | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 41 |

## SELECTION GUIDE 选用指南

MILLING TOOLS

| | X5070 | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| SERIES 系列 | G8A60 | G8A36 | G8A52 | G8A50 | G8A47 | G8A37 | G8B08 | G8A39 |
| FLUTE 槽数 | 2 | 2 | 2 | 2 | 4 | 4 | 4 | 6 |
| HELIX ANGLE 螺旋角度 | 30° | 30° | 30° | 30° | 30° | 30° | 30° | 45° |
| CUTTING EDGE SHAPE 类型 | CORNER RADIUS | CORNER RADIUS | CORNER RADIUS | CORNER RADIUS | CORNER RADIUS | CORNER RADIUS | CORNER RADIUS | CORNER RADIUS |
| SIZE MIN 最小尺寸 | D0.5 | D0.3 | D0.5 | D0.3 | D3.0 | D1.0 | D6.0 | D6.0 |
| SIZE MAX 最大尺寸 | D12.0 | D20.0 | D2.0 | D2.0 | D12.0 | D20.0 | D12.0 | D20.0 |
| PAGE 页数 | C92-96 | C97-98 | C99 | C100 | C101 | C102 | C103 | C104 |
| LENGTH | RIB PROCESSING | EXTENDED NECK | RIB PROCESSING | MINIATURE | EXTENDED NECK | EXTENDED NECK | EXTENDED NECK | EXTENDED NECK |
| SURFACE TREATMENT | Blue Coating | Blue Coating | Blue Coating | Blue Coating | Blue Coating | Blue Coating | Blue Coating | Blue Coating |

Please visit globalyg1.com/mat for material search

◎ : Excellent (优秀)
○ : Good (良好)

| ISO | VDI 3323 | Material Description 工件材料 | HB | HRc | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | 125 | | | | | | | | | |
| | 2 | | 190 | 13 | | | | | | | | |
| | 3 | | 250 | 25 | | | | | | | | |
| | 4 | | 270 | 28 | | | | | | | | |
| | 5 | | 300 | 32 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | 6 | Low alloy steel | 180 | 10 | | | | | | | | |
| | 7 | | 275 | 29 | | | | | | | | |
| | 8 | | 300 | 32 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | 9 | | 350 | 38 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | 10 | High alloyed steel, and tool steel | 200 | 15 | | | | | | | | |
| | 11 | | 325 | 35 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| M | 12 | Stainless steel | 200 | 15 | | | | | | | | |
| | 13 | | 240 | 23 | | | | | | | | |
| | 14 | | 180 | 10 | | | | | | | | |
| K | 15 | Grey cast iron | 180 | 10 | | | | | | | | |
| | 16 | | 260 | 26 | | | | | | | | |
| | 17 | Nodular cast iron | 160 | 3 | | | | | | | | |
| | 18 | | 250 | 25 | | | | | | | | |
| | 19 | Malleable cast iron | 130 | | | | | | | | | |
| | 20 | | 230 | 21 | | | | | | | | |
| N | 21 | Aluminum-wrought alloy | 60 | | | | | | | | | |
| | 22 | | 100 | | | | | | | | | |
| | 23 | Aluminum-cast, alloyed | 75 | | | | | | | | | |
| | 24 | | 90 | | | | | | | | | |
| | 25 | | 130 | | | | | | | | | |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | 110 | | | | | | | | | |
| | 27 | | 90 | | | | | | | | | |
| | 28 | | 100 | | | | | | | | | |
| | 29 | Non Metallic Materials Duroplastic, Fiber Reinforced Plastic, Graphite, CFRP, GFRP, etc. | | | | | | | | | | |
| | 30 | | | | | | | | | | | |
| S | 31 | Heat Resistant Super Alloys | 200 | 15 | | | | | | | | |
| | 32 | | 280 | 30 | | | | | | | | |
| | 33 | | 250 | 25 | | | | | | | | |
| | 34 | | 350 | 38 | | | | | | | | |
| | 35 | | 320 | 34 | | | | | | | | |
| | 36 | Titanium Alloys | 400 Rm | | | | | | | | | |
| | 37 | | 1050 Rm | | | | | | | | | |
| H | 38 | Hardened steel | 550 | 55 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 39 | | 630 | 60 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 40 | Chilled Cast Iron | 400 | 42 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | 41 | Hardened Cast Iron | 550 | 55 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |



| | X5070 | | | | | 4G Mills | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | G8A45 | G8A01 | G8A02 | G8D63 | G8D64 | SEMD98 | SEM846 | SEM846 | SEMD99 | SEME61 | SEME01 | SEME64 |
| FLUTE 槽数 | 2 | 2 | 4 | 6&8 | 6&8 | 2 | 2 | 2 | 2 | 2 | 4 | 4 |
| HELIX ANGLE 螺旋角度 | 30° | 30° | 30° | 45° | 45° | 30° | 30° | 30° | 30° | 30° | 27°/30° (MULTIPLE HELIX) | 27°/30° (MULTIPLE HELIX) |
| CUTTING EDGE SHAPE 类型 | SQUARE | SQUARE | SQUARE | SQUARE | SQUARE | BALL NOSE | BALL NOSE | BALL NOSE | CORNER RADIUS | CORNER RADIUS | CORNER RADIUS | CORNER RADIUS |
| SIZE MIN 最小尺寸 | D0.1 | D0.1 | D1.0 | D6.0 | D6.0 | R0.05 | R0.05 | R0.25 | D0.2 | D0.2 | D1.0 | D1.0 |
| SIZE MAX 最大尺寸 | D4.0 | D20.0 | D20.0 | D25.0 | D25.0 | R12.5 | R6.0 | R1.0 | D20.0 | D20.0 | D20.0 | D20.0 |
| PAGE 页数 | C105-108 | C109 | C110 | C111 | C112 | C140-145 | C146-155 | C156-158 | C159-166 | C167-185 | C186-192 | C193-207 |
| LENGTH | RIB PROCESSING | EXTENDED NECK | EXTENDED NECK | LONG LENGTH | EXTRA LONG LENGTH | - | EXTENDED NECK | EXTENDED NECK (6mm Shank) | - | EXTENDED NECK | - | EXTENDED NECK |
| SURFACE TREATMENT | Blue Coating | Blue Coating | Blue Coating | Blue Coating | Blue Coating | Y-Coating | Y-Coating | Y-Coating | Y-Coating | Y-Coating | Y-Coating | Y-Coating |

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| | | | | | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 4 | |
| ○ | ○ | ○ | ○ | ○ | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 5 | |
| | | | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 6 | P |
| | | | | | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 7 | |
| ○ | ○ | ○ | ○ | ○ | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 8 | |
| ○ | ○ | ○ | ○ | ○ | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 9 | |
| | | | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 10 | |
| ○ | ○ | ○ | ○ | ○ | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 11 | |
| | | | | | | | | | | | | | 12 | |
| | | | | | | | | | | | | | 13 | M |
| | | | | | | | | | | | | | 14 | |
| | | | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 15 | |
| | | | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 16 | |
| | | | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 17 | |
| | | | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 18 | K |
| | | | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 19 | |
| | | | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 20 | |
| | | | | | | | | | | | | | 21 | |
| | | | | | | | | | | | | | 22 | |
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| | | | | | | | | | | | | | 26 | N |
| | | | | | | | | | | | | | 27 | |
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| | | | | | | | | | | | | | 31 | |
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| | | | | | | | | | | | | | 34 | S |
| | | | | | | | | | | | | | 35 | |
| | | | | | | | | | | | | | 36 | |
| | | | | | | | | | | | | | 37 | |
| ◎ | ◎ | ◎ | ◎ | ◎ | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 38 | |
| ◎ | ◎ | ◎ | ◎ | ◎ | | | | | | | | | 39 | H |
| ○ | ○ | ○ | ○ | ○ | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 40 | |
| ◎ | ◎ | ◎ | ◎ | ◎ | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 41 | |

## SELECTION GUIDE 选用指南

YG MILLING TOOLS

| | 4G Mills | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| SERIES 系列 | SEME35 | SEME35 | SEME35 | SEME70 | SEM845 | SEME36 | SEME71 | SEME72 | SEME73 | SEME75 |
| FLUTE 槽数 | 2 | 2 | 2 | 2 | 2 | 4 | 4 | 4 | 4 | 6 |
| HELIX ANGLE 螺旋角度 | 30° | 30° | 30° | 30° | 30° | 27°/30° (MULTIPLE HELIX) | 35°/38° (MULTIPLE HELIX) | 30° | 30° | 45° |
| CUTTING EDGE SHAPE 类型 | SQUARE | SQUARE | SQUARE | SQUARE | SQUARE | SQUARE | SQUARE | SQUARE | SQUARE | SQUARE |
| SIZE MIN 最小尺寸 | D0.1 | D0.1 | D0.1 | D1.0 | D0.1 | D0.8 | D1.0 | D1.0 | D1.0 | D6.0 |
| SIZE MAX 最大尺寸 | D25.0 | D4.0 | D3.0 | D25.0 | D12.0 | D25.0 | D20.0 | D25.0 | D12.0 | D20.0 |
| PAGE 页数 | C208-210 | C211 | C212 | C213-218 | C219-227 | C228-229 | C230-233 | C234-239 | C240-244 | 2C45-246 |
| LENGTH | - | 4mm Shank | 3mm Shank | LONG LENGTH | EXTENDED NECK | - | Sharp Corner Removal | LONG LENGTH | EXTENDED NECK | - |
| SURFACE TREATMENT | Y-Coating | Y-Coating | Y-Coating | Y-Coating | Y-Coating | Y-Coating | Y-Coating | Y-Coating | Y-Coating | Y-Coating |

Please visit globalyg1.com/mat for material search

◎ : Excellent (优秀)
○ : Good (良好)

| ISO | VDI 3323 | Material Description 工件材料 | HB | HRc | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | 125 | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | 2 | | 190 | 13 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | 3 | | 250 | 25 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 4 | | 270 | 28 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 5 | | 300 | 32 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 6 | Low alloy steel | 180 | 10 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | 7 | | 275 | 29 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 8 | | 300 | 32 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 9 | | 350 | 38 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 10 | High alloyed steel, and tool steel | 200 | 15 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | 11 | | 325 | 35 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| M | 12 | Stainless steel | 200 | 15 | | | | | ○ | | | | ○ | |
| | 13 | | 240 | 23 | | | | | ○ | | | | ○ | |
| | 14 | | 180 | 10 | ○ | ○ | ○ | | ○ | ○ | ○ | | ○ | |
| K | 15 | Grey cast iron | 180 | 10 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | 16 | | 260 | 26 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | 17 | Nodular cast iron | 160 | 3 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | 18 | | 250 | 25 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | 19 | Malleable cast iron | 130 | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | 20 | | 230 | 21 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| N | 21 | Aluminum-wrought alloy | 60 | | | | | | | | | | | |
| | 22 | | 100 | | | | | | | | | | | |
| | 23 | Aluminum-cast, alloyed | 75 | | | | | | | | | | | |
| | 24 | | 90 | | | | | | | | | | | |
| | 25 | | 130 | | | | | | | | | | | |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | 110 | | | | | | | | | | | |
| | 27 | | 90 | | | | | | | | | | | |
| | 28 | | 100 | | | | | | | | | | | |
| | 29 | Non Metallic Materials Duroplastic, Fiber Reinforced Plastic, Graphite, CFRP, GFRP, etc. | | | | | | | | | | | | |
| | 30 | | | | | | | | | | | | | |
| S | 31 | Heat Resistant Super Alloys | 200 | 15 | | | | | | | | | | |
| | 32 | | 280 | 30 | | | | | | | | | | |
| | 33 | | 250 | 25 | | | | | | | | | | |
| | 34 | | 350 | 38 | | | | | | | | | | |
| | 35 | | 320 | 34 | | | | | | | | | | |
| | 36 | Titanium Alloys | 400 Rm | | | | | | | | | | | |
| | 37 | | 1050 Rm | | | | | | | | | | | |
| H | 38 | Hardened steel | 550 | 55 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | 39 | | 630 | 60 | | | | | | | | | | |
| | 40 | Chilled Cast Iron | 400 | 42 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 41 | Hardened Cast Iron | 550 | 55 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |





| | 4G Mills X-Speed Rougher | | | | X-POWER PRO | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | G9D75 G9D67 | G9D76 G9D68 | G9D77 G9D69 | GAE53 | GMH31 | GMH32 | GMH37 | GMH38 | GMH33 | GMH34 | GMH35 | GMH36 | GMH39 | GM814 |
| | 4&5 | 4&5 | 4&5 | 4&5 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 4 | 6 | 3&4 |
| | 44°~45° (MULTIPLE HELIX) | 44°~45° (MULTIPLE HELIX) | 44°~45° (MULTIPLE HELIX) | 44°~45° (MULTIPLE HELIX) | 30° | 30° | 30° | 30° | 30° | 30° | 30° | 30° | 45° | 20° |
| | CORNER RADIUS ROUGHING | CORNER RADIUS ROUGHING | CORNER RADIUS ROUGHING | CORNER RADIUS ROUGHING | BALL NOSE | BALL NOSE | CORNER RADIUS | CORNER RADIUS | SQUARE | SQUARE | SQUARE | SQUARE | SQUARE | ROUGHING |
| | D6.0 | D6.0 | D6.0 | D6.0 | R0.1 | R0.2 | D3.0 | D3.0 | D1.0 | D0.4 | D1.0 | D2.0 | D6.0 | D6.0 |
| | D20.0 | D20.0 | D20.0 | D20.0 | R10.0 | R3.0 | D12.0 | D12 | D20.0 | D4.0 | D20.0 | D20.0 | D16.0 | D20.0 |
| | C247 | | C248 | C249 | C324 | C325-326 | C327 | C328 | C329 | C330-331 | C332 | C333 | C334 | C335 |
| | SHORT LENGTH | LONG LENGTH | LONG LENGTH | SHORT LENGTH | SHORT LENGTH | RIB PROCESSING | LONG LENGTH | LONG LENGTH | SHORT LENGTH | RIB PROCESSING | SHORT LENGTH | LONG LENGTH | LONG LENGTH | LONG LENGTH |
| | X-Coating | X-Coating | X-Coating | X-Coating | Y-Coating | Y-Coating | Y-Coating | Y-Coating | Y-Coating | Y-Coating | Y-Coating | Y-Coating | Y-Coating | Y-Coating |

| | | | | | | | | | | | | | | | |
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| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 1 | |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 2 | |
| ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 3 | |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 4 | |
| ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 5 | |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 6 | P |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 7 | |
| ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 8 | |
| ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 9 | |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 10 | |
| ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 11 | |
| ○ | ○ | ○ | | | | | ○ | ○ | | ○ | | | ○ | 12 | |
| ○ | ○ | ○ | | | | | ○ | ○ | | ○ | | | ○ | 13 | M |
| ○ | ○ | ○ | ◎ | | | | ○ | ○ | | ○ | | | ○ | 14 | |
| ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 15 | |
| ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 16 | |
| ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 17 | |
| ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 18 | K |
| ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 19 | |
| ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 20 | |
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| | | | | | | | | | | | | | | 25 | |
| ○ | ○ | ○ | ○ | | | | | | | | | | | 26 | N |
| ○ | ○ | ○ | ○ | | | | | | | | | | | 27 | |
| ○ | ○ | ○ | ○ | | | | | | | | | | | 28 | |
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| | | | | | | | | | | | | | | 37 | |
| | | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 38 | |
| | | | | | ○ | | | | | | | | | 39 | H |
| | | | | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 40 | |
| | | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 41 | |

## SELECTION GUIDE 选用指南

YG MILLING TOOLS

| | TitaNox-Power | | | | | |
|---|---|---|---|---|---|---|
| SERIES 系列 | GMG40 GMG41 | GMG28 GMG29 | GMG30 GMG31 | GMG24 GMG25 | GMG26 GMG27 | EHE54 EHE55 |
| FLUTE 槽数 | 4 | 5 | 5 | 5 | 5 | 5 |
| HELIX ANGLE 螺旋角度 | 43°/45° | 43°/44°/45° | 43°/44°/45° | 43°/44°/45° | 43°/44°/45° | 40° |
| CUTTING EDGE SHAPE 类型 | CORNER RADIUS | CORNER RADIUS | CORNER RADIUS | SQUARE | SQUARE | ROUGHING CORNER RADIUS |
| SIZE MIN 最小尺寸 | D6.0 | D6.0 | D6.0 | D6.0 | D6.0 | D6.0 |
| SIZE MAX 最大尺寸 | D25.0 | D25.0 | D25.0 | D25.0 | D25.0 | D25.0 |
| PAGE 页数 | C352-353 | C354 | C355-356 | C357 | C358 | C359 |
| LENGTH | LONG LENGTH DOUBLE CORE | SHORT LENGTH | LONG LENGTH | SHORT LENGTH | LONG LENGTH | - |
| SURFACE TREATMENT | Y-Coating | Y-Coating | Y-Coating | Y-Coating | Y-Coating | TiAlN |

Please visit globalyg1.com/mat for material search

◎ : Excellent (优秀)
○ : Good (良好)

| ISO | VDI 3323 | Material Description 工件材料 | HB | HRc | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | 125 | | ○ | ○ | ○ | ○ | ○ | |
| | 2 | | 190 | 13 | ○ | ○ | ○ | ○ | ○ | |
| | 3 | | 250 | 25 | ○ | ○ | ○ | ○ | ○ | |
| | 4 | | 270 | 28 | ○ | ○ | ○ | ○ | ○ | |
| | 5 | | 300 | 32 | ○ | ○ | ○ | ○ | ○ | |
| | 6 | Low alloy steel | 180 | 10 | ○ | ○ | ○ | ○ | ○ | |
| | 7 | | 275 | 29 | ○ | ○ | ○ | ○ | ○ | |
| | 8 | | 300 | 32 | ○ | ○ | ○ | ○ | ○ | |
| | 9 | | 350 | 38 | ○ | ○ | ○ | ○ | ○ | |
| | 10 | High alloyed steel, and tool steel | 200 | 15 | ○ | ○ | ○ | ○ | ○ | |
| | 11 | | 325 | 35 | ○ | ○ | ○ | ○ | | |
| M | 12 | Stainless steel | 200 | 15 | ◎ | ◎ | ◎ | ◎ | ◎ | ○ |
| | 13 | | 240 | 23 | ◎ | ◎ | ◎ | ◎ | ◎ | ○ |
| | 14 | | 180 | 10 | ◎ | ◎ | ◎ | ◎ | ◎ | ○ |
| K | 15 | Grey cast iron | 180 | 10 | ○ | ○ | ○ | ○ | ○ | |
| | 16 | | 260 | 26 | ○ | ○ | ○ | ○ | ○ | |
| | 17 | Nodular cast iron | 160 | 3 | ○ | ○ | ○ | ○ | ○ | |
| | 18 | | 250 | 25 | ○ | ○ | ○ | ○ | ○ | |
| | 19 | Malleable cast iron | 130 | | ○ | ○ | ○ | ○ | ○ | |
| | 20 | | 230 | 21 | ○ | ○ | ○ | ○ | ○ | |
| N | 21 | Aluminum-wrought alloy | 60 | | | | | | | |
| | 22 | | 100 | | | | | | | |
| | 23 | Aluminum-cast, alloyed | 75 | | | | | | | |
| | 24 | | 90 | | | | | | | |
| | 25 | | 130 | | | | | | | |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | 110 | | | | | | | |
| | 27 | | 90 | | | | | | | |
| | 28 | | 100 | | | | | | | |
| | 29 | Non Metallic Materials Duroplastic, Fiber Reinforced Plastic, Graphite, CFRP, GFRP, etc. | | | | | | | | |
| | 30 | | | | | | | | | |
| S | 31 | Heat Resistant Super Alloys | 200 | 15 | ○ | ○ | ○ | ○ | ○ | ○ |
| | 32 | | 280 | 30 | ○ | ○ | ○ | ○ | ○ | ○ |
| | 33 | | 250 | 25 | ○ | ○ | ○ | ○ | ○ | ○ |
| | 34 | | 350 | 38 | ○ | ○ | ○ | ○ | ○ | ○ |
| | 35 | | 320 | 34 | ○ | ○ | ○ | ○ | ○ | ○ |
| | 36 | Titanium Alloys | 400 Rm | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 37 | | 1050 Rm | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| H | 38 | Hardened steel | 550 | 55 | | | | | | |
| | 39 | | 630 | 60 | | | | | | |
| | 40 | Chilled Cast Iron | 400 | 42 | | | | | | |
| | 41 | Hardened Cast Iron | 550 | 55 | | | | | | |



| | SUS-CUT | | | | | V7 Plus | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | EMD88 | EMD83 | EHD84 | EMD82 | EMD92 | GMH66 | GMH65 | GMF66 | GMH67 | GMH68 | GMH69 | GMH71 |
| | 4 | 4 | 3 | 4 | 3-5 | 4 | 4 | 4 | 4 | 4 | 6 | 6 |
| | 36°~39.75° (SINUSOIDAL) | 36°~39.75° (SINUSOIDAL) | 45° | 36°~39.75° (SINUSOIDAL) | 45° (MULTIPLE HELIX) | 35°/37° (MULTIPLE HELIX) | 35°/37° (MULTIPLE HELIX) | 35°/37° (MULTIPLE HELIX) | 35°/37° (MULTIPLE HELIX) | 35°/37° (MULTIPLE HELIX) | 45° | 45° |
| | BALL NOSE | CORNER RADIUS | SQUARE | SQUARE | ROUGHING CORNER RADIUS | BALL NOSE | CORNER RADIUS | SQUARE | SQUARE | SQUARE | CORNER RADIUS | SQUARE |
| | R1.5 | D1.0 | D1.0 | D1.0 | D3.0 | R1.5 | D1.0 | D3.0 | D1.0 | D1.0 | D6.0 | D6.0 |
| | R10.0 | D20.0 | D20.0 | D20.0 | D20.0 | R12.5 | D25.0 | D20.0 | D20.0 | D20.0 | D25.0 | D25.0 |
| | C367 | C368-369 | C370 | C371-372 | C373-374 | C384 | C385-386 | C387 | C388 | C389 | C390 | C391 |
| | - | - | - | - | Type A/B | LONG LENGTH | LONG LENGTH | SHORT LENGTH | LONG LENGTH | LONG LENGTH | - | - |
| | Y-Coating | Y-Coating | Y-Coating | Y-Coating | Y-Coating | Y-Coating | Y-Coating | Y-Coating | Y-Coating | Y-Coating | Y-Coating | Y-Coating |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 1 | |
| ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 2 | |
| ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 3 | |
| ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 4 | |
| ○ | ○ | ○ | ○ | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 5 | |
| ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 6 | P |
| ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 7 | |
| ○ | ○ | ○ | ○ | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 8 | |
| ○ | ○ | ○ | ○ | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 9 | |
| ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 10 | |
| ○ | ○ | ○ | ○ | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 11 | |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 12 | |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 13 | M |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 14 | |
| ○ | ○ | ○ | ○ | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 15 | |
| ○ | ○ | ○ | ○ | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 16 | |
| ○ | ○ | ○ | ○ | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 17 | |
| ○ | ○ | ○ | ○ | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 18 | K |
| ○ | ○ | ○ | ○ | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 19 | |
| ○ | ○ | ○ | ○ | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 20 | |
| | | | | | | | | | | | | 21 | |
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| | | ○ | | | | | | | | | | 26 | N |
| | | ○ | | | | | | | | | | 27 | |
| | | ○ | | | | | | | | | | 28 | |
| | | | | | | | | | | | | 29 | |
| | | | | | | | | | | | | 30 | |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 31 | |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 32 | |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 33 | |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 34 | S |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 35 | |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 36 | |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 37 | |
| | | | | | | | | | | | | 38 | |
| | | | | | | | | | | | | 39 | H |
| | | | | | | | | | | | | 40 | |
| | | | | | | | | | | | | 41 | |

## SELECTION GUIDE 选用指南

YG MILLING TOOLS

| | V7 Plus | | ALU-POWER HPC | | | | ALU-CUT | |
|---|---|---|---|---|---|---|---|---|
| SERIES 系列 | GMH70 | EMB72 EMB73 | E5H24 JAH24 | E5H25 JAH25 | E5H22 JAH22 | E5H23 JAH23 | E5D71 | E5C72 |
| FLUTE 槽数 | 6 | 5 | 3 | 3 | 3 | 3 | 2 | 3 |
| HELIX ANGLE 螺旋角度 | 45° | 41°~ 45° | 37° | 37° | 37° | 37° | 45° | 45° |
| CUTTING EDGE SHAPE 类型 | SQUARE | SQUARE | CORNER RADIUS | CORNER RADIUS | SQUARE | SQUARE | SQUARE | SQUARE |
| SIZE MIN 最小尺寸 | D6.0 | D6.0 | D6.0 | D6.0 | D3.0 | D6.0 | D1.0 | D1.0 |
| SIZE MAX 最大尺寸 | D25.0 | D25.0 | D20.0 | D20.0 | D25.0 | D20.0 | D20.0 | D20.0 |
| PAGE 页数 | C392 | C393 | C402-404 | C405-407 | C408 | C409 | C415-416 | C417 |
| LENGTH | LONG LENGTH | LONG LENGTH | - | EXTENDED NECK | - | EXTENDED NECK | - | SHORT LENGTH |
| SURFACE TREATMENT | Y-Coating | AlTiN | Uncoated | Uncoated | Uncoated | Uncoated | Uncoated | Uncoated |
| | | | DLC | DLC | DLC | DLC | | |

Please visit globalyg1.com/mat for material search

◎ : Excellent (优秀)
○ : Good (良好)

| ISO | VDI 3323 | Material Description 工件材料 | HB | HRc | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | 125 | | ○ | ○ | | | | | | |
| | 2 | | 190 | 13 | ○ | ○ | | | | | | |
| | 3 | | 250 | 25 | ◎ | ◎ | | | | | | |
| | 4 | | 270 | 28 | ◎ | ◎ | | | | | | |
| | 5 | | 300 | 32 | ◎ | ◎ | | | | | | |
| | 6 | Low alloy steel | 180 | 10 | ○ | ○ | | | | | | |
| | 7 | | 275 | 29 | ◎ | ◎ | | | | | | |
| | 8 | | 300 | 32 | ◎ | ◎ | | | | | | |
| | 9 | | 350 | 38 | ◎ | ◎ | | | | | | |
| | 10 | High alloyed steel, and tool steel | 200 | 15 | ○ | ○ | | | | | | |
| | 11 | | 325 | 35 | ◎ | ◎ | | | | | | |
| M | 12 | Stainless steel | 200 | 15 | ○ | ○ | | | | | | |
| | 13 | | 240 | 23 | ○ | ○ | | | | | | |
| | 14 | | 180 | 10 | ◎ | ◎ | | | | | | |
| K | 15 | Grey cast iron | 180 | 10 | | | | | | | | |
| | 16 | | 260 | 26 | | | | | | | | |
| | 17 | Nodular cast iron | 160 | 3 | | | | | | | | |
| | 18 | | 250 | 25 | | | | | | | | |
| | 19 | Malleable cast iron | 130 | | | | | | | | | |
| | 20 | | 230 | 21 | | | | | | | | |
| N | 21 | Aluminum-wrought alloy | 60 | | | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 22 | | 100 | | | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 23 | Aluminum-cast, alloyed | 75 | | | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 24 | | 90 | | | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 25 | | 130 | | | | ○ | ○ | ○ | ○ | ◎ | |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | 110 | | | | ○ | ○ | ○ | ○ | | |
| | 27 | | 90 | | | | ○ | ○ | ○ | ○ | | |
| | 28 | | 100 | | | | ○ | ○ | ○ | ○ | | |
| | 29 | Non Metallic Materials Duroplastic, Fiber Reinforced Plastic, Graphite, CFRP, GFRP, etc. | | | | | ○ | ○ | ○ | ○ | | |
| | 30 | | | | | | | | | | | |
| S | 31 | Heat Resistant Super Alloys | 200 | 15 | ○ | ○ | | | | | | |
| | 32 | | 280 | 30 | ○ | ○ | | | | | | |
| | 33 | | 250 | 25 | ○ | ○ | | | | | | |
| | 34 | | 350 | 38 | ○ | ○ | | | | | | |
| | 35 | | 320 | 34 | ○ | ○ | | | | | | |
| | 36 | Titanium Alloys | 400 Rm | | ◎ | ◎ | | | | | | |
| | 37 | | 1050 Rm | | ◎ | ◎ | | | | | | |
| H | 38 | Hardened steel | 550 | 55 | | | | | | | | |
| | 39 | | 630 | 60 | | | | | | | | |
| | 40 | Chilled Cast Iron | 400 | 42 | ○ | ○ | | | | | | |
| | 41 | Hardened Cast Iron | 550 | 55 | | | | | | | | |





| | ALU-CUT | | G-CUT | | | | | CRX S | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | E5D70 | E5D73 | EIE21 | EIE23 | EIE22 | EIE25 | EIE26 | SGED28 | SGED27 | SGED29 | SGED31 | SGED30 |
| | 3 | 3 | 2 | 2 | 4 | 2 | 4 | 2 | 2 | 2 | 2 | 2 |
| | 45° | 45° | 30° | 30° | 30° | 30° | 30° | 30° | 30° | 30° | 30° | 30° |
| | SQUARE | ROUGHING | BALL NOSE | BALL NOSE | BALL NOSE | SQUARE | SQUARE | BALL NOSE | BALL NOSE | CORNER RADIUS | SQUARE | SQUARE |
| | D1.0 | D4.0 | R0.05 | R0.5 | R0.5 | D0.1 | D2.0 | R0.5 | R0.25 | D1.0 | D1.0 | D0.5 |
| | D20.0 | D20.0 | R10.0 | R6.0 | R10.0 | D12.0 | D20.0 | R6.0 | R6.0 | D12.0 | D12.0 | D12.0 |
| | C418-423 | C424-425 | C431-435 | C436-437 | C438-440 | C441-442 | C443-444 | C449 | C450-451 | C452-453 | C454 | C455-456 |
| | - | Type A/B | - | LONG NECK | - | - | - | - | EXTENDED NECK | EXTENDED NECK | - | EXTENDED NECK |
| | Uncoated | Uncoated | Diamond | Diamond | Diamond | Diamond | Diamond | DLC | DLC | DLC | DLC | DLC |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | | | | | | | | | | | | |
| | 2 | | | | | | | | | | | | |
| | 3 | | | | | | | | | | | | |
| | 4 | | | | | | | | | | | | |
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| | 9 | | | | | | | | | | | | |
| | 10 | | | | | | | | | | | | |
| | 11 | | | | | | | | | | | | |
| M | 12 | | | | | | | | | | | | |
| | 13 | | | | | | | | | | | | |
| | 14 | | | | | | | | | | | | |
| K | 15 | | | | | | | | | | | | |
| | 16 | | | | | | | | | | | | |
| | 17 | | | | | | | | | | | | |
| | 18 | | | | | | | | | | | | |
| | 19 | | | | | | | | | | | | |
| | 20 | | | | | | | | | | | | |
| N | 21 | ◎ | ◎ | | | | | | ○ | ○ | ○ | ○ | ○ |
| | 22 | ◎ | ◎ | | | | | | ○ | ○ | ○ | ○ | ○ |
| | 23 | ◎ | ◎ | | | | | | | | | | |
| | 24 | ◎ | ◎ | | | | | | | | | | |
| | 25 | ◎ | ◎ | | | | | | | | | | |
| | 26 | | | | | | | | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 27 | | | | | | | | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 28 | | | | | | | | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 29 | | | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ |
| | 30 | | | | | | | | | | | | |
| S | 31 | | | | | | | | | | | | |
| | 32 | | | | | | | | | | | | |
| | 33 | | | | | | | | | | | | |
| | 34 | | | | | | | | | | | | |
| | 35 | | | | | | | | | | | | |
| | 36 | | | | | | | | | | | | |
| | 37 | | | | | | | | | | | | |
| H | 38 | | | | | | | | | | | | |
| | 39 | | | | | | | | | | | | |
| | 40 | | | | | | | | | | | | |
| | 41 | | | | | | | | | | | | |

## SELECTION GUIDE 选用指南

YG MILLING TOOLS

| SERIES 系列 | EMC56 | EMC60 | EMC61 | EMC62 | EMC59 | EMC52 | EMC53 | EMC54 | EMC55 |
|---|---|---|---|---|---|---|---|---|---|
| | K-2 Plus | | | | | | | | |
| FLUTE 槽数 | 4 | 2 | 2 | 4 | 2 | 2 | 2 | 4 | 4 |
| HELIX ANGLE 螺旋角度 | 30° | 30° | 30° | 30° | 30° | 35° | 35° | 35° | 35° |
| CUTTING EDGE SHAPE 类型 | BALL NOSE | BALL NOSE | CORNER RADIUS | CORNER RADIUS | SQUARE | SQUARE | SQUARE | SQUARE | SQUARE |
| SIZE MIN 最小尺寸 | R0.1 | R0.2 | D3.0 | D3.0 | D0.4 | D1.0 | D2.0 | D1.0 | D2.0 |
| SIZE MAX 最大尺寸 | R10.0 | R3.0 | D12.0 | D12.0 | D6.0 | D20.0 | D20.0 | D20.0 | D20.0 |
| PAGE 页数 | C463 | C464-468 | C469-470 | C471-472 | C473-478 | C479 | C480 | C481 | C482 |
| LENGTH | SHORT LENGTH | LONG NECK | - | - | LONG NECK | SHORT LENGTH | LONG LENGTH | SHORT LENGTH | LONG LENGTH |
| SURFACE TREATMENT | TiAlN | TiAlN | TiAlN | TiAlN | TiAlN | TiAlN | TiAlN | TiAlN | TiAlN |

Please visit globalyg1.com/mat for material search

◎ : Excellent (优秀)
○ : Good (良好)

| ISO | VDI 3323 | Material Description 工件材料 | HB | HRc | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | 125 | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 2 | | 190 | 13 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 3 | | 250 | 25 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 4 | | 270 | 28 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 5 | | 300 | 32 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 6 | Low alloy steel | 180 | 10 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 7 | | 275 | 29 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 8 | | 300 | 32 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 9 | | 350 | 38 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 10 | High alloyed steel, and tool steel | 200 | 15 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 11 | | 325 | 35 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| M | 12 | Stainless steel | 200 | 15 | ○ | | | | | ○ | ○ | ○ | ○ |
| | 13 | | 240 | 23 | ○ | | | | | ○ | ○ | ○ | ○ |
| | 14 | | 180 | 10 | ○ | | ○ | ○ | | ○ | ○ | ○ | ○ |
| K | 15 | Grey cast iron | 180 | 10 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | 16 | | 260 | 26 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | 17 | Nodular cast iron | 160 | 3 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | 18 | | 250 | 25 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | 19 | Malleable cast iron | 130 | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | 20 | | 230 | 21 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| N | 21 | Aluminum-wrought alloy | 60 | | ○ | | | | | ○ | ○ | ○ | ○ |
| | 22 | | 100 | | ○ | | | | | ○ | ○ | ○ | ○ |
| | 23 | Aluminum-cast, alloyed | 75 | | ○ | | | | | ○ | ○ | ○ | ○ |
| | 24 | | 90 | | ○ | | | | | ○ | ○ | ○ | ○ |
| | 25 | | 130 | | ○ | | | | | ○ | ○ | ○ | ○ |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | 110 | | ○ | | | | | | | | |
| | 27 | | 90 | | ○ | | | | | | | | |
| | 28 | | 100 | | ○ | | | | | | | | |
| | 29 | Non Metallic Materials Duroplastic, Fiber Reinforced Plastic, Graphite, CFRP, GFRP, etc. | | | | | | | | | | | |
| | 30 | | | | | | | | | | | | |
| S | 31 | Heat Resistant Super Alloys | 200 | 15 | | | | | | | | | |
| | 32 | | 280 | 30 | | | | | | | | | |
| | 33 | | 250 | 25 | | | | | | | | | |
| | 34 | | 350 | 38 | | | | | | | | | |
| | 35 | | 320 | 34 | | | | | | | | | |
| | 36 | Titanium Alloys | 400 Rm | | | | | | | | | | |
| | 37 | | 1050 Rm | | | | | | | | | | |
| H | 38 | Hardened steel | 550 | 55 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | 39 | | 630 | 60 | | | | | | | | | |
| | 40 | Chilled Cast Iron | 400 | 42 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | 41 | Hardened Cast Iron | 550 | 55 | | | | | | | | | |

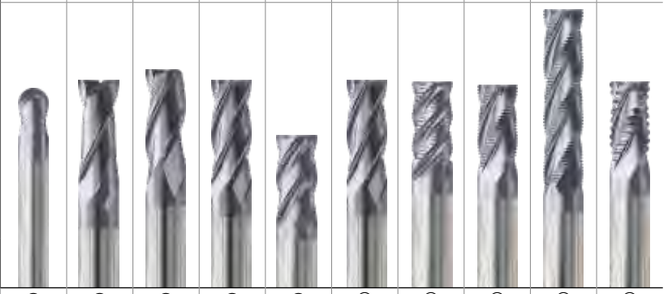
| SERIES 系列 | EMC57 | EMC58 | EMC69 | G9A25 | G9B52 | G9A23 | G9B50 | G9A24 | G9B51 | E5414 | E5524 | E5401 | E5423 | E5402 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | K-2 Plus | | | K-2 | | | | | | GENERAL CARBIDE END MILLS | | | | |
| FLUTE 槽数 | 4&6 | 6 | 4-6 | 2 | 2 | 2 | 2 | 4 | 4 | 2 | 4 | 2 | 3 | 4 |
| HELIX ANGLE 螺旋角度 | 45° | 45° | 45° | 30° | 30° | 30° | 30° | 30° | 30° | 30° | 30° | 30° | 45° | 30° |
| CUTTING EDGE SHAPE 类型 | SQUARE | SQUARE | ROUGHING | BALL NOSE | BALL NOSE | SQUARE | SQUARE | SQUARE | SQUARE | BALL NOSE | BALL NOSE | SQUARE | SQUARE | SQUARE |
| SIZE MIN 最小尺寸 | D1.0 | D6.0 | D6.0 | R0.5 | R0.5 | D1.0 | D1.0 | D1.0 | D1.0 | R0.2 | R1.0 | D0.4 | D3.0 | D1.5 |
| SIZE MAX 最大尺寸 | D20.0 | D20.0 | D20.0 | R10.0 | R10.0 | D20.0 | D20.0 | D20.0 | D20.0 | R12.5 | R10.0 | D20.0 | D20.0 | D20.0 |
| PAGE 页数 | C483 | | C484 | C485 | C486 | C487 | C488 | C489 | C490 | C507 | C508 | C509 | C510 | C511 |
| LENGTH | SHORT LENGTH | LONG LENGTH | FINE | REGULAR LENGTH | LONG LENGTH | REGULAR LENGTH | LONG LENGTH | REGULAR LENGTH | LONG LENGTH | - | SHORT LENGTH | STANDARD | SHORT LENGTH | STANDARD |
| SURFACE TREATMENT | TiAlN | TiAlN | X-Coating | TiAlN | TiAlN | TiAlN | TiAlN | TiAlN | TiAlN | Uncoated | Uncoated | Uncoated | Uncoated | Uncoated |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ○ | ○ | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 1 | |
| ○ | ○ | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 2 | |
| ○ | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 3 | |
| ○ | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 4 | |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 5 | |
| ○ | ○ | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 6 | P |
| ○ | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 7 | |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 8 | |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 9 | |
| ○ | ○ | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 10 | |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 11 | |
| | | | ○ | ○ | ○ | ○ | ○ | ○ | | | ○ | ○ | ○ | 12 | |
| | | | ○ | ○ | ○ | ○ | ○ | ○ | | | ○ | ○ | ○ | 13 | M |
| | | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | | | ○ | ○ | ○ | 14 | |
| ○ | ○ | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 15 | |
| ○ | ○ | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 16 | |
| ○ | ○ | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 17 | |
| ○ | ○ | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 18 | K |
| ○ | ○ | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 19 | |
| ○ | ○ | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 20 | |
| | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 21 | |
| | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 22 | |
| | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 23 | |
| | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 24 | |
| | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 25 | |
| | | | ○ | ○ | ○ | ○ | ○ | ○ | | | | ○ | ○ | 26 | N |
| | | | ○ | ○ | ○ | ○ | ○ | ○ | | | | ○ | ○ | 27 | |
| | | | ○ | ○ | ○ | ○ | ○ | ○ | | | | ○ | ○ | 28 | |
| | | | | | | | | | | | | | | 29 | |
| | | | | | | | | | | | | | | 30 | |
| | | ○ | ○ | ○ | | | | | | | | | | 31 | |
| | | ○ | ○ | ○ | | | | | | | | | | 32 | |
| | | ○ | ○ | ○ | | | | | | | | | | 33 | |
| | | ○ | ○ | ○ | | | | | | | | | | 34 | S |
| | | ○ | ○ | ○ | | | | | | | | | | 35 | |
| | | ○ | ○ | ○ | | | | | | | | ○ | | 36 | |
| | | ○ | ○ | ○ | | | | | | | | ○ | | 37 | |
| ○ | ○ | | | | | | | | | | | | | 38 | |
| | | | | | | | | | | | | | | 39 | |
| ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | 40 | H |
| ○ | ○ | | | | | | | | | | | | | 41 | |

## SELECTION GUIDE 选用指南

YG MILLING TOOLS

| | ONLY ONE | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| SERIES 系列 | GYG77 GYF97 | GYG72 GYF99 | GYG01 | GYG74 GYF96 | GYG52 | GYG76 GYG02 | GYF95 | GYF94 | GYF98 | GYG03 |
| FLUTE 槽数 | 2 | 2 | 3 | 4 | 4 | 4 | Multi Flute | Multi Flute | Multi Flute | Multi Flute |
| HELIX ANGLE 螺旋角度 | 30° | 30° | 30° | 30° | 35°/37° | 30° | 4F : 44°/45° 5F : 44°/44.5°/45° | 30° | 30° | 30° |
| CUTTING EDGE SHAPE 类型 | BALL NOSE | SQUARE | SQUARE | SQUARE | SQUARE | SQUARE | CORNER RADIUS ROUGHING | ROUGHING | ROUGHING | ROUGHING |
| SIZE MIN 最小尺寸 | R0.5 | D1.0 | D1.0 | D1.0 | D3.0 | D2.0 | D6.0 | D6.0 | D6.0 | D6.0 |
| SIZE MAX 最大尺寸 | R12.5 | D25.0 | D25.0 | D25.0 | D25.0 | D25.0 | D25.0 | D25.0 | D25.0 | D25.0 |
| PAGE 页数 | C526 | C527 | C528 | C529 | C530 | C531 | C532 | C533 | C534 | C535 |
| LENGTH | SHORT LENGTH | SHORT LENGTH | SHORT LENGTH (Center Cut) | SHORT LENGTH (Center Cut) | SHORT LENGTH (Center Cut) | LONG LENGTH (Center Cut) | SHORT LENGTH (Center Cut) | SHORT LENGTH (Center Cut) | LONG LENGTH (Center Cut) | SHORT LENGTH (Center Cut) |
| SURFACE TREATMENT | Y-Coating | Y-Coating | Y-Coating | Y-Coating | Y-Coating | Y-Coating | Y-Coating | Y-Coating | Y-Coating | Y-Coating |
| Tool Marterial | PM60 | PM60 | PM60 | PM60 | PM60 | PM60 | PM60 | PM60 | PM60 | PM60 |



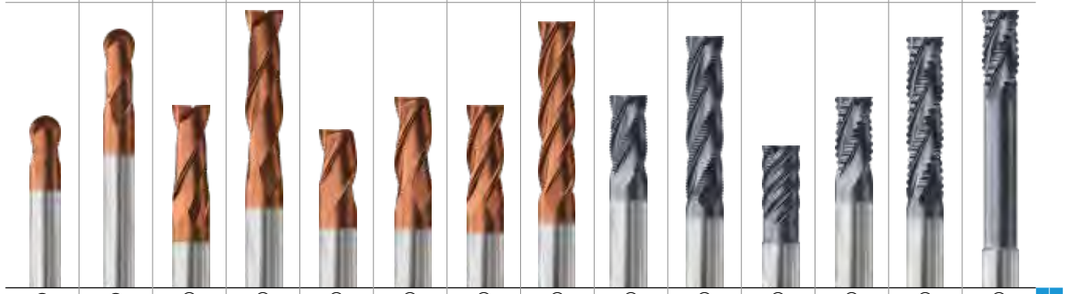
Please visit globalyg1.com/mat for material search

◎ : Excellent (优秀)
○ : Good (良好)

| ISO | VDI 3323 | Material Description 工件材料 | HB | HRc | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | 125 | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 2 | | 190 | 13 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 3 | | 250 | 25 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 4 | | 270 | 28 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 5 | | 300 | 32 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 6 | Low alloy steel | 180 | 10 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 7 | | 275 | 29 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 8 | | 300 | 32 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 9 | | 350 | 38 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | 10 | High alloyed steel, and tool steel | 200 | 15 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 11 | | 325 | 35 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| M | 12 | Stainless steel | 200 | 15 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 13 | | 240 | 23 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 14 | | 180 | 10 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| K | 15 | Grey cast iron | 180 | 10 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 16 | | 260 | 26 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 17 | Nodular cast iron | 160 | 3 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 18 | | 250 | 25 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 19 | Malleable cast iron | 130 | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 20 | | 230 | 21 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| N | 21 | Aluminum-wrought alloy | 60 | | | | | | | | | | | |
| | 22 | | 100 | | | | | | | | | | | |
| | 23 | Aluminum-cast, alloyed | 75 | | | | | | | | | | | |
| | 24 | | 90 | | | | | | | | | | | |
| | 25 | | 130 | | | | | | | | | | | |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | 110 | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | 27 | | 90 | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | 28 | | 100 | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | 29 | Non Metallic Materials Duroplastic, Fiber Reinforced Plastic, Graphite, CFRP, GFRP, etc. | | | | | | | | | | | | |
| | 30 | | | | | | | | | | | | | |
| S | 31 | Heat Resistant Super Alloys | 200 | 15 | | | | | | | | | | |
| | 32 | | 280 | 30 | | | | | | | | | | |
| | 33 | | 250 | 25 | | | | | | | | | | |
| | 34 | | 350 | 38 | | | | | | | | | | |
| | 35 | | 320 | 34 | | | | | | | | | | |
| | 36 | Titanium Alloys | 400 Rm | | | | | | | | | | | |
| | 37 | | 1050 Rm | | | | | | | | | | | |
| H | 38 | Hardened steel | 550 | 55 | | | | | | | | | | |
| | 39 | | 630 | 60 | | | | | | | | | | |
| | 40 | Chilled Cast Iron | 400 | 42 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | 41 | Hardened Cast Iron | 550 | 55 | | | | | | | | | | |



| | TANK-POWER | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | E9940 GA940 | E9A32 GAA32 | E9936 GA936 | E9A29 GAA29 | E9942 GA942 | E9A30 GAA30 | E9938 GA938 | E9A31 GAA31 | E9941 GA941 | E9A35 GAA35 | E9A26 GAA26 | E9A33 GAA33 | E9A34 GAA34 | E9E43 GAE43 |
| | 2 | 2 | 2 | 2 | 3 | 3 | 4 | 4 | Multi Flute | Multi Flute | Multi Flute | Multi Flute | Multi Flute | Multi Flute |
| | 30° | 30° | 30° | 30° | 30° | 30° | 30° | 30° | 30° | 30° | 45° | 30° | 30° | 30° |
| | BALL NOSE | BALL NOSE | SQUARE | SQUARE | SQUARE | SQUARE | SQUARE | SQUARE | ROUGHING | ROUGHING | ROUGHING | ROUGHING | ROUGHING | ROUGHING |
| | R0.5 | R1.0 | D1.0 | D1.0 | D1.0 | D1.0 | D1.0 | D2.0 | D6.0 | D6.0 | D4.0 | D6.0 | D6.0 | D10.0 |
| | R12.5 | R12.5 | D25.0 | D25.0 | D25.0 | D25.0 | D25.0 | D25.0 | D25.0 | D25.0 | D25.0 | D25.0 | D25.0 | D25.0 |
| | C548 | C549 | C550 | C551 | C552 | C553 | C554 | C555 | C556 | C557 | C558 | C559 | C560 | C561 |
| | SHORT LENGTH | LONG LENGTH | SHORT LENGTH | LONG LENGTH | STUB LENGTH | SHORT LENGTH | SHORT LENGTH | LONG LENGTH | SHORT LENGTH | LONG LENGTH | SHORT LENGTH | SHORT LENGTH | LONG LENGTH | WITH NECK |
| | TiAlN | TiAlN | TiAlN | TiAlN | TiAlN | TiAlN | TiAlN | TiAlN | X- Coating | X- Coating | X- Coating | X- Coating | X- Coating | X- Coating |
| | HSS-PM | HSS-PM | HSS-PM | HSS-PM | HSS-PM | HSS-PM | HSS-PM | HSS-PM | HSS-PM | HSS-PM | HSS-PM | HSS-PM | HSS-PM | HSS-PM |



| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 1 | |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 2 | |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 3 | |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 4 | |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 5 | |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 6 | P |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 7 | |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 8 | |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 9 | |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 10 | |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 11 | |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 12 | |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 13 | M |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 14 | |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 15 | |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 16 | |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 17 | |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 18 | K |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 19 | |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 20 | |
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| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 26 | N |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 27 | |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 28 | |
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| | | | | | | | | | | | | | | 34 | S |
| | | | | | | | | | | | | | | 35 | |
| | | | | | | | | | | | | | | 36 | |
| | | | | | | | | | | | | | | 37 | |
| | | | | | | | | | | | | | | 38 | |
| | | | | | | | | | | | | | | 39 | H |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 40 | |
| | | | | | | | | | | | | | | 41 | |

## SELECTION GUIDE 选用指南

YG MILLING TOOLS

## GENERAL HSS END MILLS

| SERIES 系列 | E2480 | E2401 | E2406 | E2412 | E2659 | E2750 | E2760 | E2759 | E2753 | EL612 |
|---|---|---|---|---|---|---|---|---|---|---|
| FLUTE 槽数 | 2 | 2 | 2 | 4 | 4 | 4 | 4-6 (Multi Flute) | 4-6 (Multi Flute) | 3-6 (Multi Flute) | 1 |
| HELIX ANGLE 螺旋角度 | 30° | 30° | 30° | 30° | 30° | 30° | 30° | 30° | 30° | ≈ 30° |
| CUTTING EDGE SHAPE 类型 | BALL NOSE | SQUARE | SQUARE | SQUARE | SQUARE | SQUARE | SQUARE ROUGHING - COARSE | SQUARE ROUGHING - COARSE | SQUARE ROUGHING - FINE | SQUARE |
| SIZE MIN 最小尺寸 | R0.5 | D1.0 | D3.0 | D1.0 | D3.0 | D16.0 | D6.0 | D10.0 | D6.0 | D3.0 |
| SIZE MAX 最大尺寸 | R25.0 | D50.0 | D50.0 | D50.0 | D50.0 | D50.0 | D50.0 | D50.0 | D40.0 | D10.0 |
| PAGE 页数 | C582-583 | C584-586 | C587-588 | C589-591 | C592-593 | C594 | C595-596 | C597 | C598 | C599 |
| LENGTH | REGULAR LENGTH | REGULAR LENGTH | LONG LENGTH | REGULAR LENGTH CENTER CUTTING | LONG LENGTH CENTER CUTTING | EXTRA LONG LENGTH | SHORT LENGTH | LONG LENGTH | SHORT LENGTH | - |
| SURFACE TREATMENT | Uncoated / TiAlN | Uncoated / TiAlN | Uncoated / TiAlN | Uncoated / TiAlN | Uncoated / TiAlN | Uncoated / TiAlN | Uncoated / TiAlN | Uncoated / TiAlN | Uncoated / TiAlN | Uncoated |
| Tool Marterial | HSSCo8 | HSSCo8 | HSSCo8 | HSSCo8 | HSSCo8 | HSSCo8 | HSSCo8 | HSSCo8 | HSSCo8 | HSS-E |

Please visit globalyg1.com/mat for material search

◎ : Excellent (优秀)
○ : Good (良好)

| ISO | VDI 3323 | Material Description 工件材料 | HB | HRc | E2480 | E2401 | E2406 | E2412 | E2659 | E2750 | E2760 | E2759 | E2753 | EL612 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | 125 | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ |
| | 2 | | 190 | 13 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ |
| | 3 | | 250 | 25 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | |
| | 4 | | 270 | 28 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | |
| | 5 | | 300 | 32 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | |
| | 6 | Low alloy steel | 180 | 10 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ |
| | 7 | | 275 | 29 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | |
| | 8 | | 300 | 32 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | |
| | 9 | | 350 | 38 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | 10 | High alloyed steel, and tool steel | 200 | 15 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ |
| | 11 | | 325 | 35 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| M | 12 | Stainless steel | 200 | 15 | | | | | | | | | | |
| | 13 | | 240 | 23 | | | | | | | | | | |
| | 14 | | 180 | 10 | | | | | | | | | | |
| K | 15 | Grey cast iron | 180 | 10 | | | | | | | | | | |
| | 16 | | 260 | 26 | | | | | | | | | | |
| | 17 | Nodular cast iron | 160 | 3 | | | | | | | | | | |
| | 18 | | 250 | 25 | | | | | | | | | | |
| | 19 | Malleable cast iron | 130 | | | | | | | | | | | |
| | 20 | | 230 | 21 | | | | | | | | | | |
| N | 21 | Aluminum-wrought alloy | 60 | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ◎ |
| | 22 | | 100 | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ◎ |
| | 23 | Aluminum-cast, alloyed | 75 | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ◎ |
| | 24 | | 90 | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ◎ |
| | 25 | | 130 | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | 110 | | | | | | | | | | | |
| | 27 | | 90 | | | | | | | | | | | |
| | 28 | | 100 | | | | | | | | | | | |
| | 29 | Non Metallic Materials Duroplastic, Fiber Reinforced Plastic, Graphite, CFRP, GFRP, etc. | | | | | | | | | | | | |
| | 30 | | | | | | | | | | | | | |
| S | 31 | Heat Resistant Super Alloys | 200 | 15 | | | | | | | | | | |
| | 32 | | 280 | 30 | | | | | | | | | | |
| | 33 | | 250 | 25 | | | | | | | | | | |
| | 34 | | 350 | 38 | | | | | | | | | | |
| | 35 | | 320 | 34 | | | | | | | | | | |
| | 36 | Titanium Alloys | 400 Rm | | | | | | | | | | | |
| | 37 | | 1050 Rm | | | | | | | | | | | |
| H | 38 | Hardened steel | 550 | 55 | | | | | | | | | | |
| | 39 | | 630 | 60 | | | | | | | | | | |
| | 40 | Chilled Cast Iron | 400 | 42 | | | | | | | | | | |
| | 41 | Hardened Cast Iron | 550 | 55 | | | | | | | | | | |

## MILLING CUTTER

| ML012, ML022 ML112, ML122 ML212, ML222 | ML032, ML042 ML132, ML142 ML232, ML242 | ML062 ML162 ML262 | ML072 ML172 ML272 | ML092 | ML102 | E2675 | E2676 | E2677 | E2678 | E2679 | E2498 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| - | - | - | - | - | - | Multi Flute | Multi Flute | Multi Flute | Multi Flute | Multi Flute | 4 |
| 0° | 0° | 10°-20° | 10°-20° | 10° | - | 30° | 42° | 30° | 30° | 30° | 0° |
| DOVETAIL CUTTERS | DOVETAIL CUTTERS | WOODRUFF KEYSEAT CUTTERS | T-SLOT CUTTERS | SIDE AND FACE MILLING CUTTERS | SIDE AND FACE MILLING CUTTERS | SHELL END MILL | SHELL END MILL | ROUGHING SHELL END MILL | ROUGHING SHELL END MILL | ROUGHING & FINISHING SHELL END MILL | CORNER ROUNDING CUTTERS |
| D16.0 | D16.0 | D10.5 | D12.5 | D50.0 | D50.0 | D30.0 | D30.0 | D40.0 | D40.0 | D40.0 | D8.0 |
| D50.0 | D38.0 | D45.5 | D40.0 | D125.0 | D200.0 | D160.0 | D100.0 | D160.0 | D160.0 | D160.0 | D56.0 |
| C624 | C625 | C626-627 | C628 | C629-630 | C631-636 | C637 | C638 | C639 | C640 | C641 | C642-643 |
| Type A, C, E | Type B, D, F | Type B, D, F | Type AA, AB, AD | with STRAIGHT TEETH | with STAGGERED TEETH | - | for ALUMINUM | - | - | - | - |
| Uncoated | Uncoated | Uncoated | Uncoated | Uncoated | Uncoated | Uncoated | Uncoated | Uncoated | Uncoated | Uncoated | Uncoated |
| HSS-E | HSS-E | HSS-E | HSS-E | HSS-E | HSS-E | HSS Co8 | HSS Co8 | HSS Co8 | HSS Co8 | HSS Co8 | HSS Co8 |

| ML012, ML022 ML112, ML122 ML212, ML222 | ML032, ML042 ML132, ML142 ML232, ML242 | ML062 ML162 ML262 | ML072 ML172 ML272 | ML092 | ML102 | E2675 | E2676 | E2677 | E2678 | E2679 | E2498 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ◎ | 1 |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ◎ | 2 |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ◎ | 3 |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ◎ | 4 |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | | ○ | ○ | ○ | ○ | 5 |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ◎ | 6 P |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ◎ | 7 |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | | ○ | ○ | ○ | ○ | 8 |
| ○ | ○ | ○ | | ○ | ○ | ○ | | ○ | ○ | ○ | ○ | 9 |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ◎ | 10 |
| ○ | ○ | ○ | | ○ | ○ | ○ | | ○ | ○ | ○ | ○ | 11 |
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| ○ | ○ | ○ | ○ | ○ | ○ | | ◎ | ○ | ○ | ○ | ○ | 21 |
| ○ | ○ | ○ | ○ | ○ | ○ | | ◎ | ○ | ○ | ○ | ○ | 22 |
| ○ | ○ | ○ | ○ | ○ | ○ | | ◎ | ○ | ○ | ○ | ○ | 23 |
| ○ | ○ | ○ | ○ | ○ | ○ | | ◎ | ○ | ○ | ○ | ○ | 24 |
| ○ | ○ | ○ | ○ | ○ | ○ | | ◎ | ○ | ○ | ○ | ○ | 25 N |
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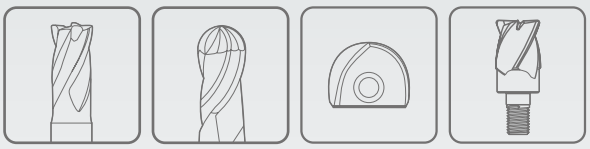
Global Cutting Tool Leader **YG-1**



# MILLING

Leading Through Innovation

CBN

# CBN (Cubic Boron Nitride)

- CBN(Cubic Boron Nitride) Machining High Hardened Steels up to HRc70 Mirror Finish
- 适用于加工高硬钢(~HRc70)，镜面处理的CBN(立方氮化硼)铣刀

# SELECTION GUIDE
## 选用指南

MILLING TOOLS

| SERIES 系列 | ESB94 | ESD02 |
|---|---|---|
| FLUTE 槽数 | 2 | 2 |
| HELIX ANGLE 螺旋角度 | 30° | 0° |
| CUTTING EDGE SHAPE 类型 | BALL NOSE | CORNER RADIUS |
| SIZE MIN 最小尺寸 | R0.2 | D0.5 |
| SIZE MAX 最大尺寸 | R1.5 | D2.0 |
| PAGE 页数 | C25 | C26 |
| | - | - |
| | UNCOATED | UNCOATED |

# CBN END MILLS

Cubic Boron Nitride,
Machining High Hardened Steels
up to HRc70, Mirror Finish

立方氮化硼，加工高硬钢(~HRc70)，镜面处理

Please visit globalyg1.com/mat for material search

◎ : Excellent (优秀) ○ : Good (良好)

Recommended cutting conditions (推荐加工参数) : p.C27

| ISO | VDI 3323 | Material Description 工件材料 | Composition / Structure / Heat Treatment 成分 / 结构 / 热处理 | | HB | HRc | | |
|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | About 0.15% C | Annealed | 125 | | | |
| | 2 | | About 0.45% C | Annealed | 190 | 13 | | |
| | 3 | | About 0.45% C | Quenched & Tempered | 250 | 25 | | |
| | 4 | | About 0.75% C | Annealed | 270 | 28 | | |
| | 5 | | About 0.75% C | Quenched & Tempered | 300 | 32 | | |
| | 6 | Low alloy steel | | Annealed | 180 | 10 | | |
| | 7 | | | Quenched & Tempered | 275 | 29 | | |
| | 8 | | | Quenched & Tempered | 300 | 32 | | |
| | 9 | | | Quenched & Tempered | 350 | 38 | | |
| | 10 | High alloyed steel, and tool steel | | Annealed | 200 | 15 | | |
| | 11 | | | Quenched & Tempered | 325 | 35 | | |
| M | 12 | Stainless steel | Ferritic / Martensitic | Annealed | 200 | 15 | | |
| | 13 | | Martensitic | Quenched & Tempered | 240 | 23 | | |
| | 14 | | Austenitic | | 180 | 10 | | |
| K | 15 | Grey cast iron | Pearlitic / ferritic | | 180 | 10 | | |
| | 16 | | Pearlitic (Martensitic) | | 260 | 26 | | |
| | 17 | Nodular cast iron | Ferritic | | 160 | 3 | | |
| | 18 | | Pearlitic | | 250 | 25 | | |
| | 19 | Malleable cast iron | Ferritic | | 130 | | | |
| | 20 | | Pearlitic | | 230 | 21 | | |
| N | 21 | Aluminum-wrought alloy | Not Curable | | 60 | | | |
| | 22 | | Curable | Hardened | 100 | | | |
| | 23 | Aluminum-cast, alloyed | ≤ 12% Si, Not Curable | | 75 | | | |
| | 24 | | ≤ 12% Si, Curable | Hardened | 90 | | | |
| | 25 | | > 12% Si, Not Curable | | 130 | | | |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | Cutting Alloys, PB>1% | | 110 | | | |
| | 27 | | CuZn, CuSnZn (Brass) | | 90 | | | |
| | 28 | | CuSn, lead-free copper and electrolytic copper | | 100 | | | |
| | 29 | Non Metallic Materials | Duroplastic, Fiber Reinforced Plastic | | | | | |
| | 30 | | Rubber, Wood, etc. | | | | | |
| S | 31 | Heat Resistant Super Alloys | Fe Based | Annealed | 200 | 15 | | |
| | 32 | | | Cured | 280 | 30 | | |
| | 33 | | Ni or Co Based | Annealed | 250 | 25 | | |
| | 34 | | | Cured | 350 | 38 | | |
| | 35 | | | Cast | 320 | 34 | | |
| | 36 | Titanium Alloys | Pure Titanium | | 400 Rm | | | |
| | 37 | | Alpha + Beta Alloys | Hardened | 1050 Rm | | | |
| H | 38 | Hardened steel | | Hardened | 550 | 55 | ◎ | ◎ |
| | 39 | | | Hardened | 630 | 60 | ◎ | ◎ |
| | 40 | Chilled Cast Iron | | Cast | 400 | 42 | | |
| | 41 | Hardened Cast Iron | | Hardened | 550 | 55 | ◎ | ◎ |

BALL NOSE = 球头　　CORNER RADIUS = 圆鼻　　UNCOATED = 非涂层





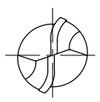
# CBN END MILLS

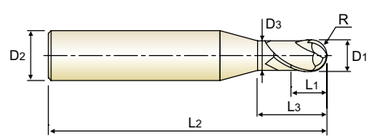
PLAIN SHANK **ESB94** SERIES

## CBN, 2 FLUTE BALL NOSE
## CBN, 2刃 球头

▶Achieves stable machining and higher accuracy for duration.
▶Saves setting time and cost from the reduction of frequent tool change.
▶Improves repeatability in performance.
▶Special designed geometry improving tool rigidity at High Speed Cutting.
▶Tighter Radius Tolerance of ±0.005mm and higher accuracy with longer tool life.

▶高耐用性可保证稳定的加工和高精度
▶减少换刀频率节省调试时间和成本
▶提高可重复性性能
▶特殊设计的形状提高刀具在高速加工的刚性
▶精确半径公差(±0.005mm), 高精度，高寿命






CBN | 2 | 30° | R ±0.005 | PLAIN

p.C27

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| ◎ | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| ◎ | POWER MILLING CHUCK | D161 - 176 |
| ○ | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Radius of Ball Nose 圆弧角 R (±0.005) | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Length Below Shank 颈长 L3 | Overall Length 全长 L2 | Neck Diameter 颈径 D3 |
|---|---|---|---|---|---|---|---|
| ESB94004012 | R0.2 | 0.4 | 4 | 0.3 | 1.2 | 50 | 0.37 |
| ESB94005015 | R0.25 | 0.5 | 4 | 0.4 | 1.5 | 50 | 0.46 |
| ESB94006015 | R0.3 | 0.6 | 4 | 0.5 | 1.5 | 50 | 0.56 |
| ESB94008020 | R0.4 | 0.8 | 4 | 0.6 | 2 | 50 | 0.76 |
| ESB94010025 | R0.5 | 1.0 | 4 | 0.6 | 2.5 | 50 | 0.95 |
| ESB94010040 | R0.5 | 1.0 | 4 | 0.6 | 4 | 50 | 0.95 |
| ESB94010060 | R0.5 | 1.0 | 4 | 0.6 | 6 | 50 | 0.95 |
| ESB94012030 | R0.6 | 1.2 | 4 | 0.8 | 3 | 50 | 1.15 |
| ESB94015030 | R0.75 | 1.5 | 4 | 0.95 | 3 | 50 | 1.45 |
| ESB94015040 | R0.75 | 1.5 | 4 | 0.95 | 4 | 50 | 1.45 |
| ESB94015060 | R0.75 | 1.5 | 4 | 0.95 | 6 | 50 | 1.45 |
| ESB94020050 | R1.0 | 2.0 | 4 | 1.2 | 5 | 50 | 1.95 |
| ESB94020060 | R1.0 | 2.0 | 4 | 1.2 | 6 | 50 | 1.95 |
| ESB94030060 | R1.5 | 3.0 | 4 | 1.8 | 6 | 50 | 2.85 |

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| ± 0.005 | h5 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | | | | | | | | | | | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ◎ | ◎ | | ◎ |

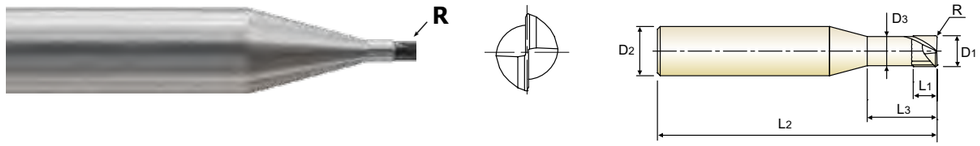
CBN END MILLS

PLAIN SHANK **ESD02** SERIES

## CBN, 2 FLUTE CORNER RADIUS
## CBN, 2刃 圆鼻

▶Achieves stable machining and higher accuracy for duration.
▶Saves setting time and cost from the reduction of frequent tool change.
▶Improves repeatability in performance.
▶Special designed geometry improving tool rigidity at High Speed Cutting.
▶Tighter Radius Tolerance of ±0.005mm and higher accuracy with longer tool life.

▶高耐用性可保证稳定的加工和高精度
▶减少换刀频率节省调试时间和成本
▶提高可重复性性能
▶特殊设计的形状提高刀具在高速加工的刚性
▶精确半径公差(±0.005mm), 高精度，高寿命




CBN | 2 | 0° | R ±0.005 | PLAIN

p.C27

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| | HYDRAULIC CHUCK SHRINK FIT HOLDER | D15 - 46 D47 - 72 |
| | POWER MILLING CHUCK | D161 - 176 |
| | ER COLLET CHUCK SK SLIM CHUCK | D73 - 115 D183 - 201 |

Unit(单位) : mm

| EDP No. | Corner Radius 圆弧角 R (±0.005) | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Length Below Shank 颈长 L3 | Overall Length 全长 L2 | Neck Diameter 颈径 D3 |
|---|---|---|---|---|---|---|---|
| ESD02005052 | R0.05 | 0.5 | 4 | 0.3 | 2 | 50 | 0.46 |
| ESD02005053 | R0.05 | 0.5 | 4 | 0.3 | 3 | 50 | 0.46 |
| ESD02010053 | R0.05 | 1.0 | 4 | 0.7 | 3 | 50 | 0.95 |
| ESD02010055 | R0.05 | 1.0 | 4 | 0.7 | 5 | 50 | 0.95 |
| ESD02010103 | R0.1 | 1.0 | 4 | 0.7 | 3 | 50 | 0.95 |
| ESD02010105 | R0.1 | 1.0 | 4 | 0.7 | 5 | 50 | 0.95 |
| ESD02015105 | R0.1 | 1.5 | 4 | 1.0 | 5 | 50 | 1.45 |
| ESD02015108 | R0.1 | 1.5 | 4 | 1.0 | 8 | 50 | 1.45 |
| ESD02015205 | R0.2 | 1.5 | 4 | 1.0 | 5 | 50 | 1.45 |
| ESD02015208 | R0.2 | 1.5 | 4 | 1.0 | 8 | 50 | 1.45 |
| ESD02020106 | R0.1 | 2.0 | 4 | 1.2 | 6 | 50 | 1.95 |
| ESD02020100 | R0.1 | 2.0 | 4 | 1.2 | 10 | 50 | 1.95 |
| ESD02020206 | R0.2 | 2.0 | 4 | 1.2 | 6 | 50 | 1.95 |
| ESD02020200 | R0.2 | 2.0 | 4 | 1.2 | 10 | 50 | 1.95 |

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| ± 0.005 | h5 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | | | | | | | | | | | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ◎ | ◎ | | ◎ |





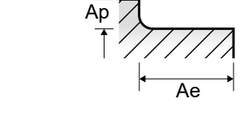
CBN END MILLS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

**ESB94** SERIES — **2 FLUTE BALL NOSE** / **2刃 球头**

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

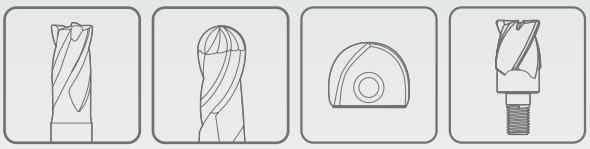
| ISO | VDI 3323 | Material Description 工件材料 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 0.4 | 0.5 | 0.6 | 0.8 | 1.0 | 1.2 | 1.5 | 2.0 | 3.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| H | 38 | Hardened steel | 0.5D | 0.2R | Vc | 65 | 80 | 95 | 125 | 155 | 190 | 235 | 250 | 250 |
| | | | | | fz | 0.012 | 0.015 | 0.02 | 0.02 | 0.03 | 0.03 | 0.03 | 0.04 | 0.04 |
| | | | | | RPM | 51725 | 50930 | 50399 | 49736 | 49338 | 50399 | 49869 | 39789 | 26526 |
| | | | | | FEED | 1241 | 1528 | 2016 | 1989 | 2960 | 3024 | 2992 | 3183 | 2122 |
| | 39.1 | | 0.5D | 0.1R | Vc | 65 | 80 | 95 | 125 | 155 | 190 | 235 | 250 | 250 |
| | | | | | fz | 0.012 | 0.015 | 0.02 | 0.02 | 0.03 | 0.03 | 0.03 | 0.04 | 0.04 |
| | | | | | RPM | 51725 | 50930 | 50399 | 49736 | 49338 | 50399 | 49869 | 39789 | 26526 |
| | | | | | FEED | 1241 | 1528 | 2016 | 1989 | 2960 | 3024 | 2992 | 3183 | 2122 |
| | 39.2 | | 0.5D | 0.1R | Vc | 65 | 80 | 95 | 125 | 155 | 190 | 235 | 200 | 205 |
| | | | | | fz | 0.012 | 0.015 | 0.02 | 0.02 | 0.03 | 0.03 | 0.03 | 0.039 | 0.04 |
| | | | | | RPM | 51725 | 50930 | 50399 | 49736 | 49338 | 50399 | 49869 | 31831 | 21751 |
| | | | | | FEED | 1241 | 1528 | 2016 | 1989 | 2960 | 3024 | 2992 | 2483 | 1740 |
| | 39.3 | | R0.2~R0.4 = 0.005mm R0.5~R1.5 = 0.01mm | R0.2~R0.4 = 0.005mm R0.5~R1.5 = 0.01mm | Vc | 65 | 80 | 95 | 125 | 155 | 190 | 235 | 200 | 205 |
| | | | | | fz | 0.012 | 0.015 | 0.02 | 0.02 | 0.03 | 0.03 | 0.03 | 0.039 | 0.04 |
| | | | | | RPM | 51725 | 50930 | 50399 | 49736 | 49338 | 50399 | 49869 | 31831 | 21751 |
| | | | | | FEED | 1241 | 1528 | 2016 | 1989 | 2960 | 3024 | 2992 | 2483 | 1740 |
| | 41 | Hardened Cast Iron | 0.5D | 0.2R | Vc | 65 | 80 | 95 | 125 | 155 | 190 | 235 | 250 | 250 |
| | | | | | fz | 0.012 | 0.015 | 0.02 | 0.02 | 0.03 | 0.03 | 0.03 | 0.04 | 0.04 |
| | | | | | RPM | 51725 | 50930 | 50399 | 49736 | 49338 | 50399 | 49869 | 39789 | 26526 |
| | | | | | FEED | 1241 | 1528 | 2016 | 1989 | 2960 | 3024 | 2992 | 3183 | 2122 |




**ESD02** SERIES — **2 FLUTE CORNER RADIUS** / **2刃 圆鼻**

| ISO | VDI 3323 | Material Description 工件材料 | Parameter 参数 | Diameter (Ø) 直径 0.5 | 1.0 | 1.5 | 2.0 |
|---|---|---|---|---|---|---|---|
| H | 38 - 39.1 | Hardened steel | Vc | 80 | 135 | 140 | 140 |
| | | | fz | 0.007 | 0.012 | 0.017 | 0.02 |
| | | | RPM | 50930 | 42972 | 29709 | 22282 |
| | | | FEED | 713 | 1031 | 1010 | 891 |
| | | | Ae | 0.1 | 0.2 | 0.4 | 0.6 |
| | | | Ap | 0.01 | 0.01 | 0.02 | 0.03 |
| | 39.2 - 39.3 | | Vc | 80 | 95 | 90 | 90 |
| | | | fz | 0.006 | 0.012 | 0.018 | 0.029 |
| | | | RPM | 50930 | 30239 | 19099 | 14324 |
| | | | FEED | 611 | 726 | 688 | 831 |
| | | | Ae | 0.06 | 0.1 | 0.2 | 0.3 |
| | | | Ap | 0.005 | 0.01 | 0.02 | 0.03 |
| | 41 | Hardened Cast Iron | Vc | 80 | 135 | 140 | 140 |
| | | | fz | 0.007 | 0.012 | 0.017 | 0.02 |
| | | | RPM | 50930 | 42972 | 29709 | 22282 |
| | | | FEED | 713 | 1031 | 1010 | 891 |
| | | | Ae | 0.1 | 0.2 | 0.4 | 0.6 |
| | | | Ap | 0.01 | 0.01 | 0.02 | 0.03 |

Global Cutting Tool Leader **YG-1**



# MILLING

YG

Leading Through Innovation

# CARBIDE INSERT & HOLDER

# *i*-Xmill END MILLS

- Various Applications Type of Inserts Available for General Steels, Pre-Hardened Steels, High Hardened Steels, Stainless Steels and Graphite
- 多样类型刀片可用在加工普通钢，预硬钢，高硬钢，不锈钢，石墨

# SELECTION GUIDE
## 选用指南

YG MILLING TOOLS

## CARBIDE INSERT & HOLDER i-Xmill END MILLS

Available for General Steels, Pre-Hardened Steels, High Hardened Steels, Stainless Steel and Graphite
适用于加工普通钢，预硬钢，高硬钢，不锈钢，石墨

Please visit globalyg1.com/mat for material search

◎ : Excellent (优秀) ○ : Good (良好)

Recommended cutting conditions (推荐加工条件) : p.C50

| SERIES 系列 | XMB110A | XMB120C | XMB260T | XMB130A |
|---|---|---|---|---|
| FLUTE 槽数 | 2 | 2 | 2 | 2 |
| HELIX ANGLE 螺旋角度 | - | - | - | - |
| CUTTING EDGE SHAPE 类型 | BALL NOSE | BALL NOSE | BALL NOSE | BALL NOSE |
| SIZE MIN 最小尺寸 | R4.0 | R4.0 | R4.0 | R4.0 |
| SIZE MAX 最大尺寸 | R16.5 | R16.5 | R16.5 | R16.5 |
| PAGE 页数 | C32 | | | C33 |
| | - | - | - | - |
| | AlTiN | X-Coating | Z-Coating | AlTiN |
| | GENERAL PURPOSE | PRE-HARDENED STEELS | HIGH HARDENED STEELS | STAINLESS STEELS |

| ISO | VDI 3323 | Material Description 材料描述 | Composition / Structure / Heat Treatment 成分 / 组织 / 热处理 | | HB | HRc | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | About 0.15% C | Annealed | 125 | | ◎ | | | |
| | 2 | | About 0.45% C | Annealed | 190 | 13 | ◎ | | | |
| | 3 | | About 0.45% C | Quenched & Tempered | 250 | 25 | ◎ | | | |
| | 4 | | About 0.75% C | Annealed | 270 | 28 | ◎ | | | |
| | 5 | | About 0.75% C | Quenched & Tempered | 300 | 32 | ◎ | | | |
| | 6 | Low alloy steel | | Annealed | 180 | 10 | ◎ | | | |
| | 7 | | | Quenched & Tempered | 275 | 29 | ◎ | | | |
| | 8 | | | Quenched & Tempered | 300 | 32 | ◎ | | | |
| | 9 | | | Quenched & Tempered | 350 | 38 | | ◎ | | |
| | 10 | High alloyed steel, and tool steel | | Annealed | 200 | 15 | | ○ | | |
| | 11 | | | Quenched & Tempered | 325 | 35 | | ◎ | | |
| M | 12 | Stainless steel | Ferritic / Martensitic | Annealed | 200 | 15 | | | | ◎ |
| | 13 | | Martensitic | Quenched & Tempered | 240 | 23 | | | | ◎ |
| | 14 | | Austenitic | | 180 | 10 | | | | ◎ |
| K | 15 | Grey cast iron | Pearlitic / ferritic | | 180 | 10 | | ◎ | | |
| | 16 | | Pearlitic (Martensitic) | | 260 | 26 | | ◎ | | |
| | 17 | Nodular cast iron | Ferritic | | 160 | 3 | | ◎ | | |
| | 18 | | Pearlitic | | 250 | 25 | | ◎ | | |
| | 19 | Malleable cast iron | Ferritic | | 130 | | | ◎ | | |
| | 20 | | Pearlitic | | 230 | 21 | | ◎ | | |
| N | 21 | Aluminum-wrought alloy | Not Curable | | 60 | | | | | |
| | 22 | | Curable | Hardened | 100 | | | | | |
| | 23 | Aluminum-cast, alloyed | ≤ 12% Si, Not Curable | | 75 | | | | | |
| | 24 | | ≤ 12% Si, Curable | Hardened | 90 | | | | | |
| | 25 | | > 12% Si, Not Curable | | 130 | | | | | |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | Cutting Alloys, PB>1% | | 110 | | | | | |
| | 27 | | CuZn, CuSnZn (Brass) | | 90 | | | | | |
| | 28 | | CuSn, lead-free copper and electrolytic copper | | 100 | | | | | |
| | 29 | Non Metallic Materials | Duroplastic, Fiber Reinforced Plastic | | | | | | | |
| | 30 | | Rubber, Wood, etc. | | | | | | | |
| S | 31 | Heat Resistant Super Alloys | Fe Based | Annealed | 200 | 15 | | | | |
| | 32 | | | Cured | 280 | 30 | | | | |
| | 33 | | Ni or Co Based | Annealed | 250 | 25 | | | | |
| | 34 | | | Cured | 350 | 38 | | | | |
| | 35 | | | Cast | 320 | 34 | | | | |
| | 36 | Titanium Alloys | Pure Titanium | | 400 Rm | | | | | |
| | 37 | | Alpha + Beta Alloys | Hardened | 1050 Rm | | | | | |
| H | 38 | Hardened steel | | Hardened | 550 | 55 | | ○ | ◎ | |
| | 39 | | | Hardened | 630 | 60 | | | ◎ | |
| | 40 | Chilled Cast Iron | | Cast | 400 | 42 | | | ○ | |
| | 41 | Hardened Cast Iron | | Hardened | 550 | 55 | | | ◎ | |

| SERIES 系列 | XMM110V | XMB110D | XMR110A | XMR120C | XMR260T | XMF110V | XMR110D | ZBC | ZBS | ZBT | ZRC | ZRS | ZRT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FLUTE 槽数 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | - | - | - | - | - | - |
| HELIX ANGLE 螺旋角度 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| CUTTING EDGE SHAPE 类型 | BALL NOSE | BALL NOSE | CORNER RADIUS | CORNER RADIUS | CORNER RADIUS | CORNER RADIUS | CORNER RADIUS | BALL NOSE | BALL NOSE | BALL NOSE | CORNER RADIUS | CORNER RADIUS | CORNER RADIUS |
| SIZE MIN 最小尺寸 | R4.0 | R4.0 | D8.0 | D8.0 | D8.0 | D8.0 | D8.0 | - | - | - | - | - | - |
| SIZE MAX 最大尺寸 | R16.5 | R16.5 | D33.0 | D33.0 | D33.0 | D33.0 | D33.0 | - | - | - | - | - | - |
| PAGE 页数 | C33 | | C34-38 | | | C39-43 | | C44 | C45 | C46 | C47 | C48 | |
| | FULL RADIUS | - | - | - | - | HIGH FEED | - | STRAIGHT NECK | STRAIGHT NECK | TAPER NECK | STRAIGHT NECK | STRAIGHT NECK | TAPER NECK |
| | Y-Coating | Diamond | AlTiN | X-Coating | Z-Coating | Y-Coating | Diamond | Carbide | Steel | Steel | Carbide | Steel | Steel |
| | GENERAL PURPOSE | GRAPHITE | GENERAL PURPOSE STAINLESS STEELS | PRE-HARDENED STEELS | HIGH HARDENED STEELS | GENERAL PURPOSE | GRAPHITE | | | | | | |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | ◎ | | ◎ | | | ◎ | | | | | | | | |
| 2 | ◎ | | ◎ | | | ◎ | | | | | | | | |
| 3 | ◎ | | ◎ | | | ◎ | | | | | | | | |
| 4 | ◎ | | ◎ | | | ◎ | | | | | | | | |
| 5 | | | ◎ | | | ◎ | | | | | | | | |
| 6 | ◎ | | ◎ | | | ◎ | | | | | | | | |
| 7 | ◎ | | ◎ | | | ◎ | | | | | | | | |
| 8 | | | ◎ | | | | | | | | | | | |
| 9 | | | | ◎ | | | | | | | | | | |
| 10 | ◎ | | | ○ | | ◎ | | | | | | | | |
| 11 | | | | ◎ | | | | | | | | | | |
| 12 | | | ◎ | | | | | | | | | | | |
| 13 | | | ◎ | | | | | | | | | | | |
| 14 | | | ◎ | | | | | | | | | | | |
| 15 | | | | ◎ | | | | | | | | | | |
| 16 | | | | ◎ | | | | | | | | | | |
| 17 | | | | ◎ | | | | | | | | | | |
| 18 | | | | ◎ | | | | | | | | | | |
| 19 | | | | ◎ | | | | | | | | | | |
| 20 | | | | ◎ | | | | | | | | | | |
| 21 | | ○ | | | | | ○ | | | | | | | |
| 22 | | ○ | | | | | ○ | | | | | | | |
| 23 | | ○ | | | | | ○ | | | | | | | |
| 24 | | ○ | | | | | ○ | | | | | | | |
| 25 | | | | | | | | | | | | | | |
| 26 | | | | | | | | | | | | | | |
| 27 | | | | | | | | | | | | | | |
| 28 | | | | | | | | | | | | | | |
| 29 | | ◎ | | | | | ◎ | | | | | | | |
| 30 | | | | | | | | | | | | | | |
| 31 | | | | | | | | | | | | | | |
| 32 | | | | | | | | | | | | | | |
| 33 | | | | | | | | | | | | | | |
| 34 | | | | | | | | | | | | | | |
| 35 | | | | | | | | | | | | | | |
| 36 | | | | | | | | | | | | | | |
| 37 | | | | | | | | | | | | | | |
| 38 | | | | ○ | ◎ | | | | | | | | | |
| 39 | | | | | ◎ | | | | | | | | | |
| 40 | | | | | ○ | | | | | | | | | |
| 41 | | | | | ◎ | | | | | | | | | |

BALL NOSE = 球头 CORNER RADIUS = 圆鼻 FULL RADIUS = 全弧型 HIGH FEED = 高进给 GENERAL PURPOSE = 普通用途 PRE-HARDENED STEELS = 预硬钢
HIGH HARDENED STEELS = 高硬钢 STAINLESS STEELS = 不锈钢 GRAPHITE = 石墨 STRAIGHT NECK = 直颈 TAPER NECK = 锥颈 CARBIDE=硬质合金 STEEL = 钢件

# i-Xmill END MILLS

**XMB110A** SERIES
**XMB120C** SERIES
**XMB260T** SERIES

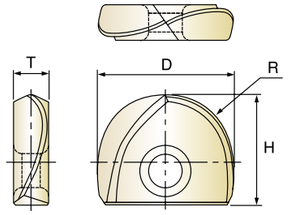
## i-Xmill BALL INSERTS
## i-Xmill 球头 刀片

▶Indexable Ball End Mill for economic use
▶Three Types of Inserts are available
- For General Purpose (~HRc50)
- For Hardened Material (HRc40~HRc65)
- For Graphite

▶Special Geometry and Coating for Excellent Performance

▶ 经济性换头式球头铣刀
▶ 可提供3类型刀片
- 普通用途 (~HRc50)
- 高硬材料用 (HRc40~HRc65)
- 石墨用

▶ 特殊形状及涂层实现优秀性能




Cutting conditions(加工参数) : p.C50

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| ◎ | POWER MILLING CHUCK | D161 - 176 |
| ○ | ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. | | | Radius of Ball Nose | Mill Diameter | Height | Thickness |
|---|---|---|---|---|---|---|
| AlTiN | X-Coating | Z-Coating | 圆弧角 | 直径 | 高度 | 厚度 |
| For General Purpose (普通用途) | For Pre-Hardened Steels (预硬钢用) | For High Hardened Steels (高硬钢用) | R | D | H | T |
| XMB110A080 | XMB120C080 | XMB260T080 | R4.0 | **8.0** | 8.0 | 2.4 |
| XMB110A100 | XMB120C100 | XMB260T100 | R5.0 | **10.0** | 9.5 | 2.7 |
| XMB110A110 | XMB120C110 | XMB260T110 | R5.5 | **11.0** | 10.0 | 2.7 |
| XMB110A120 | XMB120C120 | XMB260T120 | R6.0 | **12.0** | 11.0 | 3.2 |
| XMB110A130 | XMB120C130 | XMB260T130 | R6.5 | **13.0** | 11.5 | 3.2 |
| XMB110A160 | XMB120C160 | XMB260T160 | R8.0 | **16.0** | 13.0 | 4.2 |
| XMB110A170 | XMB120C170 | XMB260T170 | R8.5 | **17.0** | 13.5 | 4.2 |
| XMB110A200 | XMB120C200 | XMB260T200 | R10.0 | **20.0** | 16.0 | 5.2 |
| XMB110A210 | XMB120C210 | XMB260T210 | R10.5 | **21.0** | 16.5 | 5.2 |
| XMB110A250 | XMB120C250 | XMB260T250 | R12.5 | **25.0** | 19.5 | 6.2 |
| XMB110A260 | XMB120C260 | XMB260T260 | R13.0 | **26.0** | 20.0 | 6.2 |
| XMB110A300 | XMB120C300 | XMB260T300 | R15.0 | **30.0** | 23.5 | 7.2 |
| XMB110A320 | XMB120C320 | XMB260T320 | R16.0 | **32.0** | 24.5 | 7.2 |
| XMB110A330 | XMB120C330 | XMB260T330 | R16.5 | **33.0** | 25.0 | 7.2 |

▶ The ball radius tolerance is ±0.01mm and the set-up accuracy is ±0.02mm.
▶ 球头圆弧角精度是± 0.01mm，设置精度是± 0.02mm

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| XMB110A | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | | | | | | | | | | | | |
| XMB120C | | | | | | | | | ◎ | ○ | ◎ | | | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| XMB260T | | | | | | | | | | | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| XMB110A | | | | | | | | | | | | | | | | | | | | | |
| XMB120C | | | | | | | | | | | | | | | | | | ○ | | | |
| XMB260T | | | | | | | | | | | | | | | | | | ◎ | ◎ | ○ | ◎ |





# i-Xmill END MILLS

**XMB130A** SERIES
**XMM110V** SERIES
**XMB110D** SERIES

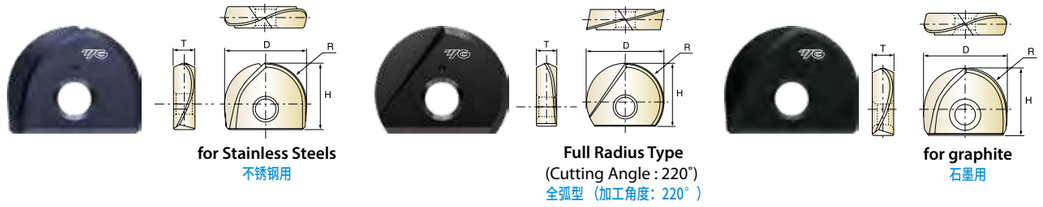
## i-Xmill BALL INSERTS
## i-Xmill 球头 刀片

▶Indexable Ball End Mill for economic use
▶Three Types of Inserts are available
- For Stainless Steels
- For General Purpose Full Radius Type
- For Graphite

▶Special Geometry and Coating for Excellent Performance

▶ 经济性换头式球头铣刀
▶ 可提供3类型刀片
- 不锈钢用
- 普通用途 全弧型
- 石墨用

▶ 特殊形状及涂层实现优秀性能




**for Stainless Steels**
不锈钢用

**Full Radius Type**
(Cutting Angle : 220°)
全弧型 （加工角度：220° ）

**for graphite**
石墨用

Cutting conditions(加工参数) : p.C50-51

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| ◎ | POWER MILLING CHUCK | D161 - 176 |
| ○ | ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. | | | Radius of Ball Nose | Mill Diameter | Height | Thickness |
|---|---|---|---|---|---|---|
| AlTiN | Y-Coating | Diamond | 圆弧角 | 直径 | 高度 | 厚度 |
| For Stainless Steels (不锈钢用) | For General Purpose High Feed (普通高进给) | For Graphite (石墨用) | R | D | H | T |
| XMB130A080 | XMM110V080 | XMB110D080 | R4.0 | **8.0** | 8.0 | 2.4 |
| XMB130A100 | XMM110V100 | XMB110D100 | R5.0 | **10.0** | 9.5 | 2.7 |
| XMB130A110 | XMM110V110 | XMB110D110 | R5.5 | **11.0** | 10.0 | 2.7 |
| XMB130A120 | XMM110V120 | XMB110D120 | R6.0 | **12.0** | 11.0 | 3.2 |
| XMB130A130 | XMM110V130 | XMB110D130 | R6.5 | **13.0** | 11.5 | 3.2 |
| XMB130A160 | XMM110V160 | XMB110D160 | R8.0 | **16.0** | 13.0 | 4.2 |
| XMB130A170 | XMM110V170 | XMB110D170 | R8.5 | **17.0** | 13.5 | 4.2 |
| XMB130A200 | XMM110V200 | XMB110D200 | R10.0 | **20.0** | 16.0 | 5.2 |
| XMB130A210 | XMM110V210 | XMB110D210 | R10.5 | **21.0** | 16.5 | 5.2 |
| XMB130A250 | XMM110V250 | XMB110D250 | R12.5 | **25.0** | 19.5 | 6.2 |
| XMB130A260 | XMM110V260 | XMB110D260 | R13.0 | **26.0** | 20.0 | 6.2 |
| XMB130A300 | XMM110V300 | XMB110D300 | R15.0 | **30.0** | 23.5 | 7.2 |
| XMB130A320 | XMM110V320 | XMB110D320 | R16.0 | **32.0** | 24.5 | 7.2 |
| XMB130A330 | XMM110V330 | XMB110D330 | R16.5 | **33.0** | 25.0 | 7.2 |

▶ The ball radius tolerance is ±0.01mm and the set-up accuracy is ±0.02mm.
▶ 球头圆弧角精度是± 0.01mm，设置精度是± 0.02mm

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| XMB130A | | | | | | | | | | | | ◎ | ◎ | ◎ | | | | | | |
| XMM110V | ◎ | ◎ | ◎ | ◎ | | ◎ | ◎ | | | ◎ | | | | | | | | | | |
| XMB110D | | | | | | | | | | | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| XMB130A | | | | | | | | | | | | | | | | | | | | | |
| XMM110V | | | | | | | | | | | | | | | | | | | | | |
| XMB110D | ○ | ○ | ○ | ○ | | | | | ◎ | | | | | | | | | | | | |

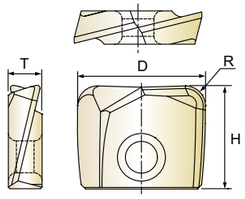
# i-Xmill END MILLS

**XMR110A** SERIES
**XMR120C** SERIES
**XMR260T** SERIES

## i-Xmill CORNER RADIUS INSERT
## i-Xmill 圆鼻 刀片

- ▶ The optimum geometry of the tool to achieve better reliability and less vibration and cutting load.
- ▶ Interchangeability with i-Xmill ball holder, but the precise cutting is possible with i-Xmill corner radius holder due to higher stability and strength of tool.
- ▶ The various and wide cutting range makes it possible to machine over the roughing and finishing.
- ▶ Special coating makes high hardness with high thermal stability against oxidation.

- ▶ 最佳设计形状提高稳定性而减少振动和切削阻力
- ▶ 可以用在i-Xmill球头刀杆，可是为了更精密加工，高稳定性，刚性，推荐采用i-Xmill圆鼻刀杆
- ▶ 多种及广大切削范围刀具可以用在粗加工~精加工
- ▶ 特殊涂层提高硬度而且具有抗氧化的高温稳定性




Cutting conditions(加工参数) : p.C52

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| ◎ | POWER MILLING CHUCK | D161 - 176 |
| ○ | ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. | | | Corner Radius | Mill Diameter | Height | Thickness |
|---|---|---|---|---|---|---|
| AlTiN | X-Coating | Z-Coating | 圆弧角 | 直径 | 高度 | 厚度 |
| For General Purpose & Stainless Steels (普通用途 & 不锈钢用) | For Pre-Hardened Steels (预硬钢用) | For High Hardened Steels (高硬钢用) | R | D | H | T |
| XMR110A080 03 | XMR120C080 03 | XMR260T080 03 | R0.3 | 8.0 | 8.0 | 2.4 |
| XMR110A080 05 | XMR120C080 05 | XMR260T080 05 | R0.5 | 8.0 | 8.0 | 2.4 |
| XMR110A080 10 | XMR120C080 10 | XMR260T080 10 | R1.0 | 8.0 | 8.0 | 2.4 |
| XMR110A080 20 | XMR120C080 20 | XMR260T080 20 | R2.0 | 8.0 | 8.0 | 2.4 |
| XMR110A100 03 | XMR120C100 03 | XMR260T100 03 | R0.3 | 10.0 | 9.5 | 2.7 |
| XMR110A100 05 | XMR120C100 05 | XMR260T100 05 | R0.5 | 10.0 | 9.5 | 2.7 |
| XMR110A100 10 | XMR120C100 10 | XMR260T100 10 | R1.0 | 10.0 | 9.5 | 2.7 |
| XMR110A100 15 | XMR120C100 15 | XMR260T100 15 | R1.5 | 10.0 | 9.5 | 2.7 |
| XMR110A100 20 | XMR120C100 20 | XMR260T100 20 | R2.0 | 10.0 | 9.5 | 2.7 |
| XMR110A100 30 | XMR120C100 30 | XMR260T100 30 | R3.0 | 10.0 | 9.5 | 2.7 |
| XMR110A110 03 | XMR120C110 03 | XMR260T110 03 | R0.3 | 11.0 | 9.5 | 2.7 |
| XMR110A110 05 | XMR120C110 05 | XMR260T110 05 | R0.5 | 11.0 | 9.5 | 2.7 |
| XMR110A110 10 | XMR120C110 10 | XMR260T110 10 | R1.0 | 11.0 | 9.5 | 2.7 |
| XMR110A110 15 | XMR120C110 15 | XMR260T110 15 | R1.5 | 11.0 | 9.5 | 2.7 |
| XMR110A110 20 | XMR120C110 20 | XMR260T110 20 | R2.0 | 11.0 | 9.5 | 2.7 |
| XMR110A110 30 | XMR120C110 30 | XMR260T110 30 | R3.0 | 11.0 | 9.5 | 2.7 |

- ▶ The corner radius tolerance is ±0.015mm and the set-up accuracy is ±0.02mm.
- ▶ 球头圆弧角公差是± 0.015mm，设置公差是± 0.02mm

▶ NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| XMR110A | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | | | | ◎ | ◎ | ◎ | | | | | | |
| XMR120C | | | | | | | | | ◎ | ○ | ◎ | | | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| XMR260T | | | | | | | | | | | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| XMR110A | | | | | | | | | | | | | | | | | | | | | |
| XMR120C | | | | | | | | | | | | | | | | | | ○ | | | |
| XMR260T | | | | | | | | | | | | | | | | | | ◎ | ◎ | ○ | ◎ |



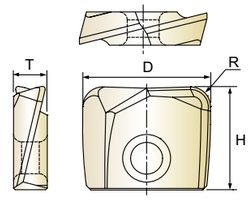
i-Xmill END MILLS

XMR110A SERIES
XMR120C SERIES
XMR260T SERIES

i-Xmill CORNER RADIUS INSERT
i-Xmill 圆鼻 刀片

- ▶ The optimum geometry of the tool to achieve better reliability and less vibration and cutting load.
- ▶ Interchangeability with i-Xmill ball holder, but the precise cutting is possible with i-Xmill corner radius holder due to higher stability and strength of tool.
- ▶ The various and wide cutting range makes it possible to machine over the roughing and finishing.
- ▶ Special coating makes high hardness with high thermal stability against oxidation.

- ▶ 最佳设计形状提高稳定性而减少振动和切削阻力
- ▶ 可以用在i-Xmill球头刀杆，可是为了更精密加工，高稳定性，刚性，推荐采用i-Xmill圆鼻刀杆
- ▶ 多种及广大切削范围刀具可以用在粗加工~精加工
- ▶ 特殊涂层提高硬度而且具有抗氧化的高温稳定性




Cutting conditions(加工参数) : p.C52

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| ◎ | POWER MILLING CHUCK | D161 - 176 |
| ○ | ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. | | | Corner Radius | Mill Diameter | Height | Thickness |
|---|---|---|---|---|---|---|
| AlTiN | X-Coating | Z-Coating | 圆弧角 | 直径 | 高度 | 厚度 |
| For General Purpose & Stainless Steels (普通用途 & 不锈钢用) | For Pre-Hardened Steels (预硬钢用) | For High Hardened Steels (高硬钢用) | R | D | H | T |
| XMR110A120 03 | XMR120C120 03 | XMR260T120 03 | R0.3 | 12.0 | 11.0 | 3.2 |
| XMR110A120 05 | XMR120C120 05 | XMR260T120 05 | R0.5 | 12.0 | 11.0 | 3.2 |
| XMR110A120 10 | XMR120C120 10 | XMR260T120 10 | R1.0 | 12.0 | 11.0 | 3.2 |
| XMR110A120 15 | XMR120C120 15 | XMR260T120 15 | R1.5 | 12.0 | 11.0 | 3.2 |
| XMR110A120 20 | XMR120C120 20 | XMR260T120 20 | R2.0 | 12.0 | 11.0 | 3.2 |
| XMR110A120 30 | XMR120C120 30 | XMR260T120 30 | R3.0 | 12.0 | 11.0 | 3.2 |
| XMR110A130 03 | XMR120C130 03 | XMR260T130 03 | R0.3 | 13.0 | 11.2 | 3.2 |
| XMR110A130 05 | XMR120C130 05 | XMR260T130 05 | R0.5 | 13.0 | 11.2 | 3.2 |
| XMR110A130 10 | XMR120C130 10 | XMR260T130 10 | R1.0 | 13.0 | 11.2 | 3.2 |
| XMR110A130 15 | XMR120C130 15 | XMR260T130 15 | R1.5 | 13.0 | 11.2 | 3.2 |
| XMR110A130 20 | XMR120C130 20 | XMR260T130 20 | R2.0 | 13.0 | 11.2 | 3.2 |
| XMR110A130 30 | XMR120C130 30 | XMR260T130 30 | R3.0 | 13.0 | 11.2 | 3.2 |
| XMR110A160 03 | XMR120C160 03 | XMR260T160 03 | R0.3 | 16.0 | 13.0 | 4.2 |
| XMR110A160 05 | XMR120C160 05 | XMR260T160 05 | R0.5 | 16.0 | 13.0 | 4.2 |
| XMR110A160 10 | XMR120C160 10 | XMR260T160 10 | R1.0 | 16.0 | 13.0 | 4.2 |
| XMR110A160 15 | XMR120C160 15 | XMR260T160 15 | R1.5 | 16.0 | 13.0 | 4.2 |
| XMR110A160 20 | XMR120C160 20 | XMR260T160 20 | R2.0 | 16.0 | 13.0 | 4.2 |
| XMR110A160 30 | XMR120C160 30 | XMR260T160 30 | R3.0 | 16.0 | 13.0 | 4.2 |

- ▶ The corner radius tolerance is ±0.015mm and the set-up accuracy is ±0.02mm.
- ▶ 球头圆弧角公差是± 0.015mm，设置公差是± 0.02mm

▶ NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| XMR110A | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | | ○ | | ◎ | ◎ | ◎ | | | | | | |
| XMR120C | | | | | | | | | ◎ | ◎ | ◎ | | | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| XMR260T | | | | | | | | | | | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| XMR110A | | | | | | | | | | | | | | | | | | | | | |
| XMR120C | | | | | | | | | | | | | | | | | | ○ | | | |
| XMR260T | | | | | | | | | | | | | | | | | | ◎ | ◎ | ○ | ◎ |

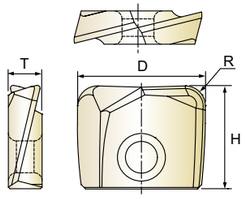
# i-Xmill END MILLS

**XMR110A** SERIES
**XMR120C** SERIES
**XMR260T** SERIES

## i-Xmill CORNER RADIUS INSERT
## i-Xmill 圆鼻 刀片

- ▶ The optimum geometry of the tool to achieve better reliability and less vibration and cutting load.
- ▶ Interchangeability with i-Xmill ball holder, but the precise cutting is possible with i-Xmill corner radius holder due to higher stability and strength of tool.
- ▶ The various and wide cutting range makes it possible to machine over the roughing and finishing.
- ▶ Special coating makes high hardness with high thermal stability against oxidation.

- ▶ 最佳设计形状提高稳定性而减少振动和切削阻力
- ▶ 可以用在i-Xmill球头刀杆，可是为了更精密加工，高稳定性，刚性，推荐采用i-Xmill圆鼻刀杆
- ▶ 多种及广大切削范围刀具可以用在粗加工~精加工
- ▶ 特殊涂层提高硬度而且具有抗氧化的高温稳定性




Cutting conditions(加工参数) : p.C52

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| ◎ | POWER MILLING CHUCK | D161 - 176 |
| ○ | ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. | | | Corner Radius | Mill Diameter | Height | Thickness |
|---|---|---|---|---|---|---|
| AlTiN | X-Coating | Z-Coating | 圆弧角 | 直径 | 高度 | 厚度 |
| For General Purpose & Stainless Steels (普通用途 & 不锈钢用) | For Pre-Hardened Steels (预硬钢用) | For High Hardened Steels (高硬钢用) | R | D | H | T |
| XMR110A170 03 | XMR120C170 03 | XMR260T170 03 | R0.3 | 17.0 | 13.0 | 4.2 |
| XMR110A170 05 | XMR120C170 05 | XMR260T170 05 | R0.5 | 17.0 | 13.0 | 4.2 |
| XMR110A170 10 | XMR120C170 10 | XMR260T170 10 | R1.0 | 17.0 | 13.0 | 4.2 |
| XMR110A170 15 | XMR120C170 15 | XMR260T170 15 | R1.5 | 17.0 | 13.0 | 4.2 |
| XMR110A170 20 | XMR120C170 20 | XMR260T170 20 | R2.0 | 17.0 | 13.0 | 4.2 |
| XMR110A170 30 | XMR120C170 30 | XMR260T170 30 | R3.0 | 17.0 | 13.0 | 4.2 |
| XMR110A200 03 | XMR120C200 03 | XMR260T200 03 | R0.3 | 20.0 | 16.0 | 5.2 |
| XMR110A200 05 | XMR120C200 05 | XMR260T200 05 | R0.5 | 20.0 | 16.0 | 5.2 |
| XMR110A200 10 | XMR120C200 10 | XMR260T200 10 | R1.0 | 20.0 | 16.0 | 5.2 |
| XMR110A200 15 | XMR120C200 15 | XMR260T200 15 | R1.5 | 20.0 | 16.0 | 5.2 |
| XMR110A200 20 | XMR120C200 20 | XMR260T200 20 | R2.0 | 20.0 | 16.0 | 5.2 |
| XMR110A200 30 | XMR120C200 30 | XMR260T200 30 | R3.0 | 20.0 | 16.0 | 5.2 |
| XMR110A210 03 | XMR120C210 03 | XMR260T210 03 | R0.3 | 21.0 | 16.0 | 5.2 |
| XMR110A210 05 | XMR120C210 05 | XMR260T210 05 | R0.5 | 21.0 | 16.0 | 5.2 |
| XMR110A210 10 | XMR120C210 10 | XMR260T210 10 | R1.0 | 21.0 | 16.0 | 5.2 |
| XMR110A210 15 | XMR120C210 15 | XMR260T210 15 | R1.5 | 21.0 | 16.0 | 5.2 |
| XMR110A210 20 | XMR120C210 20 | XMR260T210 20 | R2.0 | 21.0 | 16.0 | 5.2 |
| XMR110A210 30 | XMR120C210 30 | XMR260T210 30 | R3.0 | 21.0 | 16.0 | 5.2 |

▶ The corner radius tolerance is ±0.015mm and the set-up accuracy is ±0.02mm.
▶ 圆鼻圆弧角公差是± 0.015mm，设置公差是± 0.02mm

▶ NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | M | | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| XMR110A | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | | | | ◎ | ◎ | ◎ | | | | | | |
| XMR120C | | | | | | | | | ◎ | ○ | ◎ | | | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| XMR260T | | | | | | | | | | | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| XMR110A | | | | | | | | | | | | | | | | | | | | | |
| XMR120C | | | | | | | | | | | | | | | | | | ○ | | | |
| XMR260T | | | | | | | | | | | | | | | | | | ◎ | ◎ | ○ | ◎ |



CARBIDE
HSS
CBN END MILLS
i-Xmill END MILLS
i-SMART MODULAR END MILLS
X5070 END MILLS
4G MILL END MILLS
X-POWER PRO END MILLS
TitaNox-POWER END MILLS
SUS-CUT END MILLS
V7 PLUS END MILLS
ALU-POWER HPC END MILLS
ALU-CUT END MILLS
G-CUT END MILLS
CRX S END MILLS
K-2 END MILLS
GENERAL CARBIDE END MILLS
ONLY ONE COATED PM60 END MILLS
TANK-POWER END MILLS
GENERAL HSS END MILLS
MILLING CUTTERS
TECHNICAL DATA

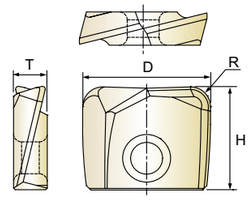
# i-Xmill END MILLS

**XMR110A** SERIES
**XMR120C** SERIES
**XMR260T** SERIES

## i-Xmill CORNER RADIUS INSERT
## i-Xmill 圆鼻 刀片

- ▶ The optimum geometry of the tool to achieve better reliability and less vibration and cutting load.
- ▶ Interchangeability with i-Xmill ball holder, but the precise cutting is possible with i-Xmill corner radius holder due to higher stability and strength of tool.
- ▶ The various and wide cutting range makes it possible to machine over the roughing and finishing.
- ▶ Special coating makes high hardness with high thermal stability against oxidation.

- ▶ 最佳设计形状提高稳定性而减少振动和切削阻力
- ▶ 可以用在i-Xmill球头刀杆，可是为了更精密加工，高稳定性，刚性，推荐采用i-Xmill圆鼻刀杆
- ▶ 多种及广大切削范围刀具可以用在粗加工~精加工
- ▶ 特殊涂层提高硬度而且具有抗氧化的高温稳定性




Cutting conditions(加工参数) : p.C52

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| ◎ | POWER MILLING CHUCK | D161 - 176 |
| ○ | ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. | | | Corner Radius | Mill Diameter | Height | Thickness |
|---|---|---|---|---|---|---|
| AlTiN | X-Coating | Z-Coating | 圆弧角 | 直径 | 高度 | 厚度 |
| For General Purpose & Stainless Steels (普通用途 & 不锈钢用) | For Pre-Hardened Steels (预硬钢用) | For High Hardened Steels (高硬钢用) | R | D | H | T |
| XMR110A250 03 | XMR120C250 03 | XMR260T250 03 | R0.3 | 25.0 | 19.5 | 6.2 |
| XMR110A250 05 | XMR120C250 05 | XMR260T250 05 | R0.5 | 25.0 | 19.5 | 6.2 |
| XMR110A250 10 | XMR120C250 10 | XMR260T250 10 | R1.0 | 25.0 | 19.5 | 6.2 |
| XMR110A250 15 | XMR120C250 15 | XMR260T250 15 | R1.5 | 25.0 | 19.5 | 6.2 |
| XMR110A250 20 | XMR120C250 20 | XMR260T250 20 | R2.0 | 25.0 | 19.5 | 6.2 |
| XMR110A250 30 | XMR120C250 30 | XMR260T250 30 | R3.0 | 25.0 | 19.5 | 6.2 |
| XMR110A260 03 | XMR120C260 03 | XMR260T260 03 | R0.3 | 26.0 | 19.5 | 6.2 |
| XMR110A260 05 | XMR120C260 05 | XMR260T260 05 | R0.5 | 26.0 | 19.5 | 6.2 |
| XMR110A260 10 | XMR120C260 10 | XMR260T260 10 | R1.0 | 26.0 | 19.5 | 6.2 |
| XMR110A260 15 | XMR120C260 15 | XMR260T260 15 | R1.5 | 26.0 | 19.5 | 6.2 |
| XMR110A260 20 | XMR120C260 20 | XMR260T260 20 | R2.0 | 26.0 | 19.5 | 6.2 |
| XMR110A260 30 | XMR120C260 30 | XMR260T260 30 | R3.0 | 26.0 | 19.5 | 6.2 |
| XMR110A300 03 | XMR120C300 03 | XMR260T300 03 | R0.3 | 30.0 | 23.5 | 7.2 |
| XMR110A300 05 | XMR120C300 05 | XMR260T300 05 | R0.5 | 30.0 | 23.5 | 7.2 |
| XMR110A300 10 | XMR120C300 10 | XMR260T300 10 | R1.0 | 30.0 | 23.5 | 7.2 |
| XMR110A300 15 | XMR120C300 15 | XMR260T300 15 | R1.5 | 30.0 | 23.5 | 7.2 |
| XMR110A300 20 | XMR120C300 20 | XMR260T300 20 | R2.0 | 30.0 | 23.5 | 7.2 |
| XMR110A300 30 | XMR120C300 30 | XMR260T300 30 | R3.0 | 30.0 | 23.5 | 7.2 |

▶ The corner radius tolerance is ±0.015mm and the set-up accuracy is ±0.02mm.
▶ 圆鼻圆弧角公差是± 0.015mm，设置公差是± 0.02mm

▶ NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | M | | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| XMR110A | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | | ○ | | ◎ | ◎ | ◎ | | | | | | |
| XMR120C | | | | | | | | | ◎ | ◎ | ◎ | | | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| XMR260T | | | | | | | | | | | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| XMR110A | | | | | | | | | | | | | | | | | | | | | |
| XMR120C | | | | | | | | | | | | | | | | | | ○ | | | |
| XMR260T | | | | | | | | | | | | | | | | | | ◎ | ◎ | ○ | ◎ |

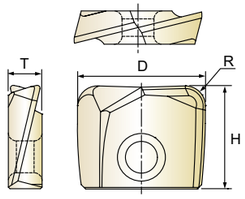
# i-Xmill END MILLS

**XMR110A** SERIES
**XMR120C** SERIES
**XMR260T** SERIES

## i-Xmill CORNER RADIUS INSERT
## i-Xmill 圆鼻 刀片

- ▶ The optimum geometry of the tool to achieve better reliability and less vibration and cutting load.
- ▶ Interchangeability with i-Xmill ball holder, but the precise cutting is possible with i-Xmill corner radius holder due to higher stability and strength of tool.
- ▶ The various and wide cutting range makes it possible to machine over the roughing and finishing.
- ▶ Special coating makes high hardness with high thermal stability against oxidation.

- ▶ 最佳设计形状提高稳定性而减少振动和切削阻力
- ▶ 可以用在i-Xmill球头刀杆，可是为了更精密加工，高稳定性，刚性，推荐采用i-Xmill圆鼻刀杆
- ▶ 多种及广大切削范围刀具可以用在粗加工~精加工
- ▶ 特殊涂层提高硬度而且具有抗氧化的高温稳定性




Cutting conditions(加工参数) : p.C52

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| ◎ | POWER MILLING CHUCK | D161 - 176 |
| ○ | ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. | | | Corner Radius | Mill Diameter | Height | Thickness |
|---|---|---|---|---|---|---|
| AlTiN | X-Coating | Z-Coating | 圆弧角 | 直径 | 高度 | 厚度 |
| For General Purpose & Stainless Steels (普通用途 & 不锈钢用) | For Pre-Hardened Steels (预硬钢用) | For High Hardened Steels (高硬钢用) | R | D | H | T |
| XMR110A320 03 | XMR120C320 03 | XMR260T320 03 | R0.3 | 32.0 | 23.5 | 7.2 |
| XMR110A320 05 | XMR120C320 05 | XMR260T320 05 | R0.5 | 32.0 | 23.5 | 7.2 |
| XMR110A320 10 | XMR120C320 10 | XMR260T320 10 | R1.0 | 32.0 | 23.5 | 7.2 |
| XMR110A320 15 | XMR120C320 15 | XMR260T320 15 | R1.5 | 32.0 | 23.5 | 7.2 |
| XMR110A320 20 | XMR120C320 20 | XMR260T320 20 | R2.0 | 32.0 | 23.5 | 7.2 |
| XMR110A320 30 | XMR120C320 30 | XMR260T320 30 | R3.0 | 32.0 | 23.5 | 7.2 |
| XMR110A330 03 | XMR120C330 03 | XMR260T330 03 | R0.3 | 33.0 | 23.5 | 7.2 |
| XMR110A330 05 | XMR120C330 05 | XMR260T330 05 | R0.5 | 33.0 | 23.5 | 7.2 |
| XMR110A330 10 | XMR120C330 10 | XMR260T330 10 | R1.0 | 33.0 | 23.5 | 7.2 |
| XMR110A330 15 | XMR120C330 15 | XMR260T330 15 | R1.5 | 33.0 | 23.5 | 7.2 |
| XMR110A330 20 | XMR120C330 20 | XMR260T330 20 | R2.0 | 33.0 | 23.5 | 7.2 |
| XMR110A330 30 | XMR120C330 30 | XMR260T330 30 | R3.0 | 33.0 | 23.5 | 7.2 |

- ▶ The corner radius tolerance is ±0.015mm and the set-up accuracy is ±0.02mm.
- ▶ 圆鼻圆弧角公差是± 0.015mm，设置公差是± 0.02mm

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| XMR110A | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | | | | ◎ | ◎ | ◎ | | | | | | |
| XMR120C | | | | | | | | | ◎ | ○ | ◎ | | | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| XMR260T | | | | | | | | | | | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| XMR110A | | | | | | | | | | | | | | | | | | | | | |
| XMR120C | | | | | | | | | | | | | | | | | | ○ | | | |
| XMR260T | | | | | | | | | | | | | | | | | | ◎ | ◎ | ○ | ◎ |





# i-Xmill END MILLS

**XMF110V** SERIES
**XMR110D** SERIES

## i-Xmill CORNER RADIUS INSERT
## i-Xmill 圆鼻 刀片

- ▶ The optimum geometry of the tool to achieve better reliability and less vibration and cutting load.
- ▶ Interchangeability with i-Xmill ball holder, but the precise cutting is possible with i-Xmill corner radius holder due to higher stability and strength of tool.
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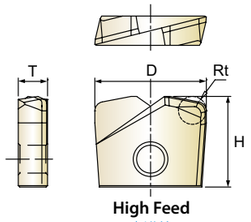
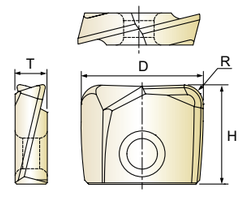
- ▶ 最佳设计形状提高稳定性而减少振动和切削阻力
- ▶ 可以用在i-Xmill球头刀杆，可是为了更精密加工，高稳定性，刚性，推荐采用i-Xmill圆鼻刀杆
- ▶ 多种及广大切削范围刀具可以用在粗加工~精加工
- ▶ 特殊涂层提高硬度而且具有抗氧化的高温稳定性




High Feed
高进给




Cutting conditions(加工参数) : p.C52

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| ◎ | POWER MILLING CHUCK | D161 - 176 |
| ○ | ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. | | Corner Radius | Mill Diameter | Height | Thickness | for High Feed |
|---|---|---|---|---|---|---|
| Y-Coating | Diamond | 圆弧角 | 直径 | 高度 | 厚度 | 高进给 |
| For General Purpose High Feed (普通高进给) | For Graphite (石墨用) | R (Rt) | D | H | T | apMax. (最大切深) |
| - | XMR110D080 03 | R0.3 | 8.0 | 8.0 | 2.4 | 0.4 |
| - | XMR110D080 05 | R0.5 | 8.0 | 8.0 | 2.4 | 0.4 |
| XMF110V080 08 | - | R0.8 | 8.0 | 8.0 | 2.4 | 0.4 |
| - | XMR110D080 10 | R1.0 | 8.0 | 8.0 | 2.4 | 0.4 |
| - | XMR110D080 20 | R2.0 | 8.0 | 8.0 | 2.4 | 0.4 |
| - | XMR110D100 03 | R0.3 | 10.0 | 9.5 | 2.7 | 0.5 |
| - | XMR110D100 05 | R0.5 | 10.0 | 9.5 | 2.7 | 0.5 |
| XMF110V100 10 | XMR110D100 10 | R1.0 | 10.0 | 9.5 | 2.7 | 0.5 |
| - | XMR110D100 15 | R1.5 | 10.0 | 9.5 | 2.7 | 0.5 |
| - | XMR110D100 20 | R2.0 | 10.0 | 9.5 | 2.7 | 0.5 |
| - | XMR110D100 30 | R3.0 | 10.0 | 9.5 | 2.7 | 0.5 |
| - | XMR110D110 03 | R0.3 | 11.0 | 9.5 | 2.7 | 0.5 |
| - | XMR110D110 05 | R0.5 | 11.0 | 9.5 | 2.7 | 0.5 |
| XMF110V110 10 | XMR110D110 10 | R1.0 | 11.0 | 9.5 | 2.7 | 0.5 |
| - | XMR110D110 15 | R1.5 | 11.0 | 9.5 | 2.7 | 0.5 |
| - | XMR110D110 20 | R2.0 | 11.0 | 9.5 | 2.7 | 0.5 |
| - | XMR110D110 30 | R3.0 | 11.0 | 9.5 | 2.7 | 0.5 |

- ▶ The corner radius tolerance is ±0.015mm(Rt tolerance is ±0.05mm) and the set-up accuracy is ±0.02mm.
- ▶ 圆鼻圆弧角公差是± 0.015mm，设置公差是± 0.02mm

▶ NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| XMF110V | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | | | ◎ | | | | | | | | | | |
| XMR110D | | | | | | | | | | | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| XMF110V | | | | | | | | | | | | | | | | | | | | | |
| XMR110D | ○ | ○ | ○ | ○ | | | | | | ◎ | | | | | | | | | | | |

# i-Xmill END MILLS

**XMF110V** SERIES
**XMR110D** SERIES

## i-Xmill CORNER RADIUS INSERT
## i-Xmill 圆鼻 刀片

- ▶ The optimum geometry of the tool to achieve better reliability and less vibration and cutting load.
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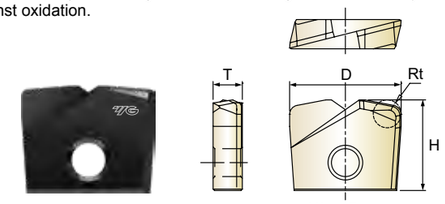
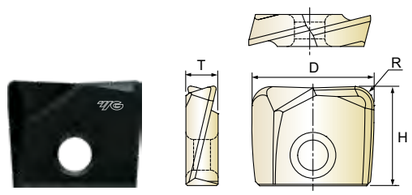
- ▶ 最佳设计形状提高稳定性而减少振动和切削阻力
- ▶ 可以用在i-Xmill球头刀杆，可是为了更精密加工，高稳定性，刚性，推荐采用i-Xmill圆鼻刀杆
- ▶ 多种及广大切削范围刀具可以用在粗加工~精加工
- ▶ 特殊涂层提高硬度而且具有抗氧化的高温稳定性




**High Feed**
高进给




Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| ◎ | POWER MILLING CHUCK | D161 - 176 |
| ○ | ER COLLET CHUCK | D73 - 115 |

Cutting conditions(加工参数) : p.C52

Unit(单位) : mm

| EDP No. | | Corner Radius | Mill Diameter | Height | Thickness | for High Feed |
|---|---|---|---|---|---|---|
| Y-Coating | Diamond | 圆弧角 | 直径 | 高度 | 厚度 | 高进给 |
| For General Purpose High Feed (普通高进给) | For Graphite (石墨用) | R (Rt) | D | H | T | apMax. (最大切深) |
| - | XMR110D120 03 | R0.3 | 12.0 | 11.0 | 2.7 | 0.6 |
| - | XMR110D120 05 | R0.5 | 12.0 | 11.0 | 2.7 | 0.6 |
| XMF110V120 10 | XMR110D120 10 | R1.0 | 12.0 | 11.0 | 2.7 | 0.6 |
| - | XMR110D120 15 | R1.5 | 12.0 | 11.0 | 2.7 | 0.6 |
| - | XMR110D120 20 | R2.0 | 12.0 | 11.0 | 2.7 | 0.6 |
| - | XMR110D120 30 | R3.0 | 12.0 | 11.0 | 2.7 | 0.6 |
| - | XMR110D130 03 | R0.3 | 13.0 | 11.2 | 2.7 | 0.6 |
| - | XMR110D130 05 | R0.5 | 13.0 | 11.2 | 2.7 | 0.6 |
| XMF110V130 10 | XMR110D130 10 | R1.0 | 13.0 | 11.2 | 2.7 | 0.6 |
| - | XMR110D130 15 | R1.5 | 13.0 | 11.2 | 2.7 | 0.6 |
| - | XMR110D130 20 | R2.0 | 13.0 | 11.2 | 2.7 | 0.6 |
| - | XMR110D130 30 | R3.0 | 13.0 | 11.2 | 2.7 | 0.6 |
| - | XMR110D160 03 | R0.3 | 16.0 | 13.0 | 4.2 | 0.8 |
| - | XMR110D160 05 | R0.5 | 16.0 | 13.0 | 4.2 | 0.8 |
| - | XMR110D160 10 | R1.0 | 16.0 | 13.0 | 4.2 | 0.8 |
| XMF110V160 15 | XMR110D160 15 | R1.5 | 16.0 | 13.0 | 4.2 | 0.8 |
| - | XMR110D160 20 | R2.0 | 16.0 | 13.0 | 4.2 | 0.8 |
| - | XMR110D160 30 | R3.0 | 16.0 | 13.0 | 4.2 | 0.8 |

- ▶ The corner radius tolerance is ±0.015mm(Rt tolerance is ±0.05mm) and the set-up accuracy is ±0.02mm.
- ▶ 圆鼻圆弧角公差是± 0.015mm，设置公差是± 0.02mm

▶ NEXT PAGE 下页

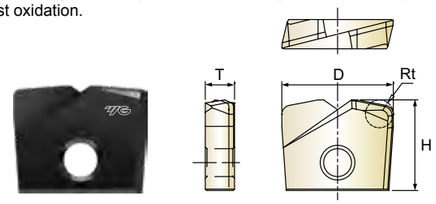
◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| XMF110V | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | | | ◎ | | | | | | | | | | |
| XMR110D | | | | | | | | | | | | | | | | | | | | |

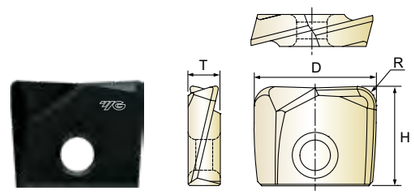
| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| XMF110V | | | | | | | | | | | | | | | | | | | | | |
| XMR110D | ○ | ○ | ○ | ○ | | | | | ◎ | | | | | | | | | | | | |



i-Xmill END MILLS
XMF110V SERIES
XMR110D SERIES
i-Xmill CORNER RADIUS INSERT
i-Xmill 圆鼻 刀片
▶ The optimum geometry of the tool to achieve better reliability and less vibration and cutting load.
▶ Interchangeability with i-Xmill ball holder, but the precise cutting is possible with i-Xmill corner radius holder due to higher stability and strength of tool.
▶ The various and wide cutting range makes it possible to machine over the roughing and finishing.
▶ Special coating makes high hardness with high thermal stability against oxidation.
▶ 最佳设计形状提高稳定性而减少振动和切削阻力
▶ 可以用在i-Xmill球头刀杆，可是为了更精密加工，高稳定性，刚性，推荐采用i-Xmill圆鼻刀杆
▶ 多种及广大切削范围刀具可以用在粗加工~精加工
▶ 特殊涂层提高硬度而且具有抗氧化的高温稳定性




**High Feed**
高进给




Recommended ToolHolder
Plain Shank Page
◎ POWER MILLING CHUCK D161 - 176
○ ER COLLET CHUCK D73 - 115
Cutting conditions(加工参数) : p.C52
Unit(单位) : mm

| EDP No. | | Corner Radius | Mill Diameter | Height | Thickness | for High Feed |
|---|---|---|---|---|---|---|
| Y-Coating | Diamond | 圆弧角 | 直径 | 高度 | 厚度 | 高进给 |
| For General Purpose High Feed (普通高进给) | For Graphite (石墨用) | R (Rt) | D | H | T | apMax. (最大切深) |
| - | XMR110D170 03 | R0.3 | 17.0 | 13.0 | 4.2 | 0.8 |
| - | XMR110D170 05 | R0.5 | 17.0 | 13.0 | 4.2 | 0.8 |
| - | XMR110D170 10 | R1.0 | 17.0 | 13.0 | 4.2 | 0.8 |
| XMF110V170 15 | XMR110D170 15 | R1.5 | 17.0 | 13.0 | 4.2 | 0.8 |
| - | XMR110D170 20 | R2.0 | 17.0 | 13.0 | 4.2 | 0.8 |
| - | XMR110D170 30 | R3.0 | 17.0 | 13.0 | 4.2 | 0.8 |
| - | XMR110D200 03 | R0.3 | 20.0 | 16.0 | 5.2 | 1.0 |
| - | XMR110D200 05 | R0.5 | 20.0 | 16.0 | 5.2 | 1.0 |
| - | XMR110D200 10 | R1.0 | 20.0 | 16.0 | 5.2 | 1.0 |
| - | XMR110D200 15 | R1.5 | 20.0 | 16.0 | 5.2 | 1.0 |
| XMF110V200 20 | XMR110D200 20 | R2.0 | 20.0 | 16.0 | 5.2 | 1.0 |
| - | XMR110D200 30 | R3.0 | 20.0 | 16.0 | 5.2 | 1.0 |
| - | XMR110D210 03 | R0.3 | 21.0 | 16.0 | 5.2 | 1.0 |
| - | XMR110D210 05 | R0.5 | 21.0 | 16.0 | 5.2 | 1.0 |
| - | XMR110D210 10 | R1.0 | 21.0 | 16.0 | 5.2 | 1.0 |
| - | XMR110D210 15 | R1.5 | 21.0 | 16.0 | 5.2 | 1.0 |
| XMF110V210 20 | XMR110D210 20 | R2.0 | 21.0 | 16.0 | 5.2 | 1.0 |
| - | XMR110D210 30 | R3.0 | 21.0 | 16.0 | 5.2 | 1.0 |

▶ The corner radius tolerance is ±0.015mm(Rt tolerance is ±0.05mm) and the set-up accuracy is ±0.02mm.
▶ 圆鼻圆弧角公差是± 0.015mm，设置公差是± 0.02mm

▶ NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| XMF110V | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | | | ◎ | | | | | | | | | | |
| XMR110D | | | | | | | | | | | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| XMF110V | | | | | | | | | | | | | | | | | | | | | |
| XMR110D | ○ | ○ | ○ | ○ | | | | | ◎ | | | | | | | | | | | | |

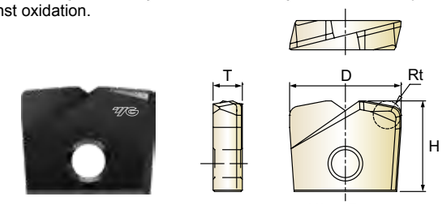
# i-Xmill END MILLS

**XMF110V** SERIES
**XMR110D** SERIES

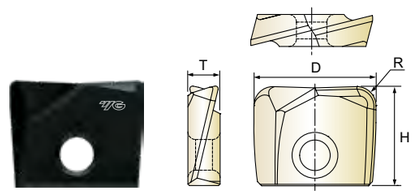
## i-Xmill CORNER RADIUS INSERT
## i-Xmill 圆鼻 刀片

- ▶ The optimum geometry of the tool to achieve better reliability and less vibration and cutting load.
- ▶ Interchangeability with i-Xmill ball holder, but the precise cutting is possible with i-Xmill corner radius holder due to higher stability and strength of tool.
- ▶ The various and wide cutting range makes it possible to machine over the roughing and finishing.
- ▶ Special coating makes high hardness with high thermal stability against oxidation.

- ▶ 最佳设计形状提高稳定性而减少振动和切削阻力
- ▶ 可以用在i-Xmill球头刀杆，可是为了更精密加工，高稳定性，刚性，推荐采用i-Xmill圆鼻刀杆
- ▶ 多种及广大切削范围刀具可以用在粗加工~精加工
- ▶ 特殊涂层提高硬度而且具有抗氧化的高温稳定性




High Feed
高进给




Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| POWER MILLING CHUCK | D161 - 176 |
| ER COLLET CHUCK | D73 - 115 |

Cutting conditions(加工参数) : p.C52

Unit(单位) : mm

| EDP No. | | Corner Radius | Mill Diameter | Height | Thickness | for High Feed |
|---|---|---|---|---|---|---|
| Y-Coating | Diamond | 圆弧角 | 直径 | 高度 | 厚度 | 高进给 |
| For General Purpose High Feed (普通高进给) | For Graphite (石墨用) | R (Rt) | D | H | T | apMax. (最大切深) |
| - | XMR110D250 03 | R0.3 | 25.0 | 19.5 | 6.2 | 1.25 |
| - | XMR110D250 05 | R0.5 | 25.0 | 19.5 | 6.2 | 1.25 |
| - | XMR110D250 10 | R1.0 | 25.0 | 19.5 | 6.2 | 1.25 |
| - | XMR110D250 15 | R1.5 | 25.0 | 19.5 | 6.2 | 1.25 |
| - | XMR110D250 20 | R2.0 | 25.0 | 19.5 | 6.2 | 1.25 |
| XMF110V250 25 | - | R2.5 | 25.0 | 19.5 | 6.2 | 1.25 |
| - | XMR110D250 30 | R3.0 | 25.0 | 19.5 | 6.2 | 1.25 |
| - | XMR110D260 03 | R0.3 | 26.0 | 19.5 | 6.2 | 1.25 |
| - | XMR110D260 05 | R0.5 | 26.0 | 19.5 | 6.2 | 1.25 |
| - | XMR110D260 10 | R1.0 | 26.0 | 19.5 | 6.2 | 1.25 |
| - | XMR110D260 15 | R1.5 | 26.0 | 19.5 | 6.2 | 1.25 |
| - | XMR110D260 20 | R2.0 | 26.0 | 19.5 | 6.2 | 1.25 |
| XMF110V260 25 | - | R2.5 | 26.0 | 19.5 | 6.2 | 1.25 |
| - | XMR110D260 30 | R3.0 | 26.0 | 19.5 | 6.2 | 1.25 |
| - | XMR110D300 03 | R0.3 | 30.0 | 23.5 | 7.2 | 1.6 |
| - | XMR110D300 05 | R0.5 | 30.0 | 23.5 | 7.2 | 1.6 |
| - | XMR110D300 10 | R1.0 | 30.0 | 23.5 | 7.2 | 1.6 |
| - | XMR110D300 15 | R1.5 | 30.0 | 23.5 | 7.2 | 1.6 |
| - | XMR110D300 20 | R2.0 | 30.0 | 23.5 | 7.2 | 1.6 |
| XMF110V300 30 | XMR110D300 30 | R3.0 | 30.0 | 23.5 | 7.2 | 1.6 |

▶ The corner radius tolerance is ±0.015mm(Rt tolerance is ±0.05mm) and the set-up accuracy is ±0.02mm.

▶ NEXT PAGE 下页

▶ 圆鼻圆弧角公差是± 0.015mm，设置公差是± 0.02mm

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| XMF110V | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | | | ◎ | | | | | | | | | | |
| XMR110D | | | | | | | | | | | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| XMF110V | | | | | | | | | | | | | | | | | | | | | |
| XMR110D | ○ | ○ | ○ | ○ | | | | | ◎ | | | | | | | | | | | | |



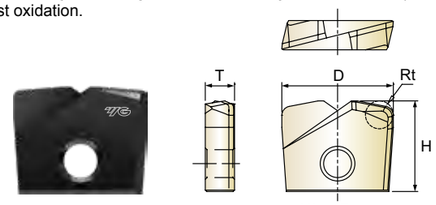
i-Xmill END MILLS

XMF110V SERIES
XMR110D SERIES

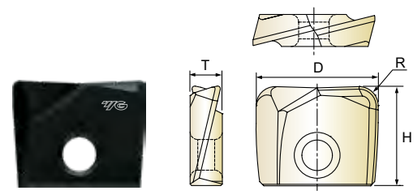
i-Xmill CORNER RADIUS INSERT
i-Xmill 圆鼻 刀片

- ▶ The optimum geometry of the tool to achieve better reliability and less vibration and cutting load.
- ▶ Interchangeability with i-Xmill ball holder, but the precise cutting is possible with i-Xmill corner radius holder due to higher stability and strength of tool.
- ▶ The various and wide cutting range makes it possible to machine over the roughing and finishing.
- ▶ Special coating makes high hardness with high thermal stability against oxidation.

- ▶ 最佳设计形状提高稳定性而减少振动和切削阻力
- ▶ 可以用在i-Xmill球头刀杆，可是为了更精密加工，高稳定性，刚性，推荐采用i-Xmill圆鼻刀杆
- ▶ 多种及广大切削范围刀具可以用在粗加工~精加工
- ▶ 特殊涂层提高硬度而且具有抗氧化的高温稳定性




High Feed
高进给




Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| POWER MILLING CHUCK | D161 - 176 |
| ER COLLET CHUCK | D73 - 115 |

Cutting conditions(加工参数) : p.C52

Unit(单位) : mm

| EDP No. | | Corner Radius | Mill Diameter | Height | Thickness | for High Feed |
|---|---|---|---|---|---|---|
| Y-Coating | Diamond | 圆弧角 | 直径 | 高度 | 厚度 | 高进给 |
| For General Purpose High Feed (普通高进给) | For Graphite (石墨用) | R (Rt) | D | H | T | apMax. (最大切深) |
| - | XMR110D320 03 | R0.3 | 32.0 | 23.5 | 7.2 | 1.6 |
| - | XMR110D320 05 | R0.5 | 32.0 | 23.5 | 7.2 | 1.6 |
| - | XMR110D320 10 | R1.0 | 32.0 | 23.5 | 7.2 | 1.6 |
| - | XMR110D320 15 | R1.5 | 32.0 | 23.5 | 7.2 | 1.6 |
| - | XMR110D320 20 | R2.0 | 32.0 | 23.5 | 7.2 | 1.6 |
| - | XMR110D320 30 | R3.0 | 32.0 | 23.5 | 7.2 | 1.6 |
| XMF110V320 32 | XMR110D320 32 | R3.2 | 32.0 | 23.5 | 7.2 | 1.6 |
| - | XMR110D330 03 | R0.3 | 33.0 | 23.5 | 7.2 | 1.6 |
| - | XMR110D330 05 | R0.5 | 33.0 | 23.5 | 7.2 | 1.6 |
| - | XMR110D330 10 | R1.0 | 33.0 | 23.5 | 7.2 | 1.6 |
| - | XMR110D330 15 | R1.5 | 33.0 | 23.5 | 7.2 | 1.6 |
| - | XMR110D330 20 | R2.0 | 33.0 | 23.5 | 7.2 | 1.6 |
| - | XMR110D330 30 | R3.0 | 33.0 | 23.5 | 7.2 | 1.6 |
| XMF110V330 32 | XMR110D330 32 | R3.2 | 33.0 | 23.5 | 7.2 | 1.6 |

▶ The corner radius tolerance is ±0.015mm(Rt tolerance is ±0.05mm) and the set-up accuracy is ±0.02mm.

▶ 圆鼻圆弧角公差是± 0.015mm，设置公差是± 0.02mm

◎ : Excellent (优秀) ○ : Good (良好)

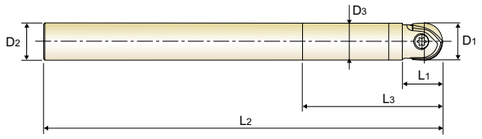
| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| XMF110V | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | | | ◎ | | | | | | | | | | |
| XMR110D | | | | | | | | | | | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| XMF110V | | | | | | | | | | | | | | | | | | | | | |
| XMR110D | ○ | ○ | ○ | ○ | | | | | ◎ | | | | | | | | | | | | |

# i-Xmill END MILLS

**ZBC** SERIES

## i-Xmill CARBIDE BALL HOLDER - STRAIGHT NECK
## i-Xmill 硬质合金 球头 刀杆 - 直颈




Unit(单位) : mm

| EDP No. | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Neck Diameter 颈径 D3 | Length of Cut 刃长 L1 | Length Below Shank 颈长 L3 | Overall Length 全长 L2 | Length Type 长度类型 | Wrench No. 扳手号码 | Screw No. 螺钉号码 |
|---|---|---|---|---|---|---|---|---|---|
| ZBC0801080 | 8 | 8 | 7.6 | 12 | 25 | 130 | Regular | TWFT07 | TX2508T07 |
| ZBC0802080 | 8 | 8 | 7.6 | 12 | 40 | 130 | Regular | | |
| ZBC0803080 | 8 | 8 | 7.6 | 12 | 65 | 130 | Regular | | |
| ZBC0804080 | 8 | 8 | 7.6 | 12 | 60 | 150 | Regular | | |
| ZBC0805080 | 8 | 8 | 7.6 | 12 | 60 | 200 | Long | | |
| ZBC0806080 | 8 | 8 | 7.6 | 12 | 25 | 80 | Short | | |
| ZBC1001100 | 10, 11 | 10 | 9.5 | 15 | 30 | 140 | Regular | TWFT08 | TX3010T08 |
| ZBC1002100 | 10, 11 | 10 | 9.5 | 15 | 50 | 140 | Regular | | |
| ZBC1003100 | 10, 11 | 10 | 9.5 | 15 | 75 | 140 | Regular | | |
| ZBC1004100 | 10, 11 | 10 | 9.5 | 15 | 60 | 180 | Regular | | |
| ZBC1005100 | 10, 11 | 10 | 9.5 | 15 | 60 | 200 | Long | | |
| ZBC1006100 | 10, 11 | 10 | 9.5 | 15 | 30 | 80 | Short | | |
| ZBC120001P | 12, 13 | 12 | 11.4 | 17 | 40 | 200 | Long | TWFT10 | TX3512T10 |
| ZBC1201120 | 12, 13 | 12 | 11.4 | 17 | 35 | 150 | Regular | | |
| ZBC1202120 | 12, 13 | 12 | 11.4 | 17 | 60 | 150 | Regular | | |
| ZBC1203120 | 12, 13 | 12 | 11.4 | 17 | 85 | 150 | Regular | | |
| ZBC1204120 | 12, 13 | 12 | 11.4 | 17 | 60 | 250 | Long | | |
| ZBC1205120 | 12, 13 | 12 | 11.4 | 17 | 35 | 100 | Short | | |
| ZBC160001P | 16, 17 | 16 | 15.0 | 20 | 50 | 150 | Regular | TWFT15 | TX4016T15 |
| ZBC1601160 | 16, 17 | 16 | 15.0 | 20 | 50 | 200 | Long | | |
| ZBC1602160 | 16, 17 | 16 | 15.0 | 20 | 80 | 200 | Long | | |
| ZBC1603160 | 16, 17 | 16 | 15.0 | 20 | 120 | 200 | Long | | |
| ZBC1604160 | 16, 17 | 16 | 15.0 | 20 | 80 | 250 | Long | | |
| ZBC1605160 | 16, 17 | 16 | 15.0 | 20 | 50 | 120 | Short | | |
| ZBC200002P | 20, 21 | 20 | 19.0 | 25 | 60 | 150 | Regular | ● TWBT20 | TX5020T20 |
| ZBC2001200 | 20, 21 | 20 | 19.0 | 25 | 60 | 200 | Regular | | |
| ZBC2002200 | 20, 21 | 20 | 19.0 | 25 | 80 | 200 | Regular | | |
| ZBC2003200 | 20, 21 | 20 | 19.0 | 25 | 100 | 250 | Long | | |
| ZBC2004200 | 20, 21 | 20 | 19.0 | 25 | 150 | 250 | Long | | |
| ZBC2005200 | 20, 21 | 20 | 19.0 | 25 | 100 | 300 | Long | | |
| ZBC250001P | 25, 26 | 25 | 24.0 | 30 | 75 | 150 | Regular | ● TWBT25 | TX6025T25 |
| ZBC2501250 | 25, 26 | 25 | 24.0 | 30 | 75 | 200 | Regular | | |
| ZBC2502250 | 25, 26 | 25 | 24.0 | 30 | 120 | 250 | Regular | | |
| ZBC2503250 | 25, 26 | 25 | 24.0 | 30 | 190 | 300 | Long | | |
| ZBC2504250 | 25, 26 | 25 | 24.0 | 30 | 120 | 350 | Long | | |
| ZBC2505250 | 25, 26 | 25 | 24.0 | 30 | 60 | 300 | Long | | |
| ZBC3001320 | 30, 32, 33 | 32 | 29.0 | 40 | 90 | 250 | Regular | ● TWBT30 | TX8030T30 |
| ZBC3002320 | 30, 32, 33 | 32 | 29.0 | 40 | 150 | 300 | Long | | |
| ZBC3003320 | 30, 32, 33 | 32 | 29.0 | 40 | 190 | 300 | Long | | |
| ZBC3004320 | 30, 32, 33 | 32 | 29.0 | 40 | 120 | 350 | Long | | |
| ZBC3005320 | 30, 32, 33 | 32 | 29.0 | 40 | 150 | 400 | Long | | |

* Upon request, the broken holder is able to be regenerated
  按照客户要求，破损的刀杆可以修磨
* Your carbide holder can be regenerated as YG-1 type upon request
  客户的刀杆可修磨到YG-1型刀杆

* ● Required to use T-HANDLE (TWH600) - (p.C49)
  需要使用T-HANDLE（TWH600) - (49页)

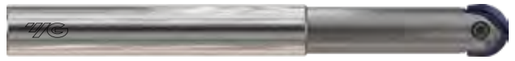


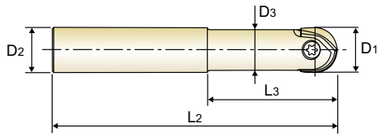
CARBIDE
HSS
CBN END MILLS
i-Xmill END MILLS
i-SMART MODULAR END MILLS
X5070 END MILLS
4G MILL END MILLS
X-POWER PRO END MILLS
TitaNox-POWER END MILLS
SUS-CUT END MILLS
V7 PLUS END MILLS
ALU-POWER HPC END MILLS
ALU-CUT END MILLS
G-CUT END MILLS
CRX S END MILLS
K-2 END MILLS
GENERAL CARBIDE END MILLS
ONLY ONE COATED PM60 END MILLS
TANK-POWER END MILLS
GENERAL HSS END MILLS
MILLING CUTTERS
TECHNICAL DATA

# i-Xmill END MILLS

**ZBS** SERIES

## i-Xmill STEEL BALL HOLDER - STRAIGHT NECK
## i-Xmill 钢件 球头 刀杆 - 直颈






Unit(单位) : mm

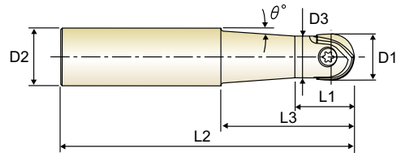
| EDP No. | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Neck Diameter 颈径 D3 | Length Below Shank 颈长 L3 | Overall Length 全长 L2 | Length Type 长度类型 | Wrench No. 扳手号码 | Screw No. 螺钉号码 |
|---|---|---|---|---|---|---|---|---|
| ZBS1201120 | 12, 13 | 12 | 10.5 | 35 | 90 | Short | TWFT10 | TX3512T10 |
| ZBS1202120 | 12, 13 | 12 | 10.5 | 55 | 110 | Regular | | |
| ZBS120001P | 12, 13 | 12 | 10.5 | 40 | 150 | Long | | |
| ZBS1601160 | 16, 17 | 16 | 14.5 | 35 | 95 | Short | TWFT15 | TX4016T15 |
| ZBS1602160 | 16, 17 | 16 | 14.5 | 65 | 125 | Regular | | |
| ZBS160001P | 16, 17 | 16 | 14.5 | 60 | 200 | Long | | |
| ZBS2001200 | 20, 21 | 20 | 18.0 | 40 | 110 | Short | ● TWBT20 | TX5020T20 |
| ZBS2002200 | 20, 21 | 20 | 18.0 | 75 | 145 | Regular | | |
| ZBS200001P | 20, 21 | 20 | 18.0 | 80 | 200 | Long | | |
| ZBS200002P | 20, 21 | 20 | 18.0 | 60 | 200 | Long | | |
| ZBS2501250 | 25, 26 | 25 | 22.5 | 45 | 125 | Short | ● TWBT25 | TX6025T25 |
| ZBS2502250 | 25, 26 | 25 | 22.5 | 90 | 170 | Regular | | |
| ZBS2503250 | 25, 26 | 25 | 22.5 | 100 | 250 | Long | | |
| ZBS250001P | 25, 26 | 25 | 22.5 | 90 | 200 | Long | | |
| ZBS250002P | 25, 26 | 25 | 22.5 | 60 | 200 | Long | | |
| ZBS3001320 | 30, 32, 33 | 32 | 27.0 | 55 | 140 | Short | ● TWBT30 | TX8030T30 |
| ZBS3002320 | 30, 32, 33 | 32 | 27.0 | 110 | 195 | Regular | | |
| ZBS3004320 | 30, 32, 33 | 32 | 27.0 | 150 | 350 | Long | | |
| ZBS300001P | 30, 32, 33 | 32 | 27.0 | 100 | 250 | Long | | |

* ● Required to use T-HANDLE (TWH600) - (p.C49)
  需要使用T-HANDLE（TWH600) - (49页)

i-Xmill END MILLS

ZBT SERIES

## i-Xmill STEEL BALL HOLDER - TAPER NECK
## i-Xmill 钢件 球头 刀杆 - 锥颈




Unit(单位) : mm

| EDP No. | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Neck Diameter 颈径 D3 | Length of Cut 刃长 L1 | Length Below Shank 颈长 L3 | Overall Length 全长 L2 | Interference Angle 锥度角度 θ° | Length Type 长度类型 | Wrench No. 扳手号码 | Screw No. 螺钉号码 |
|---|---|---|---|---|---|---|---|---|---|---|
| **ZBT0801120** | 8 | 12 | 7.2 | 12 | 35 | 90 | 4° 43′ | Short | TWFT07 | TX2508T07 |
| **ZBT0802120** | 8 | 12 | 7.2 | 25 | 55 | 110 | 3° 37′ | Regular | | |
| **ZBT1001120** | 10, 11 | 12 | 9.0 | 15 | 35 | 90 | 2° 51′ | Short | TWFT08 | TX3010T08 |
| **ZBT1002120** | 10, 11 | 12 | 9.0 | 30 | 55 | 110 | 2° 17′ | Regular | | |
| **ZBT1201160** | 12, 13 | 16 | 10.5 | 17 | 55 | 110 | 3° 23′ | Short | TWFT10 | TX3512T10 |
| **ZBT1601200** | 16, 17 | 20 | 14.5 | 20 | 65 | 125 | 2° 51′ | Short | TWFT15 | TX4016T15 |
| **ZBT1604200** | 16, 17 | 20 | 14.5 | 20 | 115 | 200 | 1° 22′ | Regular | | |
| **ZBT2001250** | 20, 21 | 25 | 18.0 | 25 | 75 | 145 | 3° 26′ | Short | ●TWBT20 | TX5020T20 |
| **ZBT2004250** | 20, 21 | 25 | 18.0 | 25 | 115 | 200 | 1° 55′ | Regular | | |
| **ZBT2005250** | 20, 21 | 25 | 18.0 | 25 | 160 | 250 | 1° 17′ | Long | | |
| **ZBT2501320** | 25, 26 | 32 | 22.5 | 30 | 90 | 170 | 4° 03′ | Short | ●TWBT25 | TX6025T25 |
| **ZBT2504320** | 25, 26 | 32 | 22.5 | 30 | 160 | 250 | 1° 53′ | Regular | | |
| **ZBT2505320** | 25, 26 | 32 | 22.5 | 30 | 190 | 300 | 1° 32′ | Long | | |
| **ZBT3001320** | 30,32,33 | 32 | 27.0 | 40 | 110 | 195 | 1° 38′ | Short | ●TWBT30 | TX8030T30 |
| **ZBT3004320** | 30,32,33 | 32 | 27.0 | 40 | 160 | 250 | 0° 58′ | Regular | | |
| **ZBT3005320** | 30,32,33 | 32 | 27.0 | 40 | 190 | 300 | 0° 46′ | Long | | |

* ● Required to use T-HANDLE (TWH600) - (p.C49)
需要使用T-HANDLE（TWH600) - (49页)

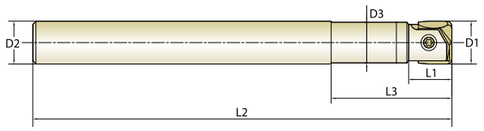




i-Xmill END MILLS

ZRC SERIES

## i-Xmill CARBIDE CORNER RADIUS HOLDER - STRAIGHT NECK
## i-Xmill 硬质合金 圆鼻 刀杆 - 直颈




Unit(单位) : mm

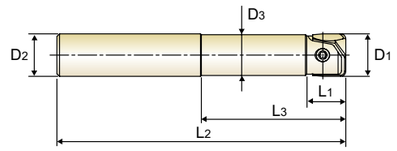
| EDP No. | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Neck Diameter 颈径 D3 | Length of Cut 刃长 L1 | Length Below Shank 颈长 L3 | Overall Length 全长 L2 | Length Type 长度类型 | Wrench No. 扳手号码 | Screw No. 螺钉号码 |
|---|---|---|---|---|---|---|---|---|---|
| **ZRC0801080** | **8** | 8 | 7.6 | 12 | 25 | 130 | Regular | TWFT07 | TX2508T07 |
| **ZRC0802080** | **8** | 8 | 7.6 | 12 | 40 | 130 | Regular | | |
| **ZRC0803080** | **8** | 8 | 7.6 | 12 | 65 | 130 | Regular | | |
| **ZRC1001100** | **10** | 10 | 9.5 | 15 | 30 | 140 | Regular | TWFT08 | TX3010T08 |
| **ZRC1002100** | **10** | 10 | 9.5 | 15 | 50 | 140 | Regular | | |
| **ZRC1003100** | **10** | 10 | 9.5 | 15 | 75 | 140 | Regular | | |
| **ZRC1201120** | **12, 13** | 12 | 11.4 | 17 | 35 | 150 | Regular | TWFT10 | TX3512T10 |
| **ZRC1202120** | **12, 13** | 12 | 11.4 | 17 | 60 | 150 | Regular | | |
| **ZRC1203120** | **12, 13** | 12 | 11.4 | 17 | 85 | 150 | Regular | | |
| **ZRC1601160** | **16, 17** | 16 | 15.0 | 20 | 50 | 200 | Long | TWFT15 | TX4016T15 |
| **ZRC1602160** | **16, 17** | 16 | 15.0 | 20 | 80 | 200 | Long | | |
| **ZRC1603160** | **16, 17** | 16 | 15.0 | 20 | 120 | 200 | Long | | |
| **ZRC1604160** | **16, 17** | 16 | 15.0 | 20 | 80 | 250 | Long | | |
| **ZRC2001200** | **20, 21** | 20 | 19.0 | 25 | 60 | 200 | Regular | ●TWBT20 | TX5020T20 |
| **ZRC2002200** | **20, 21** | 20 | 19.0 | 25 | 80 | 250 | Regular | | |
| **ZRC2003200** | **20, 21** | 20 | 19.0 | 25 | 100 | 250 | Long | | |
| **ZRC2004200** | **20, 21** | 20 | 19.0 | 25 | 150 | 250 | Long | | |
| **ZRC2501250** | **25, 26** | 25 | 24.0 | 30 | 75 | 200 | Regular | ●TWBT25 | TX6025T25 |
| **ZRC2502250** | **25, 26** | 25 | 24.0 | 30 | 120 | 250 | Regular | | |
| **ZRC2503250** | **25, 26** | 25 | 24.0 | 30 | 190 | 300 | Long | | |
| **ZRC3001320** | **30,32,33** | 32 | 29.0 | 40 | 90 | 250 | Regular | ●TWBT30 | TX8030T30 |
| **ZRC3002320** | **30,32,33** | 32 | 29.0 | 40 | 150 | 300 | Long | | |
| **ZRC3003320** | **30,32,33** | 32 | 29.0 | 40 | 190 | 300 | Long | | |

* ● Required to use T-HANDLE (TWH600) - (p.C49)
需要使用T-HANDLE（TWH600) - (49页)

i-Xmill END MILLS

ZRS SERIES

## i-Xmill STEEL CORNER RADIUS HOLDER - STRAIGHT NECK
## i-Xmill 钢件 圆鼻 刀杆 - 直颈



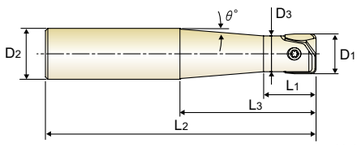

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Neck Diameter 颈径 D3 | Length of Cut 刃长 L1 | Length Below Shank 颈长 L3 | Overall Length 全长 L2 | Length Type 长度类型 | Wrench No. 扳手号码 | Screw No. 螺钉号码 |
|---|---|---|---|---|---|---|---|---|---|
| ZRS1201120 | 12, 13 | 12 | 11.0 | 13 | 30 | 110 | Regular | TWFT10 | TX3512T10 |
| ZRS1601160 | 16, 17 | 16 | 15.0 | 15 | 50 | 130 | Regular | TWFT15 | TX4016T15 |
| ZRS1602160 | 16, 17 | 16 | 15.0 | 15 | 65 | 165 | Intermediate | | |
| ZRS1603160 | 16, 17 | 16 | 15.0 | 15 | 65 | 200 | Long | | |
| ZRS2001200 | 20, 21 | 20 | 19.0 | 18 | 60 | 140 | Regular | ●TWBT20 | TX5020T20 |
| ZRS2002200 | 20, 21 | 20 | 19.0 | 18 | 80 | 180 | Intermediate | | |
| ZRS2003200 | 20, 21 | 20 | 19.0 | 18 | 80 | 250 | Long | | |
| ZRS2501250 | 25, 26 | 25 | 24.0 | 23 | 70 | 150 | Regular | ●TWBT25 | TX6025T25 |
| ZRS2502250 | 25, 26 | 25 | 24.0 | 23 | 90 | 200 | Intermediate | | |
| ZRS2503250 | 25, 26 | 25 | 24.0 | 23 | 90 | 300 | Long | | |
| ZRS3001320 | 30, 32, 33 | 32 | 29.0 | 27 | 80 | 160 | Regular | ●TWBT30 | TX8030T30 |
| ZRS3002320 | 30, 32, 33 | 32 | 29.0 | 27 | 100 | 220 | Intermediate | | |
| ZRS3003320 | 30, 32, 33 | 32 | 29.0 | 27 | 100 | 350 | Long | | |

* ● Required to use T-HANDLE (TWH600) - (p.C49)
需要使用T-HANDLE（TWH600) - (49页)

ZRT SERIES

## i-Xmill STEEL CORNER RADIUS HOLDER - TAPER NECK
## i-Xmill 钢件 圆鼻 刀杆 - 锥颈




Unit(单位) : mm

| EDP No. | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Neck Diameter 颈径 D3 | Length of Cut 刃长 L1 | Length Below Shank 颈长 L3 | Overall Length 全长 L2 | Interference Angle 锥度角度 θ° | Length Type 长度类型 | Wrench No. 扳手号码 | Screw No. 螺钉号码 |
|---|---|---|---|---|---|---|---|---|---|---|
| ZRT0801120 | 8 | 12 | 6.7 | 10 | 22 | 100 | 9° | Regular | TWFT07 | TX2508T07 |
| ZRT0802120 | 8 | 12 | 6.7 | 10 | 50 | 130 | 2° 43´ | Long | | |
| ZRT1001120 | 10, 11 | 12 | 8.6 | 13 | 25 | 100 | 4° 45´ | Regular | TWFT08 | TX3010T08 |
| ZRT1002120 | 10, 11 | 12 | 8.6 | 13 | 50 | 150 | 1° 32´ | Long | | |
| ZRT1202160 | 12, 13 | 16 | 10.2 | 15 | 60 | 160 | 2° 32´ | Long | TWFT10 | TX3512T10 |





i-Xmill END MILLS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

## ASSEMBLY of i-Xmill
## 装配 i-Xmill

▲ Make sure to clean the insert and insert seat.
确保清洁装配部分

▲ Slide the insert into the slot of the holder.
Tighten the screw using anti-seize compound.
刀片滑入刀杆的槽使用扳手拧紧螺钉

| SIZE (ØD) | CLAMPING TORQUE (夹紧扭矩) [ N·m ] |
|---|---|
| Ø8.0 | 1.0 |
| Ø10.0 | 1.5 |
| Ø12.0, Ø13.0 | 2.5 |
| Ø16.0, Ø17.0 | 3.5 |
| Ø20.0, Ø21.0 | 5.0 |
| Ø25.0, Ø26.0 | 6.0 |
| Ø30.0, Ø32.0 | 6.5 |

* When the screw is worn out, please change the a new screw.
* Please tighten up the screw with recommended torque. (Please refer to the table)
* Don't press down the insert, when the screw is tightened.

・如螺钉磨损，请更换新的螺钉
・按照推荐扭矩拧紧螺钉（参考上述表）
・螺钉装配后，不要压下刀片

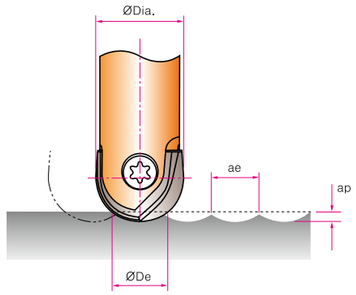
**CLAMPING DIRECTION**
**夹紧方向**

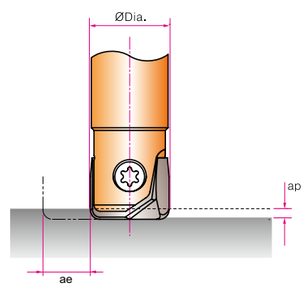
### Wrench No. 扳手号码

| WRENCH TYPE | | PRODUCT NO. | T-HANDLE No. |
|---|---|---|---|
| WING TYPE | | TWFT10 | – |
| | | TWFT15 | – |
| TORX BIT TYPE | | ● TWBT20 | TWH600 |
| | | ● TWBT25 | |
| | | ● TWBT30 | |

* ● Required to use T-HANDLE (TWH600) 需要使用T-HANDLE（TWH600)

## CUTTING CONDITION
## 加工参数




**RPM** = revolution per minute 转数 (rev/min)
**Vc** = surface meter per minute 切削速度 (M/min)
**Dia.** = diameter of insert 刀片直径 (mm)
**Vf** = feed speed 进给量 (mm/min)
**f** = feed per revolution 每转进给 (mm/rev)
**De** = effective tool diameter 有效直径(mm)
**Ap** = axial depth of cut 切削深度 (mm)
**Ae** = radial depth of cut 切削宽度(mm)

$$Vc\ [M/min] = \frac{(RPM) \cdot (\pi) \cdot (Dia.)}{1000}$$

$$RPM\ [rev/min] = \frac{(Vc) \cdot (1000)}{(\pi) \cdot (Dia.)}$$

$$Vf\ [mm/min] = (RPM) \cdot (f)$$

$$De\ [mm] = 2\sqrt{(ap) \cdot (Dia. - ap)}$$

# i-Xmill END MILLS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

### XMB110A SERIES — BALL INSERTS for GENERAL PURPOSE
### 普通用途 球头刀片

Vc = m/min.
Fz = mm/tooth
RPM = rev./min.
FEED = mm/min.

| ISO | VDI 3323 | Material Description 材料描述 | Parameter 参数 | Diameter (Ø) 直径 8 | 10, 11 | 12, 13 | 16, 17 | 20, 21 | 25, 26 | 30, 32, 33 |
|---|---|---|---|---|---|---|---|---|---|---|
| P | 1-4 | Non-alloy steel | Vc | 160~320 | 160~360 | 160~380 | 160~480 | 160~580 | 160~600 | 160~700 |
| | | | fz | 0.20~0.20 | 0.20~0.20 | 0.20~0.20 | 0.25~0.30 | 0.25~0.40 | 0.25~0.50 | 0.25~0.60 |
| | | | RPM | 6370~12730 | 5090~11460 | 4240~10080 | 3180~9550 | 2550~9230 | 2040~7640 | 1700~7430 |
| | | | FEED | 2550~5090 | 2040~4580 | 1700~4030 | 1590~5730 | 1270~7380 | 1020~7640 | 850~8910 |
| | 5 | | Vc | 120~280 | 120~300 | 120~350 | 120~380 | 120~420 | 120~480 | 120~550 |
| | | | fz | 0.20~0.20 | 0.20~0.20 | 0.20~0.20 | 0.25~0.30 | 0.25~0.40 | 0.25~0.50 | 0.25~0.60 |
| | | | RPM | 4770~11140 | 3820~9550 | 3180~9280 | 2390~7560 | 1910~6680 | 1530~6110 | 1270~5840 |
| | | | FEED | 1910~4460 | 1530~3820 | 1270~3710 | 1190~4540 | 950~5350 | 760~6110 | 640~7000 |
| | 6-7 | Low alloy steel | Vc | 160~320 | 160~360 | 160~380 | 160~480 | 160~580 | 160~600 | 160~700 |
| | | | fz | 0.20~0.20 | 0.20~0.20 | 0.20~0.20 | 0.25~0.30 | 0.25~0.40 | 0.25~0.50 | 0.25~0.60 |
| | | | RPM | 6370~12730 | 5090~11460 | 4240~10080 | 3180~9550 | 2550~9230 | 2040~7640 | 1700~7430 |
| | | | FEED | 2550~5090 | 2040~4580 | 1700~4030 | 1590~5730 | 1270~7380 | 1020~7640 | 850~8910 |
| | 8 | | Vc | 120~280 | 120~300 | 120~350 | 120~380 | 120~420 | 120~480 | 120~550 |
| | | | fz | 0.20~0.20 | 0.20~0.20 | 0.20~0.20 | 0.25~0.30 | 0.25~0.40 | 0.25~0.50 | 0.25~0.60 |
| | | | RPM | 4770~11140 | 3820~9550 | 3180~9280 | 2390~7560 | 1910~6680 | 1530~6110 | 1270~5840 |
| | | | FEED | 1910~4460 | 1530~3820 | 1270~3710 | 1190~4540 | 950~5350 | 760~6110 | 640~7000 |

### XMB120C SERIES — BALL INSERTS for PRE-HARDENED STEELS
### 预硬钢用 球头刀片

| ISO | VDI 3323 | Material Description 材料描述 | Parameter 参数 | Diameter (Ø) 直径 8 | 10, 11 | 12, 13 | 16, 17 | 20, 21 | 25, 26 | 30, 32, 33 |
|---|---|---|---|---|---|---|---|---|---|---|
| P | 9-11 | Low alloy steel<br>High alloyed steel, and tool steel | Vc | 100~220 | 100~260 | 100~280 | 100~350 | 100~400 | 100~450 | 100~500 |
| | | | fz | 0.15~0.20 | 0.15~0.20 | 0.15~0.20 | 0.20~0.30 | 0.20~0.40 | 0.20~0.50 | 0.20~0.60 |
| | | | RPM | 3980~8750 | 3180~8280 | 2650~7430 | 1990~6960 | 1590~6370 | 1270~5730 | 1060~5310 |
| | | | FEED | 1190~3500 | 950~3310 | 800~2970 | 800~4180 | 640~5090 | 510~5730 | 420~6370 |
| K | 15-20 | Grey cast iron<br>Nodular cast iron<br>Malleable cast iron | Vc | 160~320 | 160~360 | 160~400 | 160~500 | 160~550 | 160~620 | 160~720 |
| | | | fz | 0.30~0.30 | 0.30~0.30 | 0.30~0.30 | 0.35~0.40 | 0.35~0.40 | 0.35~0.50 | 0.35~0.60 |
| | | | RPM | 6370~12730 | 5090~11460 | 4240~10610 | 3180~9950 | 2550~8750 | 2040~7890 | 1700~7640 |
| | | | FEED | 3820~7640 | 3060~6880 | 2550~6370 | 2230~7960 | 1780~7000 | 1430~7890 | 1190~9170 |
| H | 38 | Hardened steel | Vc | 80~180 | 80~200 | 80~220 | 80~260 | 80~320 | 80~360 | 80~400 |
| | | | fz | 0.10~0.20 | 0.10~0.20 | 0.10~0.20 | 0.15~0.30 | 0.15~0.40 | 0.15~0.50 | 0.15~0.60 |
| | | | RPM | 3180~7160 | 2550~6370 | 2120~5840 | 1590~5170 | 1270~5090 | 1020~4580 | 850~4240 |
| | | | FEED | 640~2860 | 510~2550 | 420~2330 | 480~3100 | 380~4070 | 310~4580 | 250~5090 |

### XMB260T SERIES — BALL INSERTS for HIGH HARDENED STEELS
### 高硬钢用 球头刀片

| ISO | VDI 3323 | Material Description 材料描述 | Parameter 参数 | Diameter (Ø) 直径 8 | 10, 11 | 12, 13 | 16, 17 | 20, 21 | 25, 26 | 30, 32, 33 |
|---|---|---|---|---|---|---|---|---|---|---|
| H | 38-41 | Hardened steel | Vc | 80~180 | 80~200 | 80~220 | 80~260 | 80~320 | 80~360 | 80~400 |
| | | | fz | 0.10~0.15 | 0.10~0.15 | 0.10~0.15 | 0.15~0.25 | 0.15~0.25 | 0.15~0.25 | 0.15~0.30 |
| | | | RPM | 3180~7160 | 2550~6370 | 2120~5840 | 1590~5170 | 1270~5090 | 1020~4580 | 850~4240 |
| | | | FEED | 640~2150 | 510~1910 | 420~1750 | 480~2590 | 380~2550 | 310~2290 | 250~2550 |

### XMB130A SERIES — BALL INSERTS for STAINLESS STEELS
### 不锈钢用 球头刀片

| ISO | VDI 3323 | Material Description | Parameter 参数 | Diameter (Ø) 直径 8 | 10, 11 | 12, 13 | 16, 17 | 20, 21 | 25, 26 | 30, 32, 33 |
|---|---|---|---|---|---|---|---|---|---|---|
| M | 12-14 | Stainless steel | Vc | 90~130 | 90~130 | 90~130 | 90~130 | 90~130 | 90~130 | 90~130 |
| | | | fz | 0.10~0.12 | 0.13~0.15 | 0.15~0.20 | 0.15~0.20 | 0.15~0.20 | 0.20~0.25 | 0.20~0.25 |
| | | | RPM | 3580~5170 | 2860~4140 | 2390~3450 | 1790~2590 | 1430~2070 | 1150~1660 | 950~1380 |
| | | | FEED | 720~1290 | 720~1240 | 720~1380 | 540~1030 | 430~830 | 460~830 | 380~690 |



i-Xmill END MILLS
RECOMMENDED CUTTING CONDITIONS
推荐加工参数

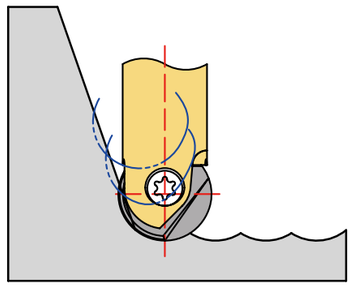
### XMM110V SERIES — BALL INSERTS for GENERAL PURPOSE - FULL RADIUS
### 普通用途 球头刀片 - 全弧型

Vc = m/min.
Fz = mm/tooth
RPM = rev./min.
FEED = mm/min.

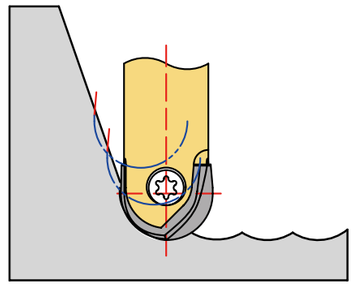
| ISO | VDI 3323 | Material Description 材料描述 | Parameter 参数 | Diameter (Ø) 直径 8 | 10, 11 | 12, 13 | 16, 17 | 20, 21 | 25, 26 | 30, 32, 33 |
|---|---|---|---|---|---|---|---|---|---|---|
| P | 1-4 | Non-alloy steel | Vc | 160~320 | 160~360 | 160~380 | 160~480 | 160~580 | 160~600 | 160~700 |
| | | | fz | 0.20~0.20 | 0.20~0.20 | 0.20~0.20 | 0.25~0.30 | 0.25~0.40 | 0.25~0.50 | 0.25~0.60 |
| | | | RPM | 6370~12730 | 5090~11460 | 4240~10080 | 3180~9550 | 2550~9230 | 2040~7640 | 1700~7430 |
| | | | FEED | 2550~5090 | 2040~4580 | 1700~4030 | 1590~5730 | 1270~7380 | 1020~7640 | 850~8910 |
| | 6-7 | Low alloy steel | Vc | 160~320 | 160~360 | 160~380 | 160~480 | 160~580 | 160~600 | 160~700 |
| | | | fz | 0.20~0.20 | 0.20~0.20 | 0.20~0.20 | 0.25~0.30 | 0.25~0.40 | 0.25~0.50 | 0.25~0.60 |
| | | | RPM | 6370~12730 | 5090~11460 | 4240~10080 | 3180~9550 | 2550~9230 | 2040~7640 | 1700~7430 |
| | | | FEED | 2550~5090 | 2040~4580 | 1700~4030 | 1590~5730 | 1270~7380 | 1020~7640 | 850~8910 |
| | 10 | High alloyed steel, and tool steel | Vc | 160~320 | 160~360 | 160~380 | 160~480 | 160~580 | 160~600 | 160~700 |
| | | | fz | 0.20~0.20 | 0.20~0.20 | 0.20~0.20 | 0.25~0.30 | 0.25~0.40 | 0.25~0.50 | 0.25~0.60 |
| | | | RPM | 6370~12730 | 5090~11460 | 4240~10080 | 3180~9550 | 2550~9230 | 2040~7640 | 1700~7430 |
| | | | FEED | 2550~5090 | 2040~4580 | 1700~4030 | 1590~5730 | 1270~7380 | 1020~7640 | 850~8910 |

### XMB110D SERIES — BALL INSERTS for GRAPHITE
### 石墨用 球头刀片

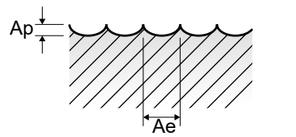
| ISO | VDI 3323 | Material Description 材料描述 | Parameter 参数 | Diameter (Ø) 直径 8 | 10, 11 | 12, 13 | 16, 17 | 20, 21 | 25, 26 | 30, 32, 33 |
|---|---|---|---|---|---|---|---|---|---|---|
| N | 21~22 | Aluminum-wrought alloy | Vc | 300~400 | 300~400 | 300~400 | 300~400 | 300~480 | 300~560 | 300~650 |
| | | | fz | 0.20~0.20 | 0.20~0.20 | 0.20~0.20 | 0.25~0.30 | 0.30~0.35 | 0.35~0.40 | 0.40~0.50 |
| | | | RPM | 11940~15920 | 9550~12730 | 7960~10610 | 5970~7960 | 4770~7640 | 3820~7130 | 3180~6900 |
| | | | FEED | 4770~6370 | 3820~5090 | 3180~4240 | 2980~4770 | 2860~5350 | 2670~5700 | 2550~6900 |
| | 23~24 | Aluminum-cast, alloyed | Vc | 300~400 | 300~400 | 300~400 | 300~400 | 300~480 | 300~560 | 300~650 |
| | | | fz | 0.20~0.20 | 0.20~0.20 | 0.20~0.20 | 0.25~0.30 | 0.30~0.35 | 0.35~0.40 | 0.40~0.50 |
| | | | RPM | 11940~15920 | 9550~12730 | 7960~10610 | 5970~7960 | 4770~7640 | 3820~7130 | 3180~6900 |
| | | | FEED | 4770~6370 | 3820~5090 | 3180~4240 | 2980~4770 | 2860~5350 | 2670~5700 | 2550~6900 |
| | 29.2 | Graphite | Vc | 300~400 | 300~400 | 300~400 | 300~400 | 300~480 | 300~560 | 300~650 |
| | | | fz | 0.20~0.20 | 0.20~0.20 | 0.20~0.20 | 0.25~0.30 | 0.30~0.35 | 0.35~0.40 | 0.40~0.50 |
| | | | RPM | 11940~15920 | 9550~12730 | 7960~10610 | 5970~7960 | 4770~7640 | 3820~7130 | 3180~6900 |
| | | | FEED | 4770~6370 | 3820~5090 | 3180~4240 | 2980~4770 | 2860~5350 | 2670~5700 | 2550~6900 |



Full Radius Type



Ball Radius Type




ae : Roughing - 0.1 x D
Finishing - Under Ø12 : 0.25mm
Under Ø20 : 0.30mm
From Ø20 : 0.40mm

ap : Roughing - Under Ø16 : 0.025 x D
From Ø16 : 0.05 x D
Finishing - Under Ø16 : 0.1mm

▶ When the length of overhang exceed 4xD, we recommend to use carbide shank holder. (Feed 20% down)
▶ Recommend to reduce the feed rate to 70~85% when you use long(long & intermediate Type Holder) tools.
▶ 如悬深长超过4xD，推荐采用硬质合金刀杆（进给要减少20%）
▶ 使用加长刀具（长，加长型刀杆）时，推荐减少进给到70~85%

# i-Xmill END MILLS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

### XMR110A SERIES — CORNER RADIUS INSERTS for GENERAL PURPOSE & STAINLESS STEELS
### 普通用途&不锈钢用 圆鼻刀片

Vc = m/min.
Fz = mm/tooth
RPM = rev./min.
FEED = mm/min.

| ISO | VDI 3323 | Material Description 材料描述 | Parameter 参数 | Diameter (Ø) 直径 8 | 10, 11 | 12, 13 | 16, 17 | 20, 21 | 25, 26 | 30, 32, 33 |
|---|---|---|---|---|---|---|---|---|---|---|
| P | 1-4 | Non-alloy steel | Vc | 160~300 | 160~300 | 160~300 | 160~300 | 160~300 | 160~300 | 160~300 |
| | | | fz | 0.20~0.15 | 0.20~0.15 | 0.20~0.15 | 0.25~0.20 | 0.25~0.20 | 0.25~0.20 | 0.25~0.20 |
| | | | RPM | 6370~11940 | 5090~9550 | 4240~7960 | 3180~5970 | 2550~4770 | 2040~3820 | 1700~3180 |
| | | | FEED | 2550~3580 | 2040~2860 | 1700~2390 | 1590~2390 | 1270~1910 | 1020~1530 | 850~1270 |
| | 5 | | Vc | 120~280 | 120~280 | 120~280 | 120~280 | 120~280 | 120~280 | 120~280 |
| | | | fz | 0.20~0.15 | 0.20~0.15 | 0.20~0.15 | 0.25~0.20 | 0.25~0.20 | 0.25~0.20 | 0.25~0.20 |
| | | | RPM | 4770~11140 | 3820~8910 | 3180~7430 | 2390~5570 | 1910~4460 | 1530~3570 | 1270~2970 |
| | | | FEED | 1910~3340 | 1530~2670 | 1270~2230 | 1190~2230 | 950~1780 | 760~1430 | 640~1190 |
| | 6-7 | Low alloy steel | Vc | 160~300 | 160~300 | 160~300 | 160~300 | 160~300 | 160~300 | 160~300 |
| | | | fz | 0.20~0.15 | 0.20~0.15 | 0.20~0.15 | 0.25~0.20 | 0.25~0.20 | 0.25~0.20 | 0.25~0.20 |
| | | | RPM | 6370~11940 | 5090~9550 | 4240~7960 | 3180~5970 | 2550~4770 | 2040~3820 | 1700~3180 |
| | | | FEED | 2550~3580 | 2040~2860 | 1700~2390 | 1590~2390 | 1270~1910 | 1020~1530 | 850~1270 |
| | 8 | | Vc | 120~280 | 120~280 | 120~280 | 120~280 | 120~280 | 120~280 | 120~280 |
| | | | fz | 0.20~0.15 | 0.20~0.15 | 0.20~0.15 | 0.25~0.20 | 0.25~0.20 | 0.25~0.20 | 0.25~0.20 |
| | | | RPM | 4770~11140 | 3820~8910 | 3180~7430 | 2390~5570 | 1910~4460 | 1530~3570 | 1270~2970 |
| | | | FEED | 1910~3340 | 1530~2670 | 1270~2230 | 1190~2230 | 950~1780 | 760~1430 | 640~1190 |
| M | 12-14 | Stainless steel | Vc | 90~130 | 90~130 | 90~130 | 90~130 | 90~130 | 90~130 | 90~130 |
| | | | fz | 0.10~0.10 | 0.11~0.11 | 0.12~0.11 | 0.13~0.13 | 0.13~0.13 | 0.13~0.12 | 0.13~0.12 |
| | | | RPM | 3580~5170 | 2860~4140 | 2390~3450 | 1790~2590 | 1430~2070 | 1150~1660 | 950~1380 |
| | | | FEED | 720~1030 | 630~910 | 550~790 | 450~650 | 360~520 | 290~410 | 240~340 |

### XMR120C SERIES — CORNER RADIUS INSERTS for PRE-HARDENED STEELS
### 预硬钢用 圆鼻刀片

| ISO | VDI 3323 | Material Description 材料描述 | Parameter 参数 | Diameter (Ø) 直径 8 | 10, 11 | 12, 13 | 16, 17 | 20, 21 | 25, 26 | 30, 32, 33 |
|---|---|---|---|---|---|---|---|---|---|---|
| P | 9-11 | Low alloy steel<br>High alloyed steel, and tool steel | Vc | 100~280 | 100~280 | 100~280 | 100~280 | 100~280 | 100~280 | 100~280 |
| | | | fz | 0.12~0.06 | 0.13~0.06 | 0.13~0.06 | 0.15~0.08 | 0.15~0.08 | 0.15~0.08 | 0.15~0.08 |
| | | | RPM | 3980~11140 | 3180~8910 | 2650~7430 | 1990~5570 | 1590~4460 | 1270~3570 | 1060~2970 |
| | | | FEED | 990~1340 | 800~1070 | 690~890 | 600~840 | 480~670 | 380~570 | 320~450 |
| K | 15-20 | Grey cast iron<br>Nodular cast iron<br>Malleable cast iron | Vc | 160~380 | 160~380 | 160~380 | 160~380 | 160~380 | 160~380 | 160~380 |
| | | | fz | 0.30~0.20 | 0.30~0.20 | 0.30~0.20 | 0.35~0.30 | 0.35~0.30 | 0.35~0.30 | 0.35~0.30 |
| | | | RPM | 6370~15120 | 5090~12100 | 4240~10080 | 3180~7560 | 2550~6050 | 2040~4840 | 1700~4030 |
| | | | FEED | 3820~6050 | 3060~4840 | 2550~4030 | 2230~4540 | 1780~3630 | 1430~2900 | 1190~2420 |
| H | 38 | Hardened steel | Vc | 80~220 | 80~220 | 80~220 | 80~220 | 80~220 | 80~220 | 80~220 |
| | | | fz | 0.10~0.05 | 0.10~0.05 | 0.10~0.05 | 0.15~0.06 | 0.15~0.06 | 0.15~0.06 | 0.15~0.06 |
| | | | RPM | 3180~8750 | 2550~7000 | 2120~5840 | 1590~4380 | 1270~3500 | 1020~2800 | 850~2330 |
| | | | FEED | 640~880 | 510~700 | 420~580 | 420~530 | 380~420 | 310~340 | 250~280 |

### XMR260T SERIES — CORNER RADIUS INSERTS for HIGH HARDENED STEELS
### 高硬钢用 圆鼻刀片

| ISO | VDI 3323 | Material Description 材料描述 | Parameter 参数 | Diameter (Ø) 直径 8 | 10, 11 | 12, 13 | 16, 17 | 20, 21 | 25, 26 | 30, 32, 33 |
|---|---|---|---|---|---|---|---|---|---|---|
| H | 38-41 | Hardened steel | Vc | 80~220 | 80~220 | 80~220 | 80~220 | 80~220 | 80~220 | 80~220 |
| | | | fz | 0.10~0.05 | 0.10~0.05 | 0.10~0.05 | 0.15~0.06 | 0.15~0.06 | 0.15~0.06 | 0.15~0.06 |
| | | | RPM | 3180~8750 | 2550~7000 | 2120~5840 | 1590~4380 | 1270~3500 | 1020~2800 | 850~2330 |
| | | | FEED | 640~880 | 510~700 | 420~580 | 480~530 | 380~420 | 310~340 | 250~280 |



i-Xmill END MILLS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

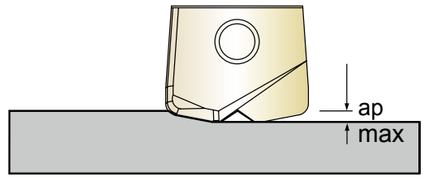
### XMF110V SERIES — CORNER RADIUS INSERTS for GENERAL PURPOSE - HIGH FEED
### 普通用途 圆鼻刀片 - 高进给

Vc = m/min.
Fz = mm/tooth
RPM = rev./min.
FEED = mm/min.

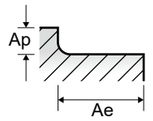
| ISO | VDI 3323 | Material Description 材料描述 | Parameter 参数 | Diameter (Ø) 直径 8 | 10, 11 | 12, 13 | 16, 17 | 20, 21 | 25, 26 | 30, 32, 33 |
|---|---|---|---|---|---|---|---|---|---|---|
| P | 1-7 | Non-alloy steel<br>Low alloy steel | Vc | 150~200 | 150~200 | 150~200 | 150~200 | 150~200 | 150~200 | 150~200 |
| | | | fz | 0.60~0.40 | 0.75~0.50 | 0.90~0.60 | 1.20~0.80 | 1.50~1.00 | 1.80~1.40 | 2.30~1.80 |
| | | | RPM | 5970~7960 | 4770~6370 | 3980~5310 | 2980~3980 | 2390~3180 | 1910~2550 | 1590~2120 |
| | | | FEED | 7160~6370 | 7160~6370 | 7160~6370 | 7160~6370 | 7160~6370 | 6880~7140 | 7320~7640 |
| | | | Ap(Max) | 0.4 | 0.5 | 0.6 | 0.8 | 1.0 | 1.3 | 1.6 |
| | 10 | High alloyed steel, and tool steel | Vc | 150~200 | 150~200 | 150~200 | 150~200 | 150~200 | 150~200 | 150~200 |
| | | | fz | 0.60~0.40 | 0.75~0.50 | 0.90~0.60 | 1.20~0.80 | 1.50~1.00 | 1.80~1.40 | 2.30~1.80 |
| | | | RPM | 5970~7960 | 4770~6370 | 3980~5310 | 2980~3980 | 2390~3180 | 1910~2550 | 1590~2120 |
| | | | FEED | 7160~6370 | 7160~6370 | 7160~6370 | 7160~6370 | 7160~6370 | 6880~7140 | 7320~7640 |
| | | | Ap(Max) | 0.4 | 0.5 | 0.6 | 0.8 | 1.0 | 1.3 | 1.6 |

### XMR110D SERIES — CORNER RADIUS INSERTS for GRAPHITE
### 石墨用 圆鼻刀片

| ISO | VDI 3323 | Material Description 材料描述 | Parameter 参数 | Diameter (Ø) 直径 8 | 10, 11 | 12, 13 | 16, 17 | 20, 21 | 25, 26 | 30, 32, 33 |
|---|---|---|---|---|---|---|---|---|---|---|
| N | 21~22 | Aluminum-wrought alloy | Vc | 300~400 | 300~400 | 300~400 | 300~400 | 300~400 | 300~400 | 300~400 |
| | | | fz | 0.20~0.20 | 0.20~0.20 | 0.20~0.20 | 0.20~0.20 | 0.25~0.25 | 0.25~0.25 | 0.25~0.25 |
| | | | RPM | 11940~15920 | 9550~12730 | 7960~10610 | 5970~7960 | 4770~6370 | 3820~5090 | 3180~4240 |
| | | | FEED | 4770~6370 | 3820~5090 | 3180~4240 | 2390~3180 | 2390~3180 | 1910~2550 | 1590~2120 |
| | 23~24 | Aluminum-cast, alloyed | Vc | 300~400 | 300~400 | 300~400 | 300~400 | 300~400 | 300~400 | 300~400 |
| | | | fz | 0.20~0.20 | 0.20~0.20 | 0.20~0.20 | 0.20~0.20 | 0.25~0.25 | 0.25~0.25 | 0.25~0.25 |
| | | | RPM | 11940~15920 | 9550~12730 | 7960~10610 | 5970~7960 | 4770~6370 | 3820~5090 | 3180~4240 |
| | | | FEED | 4770~6370 | 3820~5090 | 3180~4240 | 2390~3180 | 2390~3180 | 1910~2550 | 1590~2120 |
| | 29.2 | Graphite | Vc | 300~400 | 300~400 | 300~400 | 300~400 | 300~400 | 300~400 | 300~400 |
| | | | fz | 0.20~0.20 | 0.20~0.20 | 0.20~0.20 | 0.20~0.20 | 0.25~0.25 | 0.25~0.25 | 0.25~0.25 |
| | | | RPM | 11940~15920 | 9550~12730 | 7960~10610 | 5970~7960 | 4770~6370 | 3820~5090 | 3180~4240 |
| | | | FEED | 4770~6370 | 3820~5090 | 3180~4240 | 2390~3180 | 2390~3180 | 1910~2550 | 1590~2120 |




High Feed

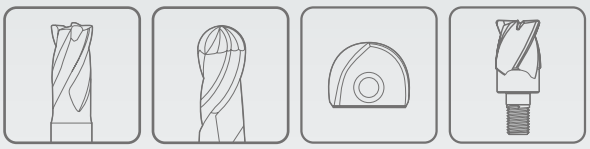



ae : Roughing - 0.1 x D
Finishing - 0.2mm

ap : Roughing - Under Ø16 : 0.025 x D
From Ø16 : 0.05 x D
Finishing - Under Ø16 : 0.1mm
From Ø16 : 0.2mm

▶ When the length of overhang exceed 4 x D, we recommend to use carbide shank holder. (Feed 20% down)
▶ Recommend to reduce the feed rate to 70 ~ 85% when you use long(long & intermediate Type Holder) tools.
▶ 如悬深长超过4xD，推荐采用硬质合金刀杆（进给要减少20%）
▶ 使用加长刀具（长，加长型刀杆）时，推荐减少进给到70~85%

Global Cutting Tool Leader **YG-1**



# MILLING

Leading Through Innovation

# CARBIDE MODULAR HEAD & HOLDER

# i-SMART MODULAR TYPE END MILLS

- For General Steels, Hardened Steels and Cast Iron
- 适用于普通钢，高硬钢和铸铁

# SELECTION GUIDE
## 选用指南

YG MILLING TOOLS

## CARBIDE MODULAR HEAD & HOLDER i-SMART END MILLS

Ultra-micro Grain Carbide Heads with Carbide & Steel Holders
超纳米颗粒硬质合金模块铣刀
带硬质合金 & 钢件刀杆

Please visit globalyg1.com/mat for material search

◎ : Excellent (优秀) ○ : Good (良好)

Recommended cutting conditions (推荐加工参数) : p.C70

| SERIES 系列 | XSEMD98 | XSEME59 | XSEME60 |
|---|---|---|---|
| FLUTE 槽数 | 2 | 3 | 4 |
| HELIX ANGLE 螺旋角度 | 30° | 30° | 30° |
| CUTTING EDGE SHAPE 类型 | BALL NOSE | BALL NOSE | BALL NOSE |
| SIZE MIN 最小尺寸 | R5.0 | R5.0 | R5.0 |
| SIZE MAX 最大尺寸 | R16.0 | R16.0 | R16.0 |
| PAGE 页数 | C58 | C59 | C60 |
| | CENTER MATCH | CENTER MATCH | CENTER MATCH |
| | Y-Coating | Y-Coating | Y-Coating |

| ISO | VDI 3323 | Material Description 材料描述 | Composition / Structure / Heat Treatment 成分 / 组织 / 热处理 | | HB | HRc | | | |
|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | About 0.15% C | Annealed | 125 | | ○ | ○ | ○ |
| | 2 | | About 0.45% C | Annealed | 190 | 13 | ○ | ○ | ○ |
| | 3 | | About 0.45% C | Quenched & Tempered | 250 | 25 | ○ | ○ | ○ |
| | 4 | | About 0.75% C | Annealed | 270 | 28 | ◎ | ◎ | ◎ |
| | 5 | | About 0.75% C | Quenched & Tempered | 300 | 32 | ◎ | ◎ | ◎ |
| | 6 | Low alloy steel | | Annealed | 180 | 10 | ○ | ○ | ○ |
| | 7 | | | Quenched & Tempered | 275 | 29 | ◎ | ◎ | ◎ |
| | 8 | | | Quenched & Tempered | 300 | 32 | ◎ | ◎ | ◎ |
| | 9 | | | Quenched & Tempered | 350 | 38 | ◎ | ◎ | ◎ |
| | 10 | High alloyed steel, and tool steel | | Annealed | 200 | 15 | ○ | ○ | ○ |
| | 11 | | | Quenched & Tempered | 325 | 35 | ◎ | ◎ | ◎ |
| M | 12 | Stainless steel | Ferritic / Martensitic | Annealed | 200 | 15 | | | |
| | 13 | | Martensitic | Quenched & Tempered | 240 | 23 | | | |
| | 14 | | Austenitic | | 180 | 10 | | | |
| K | 15 | Grey cast iron | Pearlitic / ferritic | | 180 | 10 | ○ | ○ | ○ |
| | 16 | | Pearlitic (Martensitic) | | 260 | 26 | ○ | ○ | ○ |
| | 17 | Nodular cast iron | Ferritic | | 160 | 3 | ○ | ○ | ○ |
| | 18 | | Pearlitic | | 250 | 25 | ○ | ○ | ○ |
| | 19 | Malleable cast iron | Ferritic | | 130 | | ○ | ○ | ○ |
| | 20 | | Pearlitic | | 230 | 21 | ○ | ○ | ○ |
| N | 21 | Aluminum-wrought alloy | Not Curable | | 60 | | | | |
| | 22 | | Curable | Hardened | 100 | | | | |
| | 23 | Aluminum-cast, alloyed | ≤ 12% Si, Not Curable | | 75 | | | | |
| | 24 | | ≤ 12% Si, Curable | Hardened | 90 | | | | |
| | 25 | | > 12% Si, Not Curable | | 130 | | | | |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | Cutting Alloys, PB>1% | | 110 | | | | |
| | 27 | | CuZn, CuSnZn (Brass) | | 90 | | | | |
| | 28 | | CuSn, lead-free copper and electrolytic copper | | 100 | | | | |
| | 29 | Non Metallic Materials | Duroplastic, Fiber Reinforced Plastic | | | | | | |
| | 30 | | Rubber, Wood, etc. | | | | | | |
| S | 31 | Heat Resistant Super Alloys | Fe Based | Annealed | 200 | 15 | | | |
| | 32 | | | Cured | 280 | 30 | | | |
| | 33 | | Ni or Co Based | Annealed | 250 | 25 | | | |
| | 34 | | | Cured | 350 | 38 | | | |
| | 35 | | | Cast | 320 | 34 | | | |
| | 36 | Titanium Alloys | Pure Titanium | | 400 Rm | | | | |
| | 37 | | Alpha + Beta Alloys | Hardened | 1050 Rm | | | | |
| H | 38 | Hardened steel | | Hardened | 550 | 55 | ○ | ○ | ○ |
| | 39 | | | Hardened | 630 | 60 | ○ | ○ | ○ |
| | 40 | Chilled Cast Iron | | Cast | 400 | 42 | ◎ | ◎ | ◎ |
| | 41 | Hardened Cast Iron | | Hardened | 550 | 55 | ○ | ○ | ○ |



| SERIES 系列 | XSEME01 | XSEME68 | XSEME36 | XSEME75 | ZMC | ZMS | ZMT |
|---|---|---|---|---|---|---|---|
| FLUTE 槽数 | 4 | 6 | 4 | 6 | - | - | - |
| HELIX ANGLE 螺旋角度 | 27°/30° (MULTIPLE HELIX) | 45° | 27°/30° (MULTIPLE HELIX) | 45° | - | - | - |
| CUTTING EDGE SHAPE 类型 | CORNER RADIUS | CORNER RADIUS | SQUARE | SQUARE | - | - | - |
| SIZE MIN 最小尺寸 | D10.0 | D10.0 | D10.0 | D10.0 | - | - | - |
| SIZE MAX 最大尺寸 | D32.0 | D32.0 | D32.0 | D32.0 | - | - | - |
| PAGE 页数 | C61-62 | C63 | C64 | C65 | C66 | C67 | C68 |
| | - | - | - | - | STRAIGHT NECK | STRAIGHT NECK | TAPER NECK |
| | Y-Coating | Y-Coating | Y-Coating | Y-Coating | Carbide | Steel | Steel |

| | | | | | | | |
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| ◎ | ◎ | ◎ | ◎ | | | | 4 |
| ◎ | ◎ | ◎ | ◎ | | | | 5 |
| ○ | ○ | ○ | ○ | | | | 6 P |
| ◎ | ◎ | ◎ | ◎ | | | | 7 |
| ◎ | ◎ | ◎ | ◎ | | | | 8 |
| ◎ | ◎ | ◎ | ◎ | | | | 9 |
| ○ | ○ | ○ | ○ | | | | 10 |
| ◎ | ◎ | ◎ | ◎ | | | | 11 |
| | | | | | | | 12 |
| | | | | | | | 13 M |
| | | ○ | | | | | 14 |
| ○ | ○ | ○ | ○ | | | | 15 |
| ○ | ○ | ○ | ○ | | | | 16 |
| ○ | ○ | ○ | ○ | | | | 17 |
| ○ | ○ | ○ | ○ | | | | 18 K |
| ○ | ○ | ○ | ○ | | | | 19 |
| ○ | ○ | ○ | ○ | | | | 20 |
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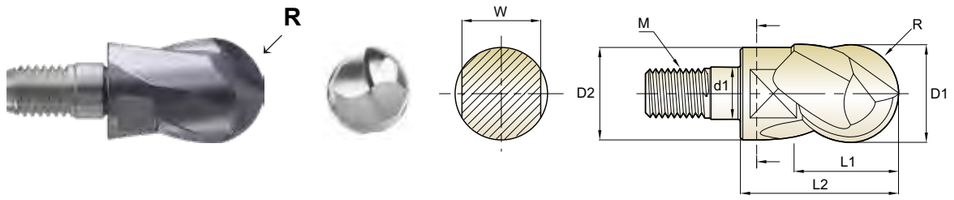
| | | | | | | | 34 S |
| | | | | | | | 35 |
| | | | | | | | 36 |
| | | | | | | | 37 |
| ○ | ○ | ○ | ○ | | | | 38 |
| ○ | ○ | ○ | ○ | | | | 39 |
| ◎ | ◎ | ◎ | ◎ | | | | 40 H |
| ○ | ○ | ○ | ○ | | | | 41 |

BALL NOSE = 球头 CORNER RADIUS = 圆鼻 SQUARE = 平头 MULTIPLE HELIX = 不等螺旋
STRAIGHT NECK = 直颈 TAPER NECK = 锥颈 CARBIDE=硬质合金 STEEL = 钢件

# i-Smart END MILLS

## XSEMD98 SERIES

## CARBIDE MODULAR HEAD, 2 FLUTE BALL NOSE (Center Match)
## 硬质合金 模块铣刀，2刃 球头 (中心对称)




CARBIDE | 2 | 30° | p.C70

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| POWER MILLING CHUCK | D161 - 176 |
| ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. | Radius of Ball Nose 圆弧角 | Mill Diameter 直径 | Neck Diameter 颈径 | Length of Cut 刃长 | Length Below Shank 颈长 | Wrench Width 扳手宽度 | Coupling Diameter 连接直径 | Thread 螺纹 |
|---|---|---|---|---|---|---|---|---|
| Y-COATED | R | $D_1$ | $D_2$ | $L_1$ | $L_2$ | W | $d_1$ | M |
| **XSEMD98100** | R5.0 | **10.0** | 9.2 | 10 | 17.5 | 8 | 6.5 | M6 |
| **XSEMD98120** | R6.0 | **12.0** | 11.2 | 12 | 20.5 | 10 | 6.5 | M6 |
| **XSEMD98160** | R8.0 | **16.0** | 15.0 | 16 | 25.5 | 13 | 8.5 | M8 |
| **XSEMD98200** | R10.0 | **20.0** | 19.0 | 20 | 30.0 | 17 | 10.5 | M10 |
| **XSEMD98250** | R12.5 | **25.0** | 24.0 | 25 | 37.0 | 22 | 12.5 | M12 |
| **XSEMD98300** | R15.0 | **30.0** | 29.0 | 30 | 43.0 | 27 | 17.0 | M16 |
| **XSEMD98320** | R16.0 | **32.0** | 31.0 | 32 | 45.0 | 27 | 17.0 | M16 |

| Radius Tolerance(mm) 圆弧角公差 | Mill Dia.Tolerance (mm) 直径公差 |
|---|---|
| ± 0.010 | 0 ~ - 0.02 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ○ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

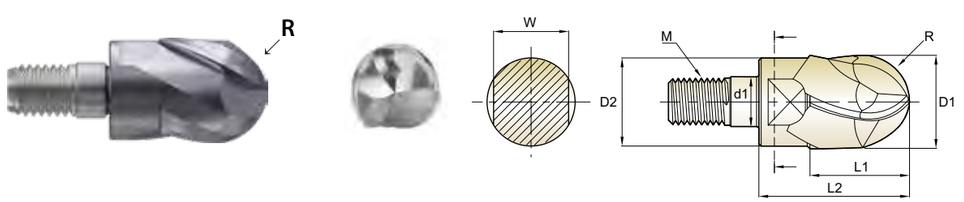
| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | ○ | ◎ | ○ |



# i-Smart END MILLS

## XSEME59 SERIES

## CARBIDE MODULAR HEAD, 3 FLUTE BALL NOSE (Center Match)
## 硬质合金 模块铣刀，3刃 球头 (中心对称)




CARBIDE | 3 | 30° | p.C70

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| POWER MILLING CHUCK | D161 - 176 |
| ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. | Radius of Ball Nose 圆弧角 | Mill Diameter 直径 | Neck Diameter 颈径 | Length of Cut 刃长 | Length Below Shank 颈长 | Wrench Width 扳手宽度 | Coupling Diameter 连接直径 | Thread 螺纹 |
|---|---|---|---|---|---|---|---|---|
| Y-COATED | R | $D_1$ | $D_2$ | $L_1$ | $L_2$ | W | $d_1$ | M |
| **XSEME59100** | R5.0 | **10.0** | 9.2 | 10 | 17.5 | 8 | 6.5 | M6 |
| **XSEME59120** | R6.0 | **12.0** | 11.2 | 12 | 20.5 | 10 | 6.5 | M6 |
| **XSEME59160** | R8.0 | **16.0** | 15.0 | 16 | 25.5 | 13 | 8.5 | M8 |
| **XSEME59200** | R10.0 | **20.0** | 19.0 | 20 | 30.0 | 17 | 10.5 | M10 |
| **XSEME59250** | R12.5 | **25.0** | 24.0 | 25 | 37.0 | 22 | 12.5 | M12 |
| **XSEME59300** | R15.0 | **30.0** | 29.0 | 30 | 43.0 | 27 | 17.0 | M16 |
| **XSEME59320** | R16.0 | **32.0** | 31.0 | 32 | 45.0 | 27 | 17.0 | M16 |

| Radius Tolerance(mm) 圆弧角公差 | Mill Dia.Tolerance (mm) 直径公差 |
|---|---|
| ± 0.010 | 0 ~ - 0.02 |

◎ : Excellent (优秀) ○ : Good (良好)

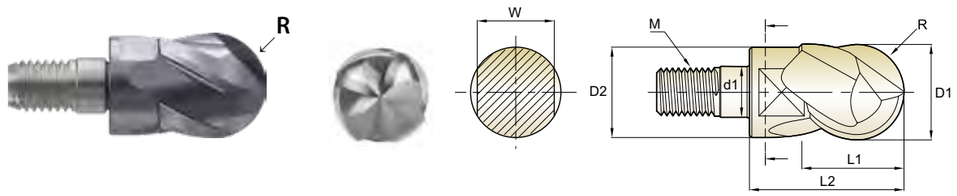
| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ○ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | ○ | ◎ | ○ |

# i-Smart END MILLS

## XSEME60 SERIES

## CARBIDE MODULAR HEAD, 4 FLUTE BALL NOSE (Center Match)
## 硬质合金 模块铣刀，4刃球头 (中心对称)




CARBIDE | 4 | 30° | p.C71

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| POWER MILLING CHUCK | D161 - 176 |
| ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. | Radius of Ball Nose 圆弧角 | Mill Diameter 直径 | Neck Diameter 颈径 | Length of Cut 刃长 | Length Below Shank 颈长 | Wrench Width 扳手宽度 | Coupling Diameter 连接直径 | Thread 螺纹 |
|---|---|---|---|---|---|---|---|---|
| Y-COATED | R | $D_1$ | $D_2$ | $L_1$ | $L_2$ | W | $d_1$ | M |
| **XSEME60100** | R5.0 | **10.0** | 9.2 | 10 | 17.5 | 8 | 6.5 | M6 |
| **XSEME60120** | R6.0 | **12.0** | 11.2 | 12 | 20.5 | 10 | 6.5 | M6 |
| **XSEME60160** | R8.0 | **16.0** | 15.0 | 16 | 25.5 | 13 | 8.5 | M8 |
| **XSEME60200** | R10.0 | **20.0** | 19.0 | 20 | 30.0 | 17 | 10.5 | M10 |
| **XSEME60250** | R12.5 | **25.0** | 24.0 | 25 | 37.0 | 22 | 12.5 | M12 |
| **XSEME60300** | R15.0 | **30.0** | 29.0 | 30 | 43.0 | 27 | 17.0 | M16 |
| **XSEME60320** | R16.0 | **32.0** | 31.0 | 32 | 45.0 | 27 | 17.0 | M16 |

| Radius Tolerance(mm) 圆弧角公差 | Mill Dia.Tolerance (mm) 直径公差 |
|---|---|
| ± 0.010 | 0 ~ - 0.02 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ○ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

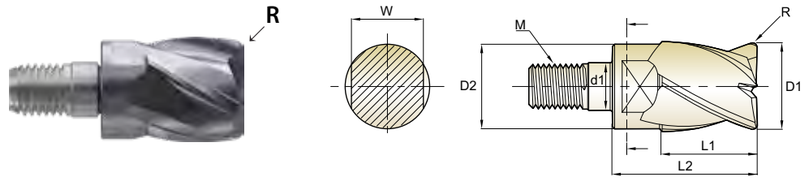
| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | ○ | ◎ | ○ |



# i-Smart END MILLS

## XSEME01 SERIES

## CARBIDE MODULAR HEAD, 4 FLUTE MULTIPLE HELIX CORNER RADIUS
## 硬质合金 模块铣刀，4刃 不等螺旋 圆鼻




CARBIDE | 4 | 27°/30° | p.C71

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| POWER MILLING CHUCK | D161 - 176 |
| ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. | Corner Radius 圆弧角 | Mill Diameter 直径 | Neck Diameter 颈径 | Length of Cut 刃长 | Length Below Shank 颈长 | Wrench Width 扳手宽度 | Coupling Diameter 连接直径 | Thread 螺纹 |
|---|---|---|---|---|---|---|---|---|
| Y-COATED | R | $D_1$ | $D_2$ | $L_1$ | $L_2$ | W | $d_1$ | M |
| **XSEME01100 010** | R0.1 | **10.0** | 9.2 | 10 | 17.5 | 8 | 6.5 | M6 |
| **XSEME01100 020** | R0.2 | **10.0** | 9.2 | 10 | 17.5 | 8 | 6.5 | M6 |
| **XSEME01100 030** | R0.3 | **10.0** | 9.2 | 10 | 17.5 | 8 | 6.5 | M6 |
| **XSEME01100 050** | R0.5 | **10.0** | 9.2 | 10 | 17.5 | 8 | 6.5 | M6 |
| **XSEME01100 100** | R1.0 | **10.0** | 9.2 | 10 | 17.5 | 8 | 6.5 | M6 |
| **XSEME01100 150** | R1.5 | **10.0** | 9.2 | 10 | 17.5 | 8 | 6.5 | M6 |
| **XSEME01100 200** | R2.0 | **10.0** | 9.2 | 10 | 17.5 | 8 | 6.5 | M6 |
| **XSEME01100 250** | R2.5 | **10.0** | 9.2 | 10 | 17.5 | 8 | 6.5 | M6 |
| **XSEME01100 300** | R3.0 | **10.0** | 9.2 | 10 | 17.5 | 8 | 6.5 | M6 |
| **XSEME01100 400** | R4.0 | **10.0** | 9.2 | 10 | 17.5 | 8 | 6.5 | M6 |
| **XSEME01120 010** | R0.1 | **12.0** | 11.2 | 12 | 20.5 | 10 | 6.5 | M6 |
| **XSEME01120 020** | R0.2 | **12.0** | 11.2 | 12 | 20.5 | 10 | 6.5 | M6 |
| **XSEME01120 030** | R0.3 | **12.0** | 11.2 | 12 | 20.5 | 10 | 6.5 | M6 |
| **XSEME01120 050** | R0.5 | **12.0** | 11.2 | 12 | 20.5 | 10 | 6.5 | M6 |
| **XSEME01120 100** | R1.0 | **12.0** | 11.2 | 12 | 20.5 | 10 | 6.5 | M6 |
| **XSEME01120 150** | R1.5 | **12.0** | 11.2 | 12 | 20.5 | 10 | 6.5 | M6 |
| **XSEME01120 200** | R2.0 | **12.0** | 11.2 | 12 | 20.5 | 10 | 6.5 | M6 |
| **XSEME01120 250** | R2.5 | **12.0** | 11.2 | 12 | 20.5 | 10 | 6.5 | M6 |
| **XSEME01120 300** | R3.0 | **12.0** | 11.2 | 12 | 20.5 | 10 | 6.5 | M6 |
| **XSEME01120 400** | R4.0 | **12.0** | 11.2 | 12 | 20.5 | 10 | 6.5 | M6 |
| **XSEME01120 500** | R5.0 | **12.0** | 11.2 | 12 | 20.5 | 10 | 6.5 | M6 |
| **XSEME01160 050** | R0.5 | **16.0** | 15.0 | 16 | 25.5 | 13 | 8.5 | M8 |
| **XSEME01160 100** | R1.0 | **16.0** | 15.0 | 16 | 25.5 | 13 | 8.5 | M8 |
| **XSEME01160 150** | R1.5 | **16.0** | 15.0 | 16 | 25.5 | 13 | 8.5 | M8 |

▶ NEXT PAGE 下页

| Radius Tolerance(mm) 圆弧角公差 | Mill Dia.Tolerance (mm) 直径公差 |
|---|---|
| ± 0.02 | 0 ~ - 0.03 |

◎ : Excellent (优秀) ○ : Good (良好)

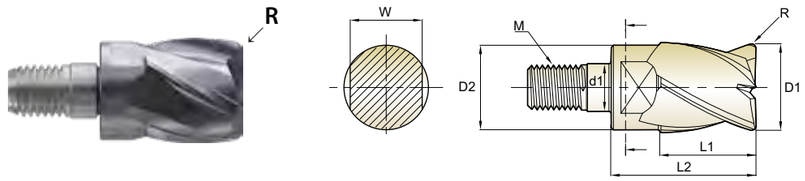
| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | ○ | ◎ | ○ |

i-Smart END MILLS

**XSEME01 SERIES**

## CARBIDE MODULAR HEAD, 4 FLUTE MULTIPLE HELIX CORNER RADIUS
## 硬质合金 模块铣刀，4刃 不等螺旋 圆鼻




CARBIDE | 4 | 27°/30° | p.C71

Recommended ToolHolder — Plain Shank — Page
POWER MILLING CHUCK D161 - 176
ER COLLET CHUCK D73 - 115

Unit(单位) : mm

| EDP No. | Corner Radius 圆弧角 | Mill Diameter 直径 | Neck Diameter 颈径 | Length of Cut 刃长 | Length Below Shank 颈长 | Wrench Width 扳手宽度 | Coupling Diameter 连接直径 | Thread 螺纹 |
|---|---|---|---|---|---|---|---|---|
| Y-COATED | R | $D_1$ | $D_2$ | $L_1$ | $L_2$ | W | $d_1$ | M |
| **XSEME01160 200** | R2.0 | **16.0** | 15.0 | 16 | 25.5 | 13 | 8.5 | M8 |
| **XSEME01200 050** | R0.5 | **20.0** | 19.0 | 20 | 30.0 | 17 | 10.5 | M10 |
| **XSEME01200 100** | R1.0 | **20.0** | 19.0 | 20 | 30.0 | 17 | 10.5 | M10 |
| **XSEME01200 150** | R1.5 | **20.0** | 19.0 | 20 | 30.0 | 17 | 10.5 | M10 |
| **XSEME01200 200** | R2.0 | **20.0** | 19.0 | 20 | 30.0 | 17 | 10.5 | M10 |
| **XSEME01250 050** | R0.5 | **25.0** | 24.0 | 25 | 37.0 | 22 | 12.5 | M12 |
| **XSEME01250 100** | R1.0 | **25.0** | 24.0 | 25 | 37.0 | 22 | 12.5 | M12 |
| **XSEME01250 150** | R1.5 | **25.0** | 24.0 | 25 | 37.0 | 22 | 12.5 | M12 |
| **XSEME01250 200** | R2.0 | **25.0** | 24.0 | 25 | 37.0 | 22 | 12.5 | M12 |
| **XSEME01300 050** | R0.5 | **30.0** | 29.0 | 30 | 43.0 | 27 | 17.0 | M16 |
| **XSEME01300 100** | R1.0 | **30.0** | 29.0 | 30 | 43.0 | 27 | 17.0 | M16 |
| **XSEME01300 150** | R1.5 | **30.0** | 29.0 | 30 | 43.0 | 27 | 17.0 | M16 |
| **XSEME01300 200** | R2.0 | **30.0** | 29.0 | 30 | 43.0 | 27 | 17.0 | M16 |
| **XSEME01320 050** | R0.5 | **32.0** | 31.0 | 32 | 45.0 | 27 | 17.0 | M16 |
| **XSEME01320 100** | R1.0 | **32.0** | 31.0 | 32 | 45.0 | 27 | 17.0 | M16 |
| **XSEME01320 150** | R1.5 | **32.0** | 31.0 | 32 | 45.0 | 27 | 17.0 | M16 |
| **XSEME01320 200** | R2.0 | **32.0** | 31.0 | 32 | 45.0 | 27 | 17.0 | M16 |

| Radius Tolerance(mm) 圆弧角公差 | Mill Dia.Tolerance (mm) 直径公差 |
|---|---|
| ± 0.02 | 0 ~ - 0.03 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

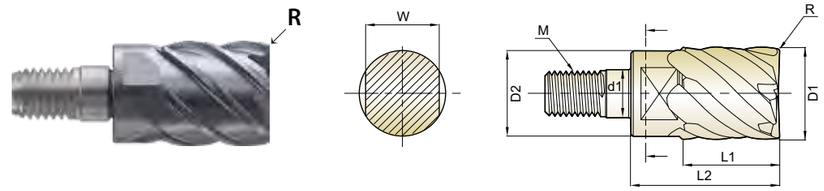
| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | ○ | ◎ | ○ |



i-Smart END MILLS

**XSEME68 SERIES**

## CARBIDE MODULAR HEAD, 6 FLUTE 45° HELIX CORNER RADIUS
## 硬质合金 模块铣刀，6刃 45度螺旋 圆鼻




CARBIDE | 6 | 45° | p.C72

Recommended ToolHolder — Plain Shank — Page
POWER MILLING CHUCK D161 - 176
ER COLLET CHUCK D73 - 115

Unit(单位) : mm

| EDP No. | Corner Radius 圆弧角 | Mill Diameter 直径 | Neck Diameter 颈径 | Length of Cut 刃长 | Length Below Shank 颈长 | Wrench Width 扳手宽度 | Coupling Diameter 连接直径 | Thread 螺纹 |
|---|---|---|---|---|---|---|---|---|
| Y-COATED | R | $D_1$ | $D_2$ | $L_1$ | $L_2$ | W | $d_1$ | M |
| **XSEME68100 030** | R0.3 | **10.0** | 9.2 | 10 | 17.5 | 8 | 6.5 | M6 |
| **XSEME68100 050** | R0.5 | **10.0** | 9.2 | 10 | 17.5 | 8 | 6.5 | M6 |
| **XSEME68100 100** | R1.0 | **10.0** | 9.2 | 10 | 17.5 | 8 | 6.5 | M6 |
| **XSEME68120 030** | R0.3 | **12.0** | 11.2 | 12 | 20.5 | 10 | 6.5 | M6 |
| **XSEME68120 050** | R0.5 | **12.0** | 11.2 | 12 | 20.5 | 10 | 6.5 | M6 |
| **XSEME68120 100** | R1.0 | **12.0** | 11.2 | 12 | 20.5 | 10 | 6.5 | M6 |
| **XSEME68160 050** | R0.5 | **16.0** | 15.0 | 16 | 25.5 | 13 | 8.5 | M8 |
| **XSEME68160 100** | R1.0 | **16.0** | 15.0 | 16 | 25.5 | 13 | 8.5 | M8 |
| **XSEME68160 150** | R1.5 | **16.0** | 15.0 | 16 | 25.5 | 13 | 8.5 | M8 |
| **XSEME68160 200** | R2.0 | **16.0** | 15.0 | 16 | 25.5 | 13 | 8.5 | M8 |
| **XSEME68200 050** | R0.5 | **20.0** | 19.0 | 20 | 30.0 | 17 | 10.5 | M10 |
| **XSEME68200 100** | R1.0 | **20.0** | 19.0 | 20 | 30.0 | 17 | 10.5 | M10 |
| **XSEME68200 150** | R1.5 | **20.0** | 19.0 | 20 | 30.0 | 17 | 10.5 | M10 |
| **XSEME68200 200** | R2.0 | **20.0** | 19.0 | 20 | 30.0 | 17 | 10.5 | M10 |
| **XSEME68250 050** | R0.5 | **25.0** | 24.0 | 25 | 37.0 | 22 | 12.5 | M12 |
| **XSEME68250 100** | R1.0 | **25.0** | 24.0 | 25 | 37.0 | 22 | 12.5 | M12 |
| **XSEME68250 150** | R1.5 | **25.0** | 24.0 | 25 | 37.0 | 22 | 12.5 | M12 |
| **XSEME68250 200** | R2.0 | **25.0** | 24.0 | 25 | 37.0 | 22 | 12.5 | M12 |
| **XSEME68300 050** | R0.5 | **30.0** | 29.0 | 30 | 43.0 | 27 | 17.0 | M16 |
| **XSEME68300 100** | R1.0 | **30.0** | 29.0 | 30 | 43.0 | 27 | 17.0 | M16 |
| **XSEME68300 150** | R1.5 | **30.0** | 29.0 | 30 | 43.0 | 27 | 17.0 | M16 |
| **XSEME68300 200** | R2.0 | **30.0** | 29.0 | 30 | 43.0 | 27 | 17.0 | M16 |
| **XSEME68320 050** | R0.5 | **32.0** | 31.0 | 32 | 45.0 | 27 | 17.0 | M16 |
| **XSEME68320 100** | R1.0 | **32.0** | 31.0 | 32 | 45.0 | 27 | 17.0 | M16 |
| **XSEME68320 150** | R1.5 | **32.0** | 31.0 | 32 | 45.0 | 27 | 17.0 | M16 |
| **XSEME68320 200** | R2.0 | **32.0** | 31.0 | 32 | 45.0 | 27 | 17.0 | M16 |

| Radius Tolerance(mm) 圆弧角公差 | Mill Dia.Tolerance (mm) 直径公差 |
|---|---|
| ± 0.015 | 0 ~ - 0.03 |

◎ : Excellent (优秀) ○ : Good (良好)

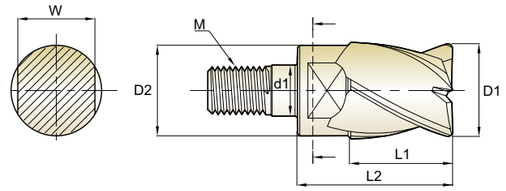
| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ○ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | ○ | ◎ | ○ |

# i-Smart END MILLS

## XSEME36 SERIES

## CARBIDE MODULAR HEAD, 4 FLUTE MULTIPLE HELIX
## 硬质合金 模块铣刀，4刃 不等螺旋




CARBIDE | 4 | 27°/30° | p.C72

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| POWER MILLING CHUCK | D161 - 176 |
| ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. | Mill Diameter | Neck Diameter | Length of Cut | Length Below Shank | Wrench Width | Coupling Diameter | Thread |
|---|---|---|---|---|---|---|---|
| | 直径 | 颈径 | 刃长 | 颈长 | 扳手宽度 | 连接直径 | 螺纹 |
| Y-COATED | $D_1$ | $D_2$ | $L_1$ | $L_2$ | W | $d_1$ | M |
| **XSEME36100** | **10.0** | 9.2 | 10 | 17.5 | 8 | 6.5 | M6 |
| **XSEME36120** | **12.0** | 11.2 | 12 | 20.5 | 10 | 6.5 | M6 |
| **XSEME36160** | **16.0** | 15.0 | 16 | 25.5 | 13 | 8.5 | M8 |
| **XSEME36200** | **20.0** | 19.0 | 20 | 30.0 | 17 | 10.5 | M10 |
| **XSEME36250** | **25.0** | 24.0 | 25 | 37.0 | 22 | 12.5 | M12 |
| **XSEME36300** | **30.0** | 29.0 | 30 | 43.0 | 27 | 17.0 | M16 |
| **XSEME36320** | **32.0** | 31.0 | 32 | 45.0 | 27 | 17.0 | M16 |

Mill Dia.Tolerance (mm) 直径公差

0 ~ - 0.03

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

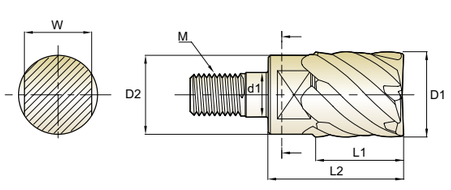
| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | ○ | ◎ | ○ |



# i-Smart END MILLS

## XSEME75 SERIES

## CARBIDE MODULAR HEAD, 6 FLUTE 45° HELIX
## 硬质合金 模块铣刀，6刃 45度螺旋




CARBIDE | 6 | 45° | p.C73

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| POWER MILLING CHUCK | D161 - 176 |
| ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. | Mill Diameter | Neck Diameter | Length of Cut | Length Below Shank | Wrench Width | Coupling Diameter | Thread |
|---|---|---|---|---|---|---|---|
| | 直径 | 颈径 | 刃长 | 颈长 | 扳手宽度 | 连接直径 | 螺纹 |
| Y-COATED | $D_1$ | $D_2$ | $L_1$ | $L_2$ | W | $d_1$ | M |
| **XSEME75100** | **10.0** | 9.2 | 10 | 17.5 | 8 | 6.5 | M6 |
| **XSEME75120** | **12.0** | 11.2 | 12 | 20.5 | 10 | 6.5 | M6 |
| **XSEME75160** | **16.0** | 15.0 | 16 | 25.5 | 13 | 8.5 | M8 |
| **XSEME75200** | **20.0** | 19.0 | 20 | 30.0 | 17 | 10.5 | M10 |
| **XSEME75250** | **25.0** | 24.0 | 25 | 37.0 | 22 | 12.5 | M12 |
| **XSEME75300** | **30.0** | 29.0 | 30 | 43.0 | 27 | 17.0 | M16 |
| **XSEME75320** | **32.0** | 31.0 | 32 | 45.0 | 27 | 17.0 | M16 |

Mill Dia.Tolerance (mm) 直径公差

0 ~ - 0.03

◎ : Excellent (优秀) ○ : Good (良好)

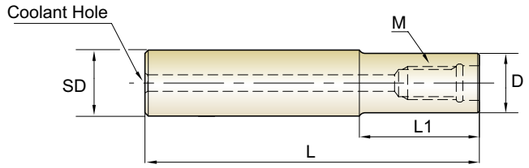
| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | ○ | ◎ | ○ |

i-Smart END MILLS

ZMC SERIES

## CARBIDE HOLDER - STRAIGHT NECK TYPE
## 硬质合金 刀杆 - 直颈




Unit(单位) : mm

| EDP No. | Mill Diameter 直径 | Shank Diameter 柄径 SD | Overall Length 全长 L | Neck Length 颈长 $L_1$ | Neck Diameter 颈径 D | Thread Size 螺纹 M | Wrench No. 扳手号码 | Coolant Hole 油孔 |
|---|---|---|---|---|---|---|---|---|
| **ZMC1001100** | **10.0** | 10 | 70 | 20 | 9.5 | M6 | SPIS0810 | 2 |
| **ZMC1002100** | **10.0** | 10 | 100 | 40 | 9.5 | M6 | SPIS0810 | 2 |
| **ZMC1003100** | **10.0** | 10 | 130 | 70 | 9.5 | M6 | SPIS0810 | 2 |
| **ZMC1201120** | **12.0** | 12 | 80 | 20 | 11.5 | M6 | SPIS0810 | 2 |
| **ZMC1202120** | **12.0** | 12 | 100 | 40 | 11.5 | M6 | SPIS0810 | 2 |
| **ZMC1203120** | **12.0** | 12 | 130 | 70 | 11.5 | M6 | SPIS0810 | 2 |
| **ZMC1601160** | **16.0** | 16 | 100 | 40 | 15.5 | M8 | SPIS1300 | 3 |
| **ZMC1602160** | **16.0** | 16 | 150 | 80 | 15.5 | M8 | SPIS1300 | 3 |
| **ZMC1603160** | **16.0** | 16 | 200 | 120 | 15.5 | M8 | SPIS1300 | 3 |
| **ZMC2001200** | **20.0** | 20 | 100 | 40 | 19.5 | M10 | SPIS1700 | 4 |
| **ZMC2002200** | **20.0** | 20 | 150 | 80 | 19.5 | M10 | SPIS1700 | 4 |
| **ZMC2003200** | **20.0** | 20 | 200 | 120 | 19.5 | M10 | SPIS1700 | 4 |
| **ZMC2004200** | **20.0** | 20 | 250 | 160 | 19.5 | M10 | SPIS1700 | 4 |
| **ZMC2501250** | **25.0** | 25 | 150 | 70 | 24.3 | M12 | SPIS2200 | 5 |
| **ZMC2502250** | **25.0** | 25 | 200 | 100 | 24.3 | M12 | SPIS2200 | 5 |
| **ZMC2503250** | **25.0** | 25 | 250 | 150 | 24.3 | M12 | SPIS2200 | 5 |
| **ZMC2504250** | **25.0** | 25 | 300 | 200 | 24.3 | M12 | SPIS2200 | 5 |
| **ZMC3001320** | **30.0 / 32.0** | 32 | 150 | 70 | 29.0 | M16 | SPIS2700 | 6 |
| **ZMC3002320** | **30.0 / 32.0** | 32 | 200 | 120 | 29.0 | M16 | SPIS2700 | 6 |
| **ZMC3003320** | **30.0 / 32.0** | 32 | 250 | 150 | 29.0 | M16 | SPIS2700 | 6 |
| **ZMC3004320** | **30.0 / 32.0** | 32 | 300 | 200 | 29.0 | M16 | SPIS2700 | 6 |
| **ZMC3005320** | **30.0 / 32.0** | 32 | 350 | 250 | 29.0 | M16 | SPIS2700 | 6 |

▸The wrench (1pc) for the relevant item is included.
If more is needed, available for sale.
扳手（1pc）包含，如再要，可以购买

▸Please refer to the wrench table on the next page.
请参考下页的扳手表

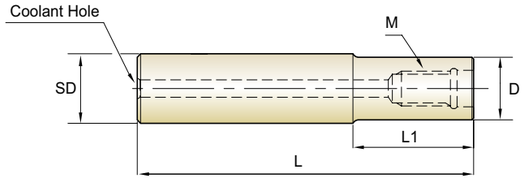


CARBIDE
HSS
CBN END MILLS
i-Xmill END MILLS
i-SMART MODULAR END MILLS
X5070 END MILLS
4G MILL END MILLS
X-POWER PRO END MILLS
TitaNox-POWER END MILLS
SUS-CUT END MILLS
V7 PLUS END MILLS
ALU-POWER HPC END MILLS
ALU-CUT END MILLS
G-CUT END MILLS
CRX S END MILLS
K-2 END MILLS
GENERAL CARBIDE END MILLS
ONLY ONE COATED PM60 END MILLS
TANK-POWER END MILLS
GENERAL HSS END MILLS
MILLING CUTTERS
TECHNICAL DATA

i-Smart END MILLS

ZMS SERIES

## STEEL HOLDER - STRAIGHT NECK TYPE
## 硬质合金 刀杆 - 直颈

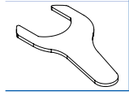



Unit(单位) : mm

| EDP No. | Mill Diameter 直径 | Shank Diameter 柄径 SD | Overall Length 全长 L | Neck Length 颈长 $L_1$ | Neck Diameter 颈径 D | Thread Size 螺纹 M | Wrench No. 扳手号码 | Coolant Hole 油孔 |
|---|---|---|---|---|---|---|---|---|
| **ZMS1001100** | **10.0** | 10 | 70 | 20 | 9 | M6 | SPIS0810 | 3 |
| **ZMS1201120** | **12.0** | 12 | 90 | 30 | 11 | M6 | SPIS0810 | 3 |
| **ZMS1601160** | **16.0** | 16 | 100 | 30 | 15 | M8 | SPIS1300 | 4 |
| **ZMS2001200** | **20.0** | 20 | 100 | 30 | 19 | M10 | SPIS1700 | 5 |
| **ZMS2501250** | **25.0** | 25 | 115 | 40 | 24 | M12 | SPIS2200 | 5 |
| **ZMS3001320** | **30.0 / 32.0** | 32 | 125 | 40 | 29 | M16 | SPIS2700 | 6 |

▸The wrench (1pc) for the relevant item is included.
If more is needed, available for sale.
扳手（1pc）包含，如再要，可以购买

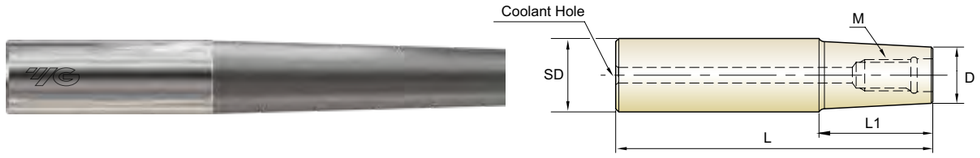
### Wrench 扳手

| Model | Wrench No. 扳手号码 | Wrench Width 扳手宽度 | Mill Diameter 直径 | Clamping Torque [N·m] 夹紧扭矩 |
|---|---|---|---|---|
| | **SPIS0810** | 8 | **10.0** | 6.5 |
| | | 10 | **12.0** | 6.5 |
| | **SPIS1300** | 13 | **16.0** | 10 |
| | **SPIS1700** | 17 | **20.0** | 12 |
| | **SPIS2200** | 22 | **25.0** | 15 |
|  | **SPIS2700** | 27 | **30.0 32.0** | 20 |

i-Smart END MILLS

ZMT SERIES

# STEEL HOLDER - TAPER NECK TYPE
# 钢件 刀杆 - 锥颈




Unit(单位) : mm

| EDP No. | Mill Diameter 直径 | Shank Diameter 柄径 SD | Overall Length 全长 L | Neck Length 颈长 $L_1$ | Neck Diameter 颈径 D | Thread Size 螺纹 M | Wrench No. 扳手号码 | Coolant Hole 油孔 |
|---|---|---|---|---|---|---|---|---|
| **ZMT1001120** | **10.0** | 12 | 100 | 50 | 9 | M6 | SPIS0810 | 3 |
| **ZMT1201160** | **12.0** | 16 | 130 | 70 | 11 | M6 | SPIS0810 | 3 |
| **ZMT1601200** | **16.0** | 20 | 150 | 90 | 15 | M8 | SPIS1300 | 4 |
| **ZMT2001250** | **20.0** | 25 | 170 | 100 | 19 | M10 | SPIS1700 | 5 |
| **ZMT2501320** | **25.0** | 32 | 200 | 110 | 24 | M12 | SPIS2200 | 5 |
| **ZMT3001320** | **30.0 / 32.0** | 32 | 200 | 110 | 29 | M16 | SPIS2700 | 6 |

▶The wrench(1pc) for the relevant item is included.
If more is needed, available for sale.
扳手（1pc）包含，如再要，可以购买

## Wrench 扳手

| Model | Wrench No. 扳手号码 | Wrench Width 扳手宽度 | Mill Diameter 直径 | Clamping Torque [N·m] 夹紧扭矩 |
|---|---|---|---|---|
| | **SPIS0810** | 8 | **10.0** | 6.5 |
| | | 10 | **12.0** | 6.5 |
| | **SPIS1300** | 13 | **16.0** | 10 |
| | **SPIS1700** | 17 | **20.0** | 12 |
| | **SPIS2200** | 22 | **25.0** | 15 |
| | **SPIS2700** | 27 | **30.0**<br>**32.0** | 20 |

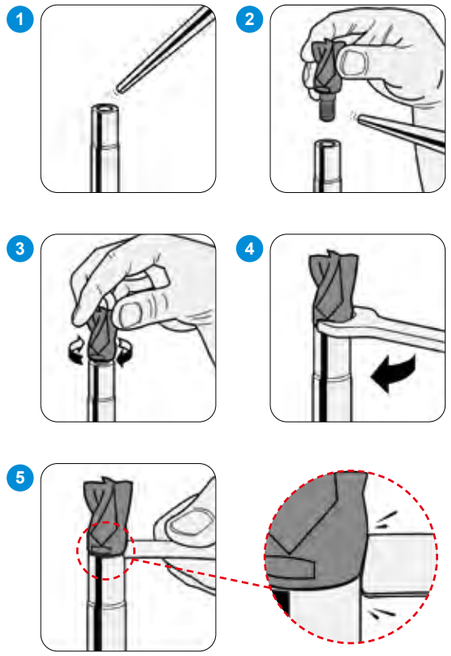


CARBIDE
HSS
CBN END MILLS
i-Xmill END MILLS
i-SMART MODULAR END MILLS
X5070 END MILLS
4G MILL END MILLS
X-POWER PRO END MILLS
TitaNox-POWER END MILLS
SUS-CUT END MILLS
V7 PLUS END MILLS
ALU-POWER HPC END MILLS
ALU-CUT END MILLS
G-CUT END MILLS
CRX S END MILLS
K-2 END MILLS
GENERAL CARBIDE END MILLS
ONLY ONE COATED PM60 END MILLS
TANK-POWER END MILLS
GENERAL HSS END MILLS
MILLING CUTTERS
TECHNICAL DATA

i-Smart END MILLS

# RECOMMENDED CUTTING CONDITIONS
# 推荐加工参数

## Instruction Manual
## 操作说明




**Step 1, 2 : Clean**
Please be sure to remove dirt and debris on all adjoining surfaces before assembling. (air preferred)

**步骤1，2：请理**
组装前，请务必清除所有结合表面上的污垢和碎屑。（空气优先）

**Step 3, 4 : Assembly**
Mount the modular head onto the shank by hand until it fits then use the supplied wrench to tighten.

**步骤3，4：组装**
用手将模块化铣刀安装到刀杆上，直到其安装到位，然后使用扳手拧紧。

**Step 5 : Final Check**
Re-check that there is no gap.

**步骤5，最终检查**
再次检查是否有间隙

**Notice**
Please tighten the screw with designated torque, too much torque will damage the screw.

**注意：**
请按规定力矩拧紧螺钉，扭矩过大会损坏螺钉。

| Mill Diameter 直径 (D) | Clamping Torque 夹紧扭矩 [ N·m ] |
|---|---|
| **10.0** | 6.5 |
| **12.0** | 6.5 |
| **16.0** | 10.0 |
| **20.0** | 12.0 |
| **25.0** | 15.0 |
| **30.0** | 20.0 |
| **32.0** | 20.0 |

# i-Smart END MILLS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

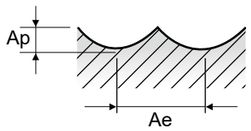
### XSEMD98 SERIES — 2 FLUTE BALL NOSE / 2刃 球头

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description 工件材料 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 10 | 12 | 16 | 20 | 25 | 30 | 32 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1-8 | Non-alloy steel Low alloy steel | 0.08D | 0.03D | Vc | 175 | 170 | 168 | 168 | 167 | 167 | 167 |
| | | | | | fz | 0.199 | 0.212 | 0.238 | 0.264 | 0.270 | 0.299 | 0.300 |
| | | | | | RPM | 5580 | 4510 | 3340 | 2670 | 2130 | 1770 | 1660 |
| | | | | | FEED | 2220 | 1910 | 1590 | 1410 | 1150 | 1060 | 995 |
| | 9 | | 0.08D | 0.03D | Vc | 168 | 165 | 162 | 162 | 162 | 162 | 162 |
| | | | | | fz | 0.174 | 0.188 | 0.206 | 0.227 | 0.231 | 0.250 | 0.250 |
| | | | | | RPM | 5340 | 4380 | 3220 | 2580 | 2060 | 1720 | 1610 |
| | | | | | FEED | 1860 | 1645 | 1320 | 1170 | 950 | 860 | 805 |
| | 10-11.1 | High alloyed steel, and tool steel | 0.08D | 0.03D | Vc | 175 | 170 | 168 | 168 | 167 | 167 | 167 |
| | | | | | fz | 0.199 | 0.212 | 0.238 | 0.264 | 0.270 | 0.299 | 0.300 |
| | | | | | RPM | 5580 | 4510 | 3340 | 2670 | 2130 | 1770 | 1660 |
| | | | | | FEED | 2220 | 1910 | 1590 | 1410 | 1150 | 1060 | 995 |
| | 11.2 | | 0.08D | 0.03D | Vc | 168 | 165 | 162 | 162 | 162 | 162 | 162 |
| | | | | | fz | 0.174 | 0.188 | 0.206 | 0.227 | 0.231 | 0.250 | 0.250 |
| | | | | | RPM | 5340 | 4380 | 3220 | 2580 | 2060 | 1720 | 1610 |
| | | | | | FEED | 1860 | 1645 | 1320 | 1170 | 950 | 860 | 805 |
| K | 15-20 | Grey cast iron Nodular cast iron Malleable cast iron | 0.08D | 0.03D | Vc | 175 | 170 | 168 | 168 | 167 | 167 | 167 |
| | | | | | fz | 0.199 | 0.212 | 0.238 | 0.264 | 0.270 | 0.299 | 0.300 |
| | | | | | RPM | 5580 | 4510 | 3340 | 2670 | 2130 | 1770 | 1660 |
| | | | | | FEED | 2220 | 1910 | 1590 | 1410 | 1150 | 1060 | 995 |
| H | 38.1 - 38.2 | Hardened steel | 0.08D | 0.03D | Vc | 141 | 138 | 136 | 136 | 136 | 136 | 136 |
| | | | | | fz | 0.160 | 0.170 | 0.189 | 0.208 | 0.211 | 0.229 | 0.230 |
| | | | | | RPM | 4500 | 3660 | 2700 | 2160 | 1730 | 1440 | 1350 |
| | | | | | FEED | 1440 | 1245 | 1020 | 900 | 730 | 660 | 620 |
| | 40 | Chilled Cast Iron | 0.08D | 0.03D | Vc | 168 | 165 | 162 | 162 | 162 | 162 | 162 |
| | | | | | fz | 0.174 | 0.188 | 0.206 | 0.227 | 0.231 | 0.250 | 0.250 |
| | | | | | RPM | 5340 | 4380 | 3220 | 2580 | 2060 | 1720 | 1610 |
| | | | | | FEED | 1860 | 1645 | 1320 | 1170 | 950 | 860 | 805 |
| | 41 | Hardened Cast Iron | 0.08D | 0.03D | Vc | 141 | 138 | 136 | 136 | 136 | 136 | 136 |
| | | | | | fz | 0.160 | 0.170 | 0.189 | 0.208 | 0.211 | 0.229 | 0.230 |
| | | | | | RPM | 4500 | 3660 | 2700 | 2160 | 1730 | 1440 | 1350 |
| | | | | | FEED | 1440 | 1245 | 1020 | 900 | 730 | 660 | 620 |

### XSEME59 SERIES — 3 FLUTE BALL NOSE / 3刃 球头

| ISO | VDI 3323 | Material Description 工件材料 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 10 | 12 | 16 | 20 | 25 | 30 | 32 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1-8 | Non-alloy steel Low alloy steel | 0.05D | 0.02D | Vc | 307 | 307 | 307 | 307 | 307 | 307 | 307 |
| | | | | | fz | 0.201 | 0.225 | 0.234 | 0.238 | 0.248 | 0.259 | 0.268 |
| | | | | | RPM | 9770 | 8150 | 6100 | 4880 | 3910 | 3260 | 3050 |
| | | | | | FEED | 5890 | 5490 | 4280 | 3490 | 2910 | 2530 | 2450 |
| | 9 | | 0.05D | 0.02D | Vc | 257 | 257 | 257 | 257 | 257 | 257 | 257 |
| | | | | | fz | 0.168 | 0.187 | 0.199 | 0.209 | 0.219 | 0.230 | 0.234 |
| | | | | | RPM | 8190 | 6830 | 5110 | 4090 | 3270 | 2730 | 2560 |
| | | | | | FEED | 4130 | 3830 | 3050 | 2560 | 2150 | 1880 | 1800 |
| | 10-11.1 | High alloyed steel, and tool steel | 0.05D | 0.02D | Vc | 307 | 307 | 307 | 307 | 307 | 307 | 307 |
| | | | | | fz | 0.201 | 0.225 | 0.234 | 0.238 | 0.248 | 0.259 | 0.268 |
| | | | | | RPM | 9770 | 8150 | 6100 | 4880 | 3910 | 3260 | 3050 |
| | | | | | FEED | 5890 | 5490 | 4280 | 3490 | 2910 | 2530 | 2450 |
| | 11.2 | | 0.05D | 0.02D | Vc | 257 | 257 | 257 | 257 | 257 | 257 | 257 |
| | | | | | fz | 0.168 | 0.187 | 0.199 | 0.209 | 0.219 | 0.230 | 0.234 |
| | | | | | RPM | 8190 | 6830 | 5110 | 4090 | 3270 | 2730 | 2560 |
| | | | | | FEED | 4130 | 3830 | 3050 | 2560 | 2150 | 1880 | 1800 |
| K | 15-20 | Grey cast iron Nodular cast iron Malleable cast iron | 0.05D | 0.02D | Vc | 307 | 307 | 307 | 307 | 307 | 307 | 307 |
| | | | | | fz | 0.201 | 0.225 | 0.234 | 0.238 | 0.248 | 0.259 | 0.268 |
| | | | | | RPM | 9770 | 8150 | 6100 | 4880 | 3910 | 3260 | 3050 |
| | | | | | FEED | 5890 | 5490 | 4280 | 3490 | 2910 | 2530 | 2450 |
| H | 38.1 - 38.2 | Hardened steel | 0.05D | 0.02D | Vc | 208 | 208 | 208 | 208 | 208 | 208 | 208 |
| | | | | | fz | 0.156 | 0.173 | 0.180 | 0.190 | 0.200 | 0.210 | 0.221 |
| | | | | | RPM | 6620 | 5520 | 4140 | 3310 | 2650 | 2210 | 2070 |
| | | | | | FEED | 3100 | 2870 | 2240 | 1890 | 1590 | 1390 | 1370 |
| | 40 | Chilled Cast Iron | 0.05D | 0.02D | Vc | 257 | 257 | 257 | 257 | 257 | 257 | 257 |
| | | | | | fz | 0.168 | 0.187 | 0.199 | 0.209 | 0.219 | 0.230 | 0.234 |
| | | | | | RPM | 8190 | 6830 | 5110 | 4090 | 3270 | 2730 | 2560 |
| | | | | | FEED | 4130 | 3830 | 3050 | 2560 | 2150 | 1880 | 1800 |
| | 41 | Hardened Cast Iron | 0.05D | 0.02D | Vc | 208 | 208 | 208 | 208 | 208 | 208 | 208 |
| | | | | | fz | 0.156 | 0.173 | 0.180 | 0.190 | 0.200 | 0.210 | 0.221 |
| | | | | | RPM | 6620 | 5520 | 4140 | 3310 | 2650 | 2210 | 2070 |
| | | | | | FEED | 3100 | 2870 | 2240 | 1890 | 1590 | 1390 | 1370 |








# i-Smart END MILLS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

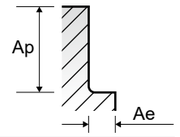
### XSEME60 SERIES — 4 FLUTE BALL NOSE / 4刃 球头

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description 工件材料 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 10 | 12 | 16 | 20 | 25 | 30 | 32 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1-8 | Non-alloy steel Low alloy steel | 0.05D | 0.02D | Vc | 341 | 341 | 341 | 341 | 341 | 341 | 341 |
| | | | | | fz | 0.148 | 0.165 | 0.175 | 0.179 | 0.186 | 0.194 | 0.201 |
| | | | | | RPM | 10850 | 9050 | 6780 | 5430 | 4340 | 3620 | 3390 |
| | | | | | FEED | 6430 | 5960 | 4750 | 3880 | 3230 | 2810 | 2720 |
| | 9 | | 0.05D | 0.02D | Vc | 286 | 286 | 286 | 286 | 286 | 286 | 286 |
| | | | | | fz | 0.126 | 0.140 | 0.149 | 0.156 | 0.164 | 0.172 | 0.176 |
| | | | | | RPM | 9100 | 7500 | 5680 | 4550 | 3640 | 3030 | 2840 |
| | | | | | FEED | 4590 | 4260 | 3390 | 2840 | 2390 | 2090 | 2000 |
| | 10-11.1 | High alloyed steel, and tool steel | 0.05D | 0.02D | Vc | 341 | 341 | 341 | 341 | 341 | 341 | 341 |
| | | | | | fz | 0.148 | 0.165 | 0.175 | 0.179 | 0.186 | 0.194 | 0.201 |
| | | | | | RPM | 10850 | 9050 | 6780 | 5430 | 4340 | 3620 | 3390 |
| | | | | | FEED | 6430 | 5960 | 4750 | 3880 | 3230 | 2810 | 2720 |
| | 11.2 | | 0.05D | 0.02D | Vc | 286 | 286 | 286 | 286 | 286 | 286 | 286 |
| | | | | | fz | 0.126 | 0.140 | 0.149 | 0.156 | 0.164 | 0.172 | 0.176 |
| | | | | | RPM | 9100 | 7500 | 5680 | 4550 | 3640 | 3030 | 2840 |
| | | | | | FEED | 4590 | 4260 | 3390 | 2840 | 2390 | 2090 | 2000 |
| K | 15-20 | Grey cast iron Nodular cast iron Malleable cast iron | 0.05D | 0.02D | Vc | 341 | 341 | 341 | 341 | 341 | 341 | 341 |
| | | | | | fz | 0.148 | 0.165 | 0.175 | 0.179 | 0.186 | 0.194 | 0.201 |
| | | | | | RPM | 10850 | 9050 | 6780 | 5430 | 4340 | 3620 | 3390 |
| | | | | | FEED | 6430 | 5960 | 4750 | 3880 | 3230 | 2810 | 2720 |
| H | 38.1 - 38.2 | Hardened steel | 0.05D | 0.02D | Vc | 231 | 231 | 231 | 231 | 231 | 231 | 231 |
| | | | | | fz | 0.117 | 0.130 | 0.135 | 0.143 | 0.150 | 0.157 | 0.165 |
| | | | | | RPM | 7350 | 6130 | 4600 | 3680 | 2940 | 2450 | 2300 |
| | | | | | FEED | 3450 | 3190 | 2490 | 2100 | 1760 | 1540 | 1520 |
| | 40 | Chilled Cast Iron | 0.05D | 0.02D | Vc | 286 | 286 | 286 | 286 | 286 | 286 | 286 |
| | | | | | fz | 0.126 | 0.140 | 0.149 | 0.156 | 0.164 | 0.172 | 0.176 |
| | | | | | RPM | 9100 | 7500 | 5680 | 4550 | 3640 | 3030 | 2840 |
| | | | | | FEED | 4590 | 4260 | 3390 | 2840 | 2390 | 2090 | 2000 |
| | 41 | Hardened Cast Iron | 0.05D | 0.02D | Vc | 231 | 231 | 231 | 231 | 231 | 231 | 231 |
| | | | | | fz | 0.117 | 0.130 | 0.135 | 0.143 | 0.150 | 0.157 | 0.165 |
| | | | | | RPM | 7350 | 6130 | 4600 | 3680 | 2940 | 2450 | 2300 |
| | | | | | FEED | 3450 | 3190 | 2490 | 2100 | 1760 | 1540 | 1520 |

### XSEME01 SERIES — 4 FLUTE CORNER RADIUS - SIDE CUTTING / 4刃 圆鼻- 侧铣削

| ISO | VDI 3323 | Material Description 工件材料 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 10 | 12 | 16 | 20 | 25 | 30 | 32 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1-8 | Non-alloy steel Low alloy steel | 0.05D | 0.8D | Vc | 156 | 156 | 156 | 156 | 156 | 156 | 156 |
| | | | | | fz | 0.023 | 0.023 | 0.023 | 0.023 | 0.023 | 0.023 | 0.023 |
| | | | | | RPM | 4970 | 4140 | 3100 | 2480 | 1990 | 1650 | 1550 |
| | | | | | FEED | 455 | 380 | 280 | 230 | 180 | 150 | 140 |
| | 9 | | 0.05D | 0.8D | Vc | 105 | 105 | 105 | 105 | 105 | 105 | 105 |
| | | | | | fz | 0.027 | 0.027 | 0.027 | 0.027 | 0.027 | 0.027 | 0.026 |
| | | | | | RPM | 3340 | 2780 | 2090 | 1670 | 1340 | 1110 | 1040 |
| | | | | | FEED | 360 | 300 | 225 | 180 | 145 | 120 | 110 |
| | 10-11.1 | High alloyed steel, and tool steel | 0.05D | 0.8D | Vc | 156 | 156 | 156 | 156 | 156 | 156 | 156 |
| | | | | | fz | 0.023 | 0.023 | 0.023 | 0.023 | 0.023 | 0.023 | 0.023 |
| | | | | | RPM | 4970 | 4140 | 3100 | 2480 | 1990 | 1650 | 1550 |
| | | | | | FEED | 455 | 380 | 280 | 230 | 180 | 150 | 140 |
| | 11.2 | | 0.05D | 0.8D | Vc | 105 | 105 | 105 | 105 | 105 | 105 | 105 |
| | | | | | fz | 0.027 | 0.027 | 0.027 | 0.027 | 0.027 | 0.027 | 0.026 |
| | | | | | RPM | 3340 | 2780 | 2090 | 1670 | 1340 | 1110 | 1040 |
| | | | | | FEED | 360 | 300 | 225 | 180 | 145 | 120 | 110 |
| K | 15-20 | Grey cast iron Nodular cast iron Malleable cast iron | 0.02D | 0.8D | Vc | 156 | 156 | 156 | 156 | 156 | 156 | 156 |
| | | | | | fz | 0.023 | 0.023 | 0.023 | 0.023 | 0.023 | 0.023 | 0.023 |
| | | | | | RPM | 4960 | 4140 | 3100 | 2480 | 1990 | 1650 | 1550 |
| | | | | | FEED | 460 | 380 | 280 | 230 | 180 | 150 | 140 |
| H | 38.1 - 38.2 | Hardened steel | 0.02D | 0.8D | Vc | 63 | 63 | 63 | 63 | 63 | 63 | 63 |
| | | | | | fz | 0.021 | 0.021 | 0.022 | 0.023 | 0.023 | 0.024 | 0.024 |
| | | | | | RPM | 2020 | 1680 | 1250 | 1000 | 800 | 670 | 630 |
| | | | | | FEED | 170 | 140 | 110 | 90 | 75 | 65 | 60 |
| | 40 | Chilled Cast Iron | 0.05D | 0.8D | Vc | 105 | 105 | 105 | 105 | 105 | 105 | 105 |
| | | | | | fz | 0.027 | 0.027 | 0.027 | 0.027 | 0.027 | 0.027 | 0.026 |
| | | | | | RPM | 3340 | 2780 | 2090 | 1670 | 1340 | 1110 | 1040 |
| | | | | | FEED | 360 | 300 | 225 | 180 | 145 | 120 | 110 |
| | 41 | Hardened Cast Iron | 0.02D | 0.8D | Vc | 63 | 63 | 63 | 63 | 63 | 63 | 63 |
| | | | | | fz | 0.021 | 0.021 | 0.022 | 0.023 | 0.023 | 0.024 | 0.024 |
| | | | | | RPM | 2020 | 1680 | 1250 | 1000 | 800 | 670 | 630 |
| | | | | | FEED | 170 | 140 | 110 | 90 | 75 | 65 | 60 |



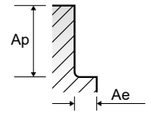
# i-Smart END MILLS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

### XSEME68 SERIES — 6 FLUTE CORNER RADIUS - SIDE CUTTING
### 6刃 圆鼻- 侧铣削

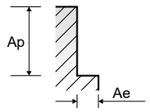
Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description 工件材料 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 10 | 12 | 16 | 20 | 25 | 30 | 32 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1-8 | Non-alloy steel Low alloy steel | 0.05D | 1.0D | Vc | 302 | 302 | 302 | 302 | 302 | 302 | 302 |
| | | | | | fz | 0.051 | 0.058 | 0.067 | 0.070 | 0.070 | 0.075 | 0.075 |
| | | | | | RPM | 9600 | 8010 | 6000 | 4800 | 3850 | 3200 | 3000 |
| | | | | | FEED | 2940 | 2790 | 2400 | 2010 | 1615 | 1440 | 1350 |
| | 9 | | 0.05D | 1.0D | Vc | 294 | 294 | 294 | 294 | 294 | 294 | 294 |
| | | | | | fz | 0.025 | 0.025 | 0.025 | 0.025 | 0.027 | 0.029 | 0.030 |
| | | | | | RPM | 9360 | 7800 | 5850 | 4680 | 3740 | 3120 | 2920 |
| | | | | | FEED | 1400 | 1170 | 880 | 690 | 600 | 540 | 525 |
| | 10-11.1 | High alloyed steel, and tool steel | 0.05D | 1.0D | Vc | 302 | 302 | 302 | 302 | 302 | 302 | 302 |
| | | | | | fz | 0.051 | 0.058 | 0.067 | 0.070 | 0.070 | 0.075 | 0.075 |
| | | | | | RPM | 9600 | 8010 | 6000 | 4800 | 3850 | 3200 | 3000 |
| | | | | | FEED | 2940 | 2700 | 2400 | 2010 | 1615 | 1440 | 1350 |
| | 11.2 | | 0.05D | 1.0D | Vc | 294 | 294 | 294 | 294 | 294 | 294 | 294 |
| | | | | | fz | 0.025 | 0.025 | 0.025 | 0.025 | 0.027 | 0.029 | 0.030 |
| | | | | | RPM | 9360 | 7800 | 5850 | 4680 | 3740 | 3120 | 2920 |
| | | | | | FEED | 1400 | 1170 | 880 | 690 | 600 | 540 | 525 |
| K | 15-20 | Grey cast iron Nodular cast iron Malleable cast iron | 0.05D | 1.0D | Vc | 302 | 302 | 302 | 302 | 302 | 302 | 302 |
| | | | | | fz | 0.051 | 0.058 | 0.067 | 0.070 | 0.070 | 0.075 | 0.075 |
| | | | | | RPM | 9600 | 8010 | 6000 | 4800 | 3850 | 3200 | 3000 |
| | | | | | FEED | 2940 | 2790 | 2400 | 2010 | 1615 | 1440 | 1350 |
| H | 38.1 - 38.2 | Hardened steel | 0.02D | 1.0D | Vc | 181 | 181 | 181 | 181 | 181 | 181 | 181 |
| | | | | | fz | 0.006 | 0.006 | 0.006 | 0.006 | 0.007 | 0.007 | 0.007 |
| | | | | | RPM | 5760 | 4800 | 3600 | 2880 | 2305 | 1920 | 1800 |
| | | | | | FEED | 210 | 180 | 130 | 110 | 90 | 85 | 80 |
| | 40 | Chilled Cast Iron | 0.05D | 1.0D | Vc | 294 | 294 | 294 | 294 | 294 | 294 | 294 |
| | | | | | fz | 0.025 | 0.025 | 0.025 | 0.025 | 0.027 | 0.029 | 0.030 |
| | | | | | RPM | 9360 | 7800 | 5850 | 4680 | 3740 | 3120 | 2920 |
| | | | | | FEED | 1400 | 1170 | 880 | 690 | 600 | 540 | 525 |
| | 41 | Hardened Cast Iron | 0.02D | 1.0D | Vc | 181 | 181 | 181 | 181 | 181 | 181 | 181 |
| | | | | | fz | 0.006 | 0.006 | 0.006 | 0.006 | 0.007 | 0.007 | 0.007 |
| | | | | | RPM | 5760 | 4800 | 3600 | 2880 | 2305 | 1920 | 1800 |
| | | | | | FEED | 210 | 180 | 130 | 110 | 90 | 85 | 80 |




### XSEME36 SERIES — 4 FLUTE - SIDE CUTTING
### 4刃 - 侧铣削

| ISO | VDI 3323 | Material Description 工件材料 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 10 | 12 | 16 | 20 | 25 | 30 | 32 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1-8 | Non-alloy steel Low alloy steel | 0.05D | 0.6D | Vc | 128 | 129 | 130 | 132 | 134 | 134 | 134 |
| | | | | | fz | 0.040 | 0.040 | 0.040 | 0.040 | 0.040 | 0.040 | 0.040 |
| | | | | | RPM | 4080 | 3430 | 2590 | 2100 | 1700 | 1420 | 1330 |
| | | | | | FEED | 650 | 545 | 415 | 335 | 270 | 230 | 215 |
| | 9 | | 0.05D | 0.6D | Vc | 79 | 79 | 80 | 82 | 82 | 82 | 82 |
| | | | | | fz | 0.030 | 0.030 | 0.030 | 0.030 | 0.031 | 0.032 | 0.032 |
| | | | | | RPM | 2500 | 2100 | 1590 | 1300 | 1050 | 870 | 820 |
| | | | | | FEED | 300 | 250 | 190 | 155 | 130 | 110 | 105 |
| | 10-11.1 | High alloyed steel, and tool steel | 0.05D | 0.6D | Vc | 128 | 129 | 130 | 132 | 134 | 134 | 134 |
| | | | | | fz | 0.040 | 0.040 | 0.040 | 0.040 | 0.040 | 0.040 | 0.040 |
| | | | | | RPM | 4080 | 3430 | 2590 | 2100 | 1700 | 1420 | 1330 |
| | | | | | FEED | 650 | 545 | 415 | 335 | 270 | 230 | 215 |
| | 11.2 | | 0.05D | 0.6D | Vc | 79 | 79 | 80 | 82 | 82 | 82 | 82 |
| | | | | | fz | 0.030 | 0.030 | 0.030 | 0.030 | 0.031 | 0.032 | 0.032 |
| | | | | | RPM | 2500 | 2100 | 1590 | 1300 | 1050 | 870 | 820 |
| | | | | | FEED | 300 | 250 | 190 | 155 | 130 | 110 | 105 |
| M | 12-14 | Stainless steel | 0.05D | 0.6D | Vc | 66 | 66 | 66 | 66 | 67 | 67 | 67 |
| | | | | | fz | 0.035 | 0.035 | 0.035 | 0.035 | 0.035 | 0.035 | 0.035 |
| | | | | | RPM | 2100 | 1750 | 1310 | 1050 | 850 | 710 | 670 |
| | | | | | FEED | 300 | 245 | 180 | 150 | 120 | 100 | 95 |
| K | 15-20 | Grey cast iron Nodular cast iron Malleable cast iron | 0.05D | 0.6D | Vc | 128 | 129 | 130 | 132 | 134 | 134 | 134 |
| | | | | | fz | 0.039 | 0.040 | 0.040 | 0.040 | 0.040 | 0.040 | 0.040 |
| | | | | | RPM | 4080 | 3430 | 2590 | 2100 | 1700 | 1420 | 1330 |
| | | | | | FEED | 640 | 545 | 415 | 335 | 270 | 230 | 215 |
| H | 38.1 - 38.2 | Hardened steel | 0.05D | 0.6D | Vc | 53 | 53 | 53 | 53 | 53 | 53 | 53 |
| | | | | | fz | 0.013 | 0.013 | 0.013 | 0.012 | 0.011 | 0.011 | 0.011 |
| | | | | | RPM | 1700 | 1400 | 1050 | 850 | 680 | 560 | 530 |
| | | | | | FEED | 90 | 70 | 55 | 40 | 30 | 25 | 25 |
| | 40 | Chilled Cast Iron | 0.05D | 0.6D | Vc | 79 | 79 | 80 | 82 | 82 | 82 | 82 |
| | | | | | fz | 0.030 | 0.030 | 0.030 | 0.030 | 0.031 | 0.032 | 0.032 |
| | | | | | RPM | 2500 | 2100 | 1590 | 1300 | 1050 | 870 | 820 |
| | | | | | FEED | 300 | 250 | 190 | 155 | 130 | 110 | 105 |
| | 41 | Hardened Cast Iron | 0.05D | 0.6D | Vc | 53 | 53 | 53 | 53 | 53 | 53 | 53 |
| | | | | | fz | 0.013 | 0.013 | 0.013 | 0.012 | 0.011 | 0.011 | 0.011 |
| | | | | | RPM | 1700 | 1400 | 1050 | 850 | 680 | 560 | 530 |
| | | | | | FEED | 90 | 70 | 55 | 40 | 30 | 25 | 25 |






# i-Smart END MILLS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

### XSEME75 SERIES — 6 FLUTE - SIDE CUTTING
### 6刃 - 侧铣削

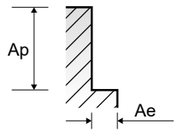
Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

#### NORMAL SPEED 普通速度

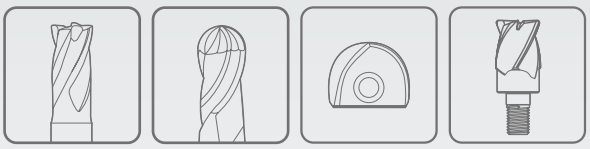
| ISO | VDI 3323 | Material Description 工件材料 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 10 | 12 | 16 | 20 | 25 | 30 | 32 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1-8 | Non-alloy steel Low alloy steel | 0.1D | 0.8D | Vc | 111 | 111 | 111 | 111 | 111 | 111 | 111 |
| | | | | | fz | 0.099 | 0.099 | 0.100 | 0.100 | 0.100 | 0.100 | 0.100 |
| | | | | | RPM | 3530 | 2945 | 2205 | 1765 | 1410 | 1180 | 1100 |
| | | | | | FEED | 2100 | 1750 | 1325 | 1060 | 845 | 710 | 660 |
| | 9 | | 0.05D | 0.8D | Vc | 77 | 77 | 77 | 77 | 77 | 77 | 77 |
| | | | | | fz | 0.094 | 0.094 | 0.094 | 0.094 | 0.094 | 0.094 | 0.094 |
| | | | | | RPM | 2450 | 2040 | 1530 | 1220 | 980 | 815 | 765 |
| | | | | | FEED | 1380 | 1150 | 860 | 690 | 555 | 460 | 430 |
| | 10-11.1 | High alloyed steel, and tool steel | 0.1D | 0.8D | Vc | 111 | 111 | 111 | 111 | 111 | 111 | 111 |
| | | | | | fz | 0.099 | 0.099 | 0.100 | 0.100 | 0.100 | 0.100 | 0.100 |
| | | | | | RPM | 3530 | 2945 | 2205 | 1765 | 1410 | 1180 | 1100 |
| | | | | | FEED | 2100 | 1750 | 1325 | 1060 | 845 | 710 | 660 |
| | 11.2 | | 0.05D | 0.8D | Vc | 77 | 77 | 77 | 77 | 77 | 77 | 77 |
| | | | | | fz | 0.094 | 0.094 | 0.094 | 0.094 | 0.094 | 0.094 | 0.094 |
| | | | | | RPM | 2450 | 2040 | 1530 | 1220 | 980 | 815 | 765 |
| | | | | | FEED | 1380 | 1150 | 860 | 690 | 555 | 460 | 430 |
| K | 15-20 | Grey cast iron Nodular cast iron Malleable cast iron | 0.1D | 0.8D | Vc | 111 | 111 | 111 | 111 | 111 | 111 | 111 |
| | | | | | fz | 0.099 | 0.099 | 0.100 | 0.100 | 0.100 | 0.100 | 0.100 |
| | | | | | RPM | 3530 | 2940 | 2205 | 1765 | 1410 | 1180 | 1100 |
| | | | | | FEED | 2100 | 1765 | 1325 | 1060 | 845 | 710 | 660 |
| H | 38.1 - 38.2 | Hardened steel | 0.05D | 0.6D | Vc | 33 | 33 | 33 | 33 | 33 | 33 | 33 |
| | | | | | fz | 0.033 | 0.034 | 0.034 | 0.035 | 0.035 | 0.036 | 0.036 |
| | | | | | RPM | 1050 | 880 | 655 | 525 | 420 | 350 | 330 |
| | | | | | FEED | 210 | 180 | 130 | 110 | 85 | 75 | 70 |
| | 40 | Chilled Cast Iron | 0.05D | 0.8D | Vc | 77 | 77 | 77 | 77 | 77 | 77 | 77 |
| | | | | | fz | 0.094 | 0.094 | 0.094 | 0.094 | 0.094 | 0.094 | 0.094 |
| | | | | | RPM | 2450 | 2040 | 1530 | 1220 | 980 | 815 | 765 |
| | | | | | FEED | 1380 | 1150 | 860 | 690 | 555 | 460 | 430 |
| | 41 | Hardened Cast Iron | 0.05D | 0.6D | Vc | 33 | 33 | 33 | 33 | 33 | 33 | 33 |
| | | | | | fz | 0.033 | 0.034 | 0.034 | 0.035 | 0.035 | 0.036 | 0.036 |
| | | | | | RPM | 1050 | 880 | 655 | 525 | 420 | 350 | 330 |
| | | | | | FEED | 210 | 180 | 130 | 110 | 85 | 75 | 70 |

#### HIGH SPEED 高速度

| ISO | VDI 3323 | Material Description 工件材料 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 10 | 12 | 16 | 20 | 25 | 30 | 32 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 11.2 | High alloyed steel, and tool steel | 0.05D | 0.6D | Vc | 332 | 332 | 332 | 332 | 332 | 332 | 332 |
| | | | | | fz | 0.095 | 0.095 | 0.095 | 0.095 | 0.095 | 0.095 | 0.095 |
| | | | | | RPM | 10570 | 8810 | 6600 | 5290 | 4230 | 3520 | 3300 |
| | | | | | FEED | 6020 | 5020 | 3765 | 3050 | 2400 | 2000 | 1890 |
| H | 38.1 - 38.2 | Hardened steel | 0.05D | 0.4D | Vc | 166 | 166 | 166 | 166 | 166 | 166 | 166 |
| | | | | | fz | 0.096 | 0.095 | 0.095 | 0.095 | 0.095 | 0.095 | 0.095 |
| | | | | | RPM | 5290 | 4410 | 3300 | 2645 | 2114 | 1761 | 1651 |
| | | | | | FEED | 3050 | 2520 | 1880 | 1470 | 1200 | 1000 | 940 |
| | 40 | Chilled Cast Iron | 0.05D | 0.6D | Vc | 332 | 332 | 332 | 332 | 332 | 332 | 332 |
| | | | | | fz | 0.095 | 0.095 | 0.095 | 0.095 | 0.095 | 0.095 | 0.095 |
| | | | | | RPM | 10570 | 8810 | 6600 | 5290 | 4230 | 3520 | 3300 |
| | | | | | FEED | 6020 | 5020 | 3765 | 3050 | 2400 | 2000 | 1890 |
| | 41 | Hardened Cast Iron | 0.05D | 0.4D | Vc | 166 | 166 | 166 | 166 | 166 | 166 | 166 |
| | | | | | fz | 0.096 | 0.095 | 0.095 | 0.095 | 0.095 | 0.095 | 0.095 |
| | | | | | RPM | 5290 | 4410 | 3300 | 2645 | 2114 | 1761 | 1651 |
| | | | | | FEED | 3050 | 2520 | 1880 | 1470 | 1200 | 1000 | 940 |



Global Cutting Tool Leader **YG-1**



# MILLING

YG

Leading Through Innovation

NANO SOLIDE CARBIDE

# X5070 END MILLS

**- For High Hardened Steels (HRc45 to HRc70)**
**High Speed Machining and Dry Cutting**

**蓝色涂层，整体硬质合金立铣刀**(HRc45 to HRc70)
**用于加工高硬钢，用于高速切削和干切，用于模具**

# SELECTION GUIDE
## 选用指南

YG MILLING TOOLS

## NANO SOLIDE CARBIDE
# X5070
# END MILLS

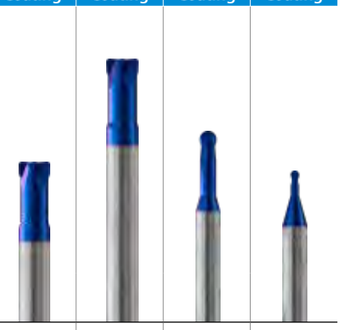
High Hardened Steels HRc45 to HRc70,
High Speed Machining, Dry Cutting

Please visit globalyg1.com/mat for material search

◎ : Excellent (优秀) ○ : Good (良好)

Recommended cutting conditions (推荐加工参数) : p.113

| | SERIES 系列 | G8B59 | G8B54 | G8A46 | G8A54 |
|---|---|---|---|---|---|
| | FLUTE 槽数 | 4 | 4 | 2 | 2 |
| | HELIX ANGLE 螺旋角度 | 0° | 0° | 30° | 30° |
| | CUTTING EDGE SHAPE 类型 | CORNER RADIUS | CORNER RADIUS | BALL NOSE | BALL NOSE |
| | SIZE MIN 最小尺寸 | D2.0 | D2.0 | R0.05 | R0.25 |
| | SIZE MAX 最大尺寸 | D12.0 | D16.0 | R2.0 | R1.0 |
| | PAGE 页数 | C79 | C80 | C81-84 | C85 |
| | | HIGH FEED | HIGH FEED LONG SHANK | RIB PROCESSING | RIB PROCESSING |
| | | Blue Coating | Blue Coating | Blue Coating | Blue Coating |



| ISO | VDI 3323 | Material Description 工件材料 | Composition / Structure / Heat Treatment 成分 / 结构 / 热处理 | | HB | HRc | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | About 0.15% C | Annealed | 125 | | | | | |
| | 2 | | About 0.45% C | Annealed | 190 | 13 | | | | |
| | 3 | | About 0.45% C | Quenched & Tempered | 250 | 25 | | | | |
| | 4 | | About 0.75% C | Annealed | 270 | 28 | | | | |
| | 5 | | About 0.75% C | Quenched & Tempered | 300 | 32 | ○ | ○ | ○ | ○ |
| | 6 | Low alloy steel | | Annealed | 180 | 10 | | | | |
| | 7 | | | Quenched & Tempered | 275 | 29 | | | | |
| | 8 | | | Quenched & Tempered | 300 | 32 | ○ | ○ | ○ | ○ |
| | 9 | | | Quenched & Tempered | 350 | 38 | ○ | ○ | ○ | ○ |
| | 10 | High alloyed steel, and tool steel | | Annealed | 200 | 15 | | | | |
| | 11 | | | Quenched & Tempered | 325 | 35 | ○ | ○ | ○ | ○ |
| M | 12 | Stainless steel | Ferritic / Martensitic | Annealed | 200 | 15 | | | | |
| | 13 | | Martensitic | Quenched & Tempered | 240 | 23 | | | | |
| | 14 | | Austenitic | | 180 | 10 | | | | |
| K | 15 | Grey cast iron | Pearlitic / ferritic | | 180 | 10 | | | | |
| | 16 | | Pearlitic (Martensitic) | | 260 | 26 | | | | |
| | 17 | Nodular cast iron | Ferritic | | 160 | 3 | | | | |
| | 18 | | Pearlitic | | 250 | 25 | | | | |
| | 19 | Malleable cast iron | Ferritic | | 130 | | | | | |
| | 20 | | Pearlitic | | 230 | 21 | | | | |
| N | 21 | Aluminum-wrought alloy | Not Curable | | 60 | | | | | |
| | 22 | | Curable | Hardened | 100 | | | | | |
| | 23 | Aluminum-cast, alloyed | ≤ 12% Si, Not Curable | | 75 | | | | | |
| | 24 | | ≤ 12% Si, Curable | Hardened | 90 | | | | | |
| | 25 | | > 12% Si, Not Curable | | 130 | | | | | |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | Cutting Alloys, PB>1% | | 110 | | | | | |
| | 27 | | CuZn, CuSnZn (Brass) | | 90 | | | | | |
| | 28 | | CuSn, lead-free copper and electrolytic copper | | 100 | | | | | |
| | 29 | Non Metallic Materials | Duroplastic, Fiber Reinforced Plastic | | | | | | | |
| | 30 | | Rubber, Wood, etc. | | | | | | | |
| S | 31 | Heat Resistant Super Alloys | Fe Based | Annealed | 200 | 15 | | | | |
| | 32 | | | Cured | 280 | 30 | | | | |
| | 33 | | Ni or Co Based | Annealed | 250 | 25 | | | | |
| | 34 | | | Cured | 350 | 38 | | | | |
| | 35 | | | Cast | 320 | 34 | | | | |
| | 36 | Titanium Alloys | Pure Titanium | | 400 Rm | | | | | |
| | 37 | | Alpha + Beta Alloys | Hardened | 1050 Rm | | | | | |
| H | 38 | Hardened steel | | Hardened | 550 | 55 | ◎ | ◎ | ◎ | ◎ |
| | 39 | | | Hardened | 630 | 60 | ◎ | ◎ | ◎ | ◎ |
| | 40 | Chilled Cast Iron | | Cast | 400 | 42 | ○ | ○ | ○ | ○ |
| | 41 | Hardened Cast Iron | | Hardened | 550 | 55 | ◎ | ◎ | ◎ | ◎ |



| | G8A28 | G8A38 | G8A53 | G8A59 | G8D62 | G8A60 | G8A36 | G8A52 | G8A50 | G8A47 | G8A37 | G8B08 | G8A39 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2 | 2 | 2 | 3 | 4 | 2 | 2 | 2 | 2 | 4 | 4 | 4 | 6 |
| | 30° | 30° | 30° | 30° | 30° | 30° | 30° | 30° | 30° | 30° | 30° | 30° | 45° |
| | BALL NOSE | BALL NOSE | BALL NOSE | BALL NOSE | BALL NOSE | CORNER RADIUS | CORNER RADIUS | CORNER RADIUS | CORNER RADIUS | CORNER RADIUS | CORNER RADIUS | CORNER RADIUS | CORNER RADIUS |
| | R0.05 | R0.5 | R0.2 | R1.5 | R1.5 | D0.5 | D0.3 | D0.5 | D0.3 | D3.0 | D1.0 | D6.0 | D6.0 |
| | R6.0 | R12.5 | R1.0 | R10.0 | R10.0 | D12.0 | D20.0 | D2.0 | D2.0 | D12.0 | D20.0 | D12.0 | D20.0 |
| | C86-87 | C88 | C89 | C90 | C91 | C92-96 | C97-98 | C99 | C100 | C101 | C102 | C103 | 104 |
| | - | EXTENDED NECK | MINIATURE | Center Match | Center Match | RIB PROCESSING | EXTENDED NECK | RIB PROCESSING | MINIATURE | EXTENDED NECK | EXTENDED NECK | EXTENDED NECK | EXTENDED NECK |
| | Blue Coating | Blue Coating | Blue Coating | Blue Coating | Blue Coating | Blue Coating | Blue Coating | Blue Coating | Blue Coating | Blue Coating | Blue Coating | Blue Coating | Blue Coating |

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| | | | | | | | | | | | | | | 4 |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | 5 |
| | | | | | | | | | | | | | | 6 P |
| | | | | | | | | | | | | | | 7 |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | 8 |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | 9 |
| | | | | | | | | | | | | | | 10 |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | 11 |
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| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | | 38 |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | | 39 |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | 40 H |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | | 41 |

BALL NOSE = 球头 CORNER RADIUS = 圆鼻 SQUARE = 平头 HIGH FEED = 高进给 RIB PROCESSING = 颈部加长
MINIATURE = 微型 LONG LENGTH = 长刃 EXTRA LONG LENGTH = 螺旋角 长刃 EXTENDED NECK = 颈部加长 Center Match = 中心交接式

# SELECTION GUIDE
## 选用指南

YG MILLING TOOLS

| SERIES 系列 | G8A45 | G8A01 | G8A02 | G8D63 | G8D64 |
|---|---|---|---|---|---|
| FLUTE 槽数 | 2 | 2 | 4 | 6&8 | 6&8 |
| HELIX ANGLE 螺旋角度 | 30° | 30° | 30° | 45° | 45° |
| CUTTING EDGE SHAPE 类型 | SQUARE | SQUARE | SQUARE | SQUARE | SQUARE |
| SIZE MIN 最小尺寸 | D0.1 | D0.1 | D1.0 | D6.0 | D6.0 |
| SIZE MAX 最大尺寸 | D4.0 | D20.0 | D20.0 | D25.0 | D25.0 |
| PAGE 页数 | C105-108 | C109 | C110 | C111 | C112 |
| | RIB PROCESSING | EXTENDED NECK | EXTENDED NECK | LONG LENGTH | EXTRA LONG LENGTH |
| | Blue Coating | Blue Coating | Blue Coating | Blue Coating | Blue Coating |

## SOLID CARBIDE
# X5070 END MILLS
High Hardened Steels HRc45 to HRc70,
High Speed Machining, Dry Cutting

Please visit globalyg1.com/mat for material search

◎ : Excellent (优秀) ○ : Good (良好)

Recommended cutting conditions (推荐加工参数) : p.C113

| ISO | VDI 3323 | Material Description 工件材料 | Composition / Structure / Heat Treatment 成分 / 结构 / 热处理 | | HB | HRc | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | About 0.15% C | Annealed | 125 | | | | | | |
| | 2 | | About 0.45% C | Annealed | 190 | 13 | | | | | |
| | 3 | | About 0.45% C | Quenched & Tempered | 250 | 25 | | | | | |
| | 4 | | About 0.75% C | Annealed | 270 | 28 | | | | | |
| | 5 | | About 0.75% C | Quenched & Tempered | 300 | 32 | ○ | ○ | ○ | ○ | ○ |
| | 6 | Low alloy steel | | Annealed | 180 | 10 | | | | | |
| | 7 | | | Quenched & Tempered | 275 | 29 | | | | | |
| | 8 | | | Quenched & Tempered | 300 | 32 | ○ | ○ | ○ | ○ | ○ |
| | 9 | | | Quenched & Tempered | 350 | 38 | ○ | ○ | ○ | ○ | ○ |
| | 10 | High alloyed steel, and tool steel | | Annealed | 200 | 15 | | | | | |
| | 11 | | | Quenched & Tempered | 325 | 35 | ○ | ○ | ○ | ○ | ○ |
| M | 12 | Stainless steel | Ferritic / Martensitic | Annealed | 200 | 15 | | | | | |
| | 13 | | Martensitic | Quenched & Tempered | 240 | 23 | | | | | |
| | 14 | | Austenitic | | 180 | 10 | | | | | |
| K | 15 | Grey cast iron | Pearlitic / ferritic | | 180 | 10 | | | | | |
| | 16 | | Pearlitic (Martensitic) | | 260 | 26 | | | | | |
| | 17 | Nodular cast iron | Ferritic | | 160 | 3 | | | | | |
| | 18 | | Pearlitic | | 250 | 25 | | | | | |
| | 19 | Malleable cast iron | Ferritic | | 130 | | | | | | |
| | 20 | | Pearlitic | | 230 | 21 | | | | | |
| N | 21 | Aluminum-wrought alloy | Not Curable | | 60 | | | | | | |
| | 22 | | Curable | Hardened | 100 | | | | | | |
| | 23 | Aluminum-cast, alloyed | ≤ 12% Si, Not Curable | | 75 | | | | | | |
| | 24 | | ≤ 12% Si, Curable | Hardened | 90 | | | | | | |
| | 25 | | > 12% Si, Not Curable | | 130 | | | | | | |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | Cutting Alloys, PB>1% | | 110 | | | | | | |
| | 27 | | CuZn, CuSnZn (Brass) | | 90 | | | | | | |
| | 28 | | CuSn, lead-free copper and electrolytic copper | | 100 | | | | | | |
| | 29 | Non Metallic Materials | Duroplastic, Fiber Reinforced Plastic | | | | | | | | |
| | 30 | | Rubber, Wood, etc. | | | | | | | | |
| S | 31 | Heat Resistant Super Alloys | Fe Based | Annealed | 200 | 15 | | | | | |
| | 32 | | | Cured | 280 | 30 | | | | | |
| | 33 | | Ni or Co Based | Annealed | 250 | 25 | | | | | |
| | 34 | | | Cured | 350 | 38 | | | | | |
| | 35 | | | Cast | 320 | 34 | | | | | |
| | 36 | Titanium Alloys | Pure Titanium | | 400 Rm | | | | | | |
| | 37 | | Alpha + Beta Alloys | Hardened | 1050 Rm | | | | | | |
| H | 38 | Hardened steel | | Hardened | 550 | 55 | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 39 | | | Hardened | 630 | 60 | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 40 | Chilled Cast Iron | | Cast | 400 | 42 | ○ | ○ | ○ | ○ | ○ |
| | 41 | Hardened Cast Iron | | Hardened | 550 | 55 | ◎ | ◎ | ◎ | ◎ | ◎ |





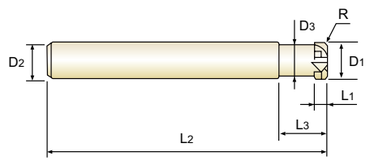
# YG X5070 END MILLS

PLAIN SHANK **G8B59 SERIES**

## CARBIDE, 4 FLUTE STUB LENGTH CORNER RADIUS HIGH FEED
## 硬质合金，4刃 短刃 高进给 圆鼻

- ▶ Excellent wear resistance at heavy feed rates on high hardened material.
- ▶ Designed with reduced clearance angles and short flutes for strength.
- ▶ High hardness & heat resistance coating for long life in dry applications.

- ▶卓越耐磨性在高进给加工高硬度工况
- ▶由于减少后角及采用短槽，提高刚性
- ▶采用高硬度极高耐热性涂层，卓越刀具寿命在干切削工况




CARBIDE | 4 | BLUE | 0° | R ±0.005 | PLAIN

p.C113

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| POWER MILLING CHUCK | D161 - 176 |
| ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

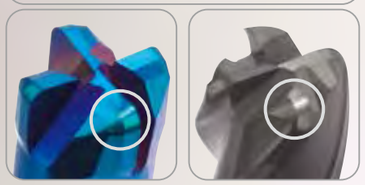
Unit(单位) : mm

| EDP No. | Corner Radius 圆弧角 R (±0.005) | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Length Below Shank 颈长 L3 | Overall Length 全长 L2 | Neck Diameter 颈径 D3 |
|---|---|---|---|---|---|---|---|
| G8B5902005 | R0.5 | **2.0** | 6 | 1 | 6 | 50 | 1.8 |
| G8B5903005 | R0.5 | **3.0** | 6 | 1.2 | 8 | 50 | 2.8 |
| G8B5904005 | R0.5 | **4.0** | 6 | 1.5 | 10 | 50 | 3.8 |
| G8B5906005 | R0.5 | **6.0** | 6 | 2.5 | 12 | 60 | 5.4 |
| G8B5906010 | R1.0 | **6.0** | 6 | 2.5 | 12 | 60 | 5.4 |
| G8B5908010 | R1.0 | **8.0** | 8 | 3.5 | 16 | 60 | 7.2 |
| G8B5908020 | R2.0 | **8.0** | 8 | 3.5 | 16 | 60 | 7.2 |
| G8B5910010 | R1.0 | **10.0** | 10 | 4 | 20 | 70 | 9 |
| G8B5910020 | R2.0 | **10.0** | 10 | 4 | 20 | 70 | 9 |
| G8B5912020 | R2.0 | **12.0** | 12 | 5 | 25 | 80 | 11 |
| G8B5912030 | R3.0 | **12.0** | 12 | 5 | 25 | 80 | 11 |

| Mill Dia. Tolerance (mm) 直径公差 | Corner Radius Tolerance (mm) 圆弧角公差 | Shank Dia. Tolerance 柄径公差 |
|---|---|---|
| 0 ~ - 0.02 | ± 0.005 | h5 |

Due to the characteristics of the blue decoration layer, it might be erased during short term use and the color layer might not be uniformed. However, it doesn't affect the performance of the tool.
具有装饰性的蓝色涂层在初期使用时有可能会擦掉、该特性使得涂层厚度不均。可是、对刀具的性能没有影响。

**Comparison of the endteeth shape**
刀尖形状对比图



High Feed End Mill 高进给铣刀 | Normal End Mill 普通铣刀

- Reduced clearance angles and short flutes strengthens corner radius and reduces chattering
  减少后角及采用短槽使提高圆弧角的刚性和减少震动
- Extra-short flute length for high rigidity
  超短槽提高刚性
- Heavy core with reduced diameter allows greater depths and maximum rigidity
  厚芯部和减直径的设计，加大切削深度及提高刚性

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | | | | | ○ | | | ○ | ○ | | ○ | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ◎ | ◎ | ○ | ◎ |

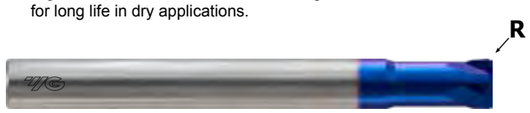
# X5070 END MILLS

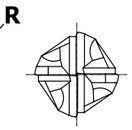
PLAIN SHANK **G8B54** SERIES

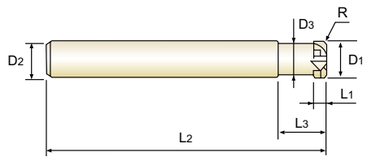
## CARBIDE, 4 FLUTE STUB LENGTH CORNER RADIUS HIGH FEED (long shank)
## 硬质合金，4刃 短刃 高进给 圆鼻

- ▶ Excellent wear resistance at heavy feed rates on high hardened material.
- ▶ Designed with reduced clearance angles and short flutes for strength.
- ▶ High hardness & heat resistance coating for long life in dry applications.

- ▶卓越耐磨性在高进给加工高硬度工况
- ▶由于减少后角及采用短槽，提高刚性
- ▶采用高硬度极高耐热性涂层，卓越刀具寿命在干切削工况






CARBIDE | 4 | BLUE | 0° | R ±0.005 | PLAIN

p.C113

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| HYDRAULIC CHUCK SHRINK FIT HOLDER | D15 - 46 D47 - 72 |
| POWER MILLING CHUCK | D161 - 176 |
| ER COLLET CHUCK SK SLIM CHUCK | D73 - 115 D183 - 201 |

Unit(单位) : mm

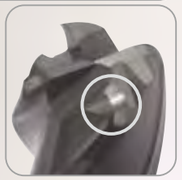
| EDP No. | Corner Radius 圆弧角 R (±0.005) | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Length Below Shank 颈长 L3 | Overall Length 全长 L2 | Neck Diameter 颈径 D3 |
|---|---|---|---|---|---|---|---|
| G8B5402005 | R0.5 | **2.0** | 6 | 1 | 6 | 70 | 1.8 |
| G8B5403005 | R0.5 | **3.0** | 6 | 1.2 | 8 | 70 | 2.8 |
| G8B5404005 | R0.5 | **4.0** | 6 | 1.5 | 10 | 70 | 3.8 |
| G8B5405005 | R0.5 | **5.0** | 6 | 2 | 10 | 70 | 4.6 |
| G8B5406005 | R0.5 | **6.0** | 6 | 2.5 | 12 | 90 | 5.4 |
| G8B5406010 | R1.0 | **6.0** | 6 | 2.5 | 12 | 90 | 5.4 |
| G8B5408010 | R1.0 | **8.0** | 8 | 3.5 | 16 | 100 | 7.2 |
| G8B5408020 | R2.0 | **8.0** | 8 | 3.5 | 16 | 100 | 7.2 |
| G8B5410010 | R1.0 | **10.0** | 10 | 4 | 20 | 100 | 9 |
| G8B5410020 | R2.0 | **10.0** | 10 | 4 | 20 | 100 | 9 |
| G8B5412020 | R2.0 | **12.0** | 12 | 5 | 25 | 110 | 11 |
| G8B5412030 | R3.0 | **12.0** | 12 | 5 | 25 | 110 | 11 |
| G8B5416030 | R3.0 | **16.0** | 16 | 6.5 | 30 | 130 | 15 |

| Mill Dia. Tolerance (mm) 直径公差 | Corner Radius Tolerance (mm) 圆弧角公差 | Shank Dia. Tolerance 柄径公差 |
|---|---|---|
| 0 ~ - 0.02 | ± 0.005 | h5 |

Due to the characteristics of the blue decoration layer, it might be erased during short term use and the color layer might not be uniformed. However, it doesn't affect the performance of the tool.
具有装饰性的蓝色涂层在初期使用时有可能会擦掉、该特性使得涂层厚度不均。可是、对刀具的性能没有影响。

### Comparison of the endteeth shape
### 刀尖形状对比图

High Feed End Mill 高进给铣刀



Normal End Mill 普通铣刀

- Reduced clearance angles and short flutes strengthens corner radius and reduces chattering
  减少后角及采用短槽使提高圆弧角的刚性和减少震动
- Extra-short flute length for high rigidity
  超短槽提高刚性
- Heavy core with reduced diameter allows greater depths and maximum rigidity
  厚芯部和减直径的设计，加大切削深度及提高刚性

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | | | | | ○ | | | ○ | ○ | | ○ | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ◎ | ◎ | ○ | ◎ |





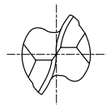
# X5070 END MILLS

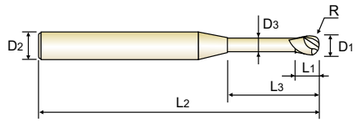
PLAIN SHANK **G8A46** SERIES

## CARBIDE, 2 FLUTE BALL NOSE for RIB PROCESSING
## 硬质合金，2刃 球头 深腔加工

- ▶ Designed to machine high hardened materials.
- ▶ Suitable for dry cutting, high speed cutting thanks to newly developed raw-material and new coating.
- ▶ Excellent workpiece finish.
- ▶ Designed for high precision milling operation.
- ▶ Higher wear-resistance.

- ▶为加工高硬度材料设计
- ▶由于最新开发的原材料和涂层，适用于干式切削，高速切削
- ▶卓越的工件表面粗糙度
- ▶高精密铣削设计
- ▶优异的耐磨性






CARBIDE | 2 | BLUE | 30° | R ±0.005 | PLAIN

p.C114-115

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| HYDRAULIC CHUCK SHRINK FIT HOLDER | D15 - 46 D47 - 72 |
| POWER MILLING CHUCK | D161 - 176 |
| ER COLLET CHUCK SK SLIM CHUCK | D73 - 115 D183 - 201 |

Unit(单位) : mm

| EDP No. | Radius of Ball Nose 圆弧角 R (±0.005) | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Length Below Shank 颈长 L3 | Overall Length 全长 L2 | Neck Diameter 颈径 D3 |
|---|---|---|---|---|---|---|---|
| G8A46805 | R0.05 | **0.1** | 4 | 0.1 | 0.3 | 45 | 0.085 |
| G8A46806 | R0.05 | **0.1** | 4 | 0.1 | 0.5 | 45 | 0.085 |
| G8A46002 | R0.1 | **0.2** | 4 | 0.2 | 0.5 | 45 | 0.17 |
| G8A46977 | R0.1 | **0.2** | 4 | 0.2 | 1 | 45 | 0.17 |
| G8A46958 | R0.1 | **0.2** | 4 | 0.2 | 1.5 | 45 | 0.17 |
| G8A46003 | R0.15 | **0.3** | 4 | 0.3 | 1 | 45 | 0.27 |
| G8A46959 | R0.15 | **0.3** | 4 | 0.3 | 2 | 45 | 0.27 |
| G8A46986 | R0.15 | **0.3** | 4 | 0.3 | 3 | 45 | 0.27 |
| G8A46004 | R0.2 | **0.4** | 4 | 0.4 | 1 | 45 | 0.37 |
| G8A46960 | R0.2 | **0.4** | 4 | 0.4 | 2 | 45 | 0.37 |
| G8A46961 | R0.2 | **0.4** | 4 | 0.4 | 3 | 45 | 0.37 |
| G8A46981 | R0.2 | **0.4** | 4 | 0.4 | 4 | 45 | 0.37 |
| G8A46987 | R0.2 | **0.4** | 4 | 0.4 | 5 | 45 | 0.37 |
| G8A46005 | R0.25 | **0.5** | 4 | 0.4 | 2 | 45 | 0.45 |
| G8A46804 | R0.25 | **0.5** | 4 | 0.4 | 2.5 | 45 | 0.45 |
| G8A46962 | R0.25 | **0.5** | 4 | 0.4 | 4 | 45 | 0.45 |
| G8A46963 | R0.25 | **0.5** | 4 | 0.4 | 6 | 45 | 0.45 |
| G8A46964 | R0.25 | **0.5** | 4 | 0.4 | 8 | 45 | 0.45 |
| G8A46957 | R0.3 | **0.6** | 4 | 0.5 | 2 | 45 | 0.55 |
| G8A46988 | R0.3 | **0.6** | 4 | 0.5 | 3 | 45 | 0.55 |
| G8A46915 | R0.3 | **0.6** | 4 | 0.5 | 4 | 45 | 0.55 |
| G8A46989 | R0.3 | **0.6** | 4 | 0.5 | 5 | 45 | 0.55 |

Due to the characteristics of the blue decoration layer, it might be erased during short term use and the color layer might not be uniformed. However, it doesn't affect the performance of the tool.
具有装饰性的蓝色涂层在初期使用时有可能会擦掉、该特性使得涂层厚度不均。可是、对刀具的性能没有影响。

▶ NEXT PAGE 下页

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.012 | h5 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | | | | | | | | ○ | ○ | | ○ | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ◎ | ◎ | ○ | ◎ |

# X5070 END MILLS

PLAIN SHANK **G8A46** SERIES

## CARBIDE, 2 FLUTE BALL NOSE for RIB PROCESSING
## 硬质合金，2刃 球头 深腔加工

- ▶ Designed to machine high hardened materials.
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- ▶ Excellent workpiece finish.
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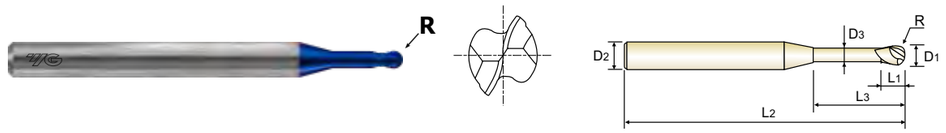
- ▶ Higher wear-resistance.

- ▶为加工高硬度材料设计
- ▶由于最新开发的原材料和涂层，适用于干式切削，高速切削
- ▶卓越的工件表面粗糙度
- ▶高精密铣削设计
- ▶优异的耐磨性




CARBIDE | 2 | BLUE | 30° | R ±0.005 | PLAIN

p.C114-115

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| HYDRAULIC CHUCK SHRINK FIT HOLDER | D15 - 46 D47 - 72 |
| POWER MILLING CHUCK | D161 - 176 |
| ER COLLET CHUCK SK SLIM CHUCK | D73 - 115 D183 - 201 |

Unit(单位) : mm

| EDP No. | Radius of Ball Nose 圆弧角 R (±0.005) | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Length Below Shank 颈长 L3 | Overall Length 全长 L2 | Neck Diameter 颈径 D3 |
|---|---|---|---|---|---|---|---|
| G8A46916 | R0.3 | **0.6** | 4 | 0.5 | 6 | 45 | 0.55 |
| G8A46917 | R0.3 | **0.6** | 4 | 0.5 | 8 | 45 | 0.55 |
| G8A46990 | R0.3 | **0.6** | 4 | 0.5 | 10 | 45 | 0.55 |
| G8A46918 | R0.4 | **0.8** | 4 | 0.6 | 2 | 45 | 0.75 |
| G8A46919 | R0.4 | **0.8** | 4 | 0.6 | 4 | 45 | 0.75 |
| G8A46008 | R0.4 | **0.8** | 4 | 0.6 | 6 | 45 | 0.75 |
| G8A46901 | R0.4 | **0.8** | 4 | 0.6 | 8 | 45 | 0.75 |
| G8A46965 | R0.4 | **0.8** | 4 | 0.6 | 10 | 45 | 0.75 |
| G8A46920 | R0.5 | **1.0** | 4 | 0.8 | 3 | 45 | 0.95 |
| G8A46921 | R0.5 | **1.0** | 4 | 0.8 | 4 | 45 | 0.95 |
| G8A46923 | R0.5 | **1.0** | 4 | 0.8 | 5 | 45 | 0.95 |
| G8A46010 | R0.5 | **1.0** | 4 | 0.8 | 6 | 45 | 0.95 |
| G8A46924 | R0.5 | **1.0** | 4 | 0.8 | 7 | 45 | 0.95 |
| G8A46902 | R0.5 | **1.0** | 4 | 0.8 | 8 | 45 | 0.95 |
| G8A46925 | R0.5 | **1.0** | 4 | 0.8 | 9 | 45 | 0.95 |
| G8A46903 | R0.5 | **1.0** | 4 | 0.8 | 10 | 45 | 0.95 |
| G8A46904 | R0.5 | **1.0** | 4 | 0.8 | 12 | 45 | 0.95 |
| G8A46926 | R0.5 | **1.0** | 4 | 0.8 | 14 | 50 | 0.95 |
| G8A46927 | R0.5 | **1.0** | 4 | 0.8 | 16 | 50 | 0.95 |
| G8A46966 | R0.5 | **1.0** | 4 | 0.8 | 20 | 55 | 0.95 |
| G8A46982 | R0.6 | **1.2** | 4 | 1.0 | 6 | 45 | 1.15 |
| G8A46012 | R0.6 | **1.2** | 4 | 1.0 | 8 | 45 | 1.15 |

Due to the characteristics of the blue decoration layer, it might be erased during short term use and the color layer might not be uniformed. However, it doesn't affect the performance of the tool.

▶ NEXT PAGE 下页

具有装饰性的蓝色涂层在初期使用时有可能会擦掉、该特性使得涂层厚度不均。可是、对刀具的性能没有影响。

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.012 | h5 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | | | | | ○ | | | ○ | ○ | | ○ | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ◎ | ◎ | ○ | ◎ |



CARBIDE
HSS
CBN END MILLS
i-Xmill END MILLS
i-SMART MODULAR END MILLS
X5070 END MILLS
4G MILL END MILLS
X-POWER PRO END MILLS
TitaNox-POWER END MILLS
SUS-CUT END MILLS
V7 PLUS END MILLS
ALU-POWER HPC END MILLS
ALU-CUT END MILLS
G-CUT END MILLS
CRX S END MILLS
K-2 END MILLS
GENERAL CARBIDE END MILLS
ONLY ONE COATED PM60 END MILLS
TANK-POWER END MILLS
GENERAL HSS END MILLS
MILLING CUTTERS
TECHNICAL DATA

# X5070 END MILLS

PLAIN SHANK **G8A46** SERIES

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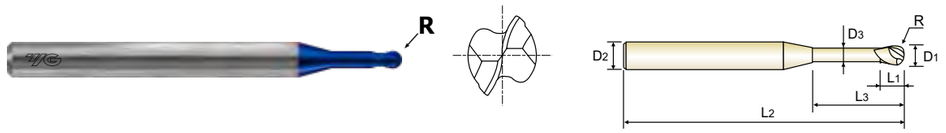
- ▶卓越的工件表面粗糙度
- ▶高精密铣削设计
- ▶优异的耐磨性




CARBIDE | 2 | BLUE | 30° | R ±0.005 | PLAIN

p.C114-115

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| HYDRAULIC CHUCK SHRINK FIT HOLDER | D15 - 46 D47 - 72 |
| POWER MILLING CHUCK | D161 - 176 |
| ER COLLET CHUCK SK SLIM CHUCK | D73 - 115 D183 - 201 |

Unit(单位) : mm

| EDP No. | Radius of Ball Nose 圆弧角 R (±0.005) | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Length Below Shank 颈长 L3 | Overall Length 全长 L2 | Neck Diameter 颈径 D3 |
|---|---|---|---|---|---|---|---|
| G8A46983 | R0.6 | **1.2** | 4 | 1.0 | 10 | 45 | 1.15 |
| G8A46905 | R0.6 | **1.2** | 4 | 1.0 | 12 | 45 | 1.15 |
| G8A46930 | R0.75 | **1.5** | 4 | 1.2 | 6 | 45 | 1.45 |
| G8A46015 | R0.75 | **1.5** | 4 | 1.2 | 8 | 45 | 1.45 |
| G8A46931 | R0.75 | **1.5** | 4 | 1.2 | 10 | 45 | 1.45 |
| G8A46906 | R0.75 | **1.5** | 4 | 1.2 | 12 | 45 | 1.45 |
| G8A46992 | R0.75 | **1.5** | 4 | 1.2 | 14 | 50 | 1.45 |
| G8A46907 | R0.75 | **1.5** | 4 | 1.2 | 16 | 50 | 1.45 |
| G8A46932 | R0.75 | **1.5** | 4 | 1.2 | 20 | 55 | 1.45 |
| G8A46939 | R1.0 | **2.0** | 4 | 1.6 | 4 | 45 | 1.95 |
| G8A46940 | R1.0 | **2.0** | 4 | 1.6 | 6 | 45 | 1.95 |
| G8A46020 | R1.0 | **2.0** | 4 | 1.6 | 8 | 45 | 1.95 |
| G8A46941 | R1.0 | **2.0** | 4 | 1.6 | 10 | 45 | 1.95 |
| G8A46942 | R1.0 | **2.0** | 4 | 1.6 | 12 | 50 | 1.95 |
| G8A46943 | R1.0 | **2.0** | 4 | 1.6 | 14 | 50 | 1.95 |
| G8A46909 | R1.0 | **2.0** | 4 | 1.6 | 16 | 50 | 1.95 |
| G8A46993 | R1.0 | **2.0** | 4 | 1.6 | 18 | 55 | 1.95 |
| G8A46910 | R1.0 | **2.0** | 4 | 1.6 | 20 | 55 | 1.95 |
| G8A46944 | R1.0 | **2.0** | 4 | 1.6 | 22 | 60 | 1.95 |
| G8A46945 | R1.0 | **2.0** | 4 | 1.6 | 25 | 60 | 1.95 |
| G8A46967 | R1.0 | **2.0** | 4 | 1.6 | 30 | 70 | 1.95 |
| G8A46948 | R1.5 | **3.0** | 6 | 2.4 | 12 | 50 | 2.85 |

Due to the characteristics of the blue decoration layer, it might be erased during short term use and the color layer might not be uniformed. However, it doesn't affect the performance of the tool.

▶ NEXT PAGE 下页

具有装饰性的蓝色涂层在初期使用时有可能会擦掉、该特性使得涂层厚度不均。可是、对刀具的性能没有影响。

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.012 | h5 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | | | | | ○ | | | ○ | ○ | | ○ | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ◎ | ◎ | ○ | ◎ |

# X5070 END MILLS

PLAIN SHANK **G8A46** SERIES

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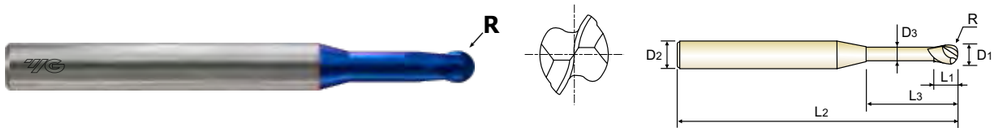



CARBIDE | 2 | BLUE | 30° | R ±0.005 | PLAIN

p.C114-115

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| HYDRAULIC CHUCK SHRINK FIT HOLDER | D15 - 46 D47 - 72 |
| POWER MILLING CHUCK | D161 - 176 |
| ER COLLET CHUCK SK SLIM CHUCK | D73 - 115 D183 - 201 |

Unit(单位) : mm

| EDP No. | Radius of Ball Nose 圆弧角 R (±0.005) | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Length Below Shank 颈长 L3 | Overall Length 全长 L2 | Neck Diameter 颈径 D3 |
|---|---|---|---|---|---|---|---|
| G8A46984 | R1.5 | **3.0** | 6 | 2.4 | 14 | 55 | 2.85 |
| G8A46030 | R1.5 | **3.0** | 6 | 2.4 | 16 | 55 | 2.85 |
| G8A46985 | R1.5 | **3.0** | 6 | 2.4 | 18 | 60 | 2.85 |
| G8A46911 | R1.5 | **3.0** | 6 | 2.4 | 20 | 60 | 2.85 |
| G8A46968 | R1.5 | **3.0** | 6 | 2.4 | 25 | 65 | 2.85 |
| G8A46969 | R1.5 | **3.0** | 6 | 2.4 | 30 | 70 | 2.85 |
| G8A46970 | R1.5 | **3.0** | 6 | 2.4 | 35 | 80 | 2.85 |
| G8A46950 | R2.0 | **4.0** | 6 | 3.2 | 12 | 60 | 3.85 |
| G8A46040 | R2.0 | **4.0** | 6 | 3.2 | 16 | 60 | 3.85 |
| G8A46912 | R2.0 | **4.0** | 6 | 3.2 | 20 | 65 | 3.85 |
| G8A46913 | R2.0 | **4.0** | 6 | 3.2 | 25 | 70 | 3.85 |
| G8A46971 | R2.0 | **4.0** | 6 | 3.2 | 30 | 70 | 3.85 |
| G8A46972 | R2.0 | **4.0** | 6 | 3.2 | 35 | 80 | 3.85 |
| G8A46973 | R2.0 | **4.0** | 6 | 3.2 | 40 | 90 | 3.85 |
| G8A46974 | R2.0 | **4.0** | 6 | 3.2 | 45 | 90 | 3.85 |
| G8A46975 | R2.0 | **4.0** | 6 | 3.2 | 50 | 100 | 3.85 |

Due to the characteristics of the blue decoration layer, it might be erased during short term use and the color layer might not be uniformed. However, it doesn't affect the performance of the tool.
具有装饰性的蓝色涂层在初期使用时有可能会擦掉、该特性使得涂层厚度不均。可是、对刀具的性能没有影响。

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.012 | h5 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | | | | | ○ | | | ○ | ○ | | ○ | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ◎ | ◎ | ○ | ◎ |



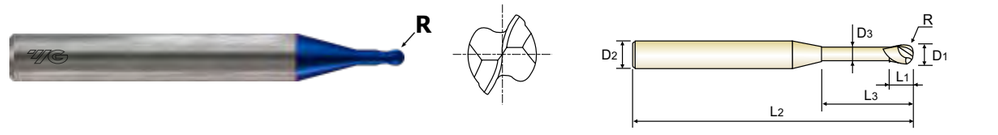
# X5070 END MILLS

PLAIN SHANK **G8A54** SERIES

## CARBIDE, 2 FLUTE BALL NOSE for RIB PROCESSING
## 硬质合金，2刃 球头 深腔加工

- ▶ Designed to machine high hardened materials.
- ▶ Suitable for dry cutting, high speed cutting thanks to newly developed raw-material and new coating.
- ▶ Excellent workpiece finish.
- ▶ Designed for high precision milling operation.
- ▶ Higher wear-resistance.

- ▶为加工高硬度材料设计
- ▶由于最新开发的原材料和涂层，适用于干式切削，高速切削
- ▶卓越的工件表面粗糙度
- ▶高精密铣削设计
- ▶优异的耐磨性




CARBIDE | 2 | BLUE | 30° | R ±0.005 | PLAIN

p.C114-115

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| HYDRAULIC CHUCK SHRINK FIT HOLDER | D15 - 46 D47 - 72 |
| POWER MILLING CHUCK | D161 - 176 |
| ER COLLET CHUCK SK SLIM CHUCK | D73 - 115 D183 - 201 |

Unit(单位) : mm

| EDP No. | Radius of Ball Nose 圆弧角 R (±0.005) | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Length Below Shank 颈长 L3 | Overall Length 全长 L2 | Neck Diameter 颈径 D3 |
|---|---|---|---|---|---|---|---|
| G8A54005 | R0.25 | **0.5** | 6 | 0.5 | 1.5 | 50 | 0.45 |
| G8A54901 | R0.25 | **0.5** | 6 | 0.5 | 3.3 | 50 | 0.45 |
| G8A54006 | R0.3 | **0.6** | 6 | 0.6 | 2 | 50 | 0.55 |
| G8A54902 | R0.3 | **0.6** | 6 | 0.6 | 4 | 50 | 0.55 |
| G8A54008 | R0.4 | **0.8** | 6 | 0.8 | 2.5 | 50 | 0.75 |
| G8A54903 | R0.4 | **0.8** | 6 | 0.8 | 5.5 | 50 | 0.75 |
| G8A54010 | R0.5 | **1.0** | 6 | 1 | 3.3 | 50 | 0.95 |
| G8A54904 | R0.5 | **1.0** | 6 | 1 | 6.7 | 50 | 0.95 |
| G8A54905 | R0.5 | **1.0** | 6 | 1 | 12 | 50 | 0.95 |
| G8A54012 | R0.6 | **1.2** | 6 | 1.2 | 4.4 | 50 | 1.15 |
| G8A54906 | R0.6 | **1.2** | 6 | 1.2 | 8 | 50 | 1.15 |
| G8A54015 | R0.75 | **1.5** | 6 | 1.5 | 5 | 50 | 1.45 |
| G8A54907 | R0.75 | **1.5** | 6 | 1.5 | 9.7 | 50 | 1.45 |
| G8A54908 | R0.75 | **1.5** | 6 | 1.5 | 15 | 50 | 1.45 |
| G8A54020 | R1.0 | **2.0** | 6 | 2 | 6 | 50 | 1.95 |
| G8A54909 | R1.0 | **2.0** | 6 | 2 | 13 | 50 | 1.95 |
| G8A54910 | R1.0 | **2.0** | 6 | 2 | 20 | 60 | 1.95 |

Due to the characteristics of the blue decoration layer, it might be erased during short term use and the color layer might not be uniformed. However, it doesn't affect the performance of the tool.
具有装饰性的蓝色涂层在初期使用时有可能会擦掉、该特性使得涂层厚度不均。可是、对刀具的性能没有影响。

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.012 | h5 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | | | | | ○ | | | ○ | ○ | | ○ | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ◎ | ◎ | ○ | ◎ |

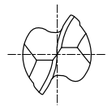
# X5070 END MILLS

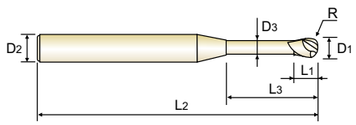
PLAIN SHANK **G8A28** SERIES

## CARBIDE, 2 FLUTE BALL NOSE
## 硬质合金，2刃 球头

- ▶ Designed to machine high hardened materials.
- ▶ Suitable for dry cutting, high speed cutting thanks to newly developed raw-material and new coating.
- ▶ Excellent workpiece finish.
- ▶ Designed for high precision milling operation.
- ▶ Higher wear-resistance.

- ▶为加工高硬度材料设计
- ▶由于最新开发的原材料和涂层，适用于干式切削，高速切削
- ▶卓越的工件表面粗糙度
- ▶高精密铣削设计
- ▶优异的耐磨性






CARBIDE | 2 | BLUE | 30° | R ±0.005 R0.05~R3 | R ±0.010 R4~R6 | PLAIN | p.C116-117

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| HYDRAULIC CHUCK SHRINK FIT HOLDER | D15 - 46 D47 - 72 |
| POWER MILLING CHUCK | D161 - 176 |
| ER COLLET CHUCK SK SLIM CHUCK | D73 - 115 D183 - 201 |

Unit(单位) : mm

| EDP No. | Radius of Ball Nose 圆弧角 R | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Length Below Shank 颈长 L3 | Overall Length 全长 L2 | Neck Diameter 颈径 D3 |
|---|---|---|---|---|---|---|---|
| G8A28001 | R0.05 | **0.1** | 4 | 0.2 | - | 40 | - |
| G8A28002 | R0.1 | **0.2** | 4 | 0.3 | - | 40 | - |
| G8A28003 | R0.15 | **0.3** | 4 | 0.5 | - | 40 | - |
| G8A28004 | R0.2 | **0.4** | 4 | 0.6 | - | 40 | - |
| G8A28005 | R0.25 | **0.5** | 4 | 0.7 | - | 40 | - |
| G8A28006 | R0.3 | **0.6** | 4 | 0.9 | - | 40 | - |
| G8A28007 | R0.35 | **0.7** | 4 | 1.1 | - | 40 | - |
| G8A28008 | R0.4 | **0.8** | 4 | 1.2 | - | 40 | - |
| G8A28009 | R0.45 | **0.9** | 4 | 1.4 | - | 40 | - |
| G8A280104S | R0.5 | **1.0** | 4 | 1.5 | 3 | 50 | 0.95 |
| G8A28010 | R0.5 | **1.0** | 6 | 1.5 | 3 | 50 | 0.95 |
| G8A280154S | R0.75 | **1.5** | 4 | 2 | 4 | 50 | 1.45 |
| G8A28015 | R0.75 | **1.5** | 6 | 2 | 4 | 50 | 1.45 |
| G8A280204S | R1.0 | **2.0** | 4 | 2.5 | 5 | 50 | 1.95 |
| G8A28020 | R1.0 | **2.0** | 6 | 2.5 | 5 | 50 | 1.95 |
| G8A280254S | R1.25 | **2.5** | 4 | 3 | 7 | 50 | 2.4 |
| G8A28025 | R1.25 | **2.5** | 6 | 3 | 7 | 50 | 2.4 |
| G8A28030 | R1.5 | **3.0** | 6 | 4 | 10 | 60 | 2.85 |
| G8A28035 | R1.75 | **3.5** | 6 | 4.5 | 10 | 60 | 3.35 |
| G8A28040 | R2.0 | **4.0** | 6 | 5 | 10 | 60 | 3.85 |
| G8A28045 | R2.25 | **4.5** | 6 | 5.5 | 10 | 60 | 4.35 |
| G8A28050 | R2.5 | **5.0** | 6 | 6 | 12 | 60 | 4.85 |

Due to the characteristics of the blue decoration layer, it might be erased during short term use and the color layer might not be uniformed. However, it doesn't affect the performance of the tool.
具有装饰性的蓝色涂层在初期使用时有可能会擦掉、该特性使得涂层厚度不均。可是、对刀具的性能没有影响。

▶ NEXT PAGE 下页

| Size 尺寸 | RadiusTolerance (mm) 半径公差 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|---|
| up to R3 R3以下 | ± 0.005 | 0 ~ - 0.012 | h5 |
| over R3 超过R3 | ± 0.010 | 0 ~ - 0.015 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | | | | | ○ | | | ○ | ○ | | ○ | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ◎ | ◎ | ○ | ◎ |



CARBIDE
HSS
CBN END MILLS
i-Xmill END MILLS
i-SMART MODULAR END MILLS
X5070 END MILLS
4G MILL END MILLS
X-POWER PRO END MILLS
TitaNox-POWER END MILLS
SUS-CUT END MILLS
V7 PLUS END MILLS
ALU-POWER HPC END MILLS
ALU-CUT END MILLS
G-CUT END MILLS
CRX S END MILLS
K-2 END MILLS
GENERAL CARBIDE END MILLS
ONLY ONE COATED PM60 END MILLS
TANK-POWER END MILLS
GENERAL HSS END MILLS
MILLING CUTTERS
TECHNICAL DATA

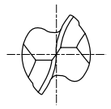
# X5070 END MILLS

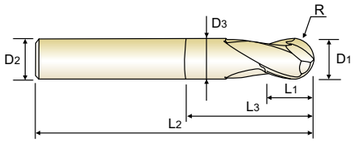
PLAIN SHANK **G8A28** SERIES

## CARBIDE, 2 FLUTE BALL NOSE
## 硬质合金，2刃 球头

- ▶ Designed to machine high hardened materials.
- ▶ Suitable for dry cutting, high speed cutting thanks to newly developed raw-material and new coating.
- ▶ Excellent workpiece finish.
- ▶ Designed for high precision milling operation.
- ▶ Higher wear-resistance.

- ▶为加工高硬度材料设计
- ▶由于最新开发的原材料和涂层，适用于干式切削，高速切削
- ▶卓越的工件表面粗糙度
- ▶高精密铣削设计
- ▶优异的耐磨性






CARBIDE | 2 | BLUE | 30° | R ±0.005 R0.05~R3 | R ±0.010 R4~R6 | PLAIN | p.C116-117

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| HYDRAULIC CHUCK SHRINK FIT HOLDER | D15 - 46 D47 - 72 |
| POWER MILLING CHUCK | D161 - 176 |
| ER COLLET CHUCK SK SLIM CHUCK | D73 - 115 D183 - 201 |

Unit(单位) : mm

| EDP No. | Radius of Ball Nose 圆弧角 R | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Length Below Shank 颈长 L3 | Overall Length 全长 L2 | Neck Diameter 颈径 D3 |
|---|---|---|---|---|---|---|---|
| G8A28055 | R2.75 | **5.5** | 6 | 6.5 | 12 | 60 | 5.35 |
| G8A28060 | R3.0 | **6.0** | 6 | 7 | 15 | 60 | 5.85 |
| G8A28903 | R3.0 | **6.0** | 6 | 9 | 30 | 90 | 5.85 |
| G8A28901 | R4.0 | **8.0** | 8 | 9 | 15 | 60 | 7.7 |
| G8A28080 | R4.0 | **8.0** | 8 | 9 | 15 | 80 | 7.7 |
| G8A28904 | R4.0 | **8.0** | 8 | 12 | 30 | 100 | 7.7 |
| G8A28902 | R5.0 | **10.0** | 10 | 11 | 25 | 60 | 9.7 |
| G8A28100 | R5.0 | **10.0** | 10 | 11 | 25 | 80 | 9.7 |
| G8A28905 | R5.0 | **10.0** | 10 | 15 | 30 | 100 | 9.7 |
| G8A28120 | R6.0 | **12.0** | 12 | 14 | 25 | 80 | 11.7 |

Due to the characteristics of the blue decoration layer, it might be erased during short term use and the color layer might not be uniformed. However, it doesn't affect the performance of the tool.
具有装饰性的蓝色涂层在初期使用时有可能会擦掉、该特性使得涂层厚度不均。可是、对刀具的性能没有影响。

| Size 尺寸 | RadiusTolerance (mm) 半径公差 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|---|
| up to R3 R3以下 | ± 0.005 | 0 ~ - 0.012 | h5 |
| over R3 超过R3 | ± 0.010 | 0 ~ - 0.015 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | | | | | ○ | | | ○ | ○ | | ○ | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ◎ | ◎ | ○ | ◎ |

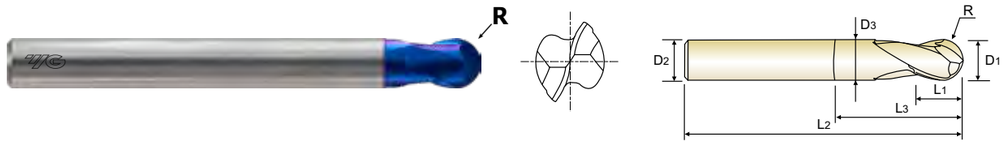
# X5070 END MILLS

PLAIN SHANK **G8A38** SERIES

## CARBIDE, 2 FLUTE STUB LENGTH BALL NOSE with EXTENDED NECK
## 硬质合金，2刃 短刃 颈部加长 球头

- ▶ Designed to machine high hardened materials.
- ▶ Suitable for dry cutting, high speed cutting thanks to newly developed raw-material and new coating.
- ▶ Excellent workpiece finish.
- ▶ Designed for high precision milling operation.
- ▶ Higher wear-resistance.

- ▶为加工高硬度材料设计
- ▶由于最新开发的原材料和涂层，适用于干式切削，高速切削
- ▶卓越的工件表面粗糙度
- ▶高精密铣削设计
- ▶优异的耐磨性




CARBIDE | 2 | BLUE | 30° | R ±0.005 (R0.5~R3) | R ±0.010 (R3.5~R12.5) | PLAIN

p.C116-117

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| HYDRAULIC CHUCK SHRINK FIT HOLDER | D15 - 46 | D47 - 72 |
| POWER MILLING CHUCK | D161 - 176 | |
| ER COLLET CHUCK SK SLIM CHUCK | D73 - 115 | D183 - 201 |

Unit(单位) : mm

| EDP No. | Radius of Ball Nose 圆弧角 R | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Length Below Shank 颈长 L3 | Overall Length 全长 L2 | Neck Diameter 颈径 D3 |
|---|---|---|---|---|---|---|---|
| G8A38010 | R0.5 | **1.0** | 4 | 1 | 2.2 | 50 | 0.95 |
| G8A38012 | R0.6 | **1.2** | 4 | 1.2 | 2.6 | 50 | 1.15 |
| G8A38015 | R0.75 | **1.5** | 4 | 1.5 | 3 | 50 | 1.45 |
| G8A380204S | R1.0 | **2.0** | 4 | 2 | 4 | 50 | 1.95 |
| G8A38020 | R1.0 | **2.0** | 6 | 2 | 4 | 50 | 1.95 |
| G8A38030 | R1.5 | **3.0** | 6 | 3 | 6 | 60 | 2.85 |
| G8A38040 | R2.0 | **4.0** | 6 | 4 | 8 | 70 | 3.85 |
| G8A38050 | R2.5 | **5.0** | 6 | 5 | 10 | 80 | 4.85 |
| G8A38060 | R3.0 | **6.0** | 6 | 6 | 12 | 90 | 5.85 |
| G8A38070 | R3.5 | **7.0** | 8 | 7 | 14 | 90 | 6.7 |
| G8A38080 | R4.0 | **8.0** | 8 | 8 | 16 | 100 | 7.7 |
| G8A38090 | R4.5 | **9.0** | 10 | 9 | 18 | 100 | 8.7 |
| G8A38100 | R5.0 | **10.0** | 10 | 10 | 20 | 100 | 9.7 |
| G8A38120 | R6.0 | **12.0** | 12 | 12 | 24 | 110 | 11.7 |
| G8A38140 | R7.0 | **14.0** | 14 | 14 | 28 | 110 | 13.7 |
| G8A38160 | R8.0 | **16.0** | 16 | 16 | 32 | 140 | 15.7 |
| G8A38180 | R9.0 | **18.0** | 18 | 18 | 36 | 140 | 17.7 |
| G8A38200 | R10.0 | **20.0** | 20 | 20 | 40 | 160 | 19.7 |
| G8A38250 | R12.5 | **25.0** | 25 | 25 | 50 | 180 | 24.7 |

Due to the characteristics of the blue decoration layer, it might be erased during short term use and the color layer might not be uniformed. However, it doesn't affect the performance of the tool.
具有装饰性的蓝色涂层在初期使用时有可能会擦掉、该特性使得涂层厚度不均。可是、对刀具的性能没有影响。

| Size 尺寸 | RadiusTolerance (mm) 半径公差 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|---|
| up to R3 R3以下 | ± 0.005 | 0 ~ - 0.012 | h5 |
| over R3 超过R3 | ± 0.010 | 0 ~ - 0.015 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | | | | | ○ | | | ○ | ○ | | ○ | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ◎ | ◎ | ○ | ◎ |



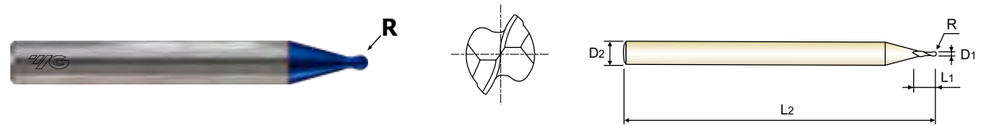
# X5070 END MILLS

PLAIN SHANK **G8A53** SERIES

## CARBIDE, 2 FLUTE MINIATURE BALL NOSE
## 硬质合金，2刃 微型 球头

- ▶ Designed to machine high hardened materials.
- ▶ Suitable for dry cutting, high speed cutting thanks to newly developed raw-material and new coating.
- ▶ Excellent workpiece finish.
- ▶ Designed for high precision milling operation.
- ▶ Higher wear-resistance.

- ▶为加工高硬度材料设计
- ▶由于最新开发的原材料和涂层，适用于干式切削，高速切削
- ▶卓越的工件表面粗糙度
- ▶高精密铣削设计
- ▶优异的耐磨性




CARBIDE | 2 | BLUE | 30° | R ±0.005 | PLAIN

p.C116-117

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| HYDRAULIC CHUCK SHRINK FIT HOLDER | D15 - 46 | D47 - 72 |
| POWER MILLING CHUCK | D161 - 176 | |
| ER COLLET CHUCK SK SLIM CHUCK | D73 - 115 | D183 - 201 |

Unit(单位) : mm

| EDP No. | Radius of Ball Nose 圆弧角 R (±0.005) | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Overall Length 全长 L2 |
|---|---|---|---|---|---|
| G8A53004 | R0.2 | **0.4** | 6 | 0.4 | 50 |
| G8A53005 | R0.25 | **0.5** | 6 | 0.5 | 50 |
| G8A53006 | R0.3 | **0.6** | 6 | 0.6 | 50 |
| G8A53008 | R0.4 | **0.8** | 6 | 0.8 | 50 |
| G8A53010 | R0.5 | **1.0** | 6 | 1.0 | 50 |
| G8A53012 | R0.6 | **1.2** | 6 | 1.2 | 50 |
| G8A53015 | R0.75 | **1.5** | 6 | 1.5 | 50 |
| G8A53020 | R1.0 | **2.0** | 6 | 2.0 | 50 |

Due to the characteristics of the blue decoration layer, it might be erased during short term use and the color layer might not be uniformed. However, it doesn't affect the performance of the tool.
具有装饰性的蓝色涂层在初期使用时有可能会擦掉、该特性使得涂层厚度不均。可是、对刀具的性能没有影响。

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.012 | h5 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | | | | | ○ | | | ○ | ○ | | ○ | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ◎ | ◎ | ○ | ◎ |

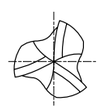
# X5070 END MILLS

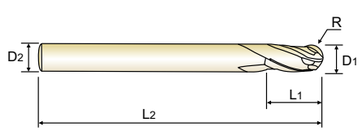
PLAIN SHANK **G8A59** SERIES

## CARBIDE, 3 FLUTE BALL NOSE (Center Match)
## 硬质合金，3刃 球头 (中心对称)

- ▶ Designed to machine high hardened materials.
- ▶ Suitable for dry cutting, high speed cutting thanks to newly developed raw-material and new coating.
- ▶ Excellent workpiece finish.
- ▶ Designed for high precision milling operation.
- ▶ Higher wear-resistance.

- ▶为加工高硬度材料设计
- ▶由于最新开发的原材料和涂层，适用于干式切削，高速切削
- ▶卓越的工件表面粗糙度
- ▶高精密铣削设计
- ▶优异的耐磨性






CARBIDE | 3 | BLUE | 30° | R ±0.005 R1.5~R3 | R ±0.010 R4~R10 | PLAIN

p.C118

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| HYDRAULIC CHUCK SHRINK FIT HOLDER | D15 - 46 | D47 - 72 |
| POWER MILLING CHUCK | D161 - 176 | |
| ER COLLET CHUCK SK SLIM CHUCK | D73 - 115 | D183 - 201 |

Unit(单位) : mm

| EDP No. | Radius of Ball Nose 圆弧角 R | Mill Diameter 直径 $D_1$ | Shank Diameter 柄径 $D_2$ | Length of Cut 刃长 $L_1$ | Overall Length 全长 $L_2$ |
|---|---|---|---|---|---|
| G8A59030 | R1.5 | **3.0** | 6 | 8 | 60 |
| G8A59040 | R2.0 | **4.0** | 6 | 8 | 70 |
| G8A59050 | R2.5 | **5.0** | 6 | 10 | 80 |
| G8A59060 | R3.0 | **6.0** | 6 | 12 | 90 |
| G8A59080 | R4.0 | **8.0** | 8 | 14 | 100 |
| G8A59100 | R5.0 | **10.0** | 10 | 18 | 100 |
| G8A59120 | R6.0 | **12.0** | 12 | 22 | 110 |
| G8A59160 | R8.0 | **16.0** | 16 | 30 | 140 |
| G8A59200 | R10.0 | **20.0** | 20 | 38 | 160 |

Due to the characteristics of the blue decoration layer, it might be erased during short term use and the color layer might not be uniformed. However, it doesn't affect the performance of the tool.
具有装饰性的蓝色涂层在初期使用时有可能会擦掉、该特性使得涂层厚度不均。可是、对刀具的性能没有影响。

| Size 尺寸 | RadiusTolerance (mm) 半径公差 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|---|
| up to R3 R3以下 | ± 0.005 | 0 ~ - 0.012 | h5 |
| over R3 超过R3 | ± 0.010 | 0 ~ - 0.015 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | | | | | ○ | | | ○ | ○ | | ○ | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ◎ | ◎ | ○ | ◎ |



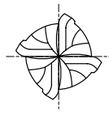
# X5070 END MILLS

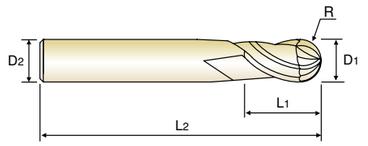
PLAIN SHANK **G8D62** SERIES

## CARBIDE, 4 FLUTE BALL NOSE (Center Match)
## 硬质合金，4刃 球头(中心对称)

- ▶ Applied center match type & special new design on ball center shape.
- ▶ Excellent high wear resistance and high performance.
- ▶ Applied for high speed and feed.
- ▶ Increased the surface roughness.

- ▶采用中心交接式 & 独特设计的形状
- ▶卓越高耐磨性及性能
- ▶适用于高速度和进给
- ▶卓越的工件表面粗糙度






CARBIDE | 4 | BLUE | 30° | R ±0.005 R1.5~R3 | R ±0.010 R4~R10 | PLAIN

p.C119

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| HYDRAULIC CHUCK SHRINK FIT HOLDER | D15 - 46 | D47 - 72 |
| POWER MILLING CHUCK | D161 - 176 | |
| ER COLLET CHUCK SK SLIM CHUCK | D73 - 115 | D183 - 201 |

Unit(单位) : mm

| EDP No. | Radius of Ball Nose 圆弧角 R | Mill Diameter 直径 $D_1$ | Shank Diameter 柄径 $D_2$ | Length of Cut 刃长 $L_1$ | Overall Length 全长 $L_2$ |
|---|---|---|---|---|---|
| G8D62030 | R1.5 | **3.0** | 6 | 8 | 60 |
| G8D62040 | R2.0 | **4.0** | 6 | 8 | 70 |
| G8D62050 | R2.5 | **5.0** | 6 | 10 | 80 |
| G8D62060 | R3.0 | **6.0** | 6 | 12 | 90 |
| G8D62080 | R4.0 | **8.0** | 8 | 14 | 100 |
| G8D62100 | R5.0 | **10.0** | 10 | 18 | 100 |
| G8D62120 | R6.0 | **12.0** | 12 | 22 | 110 |
| G8D62160 | R8.0 | **16.0** | 16 | 30 | 140 |
| G8D62200 | R10.0 | **20.0** | 20 | 38 | 160 |

Due to the characteristics of the blue decoration layer, it might be erased during short term use and the color layer might not be uniformed. However, it doesn't affect the performance of the tool.
具有装饰性的蓝色涂层在初期使用时有可能会擦掉、该特性使得涂层厚度不均。可是、对刀具的性能没有影响。

| Size 尺寸 | RadiusTolerance (mm) 半径公差 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|---|
| up to R3 R3以下 | ± 0.005 | 0 ~ - 0.012 | h5 |
| over R3 超过R3 | ± 0.010 | 0 ~ - 0.015 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | | | | | ○ | | | ○ | ○ | | ○ | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ◎ | ◎ | ○ | ◎ |

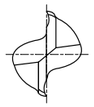
# X5070 END MILLS

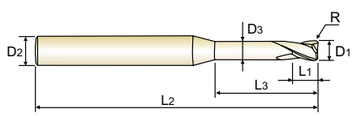
PLAIN SHANK **G8A60** SERIES

## CARBIDE, 2 FLUTE CORNER RADIUS for RIB PROCESSING
## 硬质合金，2刃 圆鼻 深腔加工

- ▶ Designed to machine high hardened materials.
- ▶ Suitable for dry cutting, high speed cutting thanks to newly developed raw-material and new coating.
- ▶ Excellent workpiece finish.
- ▶ Deep slotting is possible by reduced neck.
- ▶ Corner radius for preventing the chipping in high speed machining.
- ▶ Higher wear-resistance.

- ▶为加工高硬度工件设计
- ▶由于新开发的原材料和涂层，适用于，高速切削
- ▶卓越的工件表面粗糙度
- ▶深开槽可以通过减少的颈部设计
- ▶通过减小颈部设计，实现深槽铣加工
- ▶优异的耐磨性






CARBIDE | 2 | BLUE | 30° | R ±0.010 (Ø0.5~Ø6) | R ±0.015 (Ø8~Ø12) | PLAIN

p.C120-121

Recommended ToolHolder


| Plain Shank | Page |
|---|---|
| HYDRAULIC CHUCK SHRINK FIT HOLDER | D15 - 46 D47 - 72 |
| POWER MILLING CHUCK | D161 - 176 |
| ER COLLET CHUCK SK SLIM CHUCK | D73 - 115 D183 - 201 |


Unit(单位) : mm

| EDP No. | Corner Radius 圆弧角 R | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Length Below Shank 颈长 L3 | Overall Length 全长 L2 | Neck Diameter 颈径 D3 |
|---|---|---|---|---|---|---|---|
| G8A60936 | R0.05 | **0.5** | 4 | 0.7 | 1.5 | 45 | 0.45 |
| G8A60932 | R0.05 | **0.5** | 4 | 0.7 | 2.5 | 45 | 0.45 |
| G8A60935 | R0.05 | **0.5** | 4 | 0.7 | 4 | 45 | 0.45 |
| G8A60931 | R0.05 | **0.6** | 4 | 0.9 | 2 | 45 | 0.55 |
| G8A60933 | R0.05 | **0.6** | 4 | 0.9 | 3 | 45 | 0.55 |
| G8A60934 | R0.05 | **0.6** | 4 | 0.9 | 4 | 45 | 0.55 |
| G8A600060102 | R0.1 | **0.6** | 4 | 0.9 | 2 | 45 | 0.55 |
| G8A600070104 | R0.1 | **0.7** | 4 | 1 | 4 | 45 | 0.65 |
| G8A600080102 | R0.1 | **0.8** | 4 | 1.2 | 2 | 45 | 0.75 |
| G8A60008 | R0.1 | **0.8** | 4 | 1.2 | 4 | 45 | 0.75 |
| G8A60924 | R0.1 | **0.8** | 4 | 1.2 | 6 | 45 | 0.75 |
| G8A6092545 | R0.1 | **1.0** | 4 | 1.5 | 4 | 50 | 0.95 |
| G8A6092645 | R0.1 | **1.0** | 4 | 1.5 | 6 | 50 | 0.95 |
| G8A600100204 | R0.2 | **1.0** | 4 | 1.5 | 4 | 50 | 0.95 |
| G8A600100206 | R0.2 | **1.0** | 4 | 1.5 | 6 | 50 | 0.95 |
| G8A6091145 | R0.2 | **1.0** | 4 | 1.5 | 8 | 50 | 0.95 |
| G8A600100304 | R0.3 | **1.0** | 4 | 1.5 | 4 | 50 | 0.95 |
| G8A600100306 | R0.3 | **1.0** | 4 | 1.5 | 6 | 50 | 0.95 |
| G8A60980 | R0.3 | **1.0** | 4 | 1.5 | 8 | 50 | 0.95 |
| G8A60925 | R0.1 | **1.0** | 6 | 1.5 | 4 | 50 | 0.95 |
| G8A60926 | R0.1 | **1.0** | 6 | 1.5 | 6 | 50 | 0.95 |
| G8A60010 | R0.2 | **1.0** | 6 | 1.5 | 4 | 50 | 0.95 |

Due to the characteristics of the blue decoration layer, it might be erased during short term use and the color layer might not be uniformed. However, it doesn't affect the performance of the tool.

▶ NEXT PAGE 下页

具有装饰性的蓝色涂层在初期使用时有可能会擦掉、该特性使得涂层厚度不均。可是、对刀具的性能没有影响。

| Size 尺寸 | Corner Radius Tolerance (mm) 圆弧角精度 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|---|
| up to Ø6 Ø6以下 | ± 0.010 | 0 ~ - 0.012 | h5 |
| over Ø6 超过Ø6 | ± 0.015 | 0 ~ - 0.015 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | | | | | ○ | | | ○ | ○ | | ○ | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ◎ | ◎ | ○ | ◎ |



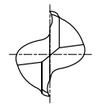
X5070 END MILLS

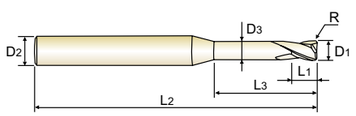
PLAIN SHANK G8A60 SERIES

CARBIDE, 2 FLUTE CORNER RADIUS for RIB PROCESSING
硬质合金，2刃 圆鼻 深腔加工

- ▶ Designed to machine high hardened materials.
- ▶ Suitable for dry cutting, high speed cutting thanks to newly developed raw-material and new coating.
- ▶ Excellent workpiece finish.
- ▶ Deep slotting is possible by reduced neck.
- ▶ Corner radius for preventing the chipping in high speed machining.
- ▶ Higher wear-resistance.

- ▶为加工高硬度工件设计
- ▶由于新开发的原材料和涂层，适用于，高速切削
- ▶卓越的工件表面粗糙度
- ▶深开槽可以通过减少的颈部设计
- ▶通过减小颈部设计，实现深槽铣加工
- ▶优异的耐磨性






CARBIDE | 2 | BLUE | 30° | R ±0.010 (Ø0.5~Ø6) | R ±0.015 (Ø8~Ø12) | PLAIN

p.C120-121

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| HYDRAULIC CHUCK SHRINK FIT HOLDER | D15 - 46 D47 - 72 |
| POWER MILLING CHUCK | D161 - 176 |
| ER COLLET CHUCK SK SLIM CHUCK | D73 - 115 D183 - 201 |

Unit(单位) : mm

| EDP No. | Corner Radius 圆弧角 R | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Length Below Shank 颈长 L3 | Overall Length 全长 L2 | Neck Diameter 颈径 D3 |
|---|---|---|---|---|---|---|---|
| G8A60910 | R0.2 | **1.0** | 6 | 1.5 | 6 | 50 | 0.95 |
| G8A60911 | R0.2 | **1.0** | 6 | 1.5 | 8 | 50 | 0.95 |
| G8A60912 | R0.3 | **1.0** | 6 | 1.5 | 4 | 50 | 0.95 |
| G8A60930 | R0.3 | **1.0** | 6 | 1.5 | 6 | 50 | 0.95 |
| G8A600100308 | R0.3 | **1.0** | 6 | 1.5 | 8 | 50 | 0.95 |
| G8A6001545 | R0.2 | **1.5** | 4 | 2.5 | 4 | 50 | 1.45 |
| G8A6001502064S | R0.2 | **1.5** | 4 | 2.5 | 6 | 50 | 1.45 |
| G8A6001502084S | R0.2 | **1.5** | 4 | 2.5 | 8 | 50 | 1.45 |
| G8A6091345 | R0.2 | **1.5** | 4 | 2.5 | 10 | 50 | 1.45 |
| G8A6091445 | R0.2 | **1.5** | 4 | 2.5 | 12 | 50 | 1.45 |
| G8A6091545 | R0.3 | **1.5** | 4 | 2.5 | 4 | 50 | 1.45 |
| G8A6001503064S | R0.3 | **1.5** | 4 | 2.5 | 6 | 50 | 1.45 |
| G8A6001503084S | R0.3 | **1.5** | 4 | 2.5 | 8 | 50 | 1.45 |
| G8A60015 | R0.2 | **1.5** | 6 | 2.5 | 4 | 50 | 1.45 |
| G8A600150206 | R0.2 | **1.5** | 6 | 2.5 | 6 | 50 | 1.45 |
| G8A600150208 | R0.2 | **1.5** | 6 | 2.5 | 8 | 50 | 1.45 |
| G8A60913 | R0.2 | **1.5** | 6 | 2.5 | 10 | 50 | 1.45 |
| G8A60914 | R0.2 | **1.5** | 6 | 2.5 | 12 | 50 | 1.45 |
| G8A60915 | R0.3 | **1.5** | 6 | 2.5 | 4 | 50 | 1.45 |
| G8A600150306 | R0.3 | **1.5** | 6 | 2.5 | 6 | 50 | 1.45 |
| G8A600150308 | R0.3 | **1.5** | 6 | 2.5 | 8 | 50 | 1.45 |
| G8A6092745 | R0.2 | **2.0** | 4 | 3 | 6 | 50 | 1.95 |

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▶ NEXT PAGE 下页

具有装饰性的蓝色涂层在初期使用时有可能会擦掉、该特性使得涂层厚度不均。可是、对刀具的性能没有影响。

| Size 尺寸 | Corner Radius Tolerance (mm) 圆弧角精度 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|---|
| up to Ø6 Ø6以下 | ± 0.010 | 0 ~ - 0.012 | h5 |
| over Ø6 超过Ø6 | ± 0.015 | 0 ~ - 0.015 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | | | | | ○ | | | ○ | ○ | | ○ | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ◎ | ◎ | ○ | ◎ |

# X5070 END MILLS

PLAIN SHANK **G8A60** SERIES

## CARBIDE, 2 FLUTE CORNER RADIUS for RIB PROCESSING
## 硬质合金，2刃 圆鼻 深腔加工

- ▶ Designed to machine high hardened materials.
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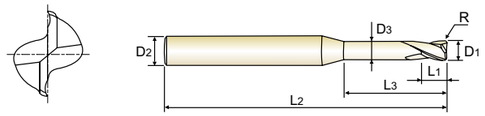
- ▶优异的耐磨性




CARBIDE | 2 | BLUE | 30° | R ±0.010 | R ±0.015 | PLAIN

Ø0.5~Ø6 Ø8~Ø12

p.C120-121

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| HYDRAULIC CHUCK SHRINK FIT HOLDER | D15 - 46 | D47 - 72 |
| POWER MILLING CHUCK | D161 - 176 | |
| ER COLLET CHUCK SK SLIM CHUCK | D73 - 115 | D183 - 201 |

Unit(单位) : mm

| EDP No. | Corner Radius 圆弧角 R | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Length Below Shank 颈长 L3 | Overall Length 全长 L2 | Neck Diameter 颈径 D3 |
|---|---|---|---|---|---|---|---|
| G8A6002002084S | R0.2 | **2.0** | 4 | 3 | 8 | 50 | 1.95 |
| G8A6002002104S | R0.2 | **2.0** | 4 | 3 | 10 | 55 | 1.95 |
| G8A6002002124S | R0.2 | **2.0** | 4 | 3 | 12 | 55 | 1.95 |
| G8A609164S | R0.3 | **2.0** | 4 | 3 | 6 | 50 | 1.95 |
| G8A6002003084S | R0.3 | **2.0** | 4 | 3 | 8 | 50 | 1.95 |
| G8A6002003104S | R0.3 | **2.0** | 4 | 3 | 10 | 55 | 1.95 |
| G8A6002003124S | R0.3 | **2.0** | 4 | 3 | 12 | 55 | 1.95 |
| G8A6002003164S | R0.3 | **2.0** | 4 | 3 | 16 | 55 | 1.95 |
| G8A609174S | R0.5 | **2.0** | 4 | 3 | 6 | 50 | 1.95 |
| G8A600204S | R0.5 | **2.0** | 4 | 3 | 10 | 55 | 1.95 |
| G8A609184S | R0.5 | **2.0** | 4 | 3 | 12 | 55 | 1.95 |
| G8A60927 | R0.2 | **2.0** | 6 | 3 | 6 | 50 | 1.95 |
| G8A600200208 | R0.2 | **2.0** | 6 | 3 | 8 | 50 | 1.95 |
| G8A600200210 | R0.2 | **2.0** | 6 | 3 | 10 | 55 | 1.95 |
| G8A600200212 | R0.2 | **2.0** | 6 | 3 | 12 | 55 | 1.95 |
| G8A60916 | R0.3 | **2.0** | 6 | 3 | 6 | 50 | 1.95 |
| G8A600200308 | R0.3 | **2.0** | 6 | 3 | 8 | 50 | 1.95 |
| G8A600200310 | R0.3 | **2.0** | 6 | 3 | 10 | 55 | 1.95 |
| G8A600200312 | R0.3 | **2.0** | 6 | 3 | 12 | 55 | 1.95 |
| G8A600200316 | R0.3 | **2.0** | 6 | 3 | 16 | 55 | 1.95 |
| G8A60917 | R0.5 | **2.0** | 6 | 3 | 6 | 50 | 1.95 |
| G8A60020 | R0.5 | **2.0** | 6 | 3 | 10 | 55 | 1.95 |

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▶ NEXT PAGE 下页

具有装饰性的蓝色涂层在初期使用时有可能会擦掉、该特性使得涂层厚度不均。可是、对刀具的性能没有影响。

| Size 尺寸 | Corner Radius Tolerance (mm) 圆弧角精度 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|---|
| up to Ø6 Ø6以下 | ± 0.010 | 0 ~ - 0.012 | h5 |
| over Ø6 超过Ø6 | ± 0.015 | 0 ~ - 0.015 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | | | | | ○ | | | ○ | ○ | | ○ | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ◎ | ◎ | ○ | ◎ |



X5070 END MILLS

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CARBIDE | 2 | BLUE | 30° | R ±0.010 | R ±0.015 | PLAIN

Ø0.5~Ø6 Ø8~Ø12

p.C120-121

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| HYDRAULIC CHUCK SHRINK FIT HOLDER | D15 - 46 | D47 - 72 |
| POWER MILLING CHUCK | D161 - 176 | |
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Unit(单位) : mm

| EDP No. | Corner Radius 圆弧角 R | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Length Below Shank 颈长 L3 | Overall Length 全长 L2 | Neck Diameter 颈径 D3 |
|---|---|---|---|---|---|---|---|
| G8A60918 | R0.5 | **2.0** | 6 | 3 | 12 | 55 | 1.95 |
| G8A600300208 | R0.2 | **3.0** | 6 | 4 | 8 | 55 | 2.85 |
| G8A600300210 | R0.2 | **3.0** | 6 | 4 | 10 | 55 | 2.85 |
| G8A600300212 | R0.2 | **3.0** | 6 | 4 | 12 | 55 | 2.85 |
| G8A600300216 | R0.2 | **3.0** | 6 | 4 | 16 | 55 | 2.85 |
| G8A600300308 | R0.3 | **3.0** | 6 | 4 | 8 | 55 | 2.85 |
| G8A60919 | R0.3 | **3.0** | 6 | 4 | 10 | 55 | 2.85 |
| G8A600300312 | R0.3 | **3.0** | 6 | 4 | 12 | 55 | 2.85 |
| G8A600300316 | R0.3 | **3.0** | 6 | 4 | 16 | 55 | 2.85 |
| G8A60030 | R0.5 | **3.0** | 6 | 4 | 10 | 55 | 2.85 |
| G8A600300512 | R0.5 | **3.0** | 6 | 4 | 12 | 55 | 2.85 |
| G8A60901 | R0.5 | **3.0** | 6 | 4 | 16 | 55 | 2.85 |
| G8A60902 | R0.5 | **3.0** | 6 | 4 | 20 | 55 | 2.85 |
| G8A600400212 | R0.2 | **4.0** | 6 | 5 | 12 | 55 | 3.85 |
| G8A600400216 | R0.2 | **4.0** | 6 | 5 | 16 | 55 | 3.85 |
| G8A600400220 | R0.2 | **4.0** | 6 | 5 | 20 | 55 | 3.85 |
| G8A600400310 | R0.3 | **4.0** | 6 | 5 | 10 | 55 | 3.85 |
| G8A60920 | R0.3 | **4.0** | 6 | 5 | 12 | 55 | 3.85 |
| G8A600400316 | R0.3 | **4.0** | 6 | 5 | 16 | 55 | 3.85 |
| G8A600400320 | R0.3 | **4.0** | 6 | 5 | 20 | 55 | 3.85 |
| G8A60040 | R0.5 | **4.0** | 6 | 5 | 12 | 55 | 3.85 |
| G8A60903 | R0.5 | **4.0** | 6 | 5 | 16 | 55 | 3.85 |

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具有装饰性的蓝色涂层在初期使用时有可能会擦掉、该特性使得涂层厚度不均。可是、对刀具的性能没有影响。

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|---|---|---|---|
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| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | | | | | ○ | | | ○ | ○ | | ○ | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ◎ | ◎ | ○ | ◎ |

# X5070 END MILLS

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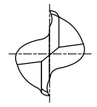
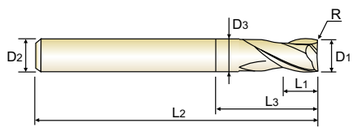
- ▶通过减小颈部设计，实现深槽铣加工
- ▶优异的耐磨性






CARBIDE | 2 | BLUE | 30° | R ±0.010 Ø0.5~Ø6 | R ±0.015 Ø8~Ø12 | PLAIN

p.C120-121

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| HYDRAULIC CHUCK SHRINK FIT HOLDER | D15 - 46 D47 - 72 |
| POWER MILLING CHUCK | D161 - 176 |
| ER COLLET CHUCK SK SLIM CHUCK | D73 - 115 D183 - 201 |

Unit(单位) : mm

| EDP No. | Corner Radius 圆弧角 R | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Length Below Shank 颈长 L3 | Overall Length 全长 L2 | Neck Diameter 颈径 D3 |
|---|---|---|---|---|---|---|---|
| G8A60904 | R0.5 | **4.0** | 6 | 5 | 20 | 55 | 3.85 |
| G8A600401012 | R1.0 | **4.0** | 6 | 5 | 12 | 55 | 3.85 |
| G8A600401016 | R1.0 | **4.0** | 6 | 5 | 16 | 55 | 3.85 |
| G8A60921 | R0.3 | **6.0** | 6 | 7 | 20 | 60 | 5.85 |
| G8A60060 | R0.5 | **6.0** | 6 | 7 | 20 | 60 | 5.85 |
| G8A60905 | R1.0 | **6.0** | 6 | 7 | 20 | 60 | 5.85 |
| G8A60906 | R1.5 | **6.0** | 6 | 7 | 20 | 60 | 5.85 |
| G8A600602020 | R2.0 | **6.0** | 6 | 7 | 20 | 60 | 5.85 |
| G8A60922 | R0.3 | **8.0** | 8 | 9 | 25 | 60 | 7.7 |
| G8A60929 | R0.5 | **8.0** | 8 | 9 | 25 | 60 | 7.7 |
| G8A60080 | R1.0 | **8.0** | 8 | 9 | 25 | 60 | 7.7 |
| G8A60907 | R1.5 | **8.0** | 8 | 9 | 25 | 60 | 7.7 |
| G8A600802025 | R2.0 | **8.0** | 8 | 9 | 25 | 60 | 7.7 |
| G8A60923 | R0.3 | **10.0** | 10 | 11 | 32 | 70 | 9.7 |
| G8A601000532 | R0.5 | **10.0** | 10 | 11 | 32 | 70 | 9.7 |
| G8A60100 | R1.0 | **10.0** | 10 | 11 | 32 | 70 | 9.7 |
| G8A60908 | R1.5 | **10.0** | 10 | 11 | 32 | 70 | 9.7 |
| G8A601002032 | R2.0 | **10.0** | 10 | 11 | 32 | 70 | 9.7 |
| G8A601200538 | R0.5 | **12.0** | 12 | 12 | 38 | 80 | 11.7 |
| G8A60120 | R1.0 | **12.0** | 12 | 12 | 38 | 80 | 11.7 |
| G8A60909 | R1.5 | **12.0** | 12 | 12 | 38 | 80 | 11.7 |
| G8A601202038 | R2.0 | **12.0** | 12 | 12 | 38 | 80 | 11.7 |

Due to the characteristics of the blue decoration layer, it might be erased during short term use and the color layer might not be uniformed. However, it doesn't affect the performance of the tool.
具有装饰性的蓝色涂层在初期使用时有可能会擦掉、该特性使得涂层厚度不均。可是、对刀具的性能没有影响。

| Size 尺寸 | Corner Radius Tolerance (mm) 圆弧角精度 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|---|
| up to Ø6 Ø6以下 | ± 0.010 | 0 ~ - 0.012 | h5 |
| over Ø6 超过Ø6 | ± 0.015 | 0 ~ - 0.015 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | | | | | ○ | | | ○ | ○ | | ○ | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ◎ | ◎ | ○ | ◎ |



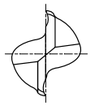
# X5070 END MILLS

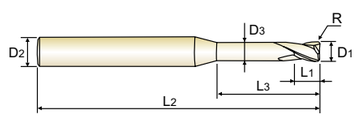
PLAIN SHANK **G8A36** SERIES

## CARBIDE, 2 FLUTE STUB LENGTH CORNER RADIUS with EXTENDED NECK
## 硬质合金，2刃 短刃 颈部加长 圆鼻

- ▶ Designed to machine high hardened materials.
- ▶ Suitable for dry cutting, high speed cutting thanks to newly developed raw-material and new coating.
- ▶ Excellent workpiece finish.
- ▶ Deep slotting is possible by reduced neck.
- ▶ Corner radius for preventing the chipping in high speed machining.
- ▶ Higher wear-resistance.

- ▶为加工高硬度工件设计
- ▶由于新开发的原材料和涂层，适用于，高速切削
- ▶卓越的工件表面粗糙度
- ▶深开槽可以通过减少的颈部设计
- ▶通过减小颈部设计，实现深槽铣加工
- ▶优异的耐磨性






CARBIDE | 2 | BLUE | 30° | R ±0.010 Ø0.3~Ø6 | R ±0.015 Ø8~Ø20 | PLAIN

p.C127-129

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| HYDRAULIC CHUCK SHRINK FIT HOLDER | D15 - 46 D47 - 72 |
| POWER MILLING CHUCK | D161 - 176 |
| ER COLLET CHUCK SK SLIM CHUCK | D73 - 115 D183 - 201 |

Unit(单位) : mm

| EDP No. | Corner Radius 圆弧角 R | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Length Below Shank 颈长 L3 | Overall Length 全长 L2 | Neck Diameter 颈径 D3 |
|---|---|---|---|---|---|---|---|
| G8A36003 | - | **0.3** | 3 | 0.45 | - | 40 | - |
| G8A36004 | - | **0.4** | 3 | 0.6 | - | 40 | - |
| G8A36005 | R0.05 | **0.5** | 3 | 0.7 | - | 40 | - |
| G8A36907 | R0.05 | **0.5** | 4 | 1 | - | 40 | - |
| G8A36006 | R0.05 | **0.6** | 3 | 0.9 | - | 40 | - |
| G8A36908 | R0.05 | **0.6** | 4 | 1.2 | - | 40 | - |
| G8A36909 | R0.05 | **0.7** | 4 | 1.4 | - | 40 | - |
| G8A36008 | R0.05 | **0.8** | 3 | 1.2 | - | 40 | - |
| G8A36910 | R0.05 | **0.8** | 4 | 1.6 | - | 40 | - |
| G8A36911 | R0.05 | **0.9** | 4 | 2 | - | 40 | - |
| G8A36010 | R0.1 | **1.0** | 3 | 1.5 | - | 40 | - |
| G8A36901 | R0.1 | **1.0** | 4 | 1.5 | - | 40 | - |
| G8A36903 | R0.1 | **1.0** | 6 | 1.5 | - | 40 | - |
| G8A36015 | R0.1 | **1.5** | 3 | 2.2 | - | 40 | - |
| G8A36904 | R0.1 | **1.5** | 6 | 2.2 | - | 40 | - |
| G8A36020 | R0.1 | **2.0** | 3 | 3 | 6 | 40 | 1.95 |
| G8A36902 | R0.1 | **2.0** | 4 | 3 | 6 | 40 | 1.95 |
| G8A36905 | R0.1 | **2.0** | 6 | 3 | 6 | 40 | 1.95 |
| G8A36025 | R0.1 | **2.5** | 3 | 4 | 6 | 40 | 2.4 |
| G8A36906 | R0.1 | **2.5** | 6 | 4 | 6 | 40 | 2.4 |
| G8A36030 | R0.1 | **3.0** | 6 | 4 | 7 | 45 | 2.85 |
| G8A36035 | R0.1 | **3.5** | 6 | 5 | 9 | 45 | 3.35 |

Due to the characteristics of the blue decoration layer, it might be erased during short term use and the color layer might not be uniformed. However, it doesn't affect the performance of the tool.
▶ NEXT PAGE 下页
具有装饰性的蓝色涂层在初期使用时有可能会擦掉、该特性使得涂层厚度不均。可是、对刀具的性能没有影响。

| Size 尺寸 | Corner Radius Tolerance (mm) 圆弧角精度 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|---|
| up to Ø6 Ø6以下 | ± 0.010 | 0 ~ - 0.012 | h5 |
| over Ø6 超过Ø6 | ± 0.015 | 0 ~ - 0.015 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | | | | | ○ | | | ○ | ○ | | ○ | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ◎ | ◎ | ○ | ◎ |

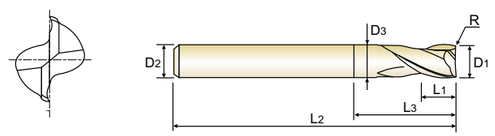
# X5070 END MILLS

PLAIN SHANK **G8A36** SERIES

## CARBIDE, 2 FLUTE STUB LENGTH CORNER RADIUS with EXTENDED NECK
## 硬质合金，2刃 短刃 颈部加长 圆鼻

- ▶ Designed to machine high hardened materials.
- ▶ Suitable for dry cutting, high speed cutting thanks to newly developed raw-material and new coating.
- ▶ Excellent workpiece finish.
- ▶ Deep slotting is possible by reduced neck.
- ▶ Corner radius for preventing the chipping in high speed machining.
- ▶ Higher wear-resistance.

- ▶为加工高硬度工件设计
- ▶由于新开发的原材料和涂层，适用于，高速切削
- ▶卓越的工件表面粗糙度
- ▶深开槽可以通过减少的颈部设计
- ▶通过减小颈部设计，实现深槽铣加工
- ▶优异的耐磨性




CARBIDE | 2 | BLUE | 30° | R ±0.010 (Ø0.3~Ø6) | R ±0.015 (Ø8~Ø20) | PLAIN

p.C127-129

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| HYDRAULIC CHUCK SHRINK FIT HOLDER | | D15 - 46 D47 - 72 |
| POWER MILLING CHUCK | | D161 - 176 |
| ER COLLET CHUCK SK SLIM CHUCK | | D73 - 115 D183 - 201 |

Unit(单位) : mm

| EDP No. | Corner Radius 圆弧角 R | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Length Below Shank 颈长 L3 | Overall Length 全长 L2 | Neck Diameter 颈径 D3 |
|---|---|---|---|---|---|---|---|
| G8A36040 | R0.1 | **4.0** | 6 | 5 | 9 | 45 | 3.85 |
| G8A36045 | R0.1 | **4.5** | 6 | 6 | 10 | 45 | 4.35 |
| G8A36050 | R0.2 | **5.0** | 6 | 6 | 11 | 50 | 4.85 |
| G8A36060 | R0.2 | **6.0** | 6 | 7 | 14 | 50 | 5.85 |
| G8A36080 | R0.2 | **8.0** | 8 | 9 | 18 | 60 | 7.7 |
| G8A36100 | R0.2 | **10.0** | 10 | 12 | 25 | 75 | 9.7 |
| G8A36120 | R0.3 | **12.0** | 12 | 15 | 30 | 75 | 11.7 |
| G8A36160 | R0.3 | **16.0** | 16 | 18 | 38 | 90 | 15.7 |
| G8A36200 | R0.3 | **20.0** | 20 | 24 | 45 | 100 | 19.7 |

Due to the characteristics of the blue decoration layer, it might be erased during short term use and the color layer might not be uniformed. However, it doesn't affect the performance of the tool.
具有装饰性的蓝色涂层在初期使用时有可能会擦掉、该特性使得涂层厚度不均。可是、对刀具的性能没有影响。

| Size 尺寸 | Corner Radius Tolerance (mm) 圆弧角精度 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|---|
| up to Ø6 Ø6以下 | ± 0.010 | 0 ~ - 0.012 | h5 |
| over Ø6 超过Ø6 | ± 0.015 | 0 ~ - 0.015 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | | | | | ○ | | | ○ | ○ | | ○ | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ◎ | ◎ | ○ | ◎ |



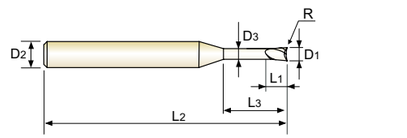
# X5070 END MILLS

PLAIN SHANK **G8A52** SERIES

## CARBIDE, 2 FLUTE CORNER RADIUS for RIB PROCESSING
## 硬质合金，2刃 圆鼻 深腔加工

- ▶ Designed to machine high hardened materials.
- ▶ Suitable for dry cutting, high speed cutting thanks to newly developed raw-material and new coating.
- ▶ Excellent workpiece finish.
- ▶ Deep slotting is possible by reduced neck.
- ▶ Corner radius for preventing the chipping in high speed machining.
- ▶ Higher wear-resistance.

- ▶为加工高硬度工件设计
- ▶由于新开发的原材料和涂层，适用于，高速切削
- ▶卓越的工件表面粗糙度
- ▶深开槽可以通过减少的颈部设计
- ▶通过减小颈部设计，实现深槽铣加工
- ▶优异的耐磨性




CARBIDE | 2 | BLUE | 30° | R ±0.010 | PLAIN

p.C122

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| HYDRAULIC CHUCK SHRINK FIT HOLDER | | D15 - 46 D47 - 72 |
| POWER MILLING CHUCK | | D161 - 176 |
| ER COLLET CHUCK SK SLIM CHUCK | | D73 - 115 D183 - 201 |

Unit(单位) : mm

| EDP No. | Corner Radius 圆弧角 R (±0.010) | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Length Below Shank 颈长 L3 | Overall Length 全长 L2 | Neck Diameter 颈径 D3 |
|---|---|---|---|---|---|---|---|
| G8A52005 | R0.05 | **0.5** | 6 | 0.7 | 1.5 | 50 | 0.45 |
| G8A52901 | R0.05 | **0.5** | 6 | 0.7 | 3.3 | 50 | 0.45 |
| G8A52006 | R0.05 | **0.6** | 6 | 0.9 | 2 | 50 | 0.55 |
| G8A52902 | R0.05 | **0.6** | 6 | 0.9 | 4 | 50 | 0.55 |
| G8A52008 | R0.05 | **0.8** | 6 | 1.2 | 2.5 | 50 | 0.75 |
| G8A52903 | R0.05 | **0.8** | 6 | 1.2 | 5.5 | 50 | 0.75 |
| G8A52010 | R0.10 | **1.0** | 6 | 1.5 | 3.3 | 50 | 0.95 |
| G8A52904 | R0.10 | **1.0** | 6 | 1.5 | 6.7 | 50 | 0.95 |
| G8A52012 | R0.10 | **1.2** | 6 | 1.8 | 4.4 | 50 | 1.15 |
| G8A52905 | R0.10 | **1.2** | 6 | 1.8 | 8 | 50 | 1.15 |
| G8A52015 | R0.15 | **1.5** | 6 | 2.2 | 5 | 50 | 1.45 |
| G8A52906 | R0.15 | **1.5** | 6 | 2.2 | 9.7 | 50 | 1.45 |
| G8A52020 | R0.15 | **2.0** | 6 | 2.2 | 6 | 50 | 1.95 |
| G8A52907 | R0.15 | **2.0** | 6 | 2.2 | 13 | 50 | 1.95 |

Due to the characteristics of the blue decoration layer, it might be erased during short term use and the color layer might not be uniformed. However, it doesn't affect the performance of the tool.
具有装饰性的蓝色涂层在初期使用时有可能会擦掉、该特性使得涂层厚度不均。可是、对刀具的性能没有影响。

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.012 | h5 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | | | | | ○ | | | ○ | ○ | | ○ | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ◎ | ◎ | ○ | ◎ |

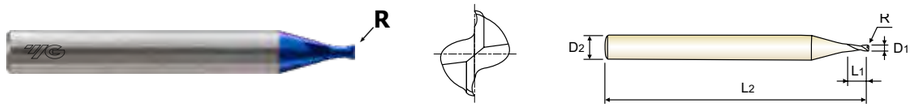
# X5070 END MILLS

PLAIN SHANK **G8A50** SERIES

## CARBIDE, 2 FLUTE MINIATURE CORNER RADIUS
## 硬质合金，2刃 微型 圆鼻

- ▶ Designed to machine high hardened materials.
- ▶ Suitable for dry cutting, high speed cutting thanks to newly developed raw-material and new coating.
- ▶ Excellent workpiece finish.
- ▶ Deep slotting is possible by reduced neck.
- ▶ Corner radius for preventing the chipping in high speed machining.
- ▶ Higher wear-resistance.

- ▶为加工高硬度工件设计
- ▶由于新开发的原材料和涂层，适用于，高速切削
- ▶卓越的工件表面粗糙度
- ▶深开槽可以通过减少的颈部设计
- ▶通过减小颈部设计，实现深槽铣加工
- ▶优异的耐磨性




CARBIDE | 2 | BLUE | 30° | R ±0.010 | PLAIN

p.C123

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| HYDRAULIC CHUCK SHRINK FIT HOLDER | D15 - 46 D47 - 72 |
| POWER MILLING CHUCK | D161 - 176 |
| ER COLLET CHUCK SK SLIM CHUCK | D73 - 115 D183 - 201 |

Unit(单位) : mm

| EDP No. | Corner Radius 圆弧角 R | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Overall Length 全长 L2 |
|---|---|---|---|---|---|
| G8A50003 | - | 0.3 | 6 | 0.45 | 50 |
| G8A50004 | - | 0.4 | 6 | 0.6 | 50 |
| G8A50005 | R0.05 | 0.5 | 6 | 0.7 | 50 |
| G8A50006 | R0.05 | 0.6 | 6 | 0.9 | 50 |
| G8A50008 | R0.05 | 0.8 | 6 | 1.2 | 50 |
| G8A50010 | R0.10 | 1.0 | 6 | 1.5 | 50 |
| G8A50012 | R0.10 | 1.2 | 6 | 1.8 | 50 |
| G8A50015 | R0.15 | 1.5 | 6 | 2.2 | 50 |
| G8A50020 | R0.15 | 2.0 | 6 | 2.2 | 50 |

Due to the characteristics of the blue decoration layer, it might be erased during short term use and the color layer might not be uniformed. However, it doesn't affect the performance of the tool.
具有装饰性的蓝色涂层在初期使用时有可能会擦掉、该特性使得涂层厚度不均。可是、对刀具的性能没有影响。

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.012 | h5 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | | | | | ○ | | | ○ | ○ | | ○ | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ◎ | ◎ | ○ | ◎ |



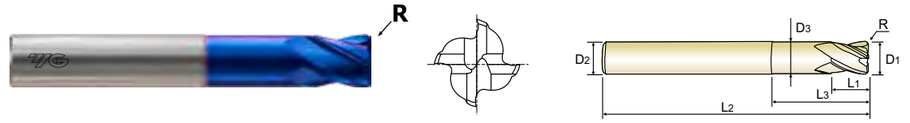
# X5070 END MILLS

PLAIN SHANK **G8A47** SERIES

## CARBIDE, 4 FLUTE CORNER RADIUS with EXTENDED NECK
## 硬质合金，4刃 颈部加长 圆鼻

- ▶ Designed to machine high hardened materials.
- ▶ Suitable for dry cutting, high speed cutting thanks to newly developed raw-material and new coating.
- ▶ Excellent workpiece finish.
- ▶ Deep slotting is possible by reduced neck.
- ▶ Corner radius for preventing the chipping in high speed machining.
- ▶ Higher wear-resistance.

- ▶为加工高硬度工件设计
- ▶由于新开发的原材料和涂层，适用于，高速切削
- ▶卓越的工件表面粗糙度
- ▶深开槽可以通过减少的颈部设计
- ▶通过减小颈部设计，实现深槽铣加工
- ▶优异的耐磨性




CARBIDE | 4 | BLUE | 30° | R ±0.010 Ø3~Ø6 | R ±0.015 Ø8~Ø12 | PLAIN

p.C124

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| HYDRAULIC CHUCK SHRINK FIT HOLDER | D15 - 46 D47 - 72 |
| POWER MILLING CHUCK | D161 - 176 |
| ER COLLET CHUCK SK SLIM CHUCK | D73 - 115 D183 - 201 |

Unit(单位) : mm

| EDP No. | Corner Radius 圆弧角 R | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Length Below Shank 颈长 L3 | Overall Length 全长 L2 | Neck Diameter 颈径 D3 |
|---|---|---|---|---|---|---|---|
| G8A47916 | R0.3 | 3.0 | 6 | 4 | 12 | 55 | 2.85 |
| G8A47917 | R0.3 | 3.0 | 6 | 4 | 16 | 55 | 2.85 |
| G8A47918 | R0.3 | 3.0 | 6 | 4 | 20 | 55 | 2.85 |
| G8A47030 | R0.5 | 3.0 | 6 | 4 | 10 | 55 | 2.85 |
| G8A47901 | R0.5 | 3.0 | 6 | 4 | 16 | 55 | 2.85 |
| G8A47902 | R0.5 | 3.0 | 6 | 4 | 20 | 55 | 2.85 |
| G8A47919 | R0.3 | 4.0 | 6 | 5 | 12 | 55 | 3.85 |
| G8A47920 | R0.3 | 4.0 | 6 | 5 | 16 | 55 | 3.85 |
| G8A47921 | R0.3 | 4.0 | 6 | 5 | 20 | 55 | 3.85 |
| G8A47040 | R0.5 | 4.0 | 6 | 5 | 12 | 55 | 3.85 |
| G8A47903 | R0.5 | 4.0 | 6 | 5 | 16 | 55 | 3.85 |
| G8A47904 | R0.5 | 4.0 | 6 | 5 | 20 | 55 | 3.85 |
| G8A47922 | R1.0 | 4.0 | 6 | 5 | 12 | 55 | 3.85 |
| G8A47060 | R0.5 | 6.0 | 6 | 7 | 20 | 60 | 5.85 |
| G8A47905 | R1.0 | 6.0 | 6 | 7 | 20 | 60 | 5.85 |
| G8A47906 | R1.5 | 6.0 | 6 | 7 | 20 | 60 | 5.85 |
| G8A47910 | R0.5 | 8.0 | 8 | 9 | 25 | 60 | 7.7 |
| G8A47080 | R1.0 | 8.0 | 8 | 9 | 25 | 60 | 7.7 |
| G8A47907 | R1.5 | 8.0 | 8 | 9 | 25 | 60 | 7.7 |
| G8A47913 | R2.0 | 8.0 | 8 | 9 | 25 | 60 | 7.7 |
| G8A47911 | R0.5 | 10.0 | 10 | 11 | 32 | 70 | 9.7 |
| G8A47100 | R1.0 | 10.0 | 10 | 11 | 32 | 70 | 9.7 |
| G8A47908 | R1.5 | 10.0 | 10 | 11 | 32 | 70 | 9.7 |
| G8A47914 | R2.0 | 10.0 | 10 | 11 | 32 | 70 | 9.7 |
| G8A47912 | R0.5 | 12.0 | 12 | 12 | 38 | 80 | 11.7 |
| G8A47120 | R1.0 | 12.0 | 12 | 12 | 38 | 80 | 11.7 |
| G8A47909 | R1.5 | 12.0 | 12 | 12 | 38 | 80 | 11.7 |
| G8A47915 | R2.0 | 12.0 | 12 | 12 | 38 | 80 | 11.7 |

Due to the characteristics of the blue decoration layer, it might be erased during short term use and the color layer might not be uniformed. However, it doesn't affect the performance of the tool.
具有装饰性的蓝色涂层在初期使用时有可能会擦掉、该特性使得涂层厚度不均。可是、对刀具的性能没有影响。

| Size 尺寸 | Corner Radius Tolerance (mm) 圆弧角精度 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|---|
| up to Ø6 Ø6以下 | ± 0.010 | 0 ~ - 0.012 | h5 |
| over Ø6 超过Ø6 | ± 0.015 | 0 ~ - 0.015 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | | | | | ○ | | | ○ | ○ | | ○ | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ◎ | ◎ | ○ | ◎ |

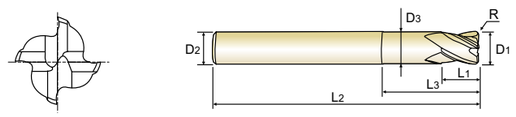
# X5070 END MILLS

PLAIN SHANK **G8A37** SERIES

## CARBIDE, 4 FLUTE STUB LENGTH CORNER RADIUS with EXTENDED NECK
## 硬质合金，4刃 颈部加长 短刃 圆鼻

- ▶ Designed to machine high hardened materials.
- ▶ Suitable for dry cutting, high speed cutting thanks to newly developed raw-material and new coating.
- ▶ Excellent workpiece finish.
- ▶ Deep slotting is possible by reduced neck.
- ▶ Corner radius for preventing the chipping in high speed machining.
- ▶ Higher wear-resistance.

- ▶为加工高硬度材料设计
- ▶由于最新开发的原材料和涂层，适用于，高速切削
- ▶卓越的工件表面粗糙度
- ▶由于颈部稍细可以加工深槽
- ▶圆弧可防止高速切削的崩刃
- ▶优异的耐磨性




CARBIDE | 4 | BLUE | 30° | R ±0.010 | R ±0.015 | PLAIN

Ø1~Ø6 Ø8~Ø20

p.C130

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| HYDRAULIC CHUCK SHRINK FIT HOLDER | D15 - 46 D47 - 72 |
| POWER MILLING CHUCK | D161 - 176 |
| ER COLLET CHUCK SK SLIM CHUCK | D73 - 115 D183 - 201 |

Unit(单位) : mm

| EDP No. | Corner Radius 圆弧角 R | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Length Below Shank 颈长 L3 | Overall Length 全长 L2 | Neck Diameter 颈径 D3 |
|---|---|---|---|---|---|---|---|
| G8A37010 | R0.1 | 1.0 | 3 | 1.5 | - | 40 | - |
| G8A37901 | R0.1 | 1.0 | 6 | 1.5 | - | 40 | - |
| G8A37015 | R0.1 | 1.5 | 3 | 2.2 | - | 40 | - |
| G8A37902 | R0.1 | 1.5 | 6 | 2.2 | - | 40 | - |
| G8A37020 | R0.1 | 2.0 | 3 | 3 | 6 | 40 | 1.95 |
| G8A37903 | R0.1 | 2.0 | 6 | 3 | 6 | 40 | 1.95 |
| G8A37025 | R0.1 | 2.5 | 3 | 4 | 6 | 40 | 2.4 |
| G8A37904 | R0.1 | 2.5 | 6 | 4 | 6 | 40 | 2.4 |
| G8A37030 | R0.1 | 3.0 | 6 | 4 | 7 | 45 | 2.85 |
| G8A37035 | R0.1 | 3.5 | 6 | 5 | 9 | 45 | 3.35 |
| G8A37040 | R0.1 | 4.0 | 6 | 5 | 9 | 45 | 3.85 |
| G8A37045 | R0.1 | 4.5 | 6 | 6 | 10 | 45 | 4.35 |
| G8A37050 | R0.2 | 5.0 | 6 | 6 | 11 | 50 | 4.85 |
| G8A37060 | R0.2 | 6.0 | 6 | 7 | 14 | 50 | 5.85 |
| G8A37080 | R0.2 | 8.0 | 8 | 9 | 18 | 60 | 7.7 |
| G8A37100 | R0.2 | 10.0 | 10 | 12 | 25 | 75 | 9.7 |
| G8A37120 | R0.3 | 12.0 | 12 | 15 | 30 | 75 | 11.7 |
| G8A37160 | R0.3 | 16.0 | 16 | 18 | 38 | 90 | 15.7 |
| G8A37200 | R0.3 | 20.0 | 20 | 24 | 45 | 100 | 19.7 |

Due to the characteristics of the blue decoration layer, it might be erased during short term use and the color layer might not be uniformed. However, it doesn't affect the performance of the tool.
具有装饰性的蓝色涂层在初期使用时有可能会擦掉、该特性使得涂层厚度不均。可是、对刀具的性能没有影响。

| Size 尺寸 | Corner Radius Tolerance (mm) 圆弧角精度 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|---|
| up to Ø6 Ø6以下 | ± 0.010 | 0 ~ - 0.012 | h5 |
| over Ø6 超过Ø6 | ± 0.015 | 0 ~ - 0.015 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | | | | | ○ | | | ○ | ○ | | ○ | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ◎ | ◎ | ○ | ◎ |





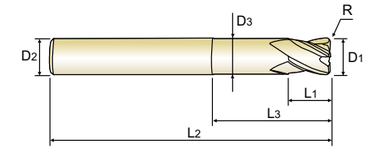
# X5070 END MILLS

PLAIN SHANK **G8B08** SERIES

## CARBIDE, 4 FLUTE CORNER RADIUS with EXTENDED NECK
## 硬质合金，4刃 颈部加长 圆鼻

- ▶ Designed to machine high hardened materials.
- ▶ Suitable for dry cutting, high speed cutting thanks to newly developed raw-material and new coating.
- ▶ Excellent workpiece finish.
- ▶ Deep slotting is possible by reduced neck.
- ▶ Corner radius for preventing the chipping in high speed machining.
- ▶ Higher wear-resistance.

- ▶为加工高硬度工件设计
- ▶由于新开发的原材料和涂层，适用于，高速切削
- ▶卓越的工件表面粗糙度
- ▶深开槽可以通过减少的颈部设计
- ▶通过减小颈部设计，实现深槽铣加工
- ▶优异的耐磨性




CARBIDE | 4 | BLUE | 30° | R ±0.010 | R ±0.015 | PLAIN

Ø6 Ø8~Ø12

p.C124

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| HYDRAULIC CHUCK SHRINK FIT HOLDER | D15 - 46 D47 - 72 |
| POWER MILLING CHUCK | D161 - 176 |
| ER COLLET CHUCK SK SLIM CHUCK | D73 - 115 D183 - 201 |

Unit(单位) : mm

| EDP No. | Corner Radius 圆弧角 R | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Length Below Shank 颈长 L3 | Overall Length 全长 L2 | Neck Diameter 颈径 D3 |
|---|---|---|---|---|---|---|---|
| G8B0806005090 | R0.5 | 6.0 | 6 | 9 | 20 | 90 | 5.85 |
| G8B0806010090 | R1.0 | 6.0 | 6 | 9 | 20 | 90 | 5.85 |
| G8B0808005100 | R0.5 | 8.0 | 8 | 12 | 25 | 100 | 7.7 |
| G8B0808010100 | R1.0 | 8.0 | 8 | 12 | 25 | 100 | 7.7 |
| G8B0810005100 | R0.5 | 10.0 | 10 | 15 | 32 | 100 | 9.7 |
| G8B0810010100 | R1.0 | 10.0 | 10 | 15 | 32 | 100 | 9.7 |
| G8B0810020100 | R2.0 | 10.0 | 10 | 15 | 32 | 100 | 9.7 |
| G8B0812005110 | R0.5 | 12.0 | 12 | 18 | 38 | 110 | 11.7 |
| G8B0812010110 | R1.0 | 12.0 | 12 | 18 | 38 | 110 | 11.7 |
| G8B0812020110 | R2.0 | 12.0 | 12 | 18 | 38 | 110 | 11.7 |

Due to the characteristics of the blue decoration layer, it might be erased during short term use and the color layer might not be uniformed. However, it doesn't affect the performance of the tool.
具有装饰性的蓝色涂层在初期使用时有可能会擦掉、该特性使得涂层厚度不均。可是、对刀具的性能没有影响。

| Size 尺寸 | Corner Radius Tolerance (mm) 圆弧角精度 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|---|
| up to Ø6 Ø6以下 | ± 0.010 | 0 ~ - 0.012 | h5 |
| over Ø6 超过Ø6 | ± 0.015 | 0 ~ - 0.015 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | | | | | ○ | | | ○ | ○ | | ○ | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ◎ | ◎ | ○ | ◎ |

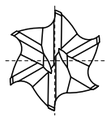
# X5070 END MILLS

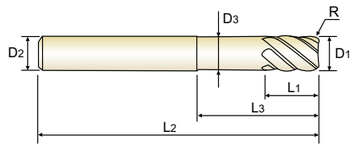
PLAIN SHANK **G8A39** SERIES

## CARBIDE, 6 FLUTE 45° HELIX CORNER RADIUS with EXTENDED NECK
## 硬质合金，6刃 45° 螺旋角 颈部加长 圆鼻

- ▶ Designed to machine high hardened materials.
- ▶ Suitable for dry cutting, high speed cutting thanks to newly developed raw-material and new coating.
- ▶ Excellent workpiece finish.
- ▶ Deep slotting is possible by reduced neck.
- ▶ Corner radius for preventing the chipping in high speed machining.
- ▶ Higher wear-resistance.

- ▶为加工高硬度材料设计
- ▶由于最新开发的原材料和涂层，适用于，高速切削
- ▶卓越的工件表面粗糙度
- ▶由于颈部稍细可以加工深槽
- ▶圆弧可防止高速切削的崩刃
- ▶优异的耐磨性






CARBIDE | 6 | BLUE | 45° | R ±0.010 Ø6 | R ±0.015 Ø8~Ø20 | PLAIN

p.C131

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| HYDRAULIC CHUCK SHRINK FIT HOLDER | | D15 - 46 D47 - 72 |
| POWER MILLING CHUCK | | D161 - 176 |
| ER COLLET CHUCK SK SLIM CHUCK | | D73 - 115 D183 - 201 |

Unit(单位) : mm

| EDP No. | Corner Radius 圆弧角 R | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Length Below Shank 颈长 L3 | Overall Length 全长 L2 | Neck Diameter 颈径 D3 |
|---|---|---|---|---|---|---|---|
| G8A39916 | R0.25 | **6.0** | 6 | 6 | 14 | 50 | 5.85 |
| G8A39060 | R0.5 | **6.0** | 6 | 6 | 14 | 50 | 5.85 |
| G8A39901 | R0.5 | **6.0** | 6 | 13 | - | 70 | - |
| * G8A39910 | R0.5 | **6.0** | 6 | 26 | - | 70 | - |
| G8A39080 | R0.5 | **8.0** | 8 | 8 | 24 | 60 | 7.7 |
| G8A39902 | R0.5 | **8.0** | 8 | 19 | - | 90 | - |
| * G8A39911 | R0.5 | **8.0** | 8 | 36 | - | 90 | - |
| G8A39903 | R0.5 | **10.0** | 10 | 22 | - | 100 | - |
| G8A39100 | R1.0 | **10.0** | 10 | 10 | 30 | 70 | 9.7 |
| G8A39904 | R1.0 | **10.0** | 10 | 22 | - | 100 | - |
| * G8A39912 | R1.0 | **10.0** | 10 | 46 | - | 100 | - |
| G8A39905 | R0.5 | **12.0** | 12 | 26 | - | 110 | - |
| G8A39120 | R1.0 | **12.0** | 12 | 12 | 30 | 75 | 11.7 |
| G8A39906 | R1.0 | **12.0** | 12 | 26 | - | 110 | - |
| * G8A39913 | R1.0 | **12.0** | 12 | 56 | - | 110 | - |
| G8A39160 | R1.0 | **16.0** | 16 | 32 | - | 130 | - |
| G8A39907 | R1.5 | **16.0** | 16 | 32 | - | 130 | - |
| * G8A39914 | R1.5 | **16.0** | 16 | 66 | - | 130 | - |
| G8A39200 | R1.0 | **20.0** | 20 | 38 | - | 140 | - |
| G8A39908 | R1.5 | **20.0** | 20 | 38 | - | 140 | - |
| G8A39909 | R2.0 | **20.0** | 20 | 38 | - | 140 | - |
| * G8A39915 | R2.0 | **20.0** | 20 | 76 | - | 140 | - |

Due to the characteristics of the blue decoration layer, it might be erased during short term use and the color layer might not be uniformed. However, it doesn't affect the performance of the tool.
具有装饰性的蓝色涂层在初期使用时有可能会擦掉、该特性使得涂层厚度不均。可是、对刀具的性能没有影响。

| Size 尺寸 | Corner Radius Tolerance (mm) 圆弧角精度 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|---|
| up to Ø6 Ø6以下 | ± 0.010 | 0 ~ - 0.012 | h5 |
| over Ø6 超过Ø6 | ± 0.015 | 0 ~ - 0.015 | |

* Mill Dia. Tolerance(mm) for Extra Long Type : 0~-0.03 * 超长铣刀直径精度为 : 0~-0.03

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | | | | | ○ | | | ○ | ○ | | ○ | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ◎ | ◎ | ○ | ◎ |



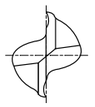
# X5070 END MILLS

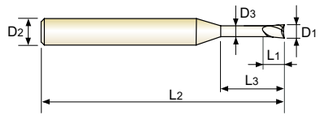
PLAIN SHANK **G8A45** SERIES

## CARBIDE, 2 FLUTE for RIB PROCESSING
## 硬质合金，2刃 深腔加工

- ▶ Designed to machine high hardened materials.
- ▶ Suitable for dry cutting, high speed cutting thanks to newly developed raw-material and new coating.
- ▶ Excellent workpiece finish.
- ▶ Designed for high precision milling operation.
- ▶ Higher wear-resistance.

- ▶为加工高硬度材料设计
- ▶由于最新开发的原材料和涂层，适用于，高速切削
- ▶卓越的工件表面粗糙度
- ▶由于颈部稍细可以加工深槽
- ▶圆弧可防止高速切削的崩刃
- ▶优异的耐磨性






CARBIDE | 2 | BLUE | 30° | PLAIN

p.C125~126

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| HYDRAULIC CHUCK SHRINK FIT HOLDER | | D15 - 46 D47 - 72 |
| POWER MILLING CHUCK | | D161 - 176 |
| ER COLLET CHUCK SK SLIM CHUCK | | D73 - 115 D183 - 201 |

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Length Below Shank 颈长 L3 | Overall Length 全长 L2 | Neck Diameter 颈径 D3 |
|---|---|---|---|---|---|---|
| G8A45863 | **0.1** | 4 | 0.15 | 0.3 | 45 | 0.085 |
| G8A45864 | **0.1** | 4 | 0.15 | 0.5 | 45 | 0.085 |
| G8A45002 | **0.2** | 4 | 0.3 | 0.5 | 45 | 0.17 |
| G8A45815 | **0.2** | 4 | 0.3 | 1 | 45 | 0.17 |
| G8A45816 | **0.2** | 4 | 0.3 | 1.5 | 45 | 0.17 |
| G8A45003 | **0.3** | 4 | 0.45 | 1 | 45 | 0.27 |
| G8A45844 | **0.3** | 4 | 0.45 | 1.5 | 45 | 0.27 |
| G8A45817 | **0.3** | 4 | 0.45 | 2 | 45 | 0.27 |
| G8A45818 | **0.3** | 4 | 0.45 | 3 | 45 | 0.27 |
| G8A45842 | **0.3** | 4 | 0.45 | 4 | 45 | 0.27 |
| G8A45843 | **0.4** | 4 | 0.6 | 1 | 45 | 0.37 |
| G8A45004 | **0.4** | 4 | 0.6 | 2 | 45 | 0.37 |
| G8A45984 | **0.4** | 4 | 0.6 | 3 | 45 | 0.37 |
| G8A45985 | **0.4** | 4 | 0.6 | 4 | 45 | 0.37 |
| G8A45986 | **0.4** | 4 | 0.6 | 5 | 45 | 0.37 |
| G8A45005 | **0.5** | 4 | 0.7 | 2 | 45 | 0.45 |
| G8A45861 | **0.5** | 4 | 0.7 | 2.5 | 45 | 0.45 |
| G8A45988 | **0.5** | 4 | 0.7 | 4 | 45 | 0.45 |
| G8A45989 | **0.5** | 4 | 0.7 | 6 | 45 | 0.45 |
| G8A45990 | **0.5** | 4 | 0.7 | 8 | 45 | 0.45 |
| G8A45006 | **0.6** | 4 | 0.9 | 2 | 45 | 0.55 |
| G8A45860 | **0.6** | 4 | 0.9 | 3 | 45 | 0.55 |

Due to the characteristics of the blue decoration layer, it might be erased during short term use and the color layer might not be uniformed. However, it doesn't affect the performance of the tool.
具有装饰性的蓝色涂层在初期使用时有可能会擦掉、该特性使得涂层厚度不均。可是、对刀具的性能没有影响。

▶ NEXT PAGE 下页

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.012 | h5 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | | | | | | | | ○ | | | ○ | | | ○ | ○ | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ◎ | ◎ | ○ | ◎ |

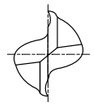
# X5070 END MILLS

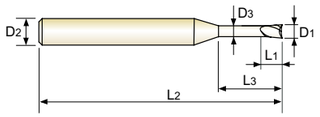
PLAIN SHANK **G8A45 SERIES**

## CARBIDE, 2 FLUTE for RIB PROCESSING
## 硬质合金，2刃 深腔加工

- ▶ Designed to machine high hardened materials.
- ▶ Suitable for dry cutting, high speed cutting thanks to newly developed raw-material and new coating.
- ▶ Excellent workpiece finish.
- ▶ Designed for high precision milling operation.
- ▶ Higher wear-resistance.

- ▶为加工高硬度材料设计
- ▶由于最新开发的原材料和涂层，适用于，高速切削
- ▶卓越的工件表面粗糙度
- ▶由于颈部稍细可以加工深槽
- ▶圆弧可防止高速切削的崩刃
- ▶优异的耐磨性






CARBIDE | 2 | BLUE | 30° | PLAIN

p.C125~126

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| HYDRAULIC CHUCK SHRINK FIT HOLDER | D15 - 46 D47 - 72 |
| POWER MILLING CHUCK | D161 - 176 |
| ER COLLET CHUCK SK SLIM CHUCK | D73 - 115 D183 - 201 |

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Length Below Shank 颈长 L3 | Overall Length 全长 L2 | Neck Diameter 颈径 D3 |
|---|---|---|---|---|---|---|
| G8A45991 | 0.6 | 4 | 0.9 | 4 | 45 | 0.55 |
| G8A45992 | 0.6 | 4 | 0.9 | 6 | 45 | 0.55 |
| G8A45993 | 0.6 | 4 | 0.9 | 8 | 45 | 0.55 |
| G8A45819 | 0.6 | 4 | 0.9 | 10 | 45 | 0.55 |
| G8A45862 | 0.8 | 4 | 1.2 | 2 | 45 | 0.75 |
| G8A45008 | 0.8 | 4 | 1.2 | 4 | 45 | 0.75 |
| G8A45908 | 0.8 | 4 | 1.2 | 6 | 45 | 0.75 |
| G8A45909 | 0.8 | 4 | 1.2 | 8 | 45 | 0.75 |
| G8A45994 | 0.8 | 4 | 1.2 | 10 | 45 | 0.75 |
| G8A45995 | 0.8 | 4 | 1.2 | 12 | 45 | 0.75 |
| G8A45996 | 1.0 | 4 | 1.5 | 4 | 45 | 0.95 |
| G8A45010 | 1.0 | 4 | 1.5 | 6 | 45 | 0.95 |
| G8A45912 | 1.0 | 4 | 1.5 | 8 | 45 | 0.95 |
| G8A45913 | 1.0 | 4 | 1.5 | 10 | 45 | 0.95 |
| G8A45914 | 1.0 | 4 | 1.5 | 12 | 45 | 0.95 |
| G8A45997 | 1.0 | 4 | 1.5 | 16 | 50 | 0.95 |
| G8A45998 | 1.0 | 4 | 1.5 | 20 | 55 | 0.95 |
| G8A45012 | 1.2 | 4 | 1.8 | 6 | 45 | 1.15 |
| G8A45915 | 1.2 | 4 | 1.8 | 8 | 45 | 1.15 |
| G8A45916 | 1.2 | 4 | 1.8 | 10 | 45 | 1.15 |
| G8A45917 | 1.2 | 4 | 1.8 | 12 | 45 | 1.15 |
| G8A45999 | 1.2 | 4 | 1.8 | 16 | 50 | 1.15 |

Due to the characteristics of the blue decoration layer, it might be erased during short term use and the color layer might not be uniformed. However, it doesn't affect the performance of the tool.
具有装饰性的蓝色涂层在初期使用时有可能会擦掉、该特性使得涂层厚度不均。可是、对刀具的性能没有影响。

▶ NEXT PAGE 下页

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.012 | h5 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | | | | | ○ | | | ○ | ○ | | ○ | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ◎ | ◎ | ○ | ◎ |



X5070 END MILLS
PLAIN SHANK G8A45 SERIES
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▶ Designed to machine high hardened materials.
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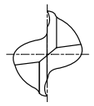
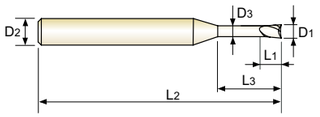





CARBIDE | 2 | BLUE | 30° | PLAIN

p.C125~126

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| HYDRAULIC CHUCK SHRINK FIT HOLDER | D15 - 46 D47 - 72 |
| POWER MILLING CHUCK | D161 - 176 |
| ER COLLET CHUCK SK SLIM CHUCK | D73 - 115 D183 - 201 |

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Length Below Shank 颈长 L3 | Overall Length 全长 L2 | Neck Diameter 颈径 D3 |
|---|---|---|---|---|---|---|
| G8A45015 | 1.5 | 4 | 2.3 | 6 | 45 | 1.45 |
| G8A45923 | 1.5 | 4 | 2.3 | 8 | 45 | 1.45 |
| G8A45924 | 1.5 | 4 | 2.3 | 10 | 45 | 1.45 |
| G8A45925 | 1.5 | 4 | 2.3 | 12 | 45 | 1.45 |
| G8A45926 | 1.5 | 4 | 2.3 | 14 | 50 | 1.45 |
| G8A45927 | 1.5 | 4 | 2.3 | 16 | 50 | 1.45 |
| G8A45928 | 1.5 | 4 | 2.3 | 18 | 55 | 1.45 |
| G8A45810 | 1.5 | 4 | 2.3 | 20 | 55 | 1.45 |
| G8A45958 | 2.0 | 4 | 3.0 | 6 | 45 | 1.95 |
| G8A45020 | 2.0 | 4 | 3.0 | 8 | 45 | 1.95 |
| G8A45959 | 2.0 | 4 | 3.0 | 10 | 45 | 1.95 |
| G8A45960 | 2.0 | 4 | 3.0 | 12 | 45 | 1.95 |
| G8A45961 | 2.0 | 4 | 3.0 | 14 | 50 | 1.95 |
| G8A45962 | 2.0 | 4 | 3.0 | 16 | 50 | 1.95 |
| G8A45963 | 2.0 | 4 | 3.0 | 18 | 55 | 1.95 |
| G8A45964 | 2.0 | 4 | 3.0 | 20 | 55 | 1.95 |
| G8A45966 | 2.0 | 4 | 3.0 | 25 | 60 | 1.95 |
| G8A45814 | 2.0 | 4 | 3.0 | 30 | 70 | 1.95 |
| G8A45975 | 3.0 | 6 | 4.5 | 10 | 45 | 2.85 |
| G8A45976 | 3.0 | 6 | 4.5 | 12 | 45 | 2.85 |
| G8A45977 | 3.0 | 6 | 4.5 | 14 | 50 | 2.85 |
| G8A45978 | 3.0 | 6 | 4.5 | 16 | 55 | 2.85 |

Due to the characteristics of the blue decoration layer, it might be erased during short term use and the color layer might not be uniformed. However, it doesn't affect the performance of the tool.
具有装饰性的蓝色涂层在初期使用时有可能会擦掉、该特性使得涂层厚度不均。可是、对刀具的性能没有影响。

▶ NEXT PAGE 下页

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.012 | h5 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | | | | | ○ | | | ○ | ○ | | ○ | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ◎ | ◎ | ○ | ◎ |

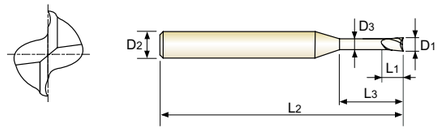
# X5070 END MILLS

PLAIN SHANK **G8A45** SERIES

## CARBIDE, 2 FLUTE for RIB PROCESSING
## 硬质合金，2刃 深腔加工

- ▶ Designed to machine high hardened materials.
- ▶ Suitable for dry cutting, high speed cutting thanks to newly developed raw-material and new coating.
- ▶ Excellent workpiece finish.
- ▶ Designed for high precision milling operation.
- ▶ Higher wear-resistance.

- ▶为加工高硬度材料设计
- ▶由于最新开发的原材料和涂层，适用于，高速切削
- ▶卓越的工件表面粗糙度
- ▶由于颈部稍细可以加工深槽
- ▶圆弧可防止高速切削的崩刃
- ▶优异的耐磨性




CARBIDE | 2 | BLUE | 30° | PLAIN

p.C125~126

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| HYDRAULIC CHUCK SHRINK FIT HOLDER | D15 - 46 D47 - 72 |
| POWER MILLING CHUCK | D161 - 176 |
| ER COLLET CHUCK SK SLIM CHUCK | D73 - 115 D183 - 201 |

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Length Below Shank 颈长 L3 | Overall Length 全长 L2 | Neck Diameter 颈径 D3 |
|---|---|---|---|---|---|---|
| G8A45979 | 3.0 | 6 | 4.5 | 18 | 55 | 2.85 |
| G8A45980 | 3.0 | 6 | 4.5 | 20 | 60 | 2.85 |
| G8A45981 | 3.0 | 6 | 4.5 | 25 | 65 | 2.85 |
| G8A45832 | 3.0 | 6 | 4.5 | 30 | 70 | 2.85 |
| G8A45833 | 3.0 | 6 | 4.5 | 35 | 80 | 2.85 |
| G8A45983 | 3.0 | 6 | 4.5 | 40 | 90 | 2.85 |
| G8A45040 | 4.0 | 6 | 6 | 12 | 50 | 3.85 |
| G8A45801 | 4.0 | 6 | 6 | 16 | 60 | 3.85 |
| G8A45802 | 4.0 | 6 | 6 | 20 | 60 | 3.85 |
| G8A45803 | 4.0 | 6 | 6 | 25 | 70 | 3.85 |
| G8A45834 | 4.0 | 6 | 6 | 30 | 70 | 3.85 |
| G8A45835 | 4.0 | 6 | 6 | 35 | 80 | 3.85 |
| G8A45836 | 4.0 | 6 | 6 | 40 | 90 | 3.85 |
| G8A45837 | 4.0 | 6 | 6 | 45 | 90 | 3.85 |
| G8A45838 | 4.0 | 6 | 6 | 50 | 100 | 3.85 |

Due to the characteristics of the blue decoration layer, it might be erased during short term use and the color layer might not be uniformed. However, it doesn't affect the performance of the tool.
具有装饰性的蓝色涂层在初期使用时有可能会擦掉、该特性使得涂层厚度不均。可是、对刀具的性能没有影响。

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.012 | h5 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | | | | | ○ | | | ○ | ○ | | ○ | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ◎ | ◎ | ○ | ◎ |



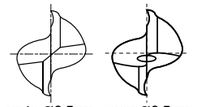
# X5070 END MILLS

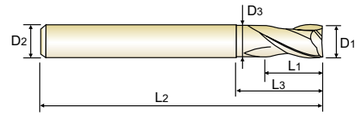
PLAIN SHANK **G8A01** SERIES

## CARBIDE, 2 FLUTE with EXTENDED NECK
## 硬质合金，2刃 颈部加长

- ▶ Designed to machine high hardened materials.
- ▶ Suitable for dry cutting, high speed cutting thanks to newly developed raw-material and new coating.
- ▶ Excellent workpiece finish.
- ▶ Designed for high precision milling operation.
- ▶ Higher wear-resistance.

- ▶为加工高硬度材料设计
- ▶由于最新开发的原材料和涂层，适用于，高速切削
- ▶卓越的工件表面粗糙度
- ▶由于颈部稍细可以加工深槽
- ▶圆弧可防止高速切削的崩刃
- ▶优异的耐磨性




CARBIDE | 2 | BLUE | 30° | PLAIN

p.C127-129

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| HYDRAULIC CHUCK SHRINK FIT HOLDER | D15 - 46 D47 - 72 |
| POWER MILLING CHUCK | D161 - 176 |
| ER COLLET CHUCK SK SLIM CHUCK | D73 - 115 D183 - 201 |

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Length Below Shank 颈长 L3 | Overall Length 全长 L2 | Neck Diameter 颈径 D3 |
|---|---|---|---|---|---|---|
| G8A01001 | 0.1 | 4 | 0.2 | - | 40 | - |
| G8A01002 | 0.2 | 4 | 0.4 | - | 40 | - |
| G8A01003 | 0.3 | 4 | 0.6 | - | 40 | - |
| G8A01004 | 0.4 | 4 | 0.8 | - | 40 | - |
| G8A01005 | 0.5 | 4 | 1 | - | 40 | - |
| G8A01006 | 0.6 | 4 | 1.2 | - | 40 | - |
| G8A01007 | 0.7 | 4 | 1.4 | - | 40 | - |
| G8A01008 | 0.8 | 4 | 1.6 | - | 40 | - |
| G8A01009 | 0.9 | 4 | 2 | - | 40 | - |
| G8A010104S | 1.0 | 4 | 1.5 | 3 | 50 | 0.95 |
| G8A01010 | 1.0 | 6 | 1.5 | 3 | 50 | 0.95 |
| G8A010154S | 1.5 | 4 | 1.7 | 4 | 50 | 1.45 |
| G8A01015 | 1.5 | 6 | 1.7 | 4 | 50 | 1.45 |
| G8A010204S | 2.0 | 4 | 2 | 5 | 50 | 1.95 |
| G8A01020 | 2.0 | 6 | 2 | 5 | 50 | 1.95 |
| G8A010254S | 2.5 | 4 | 2.5 | 6 | 55 | 2.4 |
| G8A01025 | 2.5 | 6 | 2.5 | 6 | 55 | 2.4 |
| G8A01030 | 3.0 | 6 | 3 | 8 | 55 | 2.85 |
| G8A01035 | 3.5 | 6 | 3.5 | 9 | 55 | 3.35 |
| G8A01040 | 4.0 | 6 | 4 | 10 | 55 | 3.85 |
| G8A01050 | 5.0 | 6 | 5 | 13 | 55 | 4.85 |
| G8A01060 | 6.0 | 6 | 6 | 15 | 55 | 5.85 |
| G8A01080 | 8.0 | 8 | 8 | 20 | 65 | 7.7 |
| G8A01100 | 10.0 | 10 | 10 | 25 | 75 | 9.7 |
| G8A01120 | 12.0 | 12 | 12 | 28 | 85 | 11.7 |
| G8A01160 | 16.0 | 16 | 16 | 32 | 90 | 15.7 |
| G8A01200 | 20.0 | 20 | 20 | 40 | 105 | 19.7 |

Due to the characteristics of the blue decoration layer, it might be erased during short term use and the color layer might not be uniformed. However, it doesn't affect the performance of the tool.
具有装饰性的蓝色涂层在初期使用时有可能会擦掉、该特性使得涂层厚度不均。可是、对刀具的性能没有影响。

| Size 尺寸 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|
| up to Ø6 Ø6以下 | 0 ~ - 0.012 | h5 |
| over Ø6 超过Ø6 | 0 ~ - 0.015 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | | | | | ○ | | | ○ | ○ | | ○ | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ◎ | ◎ | ○ | ◎ |

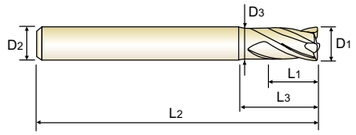
# X5070 END MILLS

PLAIN SHANK **G8A02 SERIES**

## CARBIDE, 4 FLUTE with EXTENDED NECK
## 硬质合金，4刃 颈部加长

- ▶ Designed to machine high hardened materials.
- ▶ Suitable for dry cutting, high speed cutting thanks to newly developed raw-material and new coating.
- ▶ Excellent workpiece finish.
- ▶ Designed for high precision milling operation.
- ▶ Higher wear-resistance.

- ▶为加工高硬度材料设计
- ▶由于最新开发的原材料和涂层，适用于，高速切削
- ▶卓越的工件表面粗糙度
- ▶由于颈部稍细可以加工深槽
- ▶圆弧可防止高速切削的崩刃
- ▶优异的耐磨性




CARBIDE | 4 | BLUE | 30° | PLAIN

p.C130

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| HYDRAULIC CHUCK SHRINK FIT HOLDER | | D15 - 46 D47 - 72 |
| POWER MILLING CHUCK | | D161 - 176 |
| ER COLLET CHUCK SK SLIM CHUCK | | D73 - 115 D183 - 201 |

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Length Below Shank 颈长 L3 | Overall Length 全长 L2 | Neck Diameter 颈径 D3 |
|---|---|---|---|---|---|---|
| G8A02010 | 1.0 | 6 | 1.5 | 3 | 50 | 0.95 |
| G8A02020 | 2.0 | 6 | 2 | 5 | 50 | 1.95 |
| G8A02030 | 3.0 | 6 | 3 | 8 | 55 | 2.85 |
| G8A02040 | 4.0 | 6 | 4 | 10 | 55 | 3.85 |
| G8A02050 | 5.0 | 6 | 5 | 13 | 55 | 4.85 |
| G8A02060 | 6.0 | 6 | 6 | 15 | 55 | 5.85 |
| G8A02080 | 8.0 | 8 | 8 | 20 | 65 | 7.7 |
| G8A02100 | 10.0 | 10 | 10 | 25 | 75 | 9.7 |
| G8A02120 | 12.0 | 12 | 12 | 28 | 85 | 11.7 |
| G8A02160 | 16.0 | 16 | 16 | 32 | 90 | 15.7 |
| G8A02200 | 20.0 | 20 | 20 | 40 | 105 | 19.7 |

Due to the characteristics of the blue decoration layer, it might be erased during short term use and the color layer might not be uniformed. However, it doesn't affect the performance of the tool.
具有装饰性的蓝色涂层在初期使用时有可能会擦掉、该特性使得涂层厚度不均。可是、对刀具的性能没有影响。

| Size 尺寸 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|
| up to Ø6 Ø6以下 | 0 ~ - 0.012 | h5 |
| over Ø6 超过Ø6 | 0 ~ - 0.015 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | | | | | ○ | | | ○ | ○ | | ○ | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ◎ | ◎ | ○ | ◎ |



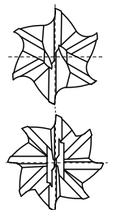
# X5070 END MILLS

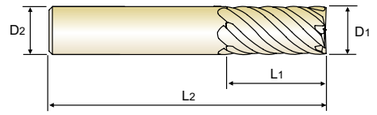
PLAIN SHANK **G8D63 SERIES**

## CARBIDE, 6&8 FLUTE 45° HELIX LONG LENGTH
## 硬质合金，6&8刃 45° 螺旋角 长刃

- ▶ Designed to machine high hardened materials.
- ▶ Designed for high abrasion resistance thanks to negative rake angle.
- ▶ Excellent side-cutting of press mold field.

- ▶为加工高硬度钢而设计
- ▶由于负前角的设计具有高耐磨性
- ▶在冲床模具领域有着极好的侧铣功能






CARBIDE | 6&8 | BLUE | 45° | PLAIN

p.C132

Recommended ToolHolder

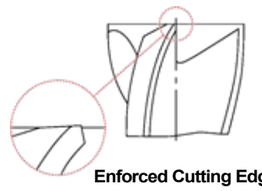
| | Plain Shank | Page |
|---|---|---|
| HYDRAULIC CHUCK SHRINK FIT HOLDER | | D15 - 46 D47 - 72 |
| POWER MILLING CHUCK | | D161 - 176 |
| ER COLLET CHUCK SK SLIM CHUCK | | D73 - 115 D183 - 201 |

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Overall Length 全长 L2 | No. of Flute 刃数 |
|---|---|---|---|---|---|
| G8D63060 | 6.0 | 6 | 13 | 57 | 6 |
| G8D63080 | 8.0 | 8 | 19 | 63 | 6 |
| G8D63100 | 10.0 | 10 | 22 | 72 | 6 |
| G8D63120 | 12.0 | 12 | 26 | 83 | 6 |
| G8D63140 | 14.0 | 14 | 26 | 83 | 6 |
| G8D63160 | 16.0 | 16 | 32 | 92 | 6 |
| G8D63180 | 18.0 | 18 | 32 | 92 | 8 |
| G8D63200 | 20.0 | 20 | 38 | 104 | 8 |
| G8D63250 | 25.0 | 25 | 44 | 104 | 8 |

Due to the characteristics of the blue decoration layer, it might be erased during short term use and the color layer might not be uniformed. However, it doesn't affect the performance of the tool.
具有装饰性的蓝色涂层在初期使用时有可能会擦掉、该特性使得涂层厚度不均。可是、对刀具的性能没有影响。

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.02 | h5 |



Enforced Cutting Edge

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | | | | | ○ | | | ○ | ○ | | ○ | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ◎ | ◎ | ○ | ◎ |

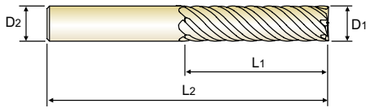
# X5070 END MILLS

PLAIN SHANK **G8D64 SERIES**

## CARBIDE, 6&8 FLUTE 45° HELIX EXTRA LONG LENGTH
## 硬质合金，6&8刃 45° 螺旋角 长刃

- ▶ Designed to machine high hardened materials.
- ▶ Designed for high abrasion resistance thanks to negative rake angle.
- ▶ Excellent side-cutting of press mold field.

- ▶为加工高硬度钢而设计
- ▶由于负前角的设计具有高耐磨性
- ▶在冲床模具领域有着极好的侧铣功能




CARBIDE | 6&8 | BLUE | 45° | PLAIN

p.C133

Recommended ToolHolder

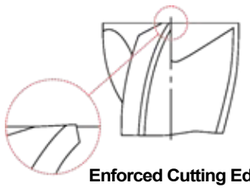
| Plain Shank | Page |
|---|---|
| HYDRAULIC CHUCK / SHRINK FIT HOLDER | D15 - 46 / D47 - 72 |
| POWER MILLING CHUCK | D161 - 176 |
| ER COLLET CHUCK / SK SLIM CHUCK | D73 - 115 / D183 - 201 |

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Overall Length 全长 L2 | No. of Flute 刃数 |
|---|---|---|---|---|---|
| G8D64060 | 6.0 | 6 | 26 | 70 | 6 |
| G8D64080 | 8.0 | 8 | 36 | 90 | 6 |
| G8D64100 | 10.0 | 10 | 46 | 100 | 6 |
| G8D64120 | 12.0 | 12 | 56 | 110 | 6 |
| G8D64160 | 16.0 | 16 | 66 | 130 | 6 |
| G8D64200 | 20.0 | 20 | 76 | 140 | 8 |
| G8D64250 | 25.0 | 25 | 92 | 180 | 8 |

Due to the characteristics of the blue decoration layer, it might be erased during short term use and the color layer might not be uniformed. However, it doesn't affect the performance of the tool.
具有装饰性的蓝色涂层在初期使用时有可能会擦掉、该特性使得涂层厚度不均。可是、对刀具的性能没有影响。

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.03 | h5 |



**Enforced Cutting Edge**

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | | | | | ○ | | | ○ | ○ | | ○ | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ◎ | ◎ | ○ | ◎ |



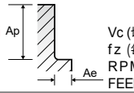


# X5070 END MILLS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

**G8B59, G8B54 SERIES**

**4 FLUTE CORNER RADIUS - SIDE CUTTING**
**4刃 圆鼻 - 侧铣削**




Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

### HIGH SPEED 高速度

| ISO | VDI 3323 | Material Description | Ae | Ap | Parameter | Diameter (Ø) 2.0 | 3.0 | 4.0 | 5.0 | 6.0 | 8.0 | 10.0 | 12.0 | 16.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 5 | Non-alloy steel | 0.3D | 0.1R | Vc | 180 | 205 | 215 | 235 | 255 | 250 | 250 | 250 | 250 |
| | | | | | fz | 0.129 | 0.182 | 0.257 | 0.3 | 0.343 | 0.463 | 0.578 | 0.701 | 0.925 |
| | | | | | RPM | 28648 | 21751 | 17109 | 14961 | 13528 | 9947 | 7958 | 6631 | 4974 |
| | | | | | FEED | 14782 | 15835 | 17588 | 17953 | 18561 | 18422 | 18398 | 18595 | 18402 |
| | 8-9 | Low alloy steel | 0.3D | 0.1R | Vc | 180 | 205 | 215 | 235 | 255 | 250 | 250 | 250 | 250 |
| | | | | | fz | 0.129 | 0.182 | 0.257 | 0.3 | 0.343 | 0.463 | 0.578 | 0.701 | 0.925 |
| | | | | | RPM | 28648 | 21751 | 17109 | 14961 | 13528 | 9947 | 7958 | 6631 | 4974 |
| | | | | | FEED | 14782 | 15835 | 17588 | 17953 | 18561 | 18422 | 18398 | 18595 | 18402 |
| | 11.1 | High alloyed steel, and tool steel | 0.3D | 0.1R | Vc | 180 | 205 | 215 | 235 | 255 | 250 | 250 | 250 | 250 |
| | | | | | fz | 0.129 | 0.182 | 0.257 | 0.3 | 0.343 | 0.463 | 0.578 | 0.701 | 0.925 |
| | | | | | RPM | 28648 | 21751 | 17109 | 14961 | 13528 | 9947 | 7958 | 6631 | 4974 |
| | | | | | FEED | 14782 | 15835 | 17588 | 17953 | 18561 | 18422 | 18398 | 18595 | 18402 |
| | 11.2 | | 0.3D | 0.1R | Vc | 140 | 160 | 165 | 175 | 200 | 200 | 200 | 200 | 195 |
| | | | | | fz | 0.111 | 0.147 | 0.231 | 0.284 | 0.329 | 0.438 | 0.547 | 0.66 | 0.897 |
| | | | | | RPM | 22282 | 16977 | 13130 | 11141 | 10610 | 7958 | 6366 | 5305 | 3879 |
| | | | | | FEED | 9893 | 9982 | 12132 | 12656 | 13963 | 13942 | 13929 | 14006 | 13919 |
| H | 38.1 | Hardened steel | 0.3D | 0.1R | Vc | 140 | 160 | 165 | 175 | 200 | 200 | 200 | 200 | 195 |
| | | | | | fz | 0.111 | 0.147 | 0.231 | 0.284 | 0.329 | 0.438 | 0.547 | 0.66 | 0.897 |
| | | | | | RPM | 22282 | 16977 | 13130 | 11141 | 10610 | 7958 | 6366 | 5305 | 3879 |
| | | | | | FEED | 9893 | 9982 | 12132 | 12656 | 13963 | 13942 | 13929 | 14006 | 13919 |
| | 38.2 | | 0.3D | 0.1R | Vc | 95 | 200 | 140 | 155 | 170 | 170 | 170 | 170 | 165 |
| | | | | | fz | 0.131 | 0.16 | 0.209 | 0.25 | 0.306 | 0.404 | 0.509 | 0.611 | 0.833 |
| | | | | | RPM | 15120 | 21221 | 11141 | 9868 | 9019 | 6764 | 5411 | 4509 | 3283 |
| | | | | | FEED | 7923 | 13581 | 9314 | 9868 | 11039 | 10931 | 11017 | 11021 | 10938 |
| | 39.1 | | 0.3D | 0.05R | Vc | 70 | 90 | 100 | 110 | 120 | 120 | 120 | 120 | 120 |
| | | | | | fz | 0.101 | 0.121 | 0.172 | 0.214 | 0.25 | 0.349 | 0.447 | 0.547 | 0.729 |
| | | | | | RPM | 11141 | 9549 | 7958 | 7003 | 6366 | 4775 | 3820 | 3183 | 2387 |
| | | | | | FEED | 4501 | 4622 | 5475 | 5994 | 6366 | 6665 | 6830 | 6965 | 6961 |
| | 39.2 | | 0.3D | 0.05R | Vc | 55 | 65 | 70 | 75 | 85 | 85 | 85 | 85 | 85 |
| | | | | | fz | 0.07 | 0.091 | 0.129 | 0.158 | 0.2 | 0.301 | 0.352 | 0.4 | 0.5 |
| | | | | | RPM | 8754 | 6897 | 5570 | 4775 | 4509 | 3382 | 2706 | 2255 | 1691 |
| | | | | | FEED | 2451 | 2510 | 2874 | 3018 | 3608 | 4072 | 3810 | 3608 | 3382 |
| | 40 | Chilled Cast Iron | 0.3D | 0.1R | Vc | 140 | 160 | 165 | 175 | 200 | 200 | 200 | 200 | 195 |
| | | | | | fz | 0.111 | 0.147 | 0.231 | 0.284 | 0.329 | 0.438 | 0.547 | 0.66 | 0.897 |
| | | | | | RPM | 22282 | 16977 | 13130 | 11141 | 10610 | 7958 | 6366 | 5305 | 3879 |
| | | | | | FEED | 9893 | 9982 | 12132 | 12656 | 13963 | 13942 | 13929 | 14006 | 13919 |
| | 41 | Hardened Cast Iron | 0.3D | 0.1R | Vc | 95 | 200 | 140 | 155 | 170 | 170 | 170 | 170 | 165 |
| | | | | | fz | 0.131 | 0.16 | 0.209 | 0.25 | 0.306 | 0.404 | 0.509 | 0.611 | 0.833 |
| | | | | | RPM | 15120 | 21221 | 11141 | 9868 | 9019 | 6764 | 5411 | 4509 | 3283 |
| | | | | | FEED | 7923 | 13581 | 9314 | 9868 | 11039 | 10931 | 11017 | 11021 | 10938 |

### NORMAL SPEED 普通速度

| ISO | VDI 3323 | Material Description | Ae | Ap | Parameter | Diameter (Ø) 2.0 | 3.0 | 4.0 | 5.0 | 6.0 | 8.0 | 10.0 | 12.0 | 16.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 5 | Non-alloy steel | 0.5D | 0.2R | Vc | 85 | 90 | 100 | 100 | 110 | 110 | 110 | 110 | 110 |
| | | | | | fz | 0.12 | 0.17 | 0.22 | 0.281 | 0.33 | 0.44 | 0.546 | 0.659 | 0.869 |
| | | | | | RPM | 13528 | 9549 | 7958 | 6366 | 5836 | 4377 | 3501 | 2918 | 2188 |
| | | | | | FEED | 6494 | 6494 | 7003 | 7156 | 7703 | 7703 | 7647 | 7691 | 7607 |
| | 8-9 | Low alloy steel | 0.5D | 0.2R | Vc | 85 | 90 | 100 | 100 | 110 | 110 | 110 | 110 | 110 |
| | | | | | fz | 0.12 | 0.17 | 0.22 | 0.281 | 0.33 | 0.44 | 0.546 | 0.659 | 0.869 |
| | | | | | RPM | 13528 | 9549 | 7958 | 6366 | 5836 | 4377 | 3501 | 2918 | 2188 |
| | | | | | FEED | 6494 | 6494 | 7003 | 7156 | 7703 | 7703 | 7647 | 7691 | 7607 |
| | 11.1 | High alloyed steel, and tool steel | 0.5D | 0.2R | Vc | 85 | 90 | 100 | 100 | 110 | 110 | 110 | 110 | 110 |
| | | | | | fz | 0.12 | 0.17 | 0.22 | 0.281 | 0.33 | 0.44 | 0.546 | 0.659 | 0.869 |
| | | | | | RPM | 13528 | 9549 | 7958 | 6366 | 5836 | 4377 | 3501 | 2918 | 2188 |
| | | | | | FEED | 6494 | 6494 | 7003 | 7156 | 7703 | 7703 | 7647 | 7691 | 7607 |
| | 11.2 | | 0.5D | 0.2R | Vc | 60 | 65 | 70 | 75 | 75 | 75 | 75 | 75 | 80 |
| | | | | | fz | 0.099 | 0.15 | 0.2 | 0.25 | 0.299 | 0.402 | 0.5 | 0.598 | 0.79 |
| | | | | | RPM | 9549 | 6897 | 5570 | 4775 | 3979 | 2984 | 2387 | 1989 | 1592 |
| | | | | | FEED | 3782 | 4138 | 4456 | 4775 | 4759 | 4799 | 4775 | 4759 | 5029 |
| H | 38.1 | Hardened steel | 0.5D | 0.2R | Vc | 60 | 65 | 70 | 75 | 75 | 75 | 75 | 75 | 80 |
| | | | | | fz | 0.099 | 0.15 | 0.2 | 0.25 | 0.299 | 0.402 | 0.5 | 0.598 | 0.79 |
| | | | | | RPM | 9549 | 6897 | 5570 | 4775 | 3979 | 2984 | 2387 | 1989 | 1592 |
| | | | | | FEED | 3782 | 4138 | 4456 | 4775 | 4759 | 4799 | 4775 | 4759 | 5029 |
| | 38.2 | | 0.5D | 0.2R | Vc | 35 | 45 | 50 | 55 | 55 | 55 | 55 | 55 | 55 |
| | | | | | fz | 0.1 | 0.151 | 0.2 | 0.235 | 0.302 | 0.398 | 0.5 | 0.603 | 0.795 |
| | | | | | RPM | 5570 | 4775 | 3979 | 3501 | 2918 | 2188 | 1751 | 1459 | 1094 |
| | | | | | FEED | 2228 | 2884 | 3183 | 3291 | 3525 | 3484 | 3501 | 3519 | 3480 |
| | 39.1 | | 0.5D | 0.1R | Vc | 20 | 25 | 30 | 35 | 35 | 35 | 35 | 35 | 35 |
| | | | | | fz | 0.078 | 0.101 | 0.132 | 0.182 | 0.25 | 0.33 | 0.42 | 0.5 | 0.661 |
| | | | | | RPM | 3183 | 2653 | 2387 | 2228 | 1857 | 1393 | 1114 | 928 | 696 |
| | | | | | FEED | 993 | 1072 | 1261 | 1622 | 1857 | 1838 | 1872 | 1857 | 1841 |
| | 39.2 | | 0.5D | 0.1R | Vc | 15 | 20 | 20 | 25 | 25 | 25 | 25 | 25 | 25 |
| | | | | | fz | 0.063 | 0.08 | 0.1 | 0.117 | 0.147 | 0.2 | 0.25 | 0.299 | 0.398 |
| | | | | | RPM | 2387 | 2122 | 1592 | 1592 | 1326 | 995 | 796 | 663 | 497 |
| | | | | | FEED | 602 | 679 | 637 | 745 | 780 | 796 | 796 | 793 | 792 |
| | 40 | Chilled Cast Iron | 0.5D | 0.2R | Vc | 60 | 65 | 70 | 75 | 75 | 75 | 75 | 75 | 80 |
| | | | | | fz | 0.099 | 0.15 | 0.2 | 0.25 | 0.299 | 0.402 | 0.5 | 0.598 | 0.79 |
| | | | | | RPM | 9549 | 6897 | 5570 | 4775 | 3979 | 2984 | 2387 | 1989 | 1592 |
| | | | | | FEED | 3782 | 4138 | 4456 | 4775 | 4759 | 4799 | 4775 | 4759 | 5029 |
| | 41 | Hardened Cast Iron | 0.5D | 0.2R | Vc | 35 | 45 | 50 | 55 | 55 | 55 | 55 | 55 | 55 |
| | | | | | fz | 0.1 | 0.151 | 0.2 | 0.235 | 0.302 | 0.398 | 0.5 | 0.603 | 0.795 |
| | | | | | RPM | 5570 | 4775 | 3979 | 3501 | 2918 | 2188 | 1751 | 1459 | 1094 |
| | | | | | FEED | 2228 | 2884 | 3183 | 3291 | 3525 | 3484 | 3501 | 3519 | 3480 |

# X5070 END MILLS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

### G8A46, G8A54 SERIES

**2 FLUTE BALL NOSE - RIB PROCESSING**
**2刃 球头 - 深腔加工**

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)
Ap (切削深度) = (mm)

| ISO | VDI 3323 | Material Description | Parameter | Diameter (Ø) 0.2 | 0.3 | 0.4 | 0.5 | 0.6 |
|---|---|---|---|---|---|---|---|---|
| P | 5 | Non-alloy steel | Vc | 31 | 45~47 | 60~63 | 50~55 | 50~56 |
| | | | fz | 0.003~0.004 | 0.005~0.005 | 0.007~0.008 | 0.006~0.013 | 0.007~0.015 |
| | | | RPM | 50000 | 48000~50000 | 48000~50000 | 31900~35200 | 26400~29700 |
| | | | FEED | 265~310 | 440~460 | 450~550 | 450~540 | 440~540 |
| | | | Ap | 0.006~0.016 | 0.010~0.017 | 0.013~0.032 | 0.007~0.028 | 0.007~0.034 |
| | 8-9 | Low alloy steel | Vc | 31 | 45~47 | 60~63 | 54~78 | 54~77 |
| | | | fz | 0.003~0.004 | 0.005~0.005 | 0.007~0.008 | 0.006~0.013 | 0.007~0.015 |
| | | | RPM | 50000 | 48000~50000 | 48000~50000 | 34100~49500 | 28600~40700 |
| | | | FEED | 300~350 | 480~520 | 720~790 | 600~870 | 590~850 |
| | | | Ap | 0.006~0.016 | 0.010~0.017 | 0.013~0.032 | 0.007~0.028 | 0.007~0.034 |
| | 11.1 - 11.2 | High alloyed steel, and tool steel | Vc | 31 | 45~47 | 60~63 | 54~78 | 54~77 |
| | | | fz | 0.003~0.004 | 0.005~0.005 | 0.007~0.008 | 0.006~0.013 | 0.007~0.015 |
| | | | RPM | 50000 | 48000~50000 | 48000~50000 | 34100~49500 | 28600~40700 |
| | | | FEED | 300~350 | 480~520 | 720~790 | 600~870 | 590~850 |
| | | | Ap | 0.006~0.016 | 0.010~0.017 | 0.013~0.032 | 0.007~0.028 | 0.007~0.034 |
| H | 38.1 38.2 | Hardened steel | Vc | 31 | 45~47 | 60~63 | 50~55 | 50~56 |
| | | | fz | 0.003~0.003 | 0.004~0.005 | 0.005~0.006 | 0.006~0.008 | 0.007~0.010 |
| | | | RPM | 50000 | 48000~50000 | 48000~50000 | 31900~35200 | 26400~29700 |
| | | | FEED | 265~310 | 440~460 | 450~550 | 450~540 | 440~540 |
| | | | Ap | 0.005~0.013 | 0.008~0.014 | 0.011~0.026 | 0.005~0.023 | 0.006~0.028 |
| | 39.1 | | Vc | 31 | 43~47 | 58~63 | 50~55 | 50~56 |
| | | | fz | 0.009~0.011 | 0.017~0.017 | 0.017~0.018 | 0.027~0.028 | 0.030~0.032 |
| | | | RPM | 50000 | 46000~50000 | 46000~50000 | 31900~35200 | 26400~29700 |
| | | | FEED | 225~265 | 390~420 | 400~460 | 440~480 | 400~480 |
| | | | Ap | 0.005~0.012 | 0.007~0.013 | 0.010~0.024 | 0.005~0.021 | 0.006~0.025 |
| | 39.2 | | Vc | 31 | 43~47 | 58~63 | 50~55 | 50~56 |
| | | | fz | 0.009~0.011 | 0.017~0.017 | 0.017~0.018 | 0.027~0.028 | 0.030~0.032 |
| | | | RPM | 50000 | 46000~50000 | 46000~50000 | 31900~35200 | 26400~29700 |
| | | | FEED | 225~265 | 390~420 | 400~460 | 440~480 | 400~480 |
| | | | Ap | 0.005~0.012 | 0.007~0.013 | 0.010~0.024 | 0.005~0.021 | 0.006~0.025 |
| | 40 | Chilled Cast Iron | Vc | 31 | 45~47 | 60~63 | 54~78 | 54~77 |
| | | | fz | 0.003~0.004 | 0.005~0.005 | 0.007~0.008 | 0.006~0.013 | 0.007~0.015 |
| | | | RPM | 50000 | 48000~50000 | 48000~50000 | 34100~49500 | 28600~40700 |
| | | | FEED | 300~350 | 480~520 | 720~790 | 600~870 | 590~850 |
| | | | Ap | 0.006~0.016 | 0.010~0.017 | 0.013~0.032 | 0.007~0.028 | 0.007~0.034 |
| | 41 | Hardened Cast Iron | Vc | 31 | 45~47 | 60~63 | 50~55 | 50~56 |
| | | | fz | 0.003~0.003 | 0.004~0.005 | 0.005~0.006 | 0.006~0.008 | 0.007~0.010 |
| | | | RPM | 50000 | 48000~50000 | 48000~50000 | 31900~35200 | 26400~29700 |
| | | | FEED | 265~310 | 440~460 | 450~550 | 450~540 | 440~540 |
| | | | Ap | 0.005~0.013 | 0.008~0.014 | 0.011~0.026 | 0.005~0.023 | 0.006~0.028 |

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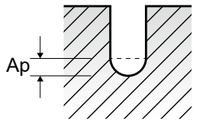
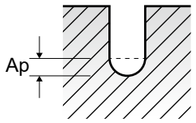





X5070 END MILLS
RECOMMENDED CUTTING CONDITIONS
推荐加工参数
G8A46, G8A54 SERIES
2 FLUTE BALL NOSE - RIB PROCESSING
2刃 球头 - 深腔加工
Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)
Ap (切削深度) = (mm)

| VDI 3323 | Parameter | Diameter (Ø) 0.8 | 1.0 | 1.2 | 1.5 | 2.0 | 3.0 | 4.0 |
|---|---|---|---|---|---|---|---|---|
| 5 | Vc | 50~55 | 48~55 | 45~53 | 47~54 | 50~55 | 50~55 | 50~55 |
| | fz | 0.010~0.020 | 0.012~0.024 | 0.016~0.027 | 0.020~0.035 | 0.027~0.047 | 0.045~0.088 | 0.055~0.115 |
| | RPM | 19800~22000 | 15400~17600 | 12000~14000 | 10000~11500 | 7900~8800 | 5300~5800 | 3950~4400 |
| | FEED | 460~550 | 470~540 | 460~540 | 440~540 | 470~530 | 590~650 | 550~620 |
| | Ap | 0.016~0.064 | 0.008~0.080 | 0.024~0.032 | 0.031~0.048 | 0.024~0.160 | 0.064~0.240 | 0.080~0.320 |
| 8-9 | Vc | 55~77 | 55~76 | 54~70 | 52~67 | 53~69 | 54~77 | 54~78 |
| | fz | 0.010~0.020 | 0.012~0.024 | 0.016~0.027 | 0.020~0.035 | 0.027~0.047 | 0.045~0.088 | 0.055~0.115 |
| | RPM | 22000~30800 | 17600~24200 | 14300~18700 | 11000~14300 | 8500~11000 | 5700~8200 | 4300~6200 |
| | FEED | 640~890 | 600~850 | 590~780 | 580~760 | 590~800 | 730~1000 | 680~990 |
| | Ap | 0.016~0.064 | 0.008~0.080 | 0.024~0.032 | 0.031~0.048 | 0.024~0.160 | 0.064~0.240 | 0.080~0.320 |
| 11.1 - 11.2 | Vc | 55~77 | 55~76 | 54~70 | 52~67 | 53~69 | 54~77 | 54~78 |
| | fz | 0.010~0.020 | 0.012~0.024 | 0.016~0.027 | 0.020~0.035 | 0.027~0.047 | 0.045~0.088 | 0.055~0.115 |
| | RPM | 22000~30800 | 17600~24200 | 14300~18700 | 11000~14300 | 8500~11000 | 5700~8200 | 4300~6200 |
| | FEED | 640~890 | 600~850 | 590~780 | 580~760 | 590~800 | 730~1000 | 680~990 |
| | Ap | 0.016~0.064 | 0.008~0.080 | 0.024~0.032 | 0.031~0.048 | 0.024~0.160 | 0.064~0.240 | 0.080~0.320 |
| 38.1 - 38.2 | Vc | 50~55 | 48~55 | 45~53 | 47~54 | 50~55 | 50~55 | 50~55 |
| | fz | 0.010~0.014 | 0.013~0.018 | 0.016~0.023 | 0.019~0.027 | 0.027~0.034 | 0.051~0.061 | 0.063~0.078 |
| | RPM | 19800~22000 | 15400~17600 | 12000~14000 | 10000~11500 | 7900~8800 | 5300~5800 | 3950~4400 |
| | FEED | 460~550 | 470~540 | 460~540 | 440~540 | 470~530 | 590~650 | 550~620 |
| | Ap | 0.013~0.052 | 0.007~0.065 | 0.020~0.026 | 0.025~0.039 | 0.020~0.130 | 0.052~0.195 | 0.065~0.260 |
| 39.1 | Vc | 50~55 | 48~55 | 45~53 | 47~54 | 50~55 | 50~55 | 48~55 |
| | fz | 0.044~0.045 | 0.057~0.057 | 0.069~0.070 | 0.083~0.084 | 0.109~0.111 | 0.208~0.214 | 0.259~0.275 |
| | RPM | 19800~22000 | 15400~17600 | 12000~14000 | 10000~11500 | 7900~8800 | 5300~5800 | 3850~4400 |
| | FEED | 440~500 | 440~500 | 420~480 | 420~480 | 440~480 | 550~620 | 530~570 |
| | Ap | 0.012~0.048 | 0.006~0.060 | 0.018~0.024 | 0.023~0.036 | 0.018~0.120 | 0.048~0.120 | 0.060~0.240 |
| 39.2 | Vc | 50~55 | 48~55 | 45~53 | 47~54 | 50~55 | 50~55 | 48~55 |
| | fz | 0.044~0.045 | 0.057~0.057 | 0.069~0.070 | 0.083~0.084 | 0.109~0.111 | 0.208~0.214 | 0.259~0.275 |
| | RPM | 19800~22000 | 15400~17600 | 12000~14000 | 10000~11500 | 7900~8800 | 5300~5800 | 3850~4400 |
| | FEED | 440~500 | 440~500 | 420~480 | 420~480 | 440~480 | 550~620 | 530~570 |
| | Ap | 0.012~0.048 | 0.006~0.060 | 0.018~0.024 | 0.023~0.036 | 0.018~0.120 | 0.048~0.120 | 0.060~0.240 |
| 40 | Vc | 55~77 | 55~76 | 54~70 | 52~67 | 53~69 | 54~77 | 54~78 |
| | fz | 0.010~0.020 | 0.012~0.024 | 0.016~0.027 | 0.020~0.035 | 0.027~0.047 | 0.045~0.088 | 0.055~0.115 |
| | RPM | 22000~30800 | 17600~24200 | 14300~18700 | 11000~14300 | 8500~11000 | 5700~8200 | 4300~6200 |
| | FEED | 640~890 | 600~850 | 590~780 | 580~760 | 590~800 | 730~1000 | 680~990 |
| | Ap | 0.016~0.064 | 0.008~0.080 | 0.024~0.032 | 0.031~0.048 | 0.024~0.160 | 0.064~0.240 | 0.080~0.320 |
| 41 | Vc | 50~55 | 48~55 | 45~53 | 47~54 | 50~55 | 50~55 | 50~55 |
| | fz | 0.010~0.014 | 0.013~0.018 | 0.016~0.023 | 0.019~0.027 | 0.027~0.034 | 0.051~0.061 | 0.063~0.078 |
| | RPM | 19800~22000 | 15400~17600 | 12000~14000 | 10000~11500 | 7900~8800 | 5300~5800 | 3950~4400 |
| | FEED | 460~550 | 470~540 | 460~540 | 440~540 | 470~530 | 590~650 | 550~620 |
| | Ap | 0.013~0.052 | 0.007~0.065 | 0.020~0.026 | 0.025~0.039 | 0.020~0.130 | 0.052~0.195 | 0.065~0.260 |



# X5070 END MILLS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

### G8A28, G8A38, G8A53 SERIES

**2 FLUTE BALL NOSE**
**2刃 球头**

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description | Ae | Ap | Parameter | Diameter (Ø) 0.2 | 0.3 | 0.4 | 0.5 | 0.6 | 0.8 | 1.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 5 | Non-alloy steel | 0.05D | 0.02D | Vc | 30 | 45 | 65 | 80 | 95 | 125 | 155 |
| | | | | | fz | 0.012 | 0.015 | 0.019 | 0.024 | 0.029 | 0.039 | 0.048 |
| | | | | | RPM | 47746 | 47746 | 51725 | 50930 | 50399 | 49736 | 49338 |
| | | | | | FEED | 1146 | 1432 | 1966 | 2445 | 2923 | 3879 | 4736 |
| | 8-9 | Low alloy steel | 0.05D | 0.02D | Vc | 30 | 45 | 65 | 80 | 95 | 125 | 155 |
| | | | | | fz | 0.012 | 0.015 | 0.019 | 0.024 | 0.029 | 0.039 | 0.048 |
| | | | | | RPM | 47746 | 47746 | 51725 | 50930 | 50399 | 49736 | 49338 |
| | | | | | FEED | 1146 | 1432 | 1966 | 2445 | 2923 | 3879 | 4736 |
| | 11.1 | High alloyed steel, and tool steel | 0.05D | 0.02D | Vc | 30 | 45 | 65 | 80 | 95 | 125 | 155 |
| | | | | | fz | 0.012 | 0.015 | 0.019 | 0.024 | 0.029 | 0.039 | 0.048 |
| | | | | | RPM | 47746 | 47746 | 51725 | 50930 | 50399 | 49736 | 49338 |
| | | | | | FEED | 1146 | 1432 | 1966 | 2445 | 2923 | 3879 | 4736 |
| | 11.2 | | 0.05D | 0.02D | Vc | 30 | 45 | 65 | 80 | 95 | 125 | 155 |
| | | | | | fz | 0.011 | 0.014 | 0.017 | 0.021 | 0.025 | 0.033 | 0.042 |
| | | | | | RPM | 47746 | 47746 | 51725 | 50930 | 50399 | 49736 | 49338 |
| | | | | | FEED | 1050 | 1337 | 1759 | 2139 | 2520 | 3283 | 4144 |
| H | 38.1 | Hardened steel | 0.05D | 0.02D | Vc | 30 | 45 | 65 | 80 | 95 | 125 | 155 |
| | | | | | fz | 0.011 | 0.014 | 0.017 | 0.021 | 0.025 | 0.033 | 0.042 |
| | | | | | RPM | 47746 | 47746 | 51725 | 50930 | 50399 | 49736 | 49338 |
| | | | | | FEED | 1050 | 1337 | 1759 | 2139 | 2520 | 3283 | 4144 |
| | 38.2 | | 0.05D | 0.02D | Vc | 30 | 40 | 55 | 70 | 85 | 115 | 140 |
| | | | | | fz | 0.011 | 0.013 | 0.017 | 0.021 | 0.024 | 0.033 | 0.042 |
| | | | | | RPM | 47746 | 42441 | 43768 | 44563 | 45094 | 45757 | 44563 |
| | | | | | FEED | 1050 | 1103 | 1488 | 1872 | 2165 | 3020 | 3743 |
| | 39.1 | | 0.05D | 0.02D | Vc | 25 | 40 | 50 | 65 | 75 | 100 | 125 |
| | | | | | fz | 0.01 | 0.012 | 0.015 | 0.019 | 0.023 | 0.03 | 0.038 |
| | | | | | RPM | 39789 | 42441 | 39789 | 41380 | 39789 | 39789 | 39789 |
| | | | | | FEED | 796 | 1019 | 1194 | 1572 | 1830 | 2387 | 3024 |
| | 39.2 | | 0.05D | 0.02D | Vc | 20 | 35 | 45 | 55 | 65 | 90 | 110 |
| | | | | | fz | 0.01 | 0.012 | 0.015 | 0.019 | 0.023 | 0.03 | 0.037 |
| | | | | | RPM | 31831 | 37136 | 35810 | 35014 | 34484 | 35810 | 35014 |
| | | | | | FEED | 637 | 891 | 1074 | 1331 | 1586 | 2149 | 2591 |
| | 39.3 | | 0.05D | 0.02D | Vc | 20 | 30 | 40 | 50 | 60 | 80 | 110 |
| | | | | | fz | 0.009 | 0.011 | 0.014 | 0.017 | 0.022 | 0.029 | 0.033 |
| | | | | | RPM | 31831 | 31831 | 31831 | 31831 | 31831 | 31831 | 35014 |
| | | | | | FEED | 573 | 700 | 891 | 1082 | 1401 | 1846 | 2311 |
| | 40 | Chilled Cast Iron | 0.05D | 0.02D | Vc | 30 | 45 | 65 | 80 | 95 | 125 | 155 |
| | | | | | fz | 0.011 | 0.014 | 0.017 | 0.021 | 0.025 | 0.033 | 0.042 |
| | | | | | RPM | 47746 | 47746 | 51725 | 50930 | 50399 | 49736 | 49338 |
| | | | | | FEED | 1050 | 1337 | 1759 | 2139 | 2520 | 3283 | 4144 |
| | 41 | Hardened Cast Iron | 0.05D | 0.02D | Vc | 30 | 40 | 55 | 70 | 85 | 115 | 140 |
| | | | | | fz | 0.011 | 0.013 | 0.017 | 0.021 | 0.024 | 0.033 | 0.042 |
| | | | | | RPM | 47746 | 47746 | 51725 | 50930 | 50399 | 49736 | 49338 |
| | | | | | FEED | 1050 | 1337 | 1759 | 2139 | 2520 | 3283 | 4144 |

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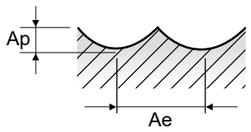
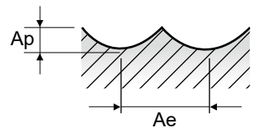





X5070 END MILLS
RECOMMENDED CUTTING CONDITIONS
推荐加工参数
G8A28, G8A38, G8A53 SERIES
2 FLUTE BALL NOSE
2刃 球头
Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| VDI 3323 | Parameter | Diameter (Ø) 1.2 | 1.5 | 2.0 | 3.0 | 4.0 | 5.0 | 6.0 | 8.0 | 10.0 | 12.0 | 16.0 | 20.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5 | Vc | 190 | 235 | 310 | 310 | 315 | 290 | 260 | 280 | 290 | 260 | 280 | 280 |
| | fz | 0.051 | 0.054 | 0.057 | 0.091 | 0.12 | 0.156 | 0.174 | 0.189 | 0.199 | 0.212 | 0.238 | 0.264 |
| | RPM | 50399 | 49869 | 49338 | 32892 | 25067 | 18462 | 13793 | 11141 | 9231 | 6897 | 5570 | 4456 |
| | FEED | 5141 | 5386 | 5625 | 5986 | 6016 | 5760 | 4800 | 4211 | 3674 | 2924 | 2652 | 2353 |
| 8-9 | Vc | 190 | 235 | 310 | 310 | 315 | 290 | 260 | 280 | 290 | 260 | 280 | 280 |
| | fz | 0.051 | 0.054 | 0.057 | 0.091 | 0.12 | 0.156 | 0.174 | 0.189 | 0.199 | 0.212 | 0.238 | 0.264 |
| | RPM | 50399 | 49869 | 49338 | 32892 | 25067 | 18462 | 13793 | 11141 | 9231 | 6897 | 5570 | 4456 |
| | FEED | 5141 | 5386 | 5625 | 5986 | 6016 | 5760 | 4800 | 4211 | 3674 | 2924 | 2652 | 2353 |
| 11.1 | Vc | 190 | 235 | 310 | 310 | 315 | 290 | 260 | 280 | 290 | 260 | 280 | 280 |
| | fz | 0.051 | 0.054 | 0.057 | 0.091 | 0.12 | 0.156 | 0.174 | 0.189 | 0.199 | 0.212 | 0.238 | 0.264 |
| | RPM | 50399 | 49869 | 49338 | 32892 | 25067 | 18462 | 13793 | 11141 | 9231 | 6897 | 5570 | 4456 |
| | FEED | 5141 | 5386 | 5625 | 5986 | 6016 | 5760 | 4800 | 4211 | 3674 | 2924 | 2652 | 2353 |
| 11.2 | Vc | 180 | 225 | 300 | 300 | 300 | 280 | 255 | 270 | 280 | 250 | 270 | 270 |
| | fz | 0.045 | 0.047 | 0.05 | 0.083 | 0.111 | 0.138 | 0.153 | 0.164 | 0.174 | 0.187 | 0.206 | 0.227 |
| | RPM | 47746 | 47746 | 47746 | 31831 | 23873 | 17825 | 13528 | 10743 | 8913 | 6631 | 5371 | 4297 |
| | FEED | 4297 | 4488 | 4775 | 5284 | 5300 | 4920 | 4140 | 3524 | 3102 | 2480 | 2213 | 1951 |
| 38.1 | Vc | 180 | 225 | 300 | 300 | 300 | 280 | 255 | 270 | 280 | 250 | 270 | 270 |
| | fz | 0.045 | 0.047 | 0.05 | 0.083 | 0.111 | 0.138 | 0.153 | 0.164 | 0.174 | 0.187 | 0.206 | 0.227 |
| | RPM | 47746 | 47746 | 47746 | 31831 | 23873 | 17825 | 13528 | 10743 | 8913 | 6631 | 5371 | 4297 |
| | FEED | 4297 | 4488 | 4775 | 5284 | 5300 | 4920 | 4140 | 3524 | 3102 | 2480 | 2213 | 1951 |
| 38.2 | Vc | 160 | 205 | 250 | 250 | 250 | 235 | 205 | 225 | 235 | 210 | 225 | 225 |
| | fz | 0.045 | 0.047 | 0.05 | 0.075 | 0.1 | 0.125 | 0.141 | 0.15 | 0.16 | 0.17 | 0.189 | 0.208 |
| | RPM | 42441 | 43502 | 39789 | 26526 | 19894 | 14961 | 10876 | 8952 | 7480 | 5570 | 4476 | 3581 |
| | FEED | 3820 | 4089 | 3979 | 3979 | 3979 | 3740 | 3067 | 2686 | 2394 | 1894 | 1692 | 1490 |
| 39.1 | Vc | 145 | 175 | 220 | 220 | 220 | 210 | 190 | 200 | 205 | 190 | 200 | 200 |
| | fz | 0.039 | 0.042 | 0.045 | 0.067 | 0.09 | 0.113 | 0.125 | 0.134 | 0.144 | 0.155 | 0.169 | 0.188 |
| | RPM | 38462 | 37136 | 35014 | 23343 | 17507 | 13369 | 10080 | 7958 | 6525 | 5040 | 3979 | 3183 |
| | FEED | 3000 | 3119 | 3151 | 3128 | 3151 | 3021 | 2520 | 2133 | 1879 | 1562 | 1345 | 1197 |
| 39.2 | Vc | 130 | 155 | 200 | 200 | 200 | 180 | 165 | 175 | 180 | 165 | 175 | 175 |
| | fz | 0.04 | 0.041 | 0.044 | 0.067 | 0.088 | 0.111 | 0.122 | 0.132 | 0.142 | 0.142 | 0.143 | 0.143 |
| | RPM | 34484 | 32892 | 31831 | 21221 | 15915 | 11459 | 8754 | 6963 | 5730 | 4377 | 3482 | 2785 |
| | FEED | 2759 | 2697 | 2801 | 2844 | 2801 | 2544 | 2136 | 1838 | 1627 | 1243 | 996 | 797 |
| 39.3 | Vc | 115 | 140 | 180 | 180 | 180 | 165 | 150 | 165 | 165 | 150 | 160 | 160 |
| | fz | 0.038 | 0.039 | 0.04 | 0.061 | 0.079 | 0.1 | 0.109 | 0.119 | 0.13 | 0.131 | 0.133 | 0.129 |
| | RPM | 30505 | 29709 | 28648 | 19099 | 14324 | 10504 | 7958 | 6565 | 5252 | 3979 | 3183 | 2546 |
| | FEED | 2318 | 2317 | 2292 | 2330 | 2263 | 2101 | 1735 | 1562 | 1366 | 1042 | 847 | 657 |
| 40 | Vc | 180 | 225 | 300 | 300 | 300 | 280 | 255 | 270 | 280 | 250 | 270 | 270 |
| | fz | 0.045 | 0.047 | 0.05 | 0.083 | 0.111 | 0.138 | 0.153 | 0.164 | 0.174 | 0.187 | 0.206 | 0.227 |
| | RPM | 47746 | 47746 | 47746 | 31831 | 23873 | 17825 | 13528 | 10743 | 8913 | 6631 | 5371 | 4297 |
| | FEED | 4297 | 4488 | 4775 | 5284 | 5300 | 4920 | 4140 | 3524 | 3102 | 2480 | 2213 | 1951 |
| 41 | Vc | 160 | 205 | 250 | 250 | 250 | 235 | 205 | 225 | 235 | 210 | 225 | 225 |
| | fz | 0.045 | 0.047 | 0.05 | 0.075 | 0.1 | 0.125 | 0.141 | 0.15 | 0.16 | 0.17 | 0.189 | 0.208 |
| | RPM | 47746 | 47746 | 47746 | 31831 | 23873 | 17825 | 13528 | 10743 | 8913 | 6631 | 5371 | 4297 |
| | FEED | 4297 | 4488 | 4775 | 5284 | 5300 | 4920 | 4140 | 3524 | 3102 | 2480 | 2213 | 1951 |



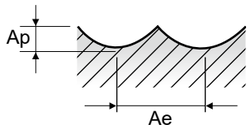
# X5070 END MILLS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

### G8A59 SERIES — 3 FLUTE BALL NOSE / 3刃 球头

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description | Ae | Ap | Parameter | Diameter (Ø) 3.0 | 4.0 | 5.0 | 6.0 | 8.0 | 10.0 | 12.0 | 16.0 | 20.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 5 | Non-alloy steel | 0.05D | 0.02D | Vc | 300 | 305 | 315 | 340 | 340 | 340 | 340 | 335 | 340 |
| | | | | | fz | 0.09 | 0.107 | 0.121 | 0.159 | 0.181 | 0.202 | 0.225 | 0.229 | 0.222 |
| | | | | | RPM | 31831 | 24271 | 20054 | 18038 | 13528 | 10823 | 9019 | 6665 | 5411 |
| | | | | | FEED | 8594 | 7791 | 7279 | 8604 | 7346 | 6558 | 6088 | 4579 | 3604 |
| | 8-9 | Low alloy steel | 0.05D | 0.02D | Vc | 300 | 305 | 315 | 340 | 340 | 340 | 340 | 335 | 340 |
| | | | | | fz | 0.09 | 0.107 | 0.121 | 0.159 | 0.181 | 0.202 | 0.225 | 0.229 | 0.222 |
| | | | | | RPM | 31831 | 24271 | 20054 | 18038 | 13528 | 10823 | 9019 | 6665 | 5411 |
| | | | | | FEED | 8594 | 7791 | 7279 | 8604 | 7346 | 6558 | 6088 | 4579 | 3604 |
| | 11.1 - 11.2 | High alloyed steel, and tool steel | 0.05D | 0.02D | Vc | 300 | 305 | 315 | 340 | 340 | 340 | 340 | 335 | 340 |
| | | | | | fz | 0.09 | 0.107 | 0.121 | 0.159 | 0.181 | 0.202 | 0.225 | 0.229 | 0.222 |
| | | | | | RPM | 31831 | 24271 | 20054 | 18038 | 13528 | 10823 | 9019 | 6665 | 5411 |
| | | | | | FEED | 8594 | 7791 | 7279 | 8604 | 7346 | 6558 | 6088 | 4579 | 3604 |
| H | 38.1 - 38.2 | Hardened steel | 0.05D | 0.02D | Vc | 255 | 255 | 265 | 285 | 285 | 285 | 285 | 285 | 285 |
| | | | | | fz | 0.072 | 0.09 | 0.108 | 0.136 | 0.155 | 0.168 | 0.187 | 0.19 | 0.192 |
| | | | | | RPM | 27056 | 20292 | 16870 | 15120 | 11340 | 9072 | 7560 | 5670 | 4536 |
| | | | | | FEED | 5844 | 5479 | 5466 | 6169 | 5273 | 4572 | 4241 | 3232 | 2613 |
| | 39.1 | | 0.05D | 0.02D | Vc | 185 | 185 | 195 | 230 | 230 | 230 | 230 | 230 | 230 |
| | | | | | fz | 0.072 | 0.087 | 0.099 | 0.123 | 0.144 | 0.156 | 0.173 | 0.18 | 0.18 |
| | | | | | RPM | 19629 | 14722 | 12414 | 12202 | 9151 | 7321 | 6101 | 4576 | 3661 |
| | | | | | FEED | 4240 | 3842 | 3687 | 4502 | 3953 | 3426 | 3166 | 2471 | 1977 |
| | 39.2 | | 0.05D | 0.02D | Vc | 175 | 180 | 185 | 210 | 210 | 210 | 210 | 210 | 205 |
| | | | | | fz | 0.072 | 0.086 | 0.099 | 0.115 | 0.134 | 0.144 | 0.145 | 0.144 | 0.145 |
| | | | | | RPM | 18568 | 14324 | 11777 | 11141 | 8356 | 6685 | 5570 | 4178 | 3263 |
| | | | | | FEED | 4011 | 3696 | 3498 | 3844 | 3359 | 2888 | 2423 | 1805 | 1419 |
| | 39.3 | | 0.05D | 0.02D | Vc | 120 | 120 | 125 | 145 | 145 | 145 | 145 | 145 | 145 |
| | | | | | fz | 0.072 | 0.087 | 0.099 | 0.108 | 0.125 | 0.144 | 0.144 | 0.144 | 0.143 |
| | | | | | RPM | 12732 | 9549 | 7958 | 7692 | 5769 | 4615 | 3846 | 2885 | 2308 |
| | | | | | FEED | 2750 | 2492 | 2363 | 2492 | 2164 | 1994 | 1662 | 1246 | 990 |
| | 40 | Chilled Cast Iron | 0.05D | 0.02D | Vc | 300 | 305 | 315 | 340 | 340 | 340 | 340 | 335 | 340 |
| | | | | | fz | 0.09 | 0.107 | 0.121 | 0.159 | 0.181 | 0.202 | 0.225 | 0.229 | 0.222 |
| | | | | | RPM | 31831 | 24271 | 20054 | 18038 | 13528 | 10823 | 9019 | 6665 | 5411 |
| | | | | | FEED | 8594 | 7791 | 7279 | 8604 | 7346 | 6558 | 6088 | 4579 | 3604 |
| | 41 | Hardened Cast Iron | 0.05D | 0.02D | Vc | 255 | 255 | 265 | 285 | 285 | 285 | 285 | 285 | 285 |
| | | | | | fz | 0.072 | 0.09 | 0.108 | 0.136 | 0.155 | 0.168 | 0.187 | 0.19 | 0.192 |
| | | | | | RPM | 27056 | 20292 | 16870 | 15120 | 11340 | 9072 | 7560 | 5670 | 4536 |
| | | | | | FEED | 5844 | 5479 | 5466 | 6169 | 5273 | 4572 | 4241 | 3232 | 2613 |






CARBIDE
HSS
CBN END MILLS
i-Xmill END MILLS
i-SMART MODULAR END MILLS
X5070 END MILLS
4G MILL END MILLS
X-POWER PRO END MILLS
TitaNox-POWER END MILLS
SUS-CUT END MILLS
V7 PLUS END MILLS
ALU-POWER HPC END MILLS
ALU-CUT END MILLS
G-CUT END MILLS
CRX S END MILLS
K-2 END MILLS
GENERAL CARBIDE END MILLS
ONLY ONE COATED PM60 END MILLS
TANK-POWER END MILLS
GENERAL HSS END MILLS
MILLING CUTTERS
TECHNICAL DATA

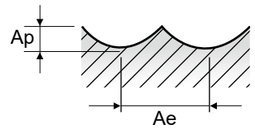
# X5070 END MILLS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

### G8D62 SERIES — 4 FLUTE BALL NOSE / 4刃 球头

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description | Ae | Ap | Parameter | Diameter (Ø) 3.0 | 4.0 | 5.0 | 6.0 | 8.0 | 10.0 | 12.0 | 16.0 | 20.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 5 | Non-alloy steel | 0.05D | 0.02D | Vc | 340 | 340 | 340 | 340 | 340 | 340 | 340 | 340 | 340 |
| | | | | | fz | 0.071 | 0.08 | 0.09 | 0.101 | 0.116 | 0.128 | 0.145 | 0.144 | 0.144 |
| | | | | | RPM | 36075 | 27056 | 21645 | 18038 | 13528 | 10823 | 9019 | 6764 | 5411 |
| | | | | | FEED | 10245 | 8658 | 7792 | 7287 | 6277 | 5541 | 5231 | 3896 | 3117 |
| | 8-9 | Low alloy steel | 0.05D | 0.02D | Vc | 340 | 340 | 340 | 340 | 340 | 340 | 340 | 340 | 340 |
| | | | | | fz | 0.071 | 0.08 | 0.09 | 0.101 | 0.116 | 0.128 | 0.145 | 0.144 | 0.144 |
| | | | | | RPM | 36075 | 27056 | 21645 | 18038 | 13528 | 10823 | 9019 | 6764 | 5411 |
| | | | | | FEED | 10245 | 8658 | 7792 | 7287 | 6277 | 5541 | 5231 | 3896 | 3117 |
| | 11.1 - 11.2 | High alloyed steel, and tool steel | 0.05D | 0.02D | Vc | 340 | 340 | 340 | 340 | 340 | 340 | 340 | 340 | 340 |
| | | | | | fz | 0.071 | 0.08 | 0.09 | 0.101 | 0.116 | 0.128 | 0.145 | 0.144 | 0.144 |
| | | | | | RPM | 36075 | 27056 | 21645 | 18038 | 13528 | 10823 | 9019 | 6764 | 5411 |
| | | | | | FEED | 10245 | 8658 | 7792 | 7287 | 6277 | 5541 | 5231 | 3896 | 3117 |
| H | 38.1 - 38.2 | Hardened steel | 0.05D | 0.02D | Vc | 285 | 285 | 280 | 285 | 285 | 285 | 285 | 285 | 285 |
| | | | | | fz | 0.06 | 0.07 | 0.081 | 0.092 | 0.103 | 0.111 | 0.125 | 0.129 | 0.126 |
| | | | | | RPM | 30239 | 22680 | 17825 | 15120 | 11340 | 9072 | 7560 | 5670 | 4536 |
| | | | | | FEED | 7257 | 6350 | 5775 | 5564 | 4672 | 4028 | 3780 | 2926 | 2286 |
| | 39.1 | | 0.05D | 0.02D | Vc | 230 | 230 | 230 | 230 | 230 | 230 | 230 | 230 | 230 |
| | | | | | fz | 0.05 | 0.06 | 0.071 | 0.082 | 0.096 | 0.104 | 0.115 | 0.119 | 0.119 |
| | | | | | RPM | 24404 | 18303 | 14642 | 12202 | 9151 | 7321 | 6101 | 4576 | 3661 |
| | | | | | FEED | 4881 | 4393 | 4158 | 4002 | 3514 | 3046 | 2806 | 2178 | 1743 |
| | 39.2 | | 0.05D | 0.02D | Vc | 210 | 210 | 210 | 210 | 210 | 210 | 210 | 210 | 205 |
| | | | | | fz | 0.045 | 0.055 | 0.067 | 0.077 | 0.089 | 0.095 | 0.097 | 0.096 | 0.096 |
| | | | | | RPM | 22282 | 16711 | 13369 | 11141 | 8356 | 6685 | 5570 | 4178 | 3263 |
| | | | | | FEED | 4011 | 3676 | 3583 | 3431 | 2975 | 2540 | 2161 | 1604 | 1253 |
| | 39.3 | | 0.05D | 0.02D | Vc | 145 | 145 | 145 | 145 | 145 | 145 | 145 | 145 | 140 |
| | | | | | fz | 0.04 | 0.05 | 0.062 | 0.072 | 0.082 | 0.096 | 0.094 | 0.096 | 0.097 |
| | | | | | RPM | 15385 | 11539 | 9231 | 7692 | 5769 | 4615 | 3846 | 2885 | 2228 |
| | | | | | FEED | 2462 | 2308 | 2289 | 2215 | 1892 | 1772 | 1446 | 1108 | 864 |
| | 40 | Chilled Cast Iron | 0.05D | 0.02D | Vc | 340 | 340 | 340 | 340 | 340 | 340 | 340 | 340 | 340 |
| | | | | | fz | 0.071 | 0.08 | 0.09 | 0.101 | 0.116 | 0.128 | 0.145 | 0.144 | 0.144 |
| | | | | | RPM | 36075 | 27056 | 21645 | 18038 | 13528 | 10823 | 9019 | 6764 | 5411 |
| | | | | | FEED | 10245 | 8658 | 7792 | 7287 | 6277 | 5541 | 5231 | 3896 | 3117 |
| | 41 | Hardened Cast Iron | 0.05D | 0.02D | Vc | 285 | 285 | 280 | 285 | 285 | 285 | 285 | 285 | 285 |
| | | | | | fz | 0.06 | 0.07 | 0.081 | 0.092 | 0.103 | 0.111 | 0.125 | 0.129 | 0.126 |
| | | | | | RPM | 30239 | 22680 | 17825 | 15120 | 11340 | 9072 | 7560 | 5670 | 4536 |
| | | | | | FEED | 7257 | 6350 | 5775 | 5564 | 4672 | 4028 | 3780 | 2926 | 2286 |



# X5070 END MILLS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

**G8A60 SERIES**

### 2 FLUTE CORNER RADIUS - SLOTTING
### 2刃 圆鼻- 槽铣削

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description | Ae | Ap | Parameter | Diameter (Ø) 0.5 | 0.6 | 0.8 | 1.0 | 2.0 | 3.0 | 4.0 | 5.0 | 6.0 | 8.0 | 10.0 | 12.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 5 | Non-alloy steel | 1.0D | 0.05D | Vc | 80 | 95 | 125 | 150 | 210 | 205 | 210 | 245 | 245 | 250 | 245 | 250 |
| | | | | | fz | 0.001 | 0.002 | 0.002 | 0.006 | 0.01 | 0.015 | 0.021 | 0.026 | 0.029 | 0.037 | 0.043 | 0.051 |
| | | | | | RPM | 50930 | 50399 | 49736 | 47746 | 33423 | 21751 | 16711 | 15597 | 12998 | 9947 | 7799 | 6631 |
| | | | | | FEED | 102 | 202 | 199 | 573 | 668 | 653 | 702 | 811 | 754 | 736 | 671 | 676 |
| | 8-9 | Low alloy steel | 1.0D | 0.05D | Vc | 80 | 95 | 125 | 150 | 210 | 205 | 210 | 245 | 245 | 250 | 245 | 250 |
| | | | | | fz | 0.001 | 0.002 | 0.002 | 0.006 | 0.01 | 0.015 | 0.021 | 0.026 | 0.029 | 0.037 | 0.043 | 0.051 |
| | | | | | RPM | 50930 | 50399 | 49736 | 47746 | 33423 | 21751 | 16711 | 15597 | 12998 | 9947 | 7799 | 6631 |
| | | | | | FEED | 102 | 202 | 199 | 573 | 668 | 653 | 702 | 811 | 754 | 736 | 671 | 676 |
| | 11.1 | High alloyed steel, and tool steel | 1.0D | 0.05D | Vc | 80 | 95 | 125 | 150 | 210 | 205 | 210 | 245 | 245 | 250 | 245 | 250 |
| | | | | | fz | 0.001 | 0.002 | 0.002 | 0.006 | 0.01 | 0.015 | 0.021 | 0.026 | 0.029 | 0.037 | 0.043 | 0.051 |
| | | | | | RPM | 50930 | 50399 | 49736 | 47746 | 33423 | 21751 | 16711 | 15597 | 12998 | 9947 | 7799 | 6631 |
| | | | | | FEED | 102 | 202 | 199 | 573 | 668 | 653 | 702 | 811 | 754 | 736 | 671 | 676 |
| | 11.2 | | 1.0D | 0.05D | Vc | 70 | 85 | 100 | 120 | 165 | 165 | 165 | 195 | 195 | 195 | 195 | 200 |
| | | | | | fz | 0.001 | 0.002 | 0.002 | 0.006 | 0.01 | 0.016 | 0.021 | 0.026 | 0.03 | 0.037 | 0.044 | 0.051 |
| | | | | | RPM | 44563 | 45094 | 39789 | 38197 | 26261 | 17507 | 13130 | 12414 | 10345 | 7759 | 6207 | 5305 |
| | | | | | FEED | 89 | 180 | 159 | 458 | 525 | 560 | 551 | 646 | 621 | 574 | 546 | 541 |
| H | 38.1 | Hardened steel | 1.0D | 0.05D | Vc | 70 | 85 | 100 | 120 | 165 | 165 | 165 | 195 | 195 | 195 | 195 | 200 |
| | | | | | fz | 0.001 | 0.002 | 0.002 | 0.006 | 0.01 | 0.016 | 0.021 | 0.026 | 0.03 | 0.037 | 0.044 | 0.051 |
| | | | | | RPM | 44563 | 45094 | 39789 | 38197 | 26261 | 17507 | 13130 | 12414 | 10345 | 7759 | 6207 | 5305 |
| | | | | | FEED | 89 | 180 | 159 | 458 | 525 | 560 | 551 | 646 | 621 | 574 | 546 | 541 |
| | 38.2 | | 1.0D | 0.05D | Vc | 65 | 75 | 75 | 80 | 110 | 110 | 110 | 130 | 130 | 130 | 130 | 130 |
| | | | | | fz | 0.001 | 0.001 | 0.002 | 0.006 | 0.01 | 0.015 | 0.02 | 0.024 | 0.028 | 0.034 | 0.04 | 0.047 |
| | | | | | RPM | 41380 | 39789 | 29842 | 25465 | 17507 | 11671 | 8754 | 8276 | 6897 | 5173 | 4138 | 3448 |
| | | | | | FEED | 83 | 80 | 119 | 306 | 350 | 350 | 350 | 397 | 386 | 352 | 331 | 324 |
| | 39.1 | | 1.0D | 0.05D | Vc | 50 | 55 | 65 | 65 | 90 | 90 | 90 | 100 | 100 | 100 | 100 | 100 |
| | | | | | fz | 0.001 | 0.001 | 0.001 | 0.004 | 0.007 | 0.011 | 0.015 | 0.018 | 0.021 | 0.026 | 0.03 | 0.036 |
| | | | | | RPM | 31831 | 29178 | 25863 | 20690 | 14324 | 9549 | 7162 | 6366 | 5305 | 3979 | 3183 | 2653 |
| | | | | | FEED | 64 | 58 | 52 | 166 | 201 | 210 | 215 | 229 | 223 | 207 | 191 | 191 |
| | 39.2 | | 1.0D | 0.05D | Vc | 40 | 45 | 50 | 50 | 70 | 70 | 70 | 80 | 80 | 80 | 80 | 80 |
| | | | | | fz | 0.001 | 0.001 | 0.001 | 0.003 | 0.006 | 0.009 | 0.012 | 0.014 | 0.017 | 0.02 | 0.024 | 0.029 |
| | | | | | RPM | 25465 | 23873 | 19894 | 15915 | 11141 | 7427 | 5570 | 5093 | 4244 | 3183 | 2546 | 2122 |
| | | | | | FEED | 51 | 48 | 40 | 95 | 134 | 134 | 134 | 143 | 144 | 127 | 122 | 123 |
| | 39.3 | | 1.0D | 0.02D | Vc | 30 | 40 | 40 | 40 | 60 | 60 | 60 | 70 | 70 | 70 | 70 | 70 |
| | | | | | fz | 0.001 | 0.001 | 0.001 | 0.003 | 0.005 | 0.007 | 0.01 | 0.012 | 0.014 | 0.017 | 0.021 | 0.024 |
| | | | | | RPM | 19099 | 21221 | 15915 | 12732 | 9549 | 6366 | 4775 | 4456 | 3714 | 2785 | 2228 | 1857 |
| | | | | | FEED | 19 | 25 | 29 | 71 | 90 | 89 | 96 | 105 | 100 | 95 | 91 | 90 |
| | 40 | Chilled Cast Iron | 1.0D | 0.05D | Vc | 70 | 85 | 100 | 120 | 165 | 165 | 165 | 195 | 195 | 195 | 195 | 200 |
| | | | | | fz | 0.001 | 0.002 | 0.002 | 0.006 | 0.01 | 0.016 | 0.021 | 0.026 | 0.03 | 0.037 | 0.044 | 0.051 |
| | | | | | RPM | 44563 | 45094 | 39789 | 38197 | 26261 | 17507 | 13130 | 12414 | 10345 | 7759 | 6207 | 5305 |
| | | | | | FEED | 89 | 180 | 159 | 458 | 525 | 560 | 551 | 646 | 621 | 574 | 546 | 541 |
| | 41 | Hardened Cast Iron | 1.0D | 0.05D | Vc | 65 | 75 | 75 | 80 | 110 | 110 | 110 | 130 | 130 | 130 | 130 | 130 |
| | | | | | fz | 0.001 | 0.001 | 0.002 | 0.006 | 0.01 | 0.015 | 0.02 | 0.024 | 0.028 | 0.034 | 0.04 | 0.047 |
| | | | | | RPM | 41380 | 39789 | 29842 | 25465 | 17507 | 11671 | 8754 | 8276 | 6897 | 5173 | 4138 | 3448 |
| | | | | | FEED | 83 | 80 | 119 | 306 | 350 | 350 | 350 | 397 | 386 | 352 | 331 | 324 |

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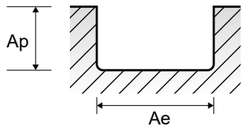




X5070 END MILLS

RECOMMENDED CUTTING CONDITIONS
推荐加工参数

**G8A60 SERIES**

### 4 FLUTE CORNER RADIUS - SIDE CUTTING
### 4刃 圆鼻- 侧铣削

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description | Ae | Ap | Parameter | Diameter (Ø) 0.5 | 0.6 | 0.8 | 1.0 | 2.0 | 3.0 | 4.0 | 5.0 | 6.0 | 8.0 | 10.0 | 12.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 5 | Non-alloy steel | 0.03D | 1.0D | Vc | 80 | 95 | 125 | 150 | 210 | 205 | 210 | 245 | 245 | 250 | 245 | 250 |
| | | | | | fz | 0.002 | 0.003 | 0.003 | 0.009 | 0.014 | 0.022 | 0.03 | 0.037 | 0.041 | 0.053 | 0.062 | 0.072 |
| | | | | | RPM | 50930 | 50399 | 49736 | 47746 | 33423 | 21751 | 16711 | 15597 | 12998 | 9947 | 7799 | 6631 |
| | | | | | FEED | 204 | 302 | 298 | 859 | 936 | 957 | 1003 | 1154 | 1066 | 1054 | 967 | 955 |
| | 8-9 | Low alloy steel | 0.03D | 1.0D | Vc | 80 | 95 | 125 | 150 | 210 | 205 | 210 | 245 | 245 | 250 | 245 | 250 |
| | | | | | fz | 0.002 | 0.003 | 0.003 | 0.009 | 0.014 | 0.022 | 0.03 | 0.037 | 0.041 | 0.053 | 0.062 | 0.072 |
| | | | | | RPM | 50930 | 50399 | 49736 | 47746 | 33423 | 21751 | 16711 | 15597 | 12998 | 9947 | 7799 | 6631 |
| | | | | | FEED | 204 | 302 | 298 | 859 | 936 | 957 | 1003 | 1154 | 1066 | 1054 | 967 | 955 |
| | 11.1 | High alloyed steel, and tool steel | 0.03D | 1.0D | Vc | 80 | 95 | 125 | 150 | 210 | 205 | 210 | 245 | 245 | 250 | 245 | 250 |
| | | | | | fz | 0.002 | 0.003 | 0.003 | 0.009 | 0.014 | 0.022 | 0.03 | 0.037 | 0.041 | 0.053 | 0.062 | 0.072 |
| | | | | | RPM | 50930 | 50399 | 49736 | 47746 | 33423 | 21751 | 16711 | 15597 | 12998 | 9947 | 7799 | 6631 |
| | | | | | FEED | 204 | 302 | 298 | 859 | 936 | 957 | 1003 | 1154 | 1066 | 1054 | 967 | 955 |
| | 11.2 | | 0.03D | 1.0D | Vc | 70 | 85 | 100 | 120 | 165 | 165 | 165 | 195 | 195 | 195 | 195 | 200 |
| | | | | | fz | 0.002 | 0.002 | 0.003 | 0.009 | 0.015 | 0.022 | 0.03 | 0.037 | 0.043 | 0.053 | 0.063 | 0.074 |
| | | | | | RPM | 44563 | 45094 | 39789 | 38197 | 26261 | 17507 | 13130 | 12414 | 10345 | 7759 | 6207 | 5305 |
| | | | | | FEED | 178 | 180 | 239 | 688 | 788 | 770 | 788 | 919 | 890 | 822 | 782 | 785 |
| H | 38.1 | Hardened steel | 0.03D | 1.0D | Vc | 70 | 85 | 100 | 120 | 165 | 165 | 165 | 195 | 195 | 195 | 195 | 200 |
| | | | | | fz | 0.002 | 0.002 | 0.003 | 0.009 | 0.015 | 0.022 | 0.03 | 0.037 | 0.043 | 0.053 | 0.063 | 0.074 |
| | | | | | RPM | 44563 | 45094 | 39789 | 38197 | 26261 | 17507 | 13130 | 12414 | 10345 | 7759 | 6207 | 5305 |
| | | | | | FEED | 178 | 180 | 239 | 688 | 788 | 770 | 788 | 919 | 890 | 822 | 782 | 785 |
| | 38.2 | | 0.03D | 1.0D | Vc | 65 | 75 | 75 | 80 | 110 | 110 | 110 | 130 | 130 | 130 | 130 | 130 |
| | | | | | fz | 0.002 | 0.002 | 0.003 | 0.008 | 0.014 | 0.021 | 0.028 | 0.034 | 0.04 | 0.049 | 0.058 | 0.067 |
| | | | | | RPM | 41380 | 39789 | 29842 | 25465 | 17507 | 11671 | 8754 | 8276 | 6897 | 5173 | 4138 | 3448 |
| | | | | | FEED | 166 | 159 | 179 | 407 | 490 | 490 | 490 | 563 | 552 | 507 | 480 | 462 |
| | 39.1 | | 0.03D | 1.0D | Vc | 50 | 55 | 65 | 65 | 90 | 90 | 90 | 100 | 100 | 100 | 100 | 100 |
| | | | | | fz | 0.001 | 0.002 | 0.002 | 0.006 | 0.01 | 0.016 | 0.021 | 0.026 | 0.03 | 0.037 | 0.043 | 0.051 |
| | | | | | RPM | 31831 | 29178 | 25863 | 20690 | 14324 | 9549 | 7162 | 6366 | 5305 | 3979 | 3183 | 2653 |
| | | | | | FEED | 64 | 117 | 103 | 248 | 286 | 306 | 301 | 331 | 318 | 294 | 274 | 271 |
| | 39.2 | | 0.03D | 1.0D | Vc | 40 | 45 | 50 | 50 | 70 | 70 | 70 | 80 | 80 | 80 | 80 | 80 |
| | | | | | fz | 0.001 | 0.001 | 0.002 | 0.005 | 0.008 | 0.012 | 0.017 | 0.02 | 0.024 | 0.029 | 0.035 | 0.042 |
| | | | | | RPM | 25465 | 23873 | 19894 | 15915 | 11141 | 7427 | 5570 | 5093 | 4244 | 3183 | 2546 | 2122 |
| | | | | | FEED | 51 | 48 | 80 | 159 | 178 | 178 | 189 | 204 | 204 | 185 | 178 | 178 |
| | 39.3 | | 0.03D | 1.0D | Vc | 30 | 40 | 40 | 40 | 60 | 60 | 60 | 70 | 70 | 70 | 70 | 70 |
| | | | | | fz | 0.001 | 0.001 | 0.001 | 0.004 | 0.007 | 0.01 | 0.014 | 0.017 | 0.02 | 0.024 | 0.029 | 0.034 |
| | | | | | RPM | 19099 | 21221 | 15915 | 12732 | 9549 | 6366 | 4775 | 4456 | 3714 | 2785 | 2228 | 1857 |
| | | | | | FEED | 38 | 42 | 32 | 102 | 134 | 127 | 134 | 152 | 149 | 134 | 129 | 126 |
| | 40 | Chilled Cast Iron | 0.03D | 1.0D | Vc | 70 | 85 | 100 | 120 | 165 | 165 | 165 | 195 | 195 | 195 | 195 | 200 |
| | | | | | fz | 0.002 | 0.002 | 0.003 | 0.009 | 0.015 | 0.022 | 0.03 | 0.037 | 0.043 | 0.053 | 0.063 | 0.074 |
| | | | | | RPM | 44563 | 45094 | 39789 | 38197 | 26261 | 17507 | 13130 | 12414 | 10345 | 7759 | 6207 | 5305 |
| | | | | | FEED | 178 | 180 | 239 | 688 | 788 | 770 | 788 | 919 | 890 | 822 | 782 | 785 |
| | 41 | Hardened Cast Iron | 0.03D | 1.0D | Vc | 65 | 75 | 75 | 80 | 110 | 110 | 110 | 130 | 130 | 130 | 130 | 130 |
| | | | | | fz | 0.002 | 0.002 | 0.003 | 0.008 | 0.014 | 0.021 | 0.028 | 0.034 | 0.04 | 0.049 | 0.058 | 0.067 |
| | | | | | RPM | 41380 | 39789 | 29842 | 25465 | 17507 | 11671 | 8754 | 8276 | 6897 | 5173 | 4138 | 3448 |
| | | | | | FEED | 166 | 159 | 179 | 407 | 490 | 490 | 490 | 563 | 552 | 507 | 480 | 462 |

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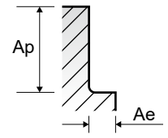


# X5070 END MILLS

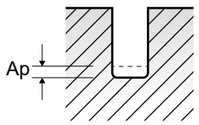
## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

### G8A52 SERIES

**2 FLUTE CORNER RADIUS - RIB PROCESSING**
**2刃 圆鼻 - 深腔加工**

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)
Ap (切削深度) = (mm)

| ISO | VDI 3323 | Material Description | Parameter | Diameter (Ø) 0.5 | 0.6 | 0.8 | 1.0 | 1.2 | 1.5 | 2.0 |
|---|---|---|---|---|---|---|---|---|---|---|
| P | 5 | Non-alloy steel | Vc | 40~52 | 39~66 | 41~66 | 39~59 | 39~66 | 43~83 | 40~66 |
| | | | fz | 0.006~0.009 | 0.005~0.013 | 0.007~0.018 | 0.009~0.022 | 0.010~0.028 | 0.012~0.046 | 0.016~0.045 |
| | | | RPM | 25650~33000 | 20900~35200 | 16150~26400 | 12300~18700 | 10450~17600 | 9100~17600 | 6350~10550 |
| | | | FEED | 370~470 | 330~560 | 360~590 | 350~540 | 350~590 | 430~830 | 340~570 |
| | | | Ap | 0.0056~0.0350 | 0.0063~0.0294 | 0.0084~0.0392 | 0.0105~0.0280 | 0.0245~0.0700 | 0.0161~0.0770 | 0.0210~0.1400 |
| | 8-9 | Low alloy steel | Vc | 40~52 | 39~66 | 41~66 | 39~59 | 39~66 | 43~83 | 40~66 |
| | | | fz | 0.006~0.009 | 0.005~0.013 | 0.007~0.018 | 0.009~0.022 | 0.010~0.028 | 0.012~0.046 | 0.016~0.045 |
| | | | RPM | 25650~33000 | 20900~35200 | 16150~26400 | 12300~18700 | 10450~17600 | 9100~17600 | 6350~10550 |
| | | | FEED | 370~470 | 330~560 | 360~590 | 350~540 | 350~590 | 430~830 | 340~570 |
| | | | Ap | 0.0056~0.0350 | 0.0063~0.0294 | 0.0084~0.0392 | 0.0105~0.0280 | 0.0245~0.0700 | 0.0161~0.0770 | 0.0210~0.1400 |
| | 11.1 - 11.2 | High alloyed steel, and tool steel | Vc | 40~52 | 39~66 | 41~66 | 39~59 | 39~66 | 43~83 | 40~66 |
| | | | fz | 0.006~0.009 | 0.005~0.013 | 0.007~0.018 | 0.009~0.022 | 0.010~0.028 | 0.012~0.046 | 0.016~0.045 |
| | | | RPM | 25650~33000 | 20900~35200 | 16150~26400 | 12300~18700 | 10450~17600 | 9100~17600 | 6350~10550 |
| | | | FEED | 370~470 | 330~560 | 360~590 | 350~540 | 350~590 | 430~830 | 340~570 |
| | | | Ap | 0.0056~0.0350 | 0.0063~0.0294 | 0.0084~0.0392 | 0.0105~0.0280 | 0.0245~0.0700 | 0.0161~0.0770 | 0.0210~0.1400 |
| H | 38.1 - 38.2 | Hardened steel | Vc | 37~41 | 38~41 | 38~42 | 33~36 | 34~38 | 33~38 | 38~42 |
| | | | fz | 0.005~0.007 | 0.004~0.007 | 0.006~0.010 | 0.008~0.013 | 0.009~0.015 | 0.011~0.020 | 0.015~0.025 |
| | | | RPM | 23750~26000 | 19900~22000 | 15200~16700 | 10500~11500 | 9100~10000 | 7000~8000 | 6100~6700 |
| | | | FEED | 285~315 | 190~290 | 210~310 | 190~280 | 180~280 | 180~280 | 200~300 |
| | | | Ap | 0.0040~0.0250 | 0.0450~0.0210 | 0.0060~0.0280 | 0.0075~0.0200 | 0.0150~0.0420 | 0.0115~0.0550 | 0.0150~0.1000 |
| | 39.1 - 39.3 | | Vc | 22~28 | 22~29 | 23~29 | 20~25 | 20~26 | 20~26 | 23~30 |
| | | | fz | 0.014~0.016 | 0.015~0.017 | 0.021~0.024 | 0.029~0.032 | 0.033~0.037 | 0.042~0.047 | 0.051~0.056 |
| | | | RPM | 14200~18000 | 11900~15500 | 9000~11700 | 6300~8050 | 5400~7000 | 4300~5500 | 3600~4700 |
| | | | FEED | 115~130 | 100~120 | 110~125 | 100~115 | 100~115 | 100~115 | 100~120 |
| | | | Ap | 0.014~0.016 | 0.015~0.017 | 0.021~0.024 | 0.029~0.032 | 0.033~0.037 | 0.042~0.047 | 0.0510~0.056 |
| | 40 | Chilled Cast Iron | Vc | 40~52 | 39~66 | 41~66 | 39~59 | 39~66 | 43~83 | 40~66 |
| | | | fz | 0.006~0.009 | 0.005~0.013 | 0.007~0.018 | 0.009~0.022 | 0.010~0.028 | 0.012~0.046 | 0.016~0.045 |
| | | | RPM | 25650~33000 | 20900~35200 | 16150~26400 | 12300~18700 | 10450~17600 | 9100~17600 | 6350~10550 |
| | | | FEED | 370~470 | 330~560 | 360~590 | 350~540 | 350~590 | 430~830 | 340~570 |
| | | | Ap | 0.0056~0.0350 | 0.0063~0.0294 | 0.0084~0.0392 | 0.0105~0.0280 | 0.0245~0.0700 | 0.0161~0.0770 | 0.0210~0.1400 |
| | 41 | Hardened Cast Iron | Vc | 37~41 | 38~41 | 38~42 | 33~36 | 34~38 | 33~38 | 38~42 |
| | | | fz | 0.005~0.007 | 0.004~0.007 | 0.006~0.010 | 0.008~0.013 | 0.009~0.015 | 0.011~0.020 | 0.015~0.025 |
| | | | RPM | 23750~26000 | 19900~22000 | 15200~16700 | 10500~11500 | 9100~10000 | 7000~8000 | 6100~6700 |
| | | | FEED | 285~315 | 190~290 | 210~310 | 190~280 | 180~280 | 180~280 | 200~300 |
| | | | Ap | 0.0040~0.0250 | 0.0450~0.0210 | 0.0060~0.0280 | 0.0075~0.0200 | 0.0150~0.0420 | 0.0115~0.0550 | 0.0150~0.1000 |








# X5070 END MILLS

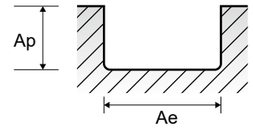
## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

### G8A50 SERIES

**2 FLUTE CORNER RADIUS - SLOTTING**
**2刃 圆鼻- 槽铣削**

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description | Ae | Ap | Parameter | Diameter (Ø) 0.3 | 0.4 | 0.5 | 0.6 | 0.8 | 1.0 | 1.2 | 1.5 | 2.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 5 | Non-alloy steel | 1.0D | 0.05D | Vc | 45 | 65 | 80 | 95 | 125 | 150 | 160 | 175 | 210 |
| | | | | | fz | 0.002 | 0.002 | 0.004 | 0.005 | 0.006 | 0.008 | 0.009 | 0.011 | 0.013 |
| | | | | | RPM | 47746 | 51725 | 50930 | 50399 | 49736 | 47746 | 42441 | 37136 | 33423 |
| | | | | | FEED | 191 | 207 | 407 | 504 | 597 | 764 | 764 | 817 | 869 |
| | 8-9 | Low alloy steel | 1.0D | 0.05D | Vc | 45 | 65 | 80 | 95 | 125 | 150 | 160 | 175 | 210 |
| | | | | | fz | 0.002 | 0.002 | 0.004 | 0.005 | 0.006 | 0.008 | 0.009 | 0.011 | 0.013 |
| | | | | | RPM | 47746 | 51725 | 50930 | 50399 | 49736 | 47746 | 42441 | 37136 | 33423 |
| | | | | | FEED | 191 | 207 | 407 | 504 | 597 | 764 | 764 | 817 | 869 |
| | 11.1 | High alloyed steel, and tool steel | 1.0D | 0.05D | Vc | 45 | 65 | 80 | 95 | 125 | 150 | 160 | 175 | 210 |
| | | | | | fz | 0.002 | 0.002 | 0.004 | 0.005 | 0.006 | 0.008 | 0.009 | 0.011 | 0.013 |
| | | | | | RPM | 47746 | 51725 | 50930 | 50399 | 49736 | 47746 | 42441 | 37136 | 33423 |
| | | | | | FEED | 191 | 207 | 407 | 504 | 597 | 764 | 764 | 817 | 869 |
| | 11.2 | | 1.0D | 0.05D | Vc | 40 | 55 | 70 | 85 | 100 | 120 | 130 | 145 | 165 |
| | | | | | fz | 0.002 | 0.002 | 0.003 | 0.004 | 0.006 | 0.008 | 0.009 | 0.011 | 0.013 |
| | | | | | RPM | 42441 | 43768 | 44563 | 45094 | 39789 | 38197 | 34484 | 30770 | 26261 |
| | | | | | FEED | 170 | 175 | 267 | 361 | 477 | 611 | 621 | 677 | 683 |
| H | 38.1 | Hardened steel | 1.0D | 0.05D | Vc | 40 | 55 | 70 | 85 | 100 | 120 | 130 | 145 | 165 |
| | | | | | fz | 0.002 | 0.002 | 0.003 | 0.004 | 0.006 | 0.008 | 0.009 | 0.011 | 0.013 |
| | | | | | RPM | 42441 | 43768 | 44563 | 45094 | 39789 | 38197 | 34484 | 30770 | 26261 |
| | | | | | FEED | 170 | 175 | 267 | 361 | 477 | 611 | 621 | 677 | 683 |
| | 38.2 | | 1.0D | 0.05D | Vc | 40 | 50 | 65 | 75 | 75 | 80 | 85 | 100 | 110 |
| | | | | | fz | 0.001 | 0.002 | 0.003 | 0.004 | 0.005 | 0.007 | 0.008 | 0.01 | 0.012 |
| | | | | | RPM | 42441 | 39789 | 41380 | 39789 | 29842 | 25465 | 22547 | 21221 | 17507 |
| | | | | | FEED | 85 | 159 | 248 | 318 | 298 | 357 | 361 | 424 | 420 |
| | 39.1 | | 1.0D | 0.02D | Vc | 30 | 40 | 50 | 55 | 65 | 65 | 75 | 80 | 90 |
| | | | | | fz | 0.001 | 0.001 | 0.002 | 0.003 | 0.004 | 0.005 | 0.006 | 0.007 | 0.009 |
| | | | | | RPM | 31831 | 31831 | 31831 | 29178 | 25863 | 20690 | 19894 | 16977 | 14324 |
| | | | | | FEED | 64 | 64 | 127 | 175 | 207 | 207 | 239 | 238 | 258 |
| | 39.2 | | 1.0D | 0.02D | Vc | 25 | 30 | 40 | 45 | 50 | 50 | 55 | 60 | 70 |
| | | | | | fz | 0.001 | 0.001 | 0.002 | 0.002 | 0.003 | 0.004 | 0.005 | 0.006 | 0.007 |
| | | | | | RPM | 26526 | 23873 | 25465 | 23873 | 19894 | 15915 | 14589 | 12732 | 11141 |
| | | | | | FEED | 53 | 48 | 102 | 95 | 119 | 127 | 146 | 153 | 156 |
| | 40 | Chilled Cast Iron | 1.0D | 0.05D | Vc | 40 | 55 | 70 | 85 | 100 | 120 | 130 | 145 | 165 |
| | | | | | fz | 0.002 | 0.002 | 0.003 | 0.004 | 0.006 | 0.008 | 0.009 | 0.011 | 0.013 |
| | | | | | RPM | 42441 | 43768 | 44563 | 45094 | 39789 | 38197 | 34484 | 30770 | 26261 |
| | | | | | FEED | 170 | 175 | 267 | 361 | 477 | 611 | 621 | 677 | 683 |
| | 41 | Hardened Cast Iron | 1.0D | 0.05D | Vc | 40 | 50 | 65 | 75 | 75 | 80 | 85 | 100 | 110 |
| | | | | | fz | 0.001 | 0.002 | 0.003 | 0.004 | 0.005 | 0.007 | 0.008 | 0.01 | 0.012 |
| | | | | | RPM | 42441 | 39789 | 41380 | 39789 | 29842 | 25465 | 22547 | 21221 | 17507 |
| | | | | | FEED | 85 | 159 | 248 | 318 | 298 | 357 | 361 | 424 | 420 |



# X5070 END MILLS

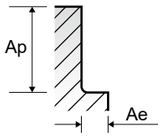
## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

### G8A47, G8B08 SERIES

**4 FLUTE CORNER RADIUS - SIDE CUTTING**
**4刃 圆鼻- 侧铣削**

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description | Ae | Ap | Parameter | Diameter (Ø) 1.0 | 2.0 | 3.0 | 4.0 | 5.0 | 6.0 | 8.0 | 10.0 | 12.0 | 16.0 | 20.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 5 | Non-alloy steel | 0.03D | 1.0D | Vc | 150 | 210 | 205 | 210 | 245 | 245 | 250 | 245 | 250 | 245 | 245 |
| | | | | | fz | 0.006 | 0.011 | 0.016 | 0.022 | 0.025 | 0.03 | 0.038 | 0.045 | 0.053 | 0.061 | 0.067 |
| | | | | | RPM | 47746 | 33423 | 21751 | 16711 | 15597 | 12998 | 9947 | 7799 | 6631 | 4874 | 3899 |
| | | | | | FEED | 1146 | 1471 | 1392 | 1471 | 1560 | 1560 | 1512 | 1404 | 1406 | 1189 | 1045 |
| | 8-9 | Low alloy steel | 0.03D | 1.0D | Vc | 150 | 210 | 205 | 210 | 245 | 245 | 250 | 245 | 250 | 245 | 245 |
| | | | | | fz | 0.006 | 0.011 | 0.016 | 0.022 | 0.025 | 0.03 | 0.038 | 0.045 | 0.053 | 0.061 | 0.067 |
| | | | | | RPM | 47746 | 33423 | 21751 | 16711 | 15597 | 12998 | 9947 | 7799 | 6631 | 4874 | 3899 |
| | | | | | FEED | 1146 | 1471 | 1392 | 1471 | 1560 | 1560 | 1512 | 1404 | 1406 | 1189 | 1045 |
| | 11.1 | High alloyed steel, and tool steel | 0.03D | 1.0D | Vc | 150 | 210 | 205 | 210 | 245 | 245 | 250 | 245 | 250 | 245 | 245 |
| | | | | | fz | 0.006 | 0.011 | 0.016 | 0.022 | 0.025 | 0.03 | 0.038 | 0.045 | 0.053 | 0.061 | 0.067 |
| | | | | | RPM | 47746 | 33423 | 21751 | 16711 | 15597 | 12998 | 9947 | 7799 | 6631 | 4874 | 3899 |
| | | | | | FEED | 1146 | 1471 | 1392 | 1471 | 1560 | 1560 | 1512 | 1404 | 1406 | 1189 | 1045 |
| | 11.2 | | 0.03D | 1.0D | Vc | 120 | 165 | 165 | 165 | 195 | 195 | 195 | 195 | 200 | 195 | 195 |
| | | | | | fz | 0.006 | 0.01 | 0.014 | 0.02 | 0.024 | 0.027 | 0.035 | 0.041 | 0.048 | 0.056 | 0.063 |
| | | | | | RPM | 38197 | 26261 | 17507 | 13130 | 12414 | 10345 | 7759 | 6207 | 5305 | 3879 | 3104 |
| | | | | | FEED | 917 | 1050 | 980 | 1050 | 1192 | 1117 | 1086 | 1018 | 1019 | 869 | 782 |
| H | 38.1 | Hardened steel | 0.03D | 1.0D | Vc | 120 | 165 | 165 | 165 | 195 | 195 | 195 | 195 | 200 | 195 | 195 |
| | | | | | fz | 0.006 | 0.01 | 0.014 | 0.02 | 0.024 | 0.027 | 0.035 | 0.041 | 0.048 | 0.056 | 0.063 |
| | | | | | RPM | 38197 | 26261 | 17507 | 13130 | 12414 | 10345 | 7759 | 6207 | 5305 | 3879 | 3104 |
| | | | | | FEED | 917 | 1050 | 980 | 1050 | 1192 | 1117 | 1086 | 1018 | 1019 | 869 | 782 |
| | 38.2 | | 0.03D | 1.0D | Vc | 80 | 110 | 110 | 110 | 130 | 130 | 130 | 130 | 130 | 130 | 130 |
| | | | | | fz | 0.006 | 0.01 | 0.015 | 0.02 | 0.024 | 0.028 | 0.035 | 0.041 | 0.048 | 0.056 | 0.063 |
| | | | | | RPM | 25465 | 17507 | 11671 | 8754 | 8276 | 6897 | 5173 | 4138 | 3448 | 2586 | 2069 |
| | | | | | FEED | 611 | 700 | 700 | 700 | 794 | 772 | 724 | 679 | 662 | 579 | 521 |
| | 39.1 | | 0.03D | 1.0D | Vc | 65 | 90 | 90 | 90 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| | | | | | fz | 0.004 | 0.007 | 0.011 | 0.015 | 0.018 | 0.021 | 0.026 | 0.03 | 0.036 | 0.042 | 0.048 |
| | | | | | RPM | 20690 | 14324 | 9549 | 7162 | 6366 | 5305 | 3979 | 3183 | 2653 | 1989 | 1592 |
| | | | | | FEED | 331 | 401 | 420 | 430 | 458 | 446 | 414 | 382 | 382 | 334 | 306 |
| | 39.2 | | 0.03D | 1.0D | Vc | 50 | 70 | 70 | 70 | 80 | 80 | 80 | 80 | 80 | 80 | 80 |
| | | | | | fz | 0.003 | 0.006 | 0.009 | 0.012 | 0.015 | 0.017 | 0.021 | 0.024 | 0.029 | 0.034 | 0.038 |
| | | | | | RPM | 15915 | 11141 | 7427 | 5570 | 5093 | 4244 | 3183 | 2546 | 2122 | 1592 | 1273 |
| | | | | | FEED | 191 | 267 | 267 | 267 | 306 | 289 | 267 | 244 | 246 | 217 | 193 |
| | 39.3 | | 0.03D | 1.0D | Vc | 40 | 60 | 60 | 60 | 70 | 70 | 70 | 70 | 70 | 70 | 70 |
| | | | | | fz | 0.003 | 0.005 | 0.007 | 0.01 | 0.012 | 0.014 | 0.017 | 0.02 | 0.024 | 0.029 | 0.033 |
| | | | | | RPM | 12732 | 9549 | 6366 | 4775 | 4456 | 3714 | 2785 | 2228 | 1857 | 1393 | 1114 |
| | | | | | FEED | 153 | 191 | 178 | 191 | 214 | 208 | 189 | 178 | 178 | 162 | 147 |
| | 40 | Chilled Cast Iron | 0.03D | 1.0D | Vc | 120 | 165 | 165 | 165 | 195 | 195 | 195 | 195 | 200 | 195 | 195 |
| | | | | | fz | 0.006 | 0.01 | 0.014 | 0.02 | 0.024 | 0.027 | 0.035 | 0.041 | 0.048 | 0.056 | 0.063 |
| | | | | | RPM | 38197 | 26261 | 17507 | 13130 | 12414 | 10345 | 7759 | 6207 | 5305 | 3879 | 3104 |
| | | | | | FEED | 917 | 1050 | 980 | 1050 | 1192 | 1117 | 1086 | 1018 | 1019 | 869 | 782 |
| | 41 | Hardened Cast Iron | 0.03D | 1.0D | Vc | 80 | 110 | 110 | 110 | 130 | 130 | 130 | 130 | 130 | 130 | 130 |
| | | | | | fz | 0.006 | 0.01 | 0.015 | 0.02 | 0.024 | 0.028 | 0.035 | 0.041 | 0.048 | 0.056 | 0.063 |
| | | | | | RPM | 25465 | 17507 | 11671 | 8754 | 8276 | 6897 | 5173 | 4138 | 3448 | 2586 | 2069 |
| | | | | | FEED | 611 | 700 | 700 | 700 | 794 | 772 | 724 | 679 | 662 | 579 | 521 |






X5070 END MILLS

RECOMMENDED CUTTING CONDITIONS
推荐加工参数

### G8A45 SERIES

**2 FLUTE - RIB PROCESSING**
**2刃- 深腔加工**

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)
Ap (切削深度) = (mm)

| ISO | VDI 3323 | Material Description | Parameter | Diameter (Ø) 0.2 | 0.3 | 0.4 | 0.5 | 0.6 | 0.8 |
|---|---|---|---|---|---|---|---|---|---|
| P | 5 | Non-alloy steel | Vc | 31 | 41~47 | 39~63 | 40~52 | 39~66 | 41~66 |
| | | | fz | 0.003~0.004 | 0.004~0.004 | 0.006~0.006 | 0.007~0.007 | 0.008~0.008 | 0.011~0.011 |
| | | | RPM | 50000 | 43000~50000 | 31400~50000 | 25650~33000 | 20900~35200 | 16150~26400 |
| | | | FEED | 300~350 | 330~420 | 350~590 | 370~470 | 330~560 | 360~590 |
| | | | Ap | 0.006~0.016 | 0.006~0.015 | 0.005~0.028 | 0.006~0.035 | 0.007~0.030 | 0.009~0.040 |
| | 8-9 | Low alloy steel | Vc | 31 | 41~47 | 39~63 | 40~52 | 39~66 | 41~66 |
| | | | fz | 0.003~0.004 | 0.004~0.004 | 0.006~0.006 | 0.007~0.007 | 0.008~0.008 | 0.011~0.011 |
| | | | RPM | 50000 | 43000~50000 | 31400~50000 | 25650~33000 | 20900~35200 | 16150~26400 |
| | | | FEED | 300~350 | 330~420 | 350~590 | 370~470 | 330~560 | 360~590 |
| | | | Ap | 0.006~0.016 | 0.006~0.015 | 0.005~0.028 | 0.006~0.035 | 0.007~0.030 | 0.009~0.040 |
| | 11.1 - 11.2 | High alloyed steel, and tool steel | Vc | 31 | 41~47 | 39~63 | 40~52 | 39~66 | 41~66 |
| | | | fz | 0.003~0.004 | 0.004~0.004 | 0.006~0.006 | 0.007~0.007 | 0.008~0.008 | 0.011~0.011 |
| | | | RPM | 50000 | 43000~50000 | 31400~50000 | 25650~33000 | 20900~35200 | 16150~26400 |
| | | | FEED | 300~350 | 330~420 | 350~590 | 370~470 | 330~560 | 360~590 |
| | | | Ap | 0.006~0.016 | 0.006~0.015 | 0.005~0.028 | 0.006~0.035 | 0.007~0.030 | 0.009~0.040 |
| H | 38.1 - 38.2 | Hardened steel | Vc | 31 | 38~44 | 38~44 | 37~41 | 38~41 | 38~42 |
| | | | fz | 0.003~0.003 | 0.003~0.003 | 0.005~0.005 | 0.006~0.006 | 0.007~0.007 | 0.009~0.009 |
| | | | RPM | 50000 | 39900~46200 | 30500~35200 | 23750~26000 | 19900~22000 | 15200~16700 |
| | | | FEED | 265~310 | 265~310 | 295~340 | 285~315 | 260~290 | 280~310 |
| | | | Ap | 0.005~0.013 | 0.004~0.011 | 0.003~0.020 | 0.004~0.025 | 0.005~0.021 | 0.006~0.028 |
| | 39.1 - 39.2 | | Vc | 31 | 23~30 | 23~31 | 22~28 | 22~29 | 23~29 |
| | | | fz | 0.002~0.003 | 0.002~0.003 | 0.003~0.004 | 0.004~0.004 | 0.004~0.004 | 0.005~0.006 |
| | | | RPM | 50000 | 23900~32300 | 18300~24600 | 14200~18000 | 11900~15500 | 9000~11700 |
| | | | FEED | 225~265 | 105~185 | 120~200 | 115~130 | 100~120 | 110~125 |
| | | | Ap | 0.005~0.012 | 0.003~0.007 | 0.002~0.012 | 0.003~0.015 | 0.003~0.013 | 0.004~0.017 |
| | 40 | Chilled Cast Iron | Vc | 31 | 41~47 | 39~63 | 40~52 | 39~66 | 41~66 |
| | | | fz | 0.003~0.004 | 0.004~0.004 | 0.006~0.006 | 0.007~0.007 | 0.008~0.008 | 0.011~0.011 |
| | | | RPM | 50000 | 43000~50000 | 31400~50000 | 25650~33000 | 20900~35200 | 16150~26400 |
| | | | FEED | 300~350 | 330~420 | 350~590 | 370~470 | 330~560 | 360~590 |
| | | | Ap | 0.006~0.016 | 0.006~0.015 | 0.005~0.028 | 0.006~0.035 | 0.007~0.030 | 0.009~0.040 |
| | 41 | Hardened Cast Iron | Vc | 31 | 38~44 | 38~44 | 37~41 | 38~41 | 38~42 |
| | | | fz | 0.003~0.003 | 0.003~0.003 | 0.005~0.005 | 0.006~0.006 | 0.007~0.007 | 0.009~0.009 |
| | | | RPM | 50000 | 39900~46200 | 30500~35200 | 23750~26000 | 19900~22000 | 15200~16700 |
| | | | FEED | 265~310 | 265~310 | 295~340 | 285~315 | 260~290 | 280~310 |
| | | | Ap | 0.005~0.013 | 0.004~0.011 | 0.003~0.020 | 0.004~0.025 | 0.005~0.021 | 0.006~0.028 |

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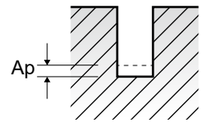


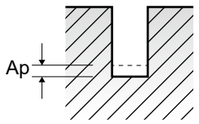
# X5070 END MILLS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

### G8A45 SERIES
**2 FLUTE - RIB PROCESSING**
**2刃- 深腔加工**

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)
Ap (切削深度) = (mm)

| ISO | VDI 3323 | Material Description | Parameter | Diameter (Ø) 1.0 | 1.2 | 1.5 | 2.0 | 3.0 | 4.0 |
|---|---|---|---|---|---|---|---|---|---|
| P | 5 | Non-alloy steel | Vc | 39~59 | 39~66 | 43~83 | 40~66 | 41~66 | 40~67 |
| | | | fz | 0.014~0.014 | 0.017~0.017 | 0.024~0.024 | 0.027~0.027 | 0.064~0.064 | 0.063~0.064 |
| | | | RPM | 12300~18700 | 10450~17600 | 9100~17600 | 6350~10550 | 4300~7050 | 3200~5300 |
| | | | FEED | 350~540 | 350~590 | 430~830 | 340~570 | 550~900 | 400~675 |
| | | | Ap | 0.011~0.028 | 0.025~0.070 | 0.017~0.077 | 0.021~0.140 | 0.056~0.210 | 0.074~0.280 |
| | 8-9 | Low alloy steel | Vc | 39~59 | 39~66 | 43~83 | 40~66 | 41~66 | 40~67 |
| | | | fz | 0.014~0.014 | 0.017~0.017 | 0.024~0.024 | 0.027~0.027 | 0.064~0.064 | 0.063~0.064 |
| | | | RPM | 12300~18700 | 10450~17600 | 9100~17600 | 6350~10550 | 4300~7050 | 3200~5300 |
| | | | FEED | 350~540 | 350~590 | 430~830 | 340~570 | 550~900 | 400~675 |
| | | | Ap | 0.011~0.028 | 0.025~0.070 | 0.017~0.077 | 0.021~0.140 | 0.056~0.210 | 0.074~0.280 |
| | 11.1 - 11.2 | High alloyed steel, and tool steel | Vc | 39~59 | 39~66 | 43~83 | 40~66 | 41~66 | 40~67 |
| | | | fz | 0.014~0.014 | 0.017~0.017 | 0.024~0.024 | 0.027~0.027 | 0.064~0.064 | 0.063~0.064 |
| | | | RPM | 12300~18700 | 10450~17600 | 9100~17600 | 6350~10550 | 4300~7050 | 3200~5300 |
| | | | FEED | 350~540 | 350~590 | 430~830 | 340~570 | 550~900 | 400~675 |
| | | | Ap | 0.011~0.028 | 0.025~0.070 | 0.017~0.077 | 0.021~0.140 | 0.056~0.210 | 0.074~0.280 |
| H | 38.1 - 38.2 | Hardened steel | Vc | 33~36 | 34~38 | 33~38 | 38~42 | 38~43 | 38~43 |
| | | | fz | 0.012~0.012 | 0.014~0.014 | 0.018~0.018 | 0.022~0.022 | 0.056~0.056 | 0.056~0.056 |
| | | | RPM | 10500~11500 | 9100~10000 | 7000~8000 | 6100~6700 | 3990~4600 | 3000~3400 |
| | | | FEED | 250~280 | 250~280 | 250~280 | 270~300 | 445~515 | 335~380 |
| | | | Ap | 0.008~0.020 | 0.015~0.042 | 0.012~0.055 | 0.015~0100 | 0.040~0.150 | 0.053~0.200 |
| | 39.1 - 39.2 | | Vc | 20~25 | 20~26 | 20~26 | 23~30 | 23~30 | 23~30 |
| | | | fz | 0.007~0.008 | 0.008~0.009 | 0.010~0.012 | 0.013~0.014 | 0.022~0.048 | 0.021~0.048 |
| | | | RPM | 6300~8050 | 5400~7000 | 4300~5500 | 3600~4700 | 2400~3200 | 1800~2400 |
| | | | FEED | 100~115 | 100~115 | 100~115 | 100~120 | 105~310 | 75~230 |
| | | | Ap | 0.005~0.012 | 0.009~0.026 | 0.007~0.033 | 0.009~0.060 | 0.024~0.090 | 0.032~0.120 |
| | 40 | Chilled Cast Iron | Vc | 39~59 | 39~66 | 43~83 | 40~66 | 41~66 | 40~67 |
| | | | fz | 0.014~0.014 | 0.017~0.017 | 0.024~0.024 | 0.027~0.027 | 0.064~0.064 | 0.063~0.064 |
| | | | RPM | 12300~18700 | 10450~17600 | 9100~17600 | 6350~10550 | 4300~7050 | 3200~5300 |
| | | | FEED | 350~540 | 350~590 | 430~830 | 340~570 | 550~900 | 400~675 |
| | | | Ap | 0.011~0.028 | 0.025~0.070 | 0.017~0.077 | 0.021~0.140 | 0.056~0.210 | 0.074~0.280 |
| | 41 | Hardened Cast Iron | Vc | 33~36 | 34~38 | 33~38 | 38~42 | 38~43 | 38~43 |
| | | | fz | 0.012~0.012 | 0.014~0.014 | 0.018~0.018 | 0.022~0.022 | 0.056~0.056 | 0.056~0.056 |
| | | | RPM | 10500~11500 | 9100~10000 | 7000~8000 | 6100~6700 | 3990~4600 | 3000~3400 |
| | | | FEED | 250~280 | 250~280 | 250~280 | 270~300 | 445~515 | 335~380 |
| | | | Ap | 0.008~0.020 | 0.015~0.042 | 0.012~0.055 | 0.015~0100 | 0.040~0.150 | 0.053~0.200 |






CARBIDE
HSS
CBN END MILLS
i-Xmill END MILLS
i-SMART MODULAR END MILLS
X5070 END MILLS
4G MILL END MILLS
X-POWER PRO END MILLS
TitaNox-POWER END MILLS
SUS-CUT END MILLS
V7 PLUS END MILLS
ALU-POWER HPC END MILLS
ALU-CUT END MILLS
G-CUT END MILLS
CRX S END MILLS
K-2 END MILLS
GENERAL CARBIDE END MILLS
ONLY ONE COATED PM60 END MILLS
TANK-POWER END MILLS
GENERAL HSS END MILLS
MILLING CUTTERS
TECHNICAL DATA

# X5070 END MILLS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

### G8A01, G8A36 SERIES
**2 FLUTE - SLOTTING**
**2刃 - 槽铣削**

| ISO | VDI 3323 | Material Description | Ae | Ap | Parameter | Diameter (Ø) 0.2 | 0.3 | 0.4 | 0.5 | 0.6 | 0.8 | 0.9 | 1.0 | 2.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 5 | Non-alloy steel | 1.0D | 0.05D | Vc | 30 | 45 | 65 | 80 | 95 | 125 | 140 | 150 | 210 |
| | | | | | fz | 0.001 | 0.002 | 0.002 | 0.004 | 0.005 | 0.006 | 0.007 | 0.01 | 0.013 |
| | | | | | RPM | 47746 | 47746 | 51725 | 50930 | 50399 | 49736 | 49515 | 47746 | 33423 |
| | | | | | FEED | 95 | 191 | 207 | 407 | 504 | 597 | 693 | 955 | 869 |
| | 8-9 | Low alloy steel | 1.0D | 0.05D | Vc | 30 | 45 | 65 | 80 | 95 | 125 | 140 | 150 | 210 |
| | | | | | fz | 0.001 | 0.002 | 0.002 | 0.004 | 0.005 | 0.006 | 0.007 | 0.01 | 0.013 |
| | | | | | RPM | 47746 | 47746 | 51725 | 50930 | 50399 | 49736 | 49515 | 47746 | 33423 |
| | | | | | FEED | 95 | 191 | 207 | 407 | 504 | 597 | 693 | 955 | 869 |
| | 11.1 | High alloyed steel, and tool steel | 1.0D | 0.05D | Vc | 30 | 45 | 65 | 80 | 95 | 125 | 140 | 150 | 210 |
| | | | | | fz | 0.001 | 0.002 | 0.002 | 0.004 | 0.005 | 0.006 | 0.007 | 0.01 | 0.013 |
| | | | | | RPM | 47746 | 47746 | 51725 | 50930 | 50399 | 49736 | 49515 | 47746 | 33423 |
| | | | | | FEED | 95 | 191 | 207 | 407 | 504 | 597 | 693 | 955 | 869 |
| | 11.2 | | 1.0D | 0.05D | Vc | 30 | 40 | 55 | 70 | 85 | 100 | 110 | 120 | 165 |
| | | | | | fz | 0.001 | 0.002 | 0.002 | 0.003 | 0.004 | 0.006 | 0.007 | 0.008 | 0.013 |
| | | | | | RPM | 47746 | 42441 | 43768 | 44563 | 45094 | 39789 | 38905 | 38197 | 26261 |
| | | | | | FEED | 95 | 170 | 175 | 267 | 361 | 477 | 545 | 611 | 683 |
| H | 38.1 | Hardened steel | 1.0D | 0.05D | Vc | 30 | 40 | 55 | 70 | 85 | 100 | 110 | 120 | 165 |
| | | | | | fz | 0.001 | 0.002 | 0.002 | 0.003 | 0.004 | 0.006 | 0.007 | 0.008 | 0.013 |
| | | | | | RPM | 47746 | 42441 | 43768 | 44563 | 45094 | 39789 | 38905 | 38197 | 26261 |
| | | | | | FEED | 95 | 170 | 175 | 267 | 361 | 477 | 545 | 611 | 683 |
| | 38.2 | | 1.0D | 0.05D | Vc | 25 | 40 | 50 | 65 | 75 | 75 | 80 | 80 | 110 |
| | | | | | fz | 0.001 | 0.001 | 0.002 | 0.003 | 0.004 | 0.005 | 0.006 | 0.007 | 0.012 |
| | | | | | RPM | 39789 | 42441 | 39789 | 41380 | 39789 | 29842 | 28294 | 25465 | 17507 |
| | | | | | FEED | 80 | 85 | 159 | 248 | 318 | 298 | 340 | 357 | 420 |
| | 39.1 | | 1.0D | 0.05D | Vc | 20 | 30 | 40 | 50 | 55 | 65 | 65 | 65 | 90 |
| | | | | | fz | 0.001 | 0.001 | 0.001 | 0.002 | 0.003 | 0.004 | 0.005 | 0.005 | 0.009 |
| | | | | | RPM | 31831 | 31831 | 31831 | 31831 | 29178 | 25863 | 22989 | 20690 | 14324 |
| | | | | | FEED | 64 | 64 | 64 | 127 | 175 | 207 | 230 | 207 | 258 |
| | 39.2 | | 1.0D | 0.05D | Vc | 20 | 25 | 30 | 40 | 45 | 50 | 50 | 50 | 70 |
| | | | | | fz | 0.001 | 0.001 | 0.001 | 0.002 | 0.002 | 0.003 | 0.004 | 0.004 | 0.007 |
| | | | | | RPM | 31831 | 26526 | 23873 | 25465 | 23873 | 19894 | 17684 | 15915 | 11141 |
| | | | | | FEED | 64 | 53 | 48 | 102 | 95 | 119 | 141 | 127 | 156 |
| | 39.3 | | 1.0D | 0.02D | Vc | 15 | 20 | 25 | 30 | 40 | 40 | 40 | 40 | 60 |
| | | | | | fz | 0.001 | 0.001 | 0.001 | 0.002 | 0.002 | 0.003 | 0.003 | 0.003 | 0.006 |
| | | | | | RPM | 23873 | 21221 | 19894 | 19099 | 21221 | 15915 | 14147 | 12732 | 9549 |
| | | | | | FEED | 29 | 38 | 40 | 57 | 81 | 83 | 91 | 87 | 116 |
| | 40 | Chilled Cast Iron | 1.0D | 0.05D | Vc | 30 | 40 | 55 | 70 | 85 | 100 | 110 | 120 | 165 |
| | | | | | fz | 0.001 | 0.002 | 0.002 | 0.003 | 0.004 | 0.006 | 0.007 | 0.008 | 0.013 |
| | | | | | RPM | 47746 | 42441 | 43768 | 44563 | 45094 | 39789 | 38905 | 38197 | 26261 |
| | | | | | FEED | 95 | 170 | 175 | 267 | 361 | 477 | 545 | 611 | 683 |
| | 41 | Hardened Cast Iron | 1.0D | 0.05D | Vc | 25 | 40 | 50 | 65 | 75 | 75 | 80 | 80 | 110 |
| | | | | | fz | 0.001 | 0.001 | 0.002 | 0.003 | 0.004 | 0.005 | 0.006 | 0.007 | 0.012 |
| | | | | | RPM | 39789 | 42441 | 39789 | 41380 | 39789 | 29842 | 28294 | 25465 | 17507 |
| | | | | | FEED | 80 | 85 | 159 | 248 | 318 | 298 | 340 | 357 | 420 |

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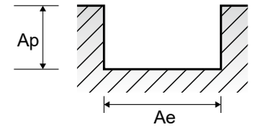

# X5070 END MILLS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

### G8A01, G8A36 SERIES

**2 FLUTE - SLOTTING**
**2刃 - 槽铣削**

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description | Ae | Ap | Parameter | Diameter (Ø) 3.0 | 4.0 | 5.0 | 6.0 | 8.0 | 10.0 | 12.0 | 16.0 | 20.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 5 | Non-alloy steel | 1.0D | 0.05D | Vc | 205 | 210 | 245 | 245 | 250 | 245 | 250 | 245 | 245 |
| | | | | | fz | 0.019 | 0.026 | 0.032 | 0.036 | 0.047 | 0.054 | 0.064 | 0.074 | 0.085 |
| | | | | | RPM | 21751 | 16711 | 15597 | 12998 | 9947 | 7799 | 6631 | 4874 | 3899 |
| | | | | | FEED | 827 | 869 | 998 | 936 | 935 | 842 | 849 | 721 | 663 |
| | 8-9 | Low alloy steel | 1.0D | 0.05D | Vc | 205 | 210 | 245 | 245 | 250 | 245 | 250 | 245 | 245 |
| | | | | | fz | 0.019 | 0.026 | 0.032 | 0.036 | 0.047 | 0.054 | 0.064 | 0.074 | 0.085 |
| | | | | | RPM | 21751 | 16711 | 15597 | 12998 | 9947 | 7799 | 6631 | 4874 | 3899 |
| | | | | | FEED | 827 | 869 | 998 | 936 | 935 | 842 | 849 | 721 | 663 |
| | 11.1 | High alloyed steel, and tool steel | 1.0D | 0.05D | Vc | 205 | 210 | 245 | 245 | 250 | 245 | 250 | 245 | 245 |
| | | | | | fz | 0.019 | 0.026 | 0.032 | 0.036 | 0.047 | 0.054 | 0.064 | 0.074 | 0.085 |
| | | | | | RPM | 21751 | 16711 | 15597 | 12998 | 9947 | 7799 | 6631 | 4874 | 3899 |
| | | | | | FEED | 827 | 869 | 998 | 936 | 935 | 842 | 849 | 721 | 663 |
| | 11.2 | | 1.0D | 0.05D | Vc | 165 | 165 | 195 | 195 | 195 | 195 | 200 | 195 | 195 |
| | | | | | fz | 0.02 | 0.027 | 0.032 | 0.037 | 0.046 | 0.055 | 0.065 | 0.074 | 0.085 |
| | | | | | RPM | 17507 | 13130 | 12414 | 10345 | 7759 | 6207 | 5305 | 3879 | 3104 |
| | | | | | FEED | 700 | 709 | 794 | 766 | 714 | 683 | 690 | 574 | 528 |
| H | 38.1 | Hardened steel | 1.0D | 0.05D | Vc | 165 | 165 | 195 | 195 | 195 | 195 | 200 | 195 | 195 |
| | | | | | fz | 0.02 | 0.027 | 0.032 | 0.037 | 0.046 | 0.055 | 0.065 | 0.074 | 0.085 |
| | | | | | RPM | 17507 | 13130 | 12414 | 10345 | 7759 | 6207 | 5305 | 3879 | 3104 |
| | | | | | FEED | 700 | 709 | 794 | 766 | 714 | 683 | 690 | 574 | 528 |
| | 38.2 | | 1.0D | 0.05D | Vc | 110 | 110 | 130 | 130 | 130 | 130 | 130 | 130 | 130 |
| | | | | | fz | 0.018 | 0.025 | 0.03 | 0.035 | 0.043 | 0.051 | 0.059 | 0.07 | 0.082 |
| | | | | | RPM | 11671 | 8754 | 8276 | 6897 | 5173 | 4138 | 3448 | 2586 | 2069 |
| | | | | | FEED | 420 | 438 | 497 | 483 | 445 | 422 | 407 | 362 | 339 |
| | 39.1 | | 1.0D | 0.05D | Vc | 90 | 90 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| | | | | | fz | 0.014 | 0.019 | 0.022 | 0.026 | 0.032 | 0.038 | 0.045 | 0.053 | 0.061 |
| | | | | | RPM | 9549 | 7162 | 6366 | 5305 | 3979 | 3183 | 2653 | 1989 | 1592 |
| | | | | | FEED | 267 | 272 | 280 | 276 | 255 | 242 | 239 | 211 | 194 |
| | 39.2 | | 1.0D | 0.05D | Vc | 70 | 70 | 80 | 80 | 80 | 80 | 80 | 80 | 80 |
| | | | | | fz | 0.011 | 0.015 | 0.018 | 0.021 | 0.026 | 0.03 | 0.037 | 0.042 | 0.048 |
| | | | | | RPM | 7427 | 5570 | 5093 | 4244 | 3183 | 2546 | 2122 | 1592 | 1273 |
| | | | | | FEED | 163 | 167 | 183 | 178 | 166 | 153 | 157 | 134 | 122 |
| | 39.3 | | 1.0D | 0.02D | Vc | 60 | 60 | 70 | 70 | 70 | 70 | 70 | 70 | 70 |
| | | | | | fz | 0.009 | 0.012 | 0.015 | 0.018 | 0.021 | 0.026 | 0.03 | 0.034 | 0.039 |
| | | | | | RPM | 6366 | 4775 | 4456 | 3714 | 2785 | 2228 | 1857 | 1393 | 1114 |
| | | | | | FEED | 115 | 118 | 132 | 131 | 119 | 114 | 112 | 94 | 86 |
| | 40 | Chilled Cast Iron | 1.0D | 0.05D | Vc | 165 | 165 | 195 | 195 | 195 | 195 | 200 | 195 | 195 |
| | | | | | fz | 0.02 | 0.027 | 0.032 | 0.037 | 0.046 | 0.055 | 0.065 | 0.074 | 0.085 |
| | | | | | RPM | 17507 | 13130 | 12414 | 10345 | 7759 | 6207 | 5305 | 3879 | 3104 |
| | | | | | FEED | 700 | 709 | 794 | 766 | 714 | 683 | 690 | 574 | 528 |
| | 41 | Hardened Cast Iron | 1.0D | 0.05D | Vc | 110 | 110 | 130 | 130 | 130 | 130 | 130 | 130 | 130 |
| | | | | | fz | 0.018 | 0.025 | 0.03 | 0.035 | 0.043 | 0.051 | 0.059 | 0.07 | 0.082 |
| | | | | | RPM | 11671 | 8754 | 8276 | 6897 | 5173 | 4138 | 3448 | 2586 | 2069 |
| | | | | | FEED | 420 | 438 | 497 | 483 | 445 | 422 | 407 | 362 | 339 |

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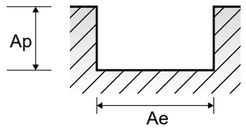




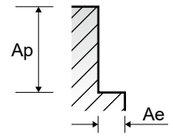

X5070 END MILLS
RECOMMENDED CUTTING CONDITIONS
推荐加工参数

### G8A01, G8A36 SERIES

**2 FLUTE - SIDE CUTTING**
**2刃 - 侧铣削**

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description | Ae | Ap | Parameter | Diameter (Ø) 1.0 | 2.0 | 3.0 | 4.0 | 5.0 | 6.0 | 8.0 | 10.0 | 12.0 | 16.0 | 20.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 5 | Non-alloy steel | 0.03D | 1.0D | Vc | 150 | 210 | 205 | 210 | 245 | 245 | 250 | 245 | 250 | 245 | 245 |
| | | | | | fz | 0.011 | 0.018 | 0.028 | 0.037 | 0.046 | 0.052 | 0.067 | 0.077 | 0.09 | 0.107 | 0.122 |
| | | | | | RPM | 47746 | 33423 | 21751 | 16711 | 15597 | 12998 | 9947 | 7799 | 6631 | 4874 | 3899 |
| | | | | | FEED | 1050 | 1203 | 1218 | 1237 | 1435 | 1352 | 1333 | 1201 | 1194 | 1043 | 951 |
| | 8-9 | Low alloy steel | 0.03D | 1.0D | Vc | 150 | 210 | 205 | 210 | 245 | 245 | 250 | 245 | 250 | 245 | 245 |
| | | | | | fz | 0.011 | 0.018 | 0.028 | 0.037 | 0.046 | 0.052 | 0.067 | 0.077 | 0.09 | 0.107 | 0.122 |
| | | | | | RPM | 47746 | 33423 | 21751 | 16711 | 15597 | 12998 | 9947 | 7799 | 6631 | 4874 | 3899 |
| | | | | | FEED | 1050 | 1203 | 1218 | 1237 | 1435 | 1352 | 1333 | 1201 | 1194 | 1043 | 951 |
| | 11.1 | High alloyed steel, and tool steel | 0.03D | 1.0D | Vc | 150 | 210 | 205 | 210 | 245 | 245 | 250 | 245 | 250 | 245 | 245 |
| | | | | | fz | 0.011 | 0.018 | 0.028 | 0.037 | 0.046 | 0.052 | 0.067 | 0.08 | 0.09 | 0.107 | 0.122 |
| | | | | | RPM | 47746 | 33423 | 21751 | 16711 | 15597 | 12998 | 9947 | 7799 | 6631 | 4874 | 3899 |
| | | | | | FEED | 1050 | 1203 | 1218 | 1237 | 1435 | 1352 | 1333 | 1248 | 1194 | 1043 | 951 |
| | 11.2 | | 0.03D | 1.0D | Vc | 120 | 165 | 165 | 165 | 195 | 195 | 195 | 195 | 200 | 195 | 195 |
| | | | | | fz | 0.011 | 0.019 | 0.028 | 0.038 | 0.046 | 0.053 | 0.066 | 0.079 | 0.092 | 0.108 | 0.121 |
| | | | | | RPM | 38197 | 26261 | 17507 | 13130 | 12414 | 10345 | 7759 | 6207 | 5305 | 3879 | 3104 |
| | | | | | FEED | 840 | 998 | 980 | 998 | 1142 | 1097 | 1024 | 981 | 976 | 838 | 751 |
| H | 38.1 | Hardened steel | 0.03D | 1.0D | Vc | 120 | 165 | 165 | 165 | 195 | 195 | 195 | 195 | 200 | 195 | 195 |
| | | | | | fz | 0.011 | 0.019 | 0.028 | 0.038 | 0.046 | 0.053 | 0.066 | 0.079 | 0.092 | 0.108 | 0.121 |
| | | | | | RPM | 38197 | 26261 | 17507 | 13130 | 12414 | 10345 | 7759 | 6207 | 5305 | 3879 | 3104 |
| | | | | | FEED | 840 | 998 | 980 | 998 | 1142 | 1097 | 1024 | 981 | 976 | 838 | 751 |
| | 38.2 | | 0.03D | 1.0D | Vc | 80 | 110 | 110 | 110 | 130 | 130 | 130 | 130 | 130 | 130 | 130 |
| | | | | | fz | 0.01 | 0.017 | 0.026 | 0.036 | 0.043 | 0.05 | 0.061 | 0.072 | 0.084 | 0.1 | 0.116 |
| | | | | | RPM | 25465 | 17507 | 11671 | 8754 | 8276 | 6897 | 5173 | 4138 | 3448 | 2586 | 2069 |
| | | | | | FEED | 509 | 595 | 607 | 630 | 712 | 690 | 631 | 596 | 579 | 517 | 480 |
| | 39.1 | | 0.03D | 1.0D | Vc | 65 | 90 | 90 | 90 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| | | | | | fz | 0.008 | 0.013 | 0.019 | 0.027 | 0.032 | 0.038 | 0.046 | 0.053 | 0.064 | 0.075 | 0.086 |
| | | | | | RPM | 20690 | 14324 | 9549 | 7162 | 6366 | 5305 | 3979 | 3183 | 2653 | 1989 | 1592 |
| | | | | | FEED | 331 | 372 | 363 | 387 | 407 | 403 | 366 | 337 | 340 | 298 | 274 |
| | 39.2 | | 0.03D | 1.0D | Vc | 50 | 70 | 70 | 70 | 80 | 80 | 80 | 80 | 80 | 80 | 80 |
| | | | | | fz | 0.006 | 0.01 | 0.015 | 0.021 | 0.025 | 0.03 | 0.037 | 0.043 | 0.052 | 0.059 | 0.067 |
| | | | | | RPM | 15915 | 11141 | 7427 | 5570 | 5093 | 4244 | 3183 | 2546 | 2122 | 1592 | 1273 |
| | | | | | FEED | 191 | 223 | 223 | 234 | 255 | 255 | 236 | 219 | 221 | 188 | 171 |
| | 39.3 | | 0.03D | 1.0D | Vc | 40 | 60 | 60 | 60 | 70 | 70 | 70 | 70 | 70 | 70 | 70 |
| | | | | | fz | 0.005 | 0.009 | 0.013 | 0.018 | 0.021 | 0.025 | 0.03 | 0.036 | 0.043 | 0.05 | 0.057 |
| | | | | | RPM | 12732 | 9549 | 6366 | 4775 | 4456 | 3714 | 2785 | 2228 | 1857 | 1393 | 1114 |
| | | | | | FEED | 127 | 172 | 166 | 172 | 187 | 186 | 167 | 160 | 160 | 139 | 127 |
| | 40 | Chilled Cast Iron | 0.03D | 1.0D | Vc | 120 | 165 | 165 | 165 | 195 | 195 | 195 | 195 | 200 | 195 | 195 |
| | | | | | fz | 0.011 | 0.019 | 0.028 | 0.038 | 0.046 | 0.053 | 0.066 | 0.079 | 0.092 | 0.108 | 0.121 |
| | | | | | RPM | 38197 | 26261 | 17507 | 13130 | 12414 | 10345 | 7759 | 6207 | 5305 | 3879 | 3104 |
| | | | | | FEED | 840 | 998 | 980 | 998 | 1142 | 1097 | 1024 | 981 | 976 | 838 | 751 |
| | 41 | Hardened Cast Iron | 0.03D | 1.0D | Vc | 80 | 110 | 110 | 110 | 130 | 130 | 130 | 130 | 130 | 130 | 130 |
| | | | | | fz | 0.01 | 0.017 | 0.026 | 0.036 | 0.043 | 0.05 | 0.061 | 0.072 | 0.084 | 0.1 | 0.116 |
| | | | | | RPM | 25465 | 17507 | 11671 | 8754 | 8276 | 6897 | 5173 | 4138 | 3448 | 2586 | 2069 |
| | | | | | FEED | 509 | 595 | 607 | 630 | 712 | 690 | 631 | 596 | 579 | 517 | 480 |



# X5070 END MILLS

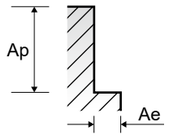
## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

### G8A02, G8A37 SERIES

**4 FLUTE - SIDE CUTTING**
**4刃 - 侧铣削**

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description | Ae | Ap | Parameter | Diameter (Ø) 1.0 | 2.0 | 3.0 | 4.0 | 5.0 | 6.0 | 8.0 | 10.0 | 12.0 | 16.0 | 20.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 5 | Non-alloy steel | 0.03D | 1.0D | Vc | 150 | 210 | 205 | 210 | 245 | 245 | 250 | 245 | 250 | 245 | 245 |
| | | | | | fz | 0.008 | 0.013 | 0.02 | 0.027 | 0.032 | 0.037 | 0.048 | 0.056 | 0.066 | 0.077 | 0.083 |
| | | | | | RPM | 47746 | 33423 | 21751 | 16711 | 15597 | 12998 | 9947 | 7799 | 6631 | 4874 | 3899 |
| | | | | | FEED | 1528 | 1738 | 1740 | 1805 | 1996 | 1924 | 1910 | 1747 | 1751 | 1501 | 1294 |
| | 8-9 | Low alloy steel | 0.03D | 1.0D | Vc | 150 | 210 | 205 | 210 | 245 | 245 | 250 | 245 | 250 | 245 | 245 |
| | | | | | fz | 0.008 | 0.013 | 0.02 | 0.027 | 0.032 | 0.037 | 0.048 | 0.056 | 0.066 | 0.077 | 0.083 |
| | | | | | RPM | 47746 | 33423 | 21751 | 16711 | 15597 | 12998 | 9947 | 7799 | 6631 | 4874 | 3899 |
| | | | | | FEED | 1528 | 1738 | 1740 | 1805 | 1996 | 1924 | 1910 | 1747 | 1751 | 1501 | 1294 |
| | 11.1 | High alloyed steel, and tool steel | 0.03D | 1.0D | Vc | 150 | 210 | 205 | 210 | 245 | 245 | 250 | 245 | 250 | 245 | 245 |
| | | | | | fz | 0.008 | 0.013 | 0.02 | 0.027 | 0.032 | 0.037 | 0.048 | 0.056 | 0.066 | 0.077 | 0.083 |
| | | | | | RPM | 47746 | 33423 | 21751 | 16711 | 15597 | 12998 | 9947 | 7799 | 6631 | 4874 | 3899 |
| | | | | | FEED | 1528 | 1738 | 1740 | 1805 | 1996 | 1924 | 1910 | 1747 | 1751 | 1501 | 1294 |
| | 11.2 | | 0.03D | 1.0D | Vc | 120 | 165 | 165 | 165 | 195 | 195 | 195 | 195 | 200 | 195 | 195 |
| | | | | | fz | 0.007 | 0.012 | 0.018 | 0.025 | 0.03 | 0.034 | 0.043 | 0.051 | 0.06 | 0.071 | 0.078 |
| | | | | | RPM | 38197 | 26261 | 17507 | 13130 | 12414 | 10345 | 7759 | 6207 | 5305 | 3879 | 3104 |
| | | | | | FEED | 1070 | 1261 | 1261 | 1313 | 1490 | 1407 | 1335 | 1266 | 1273 | 1102 | 968 |
| H | 38.1 | Hardened steel | 0.03D | 1.0D | Vc | 120 | 165 | 165 | 165 | 195 | 195 | 195 | 195 | 200 | 195 | 195 |
| | | | | | fz | 0.007 | 0.012 | 0.018 | 0.025 | 0.03 | 0.034 | 0.043 | 0.051 | 0.06 | 0.071 | 0.078 |
| | | | | | RPM | 38197 | 26261 | 17507 | 13130 | 12414 | 10345 | 7759 | 6207 | 5305 | 3879 | 3104 |
| | | | | | FEED | 1070 | 1261 | 1261 | 1313 | 1490 | 1407 | 1335 | 1266 | 1273 | 1102 | 968 |
| | 38.2 | | 0.03D | 1.0D | Vc | 80 | 110 | 110 | 110 | 130 | 130 | 130 | 130 | 130 | 130 | 130 |
| | | | | | fz | 0.007 | 0.012 | 0.018 | 0.025 | 0.03 | 0.034 | 0.043 | 0.051 | 0.06 | 0.07 | 0.079 |
| | | | | | RPM | 25465 | 17507 | 11671 | 8754 | 8276 | 6897 | 5173 | 4138 | 3448 | 2586 | 2069 |
| | | | | | FEED | 713 | 840 | 840 | 875 | 993 | 938 | 890 | 844 | 828 | 724 | 654 |
| | 39.1 | | 0.03D | 1.0D | Vc | 65 | 90 | 90 | 90 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| | | | | | fz | 0.005 | 0.009 | 0.014 | 0.019 | 0.023 | 0.026 | 0.033 | 0.038 | 0.045 | 0.053 | 0.059 |
| | | | | | RPM | 20690 | 14324 | 9549 | 7162 | 6366 | 5305 | 3979 | 3183 | 2653 | 1989 | 1592 |
| | | | | | FEED | 414 | 516 | 535 | 544 | 586 | 552 | 525 | 484 | 478 | 422 | 376 |
| | 39.2 | | 0.03D | 1.0D | Vc | 50 | 70 | 70 | 70 | 80 | 80 | 80 | 80 | 80 | 80 | 80 |
| | | | | | fz | 0.004 | 0.007 | 0.011 | 0.015 | 0.018 | 0.021 | 0.026 | 0.03 | 0.036 | 0.042 | 0.048 |
| | | | | | RPM | 15915 | 11141 | 7427 | 5570 | 5093 | 4244 | 3183 | 2546 | 2122 | 1592 | 1273 |
| | | | | | FEED | 255 | 312 | 327 | 334 | 367 | 356 | 331 | 306 | 306 | 267 | 244 |
| | 39.3 | | 0.03D | 1.0D | Vc | 40 | 60 | 60 | 60 | 70 | 70 | 70 | 70 | 70 | 70 | 70 |
| | | | | | fz | 0.004 | 0.007 | 0.009 | 0.013 | 0.016 | 0.018 | 0.022 | 0.025 | 0.03 | 0.036 | 0.041 |
| | | | | | RPM | 12732 | 9549 | 6366 | 4775 | 4456 | 3714 | 2785 | 2228 | 1857 | 1393 | 1114 |
| | | | | | FEED | 204 | 267 | 229 | 248 | 285 | 267 | 245 | 223 | 223 | 201 | 183 |
| | 40 | Chilled Cast Iron | 0.03D | 1.0D | Vc | 120 | 165 | 165 | 165 | 195 | 195 | 195 | 195 | 200 | 195 | 195 |
| | | | | | fz | 0.007 | 0.012 | 0.018 | 0.025 | 0.03 | 0.034 | 0.043 | 0.051 | 0.06 | 0.071 | 0.078 |
| | | | | | RPM | 38197 | 26261 | 17507 | 13130 | 12414 | 10345 | 7759 | 6207 | 5305 | 3879 | 3104 |
| | | | | | FEED | 1070 | 1261 | 1261 | 1313 | 1490 | 1407 | 1335 | 1266 | 1273 | 1102 | 968 |
| | 41 | Hardened Cast Iron | 0.03D | 1.0D | Vc | 80 | 110 | 110 | 110 | 130 | 130 | 130 | 130 | 130 | 130 | 130 |
| | | | | | fz | 0.007 | 0.012 | 0.018 | 0.025 | 0.03 | 0.034 | 0.043 | 0.051 | 0.06 | 0.07 | 0.079 |
| | | | | | RPM | 25465 | 17507 | 11671 | 8754 | 8276 | 6897 | 5173 | 4138 | 3448 | 2586 | 2069 |
| | | | | | FEED | 713 | 840 | 840 | 875 | 993 | 938 | 890 | 844 | 828 | 724 | 654 |





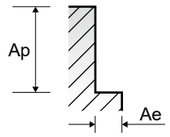

X5070 END MILLS
RECOMMENDED CUTTING CONDITIONS
推荐加工参数

### G8A39 SERIES

**6 FLUTE - SIDE CUTTING**
**6刃 - 侧铣削**

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description | Ae | Ap | Parameter | Diameter (Ø) 6.0 | 8.0 | 10.0 | 12.0 | 16.0 | 20.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 5 | Non-alloy steel | 0.05D | 1.0D | Vc | 120 | 121 | 121 | 122 | 121 | 121 |
| | | | | | fz | 0.039 | 0.052 | 0.063 | 0.07 | 0.09 | 0.079 |
| | | | | | RPM | 6366 | 4814 | 3852 | 3236 | 2407 | 1926 |
| | | | | | FEED | 1490 | 1502 | 1456 | 1359 | 1300 | 913 |
| | 8-9 | Low alloy steel | 0.05D | 1.0D | Vc | 120 | 121 | 121 | 122 | 121 | 121 |
| | | | | | fz | 0.039 | 0.052 | 0.063 | 0.07 | 0.09 | 0.079 |
| | | | | | RPM | 6366 | 4814 | 3852 | 3236 | 2407 | 1926 |
| | | | | | FEED | 1490 | 1502 | 1456 | 1359 | 1300 | 913 |
| | 11.1 | High alloyed steel, and tool steel | 0.05D | 1.0D | Vc | 120 | 121 | 121 | 122 | 121 | 121 |
| | | | | | fz | 0.039 | 0.052 | 0.063 | 0.07 | 0.09 | 0.079 |
| | | | | | RPM | 6366 | 4814 | 3852 | 3236 | 2407 | 1926 |
| | | | | | FEED | 1490 | 1502 | 1456 | 1359 | 1300 | 913 |
| | 11.2 | | 0.05D | 1.0D | Vc | 106 | 108 | 106 | 106 | 108 | 110 |
| | | | | | fz | 0.036 | 0.049 | 0.058 | 0.065 | 0.083 | 0.095 |
| | | | | | RPM | 5623 | 4297 | 3374 | 2812 | 2149 | 1751 |
| | | | | | FEED | 1215 | 1263 | 1174 | 1097 | 1070 | 998 |
| H | 38.1 | Hardened steel | 0.05D | 1.0D | Vc | 106 | 108 | 106 | 106 | 108 | 110 |
| | | | | | fz | 0.036 | 0.049 | 0.058 | 0.065 | 0.083 | 0.095 |
| | | | | | RPM | 5623 | 4297 | 3374 | 2812 | 2149 | 1751 |
| | | | | | FEED | 1215 | 1263 | 1174 | 1097 | 1070 | 998 |
| | 38.2 | | 0.05D | 1.0D | Vc | 95 | 97 | 94 | 95 | 97 | 98 |
| | | | | | fz | 0.035 | 0.046 | 0.055 | 0.062 | 0.079 | 0.091 |
| | | | | | RPM | 5040 | 3860 | 2992 | 2520 | 1930 | 1560 |
| | | | | | FEED | 1058 | 1065 | 987 | 937 | 915 | 852 |
| | 39.1 | | 0.03D | 1.0D | Vc | 83 | 83 | 82 | 83 | 83 | 87 |
| | | | | | fz | 0.033 | 0.044 | 0.053 | 0.059 | 0.076 | 0.072 |
| | | | | | RPM | 4403 | 3302 | 2610 | 2202 | 1651 | 1385 |
| | | | | | FEED | 872 | 872 | 830 | 780 | 753 | 598 |
| | 39.2 | | 0.03D | 1.0D | Vc | 72 | 72 | 72 | 72 | 72 | 75 |
| | | | | | fz | 0.031 | 0.042 | 0.05 | 0.056 | 0.072 | 0.069 |
| | | | | | RPM | 3820 | 2865 | 2292 | 1910 | 1432 | 1194 |
| | | | | | FEED | 711 | 722 | 688 | 642 | 619 | 494 |
| | 39.3 | | 0.03D | 1.0D | Vc | 48 | 48 | 49 | 50 | 48 | 45 |
| | | | | | fz | 0.028 | 0.037 | 0.045 | 0.05 | 0.064 | 0.071 |
| | | | | | RPM | 2546 | 1910 | 1560 | 1326 | 955 | 716 |
| | | | | | FEED | 428 | 424 | 421 | 398 | 367 | 305 |
| | 40 | Chilled Cast Iron | 0.05D | 1.0D | Vc | 106 | 108 | 106 | 106 | 108 | 110 |
| | | | | | fz | 0.036 | 0.049 | 0.058 | 0.065 | 0.083 | 0.095 |
| | | | | | RPM | 5623 | 4297 | 3374 | 2812 | 2149 | 1751 |
| | | | | | FEED | 1215 | 1263 | 1174 | 1097 | 1070 | 998 |
| | 41 | Hardened Cast Iron | 0.05D | 1.0D | Vc | 95 | 97 | 94 | 95 | 97 | 98 |
| | | | | | fz | 0.035 | 0.046 | 0.055 | 0.062 | 0.079 | 0.091 |
| | | | | | RPM | 5040 | 3860 | 2992 | 2520 | 1930 | 1560 |
| | | | | | FEED | 1058 | 1065 | 987 | 937 | 915 | 852 |



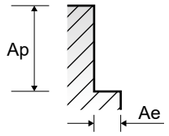
# X5070 END MILLS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

### G8D63 SERIES — 6&8FLUTE 45° HELIX - SIDE CUTTING
### 6&8刃 45度螺旋 - 侧铣削

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description | Ae | Ap | Parameter | Diameter (Ø) 6.0 | 8.0 | 10.0 | 12.0 | 14.0 | 16.0 | 18.0 | 20.0 | 25.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 5 | Non-alloy steel | 0.04D | 1.5D | Vc | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 125 |
| | | | | | fz | 0.039 | 0.052 | 0.063 | 0.07 | 0.081 | 0.09 | 0.095 | 0.08 | 0.11 |
| | | | | | RPM | 6366 | 4775 | 3820 | 3183 | 2728 | 2387 | 2122 | 1910 | 1592 |
| | | | | | FEED | 1490 | 1490 | 1444 | 1337 | 1326 | 1289 | 1613 | 1222 | 1401 |
| | 8-9 | Low alloy steel | 0.04D | 1.5D | Vc | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 125 |
| | | | | | fz | 0.039 | 0.052 | 0.063 | 0.07 | 0.081 | 0.09 | 0.095 | 0.08 | 0.11 |
| | | | | | RPM | 6366 | 4775 | 3820 | 3183 | 2728 | 2387 | 2122 | 1910 | 1592 |
| | | | | | FEED | 1490 | 1490 | 1444 | 1337 | 1326 | 1289 | 1613 | 1222 | 1401 |
| | 11.1 | High alloyed steel, and tool steel | 0.04D | 1.5D | Vc | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 125 |
| | | | | | fz | 0.039 | 0.052 | 0.063 | 0.07 | 0.081 | 0.09 | 0.095 | 0.08 | 0.11 |
| | | | | | RPM | 6366 | 4775 | 3820 | 3183 | 2728 | 2387 | 2122 | 1910 | 1592 |
| | | | | | FEED | 1490 | 1490 | 1444 | 1337 | 1326 | 1289 | 1613 | 1222 | 1401 |
| | 11.2 | | 0.04D | 1.5D | Vc | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 100 | 95 |
| | | | | | fz | 0.035 | 0.046 | 0.055 | 0.062 | 0.07 | 0.079 | 0.08 | 0.091 | 0.096 |
| | | | | | RPM | 5040 | 3780 | 3024 | 2520 | 2160 | 1890 | 1680 | 1592 | 1210 |
| | | | | | FEED | 1058 | 1043 | 998 | 937 | 907 | 896 | 1075 | 1159 | 929 |
| H | 38.1 - 38.2 | Hardened steel | 0.04D | 1.5D | Vc | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 100 | 95 |
| | | | | | fz | 0.035 | 0.046 | 0.055 | 0.062 | 0.07 | 0.079 | 0.08 | 0.091 | 0.096 |
| | | | | | RPM | 5040 | 3780 | 3024 | 2520 | 2160 | 1890 | 1680 | 1592 | 1210 |
| | | | | | FEED | 1058 | 1043 | 998 | 937 | 907 | 896 | 1075 | 1159 | 929 |
| | 39.1 - 39.2 | | 0.04D | 1.5D | Vc | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 75 | 75 |
| | | | | | fz | 0.031 | 0.042 | 0.05 | 0.056 | 0.066 | 0.072 | 0.073 | 0.069 | 0.087 |
| | | | | | RPM | 3714 | 2785 | 2228 | 1857 | 1592 | 1393 | 1238 | 1194 | 955 |
| | | | | | FEED | 691 | 702 | 668 | 624 | 630 | 602 | 723 | 659 | 665 |
| | 39.3 | | 0.04D | 1.5D | Vc | 50 | 50 | 50 | 50 | 45 | 50 | 50 | 45 | 50 |
| | | | | | fz | 0.028 | 0.037 | 0.045 | 0.05 | 0.051 | 0.064 | 0.066 | 0.071 | 0.079 |
| | | | | | RPM | 2653 | 1989 | 1592 | 1326 | 1023 | 995 | 884 | 716 | 637 |
| | | | | | FEED | 446 | 442 | 430 | 398 | 313 | 382 | 467 | 407 | 403 |
| | 40 | Chilled Cast Iron | 0.04D | 1.5D | Vc | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 100 | 95 |
| | | | | | fz | 0.035 | 0.046 | 0.055 | 0.062 | 0.07 | 0.079 | 0.08 | 0.091 | 0.096 |
| | | | | | RPM | 5040 | 3780 | 3024 | 2520 | 2160 | 1890 | 1680 | 1592 | 1210 |
| | | | | | FEED | 1058 | 1043 | 998 | 937 | 907 | 896 | 1075 | 1159 | 929 |
| | 41 | Hardened Cast Iron | 0.04D | 1.5D | Vc | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 100 | 95 |
| | | | | | fz | 0.035 | 0.046 | 0.055 | 0.062 | 0.07 | 0.079 | 0.08 | 0.091 | 0.096 |
| | | | | | RPM | 5040 | 3780 | 3024 | 2520 | 2160 | 1890 | 1680 | 1592 | 1210 |
| | | | | | FEED | 1058 | 1043 | 998 | 937 | 907 | 896 | 1075 | 1159 | 929 |



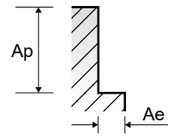



X5070 END MILLS
RECOMMENDED CUTTING CONDITIONS
推荐加工参数

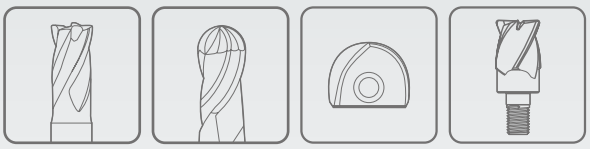
### G8D64 SERIES — 6&8FLUTE 45° HELIX - SIDE CUTTING
### 6&8刃 45度螺旋 - 侧铣削

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description | Ae | Ap | Parameter | Diameter (Ø) 6.0 | 8.0 | 10.0 | 12.0 | 14.0 | 16.0 | 18.0 | 20.0 | 25.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 5 | Non-alloy steel | 0.01D | 3.0D | Vc | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 |
| | | | | | fz | 0.04 | 0.05 | 0.06 | 0.07 | 0.075 | 0.081 | 0.085 | 0.086 | 0.089 |
| | | | | | RPM | 3183 | 2387 | 1910 | 1592 | 1364 | 1194 | 1061 | 955 | 764 |
| | | | | | FEED | 764 | 716 | 688 | 669 | 614 | 580 | 721 | 657 | 544 |
| | 8-9 | Low alloy steel | 0.01D | 3.0D | Vc | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 |
| | | | | | fz | 0.04 | 0.05 | 0.06 | 0.07 | 0.075 | 0.081 | 0.085 | 0.086 | 0.089 |
| | | | | | RPM | 3183 | 2387 | 1910 | 1592 | 1364 | 1194 | 1061 | 955 | 764 |
| | | | | | FEED | 764 | 716 | 688 | 669 | 614 | 580 | 721 | 657 | 544 |
| | 11.1 | High alloyed steel, and tool steel | 0.01D | 3.0D | Vc | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 |
| | | | | | fz | 0.04 | 0.05 | 0.06 | 0.07 | 0.075 | 0.081 | 0.085 | 0.086 | 0.089 |
| | | | | | RPM | 3183 | 2387 | 1910 | 1592 | 1364 | 1194 | 1061 | 955 | 764 |
| | | | | | FEED | 764 | 716 | 688 | 669 | 614 | 580 | 721 | 657 | 544 |
| | 11.2 | | 0.01D | 3.0D | Vc | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 |
| | | | | | fz | 0.03 | 0.04 | 0.05 | 0.061 | 0.066 | 0.071 | 0.08 | 0.09 | 0.08 |
| | | | | | RPM | 3183 | 2387 | 1910 | 1592 | 1364 | 1194 | 1061 | 955 | 764 |
| | | | | | FEED | 573 | 573 | 573 | 583 | 540 | 509 | 679 | 688 | 489 |
| H | 38.1 - 38.2 | Hardened steel | 0.01D | 3.0D | Vc | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 |
| | | | | | fz | 0.03 | 0.04 | 0.05 | 0.061 | 0.066 | 0.071 | 0.08 | 0.09 | 0.08 |
| | | | | | RPM | 3183 | 2387 | 1910 | 1592 | 1364 | 1194 | 1061 | 955 | 764 |
| | | | | | FEED | 573 | 573 | 573 | 583 | 540 | 509 | 679 | 688 | 489 |
| | 39.1 - 39.2 | | 0.01D | 3.0D | Vc | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 |
| | | | | | fz | 0.03 | 0.04 | 0.05 | 0.06 | 0.066 | 0.071 | 0.081 | 0.091 | 0.081 |
| | | | | | RPM | 2653 | 1989 | 1592 | 1326 | 1137 | 995 | 884 | 796 | 637 |
| | | | | | FEED | 478 | 477 | 478 | 477 | 450 | 424 | 573 | 579 | 413 |
| | 40 | Chilled Cast Iron | 0.01D | 3.0D | Vc | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 |
| | | | | | fz | 0.03 | 0.04 | 0.05 | 0.061 | 0.066 | 0.071 | 0.08 | 0.09 | 0.08 |
| | | | | | RPM | 3183 | 2387 | 1910 | 1592 | 1364 | 1194 | 1061 | 955 | 764 |
| | | | | | FEED | 573 | 573 | 573 | 583 | 540 | 509 | 679 | 688 | 489 |
| | 41 | Hardened Cast Iron | 0.01D | 3.0D | Vc | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 |
| | | | | | fz | 0.03 | 0.04 | 0.05 | 0.061 | 0.066 | 0.071 | 0.08 | 0.09 | 0.08 |
| | | | | | RPM | 3183 | 2387 | 1910 | 1592 | 1364 | 1194 | 1061 | 955 | 764 |
| | | | | | FEED | 573 | 573 | 573 | 583 | 540 | 509 | 679 | 688 | 489 |



Global Cutting Tool Leader **YG-1**



# MILLING

YG

Leading Through Innovation

# SOLID CARBIDE

# 4G Mill END MILLS

- High Speed Cutting for Pre-Hardened Steels up to HRc55

- 适用于高速加工 预硬钢 (~HRc55)

# SELECTION GUIDE
## 选用指南

YG MILLING TOOLS

## SOLID CARBIDE
# 4G Mill
# END MILLS

High Speed Cutting
for Pre-Hardened Steels up to HRc55
适用于高速加工 预硬钢 (~HRc55)

Please visit globalyg1.com/mat for material search

◎ : Excellent (优秀) ○ : Good (良好)

Recommended cutting conditions (推荐加工参数) : p.C250

| ISO | VDI 3323 | Material Description 工件材料 | Composition / Structure / Heat Treatment 成分 / 结构 / 热处理 | | HB | HRc | SEMD98 | SEM846 | SEM846 | SEMD99 |
|---|---|---|---|---|---|---|---|---|---|---|
| SERIES 系列 | | | | | | | SEMD98 | SEM846 | SEM846 | SEMD99 |
| FLUTE 槽数 | | | | | | | 2 | 2 | 2 | 2 |
| HELIX ANGLE 螺旋角度 | | | | | | | 30° | 30° | 30° | 30° |
| CUTTING EDGE SHAPE 类型 | | | | | | | BALL NOSE | BALL NOSE | BALL NOSE | CORNER RADIUS |
| SIZE MIN 最小尺寸 | | | | | | | R0.05 | R0.05 | R0.25 | D0.2 |
| SIZE MAX 最大尺寸 | | | | | | | R12.5 | R6.0 | R1.0 | D20.0 |
| PAGE 页数 | | | | | | | C140-145 | C146-155 | C156-158 | C159-166 |
| | | | | | | | - | EXTENDED NECK | EXTENDED NECK (6mm Shank) | - |
| | | | | | | | Y-Coating | Y-Coating | Y-Coating | Y-Coating |
| P | 1 | Non-alloy steel | About 0.15% C | Annealed | 125 | | ○ | ○ | ○ | ○ |
| | 2 | | About 0.45% C | Annealed | 190 | 13 | ○ | ○ | ○ | ○ |
| | 3 | | About 0.45% C | Quenched & Tempered | 250 | 25 | ○ | ○ | ○ | ◎ |
| | 4 | | About 0.75% C | Annealed | 270 | 28 | ◎ | ◎ | ◎ | ◎ |
| | 5 | | About 0.75% C | Quenched & Tempered | 300 | 32 | ◎ | ◎ | ◎ | ◎ |
| | 6 | Low alloy steel | | Annealed | 180 | 10 | ○ | ○ | ○ | ○ |
| | 7 | | | Quenched & Tempered | 275 | 29 | ◎ | ◎ | ◎ | ◎ |
| | 8 | | | Quenched & Tempered | 300 | 32 | ◎ | ◎ | ◎ | ◎ |
| | 9 | | | Quenched & Tempered | 350 | 38 | ◎ | ◎ | ◎ | ◎ |
| | 10 | High alloyed steel, and tool steel | | Annealed | 200 | 15 | ○ | ○ | ○ | ○ |
| | 11 | | | Quenched & Tempered | 325 | 35 | ◎ | ◎ | ◎ | ◎ |
| M | 12 | Stainless steel | Ferritic / Martensitic | Annealed | 200 | 15 | | | | |
| | 13 | | Martensitic | Quenched & Tempered | 240 | 23 | | | | |
| | 14 | | Austenitic | | 180 | 10 | | | | |
| K | 15 | Grey cast iron | Pearlitic / ferritic | | 180 | 10 | ○ | ○ | ○ | ○ |
| | 16 | | Pearlitic (Martensitic) | | 260 | 26 | ○ | ○ | ○ | ○ |
| | 17 | Nodular cast iron | Ferritic | | 160 | 3 | ○ | ○ | ○ | ○ |
| | 18 | | Pearlitic | | 250 | 25 | ○ | ○ | ○ | ○ |
| | 19 | Malleable cast iron | Ferritic | | 130 | | ○ | ○ | ○ | ○ |
| | 20 | | Pearlitic | | 230 | 21 | ○ | ○ | ○ | ○ |
| N | 21 | Aluminum-wrought alloy | Not Curable | | 60 | | | | | |
| | 22 | | Curable | Hardened | 100 | | | | | |
| | 23 | Aluminum-cast, alloyed | ≤ 12% Si, Not Curable | | 75 | | | | | |
| | 24 | | ≤ 12% Si, Curable | Hardened | 90 | | | | | |
| | 25 | | > 12% Si, Not Curable | | 130 | | | | | |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | Cutting Alloys, PB>1% | | 110 | | | | | |
| | 27 | | CuZn, CuSnZn (Brass) | | 90 | | | | | |
| | 28 | | CuSn, lead-free copper and electrolytic copper | | 100 | | | | | |
| | 29 | Non Metallic Materials | Duroplastic, Fiber Reinforced Plastic | | | | | | | |
| | 30 | | Rubber, Wood, etc. | | | | | | | |
| S | 31 | Heat Resistant Super Alloys | Fe Based | Annealed | 200 | 15 | | | | |
| | 32 | | | Cured | 280 | 30 | | | | |
| | 33 | | Ni or Co Based | Annealed | 250 | 25 | | | | |
| | 34 | | | Cured | 350 | 38 | | | | |
| | 35 | | | Cast | 320 | 34 | | | | |
| | 36 | Titanium Alloys | Pure Titanium | | 400 Rm | | | | | |
| | 37 | | Alpha + Beta Alloys | Hardened | 1050 Rm | | | | | |
| H | 38 | Hardened steel | | Hardened | 550 | 55 | ○ | ○ | ○ | ○ |
| | 39 | | | Hardened | 630 | 60 | | | | |
| | 40 | Chilled Cast Iron | | Cast | 400 | 42 | ◎ | ◎ | ◎ | ◎ |
| | 41 | Hardened Cast Iron | | Hardened | 550 | 55 | ○ | ○ | ○ | ○ |

| SEME61 | SEME01 | SEME64 | SEME35 | SEME35 | SEME35 | SEME70 | SEM845 | SEME36 | SEME71 | SEME72 | SEME73 | SEME75 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 | 4 | 4 | 2 | 2 | 2 | 2 | 2 | 4 | 4 | 4 | 4 | 6 |
| 30° | 27°/30° (MULTIPLE HELIX) | 27°/30° (MULTIPLE HELIX) | 30° | 30° | 30° | 30° | 30° | 27°/30° (MULTIPLE HELIX) | 35°/38° (MULTIPLE HELIX) | 30° | 30° | 45° |
| CORNER RADIUS | CORNER RADIUS | CORNER RADIUS | SQUARE | SQUARE | SQUARE | SQUARE | SQUARE | SQUARE | SQUARE | SQUARE | SQUARE | SQUARE |
| D0.2 | D1.0 | D1.0 | D0.1 | D0.1 | D0.1 | D1.0 | D0.1 | D0.8 | D1.0 | D1.0 | D1.0 | D6.0 |
| D20.0 | D20.0 | D20.0 | D25.0 | D4.0 | D3.0 | D25.0 | D12.0 | D25.0 | D20.0 | D25.0 | D12.0 | D20.0 |
| C167-185 | C186-192 | C193-207 | C208-210 | C211 | C212 | C213-218 | C219-227 | C228-229 | C230-233 | C234-239 | C240-244 | C245-246 |
| EXTENDED NECK | - | EXTENDED NECK | - | 4mm Shank | 3mm Shank | LONG LENGTH | EXTENDED NECK | - | Sharp Corner Removal | LONG LENGTH | EXTENDED NECK | - |
| Y-Coating | Y-Coating | Y-Coating | Y-Coating | Y-Coating | Y-Coating | Y-Coating | Y-Coating | Y-Coating | Y-Coating | Y-Coating | Y-Coating | Y-Coating |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| ○ | ○ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | | | | | | | ○ | | | | ○ | |
| | | | | | | | ○ | | | | ○ | |
| | | | ○ | ○ | ○ | | ○ | ○ | ○ | | ○ | |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

BALL NOSE = 球头 SQUARE = 平头 MULTIPLE HELIX = 不等螺旋 SHORT LENGTH = 短刃 EXTENDED NECK = 颈部加长 Sharp Corner Removal = 保护刀尖处理
CORNER RADIUS = 圆鼻 ROUGHING = 粗加工 LONG LENGTH = 长刃 (6mm Shank) = (6mm 柄径)

# SELECTION GUIDE
# 选用指南

YG MILLING TOOLS

## SOLID CARBIDE
## 4G Mill
## X-SPEED ROUGHER END MILLS

High Speed Cutting
for Pre-Hardened Steels up to HRc55
适用于高速加工 预硬钢 (~HRc55)

Please visit globalyg1.com/mat for material search

◎ : Excellent (优秀) ○ : Good (良好)

Recommended cutting conditions (推荐加工参数) : p.C250

| | | | | | | G9D75 G9D67 | G9D76 G9D68 | G9D77 G9D69 | GAE53 |
|---|---|---|---|---|---|---|---|---|---|
| SERIES 系列 | | | | | | | | | |
| FLUTE 槽数 | | | | | | 4&5 | 4&5 | 4&5 | 4&5 |
| HELIX ANGLE 螺旋角度 | | | | | | 44°~45° (MULTIPLE HELIX) | 44°~45° (MULTIPLE HELIX) | 44°~45° (MULTIPLE HELIX) | 44°~45° (MULTIPLE HELIX) |
| CUTTING EDGE SHAPE 类型 | | | | | | CORNER RADIUS ROUGHING | CORNER RADIUS ROUGHING | CORNER RADIUS ROUGHING | CORNER RADIUS ROUGHING |
| SIZE MIN 最小尺寸 | | | | | | D6.0 | D6.0 | D6.0 | D6.0 |
| SIZE MAX 最大尺寸 | | | | | | D20.0 | D20.0 | D20.0 | D20.0 |
| PAGE 页数 | | | | | | C247 | | C248 | C249 |
| | | | | | | SHORT LENGTH | LONG LENGTH | LONG LENGTH | SHORT LENGTH |
| | | | | | | X-Coating | X-Coating | X-Coating | X-Coating |
| | | | | | | | | | HSS-PM |
| ISO | VDI 3323 | Material Description 工件材料 | Composition / Structure / Heat Treatment 成分 / 结构 / 热处理 | | HB | HRc | | | | |
| P | 1 | Non-alloy steel | About 0.15% C | Annealed | 125 | | ○ | ○ | ○ | ○ |
| | 2 | | About 0.45% C | Annealed | 190 | 13 | ○ | ○ | ○ | ○ |
| | 3 | | About 0.45% C | Quenched & Tempered | 250 | 25 | ◎ | ◎ | ◎ | ◎ |
| | 4 | | About 0.75% C | Annealed | 270 | 28 | ◎ | ◎ | ◎ | ◎ |
| | 5 | | About 0.75% C | Quenched & Tempered | 300 | 32 | ◎ | ◎ | ◎ | ○ |
| | 6 | Low alloy steel | | Annealed | 180 | 10 | ○ | ○ | ○ | ○ |
| | 7 | | | Quenched & Tempered | 275 | 29 | ◎ | ◎ | ◎ | ◎ |
| | 8 | | | Quenched & Tempered | 300 | 32 | ◎ | ◎ | ◎ | ○ |
| | 9 | | | Quenched & Tempered | 350 | 38 | ◎ | ◎ | ◎ | ○ |
| | 10 | High alloyed steel, and tool steel | | Annealed | 200 | 15 | ○ | ○ | ○ | ○ |
| | 11 | | | Quenched & Tempered | 325 | 35 | ◎ | ◎ | ◎ | ○ |
| M | 12 | Stainless steel | Ferritic / Martensitic | Annealed | 200 | 15 | ○ | ○ | ○ | |
| | 13 | | Martensitic | Quenched & Tempered | 240 | 23 | ○ | ○ | ○ | |
| | 14 | | Austenitic | | 180 | 10 | ○ | ○ | ○ | ◎ |
| K | 15 | Grey cast iron | Pearlitic / ferritic | | 180 | 10 | ◎ | ◎ | ◎ | ◎ |
| | 16 | | Pearlitic (Martensitic) | | 260 | 26 | ◎ | ◎ | ◎ | ◎ |
| | 17 | Nodular cast iron | Ferritic | | 160 | 3 | ◎ | ◎ | ◎ | ◎ |
| | 18 | | Pearlitic | | 250 | 25 | ◎ | ◎ | ◎ | ◎ |
| | 19 | Malleable cast iron | Ferritic | | 130 | | ◎ | ◎ | ◎ | ◎ |
| | 20 | | Pearlitic | | 230 | 21 | ◎ | ◎ | ◎ | ◎ |
| N | 21 | Aluminum-wrought alloy | Not Curable | | 60 | | | | | |
| | 22 | | Curable | Hardened | 100 | | | | | |
| | 23 | Aluminum-cast, alloyed | ≤ 12% Si, Not Curable | | 75 | | | | | |
| | 24 | | ≤ 12% Si, Curable | Hardened | 90 | | | | | |
| | 25 | | > 12% Si, Not Curable | | 130 | | | | | |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | Cutting Alloys, PB>1% | | 110 | | ○ | ○ | ○ | ○ |
| | 27 | | CuZn, CuSnZn (Brass) | | 90 | | ○ | ○ | ○ | ○ |
| | 28 | | CuSn, lead-free copper and electrolytic copper | | 100 | | ○ | ○ | ○ | ○ |
| | 29 | Non Metallic Materials | Duroplastic, Fiber Reinforced Plastic | | | | | | | |
| | 30 | | Rubber, Wood, etc. | | | | | | | |
| S | 31 | Heat Resistant Super Alloys | Fe Based | Annealed | 200 | 15 | | | | |
| | 32 | | | Cured | 280 | 30 | | | | |
| | 33 | | Ni or Co Based | Annealed | 250 | 25 | | | | |
| | 34 | | | Cured | 350 | 38 | | | | |
| | 35 | | | Cast | 320 | 34 | | | | |
| | 36 | Titanium Alloys | Pure Titanium | | 400 Rm | | | | | |
| | 37 | | Alpha + Beta Alloys | Hardened | 1050 Rm | | | | | |
| H | 38 | Hardened steel | | Hardened | 550 | 55 | | | | |
| | 39 | | | Hardened | 630 | 60 | | | | |
| | 40 | Chilled Cast Iron | | Cast | 400 | 42 | | | | |
| | 41 | Hardened Cast Iron | | Hardened | 550 | 55 | | | | |

BALL NOSE = 球头 SQUARE = 平头 MULTIPLE HELIX = 不等螺旋 SHORT LENGTH = 短刃 EXTENDED NECK = 颈部加长 Sharp Corner Removal = 保护刀尖处理
CORNER RADIUS = 圆鼻 ROUGHING = 粗加工 LONG LENGTH = 长刃 (6mm Shank) = (6mm 柄径)



X-SPEED ROUGHER

## CHARACTERISTICS 特点

Unique flute design for excellent chip evacuation and vibration reduction.
Optimal roughing tooth profile to reduce cutting forces.
Special tool geometry for high feed rate and heavy cutting.
Strong end tooth design for plunge and pocket milling.
Custom engineered coating to allow long tool life and excellent chip evacuation.

特殊沟槽设计提高排屑性能和减少振动
最佳粗加工用牙设计减少切削阻力
特殊刀具设计可适用于高进给和重切削
刚性底刃设计可用坡走铣削
最佳涂层提高刀具寿命和提高排屑性能

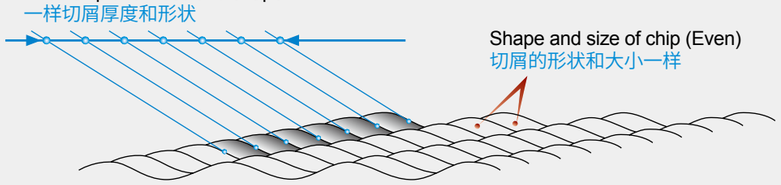
▶ 4 FLUTE (刃)

▶ 5 FLUTE (刃)

## CHIP THICKNESS AND SHAPE
## 切屑厚度和形状

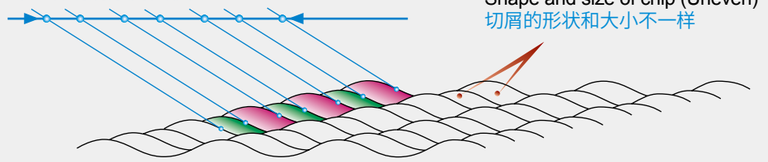
### ▶ Conventional Roughing End Mills 普通粗加工用铣刀

Even chip thickness and shape
一样切屑厚度和形状




### ▶ X-SPEED Rougher

Uneven chip thickness and shape
不一样切屑厚度和形状



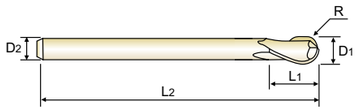
# 4G MILL END MILLS

PLAIN SHANK **SEMD98** SERIES

## CARBIDE, 2 FLUTE BALL NOSE (Short, Regular, Long Shank)
## 硬质合金，2刃 球头 (短刃, 普通刃长, 长柄)

- ▶ New coating and tool geometry applied resulting outstanding cutting abilities and wear resistance.
- ▶ With its unique ball nose geometry and cutting edges the cutting force has decreased, also increasing wear resistance.
- ▶ Excellent performance when cutting prehardened steels, up to HRc55 which are used for molds & dies.

- ▶基于新涂层及形状, 实现出色切削性能和耐磨性
- ▶基于独特设计球头及刀尖形状, 减少切削阻力, 提高耐磨性
- ▶加工模具产业的预硬钢(HRc55以下)表现出色




CARBIDE | 2 | 30° | R ±0.005 | R ±0.010 | PLAIN

R0.05~R3 R3.25~R12.5

p.C250-251

Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| ◎ | - | - | POWER MILLING CHUCK | D161 - 176 |
| ○ | - | - | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Radius of Ball Nose 圆弧角 R | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Overall Length 全长 L2 | Remark 备注 |
|---|---|---|---|---|---|---|
| SEMD98001SE | R0.05 | 0.1 | 4 | 0.1 | 40 | Short |
| SEMD98001E | R0.05 | 0.1 | 4 | 0.2 | 40 | Regular |
| SEMD980013SE | R0.05 | 0.1 | 3 | 0.2 | 40 | 3mm Shank |
| SEMD980015SE | R0.075 | 0.15 | 4 | 0.15 | 40 | Short |
| SEMD98015E | R0.075 | 0.15 | 4 | 0.3 | 40 | Regular |
| SEMD9800153SE | R0.075 | 0.15 | 3 | 0.3 | 40 | 3mm Shank |
| SEMD98002SE | R0.1 | 0.2 | 4 | 0.2 | 40 | Short |
| SEMD98002E | R0.1 | 0.2 | 4 | 0.4 | 40 | Regular |
| SEMD980023SE | R0.1 | 0.2 | 3 | 0.4 | 40 | 3mm Shank |
| SEMD98003SE | R0.15 | 0.3 | 4 | 0.3 | 40 | Short |
| SEMD98003E | R0.15 | 0.3 | 4 | 0.6 | 40 | Regular |
| SEMD980033SE | R0.15 | 0.3 | 3 | 0.6 | 40 | 3mm Shank |
| SEMD98004SE | R0.2 | 0.4 | 4 | 0.4 | 40 | Short |
| SEMD98004E | R0.2 | 0.4 | 4 | 0.8 | 40 | Regular |
| SEMD980043SE | R0.2 | 0.4 | 3 | 0.8 | 40 | 3mm Shank |
| SEMD98005SE | R0.25 | 0.5 | 4 | 0.5 | 40 | Short |
| SEMD98005S6SE | R0.25 | 0.5 | 6 | 0.8 | 40 | - |
| SEMD98005E | R0.25 | 0.5 | 4 | 1.0 | 40 | Regular |
| SEMD980053SE | R0.25 | 0.5 | 3 | 1.0 | 40 | 3mm Shank |
| SEMD98006SE | R0.3 | 0.6 | 4 | 0.6 | 40 | Short |
| SEMD98006E | R0.3 | 0.6 | 4 | 1.2 | 40 | Regular |
| SEMD980063SE | R0.3 | 0.6 | 3 | 1.2 | 40 | 3mm Shank |
| SEMD98007SE | R0.35 | 0.7 | 4 | 0.7 | 40 | Short |
| SEMD98007E | R0.35 | 0.7 | 4 | 1.4 | 40 | Regular |

▶ NEXT PAGE 下页

| Size 尺寸 | RadiusTolerance (mm) 圆弧角公差 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|---|
| up to R3 R3以下 | ± 0.005 | 0 ~ - 0.012 | h5 |
| over R3 超过R3 | ± 0.010 | 0 ~ - 0.015 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ○ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |



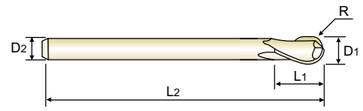
4G MILL END MILLS

PLAIN SHANK SEMD98 SERIES

CARBIDE, 2 FLUTE BALL NOSE (Short, Regular, Long Shank)
硬质合金，2刃 球头 (短刃, 普通刃长, 长柄)

▶ New coating and tool geometry applied resulting outstanding cutting abilities and wear resistance.
▶ With its unique ball nose geometry and cutting edges the cutting force has decreased, also increasing wear resistance.
▶ Excellent performance when cutting prehardened steels, up to HRc55 which are used for molds & dies.

▶基于新涂层及形状, 实现出色切削性能和耐磨性
▶基于独特设计球头及刀尖形状, 减少切削阻力, 提高耐磨性
▶加工模具产业的预硬钢(HRc55以下)表现出色




CARBIDE | 2 | 30° | R ±0.005 | R ±0.010 | PLAIN

R0.05~R3 R3.25~R12.5

p.C250-251

Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| ◎ | - | - | POWER MILLING CHUCK | D161 - 176 |
| ○ | - | - | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Radius of Ball Nose 圆弧角 R | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Overall Length 全长 L2 | Remark 备注 |
|---|---|---|---|---|---|---|
| SEMD980073SE | R0.35 | 0.7 | 3 | 1.4 | 40 | 3mm Shank |
| SEMD98008SE | R0.4 | 0.8 | 4 | 0.8 | 40 | Short |
| SEMD98008E | R0.4 | 0.8 | 4 | 1.6 | 40 | Regular |
| SEMD980083SE | R0.4 | 0.8 | 3 | 1.6 | 40 | 3mm Shank |
| SEMD98009SE | R0.45 | 0.9 | 4 | 0.9 | 40 | Short |
| SEMD98009E | R0.45 | 0.9 | 4 | 1.8 | 40 | Regular |
| SEMD980093SE | R0.45 | 0.9 | 3 | 1.8 | 40 | 3mm Shank |
| SEMD98010040E | R0.5 | 1.0 | 6 | 1.5 | 40 | Short |
| SEMD980103SE | R0.5 | 1.0 | 3 | 2.5 | 50 | 3mm Shank |
| SEMD98010S4SE | R0.5 | 1.0 | 4 | 1.5 | 40 | - |
| SEMD980104SE | R0.5 | 1.0 | 4 | 2.5 | 50 | Regular |
| SEMD98010E | R0.5 | 1.0 | 6 | 2.5 | 50 | Regular |
| SEMD98010070E | R0.5 | 1.0 | 6 | 2.5 | 70 | Long |
| SEMD98010100E | R0.5 | 1.0 | 6 | 2.5 | 100 | Long |
| SEMD98012040E | R0.6 | 1.2 | 6 | 2 | 40 | Short |
| SEMD980123SE | R0.6 | 1.2 | 3 | 3 | 50 | 3mm Shank |
| SEMD980124SE | R0.6 | 1.2 | 4 | 3 | 50 | Regular |
| SEMD98012E | R0.6 | 1.2 | 6 | 3 | 50 | Regular |
| SEMD98012070E | R0.6 | 1.2 | 6 | 3 | 70 | Long |
| SEMD98012100E | R0.6 | 1.2 | 6 | 3 | 100 | Long |
| SEMD98015040E | R0.75 | 1.5 | 6 | 2.5 | 40 | Short |
| SEMD980153SE | R0.75 | 1.5 | 3 | 4 | 50 | 3mm Shank |
| SEMD980154SE | R0.75 | 1.5 | 4 | 4 | 50 | Regular |
| SEMD98015E | R0.75 | 1.5 | 6 | 4 | 50 | Regular |

▶ NEXT PAGE 下页

| Size 尺寸 | RadiusTolerance (mm) 圆弧角公差 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|---|
| up to R3 R3以下 | ± 0.005 | 0 ~ - 0.012 | h5 |
| over R3 超过R3 | ± 0.010 | 0 ~ - 0.015 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ○ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |

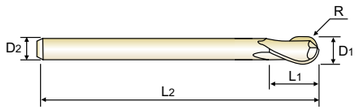
# 4G MILL END MILLS

PLAIN SHANK **SEMD98** SERIES

## CARBIDE, 2 FLUTE BALL NOSE (Short, Regular, Long Shank)
## 硬质合金，2刃 球头 (短刃, 普通刃长, 长柄)

- ▶ New coating and tool geometry applied resulting outstanding cutting abilities and wear resistance.
- ▶ With its unique ball nose geometry and cutting edges the cutting force has decreased, also increasing wear resistance.
- ▶ Excellent performance when cutting prehardened steels, up to HRc55 which are used for molds & dies.

- ▶基于新涂层及形状, 实现出色切削性能和耐磨性
- ▶基于独特设计球头及刀尖形状, 减少切削阻力, 提高耐磨性
- ▶加工模具产业的预硬钢(HRc55以下)表现出色




CARBIDE | 2 | 30° | R ±0.005 | R ±0.010 | PLAIN

p.C250-251

R0.05~R3 R3.25~R12.5

| Recommended ToolHolder | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| | END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| | - | - | POWER MILLING CHUCK | D161 - 176 |
| | - | - | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Radius of Ball Nose 圆弧角 R | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Overall Length 全长 L2 | Remark 备注 |
|---|---|---|---|---|---|---|
| SEMD98015070E | R0.75 | 1.5 | 6 | 4 | 70 | Long |
| SEMD98015100E | R0.75 | 1.5 | 6 | 4 | 100 | Long |
| SEMD98020040E | R1.0 | 2.0 | 6 | 3 | 40 | Short |
| SEMD980203SE | R1.0 | 2.0 | 3 | 5 | 50 | 3mm Shank |
| SEMD980204SE | R1.0 | 2.0 | 4 | 5 | 50 | Regular |
| SEMD98020E | R1.0 | 2.0 | 6 | 5 | 50 | Regular |
| SEMD98020080E | R1.0 | 2.0 | 6 | 5 | 80 | Long |
| SEMD98020100E | R1.0 | 2.0 | 6 | 5 | 100 | Long |
| SEMD98025040E | R1.25 | 2.5 | 6 | 4 | 40 | Short |
| SEMD980253SE | R1.25 | 2.5 | 3 | 6 | 60 | 3mm Shank |
| SEMD980254SE | R1.25 | 2.5 | 4 | 6 | 60 | Regular |
| SEMD98025E | R1.25 | 2.5 | 6 | 6 | 60 | Regular |
| SEMD98025080E | R1.25 | 2.5 | 6 | 6 | 80 | Long |
| SEMD98025100E | R1.25 | 2.5 | 6 | 6 | 100 | Long |
| SEMD98030040E | R1.5 | 3.0 | 6 | 4.5 | 40 | Short |
| SEMD980303SE | R1.5 | 3.0 | 3 | 6 | 60 | 3mm Shank |
| SEMD980304SE | R1.5 | 3.0 | 4 | 6 | 60 | Regular |
| SEMD98030E | R1.5 | 3.0 | 6 | 6 | 60 | Regular |
| SEMD98030080E | R1.5 | 3.0 | 6 | 6 | 80 | Long |
| SEMD98030100E | R1.5 | 3.0 | 6 | 6 | 100 | Long |
| SEMD98035E | R1.75 | 3.5 | 6 | 8 | 70 | - |
| SEMD98040050E | R2.0 | 4.0 | 6 | 6 | 50 | Short |
| SEMD980404SE | R2.0 | 4.0 | 4 | 8 | 70 | Regular |
| SEMD98040E | R2.0 | 4.0 | 6 | 8 | 70 | Regular |

▶ NEXT PAGE 下页

| Size 尺寸 | RadiusTolerance (mm) 圆弧角公差 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|---|
| up to R3 R3以下 | ± 0.005 | 0 ~ - 0.012 | h5 |
| over R3 超过R3 | ± 0.010 | 0 ~ - 0.015 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ○ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |



4G MILL END MILLS

PLAIN SHANK SEMD98 SERIES

CARBIDE, 2 FLUTE BALL NOSE (Short, Regular, Long Shank)
硬质合金，2刃 球头 (短刃, 普通刃长, 长柄)

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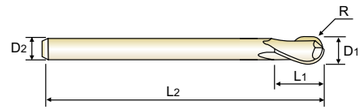
▶ With its unique ball nose geometry and cutting edges the cutting force has decreased, also increasing wear resistance.
▶ Excellent performance when cutting prehardened steels, up to HRc55 which are used for molds & dies.

▶基于新涂层及形状, 实现出色切削性能和耐磨性
▶基于独特设计球头及刀尖形状, 减少切削阻力, 提高耐磨性
▶加工模具产业的预硬钢(HRc55以下)表现出色




CARBIDE | 2 | 30° | R ±0.005 | R ±0.010 | PLAIN

p.C250-251

R0.05~R3 R3.25~R12.5

Recommended ToolHolder | Flat Shank | Page | Plain Shank | Page
END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK / SHRINK FIT HOLDER | D15 - 46 / D47 - 72
- | - | POWER MILLING CHUCK | D161 - 176
- | - | ER COLLET CHUCK / SK SLIM CHUCK | D73 - 115 / D183 - 201

Unit(单位) : mm

| EDP No. | Radius of Ball Nose 圆弧角 R | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Overall Length 全长 L2 | Remark 备注 |
|---|---|---|---|---|---|---|
| SEMD980401004SE | R2.0 | 4.0 | 4 | 8 | 100 | Long |
| SEMD980401204SE | R2.0 | 4.0 | 4 | 8 | 120 | Long |
| SEMD98040100E | R2.0 | 4.0 | 6 | 8 | 100 | Long |
| SEMD98040120E | R2.0 | 4.0 | 6 | 8 | 120 | Long |
| SEMD98045E | R2.25 | 4.5 | 6 | 9 | 80 | - |
| SEMD98050060E | R2.5 | 5.0 | 6 | 7.5 | 60 | Short |
| SEMD98050E | R2.5 | 5.0 | 6 | 10 | 80 | Regular |
| SEMD980505SE | R2.5 | 5.0 | 5 | 10 | 80 | 5mmShank |
| SEMD98055E | R2.75 | 5.5 | 6 | 11 | 90 | - |
| SEMD98060050E | R3.0 | 6.0 | 6 | 9 | 50 | Short |
| SEMD98060060E | R3.0 | 6.0 | 6 | 9 | 60 | Short |
| SEMD98060080E | R3.0 | 6.0 | 6 | 9 | 80 | Short |
| SEMD98060E | R3.0 | 6.0 | 6 | 12 | 90 | Regular |
| SEMD98060110E | R3.0 | 6.0 | 6 | 12 | 110 | Long |
| SEMD98060130E | R3.0 | 6.0 | 6 | 12 | 130 | Long |
| SEMD98060150E | R3.0 | 6.0 | 6 | 12 | 150 | Long |
| SEMD98065E | R3.25 | 6.5 | 8 | 13 | 90 | - |
| SEMD98070E | R3.5 | 7.0 | 8 | 14 | 90 | - |
| SEMD98080050E | R4.0 | 8.0 | 8 | 12 | 50 | Short |
| SEMD98080060E | R4.0 | 8.0 | 8 | 12 | 60 | Short |
| SEMD98080080E | R4.0 | 8.0 | 8 | 12 | 80 | Short |
| SEMD98080090E | R4.0 | 8.0 | 8 | 12 | 90 | Short |
| SEMD98080E | R4.0 | 8.0 | 8 | 14 | 100 | Regular |
| SEMD98080130E | R4.0 | 8.0 | 8 | 14 | 130 | Long |

▶ NEXT PAGE 下页

| Size 尺寸 | RadiusTolerance (mm) 圆弧角公差 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|---|
| up to R3 R3以下 | ± 0.005 | 0 ~ - 0.012 | h5 |
| over R3 超过R3 | ± 0.010 | 0 ~ - 0.015 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ○ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |

# 4G MILL END MILLS

PLAIN SHANK **SEMD98** SERIES

## CARBIDE, 2 FLUTE BALL NOSE (Short, Regular, Long Shank)

## 硬质合金，2刃 球头 (短刃, 普通刃长, 长柄)

- ▶ New coating and tool geometry applied resulting outstanding cutting abilities and wear resistance.
- ▶ With its unique ball nose geometry and cutting edges the cutting force has decreased, also increasing wear resistance.
- ▶ Excellent performance when cutting prehardened steels, up to HRc55 which are used for molds & dies.

- ▶基于新涂层及形状, 实现出色切削性能和耐磨性
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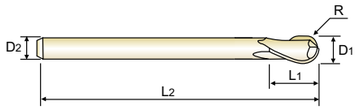
- ▶加工模具产业的预硬钢(HRc55以下)表现出色




CARBIDE | 2 | 30° | R ±0.005 | R ±0.010 | PLAIN

R0.05~R3 R3.25~R12.5

p.C250-251

Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| ◎ | - | - | POWER MILLING CHUCK | D161 - 176 |
| ○ | - | - | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Radius of Ball Nose 圆弧角 R | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Overall Length 全长 L2 | Remark 备注 |
|---|---|---|---|---|---|---|
| SEMD98080150E | R4.0 | **8.0** | 8 | 14 | 150 | Long |
| SEMD98085E | R4.25 | **8.5** | 10 | 16 | 100 | - |
| SEMD98090E | R4.5 | **9.0** | 10 | 18 | 100 | - |
| SEMD98100050E | R5.0 | **10.0** | 10 | 15 | 50 | Short |
| SEMD98100060E | R5.0 | **10.0** | 10 | 15 | 60 | Short |
| SEMD98100080E | R5.0 | **10.0** | 10 | 15 | 80 | Short |
| SEMD98100090E | R5.0 | **10.0** | 10 | 15 | 90 | Short |
| SEMD98100E | R5.0 | **10.0** | 10 | 18 | 100 | Regular |
| SEMD98100130E | R5.0 | **10.0** | 10 | 18 | 130 | Long |
| SEMD98100150E | R5.0 | **10.0** | 10 | 18 | 150 | Long |
| SEMD98100180E | R5.0 | **10.0** | 10 | 18 | 180 | Long |
| SEMD98100200E | R5.0 | **10.0** | 10 | 18 | 200 | Long |
| SEMD98110E | R5.5 | **11.0** | 12 | 20 | 100 | - |
| SEMD98120060E | R6.0 | **12.0** | 12 | 18 | 60 | Short |
| SEMD98120080E | R6.0 | **12.0** | 12 | 18 | 80 | Short |
| SEMD98120090E | R6.0 | **12.0** | 12 | 18 | 90 | Short |
| SEMD98120100E | R6.0 | **12.0** | 12 | 18 | 100 | Short |
| SEMD98120E | R6.0 | **12.0** | 12 | 22 | 110 | Regular |
| SEMD98120130E | R6.0 | **12.0** | 12 | 22 | 130 | Long |
| SEMD98120150E | R6.0 | **12.0** | 12 | 22 | 150 | Long |
| SEMD98120180E | R6.0 | **12.0** | 12 | 22 | 180 | Long |
| SEMD98120200E | R6.0 | **12.0** | 12 | 22 | 200 | Long |
| SEMD98130E | R6.5 | **13.0** | 12 | 24 | 100 | - |
| SEMD98140E | R7.0 | **14.0** | 12 | 26 | 100 | Regular |

▶ NEXT PAGE 下页

| Size 尺寸 | RadiusTolerance (mm) 圆弧角公差 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|---|
| up to R3 R3以下 | ± 0.005 | 0 ~ - 0.012 | h5 |
| over R3 超过R3 | ± 0.010 | 0 ~ - 0.015 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ○ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |



4G MILL END MILLS

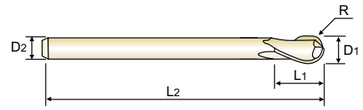
PLAIN SHANK SEMD98 SERIES

CARBIDE, 2 FLUTE BALL NOSE (Short, Regular, Long Shank)

硬质合金，2刃 球头 (短刃, 普通刃长, 长柄)

- ▶ New coating and tool geometry applied resulting outstanding cutting abilities and wear resistance.
- ▶ With its unique ball nose geometry and cutting edges the cutting force has decreased, also increasing wear resistance.
- ▶ Excellent performance when cutting prehardened steels, up to HRc55 which are used for molds & dies.

- ▶基于新涂层及形状, 实现出色切削性能和耐磨性
- ▶基于独特设计球头及刀尖形状, 减少切削阻力, 提高耐磨性
- ▶加工模具产业的预硬钢(HRc55以下)表现出色




CARBIDE | 2 | 30° | R ±0.005 | R ±0.010 | PLAIN

R0.05~R3 R3.25~R12.5

p.C250-251

Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| ◎ | - | - | POWER MILLING CHUCK | D161 - 176 |
| ○ | - | - | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Radius of Ball Nose 圆弧角 R | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Overall Length 全长 L2 | Remark 备注 |
|---|---|---|---|---|---|---|
| SEMD9814014SE | R7.0 | **14.0** | 14 | 26 | 100 | - |
| SEMD9814016SE | R7.0 | **14.0** | 16 | 26 | 100 | - |
| SEMD98150E | R7.5 | **15.0** | 16 | 28 | 140 | - |
| SEMD98160100E | R8.0 | **16.0** | 16 | 24 | 100 | Short |
| SEMD98160130E | R8.0 | **16.0** | 16 | 24 | 130 | Short |
| SEMD98160E | R8.0 | **16.0** | 16 | 30 | 150 | Regular |
| SEMD98160180E | R8.0 | **16.0** | 16 | 30 | 180 | Long |
| SEMD98160200E | R8.0 | **16.0** | 16 | 30 | 200 | Long |
| SEMD98180E | R9.0 | **18.0** | 16 | 34 | 150 | Regular |
| SEMD9818018SE | R9.0 | **18.0** | 18 | 34 | 150 | - |
| SEMD98200100E | R10.0 | **20.0** | 20 | 30 | 100 | Short |
| SEMD98200130E | R10.0 | **20.0** | 20 | 30 | 130 | Short |
| SEMD98200E | R10.0 | **20.0** | 20 | 38 | 150 | Regular |
| SEMD98200200E | R10.0 | **20.0** | 20 | 38 | 200 | Long |
| SEMD98250120E | R12.5 | **25.0** | 25 | 50 | 120 | Short |
| SEMD98250E | R12.5 | **25.0** | 25 | 50 | 180 | Regular |

| Size 尺寸 | RadiusTolerance (mm) 圆弧角公差 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|---|
| up to R3 R3以下 | ± 0.005 | 0 ~ - 0.012 | h5 |
| over R3 超过R3 | ± 0.010 | 0 ~ - 0.015 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ○ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |

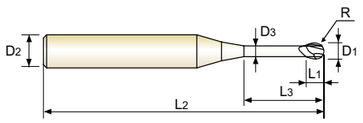
# 4G MILL END MILLS

PLAIN SHANK **SEM846** SERIES

## CARBIDE, 2 FLUTE BALL NOSE with EXTENDED NECK
## 硬质合金，2刃 球头 颈部加长

- ▶ New coating and tool geometry applied resulting outstanding cutting abilities and wear resistance.
- ▶ With its unique ball nose geometry and cutting edges the cutting force has decreased, also increasing wear resistance.
- ▶ Excellent performance when cutting prehardened steels, up to HRc55 which are used for molds & dies.

- ▶基于新涂层及形状, 实现出色切削性能和耐磨性
- ▶基于独特设计球头及刀尖形状, 减少切削阻力, 提高耐磨性
- ▶加工模具产业的预硬钢(HRc55以下)表现出色




CARBIDE | 2 | 30° | R ±0.005 | R ±0.010 | PLAIN | p.C252-263

R0.05~R3 R4~R6

| Recommended ToolHolder | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| | END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| | - | - | POWER MILLING CHUCK | D161 - 176 |
| | - | - | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Radius of Ball Nose 圆弧角 R | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Length Below Shank 颈长 L3 | Overall Length 全长 L2 | Neck Diameter 颈径 D3 |
|---|---|---|---|---|---|---|---|
| SEM846001002E | R0.05 | **0.1** | 4 | 0.1 | 0.2 | 40 | 0.085 |
| SEM846001003E | R0.05 | **0.1** | 4 | 0.1 | 0.3 | 40 | 0.085 |
| SEM846001005E | R0.05 | **0.1** | 4 | 0.1 | 0.5 | 40 | 0.085 |
| SEM84600101E | R0.05 | **0.1** | 4 | 0.1 | 1 | 40 | 0.085 |
| SEM846002005E | R0.1 | **0.2** | 4 | 0.2 | 0.5 | 40 | 0.17 |
| SEM84600201E | R0.1 | **0.2** | 4 | 0.2 | 1 | 40 | 0.17 |
| SEM846002015E | R0.1 | **0.2** | 4 | 0.2 | 1.5 | 40 | 0.17 |
| SEM84600202E | R0.1 | **0.2** | 4 | 0.2 | 2 | 40 | 0.17 |
| SEM84600203E | R0.1 | **0.2** | 4 | 0.2 | 3 | 40 | 0.17 |
| SEM84600301E | R0.15 | **0.3** | 4 | 0.3 | 1 | 40 | 0.27 |
| SEM846003015E | R0.15 | **0.3** | 4 | 0.3 | 1.5 | 40 | 0.27 |
| SEM84600302E | R0.15 | **0.3** | 4 | 0.3 | 2 | 40 | 0.27 |
| SEM846003025E | R0.15 | **0.3** | 4 | 0.3 | 2.5 | 40 | 0.27 |
| SEM84600303E | R0.15 | **0.3** | 4 | 0.3 | 3 | 40 | 0.27 |
| SEM84600304E | R0.15 | **0.3** | 4 | 0.3 | 4 | 40 | 0.27 |
| SEM84600305E | R0.15 | **0.3** | 4 | 0.3 | 5 | 40 | 0.27 |
| SEM84600401E | R0.2 | **0.4** | 4 | 0.4 | 1 | 40 | 0.37 |
| SEM846004015E | R0.2 | **0.4** | 4 | 0.4 | 1.5 | 40 | 0.37 |
| SEM84600402E | R0.2 | **0.4** | 4 | 0.4 | 2 | 40 | 0.37 |
| SEM846004025E | R0.2 | **0.4** | 4 | 0.4 | 2.5 | 40 | 0.37 |
| SEM84600403E | R0.2 | **0.4** | 4 | 0.4 | 3 | 40 | 0.37 |
| SEM84600404E | R0.2 | **0.4** | 4 | 0.4 | 4 | 40 | 0.37 |
| SEM84600405E | R0.2 | **0.4** | 4 | 0.4 | 5 | 40 | 0.37 |
| SEM84600406E | R0.2 | **0.4** | 4 | 0.4 | 6 | 40 | 0.37 |

▶ NEXT PAGE 下页

| Size 尺寸 | RadiusTolerance (mm) 圆弧角公差 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|---|
| up to R3 R3以下 | ± 0.005 | 0 ~ - 0.012 | h5 |
| over R3 超过R3 | ± 0.010 | 0 ~ - 0.015 | |

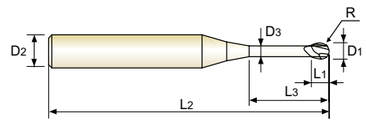
◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ○ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |



4G MILL END MILLS
PLAIN SHANK SEM846 SERIES
CARBIDE, 2 FLUTE BALL NOSE with EXTENDED NECK
硬质合金，2刃 球头 颈部加长
▶ New coating and tool geometry applied resulting outstanding cutting abilities and wear resistance.
▶ With its unique ball nose geometry and cutting edges the cutting force has decreased, also increasing wear resistance.
▶ Excellent performance when cutting prehardened steels, up to HRc55 which are used for molds & dies.
▶基于新涂层及形状, 实现出色切削性能和耐磨性
▶基于独特设计球头及刀尖形状, 减少切削阻力, 提高耐磨性
▶加工模具产业的预硬钢(HRc55以下)表现出色




CARBIDE | 2 | 30° | R ±0.005 | R ±0.010 | PLAIN | p.C252-263
R0.05~R3 R4~R6
Recommended ToolHolder | Flat Shank | Page | Plain Shank | Page
END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK / SHRINK FIT HOLDER | D15 - 46 / D47 - 72
- | - | POWER MILLING CHUCK | D161 - 176
- | - | ER COLLET CHUCK / SK SLIM CHUCK | D73 - 115 / D183 - 201
Unit(单位) : mm

| EDP No. | Radius of Ball Nose 圆弧角 R | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Length Below Shank 颈长 L3 | Overall Length 全长 L2 | Neck Diameter 颈径 D3 |
|---|---|---|---|---|---|---|---|
| SEM84600408E | R0.2 | **0.4** | 4 | 0.4 | 8 | 40 | 0.37 |
| SEM84600410E | R0.2 | **0.4** | 4 | 0.4 | 10 | 40 | 0.37 |
| SEM84600501E | R0.25 | **0.5** | 4 | 0.5 | 1 | 45 | 0.45 |
| SEM846005015E | R0.25 | **0.5** | 4 | 0.5 | 1.5 | 45 | 0.45 |
| SEM84600502E | R0.25 | **0.5** | 4 | 0.5 | 2 | 45 | 0.45 |
| SEM846005025E | R0.25 | **0.5** | 4 | 0.5 | 2.5 | 45 | 0.45 |
| SEM84600503E | R0.25 | **0.5** | 4 | 0.5 | 3 | 45 | 0.45 |
| SEM84600504E | R0.25 | **0.5** | 4 | 0.5 | 4 | 45 | 0.45 |
| SEM84600505E | R0.25 | **0.5** | 4 | 0.5 | 5 | 45 | 0.45 |
| SEM84600506E | R0.25 | **0.5** | 4 | 0.5 | 6 | 45 | 0.45 |
| SEM84600508E | R0.25 | **0.5** | 4 | 0.5 | 8 | 45 | 0.45 |
| SEM84600510E | R0.25 | **0.5** | 4 | 0.5 | 10 | 45 | 0.45 |
| SEM84600512E | R0.25 | **0.5** | 4 | 0.5 | 12 | 45 | 0.45 |
| SEM84600514E | R0.25 | **0.5** | 4 | 0.5 | 14 | 45 | 0.45 |
| SEM84600516E | R0.25 | **0.5** | 4 | 0.5 | 16 | 45 | 0.45 |
| SEM84600601E | R0.3 | **0.6** | 4 | 0.6 | 1 | 45 | 0.55 |
| SEM84600602E | R0.3 | **0.6** | 4 | 0.6 | 2 | 45 | 0.55 |
| SEM84600603E | R0.3 | **0.6** | 4 | 0.6 | 3 | 45 | 0.55 |
| SEM84600604E | R0.3 | **0.6** | 4 | 0.6 | 4 | 45 | 0.55 |
| SEM84600605E | R0.3 | **0.6** | 4 | 0.6 | 5 | 45 | 0.55 |
| SEM84600606E | R0.3 | **0.6** | 4 | 0.6 | 6 | 45 | 0.55 |
| SEM84600608E | R0.3 | **0.6** | 4 | 0.6 | 8 | 45 | 0.55 |
| SEM84600610E | R0.3 | **0.6** | 4 | 0.6 | 10 | 45 | 0.55 |
| SEM84600612E | R0.3 | **0.6** | 4 | 0.6 | 12 | 45 | 0.55 |

▶ NEXT PAGE 下页

| Size 尺寸 | RadiusTolerance (mm) 圆弧角公差 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|---|
| up to R3 R3以下 | ± 0.005 | 0 ~ - 0.012 | h5 |
| over R3 超过R3 | ± 0.010 | 0 ~ - 0.015 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ○ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |

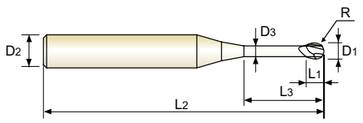
# 4G MILL END MILLS

PLAIN SHANK **SEM846** SERIES

## CARBIDE, 2 FLUTE BALL NOSE with EXTENDED NECK
## 硬质合金，2刃 球头 颈部加长

- ▶ New coating and tool geometry applied resulting outstanding cutting abilities and wear resistance.
- ▶ With its unique ball nose geometry and cutting edges the cutting force has decreased, also increasing wear resistance.
- ▶ Excellent performance when cutting prehardened steels, up to HRc55 which are used for molds & dies.

- ▶基于新涂层及形状, 实现出色切削性能和耐磨性
- ▶基于独特设计球头及刀尖形状, 减少切削阻力, 提高耐磨性
- ▶加工模具产业的预硬钢(HRc55以下)表现出色




CARBIDE | 2 | 30° | R ±0.005 | R ±0.010 | PLAIN

p.C252-263

R0.05~R3 R4~R6

| Recommended ToolHolder | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| | END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| | - | - | POWER MILLING CHUCK | D161 - 176 |
| | - | - | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Radius of Ball Nose 圆弧角 R | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Length Below Shank 颈长 L3 | Overall Length 全长 L2 | Neck Diameter 颈径 D3 |
|---|---|---|---|---|---|---|---|
| SEM84600614E | R0.3 | **0.6** | 4 | 0.6 | 14 | 45 | 0.55 |
| SEM84600616E | R0.3 | **0.6** | 4 | 0.6 | 16 | 45 | 0.55 |
| SEM84600702E | R0.35 | **0.7** | 4 | 0.7 | 2 | 45 | 0.65 |
| SEM84600704E | R0.35 | **0.7** | 4 | 0.7 | 4 | 45 | 0.65 |
| SEM84600706E | R0.35 | **0.7** | 4 | 0.7 | 6 | 45 | 0.65 |
| SEM84600708E | R0.35 | **0.7** | 4 | 0.7 | 8 | 45 | 0.65 |
| SEM84600710E | R0.35 | **0.7** | 4 | 0.7 | 10 | 45 | 0.65 |
| SEM84600712E | R0.35 | **0.7** | 4 | 0.7 | 12 | 45 | 0.65 |
| SEM84600801E | R0.4 | **0.8** | 4 | 0.8 | 1 | 45 | 0.75 |
| SEM84600802E | R0.4 | **0.8** | 4 | 0.8 | 2 | 45 | 0.75 |
| SEM84600803E | R0.4 | **0.8** | 4 | 0.8 | 3 | 45 | 0.75 |
| SEM84600804E | R0.4 | **0.8** | 4 | 0.8 | 4 | 45 | 0.75 |
| SEM84600805E | R0.4 | **0.8** | 4 | 0.8 | 5 | 45 | 0.75 |
| SEM84600806E | R0.4 | **0.8** | 4 | 0.8 | 6 | 45 | 0.75 |
| SEM84600808E | R0.4 | **0.8** | 4 | 0.8 | 8 | 45 | 0.75 |
| SEM84600810E | R0.4 | **0.8** | 4 | 0.8 | 10 | 45 | 0.75 |
| SEM84600812E | R0.4 | **0.8** | 4 | 0.8 | 12 | 45 | 0.75 |
| SEM84600814E | R0.4 | **0.8** | 4 | 0.8 | 14 | 45 | 0.75 |
| SEM84600816E | R0.4 | **0.8** | 4 | 0.8 | 16 | 45 | 0.75 |
| SEM84600820E | R0.4 | **0.8** | 4 | 0.8 | 20 | 45 | 0.75 |
| SEM84600904E | R0.45 | **0.9** | 4 | 0.9 | 4 | 45 | 0.85 |
| SEM84600906E | R0.45 | **0.9** | 4 | 0.9 | 6 | 45 | 0.85 |
| SEM84600908E | R0.45 | **0.9** | 4 | 0.9 | 8 | 45 | 0.85 |
| SEM84600910E | R0.45 | **0.9** | 4 | 0.9 | 10 | 45 | 0.85 |

▶ NEXT PAGE 下页

| Size 尺寸 | RadiusTolerance (mm) 圆弧角公差 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|---|
| up to R3 R3以下 | ± 0.005 | 0 ~ - 0.012 | h5 |
| over R3 超过R3 | ± 0.010 | 0 ~ - 0.015 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ○ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |



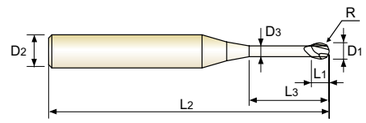
4G MILL END MILLS

PLAIN SHANK SEM846 SERIES

CARBIDE, 2 FLUTE BALL NOSE with EXTENDED NECK
硬质合金，2刃 球头 颈部加长

▶ New coating and tool geometry applied resulting outstanding cutting abilities and wear resistance.
▶ With its unique ball nose geometry and cutting edges the cutting force has decreased, also increasing wear resistance.
▶ Excellent performance when cutting prehardened steels, up to HRc55 which are used for molds & dies.

▶基于新涂层及形状, 实现出色切削性能和耐磨性
▶基于独特设计球头及刀尖形状, 减少切削阻力, 提高耐磨性
▶加工模具产业的预硬钢(HRc55以下)表现出色




CARBIDE | 2 | 30° | R ±0.005 | R ±0.010 | PLAIN

p.C252-263

R0.05~R3 R4~R6

Recommended ToolHolder | Flat Shank | Page | Plain Shank | Page
END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK / SHRINK FIT HOLDER | D15 - 46 / D47 - 72
- | - | POWER MILLING CHUCK | D161 - 176
- | - | ER COLLET CHUCK / SK SLIM CHUCK | D73 - 115 / D183 - 201

Unit(单位) : mm

| EDP No. | Radius of Ball Nose 圆弧角 R | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Length Below Shank 颈长 L3 | Overall Length 全长 L2 | Neck Diameter 颈径 D3 |
|---|---|---|---|---|---|---|---|
| SEM84601002E | R0.5 | **1.0** | 4 | 1 | 2 | 50 | 0.95 |
| SEM84601003E | R0.5 | **1.0** | 4 | 1 | 3 | 50 | 0.95 |
| SEM84601004E | R0.5 | **1.0** | 4 | 1 | 4 | 50 | 0.95 |
| SEM84601005E | R0.5 | **1.0** | 4 | 1 | 5 | 50 | 0.95 |
| SEM84601006E | R0.5 | **1.0** | 4 | 1 | 6 | 50 | 0.95 |
| SEM84601007E | R0.5 | **1.0** | 4 | 1 | 7 | 50 | 0.95 |
| SEM84601008E | R0.5 | **1.0** | 4 | 1 | 8 | 50 | 0.95 |
| SEM84601009E | R0.5 | **1.0** | 4 | 1 | 9 | 50 | 0.95 |
| SEM84601010E | R0.5 | **1.0** | 4 | 1 | 10 | 50 | 0.95 |
| SEM84601012E | R0.5 | **1.0** | 4 | 1 | 12 | 50 | 0.95 |
| SEM84601014E | R0.5 | **1.0** | 4 | 1 | 14 | 50 | 0.95 |
| SEM84601016E | R0.5 | **1.0** | 4 | 1 | 16 | 50 | 0.95 |
| SEM84601018E | R0.5 | **1.0** | 4 | 1 | 18 | 50 | 0.95 |
| SEM84601020E | R0.5 | **1.0** | 4 | 1 | 20 | 50 | 0.95 |
| SEM84601022E | R0.5 | **1.0** | 4 | 1 | 22 | 60 | 0.95 |
| SEM84601026E | R0.5 | **1.0** | 4 | 1 | 26 | 60 | 0.95 |
| SEM84601030E | R0.5 | **1.0** | 4 | 1 | 30 | 70 | 0.95 |
| SEM84601040E | R0.5 | **1.0** | 4 | 1 | 40 | 80 | 0.95 |
| SEM84601050E | R0.5 | **1.0** | 4 | 1 | 50 | 100 | 0.95 |
| SEM84601204E | R0.6 | **1.2** | 4 | 1.2 | 4 | 50 | 1.15 |
| SEM84601206E | R0.6 | **1.2** | 4 | 1.2 | 6 | 50 | 1.15 |
| SEM84601208E | R0.6 | **1.2** | 4 | 1.2 | 8 | 50 | 1.15 |
| SEM84601210E | R0.6 | **1.2** | 4 | 1.2 | 10 | 50 | 1.15 |
| SEM84601212E | R0.6 | **1.2** | 4 | 1.2 | 12 | 50 | 1.15 |

▶ NEXT PAGE 下页

| Size 尺寸 | RadiusTolerance (mm) 圆弧角公差 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|---|
| up to R3 R3以下 | ± 0.005 | 0 ~ - 0.012 | h5 |
| over R3 超过R3 | ± 0.010 | 0 ~ - 0.015 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ○ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |

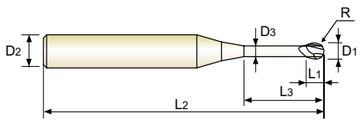
# 4G MILL END MILLS

PLAIN SHANK **SEM846** SERIES

## CARBIDE, 2 FLUTE BALL NOSE with EXTENDED NECK
## 硬质合金，2刃 球头 颈部加长

- ▶ New coating and tool geometry applied resulting outstanding cutting abilities and wear resistance.
- ▶ With its unique ball nose geometry and cutting edges the cutting force has decreased, also increasing wear resistance.
- ▶ Excellent performance when cutting prehardened steels, up to HRc55 which are used for molds & dies.

- ▶基于新涂层及形状, 实现出色切削性能和耐磨性
- ▶基于独特设计球头及刀尖形状, 减少切削阻力, 提高耐磨性
- ▶加工模具产业的预硬钢(HRc55以下)表现出色




CARBIDE | 2 | 30° | R ±0.005 | R ±0.010 | PLAIN | p.C252-263

R0.05~R3 R4~R6

| Recommended ToolHolder | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| | END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| | - | - | POWER MILLING CHUCK | D161 - 176 |
| | - | - | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Radius of Ball Nose 圆弧角 R | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Length Below Shank 颈长 L3 | Overall Length 全长 L2 | Neck Diameter 颈径 D3 |
|---|---|---|---|---|---|---|---|
| SEM84601216E | R0.6 | 1.2 | 4 | 1.2 | 16 | 50 | 1.15 |
| SEM84601220E | R0.6 | 1.2 | 4 | 1.2 | 20 | 50 | 1.15 |
| SEM84601226E | R0.6 | 1.2 | 4 | 1.2 | 26 | 60 | 1.15 |
| SEM84601406E | R0.7 | 1.4 | 4 | 1.4 | 6 | 50 | 1.35 |
| SEM84601408E | R0.7 | 1.4 | 4 | 1.4 | 8 | 50 | 1.35 |
| SEM84601410E | R0.7 | 1.4 | 4 | 1.4 | 10 | 50 | 1.35 |
| SEM84601412E | R0.7 | 1.4 | 4 | 1.4 | 12 | 50 | 1.35 |
| SEM84601416E | R0.7 | 1.4 | 4 | 1.4 | 16 | 50 | 1.35 |
| SEM84601503E | R0.75 | 1.5 | 4 | 1.5 | 3 | 50 | 1.45 |
| SEM84601504E | R0.75 | 1.5 | 4 | 1.5 | 4 | 50 | 1.45 |
| SEM84601505E | R0.75 | 1.5 | 4 | 1.5 | 5 | 50 | 1.45 |
| SEM84601506E | R0.75 | 1.5 | 4 | 1.5 | 6 | 50 | 1.45 |
| SEM84601507E | R0.75 | 1.5 | 4 | 1.5 | 7 | 50 | 1.45 |
| SEM84601508E | R0.75 | 1.5 | 4 | 1.5 | 8 | 50 | 1.45 |
| SEM84601510E | R0.75 | 1.5 | 4 | 1.5 | 10 | 50 | 1.45 |
| SEM84601512E | R0.75 | 1.5 | 4 | 1.5 | 12 | 50 | 1.45 |
| SEM84601514E | R0.75 | 1.5 | 4 | 1.5 | 14 | 50 | 1.45 |
| SEM84601516E | R0.75 | 1.5 | 4 | 1.5 | 16 | 50 | 1.45 |
| SEM84601518E | R0.75 | 1.5 | 4 | 1.5 | 18 | 50 | 1.45 |
| SEM84601520E | R0.75 | 1.5 | 4 | 1.5 | 20 | 50 | 1.45 |
| SEM84601522E | R0.75 | 1.5 | 4 | 1.5 | 22 | 60 | 1.45 |
| SEM84601526E | R0.75 | 1.5 | 4 | 1.5 | 26 | 60 | 1.45 |
| SEM84601530E | R0.75 | 1.5 | 4 | 1.5 | 30 | 70 | 1.45 |
| SEM84601535E | R0.75 | 1.5 | 4 | 1.5 | 35 | 70 | 1.45 |

▶ NEXT PAGE 下页

| Size 尺寸 | RadiusTolerance (mm) 圆弧角公差 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|---|
| up to R3 R3以下 | ± 0.005 | 0 ~ - 0.012 | h5 |
| over R3 超过R3 | ± 0.010 | 0 ~ - 0.015 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ○ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |



CARBIDE
HSS
CBN END MILLS
i-Xmill END MILLS
i-SMART MODULAR END MILLS
X5070 END MILLS
4G MILL END MILLS
X-POWER PRO END MILLS
TitaNox-POWER END MILLS
SUS-CUT END MILLS
V7 PLUS END MILLS
ALU-POWER HPC END MILLS
ALU-CUT END MILLS
G-CUT
CRX S END MILLS
K-2 END MILLS
GENERAL CARBIDE END MILLS
ONLY ONE COATED PM60 END MILLS
TANK-POWER END MILLS
GENERAL HSS END MILLS
MILLING CUTTERS
TECHNICAL DATA

# 4G MILL END MILLS

PLAIN SHANK **SEM846** SERIES

## CARBIDE, 2 FLUTE BALL NOSE with EXTENDED NECK
## 硬质合金，2刃 球头 颈部加长

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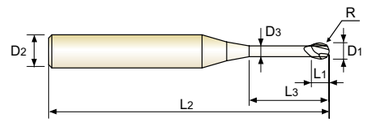
- ▶基于独特设计球头及刀尖形状, 减少切削阻力, 提高耐磨性
- ▶加工模具产业的预硬钢(HRc55以下)表现出色




CARBIDE | 2 | 30° | R ±0.005 | R ±0.010 | PLAIN | p.C252-263

R0.05~R3 R4~R6

| Recommended ToolHolder | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| | END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
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Unit(单位) : mm

| EDP No. | Radius of Ball Nose 圆弧角 R | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Length Below Shank 颈长 L3 | Overall Length 全长 L2 | Neck Diameter 颈径 D3 |
|---|---|---|---|---|---|---|---|
| SEM84601540E | R0.75 | 1.5 | 4 | 1.5 | 40 | 80 | 1.45 |
| SEM84601604E | R0.8 | 1.6 | 4 | 1.6 | 4 | 50 | 1.55 |
| SEM84601606E | R0.8 | 1.6 | 4 | 1.6 | 6 | 50 | 1.55 |
| SEM84601608E | R0.8 | 1.6 | 4 | 1.6 | 8 | 50 | 1.55 |
| SEM84601610E | R0.8 | 1.6 | 4 | 1.6 | 10 | 50 | 1.55 |
| SEM84601612E | R0.8 | 1.6 | 4 | 1.6 | 12 | 50 | 1.55 |
| SEM84601616E | R0.8 | 1.6 | 4 | 1.6 | 16 | 50 | 1.55 |
| SEM84601620E | R0.8 | 1.6 | 4 | 1.6 | 20 | 50 | 1.55 |
| SEM84601804E | R0.9 | 1.8 | 4 | 1.8 | 4 | 50 | 1.75 |
| SEM84601806E | R0.9 | 1.8 | 4 | 1.8 | 6 | 50 | 1.75 |
| SEM84601808E | R0.9 | 1.8 | 4 | 1.8 | 8 | 50 | 1.75 |
| SEM84601810E | R0.9 | 1.8 | 4 | 1.8 | 10 | 50 | 1.75 |
| SEM84601812E | R0.9 | 1.8 | 4 | 1.8 | 12 | 50 | 1.75 |
| SEM84601816E | R0.9 | 1.8 | 4 | 1.8 | 16 | 50 | 1.75 |
| SEM84601820E | R0.9 | 1.8 | 4 | 1.8 | 20 | 50 | 1.75 |
| SEM84602004E | R1.0 | 2.0 | 4 | 2 | 4 | 50 | 1.95 |
| SEM84602006E | R1.0 | 2.0 | 4 | 2 | 6 | 50 | 1.95 |
| SEM84602008E | R1.0 | 2.0 | 4 | 2 | 8 | 50 | 1.95 |
| SEM84602010E | R1.0 | 2.0 | 4 | 2 | 10 | 50 | 1.95 |
| SEM84602012E | R1.0 | 2.0 | 4 | 2 | 12 | 50 | 1.95 |
| SEM84602014E | R1.0 | 2.0 | 4 | 2 | 14 | 50 | 1.95 |
| SEM84602016E | R1.0 | 2.0 | 4 | 2 | 16 | 50 | 1.95 |
| SEM84602018E | R1.0 | 2.0 | 4 | 2 | 18 | 50 | 1.95 |
| SEM84602020E | R1.0 | 2.0 | 4 | 2 | 20 | 50 | 1.95 |

▶ NEXT PAGE 下页

| Size 尺寸 | RadiusTolerance (mm) 圆弧角公差 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|---|
| up to R3 R3以下 | ± 0.005 | 0 ~ - 0.012 | h5 |
| over R3 超过R3 | ± 0.010 | 0 ~ - 0.015 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ○ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |

# 4G MILL END MILLS

PLAIN SHANK **SEM846** SERIES

## CARBIDE, 2 FLUTE BALL NOSE with EXTENDED NECK
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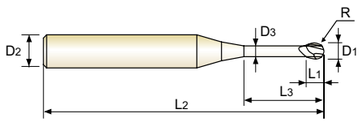
- ▶基于独特设计球头及刀尖形状, 减少切削阻力, 提高耐磨性
- ▶加工模具产业的预硬钢(HRc55以下)表现出色




CARBIDE | 2 | 30° | R ±0.005 | R ±0.010 | PLAIN | p.C278-289

R0.05~R3 R4~R6

| Recommended ToolHolder | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| | END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| | - | - | POWER MILLING CHUCK | D161 - 176 |
| | - | - | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Radius of Ball Nose 圆弧角 R | Mill Diameter 直径 $D_1$ | Shank Diameter 柄径 $D_2$ | Length of Cut 刃长 $L_1$ | Length Below Shank 颈长 $L_3$ | Overall Length 全长 $L_2$ | Neck Diameter 颈径 $D_3$ |
|---|---|---|---|---|---|---|---|
| SEM84602022E | R1.0 | **2.0** | 4 | 2 | 22 | 60 | 1.95 |
| SEM84602026E | R1.0 | **2.0** | 4 | 2 | 26 | 60 | 1.95 |
| SEM84602030E | R1.0 | **2.0** | 4 | 2 | 30 | 70 | 1.95 |
| SEM84602035E | R1.0 | **2.0** | 4 | 2 | 35 | 70 | 1.95 |
| SEM84602040E | R1.0 | **2.0** | 4 | 2 | 40 | 80 | 1.95 |
| SEM84602045E | R1.0 | **2.0** | 4 | 2 | 45 | 90 | 1.95 |
| SEM84602050E | R1.0 | **2.0** | 4 | 2 | 50 | 100 | 1.95 |
| SEM84602060E | R1.0 | **2.0** | 4 | 2 | 60 | 110 | 1.95 |
| SEM84602508E | R1.25 | **2.5** | 4 | 2.5 | 8 | 50 | 2.40 |
| SEM84602510E | R1.25 | **2.5** | 4 | 2.5 | 10 | 50 | 2.40 |
| SEM84602512E | R1.25 | **2.5** | 4 | 2.5 | 12 | 50 | 2.40 |
| SEM84602516E | R1.25 | **2.5** | 4 | 2.5 | 16 | 50 | 2.40 |
| SEM84602520E | R1.25 | **2.5** | 4 | 2.5 | 20 | 50 | 2.40 |
| SEM84602522E | R1.25 | **2.5** | 4 | 2.5 | 22 | 60 | 2.40 |
| SEM84602526E | R1.25 | **2.5** | 4 | 2.5 | 26 | 60 | 2.40 |
| SEM84602530E | R1.25 | **2.5** | 4 | 2.5 | 30 | 70 | 2.40 |
| SEM84602535E | R1.25 | **2.5** | 4 | 2.5 | 35 | 70 | 2.40 |
| SEM84602540E | R1.25 | **2.5** | 4 | 2.5 | 40 | 80 | 2.40 |
| SEM84602545E | R1.25 | **2.5** | 4 | 2.5 | 45 | 90 | 2.40 |
| SEM84602550E | R1.25 | **2.5** | 4 | 2.5 | 50 | 100 | 2.40 |
| SEM84603006E | R1.5 | **3.0** | 6 | 3 | 6 | 50 | 2.85 |
| SEM84603008E | R1.5 | **3.0** | 6 | 3 | 8 | 50 | 2.85 |
| SEM84603010E | R1.5 | **3.0** | 6 | 3 | 10 | 50 | 2.85 |
| SEM84603012E | R1.5 | **3.0** | 6 | 3 | 12 | 50 | 2.85 |

▶ NEXT PAGE 下页

| Size 尺寸 | RadiusTolerance (mm) 圆弧角公差 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|---|
| up to R3 R3以下 | ± 0.005 | 0 ~ - 0.012 | h5 |
| over R3 超过R3 | ± 0.010 | 0 ~ - 0.015 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ○ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |



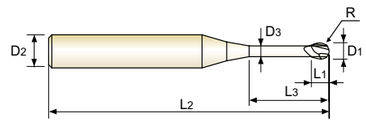
4G MILL END MILLS

PLAIN SHANK SEM846 SERIES

CARBIDE, 2 FLUTE BALL NOSE with EXTENDED NECK
硬质合金，2刃 球头 颈部加长

▶ New coating and tool geometry applied resulting outstanding cutting abilities and wear resistance.
▶ With its unique ball nose geometry and cutting edges the cutting force has decreased, also increasing wear resistance.
▶ Excellent performance when cutting prehardened steels, up to HRc55 which are used for molds & dies.

▶基于新涂层及形状, 实现出色切削性能和耐磨性
▶基于独特设计球头及刀尖形状, 减少切削阻力, 提高耐磨性
▶加工模具产业的预硬钢(HRc55以下)表现出色




CARBIDE | 2 | 30° | R ±0.005 | R ±0.010 | PLAIN | p.C278-289

R0.05~R3 R4~R6

| Recommended ToolHolder | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| | END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| | - | - | POWER MILLING CHUCK | D161 - 176 |
| | - | - | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Radius of Ball Nose 圆弧角 R | Mill Diameter 直径 $D_1$ | Shank Diameter 柄径 $D_2$ | Length of Cut 刃长 $L_1$ | Length Below Shank 颈长 $L_3$ | Overall Length 全长 $L_2$ | Neck Diameter 颈径 $D_3$ |
|---|---|---|---|---|---|---|---|
| SEM84603014E | R1.5 | **3.0** | 6 | 3 | 14 | 60 | 2.85 |
| SEM84603015E | R1.5 | **3.0** | 6 | 3 | 15 | 60 | 2.85 |
| SEM84603016E | R1.5 | **3.0** | 6 | 3 | 16 | 60 | 2.85 |
| SEM84603018E | R1.5 | **3.0** | 6 | 3 | 18 | 60 | 2.85 |
| SEM84603020E | R1.5 | **3.0** | 6 | 3 | 20 | 60 | 2.85 |
| SEM84603022E | R1.5 | **3.0** | 6 | 3 | 22 | 65 | 2.85 |
| SEM84603026E | R1.5 | **3.0** | 6 | 3 | 26 | 65 | 2.85 |
| SEM84603030E | R1.5 | **3.0** | 6 | 3 | 30 | 70 | 2.85 |
| SEM84603035E | R1.5 | **3.0** | 6 | 3 | 35 | 70 | 2.85 |
| SEM84603040E | R1.5 | **3.0** | 6 | 3 | 40 | 80 | 2.85 |
| SEM84603045E | R1.5 | **3.0** | 6 | 3 | 45 | 90 | 2.85 |
| SEM84603050E | R1.5 | **3.0** | 6 | 3 | 50 | 100 | 2.85 |
| SEM84603060E | R1.5 | **3.0** | 6 | 3 | 60 | 100 | 2.85 |
| SEM84604008E | R2.0 | **4.0** | 6 | 4 | 8 | 50 | 3.85 |
| SEM84604010E | R2.0 | **4.0** | 6 | 4 | 10 | 50 | 3.85 |
| SEM84604012E | R2.0 | **4.0** | 6 | 4 | 12 | 50 | 3.85 |
| SEM84604014E | R2.0 | **4.0** | 6 | 4 | 14 | 60 | 3.85 |
| SEM84604016E | R2.0 | **4.0** | 6 | 4 | 16 | 60 | 3.85 |
| SEM84604018E | R2.0 | **4.0** | 6 | 4 | 18 | 60 | 3.85 |
| SEM84604020E | R2.0 | **4.0** | 6 | 4 | 20 | 60 | 3.85 |
| SEM84604022E | R2.0 | **4.0** | 6 | 4 | 22 | 65 | 3.85 |
| SEM84604026E | R2.0 | **4.0** | 6 | 4 | 26 | 65 | 3.85 |
| SEM84604030E | R2.0 | **4.0** | 6 | 4 | 30 | 70 | 3.85 |
| SEM84604035E | R2.0 | **4.0** | 6 | 4 | 35 | 70 | 3.85 |

▶ NEXT PAGE 下页

| Size 尺寸 | RadiusTolerance (mm) 圆弧角公差 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|---|
| up to R3 R3以下 | ± 0.005 | 0 ~ - 0.012 | h5 |
| over R3 超过R3 | ± 0.010 | 0 ~ - 0.015 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ○ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |

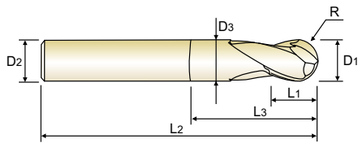
# 4G MILL END MILLS

PLAIN SHANK **SEM846** SERIES

## CARBIDE, 2 FLUTE BALL NOSE with EXTENDED NECK
## 硬质合金，2刃 球头 颈部加长

- ▶ New coating and tool geometry applied resulting outstanding cutting abilities and wear resistance.
- ▶ With its unique ball nose geometry and cutting edges the cutting force has decreased, also increasing wear resistance.
- ▶ Excellent performance when cutting prehardened steels, up to HRc55 which are used for molds & dies.

- ▶基于新涂层及形状, 实现出色切削性能和耐磨性
- ▶基于独特设计球头及刀尖形状, 减少切削阻力, 提高耐磨性
- ▶加工模具产业的预硬钢(HRc55以下)表现出色




CARBIDE | 2 | 30° | R ±0.005 | R ±0.010 | PLAIN | p.C252-263

R0.05~R3 R4~R6

Recommended ToolHolder

| Flat Shank | | Page | Plain Shank | Page |
|---|---|---|---|---|
| END MILL HOLDER | D118 - 137 | | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| - | - | | POWER MILLING CHUCK | D161 - 176 |
| - | - | | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Radius of Ball Nose<br>圆弧角<br>R | Mill Diameter<br>直径<br>D1 | Shank Diameter<br>柄径<br>D2 | Length of Cut<br>刃长<br>L1 | Length Below Shank<br>颈长<br>L3 | Overall Length<br>全长<br>L2 | Neck Diameter<br>颈径<br>D3 |
|---|---|---|---|---|---|---|---|
| SEM84604040E | R2.0 | **4.0** | 6 | 4 | 40 | 80 | 3.85 |
| SEM84604045E | R2.0 | **4.0** | 6 | 4 | 45 | 90 | 3.85 |
| SEM84604050E | R2.0 | **4.0** | 6 | 4 | 50 | 100 | 3.85 |
| SEM84604055E | R2.0 | **4.0** | 6 | 4 | 55 | 100 | 3.85 |
| SEM84604060E | R2.0 | **4.0** | 6 | 4 | 60 | 100 | 3.85 |
| SEM84605015E | R2.5 | **5.0** | 6 | 6 | 15 | 60 | 4.85 |
| SEM84605020E | R2.5 | **5.0** | 6 | 6 | 20 | 60 | 4.85 |
| SEM84605026E | R2.5 | **5.0** | 6 | 6 | 26 | 65 | 4.85 |
| SEM84605030E | R2.5 | **5.0** | 6 | 6 | 30 | 70 | 4.85 |
| SEM84605035E | R2.5 | **5.0** | 6 | 6 | 35 | 70 | 4.85 |
| SEM84605040E | R2.5 | **5.0** | 6 | 6 | 40 | 80 | 4.85 |
| SEM84605045E | R2.5 | **5.0** | 6 | 6 | 45 | 90 | 4.85 |
| SEM84605050E | R2.5 | **5.0** | 6 | 6 | 50 | 100 | 4.85 |
| SEM84605055E | R2.5 | **5.0** | 6 | 6 | 55 | 100 | 4.85 |
| SEM84605060E | R2.5 | **5.0** | 6 | 6 | 60 | 100 | 4.85 |
| SEM84606020E | R3.0 | **6.0** | 6 | 8 | 20 | 60 | 5.85 |
| SEM84606030E | R3.0 | **6.0** | 6 | 8 | 30 | 60 | 5.85 |
| SEM84606020090E | R3.0 | **6.0** | 6 | 12 | 20 | 90 | 5.85 |
| SEM84606030090E | R3.0 | **6.0** | 6 | 12 | 30 | 90 | 5.85 |
| SEM84608025E | R4.0 | **8.0** | 8 | 10 | 25 | 70 | 7.70 |
| SEM84608035E | R4.0 | **8.0** | 8 | 10 | 35 | 70 | 7.70 |
| SEM84608025100E | R4.0 | **8.0** | 8 | 14 | 25 | 100 | 7.70 |
| SEM84608035100E | R4.0 | **8.0** | 8 | 14 | 35 | 100 | 7.70 |
| SEM84610030E | R5.0 | **10.0** | 10 | 12 | 30 | 75 | 9.70 |

▶ NEXT PAGE 下页

| Size<br>尺寸 | RadiusTolerance (mm)<br>圆弧角公差 | Mill Dia.Tolerance (mm)<br>直径公差 | Shank Dia.Tolerance<br>柄径公差 |
|---|---|---|---|
| up to R3 R3以下 | ± 0.005 | 0 ~ - 0.012 | h5 |
| over R3 超过R3 | ± 0.010 | 0 ~ - 0.015 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ○ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |



CARBIDE
HSS
CBN END MILLS
i-Xmill END MILLS
i-SMART MODULAR END MILLS
X5070 END MILLS
4G MILL END MILLS
X-POWER PRO END MILLS
TitaNox-POWER END MILLS
SUS-CUT END MILLS
V7 PLUS END MILLS
ALU-POWER HPC END MILLS
ALU-CUT END MILLS
G-CUT
CRX S END MILLS
K-2 END MILLS
GENERAL CARBIDE END MILLS
ONLY ONE COATED PM60 END MILLS
TANK-POWER END MILLS
GENERAL HSS END MILLS
MILLING CUTTERS
TECHNICAL DATA

# 4G MILL END MILLS

PLAIN SHANK **SEM846** SERIES

## CARBIDE, 2 FLUTE BALL NOSE with EXTENDED NECK
## 硬质合金，2刃 球头 颈部加长

- ▶ New coating and tool geometry applied resulting outstanding cutting abilities and wear resistance.
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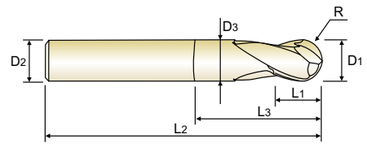
- ▶ Excellent performance when cutting prehardened steels, up to HRc55 which are used for molds & dies.

- ▶基于新涂层及形状, 实现出色切削性能和耐磨性
- ▶基于独特设计球头及刀尖形状, 减少切削阻力, 提高耐磨性
- ▶加工模具产业的预硬钢(HRc55以下)表现出色




CARBIDE | 2 | 30° | R ±0.005 | R ±0.010 | PLAIN | p.C252-263

R0.05~R3 R4~R6

Recommended ToolHolder

| Flat Shank | | Page | Plain Shank | Page |
|---|---|---|---|---|
| END MILL HOLDER | D118 - 137 | | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| - | - | | POWER MILLING CHUCK | D161 - 176 |
| - | - | | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Radius of Ball Nose<br>圆弧角<br>R | Mill Diameter<br>直径<br>D1 | Shank Diameter<br>柄径<br>D2 | Length of Cut<br>刃长<br>L1 | Length Below Shank<br>颈长<br>L3 | Overall Length<br>全长<br>L2 | Neck Diameter<br>颈径<br>D3 |
|---|---|---|---|---|---|---|---|
| SEM84610040E | R5.0 | **10.0** | 10 | 12 | 40 | 75 | 9.70 |
| SEM84610030100E | R5.0 | **10.0** | 10 | 18 | 30 | 100 | 9.70 |
| SEM84610040100E | R5.0 | **10.0** | 10 | 18 | 40 | 100 | 9.70 |
| SEM84612032E | R6.0 | **12.0** | 12 | 14 | 32 | 80 | 11.70 |
| SEM84612045E | R6.0 | **12.0** | 12 | 14 | 45 | 80 | 11.70 |
| SEM84612032110E | R6.0 | **12.0** | 12 | 22 | 32 | 110 | 11.70 |
| SEM84612045110E | R6.0 | **12.0** | 12 | 22 | 45 | 110 | 11.70 |

| Size<br>尺寸 | RadiusTolerance (mm)<br>圆弧角公差 | Mill Dia.Tolerance (mm)<br>直径公差 | Shank Dia.Tolerance<br>柄径公差 |
|---|---|---|---|
| up to R3 R3以下 | ± 0.005 | 0 ~ - 0.012 | h5 |
| over R3 超过R3 | ± 0.010 | 0 ~ - 0.015 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ○ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |

# 4G MILL END MILLS

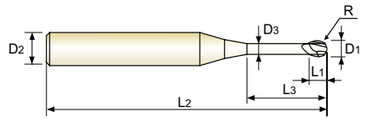
PLAIN SHANK **SEM846** SERIES

## CARBIDE, 2 FLUTE BALL NOSE with EXTENDED NECK (6mm shank)

## 硬质合金，2刃 球头 颈部加长 (6mm 柄径)

- ▶ New coating and tool geometry applied resulting outstanding cutting abilities and wear resistance.
- ▶ With its unique ball nose geometry and cutting edges the cutting force has decreased, also increasing wear resistance.
- ▶ Excellent performance when cutting prehardened steels, up to HRc55 which are used for molds & dies.

- ▶基于新涂层及形状, 实现出色切削性能和耐磨性
- ▶基于独特设计球头及刀尖形状, 减少切削阻力, 提高耐磨性
- ▶加工模具产业的预硬钢(HRc55以下)表现出色




CARBIDE | 2 | 30° | R ±0.005 | PLAIN

p.C252-263

Recommended ToolHolder

| Flat Shank | | Page | Plain Shank | Page |
|---|---|---|---|---|
| END MILL HOLDER | D118 - 137 | | HYDRAULIC CHUCK SHRINK FIT HOLDER | D15 - 46 D47 - 72 |
| - | - | | POWER MILLING CHUCK | D161 - 176 |
| - | - | | ER COLLET CHUCK SK SLIM CHUCK | D73 - 115 D183 - 201 |

Unit(单位) : mm

| EDP No. | Radius of Ball Nose 圆弧角 R | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Length Below Shank 颈长 L3 | Overall Length 全长 L2 | Neck Diameter 颈径 D3 |
|---|---|---|---|---|---|---|---|
| SEM846005016SE | R0.25 | **0.5** | 6 | 0.5 | 1 | 45 | 0.45 |
| SEM846005026SE | R0.25 | **0.5** | 6 | 0.5 | 2 | 45 | 0.45 |
| SEM846005046SE | R0.25 | **0.5** | 6 | 0.5 | 4 | 45 | 0.45 |
| SEM846006016SE | R0.3 | **0.6** | 6 | 0.6 | 1 | 45 | 0.55 |
| SEM846006026SE | R0.3 | **0.6** | 6 | 0.6 | 2 | 45 | 0.55 |
| SEM846006036SE | R0.3 | **0.6** | 6 | 0.6 | 3 | 45 | 0.55 |
| SEM846006046SE | R0.3 | **0.6** | 6 | 0.6 | 4 | 45 | 0.55 |
| SEM846006056SE | R0.3 | **0.6** | 6 | 0.6 | 5 | 45 | 0.55 |
| SEM846006066SE | R0.3 | **0.6** | 6 | 0.6 | 6 | 45 | 0.55 |
| SEM846006086SE | R0.3 | **0.6** | 6 | 0.6 | 8 | 45 | 0.55 |
| SEM846006106SE | R0.3 | **0.6** | 6 | 0.6 | 10 | 45 | 0.55 |
| SEM846006126SE | R0.3 | **0.6** | 6 | 0.6 | 12 | 45 | 0.55 |
| SEM846006146SE | R0.3 | **0.6** | 6 | 0.6 | 14 | 45 | 0.55 |
| SEM846006166SE | R0.3 | **0.6** | 6 | 0.6 | 16 | 45 | 0.55 |
| SEM846008016SE | R0.4 | **0.8** | 6 | 0.8 | 1 | 45 | 0.75 |
| SEM846008026SE | R0.4 | **0.8** | 6 | 0.8 | 2 | 45 | 0.75 |
| SEM846008036SE | R0.4 | **0.8** | 6 | 0.8 | 3 | 45 | 0.75 |
| SEM846008046SE | R0.4 | **0.8** | 6 | 0.8 | 4 | 45 | 0.75 |
| SEM846008056SE | R0.4 | **0.8** | 6 | 0.8 | 5 | 45 | 0.75 |
| SEM846008066SE | R0.4 | **0.8** | 6 | 0.8 | 6 | 45 | 0.75 |
| SEM846008086SE | R0.4 | **0.8** | 6 | 0.8 | 8 | 45 | 0.75 |
| SEM846008106SE | R0.4 | **0.8** | 6 | 0.8 | 10 | 45 | 0.75 |
| SEM846008126SE | R0.4 | **0.8** | 6 | 0.8 | 12 | 45 | 0.75 |
| SEM846008146SE | R0.4 | **0.8** | 6 | 0.8 | 14 | 45 | 0.75 |

▶ NEXT PAGE 下页

| RadiusTolerance (mm) 圆弧角公差 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|
| ± 0.005 | 0 ~ - 0.012 | h5 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ○ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |



CARBIDE
HSS
CBN END MILLS
i-Xmill END MILLS
i-SMART MODULAR END MILLS
X5070 END MILLS
4G MILL END MILLS
X-POWER PRO END MILLS
TitaNox-POWER END MILLS
SUS-CUT END MILLS
V7 PLUS END MILLS
ALU-POWER HPC END MILLS
ALU-CUT END MILLS
G-CUT END MILLS
CRX S END MILLS
K-2 END MILLS
GENERAL CARBIDE END MILLS
ONLY ONE COATED PM60 END MILLS
TANK-POWER END MILLS
GENERAL HSS END MILLS
MILLING CUTTERS
TECHNICAL DATA

# 4G MILL END MILLS

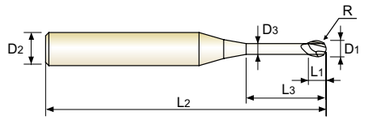
PLAIN SHANK **SEM846** SERIES

## CARBIDE, 2 FLUTE BALL NOSE with EXTENDED NECK (6mm shank)

## 硬质合金，2刃 球头 颈部加长 (6mm 柄径)

- ▶ New coating and tool geometry applied resulting outstanding cutting abilities and wear resistance.
- ▶ With its unique ball nose geometry and cutting edges the cutting force has decreased, also increasing wear resistance.
- ▶ Excellent performance when cutting prehardened steels, up to HRc55 which are used for molds & dies.

- ▶基于新涂层及形状, 实现出色切削性能和耐磨性
- ▶基于独特设计球头及刀尖形状, 减少切削阻力, 提高耐磨性
- ▶加工模具产业的预硬钢(HRc55以下)表现出色




CARBIDE | 2 | 30° | R ±0.005 | PLAIN

p.C252-263

Recommended ToolHolder

| Flat Shank | | Page | Plain Shank | Page |
|---|---|---|---|---|
| END MILL HOLDER | D118 - 137 | | HYDRAULIC CHUCK SHRINK FIT HOLDER | D15 - 46 D47 - 72 |
| - | - | | POWER MILLING CHUCK | D161 - 176 |
| - | - | | ER COLLET CHUCK SK SLIM CHUCK | D73 - 115 D183 - 201 |

Unit(单位) : mm

| EDP No. | Radius of Ball Nose 圆弧角 R | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Length Below Shank 颈长 L3 | Overall Length 全长 L2 | Neck Diameter 颈径 D3 |
|---|---|---|---|---|---|---|---|
| SEM846008166SE | R0.4 | **0.8** | 6 | 0.8 | 16 | 45 | 0.75 |
| SEM846008206SE | R0.4 | **0.8** | 6 | 0.8 | 20 | 45 | 0.75 |
| SEM846010026SE | R0.5 | **1.0** | 6 | 1 | 2 | 50 | 0.95 |
| SEM846010036SE | R0.5 | **1.0** | 6 | 1 | 3 | 50 | 0.95 |
| SEM846010046SE | R0.5 | **1.0** | 6 | 1 | 4 | 50 | 0.95 |
| SEM846010056SE | R0.5 | **1.0** | 6 | 1 | 5 | 50 | 0.95 |
| SEM846010066SE | R0.5 | **1.0** | 6 | 1 | 6 | 50 | 0.95 |
| SEM846010076SE | R0.5 | **1.0** | 6 | 1 | 7 | 50 | 0.95 |
| SEM846010086SE | R0.5 | **1.0** | 6 | 1 | 8 | 50 | 0.95 |
| SEM846010096SE | R0.5 | **1.0** | 6 | 1 | 9 | 50 | 0.95 |
| SEM846010106SE | R0.5 | **1.0** | 6 | 1 | 10 | 50 | 0.95 |
| SEM846010126SE | R0.5 | **1.0** | 6 | 1 | 12 | 50 | 0.95 |
| SEM846010146SE | R0.5 | **1.0** | 6 | 1 | 14 | 50 | 0.95 |
| SEM846010166SE | R0.5 | **1.0** | 6 | 1 | 16 | 50 | 0.95 |
| SEM846010186SE | R0.5 | **1.0** | 6 | 1 | 18 | 50 | 0.95 |
| SEM846010206SE | R0.5 | **1.0** | 6 | 1 | 20 | 50 | 0.95 |
| SEM846010226SE | R0.5 | **1.0** | 6 | 1 | 22 | 60 | 0.95 |
| SEM846010266SE | R0.5 | **1.0** | 6 | 1 | 26 | 60 | 0.95 |
| SEM846010306SE | R0.5 | **1.0** | 6 | 1 | 30 | 70 | 0.95 |
| SEM846015036SE | R0.75 | **1.5** | 6 | 1.5 | 3 | 50 | 1.45 |
| SEM846015046SE | R0.75 | **1.5** | 6 | 1.5 | 4 | 50 | 1.45 |
| SEM846015066SE | R0.75 | **1.5** | 6 | 1.5 | 6 | 50 | 1.45 |
| SEM846015086SE | R0.75 | **1.5** | 6 | 1.5 | 8 | 50 | 1.45 |
| SEM846015106SE | R0.75 | **1.5** | 6 | 1.5 | 10 | 50 | 1.45 |

▶ NEXT PAGE 下页

| RadiusTolerance (mm) 圆弧角公差 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|
| ± 0.005 | 0 ~ - 0.012 | h5 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ○ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |

# 4G MILL END MILLS

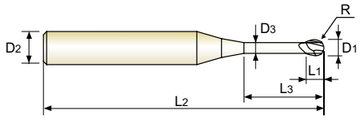
PLAIN SHANK **SEM846** SERIES

## CARBIDE, 2 FLUTE BALL NOSE with EXTENDED NECK (6mm shank)

## 硬质合金，2刃 球头 颈部加长 (6mm 柄径)

- ▶ New coating and tool geometry applied resulting outstanding cutting abilities and wear resistance.
- ▶ With its unique ball nose geometry and cutting edges the cutting force has decreased, also increasing wear resistance.
- ▶ Excellent performance when cutting prehardened steels, up to HRc55 which are used for molds & dies.

- ▶基于新涂层及形状, 实现出色切削性能和耐磨性
- ▶基于独特设计球头及刀尖形状, 减少切削阻力, 提高耐磨性
- ▶加工模具产业的预硬钢(HRc55以下)表现出色




CARBIDE | 2 | 30° | R ±0.005 | PLAIN

p.C252-263

| Recommended ToolHolder | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| | END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| | - | - | POWER MILLING CHUCK | D161 - 176 |
| | - | - | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Radius of Ball Nose<br>圆弧角<br>R | Mill Diameter<br>直径<br>D1 | Shank Diameter<br>柄径<br>D2 | Length of Cut<br>刃长<br>L1 | Length Below Shank<br>颈长<br>L3 | Overall Length<br>全长<br>L2 | Neck Diameter<br>颈径<br>D3 |
|---|---|---|---|---|---|---|---|
| SEM846015126SE | R0.75 | 1.5 | 6 | 1.5 | 12 | 50 | 1.45 |
| SEM846015146SE | R0.75 | 1.5 | 6 | 1.5 | 14 | 50 | 1.45 |
| SEM846015166SE | R0.75 | 1.5 | 6 | 1.5 | 16 | 50 | 1.45 |
| SEM846015186SE | R0.75 | 1.5 | 6 | 1.5 | 18 | 50 | 1.45 |
| SEM846015206SE | R0.75 | 1.5 | 6 | 1.5 | 20 | 50 | 1.45 |
| SEM846015226SE | R0.75 | 1.5 | 6 | 1.5 | 22 | 60 | 1.45 |
| SEM846015266SE | R0.75 | 1.5 | 6 | 1.5 | 26 | 60 | 1.45 |
| SEM846015306SE | R0.75 | 1.5 | 6 | 1.5 | 30 | 70 | 1.45 |
| SEM846015356SE | R0.75 | 1.5 | 6 | 1.5 | 35 | 70 | 1.45 |
| SEM846015406SE | R0.75 | 1.5 | 6 | 1.5 | 40 | 80 | 1.45 |
| SEM846020046SE | R1.0 | 2.0 | 6 | 2 | 4 | 50 | 1.95 |
| SEM846020066SE | R1.0 | 2.0 | 6 | 2 | 6 | 50 | 1.95 |
| SEM846020086SE | R1.0 | 2.0 | 6 | 2 | 8 | 50 | 1.95 |
| SEM846020106SE | R1.0 | 2.0 | 6 | 2 | 10 | 50 | 1.95 |
| SEM846020126SE | R1.0 | 2.0 | 6 | 2 | 12 | 50 | 1.95 |
| SEM846020146SE | R1.0 | 2.0 | 6 | 2 | 14 | 50 | 1.95 |
| SEM846020166SE | R1.0 | 2.0 | 6 | 2 | 16 | 50 | 1.95 |
| SEM846020186SE | R1.0 | 2.0 | 6 | 2 | 18 | 50 | 1.95 |
| SEM846020206SE | R1.0 | 2.0 | 6 | 2 | 20 | 50 | 1.95 |
| SEM846020226SE | R1.0 | 2.0 | 6 | 2 | 22 | 60 | 1.95 |
| SEM846020266SE | R1.0 | 2.0 | 6 | 2 | 26 | 60 | 1.95 |
| SEM846020306SE | R1.0 | 2.0 | 6 | 2 | 30 | 70 | 1.95 |
| SEM846020356SE | R1.0 | 2.0 | 6 | 2 | 35 | 70 | 1.95 |
| SEM846020406SE | R1.0 | 2.0 | 6 | 2 | 40 | 80 | 1.95 |
| SEM846020456SE | R1.0 | 2.0 | 6 | 2 | 45 | 90 | 1.95 |
| SEM846020506SE | R1.0 | 2.0 | 6 | 2 | 50 | 100 | 1.95 |

| RadiusTolerance (mm)<br>圆弧角公差 | Mill Dia.Tolerance (mm)<br>直径公差 | Shank Dia.Tolerance<br>柄径公差 |
|---|---|---|
| ± 0.005 | 0 ~ - 0.012 | h5 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ○ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |



# 4G MILL END MILLS

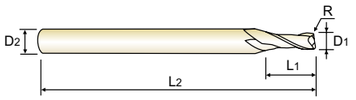
PLAIN SHANK **SEMD99** SERIES

## CARBIDE, 2 FLUTE CORNER RADIUS (Short, Regular, Long Shank)

## 硬质合金，2刃 圆鼻 (短刃, 普通刃长, 长柄)

- ▶ New coating and tool geometry applied resulting outstanding cutting abilities and wear resistance.
- ▶ Excellent for cutting prehardened steels, carbon steels, alloy steels of molds and dies, up to HRc55 and machine parts.
- ▶ Available in short, regular and long shank end mills.
- ▶ Available with various corner radius end mills, from 0.02mm to 5.0mm corner radius.

- ▶基于新形状设计, 纳米颗粒基体和涂层, 出色切削性能及耐磨性涂
- ▶加工模具产业的预硬钢, 碳钢, 合金钢(HRc55以下)表现出色
- ▶可提供短,普通和长柄铣刀
- ▶可提供多种圆弧角铣刀(R0.02mm~R5.0mm)




CARBIDE | 2 | 30° | R ±0.010 | R ±0.015 | PLAIN

p.C264-265

Ø0.2~Ø6 Ø7~Ø20

| Recommended ToolHolder | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| | END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| | - | - | POWER MILLING CHUCK | D161 - 176 |
| | - | - | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Corner Radius<br>圆弧角<br>R | Mill Diameter<br>直径<br>D1 | Shank Diameter<br>柄径<br>D2 | Length of Cut<br>刃长<br>L1 | Overall Length<br>全长<br>L2 | Remark<br>备注 |
|---|---|---|---|---|---|---|
| SEMD99002002E | R0.02 | 0.2 | 4 | 0.4 | 40 | - |
| SEMD99002005E | R0.05 | 0.2 | 4 | 0.4 | 40 | - |
| SEMD99003002E | R0.02 | 0.3 | 4 | 0.6 | 40 | - |
| SEMD99003005E | R0.05 | 0.3 | 4 | 0.6 | 40 | - |
| SEMD99004005E | R0.05 | 0.4 | 4 | 0.8 | 40 | - |
| SEMD9900401E | R0.1 | 0.4 | 4 | 0.8 | 40 | - |
| SEMD99005005E | R0.05 | 0.5 | 4 | 1 | 40 | - |
| SEMD9900501E | R0.1 | 0.5 | 4 | 1 | 40 | - |
| SEMD99006005E | R0.05 | 0.6 | 4 | 1.2 | 40 | - |
| SEMD9900601E | R0.1 | 0.6 | 4 | 1.2 | 40 | - |
| SEMD9900602E | R0.2 | 0.6 | 4 | 1.2 | 40 | - |
| SEMD99007005E | R0.05 | 0.7 | 4 | 1.4 | 40 | - |
| SEMD9900701E | R0.1 | 0.7 | 4 | 1.4 | 40 | - |
| SEMD9900702E | R0.2 | 0.7 | 4 | 1.4 | 40 | - |
| SEMD99008005E | R0.05 | 0.8 | 4 | 1.6 | 40 | - |
| SEMD9900801E | R0.1 | 0.8 | 4 | 1.6 | 40 | - |
| SEMD9900802E | R0.2 | 0.8 | 4 | 1.6 | 40 | - |
| SEMD99009005E | R0.05 | 0.9 | 4 | 1.8 | 40 | - |
| SEMD9900901E | R0.1 | 0.9 | 4 | 1.8 | 40 | - |
| SEMD990100054SE | R0.05 | 1.0 | 4 | 2.5 | 50 | 4mm Shank |
| SEMD99010014SE | R0.1 | 1.0 | 4 | 2.5 | 50 | 4mm Shank |
| SEMD99010024SE | R0.2 | 1.0 | 4 | 2.5 | 50 | 4mm Shank |
| SEMD99010034SE | R0.3 | 1.0 | 4 | 2.5 | 50 | 4mm Shank |
| SEMD99010005E | R0.05 | 1.0 | 6 | 2.5 | 50 | - |

▶ NEXT PAGE 下页

| Size<br>尺寸 | Corner Radius Tolerance (mm)<br>圆弧角公差 | Mill Dia.Tolerance (mm)<br>直径公差 | Shank Dia.Tolerance<br>柄径公差 |
|---|---|---|---|
| up to Ø6 Ø6以下 | ± 0.010 | 0 ~ - 0.012 | h5 |
| over Ø6 超过Ø6 | ± 0.015 | 0 ~ - 0.015 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |

# 4G MILL END MILLS

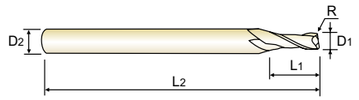
PLAIN SHANK **SEMD99** SERIES

## CARBIDE, 2 FLUTE CORNER RADIUS (Short, Regular, Long Shank)

## 硬质合金，2刃 圆鼻 (短刃, 普通刃长, 长柄)

- ▶ New coating and tool geometry applied resulting outstanding cutting abilities and wear resistance.
- ▶ Excellent for cutting prehardened steels, carbon steels, alloy steels of molds and dies, up to HRc55 and machine parts.
- ▶ Available in short, regular and long shank end mills.
- ▶ Available with various corner radius end mills, from 0.02mm to 5.0mm corner radius.

- ▶基于新形状设计, 纳米颗粒基体和涂层, 出色切削性能及耐磨性涂
- ▶加工模具产业的预硬钢, 碳钢, 合金钢(HRc55以下)表现出色
- ▶可提供短,普通和长柄铣刀
- ▶可提供多种圆弧角铣刀(R0.02mm~R5.0mm)




CARBIDE | 2 | 30° | R ±0.010 | R ±0.015 | PLAIN

Ø0.2~Ø6 Ø7~Ø20

p.C264-265

Recommended ToolHolder

| Flat Shank | | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ END MILL HOLDER | D118 - 137 | | HYDRAULIC CHUCK SHRINK FIT HOLDER | D15 - 46 D47 - 72 |
| ◎ - | - | | POWER MILLING CHUCK | D161 - 176 |
| ○ - | - | | ER COLLET CHUCK SK SLIM CHUCK | D73 - 115 D183 - 201 |

Unit(单位) : mm

| EDP No. | Corner Radius 圆弧角 R | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Overall Length 全长 L2 | Remark 备注 |
|---|---|---|---|---|---|---|
| SEMD9901001E | R0.1 | 1.0 | 6 | 2.5 | 50 | - |
| SEMD9901002E | R0.2 | 1.0 | 6 | 2.5 | 50 | - |
| SEMD9901003E | R0.3 | 1.0 | 6 | 2.5 | 50 | - |
| SEMD990120054SE | R0.05 | 1.2 | 4 | 3 | 50 | 4mm Shank |
| SEMD99012014SE | R0.1 | 1.2 | 4 | 3 | 50 | 4mm Shank |
| SEMD99012024SE | R0.2 | 1.2 | 4 | 3 | 50 | 4mm Shank |
| SEMD99012034SE | R0.3 | 1.2 | 4 | 3 | 50 | 4mm Shank |
| SEMD99012005E | R0.05 | 1.2 | 6 | 3 | 50 | - |
| SEMD9901201E | R0.1 | 1.2 | 6 | 3 | 50 | - |
| SEMD9901202E | R0.2 | 1.2 | 6 | 3 | 50 | - |
| SEMD9901203E | R0.3 | 1.2 | 6 | 3 | 50 | - |
| SEMD990150054SE | R0.05 | 1.5 | 4 | 4 | 50 | - |
| SEMD99015014SE | R0.1 | 1.5 | 4 | 4 | 50 | 4mm Shank |
| SEMD99015024SE | R0.2 | 1.5 | 4 | 4 | 50 | 4mm Shank |
| SEMD99015034SE | R0.3 | 1.5 | 4 | 4 | 50 | 4mm Shank |
| SEMD99015054SE | R0.5 | 1.5 | 4 | 4 | 50 | 4mm Shank |
| SEMD99015005E | R0.05 | 1.5 | 6 | 4 | 50 | - |
| SEMD9901501E | R0.1 | 1.5 | 6 | 4 | 50 | - |
| SEMD9901502E | R0.2 | 1.5 | 6 | 4 | 50 | - |
| SEMD9901503E | R0.3 | 1.5 | 6 | 4 | 50 | - |
| SEMD9901505E | R0.5 | 1.5 | 6 | 4 | 50 | - |
| SEMD99020014SE | R0.1 | 2.0 | 4 | 6 | 50 | 4mm Shank |
| SEMD99020024SE | R0.2 | 2.0 | 4 | 6 | 50 | 4mm Shank |
| SEMD99020034SE | R0.3 | 2.0 | 4 | 6 | 50 | 4mm Shank |

▶ NEXT PAGE 下页

| Size 尺寸 | Corner Radius Tolerance (mm) 圆弧角公差 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|---|
| up to Ø6 Ø6以下 | ± 0.010 | 0 ~ - 0.012 | h5 |
| over Ø6 超过Ø6 | ± 0.015 | 0 ~ - 0.015 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |



CARBIDE
HSS
CBN END MILLS
i-Xmill END MILLS
i-SMART MODULAR END MILLS
X5070 END MILLS
4G MILL END MILLS
X-POWER PRO END MILLS
TitaNox-POWER END MILLS
SUS-CUT END MILLS
V7 PLUS END MILLS
ALU-POWER HPC END MILLS
ALU-CUT END MILLS
G-CUT
CRX S END MILLS
K-2 END MILLS
GENERAL CARBIDE END MILLS
ONLY ONE COATED PM60 END MILLS
TANK-POWER END MILLS
GENERAL HSS END MILLS
MILLING CUTTERS
TECHNICAL DATA

# 4G MILL END MILLS

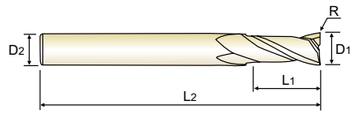
PLAIN SHANK **SEMD99** SERIES

## CARBIDE, 2 FLUTE CORNER RADIUS (Short, Regular, Long Shank)

## 硬质合金，2刃 圆鼻 (短刃, 普通刃长, 长柄)

- ▶ New coating and tool geometry applied resulting outstanding cutting abilities and wear resistance.
- ▶ Excellent for cutting prehardened steels, carbon steels, alloy steels of molds and dies, up to HRc55 and machine parts.
- ▶ Available in short, regular and long shank end mills.
- ▶ Available with various corner radius end mills, from 0.02mm to 5.0mm corner radius.

- ▶基于新形状设计, 纳米颗粒基体和涂层, 出色切削性能及耐磨性涂
- ▶加工模具产业的预硬钢, 碳钢, 合金钢(HRc55以下)表现出色
- ▶可提供短,普通和长柄铣刀
- ▶可提供多种圆弧角铣刀(R0.02mm~R5.0mm)




CARBIDE | 2 | 30° | R ±0.010 | R ±0.015 | PLAIN

Ø0.2~Ø6 Ø7~Ø20

p.C264-265

Recommended ToolHolder

| Flat Shank | | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ END MILL HOLDER | D118 - 137 | | HYDRAULIC CHUCK SHRINK FIT HOLDER | D15 - 46 D47 - 72 |
| ◎ - | - | | POWER MILLING CHUCK | D161 - 176 |
| ○ - | - | | ER COLLET CHUCK SK SLIM CHUCK | D73 - 115 D183 - 201 |

Unit(单位) : mm

| EDP No. | Corner Radius 圆弧角 R | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Overall Length 全长 L2 | Remark 备注 |
|---|---|---|---|---|---|---|
| SEMD99020054SE | R0.5 | 2.0 | 4 | 6 | 50 | 4mm Shank |
| SEMD9902001E | R0.1 | 2.0 | 6 | 6 | 50 | - |
| SEMD9902002E | R0.2 | 2.0 | 6 | 6 | 50 | - |
| SEMD9902003E | R0.3 | 2.0 | 6 | 6 | 50 | - |
| SEMD9902005E | R0.5 | 2.0 | 6 | 6 | 50 | - |
| SEMD99025014SE | R0.1 | 2.5 | 4 | 7 | 60 | 4mm Shank |
| SEMD99025024SE | R0.2 | 2.5 | 4 | 7 | 60 | 4mm Shank |
| SEMD99025034SE | R0.3 | 2.5 | 4 | 7 | 60 | 4mm Shank |
| SEMD99025054SE | R0.5 | 2.5 | 4 | 7 | 60 | 4mm Shank |
| SEMD9902501E | R0.1 | 2.5 | 6 | 7 | 60 | - |
| SEMD9902502E | R0.2 | 2.5 | 6 | 7 | 60 | - |
| SEMD9902503E | R0.3 | 2.5 | 6 | 7 | 60 | - |
| SEMD9902505E | R0.5 | 2.5 | 6 | 7 | 60 | - |
| SEMD9903001E | R0.1 | 3.0 | 6 | 8 | 60 | - |
| SEMD9903002E | R0.2 | 3.0 | 6 | 8 | 60 | - |
| SEMD9903003E | R0.3 | 3.0 | 6 | 8 | 60 | - |
| SEMD9903005E | R0.5 | 3.0 | 6 | 8 | 60 | - |
| SEMD9903010E | R1.0 | 3.0 | 6 | 8 | 60 | - |
| SEMD9903501E | R0.1 | 3.5 | 6 | 10 | 70 | - |
| SEMD9903502E | R0.2 | 3.5 | 6 | 10 | 70 | - |
| SEMD9903503E | R0.3 | 3.5 | 6 | 10 | 70 | - |
| SEMD9903505E | R0.5 | 3.5 | 6 | 10 | 70 | - |
| SEMD99040014SE | R0.1 | 4.0 | 4 | 10 | 70 | 4mm Shank |
| SEMD99040024SE | R0.2 | 4.0 | 4 | 10 | 70 | 4mm Shank |

▶ NEXT PAGE 下页

| Size 尺寸 | Corner Radius Tolerance (mm) 圆弧角公差 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|---|
| up to Ø6 Ø6以下 | ± 0.010 | 0 ~ - 0.012 | h5 |
| over Ø6 超过Ø6 | ± 0.015 | 0 ~ - 0.015 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |

# 4G MILL END MILLS

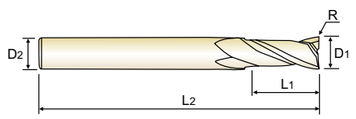
PLAIN SHANK **SEMD99** SERIES

## CARBIDE, 2 FLUTE CORNER RADIUS (Short, Regular, Long Shank)

## 硬质合金，2刃 圆鼻 (短刃, 普通刃长, 长柄)

- ▶ New coating and tool geometry applied resulting outstanding cutting abilities and wear resistance.
- ▶ Excellent for cutting prehardened steels, carbon steels, alloy steels of molds and dies, up to HRc55 and machine parts.
- ▶ Available in short, regular and long shank end mills.
- ▶ Available with various corner radius end mills, from 0.02mm to 5.0mm corner radius.

- ▶基于新形状设计, 纳米颗粒基体和涂层, 出色切削性能及耐磨性涂
- ▶加工模具产业的预硬钢, 碳钢, 合金钢(HRc55以下)表现出色
- ▶可提供短,普通和长柄铣刀
- ▶可提供多种圆弧角铣刀(R0.02mm~R5.0mm)




CARBIDE | 2 | 30° | R ±0.010 | R ±0.015 | PLAIN

Ø0.2~Ø6 Ø7~Ø20

p.C264-265

Recommended ToolHolder

| Flat Shank | | Page | Plain Shank | Page |
|---|---|---|---|---|
| END MILL HOLDER | D118 - 137 | | HYDRAULIC CHUCK SHRINK FIT HOLDER | D15 - 46 D47 - 72 |
| - | - | | POWER MILLING CHUCK | D161 - 176 |
| - | - | | ER COLLET CHUCK SK SLIM CHUCK | D73 - 115 D183 - 201 |

Unit(单位) : mm

| EDP No. | Corner Radius 圆弧角 R | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Overall Length 全长 L2 | Remark 备注 |
|---|---|---|---|---|---|---|
| SEMD99040034SE | R0.3 | **4.0** | 4 | 10 | 70 | 4mm Shank |
| SEMD99040054SE | R0.5 | **4.0** | 4 | 10 | 70 | 4mm Shank |
| SEMD99040104SE | R1.0 | **4.0** | 4 | 10 | 70 | 4mm Shank |
| SEMD99040011004SE | R0.1 | **4.0** | 4 | 10 | 100 | 4mm Shank |
| SEMD99040021004SE | R0.2 | **4.0** | 4 | 10 | 100 | 4mm Shank |
| SEMD99040031004SE | R0.3 | **4.0** | 4 | 10 | 100 | 4mm Shank |
| SEMD99040051004SE | R0.5 | **4.0** | 4 | 10 | 100 | 4mm Shank |
| SEMD99040101004SE | R1.0 | **4.0** | 4 | 10 | 100 | 4mm Shank |
| SEMD9904001E | R0.1 | **4.0** | 6 | 10 | 70 | Regular |
| SEMD9904002E | R0.2 | **4.0** | 6 | 10 | 70 | Regular |
| SEMD9904003E | R0.3 | **4.0** | 6 | 10 | 70 | Regular |
| SEMD9904005E | R0.5 | **4.0** | 6 | 10 | 70 | Regular |
| SEMD9904010E | R1.0 | **4.0** | 6 | 10 | 70 | Regular |
| SEMD9904501E | R0.1 | **4.5** | 6 | 11 | 80 | - |
| SEMD9904502E | R0.2 | **4.5** | 6 | 11 | 80 | - |
| SEMD9904503E | R0.3 | **4.5** | 6 | 11 | 80 | - |
| SEMD9904505E | R0.5 | **4.5** | 6 | 11 | 80 | - |
| SEMD9905001E | R0.1 | **5.0** | 6 | 13 | 90 | - |
| SEMD9905002E | R0.2 | **5.0** | 6 | 13 | 90 | - |
| SEMD9905003E | R0.3 | **5.0** | 6 | 13 | 90 | - |
| SEMD9905005E | R0.5 | **5.0** | 6 | 13 | 90 | - |
| SEMD9905010E | R1.0 | **5.0** | 6 | 13 | 90 | - |
| SEMD9905501E | R0.1 | **5.5** | 6 | 13 | 90 | - |
| SEMD9905502E | R0.2 | **5.5** | 6 | 13 | 90 | - |

▶ NEXT PAGE 下页

| Size 尺寸 | Corner Radius Tolerance (mm) 圆弧角公差 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|---|
| up to Ø6 Ø6以下 | ± 0.010 | 0 ~ - 0.012 | h5 |
| over Ø6 超过Ø6 | ± 0.015 | 0 ~ - 0.015 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |



4G MILL END MILLS

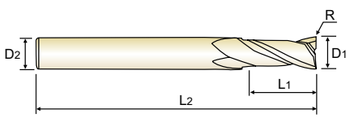
PLAIN SHANK SEMD99 SERIES

CARBIDE, 2 FLUTE CORNER RADIUS (Short, Regular, Long Shank)

硬质合金，2刃 圆鼻 (短刃, 普通刃长, 长柄)

▶ New coating and tool geometry applied resulting outstanding cutting abilities and wear resistance.
▶ Excellent for cutting prehardened steels, carbon steels, alloy steels of molds and dies, up to HRc55 and machine parts.
▶ Available in short, regular and long shank end mills.
▶ Available with various corner radius end mills, from 0.02mm to 5.0mm corner radius.

▶基于新形状设计, 纳米颗粒基体和涂层, 出色切削性能及耐磨性涂
▶加工模具产业的预硬钢, 碳钢, 合金钢(HRc55以下)表现出色
▶可提供短,普通和长柄铣刀
▶可提供多种圆弧角铣刀(R0.02mm~R5.0mm)




CARBIDE | 2 | 30° | R ±0.010 | R ±0.015 | PLAIN

Ø0.2~Ø6 Ø7~Ø20

p.C264-265

Recommended ToolHolder

| Flat Shank | | Page | Plain Shank | Page |
|---|---|---|---|---|
| END MILL HOLDER | D118 - 137 | | HYDRAULIC CHUCK SHRINK FIT HOLDER | D15 - 46 D47 - 72 |
| - | - | | POWER MILLING CHUCK | D161 - 176 |
| - | - | | ER COLLET CHUCK SK SLIM CHUCK | D73 - 115 D183 - 201 |

Unit(单位) : mm

| EDP No. | Corner Radius 圆弧角 R | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Overall Length 全长 L2 | Remark 备注 |
|---|---|---|---|---|---|---|
| SEMD9905503E | R0.3 | **5.5** | 6 | 13 | 90 | - |
| SEMD9905505E | R0.5 | **5.5** | 6 | 13 | 90 | - |
| SEMD9905510E | R1.0 | **5.5** | 6 | 13 | 90 | - |
| SEMD9906002060E | R0.2 | **6.0** | 6 | 15 | 60 | Short |
| SEMD9906003060E | R0.3 | **6.0** | 6 | 15 | 60 | Short |
| SEMD9906005060E | R0.5 | **6.0** | 6 | 15 | 60 | Short |
| SEMD9906010060E | R1.0 | **6.0** | 6 | 15 | 60 | Short |
| SEMD9906001E | R0.1 | **6.0** | 6 | 15 | 90 | Regular |
| SEMD9906002E | R0.2 | **6.0** | 6 | 15 | 90 | Regular |
| SEMD9906003E | R0.3 | **6.0** | 6 | 15 | 90 | Regular |
| SEMD9906005E | R0.5 | **6.0** | 6 | 15 | 90 | Regular |
| SEMD9906010E | R1.0 | **6.0** | 6 | 15 | 90 | Regular |
| SEMD9906015E | R1.5 | **6.0** | 6 | 15 | 90 | Regular |
| SEMD9906020E | R2.0 | **6.0** | 6 | 15 | 90 | Regular |
| SEMD9906005110E | R0.5 | **6.0** | 6 | 15 | 110 | Long |
| SEMD9906010110E | R1.0 | **6.0** | 6 | 15 | 110 | Long |
| SEMD9906005130E | R0.5 | **6.0** | 6 | 15 | 130 | Long |
| SEMD9906010130E | R1.0 | **6.0** | 6 | 15 | 130 | Long |
| SEMD9907001E | R0.1 | **7.0** | 8 | 16 | 90 | - |
| SEMD9907002E | R0.2 | **7.0** | 8 | 16 | 90 | - |
| SEMD9907003E | R0.3 | **7.0** | 8 | 16 | 90 | - |
| SEMD9907005E | R0.5 | **7.0** | 8 | 16 | 90 | - |
| SEMD9907010E | R1.0 | **7.0** | 8 | 16 | 90 | - |
| SEMD9907020E | R2.0 | **7.0** | 8 | 16 | 90 | - |

▶ NEXT PAGE 下页

| Size 尺寸 | Corner Radius Tolerance (mm) 圆弧角公差 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|---|
| up to Ø6 Ø6以下 | ± 0.010 | 0 ~ - 0.012 | h5 |
| over Ø6 超过Ø6 | ± 0.015 | 0 ~ - 0.015 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |

# 4G MILL END MILLS

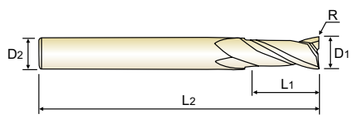
PLAIN SHANK **SEMD99** SERIES

## CARBIDE, 2 FLUTE CORNER RADIUS (Short, Regular, Long Shank)

## 硬质合金，2刃 圆鼻 (短刃, 普通刃长, 长柄)

- ▶ New coating and tool geometry applied resulting outstanding cutting abilities and wear resistance.
- ▶ Excellent for cutting prehardened steels, carbon steels, alloy steels of molds and dies, up to HRc55 and machine parts.
- ▶ Available in short, regular and long shank end mills.
- ▶ Available with various corner radius end mills, from 0.02mm to 5.0mm corner radius.

- ▶基于新形状设计, 纳米颗粒基体和涂层, 出色切削性能及耐磨性涂
- ▶加工模具产业的预硬钢, 碳钢, 合金钢(HRc55以下)表现出色
- ▶可提供短,普通和长柄铣刀
- ▶可提供多种圆弧角铣刀(R0.02mm~R5.0mm)




CARBIDE | 2 | 30° | R ±0.010 | R ±0.015 | PLAIN

Ø0.2~Ø6 Ø7~Ø20

p.C264-265

Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| ◎ | - | - | POWER MILLING CHUCK | D161 - 176 |
| ○ | - | - | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Corner Radius 圆弧角 R | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Overall Length 全长 L2 | Remark 备注 |
|---|---|---|---|---|---|---|
| SEMD9908003070E | R0.3 | **8.0** | 8 | 20 | 70 | Short |
| SEMD9908005070E | R0.5 | **8.0** | 8 | 20 | 70 | Short |
| SEMD9908010070E | R1.0 | **8.0** | 8 | 20 | 70 | Short |
| SEMD9908001E | R0.1 | **8.0** | 8 | 20 | 100 | Regular |
| SEMD9908002E | R0.2 | **8.0** | 8 | 20 | 100 | Regular |
| SEMD9908003E | R0.3 | **8.0** | 8 | 20 | 100 | Regular |
| SEMD9908005E | R0.5 | **8.0** | 8 | 20 | 100 | Regular |
| SEMD9908010E | R1.0 | **8.0** | 8 | 20 | 100 | Regular |
| SEMD9908015E | R1.5 | **8.0** | 8 | 20 | 100 | Regular |
| SEMD9908020E | R2.0 | **8.0** | 8 | 20 | 100 | Regular |
| SEMD9908025E | R2.5 | **8.0** | 8 | 20 | 100 | Regular |
| SEMD9908030E | R3.0 | **8.0** | 8 | 20 | 100 | Regular |
| SEMD9908005120E | R0.5 | **8.0** | 8 | 20 | 120 | Long |
| SEMD9908010120E | R1.0 | **8.0** | 8 | 20 | 120 | Long |
| SEMD9908015150E | R0.5 | **8.0** | 8 | 20 | 150 | Long |
| SEMD9908010150E | R1.0 | **8.0** | 8 | 20 | 150 | Long |
| SEMD9910003075E | R0.3 | **10.0** | 10 | 25 | 75 | Short |
| SEMD9910005075E | R0.5 | **10.0** | 10 | 25 | 75 | Short |
| SEMD9910010075E | R1.0 | **10.0** | 10 | 25 | 75 | Short |
| SEMD9910001E | R0.1 | **10.0** | 10 | 25 | 100 | Regular |
| SEMD9910002E | R0.2 | **10.0** | 10 | 25 | 100 | Regular |
| SEMD9910003E | R0.3 | **10.0** | 10 | 25 | 100 | Regular |
| SEMD9910005E | R0.5 | **10.0** | 10 | 25 | 100 | Regular |
| SEMD9910010E | R1.0 | **10.0** | 10 | 25 | 100 | Regular |

▶ NEXT PAGE 下页

| Size 尺寸 | Corner Radius Tolerance (mm) 圆弧角公差 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|---|
| up to Ø6 Ø6以下 | ± 0.010 | 0 ~ - 0.012 | h5 |
| over Ø6 超过Ø6 | ± 0.015 | 0 ~ - 0.015 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |



CARBIDE
HSS
CBN END MILLS
i-Xmill END MILLS
i-SMART MODULAR END MILLS
X5070 END MILLS
4G MILL END MILLS
X-POWER PRO END MILLS
TitaNox-POWER END MILLS
SUS-CUT END MILLS
V7 PLUS END MILLS
ALU-POWER HPC END MILLS
ALU-CUT END MILLS
G-CUT
CRX S END MILLS
K-2 END MILLS
GENERAL CARBIDE END MILLS
ONLY ONE COATED PM60 END MILLS
TANK-POWER END MILLS
GENERAL HSS END MILLS
MILLING CUTTERS
TECHNICAL DATA

# 4G MILL END MILLS

PLAIN SHANK **SEMD99** SERIES

## CARBIDE, 2 FLUTE CORNER RADIUS (Short, Regular, Long Shank)

## 硬质合金，2刃 圆鼻 (短刃, 普通刃长, 长柄)

- ▶ New coating and tool geometry applied resulting outstanding cutting abilities and wear resistance.
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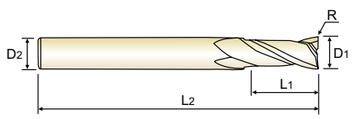
- ▶ Available with various corner radius end mills, from 0.02mm to 5.0mm corner radius.

- ▶基于新形状设计, 纳米颗粒基体和涂层, 出色切削性能及耐磨性涂
- ▶加工模具产业的预硬钢, 碳钢, 合金钢(HRc55以下)表现出色
- ▶可提供短,普通和长柄铣刀
- ▶可提供多种圆弧角铣刀(R0.02mm~R5.0mm)




CARBIDE | 2 | 30° | R ±0.010 | R ±0.015 | PLAIN

Ø0.2~Ø6 Ø7~Ø20

p.C264-265

Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| ◎ | - | - | POWER MILLING CHUCK | D161 - 176 |
| ○ | - | - | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Corner Radius 圆弧角 R | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Overall Length 全长 L2 | Remark 备注 |
|---|---|---|---|---|---|---|
| SEMD9910015E | R1.5 | **10.0** | 10 | 25 | 100 | Regular |
| SEMD9910020E | R2.0 | **10.0** | 10 | 25 | 100 | Regular |
| SEMD9910025E | R2.5 | **10.0** | 10 | 25 | 100 | Regular |
| SEMD9910030E | R3.0 | **10.0** | 10 | 25 | 100 | Regular |
| SEMD9910040E | R4.0 | **10.0** | 10 | 25 | 100 | Regular |
| SEMD9910005130E | R0.5 | **10.0** | 10 | 25 | 130 | Long |
| SEMD9910010130E | R1.0 | **10.0** | 10 | 25 | 130 | Long |
| SEMD9910005150E | R0.5 | **10.0** | 10 | 25 | 150 | Long |
| SEMD9910010150E | R1.0 | **10.0** | 10 | 25 | 150 | Long |
| SEMD9911002E | R0.2 | **11.0** | 12 | 25 | 110 | - |
| SEMD9911003E | R0.3 | **11.0** | 12 | 25 | 110 | - |
| SEMD9911005E | R0.5 | **11.0** | 12 | 25 | 110 | - |
| SEMD9911010E | R1.0 | **11.0** | 12 | 25 | 110 | - |
| SEMD9911020E | R2.0 | **11.0** | 12 | 25 | 110 | - |
| SEMD9912003080E | R0.3 | **12.0** | 12 | 30 | 80 | Short |
| SEMD9912005080E | R0.5 | **12.0** | 12 | 30 | 80 | Short |
| SEMD9912010080E | R1.0 | **12.0** | 12 | 30 | 80 | Short |
| SEMD9912001E | R0.1 | **12.0** | 12 | 30 | 110 | Regular |
| SEMD9912002E | R0.2 | **12.0** | 12 | 30 | 110 | Regular |
| SEMD9912003E | R0.3 | **12.0** | 12 | 30 | 110 | Regular |
| SEMD9912005E | R0.5 | **12.0** | 12 | 30 | 110 | Regular |
| SEMD9912010E | R1.0 | **12.0** | 12 | 30 | 110 | Regular |
| SEMD9912015E | R1.5 | **12.0** | 12 | 30 | 110 | Regular |
| SEMD9912020E | R2.0 | **12.0** | 12 | 30 | 110 | Regular |

▶ NEXT PAGE 下页

| Size 尺寸 | Corner Radius Tolerance (mm) 圆弧角公差 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|---|
| up to Ø6 Ø6以下 | ± 0.010 | 0 ~ - 0.012 | h5 |
| over Ø6 超过Ø6 | ± 0.015 | 0 ~ - 0.015 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |

# 4G MILL END MILLS

PLAIN SHANK **SEMD99** SERIES

## CARBIDE, 2 FLUTE CORNER RADIUS (Short, Regular, Long Shank)

## 硬质合金，2刃 圆鼻 (短刃, 普通刃长, 长柄)

- ▶ New coating and tool geometry applied resulting outstanding cutting abilities and wear resistance.
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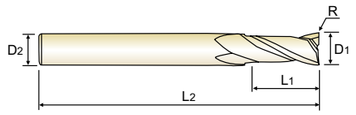
- ▶基于新形状设计, 纳米颗粒基体和涂层, 出色切削性能及耐磨性涂
- ▶加工模具产业的预硬钢, 碳钢, 合金钢(HRc55以下)表现出色
- ▶可提供短,普通和长柄铣刀
- ▶可提供多种圆弧角铣刀(R0.02mm~R5.0mm)




CARBIDE | 2 | 30° | R ±0.010 | R ±0.015 | PLAIN

Ø0.2~Ø6 Ø7~Ø20

p.C264-265

Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| ◎ | - | - | POWER MILLING CHUCK | D161 - 176 |
| ○ | - | - | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Corner Radius 圆弧角 R | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Overall Length 全长 L2 | Remark 备注 |
|---|---|---|---|---|---|---|
| SEMD9912025E | R2.5 | **12.0** | 12 | 30 | 110 | Regular |
| SEMD9912030E | R3.0 | **12.0** | 12 | 30 | 110 | Regular |
| SEMD9912040E | R4.0 | **12.0** | 12 | 30 | 110 | Regular |
| SEMD9912050E | R5.0 | **12.0** | 12 | 30 | 110 | Regular |
| SEMD9912005130E | R0.5 | **12.0** | 12 | 30 | 130 | Long |
| SEMD9912010130E | R1.0 | **12.0** | 12 | 30 | 130 | Long |
| SEMD9912005150E | R0.5 | **12.0** | 12 | 30 | 150 | Long |
| SEMD9912010150E | R1.0 | **12.0** | 12 | 30 | 150 | Long |
| SEMD9914005E | R0.5 | **14.0** | 16 | 35 | 150 | - |
| SEMD9914010E | R1.0 | **14.0** | 16 | 35 | 150 | - |
| SEMD9914020E | R2.0 | **14.0** | 16 | 35 | 150 | - |
| SEMD9916005E | R0.5 | **16.0** | 16 | 32 | 150 | - |
| SEMD9916010E | R1.0 | **16.0** | 16 | 32 | 150 | - |
| SEMD9916015E | R1.5 | **16.0** | 16 | 32 | 150 | - |
| SEMD9916020E | R2.0 | **16.0** | 16 | 32 | 150 | - |
| SEMD9920005E | R0.5 | **20.0** | 20 | 38 | 150 | - |
| SEMD9920010E | R1.0 | **20.0** | 20 | 38 | 150 | - |
| SEMD9920015E | R1.5 | **20.0** | 20 | 38 | 150 | - |
| SEMD9920020E | R2.0 | **20.0** | 20 | 38 | 150 | - |

| Size 尺寸 | Corner Radius Tolerance (mm) 圆弧角公差 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|---|
| up to Ø6 Ø6以下 | ± 0.010 | 0 ~ - 0.012 | h5 |
| over Ø6 超过Ø6 | ± 0.015 | 0 ~ - 0.015 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |



# 4G MILL END MILLS

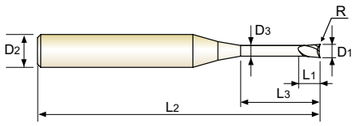
PLAIN SHANK **SEME61** SERIES

## CARBIDE, 2 FLUTE CORNER RADIUS with EXTENDED NECK

## 硬质合金，2刃 圆鼻 颈部加长

- ▶ Due to new coating and new tool geometry, outstanding cutting ability and wear resistance.
- ▶ Excellent for cutting prehardened steels, carbon steels, alloy steels of molds and dies, up to HRc55 and machine parts.
- ▶ Available various products like regular length and long shank end mills etc.
- ▶ Available various corner radius end mills, from min. 0.02mm corner radius to max. 2.0mm corner radius.
- ▶ Available more various effective length and overall length end mills than previous standard products.

- ▶ 基于新形状设计, 纳米颗粒基体和涂层, 出色切削性能及耐磨性涂
- ▶ 加工模具产业的预硬钢, 碳钢, 合金钢(HRc55以下)表现出色
- ▶ 可提供短,普通和长柄铣刀
- ▶ 可提供多种圆弧角铣刀(R0.02mm~R2.0mm)
- ▶ 可提供比以前标准品更多种有效长和全长产品




CARBIDE | 2 | 30° | R ±0.010 | R ±0.015 | PLAIN

Ø0.2~Ø6 Ø7~Ø20

p.C266-273

Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| ◎ | - | - | POWER MILLING CHUCK | D161 - 176 |
| ○ | - | - | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Corner Radius 圆弧角 R | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Length Below Shank 颈长 L3 | Overall Length 全长 L2 | Neck Diameter 颈径 D3 | Remark |
|---|---|---|---|---|---|---|---|---|
| SEME61002002005E | R0.02 | **0.2** | 4 | 0.3 | 0.5 | 40 | 0.17 | - |
| SEME6100200201E | R0.02 | **0.2** | 4 | 0.3 | 1 | 40 | 0.17 | - |
| SEME61002002015E | R0.02 | **0.2** | 4 | 0.3 | 1.5 | 40 | 0.17 | - |
| SEME6100200202E | R0.02 | **0.2** | 4 | 0.3 | 2 | 40 | 0.17 | - |
| SEME61002005005E | R0.05 | **0.2** | 4 | 0.3 | 0.5 | 40 | 0.17 | - |
| SEME6100200501E | R0.05 | **0.2** | 4 | 0.3 | 1 | 40 | 0.17 | - |
| SEME61002005015E | R0.05 | **0.2** | 4 | 0.3 | 1.5 | 40 | 0.17 | - |
| SEME6100200502E | R0.05 | **0.2** | 4 | 0.3 | 2 | 40 | 0.17 | - |
| SEME61003005015SE | R0.05 | **0.3** | 4 | 0.25 | 1.5 | 40 | 0.27 | - |
| SEME6100300201E | R0.02 | **0.3** | 4 | 0.5 | 1 | 40 | 0.27 | - |
| SEME6100300202E | R0.02 | **0.3** | 4 | 0.5 | 2 | 40 | 0.27 | - |
| SEME6100300203E | R0.02 | **0.3** | 4 | 0.5 | 3 | 40 | 0.27 | - |
| SEME6100300501E | R0.05 | **0.3** | 4 | 0.5 | 1 | 40 | 0.27 | - |
| SEME6100300502E | R0.05 | **0.3** | 4 | 0.5 | 2 | 40 | 0.27 | - |
| SEME6100300503E | R0.05 | **0.3** | 4 | 0.5 | 3 | 40 | 0.27 | - |
| SEME61003005025S6SE | R0.05 | **0.3** | 6 | 0.25 | 2 | 40 | 0.27 | |
| SEME6100400501E | R0.05 | **0.4** | 4 | 0.6 | 1 | 40 | 0.37 | - |
| SEME61004005015E | R0.05 | **0.4** | 4 | 0.6 | 1.5 | 40 | 0.37 | - |
| SEME6100400502E | R0.05 | **0.4** | 4 | 0.6 | 2 | 40 | 0.37 | - |
| SEME61004005025E | R0.05 | **0.4** | 4 | 0.6 | 2.5 | 40 | 0.37 | - |
| SEME6100400503E | R0.05 | **0.4** | 4 | 0.6 | 3 | 40 | 0.37 | - |
| SEME6100400504E | R0.05 | **0.4** | 4 | 0.6 | 4 | 40 | 0.37 | - |
| SEME610040101E | R0.1 | **0.4** | 4 | 0.6 | 1 | 40 | 0.37 | - |
| SEME6100401015E | R0.1 | **0.4** | 4 | 0.6 | 1.5 | 40 | 0.37 | - |

▶ NEXT PAGE 下页

| Size 尺寸 | Corner Radius Tolerance (mm) 圆弧角公差 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|---|
| up to Ø6 Ø6以下 | ± 0.010 | 0 ~ - 0.012 | h5 |
| over Ø6 超过Ø6 | ± 0.015 | 0 ~ - 0.015 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |

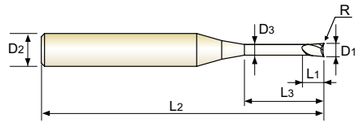
# 4G MILL END MILLS

PLAIN SHANK **SEME61** SERIES

## CARBIDE, 2 FLUTE CORNER RADIUS with EXTENDED NECK
## 硬质合金，2刃 圆鼻 颈部加长

- ▶ Due to new coating and new tool geometry, outstanding cutting ability and wear resistance.
- ▶ Excellent for cutting prehardened steels, carbon steels, alloy steels of molds and dies, up to HRc55 and machine parts.
- ▶ Available various products like regular length and long shank end mills etc.
- ▶ Available various corner radius end mills, from min. 0.02mm corner radius to max. 2.0mm corner radius.
- ▶ Available more various effective length and overall length end mills than previous standard products.

- ▶ 基于新形状设计，纳米颗粒基体和涂层，出色切削性能及耐磨性涂
- ▶ 加工模具产业的预硬钢，碳钢，合金钢(HRc55以下)表现出色
- ▶ 可提供短,普通和长柄铣刀
- ▶ 可提供多种圆弧角铣刀(R0.02mm~R2.0mm)
- ▶ 可提供比以前标准品更多种有效长和全长产品




CARBIDE | 2 | 30° | R ±0.010 | R ±0.015 | PLAIN

Ø0.2~Ø6 Ø7~Ø20

p.C266-273

Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| - | - | POWER MILLING CHUCK | D161 - 176 |
| - | - | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Corner Radius 圆弧角 R | Mill Diameter 直径 $D_1$ | Shank Diameter 柄径 $D_2$ | Length of Cut 刃长 $L_1$ | Length Below Shank 颈长 $L_3$ | Overall Length 全长 $L_2$ | Neck Diameter 颈径 $D_3$ | Remark 备注 |
|---|---|---|---|---|---|---|---|---|
| SEME610040102E | R0.1 | **0.4** | 4 | 0.6 | 2 | 40 | 0.37 | - |
| SEME6100401025E | R0.1 | **0.4** | 4 | 0.6 | 2.5 | 40 | 0.37 | - |
| SEME610040103E | R0.1 | **0.4** | 4 | 0.6 | 3 | 40 | 0.37 | - |
| SEME610040104E | R0.1 | **0.4** | 4 | 0.6 | 4 | 40 | 0.37 | - |
| SEME6100500501E | R0.05 | **0.5** | 4 | 0.7 | 1 | 45 | 0.45 | - |
| SEME61005005015E | R0.05 | **0.5** | 4 | 0.7 | 1.5 | 45 | 0.45 | - |
| SEME6100500502E | R0.05 | **0.5** | 4 | 0.7 | 2 | 45 | 0.45 | - |
| SEME6100500525E | R0.05 | **0.5** | 4 | 0.7 | 2.5 | 45 | 0.45 | - |
| SEME6100500503E | R0.05 | **0.5** | 4 | 0.7 | 3 | 45 | 0.45 | - |
| SEME6100500504E | R0.05 | **0.5** | 4 | 0.7 | 4 | 45 | 0.45 | - |
| SEME6100500505E | R0.05 | **0.5** | 4 | 0.7 | 5 | 45 | 0.45 | - |
| SEME6100500506E | R0.05 | **0.5** | 4 | 0.7 | 6 | 45 | 0.45 | - |
| SEME6100500504S6SE | R0.05 | **0.5** | 6 | 0.4 | 4 | 45 | 0.45 | - |
| SEME610050101E | R0.1 | **0.5** | 4 | 0.7 | 1 | 45 | 0.45 | - |
| SEME6100501015E | R0.1 | **0.5** | 4 | 0.7 | 1.5 | 45 | 0.45 | - |
| SEME610050102E | R0.1 | **0.5** | 4 | 0.7 | 2 | 45 | 0.45 | - |
| SEME6100501025E | R0.1 | **0.5** | 4 | 0.7 | 2.5 | 45 | 0.45 | - |
| SEME610050103E | R0.1 | **0.5** | 4 | 0.7 | 3 | 45 | 0.45 | - |
| SEME610050104E | R0.1 | **0.5** | 4 | 0.7 | 4 | 45 | 0.45 | - |
| SEME610050105E | R0.1 | **0.5** | 4 | 0.7 | 5 | 45 | 0.45 | - |
| SEME610050106E | R0.1 | **0.5** | 4 | 0.7 | 6 | 45 | 0.45 | - |
| SEME610050102S6SE | R0.1 | **0.5** | 6 | 0.4 | 2 | 45 | 0.45 | - |
| SEME610050104S6SE | R0.1 | **0.5** | 6 | 0.4 | 4 | 45 | 0.45 | - |
| SEME6100600502E | R0.05 | **0.6** | 4 | 0.9 | 2 | 45 | 0.55 | - |

▶ NEXT PAGE 下页

| Size 尺寸 | Corner Radius Tolerance (mm) 圆弧角公差 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|---|
| up to Ø6 Ø6以下 | ± 0.010 | 0 ~ - 0.012 | h5 |
| over Ø6 超过Ø6 | ± 0.015 | 0 ~ - 0.015 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | M | | | | K | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | | | | | | | | | Stainless steel | | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | | | | | | | | | | |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 | | | | | | | | | | |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 | | | | | | | | | | |
| Recommend | ○ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | Copper and Copper Alloys (Bronze / Brass) | | Non Metallic Materials | | | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |



4G MILL END MILLS

PLAIN SHANK SEME61 SERIES

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▶ 加工模具产业的预硬钢，碳钢，合金钢(HRc55以下)表现出色
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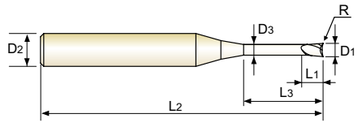
▶ 可提供比以前标准品更多种有效长和全长产品




CARBIDE | 2 | 30° | R ±0.010 | R ±0.015 | PLAIN

Ø0.2~Ø6 Ø7~Ø20

p.C266-273

Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| - | - | POWER MILLING CHUCK | D161 - 176 |
| - | - | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Corner Radius 圆弧角 R | Mill Diameter 直径 $D_1$ | Shank Diameter 柄径 $D_2$ | Length of Cut 刃长 $L_1$ | Length Below Shank 颈长 $L_3$ | Overall Length 全长 $L_2$ | Neck Diameter 颈径 $D_3$ | Remark 备注 |
|---|---|---|---|---|---|---|---|---|
| SEME6100600503E | R0.05 | **0.6** | 4 | 0.9 | 3 | 45 | 0.55 | - |
| SEME6100600504E | R0.05 | **0.6** | 4 | 0.9 | 4 | 45 | 0.55 | - |
| SEME6100600506E | R0.05 | **0.6** | 4 | 0.9 | 6 | 45 | 0.55 | - |
| SEME6100600508E | R0.05 | **0.6** | 4 | 0.9 | 8 | 45 | 0.55 | - |
| SEME6100600510E | R0.05 | **0.6** | 4 | 0.9 | 10 | 45 | 0.55 | - |
| SEME610060102E | R0.1 | **0.6** | 4 | 0.9 | 2 | 45 | 0.55 | - |
| SEME610060103E | R0.1 | **0.6** | 4 | 0.9 | 3 | 45 | 0.55 | - |
| SEME610060104E | R0.1 | **0.6** | 4 | 0.9 | 4 | 45 | 0.55 | - |
| SEME610060106E | R0.1 | **0.6** | 4 | 0.9 | 6 | 45 | 0.55 | - |
| SEME610060108E | R0.1 | **0.6** | 4 | 0.9 | 8 | 45 | 0.55 | - |
| SEME610060110E | R0.1 | **0.6** | 4 | 0.9 | 10 | 45 | 0.55 | - |
| SEME610060202E | R0.2 | **0.6** | 4 | 0.9 | 2 | 45 | 0.55 | - |
| SEME610060203E | R0.2 | **0.6** | 4 | 0.9 | 3 | 45 | 0.55 | - |
| SEME610060204E | R0.2 | **0.6** | 4 | 0.9 | 4 | 45 | 0.55 | - |
| SEME610060206E | R0.2 | **0.6** | 4 | 0.9 | 6 | 45 | 0.55 | - |
| SEME610060208E | R0.2 | **0.6** | 4 | 0.9 | 8 | 45 | 0.55 | - |
| SEME610060210E | R0.2 | **0.6** | 4 | 0.9 | 10 | 45 | 0.55 | - |
| SEME6100700502E | R0.05 | **0.7** | 4 | 1.2 | 2 | 45 | 0.65 | - |
| SEME6100700504E | R0.05 | **0.7** | 4 | 1.2 | 4 | 45 | 0.65 | - |
| SEME6100700506E | R0.05 | **0.7** | 4 | 1.2 | 6 | 45 | 0.65 | - |
| SEME6100700508E | R0.05 | **0.7** | 4 | 1.2 | 8 | 45 | 0.65 | - |
| SEME6100700510E | R0.05 | **0.7** | 4 | 1.2 | 10 | 45 | 0.65 | - |
| SEME6100700502E | R0.1 | **0.7** | 4 | 1.2 | 2 | 45 | 0.65 | - |
| SEME6100700504E | R0.1 | **0.7** | 4 | 1.2 | 4 | 45 | 0.65 | - |

▶ NEXT PAGE 下页

| Size 尺寸 | Corner Radius Tolerance (mm) 圆弧角公差 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|---|
| up to Ø6 Ø6以下 | ± 0.010 | 0 ~ - 0.012 | h5 |
| over Ø6 超过Ø6 | ± 0.015 | 0 ~ - 0.015 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | M | | | | K | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | | | | | | | | | Stainless steel | | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | | | | | | | | | | |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 | | | | | | | | | | |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 | | | | | | | | | | |
| Recommend | ○ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | Copper and Copper Alloys (Bronze / Brass) | | Non Metallic Materials | | | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |

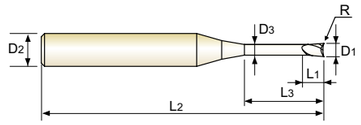
# 4G MILL END MILLS

PLAIN SHANK **SEME61** SERIES

## CARBIDE, 2 FLUTE CORNER RADIUS with EXTENDED NECK
## 硬质合金，2刃 圆鼻 颈部加长

- ▶ Due to new coating and new tool geometry, outstanding cutting ability and wear resistance.
- ▶ Excellent for cutting prehardened steels, carbon steels, alloy steels of molds and dies, up to HRc55 and machine parts.
- ▶ Available various products like regular length and long shank end mills etc.
- ▶ Available various corner radius end mills, from min. 0.02mm corner radius to max. 2.0mm corner radius.
- ▶ Available more various effective length and overall length end mills than previous standard products.

- ▶ 基于新形状设计，纳米颗粒基体和涂层，出色切削性能及耐磨性涂
- ▶ 加工模具产业的预硬钢，碳钢，合金钢(HRc55以下)表现出色
- ▶ 可提供短,普通和长柄铣刀
- ▶ 可提供多种圆弧角铣刀(R0.02mm~R2.0mm)
- ▶ 可提供比以前标准品更多种有效长和全长产品




CARBIDE | 2 | 30° | R ±0.010 | R ±0.015 | PLAIN

Ø0.2~Ø6 Ø7~Ø20

p.C266-273

Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| - | - | POWER MILLING CHUCK | D161 - 176 |
| - | - | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Corner Radius 圆弧角 R | Mill Diameter 直径 $D_1$ | Shank Diameter 柄径 $D_2$ | Length of Cut 刃长 $L_1$ | Length Below Shank 颈长 $L_3$ | Overall Length 全长 $L_2$ | Neck Diameter 颈径 $D_3$ | Remark 备注 |
|---|---|---|---|---|---|---|---|---|
| SEME610070106E | R0.1 | **0.7** | 4 | 1.2 | 6 | 45 | 0.65 | - |
| SEME610070108E | R0.1 | **0.7** | 4 | 1.2 | 8 | 45 | 0.65 | - |
| SEME610070110E | R0.1 | **0.7** | 4 | 1.2 | 10 | 45 | 0.65 | - |
| SEME610070202E | R0.2 | **0.7** | 4 | 1.2 | 2 | 45 | 0.65 | - |
| SEME610070204E | R0.2 | **0.7** | 4 | 1.2 | 4 | 45 | 0.65 | - |
| SEME610070206E | R0.2 | **0.7** | 4 | 1.2 | 6 | 45 | 0.65 | - |
| SEME610070208E | R0.2 | **0.7** | 4 | 1.2 | 8 | 45 | 0.65 | - |
| SEME610070210E | R0.2 | **0.7** | 4 | 1.2 | 10 | 45 | 0.65 | - |
| SEME6100800502E | R0.05 | **0.8** | 4 | 1.2 | 2 | 45 | 0.75 | - |
| SEME6100800503E | R0.05 | **0.8** | 4 | 1.2 | 3 | 45 | 0.75 | - |
| SEME6100800504E | R0.05 | **0.8** | 4 | 1.2 | 4 | 45 | 0.75 | - |
| SEME6100800506E | R0.05 | **0.8** | 4 | 1.2 | 6 | 45 | 0.75 | - |
| SEME6100800508E | R0.05 | **0.8** | 4 | 1.2 | 8 | 45 | 0.75 | - |
| SEME6100800510E | R0.05 | **0.8** | 4 | 1.2 | 10 | 45 | 0.75 | - |
| SEME610080102E | R0.1 | **0.8** | 4 | 1.2 | 2 | 45 | 0.75 | - |
| SEME610080103E | R0.1 | **0.8** | 4 | 1.2 | 3 | 45 | 0.75 | - |
| SEME610080104E | R0.1 | **0.8** | 4 | 1.2 | 4 | 45 | 0.75 | - |
| SEME610080106E | R0.1 | **0.8** | 4 | 1.2 | 6 | 45 | 0.75 | - |
| SEME610080108E | R0.1 | **0.8** | 4 | 1.2 | 8 | 45 | 0.75 | - |
| SEME610080110E | R0.1 | **0.8** | 4 | 1.2 | 10 | 45 | 0.75 | - |
| SEME610080202E | R0.2 | **0.8** | 4 | 1.2 | 2 | 45 | 0.75 | - |
| SEME610080203E | R0.2 | **0.8** | 4 | 1.2 | 3 | 45 | 0.75 | - |
| SEME610080204E | R0.2 | **0.8** | 4 | 1.2 | 4 | 45 | 0.75 | - |
| SEME610080206E | R0.2 | **0.8** | 4 | 1.2 | 6 | 45 | 0.75 | - |

▶ NEXT PAGE 下页

| Size 尺寸 | Corner Radius Tolerance (mm) 圆弧角公差 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|---|
| up to Ø6 Ø6以下 | ± 0.010 | 0 ~ - 0.012 | h5 |
| over Ø6 超过Ø6 | ± 0.015 | 0 ~ - 0.015 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |



4G MILL END MILLS

PLAIN SHANK SEME61 SERIES

CARBIDE, 2 FLUTE CORNER RADIUS with EXTENDED NECK
硬质合金，2刃 圆鼻 颈部加长

- ▶ Due to new coating and new tool geometry, outstanding cutting ability and wear resistance.
- ▶ Excellent for cutting prehardened steels, carbon steels, alloy steels of molds and dies, up to HRc55 and machine parts.
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- ▶ 加工模具产业的预硬钢，碳钢，合金钢(HRc55以下)表现出色
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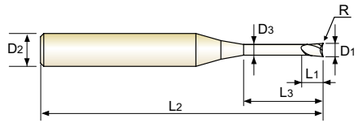
- ▶ 可提供比以前标准品更多种有效长和全长产品




CARBIDE | 2 | 30° | R ±0.010 | R ±0.015 | PLAIN

Ø0.2~Ø6 Ø7~Ø20

p.C266-273

Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| - | - | POWER MILLING CHUCK | D161 - 176 |
| - | - | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Corner Radius 圆弧角 R | Mill Diameter 直径 $D_1$ | Shank Diameter 柄径 $D_2$ | Length of Cut 刃长 $L_1$ | Length Below Shank 颈长 $L_3$ | Overall Length 全长 $L_2$ | Neck Diameter 颈径 $D_3$ | Remark 备注 |
|---|---|---|---|---|---|---|---|---|
| SEME610080208E | R0.2 | **0.8** | 4 | 1.2 | 8 | 45 | 0.75 | - |
| SEME610080210E | R0.2 | **0.8** | 4 | 1.2 | 10 | 45 | 0.75 | - |
| SEME6101000503E | R0.05 | **1.0** | 4 | 1.5 | 3 | 50 | 0.95 | - |
| SEME6101000504E | R0.05 | **1.0** | 4 | 1.5 | 4 | 50 | 0.95 | - |
| SEME6101000505E | R0.05 | **1.0** | 4 | 1.5 | 5 | 50 | 0.95 | |
| SEME6101000506E | R0.05 | **1.0** | 4 | 1.5 | 6 | 50 | 0.95 | - |
| SEME6101000508E | R0.05 | **1.0** | 4 | 1.5 | 8 | 50 | 0.95 | - |
| SEME6101000510E | R0.05 | **1.0** | 4 | 1.5 | 10 | 50 | 0.95 | - |
| SEME6101000512E | R0.05 | **1.0** | 4 | 1.5 | 12 | 50 | 0.95 | - |
| SEME6101000514E | R0.05 | **1.0** | 4 | 1.5 | 14 | 50 | 0.95 | - |
| SEME6101000516E | R0.05 | **1.0** | 4 | 1.5 | 16 | 50 | 0.95 | - |
| SEME6101000520E | R0.05 | **1.0** | 4 | 1.5 | 20 | 50 | 0.95 | - |
| SEME610100103E | R0.1 | **1.0** | 4 | 1.5 | 3 | 50 | 0.95 | - |
| SEME610100104E | R0.1 | **1.0** | 4 | 1.5 | 4 | 50 | 0.95 | - |
| SEME610100105E | R0.1 | **1.0** | 4 | 1.5 | 5 | 50 | 0.95 | - |
| SEME610100106E | R0.1 | **1.0** | 4 | 1.5 | 6 | 50 | 0.95 | - |
| SEME610100108E | R0.1 | **1.0** | 4 | 1.5 | 8 | 50 | 0.95 | - |
| SEME610100110E | R0.1 | **1.0** | 4 | 1.5 | 10 | 50 | 0.95 | - |
| SEME610100112E | R0.1 | **1.0** | 4 | 1.5 | 12 | 50 | 0.95 | - |
| SEME610100114E | R0.1 | **1.0** | 4 | 1.5 | 14 | 50 | 0.95 | - |
| SEME610100116E | R0.1 | **1.0** | 4 | 1.5 | 16 | 50 | 0.95 | - |
| SEME610100120E | R0.1 | **1.0** | 4 | 1.5 | 20 | 50 | 0.95 | - |
| SEME610100203E | R0.2 | **1.0** | 4 | 1.5 | 3 | 50 | 0.95 | - |
| SEME610100204E | R0.2 | **1.0** | 4 | 1.5 | 4 | 50 | 0.95 | - |

▶ NEXT PAGE 下页

| Size 尺寸 | Corner Radius Tolerance (mm) 圆弧角公差 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
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| up to Ø6 Ø6以下 | ± 0.010 | 0 ~ - 0.012 | h5 |
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| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
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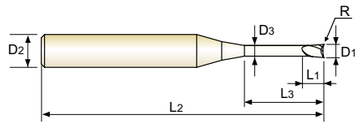


CARBIDE | 2 | 30° | R ±0.010 | R ±0.015 | PLAIN

Ø0.2~Ø6 Ø7~Ø20

p.C266-273

Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
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Unit(单位) : mm

| EDP No. | Corner Radius 圆弧角 R | Mill Diameter 直径 $D_1$ | Shank Diameter 柄径 $D_2$ | Length of Cut 刃长 $L_1$ | Length Below Shank 颈长 $L_3$ | Overall Length 全长 $L_2$ | Neck Diameter 颈径 $D_3$ | Remark 备注 |
|---|---|---|---|---|---|---|---|---|
| SEME610100205E | R0.2 | 1.0 | 4 | 1.5 | 5 | 50 | 0.95 | |
| SEME610100206E | R0.2 | 1.0 | 4 | 1.5 | 6 | 50 | 0.95 | - |
| SEME610100208E | R0.2 | 1.0 | 4 | 1.5 | 8 | 50 | 0.95 | - |
| SEME610100210E | R0.2 | 1.0 | 4 | 1.5 | 10 | 50 | 0.95 | - |
| SEME610100212E | R0.2 | 1.0 | 4 | 1.5 | 12 | 50 | 0.95 | - |
| SEME610100214E | R0.2 | 1.0 | 4 | 1.5 | 14 | 50 | 0.95 | - |
| SEME610100216E | R0.2 | 1.0 | 4 | 1.5 | 16 | 50 | 0.95 | - |
| SEME610100220E | R0.2 | 1.0 | 4 | 1.5 | 20 | 50 | 0.95 | - |
| SEME610100303E | R0.3 | 1.0 | 4 | 1.5 | 3 | 50 | 0.95 | - |
| SEME610100304E | R0.3 | 1.0 | 4 | 1.5 | 4 | 50 | 0.95 | - |
| SEME610100306E | R0.3 | 1.0 | 4 | 1.5 | 6 | 50 | 0.95 | - |
| SEME610100308E | R0.3 | 1.0 | 4 | 1.5 | 8 | 50 | 0.95 | - |
| SEME610100310E | R0.3 | 1.0 | 4 | 1.5 | 10 | 50 | 0.95 | - |
| SEME610100312E | R0.3 | 1.0 | 4 | 1.5 | 12 | 50 | 0.95 | - |
| SEME610100314E | R0.3 | 1.0 | 4 | 1.5 | 14 | 50 | 0.95 | - |
| SEME610100316E | R0.3 | 1.0 | 4 | 1.5 | 16 | 50 | 0.95 | - |
| SEME610100320E | R0.3 | 1.0 | 4 | 1.5 | 20 | 50 | 0.95 | - |
| SEME6101200503E | R0.05 | 1.2 | 4 | 1.8 | 3 | 50 | 1.15 | - |
| SEME6101200504E | R0.05 | 1.2 | 4 | 1.8 | 4 | 50 | 1.15 | - |
| SEME6101200506E | R0.05 | 1.2 | 4 | 1.8 | 6 | 50 | 1.15 | - |
| SEME6101200508E | R0.05 | 1.2 | 4 | 1.8 | 8 | 50 | 1.15 | - |
| SEME6101200510E | R0.05 | 1.2 | 4 | 1.8 | 10 | 50 | 1.15 | - |
| SEME6101200512E | R0.05 | 1.2 | 4 | 1.8 | 12 | 50 | 1.15 | - |
| SEME6101200516E | R0.05 | 1.2 | 4 | 1.8 | 16 | 50 | 1.15 | - |

▶ NEXT PAGE 下页

| Size 尺寸 | Corner Radius Tolerance (mm) 圆弧角公差 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
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| up to Ø6 Ø6以下 | ± 0.010 | 0 ~ - 0.012 | h5 |
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| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

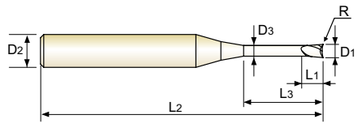
| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |



4G MILL END MILLS
PLAIN SHANK SEME61 SERIES
CARBIDE, 2 FLUTE CORNER RADIUS with EXTENDED NECK
硬质合金，2刃 圆鼻 颈部加长

▶ Due to new coating and new tool geometry, outstanding cutting ability and wear resistance.
▶ Excellent for cutting prehardened steels, carbon steels, alloy steels of molds and dies, up to HRc55 and machine parts.
▶ Available various products like regular length and long shank end mills etc.
▶ Available various corner radius end mills, from min. 0.02mm corner radius to max. 2.0mm corner radius.
▶ Available more various effective length and overall length end mills than previous standard products.

▶ 基于新形状设计，纳米颗粒基体和涂层，出色切削性能及耐磨性涂
▶ 加工模具产业的预硬钢，碳钢，合金钢(HRc55以下)表现出色
▶ 可提供短,普通和长柄铣刀
▶ 可提供多种圆弧角铣刀(R0.02mm~R2.0mm)
▶ 可提供比以前标准品更多种有效长和全长产品




CARBIDE | 2 | 30° | R ±0.010 | R ±0.015 | PLAIN

Ø0.2~Ø6 Ø7~Ø20

p.C266-273

Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| - | - | POWER MILLING CHUCK | D161 - 176 |
| - | - | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Corner Radius 圆弧角 R | Mill Diameter 直径 $D_1$ | Shank Diameter 柄径 $D_2$ | Length of Cut 刃长 $L_1$ | Length Below Shank 颈长 $L_3$ | Overall Length 全长 $L_2$ | Neck Diameter 颈径 $D_3$ | Remark 备注 |
|---|---|---|---|---|---|---|---|---|
| SEME6101200520E | R0.05 | 1.2 | 4 | 1.8 | 20 | 50 | 1.15 | - |
| SEME610120103E | R0.1 | 1.2 | 4 | 1.8 | 3 | 50 | 1.15 | - |
| SEME610120104E | R0.1 | 1.2 | 4 | 1.8 | 4 | 50 | 1.15 | - |
| SEME610120106E | R0.1 | 1.2 | 4 | 1.8 | 6 | 50 | 1.15 | - |
| SEME610120108E | R0.1 | 1.2 | 4 | 1.8 | 8 | 50 | 1.15 | - |
| SEME610120110E | R0.1 | 1.2 | 4 | 1.8 | 10 | 50 | 1.15 | - |
| SEME610120112E | R0.1 | 1.2 | 4 | 1.8 | 12 | 50 | 1.15 | - |
| SEME610120116E | R0.1 | 1.2 | 4 | 1.8 | 16 | 50 | 1.15 | - |
| SEME610120120E | R0.1 | 1.2 | 4 | 1.8 | 20 | 50 | 1.15 | - |
| SEME610120203E | R0.2 | 1.2 | 4 | 1.8 | 3 | 50 | 1.15 | - |
| SEME610120204E | R0.2 | 1.2 | 4 | 1.8 | 4 | 50 | 1.15 | - |
| SEME610120206E | R0.2 | 1.2 | 4 | 1.8 | 6 | 50 | 1.15 | - |
| SEME610120208E | R0.2 | 1.2 | 4 | 1.8 | 8 | 50 | 1.15 | - |
| SEME610120210E | R0.2 | 1.2 | 4 | 1.8 | 10 | 50 | 1.15 | - |
| SEME610120212E | R0.2 | 1.2 | 4 | 1.8 | 12 | 50 | 1.15 | - |
| SEME610120216E | R0.2 | 1.2 | 4 | 1.8 | 16 | 50 | 1.15 | - |
| SEME610120220E | R0.2 | 1.2 | 4 | 1.8 | 20 | 50 | 1.15 | - |
| SEME610120303E | R0.3 | 1.2 | 4 | 1.8 | 3 | 50 | 1.15 | - |
| SEME610120304E | R0.3 | 1.2 | 4 | 1.8 | 4 | 50 | 1.15 | - |
| SEME610120306E | R0.3 | 1.2 | 4 | 1.8 | 6 | 50 | 1.15 | - |
| SEME610120308E | R0.3 | 1.2 | 4 | 1.8 | 8 | 50 | 1.15 | - |
| SEME610120310E | R0.3 | 1.2 | 4 | 1.8 | 10 | 50 | 1.15 | - |
| SEME610120312E | R0.3 | 1.2 | 4 | 1.8 | 12 | 50 | 1.15 | - |
| SEME610120316E | R0.3 | 1.2 | 4 | 1.8 | 16 | 50 | 1.15 | - |

▶ NEXT PAGE 下页

| Size 尺寸 | Corner Radius Tolerance (mm) 圆弧角公差 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|---|
| up to Ø6 Ø6以下 | ± 0.010 | 0 ~ - 0.012 | h5 |
| over Ø6 超过Ø6 | ± 0.015 | 0 ~ - 0.015 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |

# 4G MILL END MILLS

PLAIN SHANK **SEME61** SERIES

## CARBIDE, 2 FLUTE CORNER RADIUS with EXTENDED NECK
## 硬质合金，2刃 圆鼻 颈部加长

- ▶ Due to new coating and new tool geometry, outstanding cutting ability and wear resistance.
- ▶ Excellent for cutting prehardened steels, carbon steels, alloy steels of molds and dies, up to HRc55 and machine parts.
- ▶ Available various products like regular length and long shank end mills etc.
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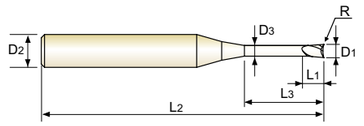
- ▶ Available more various effective length and overall length end mills than previous standard products.

- ▶ 基于新形状设计，纳米颗粒基体和涂层，出色切削性能及耐磨性涂
- ▶ 加工模具产业的预硬钢，碳钢，合金钢(HRc55以下)表现出色
- ▶ 可提供短,普通和长柄铣刀
- ▶ 可提供多种圆弧角铣刀(R0.02mm~R2.0mm)
- ▶ 可提供比以前标准品更多种有效长和全长产品




CARBIDE | 2 | 30° | R ±0.010 | R ±0.015 | PLAIN

Ø0.2~Ø6 Ø7~Ø20

p.C266-273

Recommended ToolHolder

| Flat Shank | | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK SHRINK FIT HOLDER | D15 - 46 D47 - 72 |
| ◎ | - | - | POWER MILLING CHUCK | D161 - 176 |
| ○ | - | - | ER COLLET CHUCK SK SLIM CHUCK | D73 - 115 D183 - 201 |

Unit(单位) : mm

| EDP No. | Corner Radius 圆弧角 R | Mill Diameter 直径 $D_1$ | Shank Diameter 柄径 $D_2$ | Length of Cut 刃长 $L_1$ | Length Below Shank 颈长 $L_3$ | Overall Length 全长 $L_2$ | Neck Diameter 颈径 $D_3$ | Remark 备注 |
|---|---|---|---|---|---|---|---|---|
| SEME610120320E | R0.3 | 1.2 | 4 | 1.8 | 20 | 50 | 1.15 | - |
| SEME6101500504E | R0.05 | 1.5 | 4 | 2.3 | 4 | 50 | 1.45 | - |
| SEME6101500506E | R0.05 | 1.5 | 4 | 2.3 | 6 | 50 | 1.45 | - |
| SEME6101500508E | R0.05 | 1.5 | 4 | 2.3 | 8 | 50 | 1.45 | - |
| SEME6101500510E | R0.05 | 1.5 | 4 | 2.3 | 10 | 50 | 1.45 | - |
| SEME6101500512E | R0.05 | 1.5 | 4 | 2.3 | 12 | 50 | 1.45 | - |
| SEME6101500514E | R0.05 | 1.5 | 4 | 2.3 | 14 | 50 | 1.45 | - |
| SEME6101500516E | R0.05 | 1.5 | 4 | 2.3 | 16 | 50 | 1.45 | - |
| SEME6101500520E | R0.05 | 1.5 | 4 | 2.3 | 20 | 50 | 1.45 | - |
| SEME6101500522E | R0.05 | 1.5 | 4 | 2.3 | 22 | 60 | 1.45 | - |
| SEME6101500526E | R0.05 | 1.5 | 4 | 2.3 | 26 | 60 | 1.45 | - |
| SEME610150104E | R0.1 | 1.5 | 4 | 2.3 | 4 | 50 | 1.45 | - |
| SEME610150106E | R0.1 | 1.5 | 4 | 2.3 | 6 | 50 | 1.45 | - |
| SEME610150108E | R0.1 | 1.5 | 4 | 2.3 | 8 | 50 | 1.45 | - |
| SEME610150110E | R0.1 | 1.5 | 4 | 2.3 | 10 | 50 | 1.45 | - |
| SEME610150112E | R0.1 | 1.5 | 4 | 2.3 | 12 | 50 | 1.45 | - |
| SEME610150114E | R0.1 | 1.5 | 4 | 2.3 | 14 | 50 | 1.45 | - |
| SEME610150116E | R0.1 | 1.5 | 4 | 2.3 | 16 | 50 | 1.45 | - |
| SEME610150120E | R0.1 | 1.5 | 4 | 2.3 | 20 | 50 | 1.45 | - |
| SEME610150122E | R0.1 | 1.5 | 4 | 2.3 | 22 | 60 | 1.45 | - |
| SEME610150126E | R0.1 | 1.5 | 4 | 2.3 | 26 | 60 | 1.45 | - |
| SEME610150204E | R0.2 | 1.5 | 4 | 2.3 | 4 | 50 | 1.45 | - |
| SEME610150206E | R0.2 | 1.5 | 4 | 2.3 | 6 | 50 | 1.45 | - |
| SEME610150208E | R0.2 | 1.5 | 4 | 2.3 | 8 | 50 | 1.45 | - |

▶ NEXT PAGE 下页

| Size 尺寸 | Corner Radius Tolerance (mm) 圆弧角公差 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
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| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |



4G MILL END MILLS

PLAIN SHANK SEME61 SERIES

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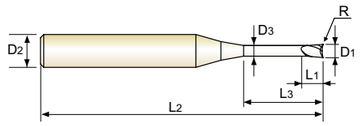


CARBIDE | 2 | 30° | R ±0.010 | R ±0.015 | PLAIN

Ø0.2~Ø6 Ø7~Ø20

p.C266-273

Recommended ToolHolder

| Flat Shank | | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK SHRINK FIT HOLDER | D15 - 46 D47 - 72 |
| ◎ | - | - | POWER MILLING CHUCK | D161 - 176 |
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Unit(单位) : mm

| EDP No. | Corner Radius 圆弧角 R | Mill Diameter 直径 $D_1$ | Shank Diameter 柄径 $D_2$ | Length of Cut 刃长 $L_1$ | Length Below Shank 颈长 $L_3$ | Overall Length 全长 $L_2$ | Neck Diameter 颈径 $D_3$ | Remark 备注 |
|---|---|---|---|---|---|---|---|---|
| SEME610150210E | R0.2 | 1.5 | 4 | 2.3 | 10 | 50 | 1.45 | - |
| SEME610150212E | R0.2 | 1.5 | 4 | 2.3 | 12 | 50 | 1.45 | - |
| SEME610150214E | R0.2 | 1.5 | 4 | 2.3 | 14 | 50 | 1.45 | - |
| SEME610150216E | R0.2 | 1.5 | 4 | 2.3 | 16 | 50 | 1.45 | - |
| SEME610150220E | R0.2 | 1.5 | 4 | 2.3 | 20 | 50 | 1.45 | - |
| SEME610150222E | R0.2 | 1.5 | 4 | 2.3 | 22 | 60 | 1.45 | - |
| SEME610150226E | R0.2 | 1.5 | 4 | 2.3 | 26 | 60 | 1.45 | - |
| SEME610150304E | R0.3 | 1.5 | 4 | 2.3 | 4 | 50 | 1.45 | - |
| SEME610150306E | R0.3 | 1.5 | 4 | 2.3 | 6 | 50 | 1.45 | - |
| SEME610150308E | R0.3 | 1.5 | 4 | 2.3 | 8 | 50 | 1.45 | - |
| SEME610150310E | R0.3 | 1.5 | 4 | 2.3 | 10 | 50 | 1.45 | - |
| SEME610150312E | R0.3 | 1.5 | 4 | 2.3 | 12 | 50 | 1.45 | - |
| SEME610150314E | R0.3 | 1.5 | 4 | 2.3 | 14 | 50 | 1.45 | - |
| SEME610150316E | R0.3 | 1.5 | 4 | 2.3 | 16 | 50 | 1.45 | - |
| SEME610150320E | R0.3 | 1.5 | 4 | 2.3 | 20 | 50 | 1.45 | - |
| SEME610150322E | R0.3 | 1.5 | 4 | 2.3 | 22 | 60 | 1.45 | - |
| SEME610150326E | R0.3 | 1.5 | 4 | 2.3 | 26 | 60 | 1.45 | - |
| SEME610150504E | R0.5 | 1.5 | 4 | 2.3 | 4 | 50 | 1.45 | - |
| SEME610150506E | R0.5 | 1.5 | 4 | 2.3 | 6 | 50 | 1.45 | - |
| SEME610150508E | R0.5 | 1.5 | 4 | 2.3 | 8 | 50 | 1.45 | - |
| SEME610150510E | R0.5 | 1.5 | 4 | 2.3 | 10 | 50 | 1.45 | - |
| SEME610150512E | R0.5 | 1.5 | 4 | 2.3 | 12 | 50 | 1.45 | - |
| SEME610150514E | R0.5 | 1.5 | 4 | 2.3 | 14 | 50 | 1.45 | - |
| SEME610150516E | R0.5 | 1.5 | 4 | 2.3 | 16 | 50 | 1.45 | - |

▶ NEXT PAGE 下页

| Size 尺寸 | Corner Radius Tolerance (mm) 圆弧角公差 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |

# 4G MILL END MILLS

PLAIN SHANK **SEME61** SERIES

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## 硬质合金，2刃 圆鼻 颈部加长

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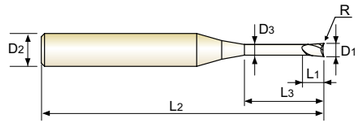
- ▶ 可提供多种圆弧角铣刀(R0.02mm~R2.0mm)
- ▶ 可提供比以前标准品更多种有效长和全长产品




CARBIDE | 2 | 30° | R ±0.010 | R ±0.015 | PLAIN

Ø0.2~Ø6 Ø7~Ø20

p.C266-273

Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| - | - | POWER MILLING CHUCK | D161 - 176 |
| - | - | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Corner Radius 圆弧角 R | Mill Diameter 直径 $D_1$ | Shank Diameter 柄径 $D_2$ | Length of Cut 刃长 $L_1$ | Length Below Shank 颈长 $L_3$ | Overall Length 全长 $L_2$ | Neck Diameter 颈径 $D_3$ | Remark 备注 |
|---|---|---|---|---|---|---|---|---|
| SEME610150520E | R0.5 | 1.5 | 4 | 2.3 | 20 | 50 | 1.45 | - |
| SEME610150522E | R0.5 | 1.5 | 4 | 2.3 | 22 | 60 | 1.45 | - |
| SEME610150526E | R0.5 | 1.5 | 4 | 2.3 | 26 | 60 | 1.45 | - |
| SEME610200106E | R0.1 | 2.0 | 4 | 3 | 6 | 50 | 1.95 | - |
| SEME610200108E | R0.1 | 2.0 | 4 | 3 | 8 | 50 | 1.95 | - |
| SEME610200110E | R0.1 | 2.0 | 4 | 3 | 10 | 50 | 1.95 | - |
| SEME610200112E | R0.1 | 2.0 | 4 | 3 | 12 | 50 | 1.95 | - |
| SEME610200114E | R0.1 | 2.0 | 4 | 3 | 14 | 50 | 1.95 | - |
| SEME610200116E | R0.1 | 2.0 | 4 | 3 | 16 | 50 | 1.95 | - |
| SEME610200120E | R0.1 | 2.0 | 4 | 3 | 20 | 50 | 1.95 | - |
| SEME610200122E | R0.1 | 2.0 | 4 | 3 | 22 | 60 | 1.95 | - |
| SEME610200126E | R0.1 | 2.0 | 4 | 3 | 26 | 60 | 1.95 | - |
| SEME610200130E | R0.1 | 2.0 | 4 | 3 | 30 | 70 | 1.95 | - |
| SEME610200206E | R0.2 | 2.0 | 4 | 3 | 6 | 50 | 1.95 | - |
| SEME610200208E | R0.2 | 2.0 | 4 | 3 | 8 | 50 | 1.95 | - |
| SEME610200210E | R0.2 | 2.0 | 4 | 3 | 10 | 50 | 1.95 | - |
| SEME610200212E | R0.2 | 2.0 | 4 | 3 | 12 | 50 | 1.95 | - |
| SEME610200214E | R0.2 | 2.0 | 4 | 3 | 14 | 50 | 1.95 | - |
| SEME610200216E | R0.2 | 2.0 | 4 | 3 | 16 | 50 | 1.95 | - |
| SEME610200220E | R0.2 | 2.0 | 4 | 3 | 20 | 50 | 1.95 | - |
| SEME610200222E | R0.2 | 2.0 | 4 | 3 | 22 | 60 | 1.95 | - |
| SEME610200226E | R0.2 | 2.0 | 4 | 3 | 26 | 60 | 1.95 | - |
| SEME610200230E | R0.2 | 2.0 | 4 | 3 | 30 | 70 | 1.95 | - |
| SEME610200306E | R0.3 | 2.0 | 4 | 3 | 6 | 50 | 1.95 | - |

▶ NEXT PAGE 下页

| Size 尺寸 | Corner Radius Tolerance (mm) 圆弧角公差 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|---|
| up to Ø6 Ø6以下 | ± 0.010 | 0 ~ - 0.012 | h5 |
| over Ø6 超过Ø6 | ± 0.015 | 0 ~ - 0.015 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |



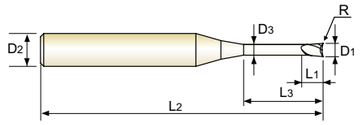
4G MILL END MILLS

PLAIN SHANK SEME61 SERIES

CARBIDE, 2 FLUTE CORNER RADIUS with EXTENDED NECK
硬质合金，2刃 圆鼻 颈部加长

▶ Due to new coating and new tool geometry, outstanding cutting ability and wear resistance.
▶ Excellent for cutting prehardened steels, carbon steels, alloy steels of molds and dies, up to HRc55 and machine parts.
▶ Available various products like regular length and long shank end mills etc.
▶ Available various corner radius end mills, from min. 0.02mm corner radius to max. 2.0mm corner radius.
▶ Available more various effective length and overall length end mills than previous standard products.

▶ 基于新形状设计，纳米颗粒基体和涂层，出色切削性能及耐磨性涂
▶ 加工模具产业的预硬钢，碳钢，合金钢(HRc55以下)表现出色
▶ 可提供短,普通和长柄铣刀
▶ 可提供多种圆弧角铣刀(R0.02mm~R2.0mm)
▶ 可提供比以前标准品更多种有效长和全长产品




CARBIDE | 2 | 30° | R ±0.010 | R ±0.015 | PLAIN

Ø0.2~Ø6 Ø7~Ø20

p.C266-273

Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| - | - | POWER MILLING CHUCK | D161 - 176 |
| - | - | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Corner Radius 圆弧角 R | Mill Diameter 直径 $D_1$ | Shank Diameter 柄径 $D_2$ | Length of Cut 刃长 $L_1$ | Length Below Shank 颈长 $L_3$ | Overall Length 全长 $L_2$ | Neck Diameter 颈径 $D_3$ | Remark 备注 |
|---|---|---|---|---|---|---|---|---|
| SEME610200308E | R0.3 | 2.0 | 4 | 3 | 8 | 50 | 1.95 | - |
| SEME610200310E | R0.3 | 2.0 | 4 | 3 | 10 | 50 | 1.95 | - |
| SEME610200312E | R0.3 | 2.0 | 4 | 3 | 12 | 50 | 1.95 | - |
| SEME610200314E | R0.3 | 2.0 | 4 | 3 | 14 | 50 | 1.95 | - |
| SEME610200316E | R0.3 | 2.0 | 4 | 3 | 16 | 50 | 1.95 | - |
| SEME610200320E | R0.3 | 2.0 | 4 | 3 | 20 | 50 | 1.95 | - |
| SEME610200322E | R0.3 | 2.0 | 4 | 3 | 22 | 60 | 1.95 | - |
| SEME610200326E | R0.3 | 2.0 | 4 | 3 | 26 | 60 | 1.95 | - |
| SEME610200330E | R0.3 | 2.0 | 4 | 3 | 30 | 70 | 1.95 | - |
| SEME610200506E | R0.5 | 2.0 | 4 | 3 | 6 | 50 | 1.95 | - |
| SEME610200508E | R0.5 | 2.0 | 4 | 3 | 8 | 50 | 1.95 | - |
| SEME610200510E | R0.5 | 2.0 | 4 | 3 | 10 | 50 | 1.95 | - |
| SEME610200512E | R0.5 | 2.0 | 4 | 3 | 12 | 50 | 1.95 | - |
| SEME610200514E | R0.5 | 2.0 | 4 | 3 | 14 | 50 | 1.95 | - |
| SEME610200516E | R0.5 | 2.0 | 4 | 3 | 16 | 50 | 1.95 | - |
| SEME610200520E | R0.5 | 2.0 | 4 | 3 | 20 | 50 | 1.95 | - |
| SEME610200522E | R0.5 | 2.0 | 4 | 3 | 22 | 60 | 1.95 | - |
| SEME610200526E | R0.5 | 2.0 | 4 | 3 | 26 | 60 | 1.95 | - |
| SEME610200530E | R0.5 | 2.0 | 4 | 3 | 30 | 70 | 1.95 | - |
| SE5E6102005086SE | R0.5 | 2.0 | 6 | 3 | 8 | 50 | 1.95 | |
| SEME610250108E | R0.1 | 2.5 | 4 | 4 | 8 | 50 | 2.40 | - |
| SEME610250110E | R0.1 | 2.5 | 4 | 4 | 10 | 50 | 2.40 | - |
| SEME610250112E | R0.1 | 2.5 | 4 | 4 | 12 | 50 | 2.40 | - |
| SEME610250114E | R0.1 | 2.5 | 4 | 4 | 14 | 50 | 2.40 | - |

▶ NEXT PAGE 下页

| Size 尺寸 | Corner Radius Tolerance (mm) 圆弧角公差 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|---|
| up to Ø6 Ø6以下 | ± 0.010 | 0 ~ - 0.012 | h5 |
| over Ø6 超过Ø6 | ± 0.015 | 0 ~ - 0.015 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |

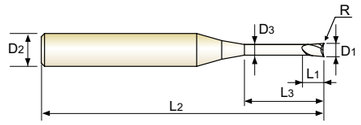
# 4G MILL END MILLS

PLAIN SHANK **SEME61** SERIES

## CARBIDE, 2 FLUTE CORNER RADIUS with EXTENDED NECK
## 硬质合金，2刃 圆鼻 颈部加长

- ▶ Due to new coating and new tool geometry, outstanding cutting ability and wear resistance.
- ▶ Excellent for cutting prehardened steels, carbon steels, alloy steels of molds and dies, up to HRc55 and machine parts.
- ▶ Available various products like regular length and long shank end mills etc.
- ▶ Available various corner radius end mills, from min. 0.02mm corner radius to max. 2.0mm corner radius.
- ▶ Available more various effective length and overall length end mills than previous standard products.

- ▶ 基于新形状设计，纳米颗粒基体和涂层，出色切削性能及耐磨性涂
- ▶ 加工模具产业的预硬钢，碳钢，合金钢(HRc55以下)表现出色
- ▶ 可提供短,普通和长柄铣刀
- ▶ 可提供多种圆弧角铣刀(R0.02mm~R2.0mm)
- ▶ 可提供比以前标准品更多种有效长和全长产品




CARBIDE | 2 | 30° | R ±0.010 | R ±0.015 | PLAIN

Ø0.2~Ø6 Ø7~Ø20

p.C266-273

Recommended ToolHolder

| Flat Shank | | Page | Plain Shank | Page |
|---|---|---|---|---|
| END MILL HOLDER | D118 - 137 | | HYDRAULIC CHUCK SHRINK FIT HOLDER | D15 - 46 D47 - 72 |
| - | - | | POWER MILLING CHUCK | D161 - 176 |
| - | - | | ER COLLET CHUCK SK SLIM CHUCK | D73 - 115 D183 - 201 |

Unit(单位) : mm

| EDP No. | Corner Radius 圆弧角 R | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Length Below Shank 颈长 L3 | Overall Length 全长 L2 | Neck Diameter 颈径 D3 | Remark 备注 |
|---|---|---|---|---|---|---|---|---|
| SEME610250116E | R0.1 | 2.5 | 4 | 4 | 16 | 50 | 2.40 | - |
| SEME610250120E | R0.1 | 2.5 | 4 | 4 | 20 | 50 | 2.40 | - |
| SEME610250126E | R0.1 | 2.5 | 4 | 4 | 26 | 60 | 2.40 | - |
| SEME610250130E | R0.1 | 2.5 | 4 | 4 | 30 | 70 | 2.40 | - |
| SEME610250208E | R0.2 | 2.5 | 4 | 4 | 8 | 50 | 2.40 | - |
| SEME610250210E | R0.2 | 2.5 | 4 | 4 | 10 | 50 | 2.40 | - |
| SEME610250212E | R0.2 | 2.5 | 4 | 4 | 12 | 50 | 2.40 | - |
| SEME610250214E | R0.2 | 2.5 | 4 | 4 | 14 | 50 | 2.40 | - |
| SEME610250216E | R0.2 | 2.5 | 4 | 4 | 16 | 50 | 2.40 | - |
| SEME610250220E | R0.2 | 2.5 | 4 | 4 | 20 | 50 | 2.40 | - |
| SEME610250226E | R0.2 | 2.5 | 4 | 4 | 26 | 60 | 2.40 | - |
| SEME610250230E | R0.2 | 2.5 | 4 | 4 | 30 | 70 | 2.40 | - |
| SEME610250308E | R0.3 | 2.5 | 4 | 4 | 8 | 50 | 2.40 | - |
| SEME610250310E | R0.3 | 2.5 | 4 | 4 | 10 | 50 | 2.40 | - |
| SEME610250312E | R0.3 | 2.5 | 4 | 4 | 12 | 50 | 2.40 | - |
| SEME610250314E | R0.3 | 2.5 | 4 | 4 | 14 | 50 | 2.40 | - |
| SEME610250316E | R0.3 | 2.5 | 4 | 4 | 16 | 50 | 2.40 | - |
| SEME610250320E | R0.3 | 2.5 | 4 | 4 | 20 | 50 | 2.40 | - |
| SEME610250326E | R0.3 | 2.5 | 4 | 4 | 26 | 60 | 2.40 | - |
| SEME610250330E | R0.3 | 2.5 | 4 | 4 | 30 | 70 | 2.40 | - |
| SEME610250508E | R0.5 | 2.5 | 4 | 4 | 8 | 50 | 2.40 | - |
| SEME610250510E | R0.5 | 2.5 | 4 | 4 | 10 | 50 | 2.40 | - |
| SEME610250512E | R0.5 | 2.5 | 4 | 4 | 12 | 50 | 2.40 | - |
| SEME610250514E | R0.5 | 2.5 | 4 | 4 | 14 | 50 | 2.40 | - |

▶ NEXT PAGE 下页

| Size 尺寸 | Corner Radius Tolerance (mm) 圆弧角公差 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
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| over Ø6 超过Ø6 | ± 0.015 | 0 ~ - 0.015 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |



4G MILL END MILLS

PLAIN SHANK SEME61 SERIES

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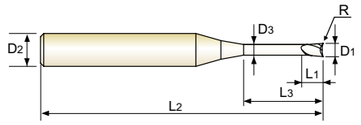
▶ 可提供比以前标准品更多种有效长和全长产品




CARBIDE | 2 | 30° | R ±0.010 | R ±0.015 | PLAIN

Ø0.2~Ø6 Ø7~Ø20

p.C266-273

Recommended ToolHolder

| Flat Shank | | Page | Plain Shank | Page |
|---|---|---|---|---|
| END MILL HOLDER | D118 - 137 | | HYDRAULIC CHUCK SHRINK FIT HOLDER | D15 - 46 D47 - 72 |
| - | - | | POWER MILLING CHUCK | D161 - 176 |
| - | - | | ER COLLET CHUCK SK SLIM CHUCK | D73 - 115 D183 - 201 |

Unit(单位) : mm

| EDP No. | Corner Radius 圆弧角 R | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Length Below Shank 颈长 L3 | Overall Length 全长 L2 | Neck Diameter 颈径 D3 | Remark 备注 |
|---|---|---|---|---|---|---|---|---|
| SEME610250516E | R0.5 | 2.5 | 4 | 4 | 16 | 50 | 2.40 | - |
| SEME610250520E | R0.5 | 2.5 | 4 | 4 | 20 | 50 | 2.40 | - |
| SEME610250526E | R0.5 | 2.5 | 4 | 4 | 26 | 60 | 2.40 | - |
| SEME610250530E | R0.5 | 2.5 | 4 | 4 | 30 | 70 | 2.40 | - |
| SEME610300108E | R0.1 | 3.0 | 6 | 4.5 | 8 | 50 | 2.85 | - |
| SEME610300110E | R0.1 | 3.0 | 6 | 4.5 | 10 | 50 | 2.85 | - |
| SEME610300112E | R0.1 | 3.0 | 6 | 4.5 | 12 | 50 | 2.85 | - |
| SEME610300114E | R0.1 | 3.0 | 6 | 4.5 | 14 | 60 | 2.85 | - |
| SEME610300116E | R0.1 | 3.0 | 6 | 4.5 | 16 | 60 | 2.85 | - |
| SEME610300120E | R0.1 | 3.0 | 6 | 4.5 | 20 | 60 | 2.85 | - |
| SEME610300126E | R0.1 | 3.0 | 6 | 4.5 | 26 | 65 | 2.85 | - |
| SEME610300130E | R0.1 | 3.0 | 6 | 4.5 | 30 | 70 | 2.85 | - |
| SEME610300135E | R0.1 | 3.0 | 6 | 4.5 | 35 | 70 | 2.85 | - |
| SEME610300140E | R0.1 | 3.0 | 6 | 4.5 | 40 | 80 | 2.85 | - |
| SEME610300208E | R0.2 | 3.0 | 6 | 4.5 | 8 | 50 | 2.85 | - |
| SEME610300210E | R0.2 | 3.0 | 6 | 4.5 | 10 | 50 | 2.85 | - |
| SEME610300212E | R0.2 | 3.0 | 6 | 4.5 | 12 | 50 | 2.85 | - |
| SEME610300214E | R0.2 | 3.0 | 6 | 4.5 | 14 | 60 | 2.85 | - |
| SEME610300216E | R0.2 | 3.0 | 6 | 4.5 | 16 | 60 | 2.85 | - |
| SEME610300220E | R0.2 | 3.0 | 6 | 4.5 | 20 | 60 | 2.85 | - |
| SEME610300226E | R0.2 | 3.0 | 6 | 4.5 | 26 | 65 | 2.85 | - |
| SEME610300230E | R0.2 | 3.0 | 6 | 4.5 | 30 | 70 | 2.85 | - |
| SEME610300235E | R0.2 | 3.0 | 6 | 4.5 | 35 | 70 | 2.85 | - |
| SEME610300240E | R0.2 | 3.0 | 6 | 4.5 | 40 | 80 | 2.85 | - |

▶ NEXT PAGE 下页

| Size 尺寸 | Corner Radius Tolerance (mm) 圆弧角公差 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|---|
| up to Ø6 Ø6以下 | ± 0.010 | 0 ~ - 0.012 | h5 |
| over Ø6 超过Ø6 | ± 0.015 | 0 ~ - 0.015 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |

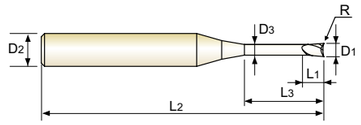
# 4G MILL END MILLS

PLAIN SHANK **SEME61** SERIES

## CARBIDE, 2 FLUTE CORNER RADIUS with EXTENDED NECK
## 硬质合金，2刃 圆鼻 颈部加长

- ▶ Due to new coating and new tool geometry, outstanding cutting ability and wear resistance.
- ▶ Excellent for cutting prehardened steels, carbon steels, alloy steels of molds and dies, up to HRc55 and machine parts.
- ▶ Available various products like regular length and long shank end mills etc.
- ▶ Available various corner radius end mills, from min. 0.02mm corner radius to max. 2.0mm corner radius.
- ▶ Available more various effective length and overall length end mills than previous standard products.

- ▶ 基于新形状设计, 纳米颗粒基体和涂层, 出色切削性能及耐磨性涂
- ▶ 加工模具产业的预硬钢, 碳钢, 合金钢(HRc55以下)表现出色
- ▶ 可提供短,普通和长柄铣刀
- ▶ 可提供多种圆弧角铣刀(R0.02mm~R2.0mm)
- ▶ 可提供比以前标准品更多种有效长和全长产品




CARBIDE | 2 | 30° | R ±0.010 | R ±0.015 | PLAIN

p.C266-273

Recommended ToolHolder

| Flat Shank | | Page | Plain Shank | Page |
|---|---|---|---|---|
| END MILL HOLDER | D118 - 137 | | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| - | - | | POWER MILLING CHUCK | D161 - 176 |
| - | - | | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Ø0.2~Ø6 Ø7~Ø20

Unit(单位) : mm

| EDP No. | Corner Radius<br>圆弧角<br>R | Mill Diameter<br>直径<br>D1 | Shank Diameter<br>柄径<br>D2 | Length of Cut<br>刃长<br>L1 | Length Below Shank<br>颈长<br>L3 | Overall Length<br>全长<br>L2 | Neck Diameter<br>颈径<br>D3 | Remark<br>备注 |
|---|---|---|---|---|---|---|---|---|
| SEME610300308E | R0.3 | 3.0 | 6 | 4.5 | 8 | 50 | 2.85 | - |
| SEME610300310E | R0.3 | 3.0 | 6 | 4.5 | 10 | 50 | 2.85 | - |
| SEME610300312E | R0.3 | 3.0 | 6 | 4.5 | 12 | 50 | 2.85 | - |
| SEME610300314E | R0.3 | 3.0 | 6 | 4.5 | 14 | 60 | 2.85 | - |
| SEME610300316E | R0.3 | 3.0 | 6 | 4.5 | 16 | 60 | 2.85 | - |
| SEME610300320E | R0.3 | 3.0 | 6 | 4.5 | 20 | 60 | 2.85 | - |
| SEME610300326E | R0.3 | 3.0 | 6 | 4.5 | 26 | 65 | 2.85 | - |
| SEME610300330E | R0.3 | 3.0 | 6 | 4.5 | 30 | 70 | 2.85 | - |
| SEME610300335E | R0.3 | 3.0 | 6 | 4.5 | 35 | 70 | 2.85 | - |
| SEME610300340E | R0.3 | 3.0 | 6 | 4.5 | 40 | 80 | 2.85 | - |
| SEME610300508E | R0.5 | 3.0 | 6 | 4.5 | 8 | 50 | 2.85 | - |
| SEME610300510E | R0.5 | 3.0 | 6 | 4.5 | 10 | 50 | 2.85 | - |
| SEME610300512E | R0.5 | 3.0 | 6 | 4.5 | 12 | 50 | 2.85 | - |
| SEME610300514E | R0.5 | 3.0 | 6 | 4.5 | 14 | 60 | 2.85 | - |
| SEME610300516E | R0.5 | 3.0 | 6 | 4.5 | 16 | 60 | 2.85 | - |
| SEME610300520E | R0.5 | 3.0 | 6 | 4.5 | 20 | 60 | 2.85 | - |
| SEME610300526E | R0.5 | 3.0 | 6 | 4.5 | 26 | 65 | 2.85 | - |
| SEME610300530E | R0.5 | 3.0 | 6 | 4.5 | 30 | 70 | 2.85 | - |
| SEME610300535E | R0.5 | 3.0 | 6 | 4.5 | 35 | 70 | 2.85 | - |
| SEME610300540E | R0.5 | 3.0 | 6 | 4.5 | 40 | 80 | 2.85 | - |
| SEME610301008E | R1.0 | 3.0 | 6 | 4.5 | 8 | 50 | 2.85 | - |
| SEME610301010E | R1.0 | 3.0 | 6 | 4.5 | 10 | 50 | 2.85 | - |
| SEME610301012E | R1.0 | 3.0 | 6 | 4.5 | 12 | 50 | 2.85 | - |
| SEME610301014E | R1.0 | 3.0 | 6 | 4.5 | 14 | 60 | 2.85 | - |

▶ NEXT PAGE 下页

| Size<br>尺寸 | Corner Radius Tolerance (mm)<br>圆弧角公差 | Mill Dia.Tolerance (mm)<br>直径公差 | Shank Dia.Tolerance<br>柄径公差 |
|---|---|---|---|
| up to Ø6 Ø6以下 | ± 0.010 | 0 ~ - 0.012 | h5 |
| over Ø6 超过Ø6 | ± 0.015 | 0 ~ - 0.015 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |



CARBIDE
HSS
CBN END MILLS
i-Xmill END MILLS
i-SMART MODULAR END MILLS
X5070 END MILLS
4G MILL END MILLS
X-POWER PRO END MILLS
TitaNox-POWER END MILLS
SUS-CUT END MILLS
V7 PLUS END MILLS
ALU-POWER HPC END MILLS
ALU-CUT END MILLS
G-CUT
CRX S END MILLS
K-2 END MILLS
GENERAL CARBIDE END MILLS
ONLY ONE COATED PM60 END MILLS
TANK-POWER END MILLS
GENERAL HSS END MILLS
MILLING CUTTERS
TECHNICAL DATA

# 4G MILL END MILLS

PLAIN SHANK **SEME61** SERIES

## CARBIDE, 2 FLUTE CORNER RADIUS with EXTENDED NECK
## 硬质合金，2刃 圆鼻 颈部加长

- ▶ Due to new coating and new tool geometry, outstanding cutting ability and wear resistance.
- ▶ Excellent for cutting prehardened steels, carbon steels, alloy steels of molds and dies, up to HRc55 and machine parts.
- ▶ Available various products like regular length and long shank end mills etc.
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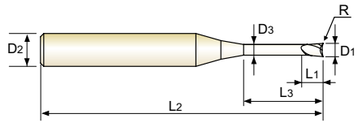
- ▶ 基于新形状设计, 纳米颗粒基体和涂层, 出色切削性能及耐磨性涂
- ▶ 加工模具产业的预硬钢, 碳钢, 合金钢(HRc55以下)表现出色
- ▶ 可提供短,普通和长柄铣刀
- ▶ 可提供多种圆弧角铣刀(R0.02mm~R2.0mm)
- ▶ 可提供比以前标准品更多种有效长和全长产品




CARBIDE | 2 | 30° | R ±0.010 | R ±0.015 | PLAIN

p.C266-273

Recommended ToolHolder

| Flat Shank | | Page | Plain Shank | Page |
|---|---|---|---|---|
| END MILL HOLDER | D118 - 137 | | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| - | - | | POWER MILLING CHUCK | D161 - 176 |
| - | - | | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Ø0.2~Ø6 Ø7~Ø20

Unit(单位) : mm

| EDP No. | Corner Radius<br>圆弧角<br>R | Mill Diameter<br>直径<br>D1 | Shank Diameter<br>柄径<br>D2 | Length of Cut<br>刃长<br>L1 | Length Below Shank<br>颈长<br>L3 | Overall Length<br>全长<br>L2 | Neck Diameter<br>颈径<br>D3 | Remark<br>备注 |
|---|---|---|---|---|---|---|---|---|
| SEME610301016E | R1.0 | 3.0 | 6 | 4.5 | 16 | 60 | 2.85 | - |
| SEME610301020E | R1.0 | 3.0 | 6 | 4.5 | 20 | 60 | 2.85 | - |
| SEME610301026E | R1.0 | 3.0 | 6 | 4.5 | 26 | 65 | 2.85 | - |
| SEME610301030E | R1.0 | 3.0 | 6 | 4.5 | 30 | 70 | 2.85 | - |
| SEME610301035E | R1.0 | 3.0 | 6 | 4.5 | 35 | 70 | 2.85 | - |
| SEME610301040E | R1.0 | 3.0 | 6 | 4.5 | 40 | 80 | 2.85 | - |
| SEME610400110E | R0.1 | 4.0 | 6 | 6 | 10 | 50 | 3.85 | - |
| SEME610400112E | R0.1 | 4.0 | 6 | 6 | 12 | 50 | 3.85 | - |
| SEME610400114E | R0.1 | 4.0 | 6 | 6 | 14 | 60 | 3.85 | - |
| SEME610400116E | R0.1 | 4.0 | 6 | 6 | 16 | 60 | 3.85 | - |
| SEME610400120E | R0.1 | 4.0 | 6 | 6 | 20 | 60 | 3.85 | - |
| SEME610400126E | R0.1 | 4.0 | 6 | 6 | 26 | 65 | 3.85 | - |
| SEME610400130E | R0.1 | 4.0 | 6 | 6 | 30 | 70 | 3.85 | - |
| SEME610400135E | R0.1 | 4.0 | 6 | 6 | 35 | 70 | 3.85 | - |
| SEME610400140E | R0.1 | 4.0 | 6 | 6 | 40 | 80 | 3.85 | - |
| SEME610400145E | R0.1 | 4.0 | 6 | 6 | 45 | 90 | 3.85 | - |
| SEME610400150E | R0.1 | 4.0 | 6 | 6 | 50 | 100 | 3.85 | - |
| SEME610400210E | R0.2 | 4.0 | 6 | 6 | 10 | 50 | 3.85 | - |
| SEME610400212E | R0.2 | 4.0 | 6 | 6 | 12 | 50 | 3.85 | - |
| SEME610400214E | R0.2 | 4.0 | 6 | 6 | 14 | 60 | 3.85 | - |
| SEME610400216E | R0.2 | 4.0 | 6 | 6 | 16 | 60 | 3.85 | - |
| SEME610400220E | R0.2 | 4.0 | 6 | 6 | 20 | 60 | 3.85 | - |
| SEME610400226E | R0.2 | 4.0 | 6 | 6 | 26 | 65 | 3.85 | - |
| SEME610400230E | R0.2 | 4.0 | 6 | 6 | 30 | 70 | 3.85 | - |

▶ NEXT PAGE 下页

| Size<br>尺寸 | Corner Radius Tolerance (mm)<br>圆弧角公差 | Mill Dia.Tolerance (mm)<br>直径公差 | Shank Dia.Tolerance<br>柄径公差 |
|---|---|---|---|
| up to Ø6 Ø6以下 | ± 0.010 | 0 ~ - 0.012 | h5 |
| over Ø6 超过Ø6 | ± 0.015 | 0 ~ - 0.015 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |

# 4G MILL END MILLS

PLAIN SHANK **SEME61** SERIES

## CARBIDE, 2 FLUTE CORNER RADIUS with EXTENDED NECK
## 硬质合金，2刃 圆鼻 颈部加长

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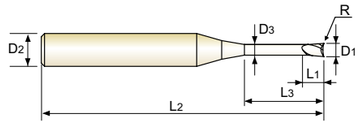
- ▶ 基于新形状设计, 纳米颗粒基体和涂层, 出色切削性能及耐磨性涂
- ▶ 加工模具产业的预硬钢, 碳钢, 合金钢(HRc55以下)表现出色
- ▶ 可提供短,普通和长柄铣刀
- ▶ 可提供多种圆弧角铣刀(R0.02mm~R2.0mm)
- ▶ 可提供比以前标准品更多种有效长和全长产品




CARBIDE | 2 | 30° | R ±0.010 | R ±0.015 | PLAIN

p.C266-273

Recommended ToolHolder

| Flat Shank | | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ END MILL HOLDER | D118 - 137 | | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| ◎ - | - | | POWER MILLING CHUCK | D161 - 176 |
| ○ - | - | | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Corner Radius 圆弧角 R | Mill Diameter 直径 $D_1$ | Shank Diameter 柄径 $D_2$ | Length of Cut 刃长 $L_1$ | Length Below Shank 颈长 $L_3$ | Overall Length 全长 $L_2$ | Neck Diameter 颈径 $D_3$ | Remark 备注 |
|---|---|---|---|---|---|---|---|---|
| SEME610400235E | R0.2 | 4.0 | 6 | 6 | 35 | 70 | 3.85 | - |
| SEME610400240E | R0.2 | 4.0 | 6 | 6 | 40 | 80 | 3.85 | - |
| SEME610400245E | R0.2 | 4.0 | 6 | 6 | 45 | 90 | 3.85 | - |
| SEME610400250E | R0.2 | 4.0 | 6 | 6 | 50 | 100 | 3.85 | - |
| SEME610400310E | R0.3 | 4.0 | 6 | 6 | 10 | 50 | 3.85 | - |
| SEME610400312E | R0.3 | 4.0 | 6 | 6 | 12 | 50 | 3.85 | - |
| SEME610400314E | R0.3 | 4.0 | 6 | 6 | 14 | 50 | 3.85 | - |
| SEME610400316E | R0.3 | 4.0 | 6 | 6 | 16 | 50 | 3.85 | - |
| SEME610400320E | R0.3 | 4.0 | 6 | 6 | 20 | 50 | 3.85 | - |
| SEME610400326E | R0.3 | 4.0 | 6 | 6 | 26 | 65 | 3.85 | - |
| SEME610400330E | R0.3 | 4.0 | 6 | 6 | 30 | 70 | 3.85 | - |
| SEME610400335E | R0.3 | 4.0 | 6 | 6 | 35 | 70 | 3.85 | - |
| SEME610400340E | R0.3 | 4.0 | 6 | 6 | 40 | 80 | 3.85 | - |
| SEME610400345E | R0.3 | 4.0 | 6 | 6 | 45 | 90 | 3.85 | - |
| SEME610400350E | R0.3 | 4.0 | 6 | 6 | 50 | 100 | 3.85 | - |
| SEME610400510E | R0.5 | 4.0 | 6 | 6 | 10 | 50 | 3.85 | - |
| SEME610400512E | R0.5 | 4.0 | 6 | 6 | 12 | 50 | 3.85 | - |
| SEME610400514E | R0.5 | 4.0 | 6 | 6 | 14 | 60 | 3.85 | - |
| SEME610400516E | R0.5 | 4.0 | 6 | 6 | 16 | 60 | 3.85 | - |
| SEME610400520E | R0.5 | 4.0 | 6 | 6 | 20 | 60 | 3.85 | - |
| SEME610400526E | R0.5 | 4.0 | 6 | 6 | 26 | 65 | 3.85 | - |
| SEME610400530E | R0.5 | 4.0 | 6 | 6 | 30 | 70 | 3.85 | - |
| SEME610400535E | R0.5 | 4.0 | 6 | 6 | 35 | 70 | 3.85 | - |
| SEME610400540E | R0.5 | 4.0 | 6 | 6 | 40 | 80 | 3.85 | - |

▶ NEXT PAGE 下页

| Size 尺寸 | Corner Radius Tolerance (mm) 圆弧角公差 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|---|
| up to Ø6 Ø6以下 | ± 0.010 | 0 ~ - 0.012 | h5 |
| over Ø6 超过Ø6 | ± 0.015 | 0 ~ - 0.015 | |

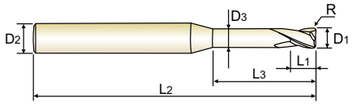
◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |



4G MILL END MILLS
PLAIN SHANK SEME61 SERIES
CARBIDE, 2 FLUTE CORNER RADIUS with EXTENDED NECK
硬质合金，2刃 圆鼻 颈部加长
▶ Due to new coating and new tool geometry, outstanding cutting ability and wear resistance.
▶ Excellent for cutting prehardened steels, carbon steels, alloy steels of molds and dies, up to HRc55 and machine parts.
▶ Available various products like regular length and long shank end mills etc.
▶ Available various corner radius end mills, from min. 0.02mm corner radius to max. 2.0mm corner radius.
▶ Available more various effective length and overall length end mills than previous standard products.
▶ 基于新形状设计, 纳米颗粒基体和涂层, 出色切削性能及耐磨性涂
▶ 加工模具产业的预硬钢, 碳钢, 合金钢(HRc55以下)表现出色
▶ 可提供短,普通和长柄铣刀
▶ 可提供多种圆弧角铣刀(R0.02mm~R2.0mm)
▶ 可提供比以前标准品更多种有效长和全长产品




CARBIDE | 2 | 30° | R ±0.010 | R ±0.015 | PLAIN
p.C266-273
Recommended ToolHolder

| Flat Shank | | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ END MILL HOLDER | D118 - 137 | | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| ◎ - | - | | POWER MILLING CHUCK | D161 - 176 |
| ○ - | - | | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Corner Radius 圆弧角 R | Mill Diameter 直径 $D_1$ | Shank Diameter 柄径 $D_2$ | Length of Cut 刃长 $L_1$ | Length Below Shank 颈长 $L_3$ | Overall Length 全长 $L_2$ | Neck Diameter 颈径 $D_3$ | Remark 备注 |
|---|---|---|---|---|---|---|---|---|
| SEME610400545E | R0.5 | 4.0 | 6 | 6 | 45 | 90 | 3.85 | - |
| SEME610400550E | R0.5 | 4.0 | 6 | 6 | 50 | 100 | 3.85 | - |
| SEME610401010E | R1.0 | 4.0 | 6 | 6 | 10 | 50 | 3.85 | - |
| SEME610401012E | R1.0 | 4.0 | 6 | 6 | 12 | 50 | 3.85 | - |
| SEME610401014E | R1.0 | 4.0 | 6 | 6 | 14 | 60 | 3.85 | - |
| SEME610401016E | R1.0 | 4.0 | 6 | 6 | 16 | 60 | 3.85 | - |
| SEME610401020E | R1.0 | 4.0 | 6 | 6 | 20 | 60 | 3.85 | - |
| SEME610401026E | R1.0 | 4.0 | 6 | 6 | 26 | 65 | 3.85 | - |
| SEME610401030E | R1.0 | 4.0 | 6 | 6 | 30 | 70 | 3.85 | - |
| SEME610401035E | R1.0 | 4.0 | 6 | 6 | 35 | 70 | 3.85 | - |
| SEME610401040E | R1.0 | 4.0 | 6 | 6 | 40 | 80 | 3.85 | - |
| SEME610401045E | R1.0 | 4.0 | 6 | 6 | 45 | 90 | 3.85 | - |
| SEME610401050E | R1.0 | 4.0 | 6 | 6 | 50 | 100 | 3.85 | - |
| SEME6105001E | R0.1 | 5.0 | 6 | 8 | 15 | 60 | 4.85 | - |
| SEME6105002E | R0.2 | 5.0 | 6 | 8 | 15 | 60 | 4.85 | - |
| SEME6105003E | R0.3 | 5.0 | 6 | 8 | 15 | 60 | 4.85 | - |
| SEME6105005E | R0.5 | 5.0 | 6 | 8 | 15 | 60 | 4.85 | - |
| SEME6105010E | R1.0 | 5.0 | 6 | 8 | 15 | 60 | 4.85 | - |
| SEME6105015E | R1.5 | 5.0 | 6 | 8 | 15 | 60 | 4.85 | - |
| SEME6105020E | R2.0 | 5.0 | 6 | 8 | 15 | 60 | 4.85 | - |
| SEME6106001E | R0.1 | 6.0 | 6 | 9 | 20 | 60 | 5.85 | Regular |
| SEME6106002E | R0.2 | 6.0 | 6 | 9 | 20 | 60 | 5.85 | Regular |
| SEME6106003E | R0.3 | 6.0 | 6 | 9 | 20 | 60 | 5.85 | Regular |
| SEME6106005E | R0.5 | 6.0 | 6 | 9 | 20 | 60 | 5.85 | Regular |

▶ NEXT PAGE 下页

| Size 尺寸 | Corner Radius Tolerance (mm) 圆弧角公差 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|---|
| up to Ø6 Ø6以下 | ± 0.010 | 0 ~ - 0.012 | h5 |
| over Ø6 超过Ø6 | ± 0.015 | 0 ~ - 0.015 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |

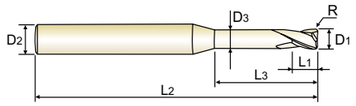
# 4G MILL END MILLS

PLAIN SHANK **SEME61** SERIES

## CARBIDE, 2 FLUTE CORNER RADIUS with EXTENDED NECK
## 硬质合金，2刃 圆鼻 颈部加长

- ▶ Due to new coating and new tool geometry, outstanding cutting ability and wear resistance.
- ▶ Excellent for cutting prehardened steels, carbon steels, alloy steels of molds and dies, up to HRc55 and machine parts.
- ▶ Available various products like regular length and long shank end mills etc.
- ▶ Available various corner radius end mills, from min. 0.02mm corner radius to max. 2.0mm corner radius.
- ▶ Available more various effective length and overall length end mills than previous standard products.

- ▶ 基于新形状设计, 纳米颗粒基体和涂层, 出色切削性能及耐磨性涂
- ▶ 加工模具产业的预硬钢, 碳钢, 合金钢(HRc55以下)表现出色
- ▶ 可提供短,普通和长柄铣刀
- ▶ 可提供多种圆弧角铣刀(R0.02mm~R2.0mm)
- ▶ 可提供比以前标准品更多种有效长和全长产品




CARBIDE | 2 | 30° | R ±0.010 | R ±0.015 | PLAIN

p.C266-273

Recommended ToolHolder

| Flat Shank | | Page | Plain Shank | Page |
|---|---|---|---|---|
| END MILL HOLDER | D118 - 137 | | HYDRAULIC CHUCK SHRINK FIT HOLDER | D15 - 46 D47 - 72 |
| - | - | | POWER MILLING CHUCK | D161 - 176 |
| - | - | | ER COLLET CHUCK SK SLIM CHUCK | D73 - 115 D183 - 201 |

Unit(单位) : mm

| EDP No. | Corner Radius 圆弧角 R | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Length Below Shank 颈长 L3 | Overall Length 全长 L2 | Neck Diameter 颈径 D3 | Remark 备注 |
|---|---|---|---|---|---|---|---|---|
| SEME6106010E | R1.0 | **6.0** | 6 | 9 | 20 | 60 | 5.85 | Regular |
| SEME6106015E | R1.5 | **6.0** | 6 | 9 | 20 | 60 | 5.85 | Regular |
| SEME6106020E | R2.0 | **6.0** | 6 | 9 | 20 | 60 | 5.85 | Regular |
| SEME6106003090E | R0.3 | **6.0** | 6 | 15 | 30 | 90 | 5.85 | Long |
| SEME610600524E | R0.5 | **6.0** | 6 | 9 | 24 | 90 | 5.85 | - |
| SEME6106005090E | R0.5 | **6.0** | 6 | 15 | 30 | 90 | 5.85 | Long |
| SEME6106010090E | R1.0 | **6.0** | 6 | 15 | 30 | 90 | 5.85 | Long |
| SEME6108001E | R0.1 | **8.0** | 8 | 12 | 25 | 70 | 7.70 | Regular |
| SEME6108002E | R0.2 | **8.0** | 8 | 12 | 25 | 70 | 7.70 | Regular |
| SEME6108003E | R0.3 | **8.0** | 8 | 12 | 25 | 70 | 7.70 | Regular |
| SEME6108005E | R0.5 | **8.0** | 8 | 12 | 25 | 70 | 7.70 | Regular |
| SEME6108010E | R1.0 | **8.0** | 8 | 12 | 25 | 70 | 7.70 | Regular |
| SEME6108015E | R1.5 | **8.0** | 8 | 12 | 25 | 70 | 7.70 | Regular |
| SEME6108020E | R2.0 | **8.0** | 8 | 12 | 25 | 70 | 7.70 | Regular |
| SEME6108003100E | R0.3 | **8.0** | 8 | 20 | 35 | 100 | 7.70 | Long |
| SEME6108005100E | R0.5 | **8.0** | 8 | 20 | 35 | 100 | 7.70 | Long |
| SEME6108010100E | R1.0 | **8.0** | 8 | 20 | 35 | 100 | 7.70 | Long |
| SEME6110001E | R0.1 | **10.0** | 10 | 15 | 30 | 75 | 9.70 | Regular |
| SEME6110002E | R0.2 | **10.0** | 10 | 15 | 30 | 75 | 9.70 | Regular |
| SEME6110003E | R0.3 | **10.0** | 10 | 15 | 30 | 75 | 9.70 | Regular |
| SEME6110005E | R0.5 | **10.0** | 10 | 15 | 30 | 75 | 9.70 | Regular |
| SEME6110010E | R1.0 | **10.0** | 10 | 15 | 30 | 75 | 9.70 | Regular |
| SEME6110015E | R1.5 | **10.0** | 10 | 15 | 30 | 75 | 9.70 | Regular |
| SEME6110020E | R2.0 | **10.0** | 10 | 15 | 30 | 75 | 9.70 | Regular |

▶ NEXT PAGE 下页

| Size 尺寸 | Corner Radius Tolerance (mm) 圆弧角公差 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|---|
| up to Ø6 Ø6以下 | ± 0.010 | 0 ~ - 0.012 | h5 |
| over Ø6 超过Ø6 | ± 0.015 | 0 ~ - 0.015 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | M | | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | | | | | | | | | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | | | | | | | | | |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 | | | | | | | | | |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 | | | | | | | | | |
| Recommend | ○ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | |
| ISO | N | | | | | | | | | | | S | | | | | | | | | H | | | | | | | | |
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron | | | | | |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | | 31 | 32 | 33 | 34 | 35 | 36 | 37 | | | 38 | 39 | 40 | 41 | | | | | |
| HRc | | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | | | 55 | 60 | 42 | 55 | | | | | |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | | | 550 | 630 | 400 | 550 | | | | | |
| Recommend | | | | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ | | | | | |



CARBIDE
HSS
CBN END MILLS
i-Xmill END MILLS
i-SMART MODULAR END MILLS
X5070 END MILLS
4G MILL END MILLS
X-POWER PRO END MILLS
TitaNox-POWER END MILLS
SUS-CUT END MILLS
V7 PLUS END MILLS
ALU-POWER HPC END MILLS
ALU-CUT END MILLS
G-CUT
CRX S END MILLS
K-2 END MILLS
GENERAL CARBIDE END MILLS
ONLY ONE COATED PM60 END MILLS
TANK-POWER END MILLS
GENERAL HSS END MILLS
MILLING CUTTERS
TECHNICAL DATA

# 4G MILL END MILLS

PLAIN SHANK **SEME61** SERIES

## CARBIDE, 2 FLUTE CORNER RADIUS with EXTENDED NECK
## 硬质合金，2刃 圆鼻 颈部加长

- ▶ Due to new coating and new tool geometry, outstanding cutting ability and wear resistance.
- ▶ Excellent for cutting prehardened steels, carbon steels, alloy steels of molds and dies, up to HRc55 and machine parts.
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- ▶ Available more various effective length and overall length end mills than previous standard products.

- ▶ 基于新形状设计, 纳米颗粒基体和涂层, 出色切削性能及耐磨性涂
- ▶ 加工模具产业的预硬钢, 碳钢, 合金钢(HRc55以下)表现出色
- ▶ 可提供短,普通和长柄铣刀
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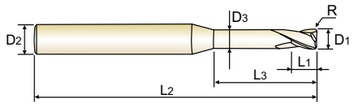
- ▶ 可提供比以前标准品更多种有效长和全长产品




CARBIDE | 2 | 30° | R ±0.010 | R ±0.015 | PLAIN

p.C266-273

Recommended ToolHolder

| Flat Shank | | Page | Plain Shank | Page |
|---|---|---|---|---|
| END MILL HOLDER | D118 - 137 | | HYDRAULIC CHUCK SHRINK FIT HOLDER | D15 - 46 D47 - 72 |
| - | - | | POWER MILLING CHUCK | D161 - 176 |
| - | - | | ER COLLET CHUCK SK SLIM CHUCK | D73 - 115 D183 - 201 |

Unit(单位) : mm

| EDP No. | Corner Radius 圆弧角 R | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Length Below Shank 颈长 L3 | Overall Length 全长 L2 | Neck Diameter 颈径 D3 | Remark 备注 |
|---|---|---|---|---|---|---|---|---|
| SEME6110003100E | R0.3 | **10.0** | 10 | 25 | 40 | 100 | 9.70 | Long |
| SEME6110005100E | R0.5 | **10.0** | 10 | 25 | 40 | 100 | 9.70 | Long |
| SEME6110010100E | R1.0 | **10.0** | 10 | 25 | 40 | 100 | 9.70 | Long |
| SEME6112002E | R0.2 | **12.0** | 12 | 18 | 32 | 80 | 11.70 | Regular |
| SEME6112003E | R0.3 | **12.0** | 12 | 18 | 32 | 80 | 11.70 | Regular |
| SEME6112005E | R0.5 | **12.0** | 12 | 18 | 32 | 80 | 11.70 | Regular |
| SEME6112010E | R1.0 | **12.0** | 12 | 18 | 32 | 80 | 11.70 | Regular |
| SEME6112015E | R1.5 | **12.0** | 12 | 18 | 32 | 80 | 11.70 | Regular |
| SEME6112020E | R2.0 | **12.0** | 12 | 18 | 32 | 80 | 11.70 | Regular |
| SEME6112003110E | R0.3 | **12.0** | 12 | 30 | 50 | 110 | 11.70 | Long |
| SEME6112005110E | R0.5 | **12.0** | 12 | 30 | 50 | 110 | 11.70 | Long |
| SEME6112010110E | R1.0 | **12.0** | 12 | 30 | 50 | 110 | 11.70 | Long |
| SEME6116005E | R0.5 | **16.0** | 16 | 20 | 35 | 100 | 15.70 | Regular |
| SEME6116010E | R1.0 | **16.0** | 16 | 20 | 35 | 100 | 15.70 | Regular |
| SEME6116005150E | R0.5 | **16.0** | 16 | 35 | 50 | 150 | 15.70 | Long |
| SEME6116010150E | R1.0 | **16.0** | 16 | 35 | 50 | 150 | 15.70 | Long |
| SEME6120005E | R0.5 | **20.0** | 20 | 25 | 40 | 100 | 19.70 | Regular |
| SEME6120010E | R1.0 | **20.0** | 20 | 25 | 40 | 100 | 19.70 | Regular |
| SEME6120005150E | R0.5 | **20.0** | 20 | 40 | 55 | 150 | 19.70 | Long |
| SEME6120010150E | R1.0 | **20.0** | 20 | 40 | 55 | 150 | 19.70 | Long |

| Size 尺寸 | Corner Radius Tolerance (mm) 圆弧角公差 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|---|
| up to Ø6 Ø6以下 | ± 0.010 | 0 ~ - 0.012 | h5 |
| over Ø6 超过Ø6 | ± 0.015 | 0 ~ - 0.015 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | M | | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | | | | | | | | | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | | | | | | | | | |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 | | | | | | | | | |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 | | | | | | | | | |
| Recommend | ○ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | |
| ISO | N | | | | | | | | | | | S | | | | | | | | | H | | | | | | | | |
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron | | | | | |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | | 31 | 32 | 33 | 34 | 35 | 36 | 37 | | | 38 | 39 | 40 | 41 | | | | | |
| HRc | | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | | | 55 | 60 | 42 | 55 | | | | | |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | | | 550 | 630 | 400 | 550 | | | | | |
| Recommend | | | | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ | | | | | |

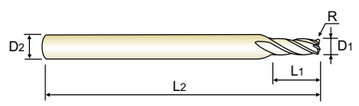
# 4G MILL END MILLS

PLAIN SHANK **SEME01** SERIES

## CARBIDE, 4 FLUTE MULTIPLE HELIX CORNER RADIUS (Short, Regular, Long Shank)
## 硬质合金，4刃 不等螺旋 圆鼻 (短刃, 普通刃长, 长柄)

- ▶ New coating and tool geometry applied resulting outstanding cutting abilities and wear resistance.
- ▶ Excellent performance when cutting prehardened steels, up to HRc55 which are used for molds & dies.
- ▶ Multiple Helix for 3.0mm and over 3.0mm diameter endmills minimizing vibration and decreasing wear in cutting.
- ▶ Available in short, regular and long shank end mills.

- ▶基于新涂层及形状, 实现出色切削性能和耐磨性
- ▶加工模具产业的预硬钢(HRc55以下)表现出色
- ▶基于Ø3.0mm以上采用不等螺旋, 减少切削震动及增加切削耐磨性
- ▶可提供多种产品包括短, 普通和长柄铣刀




CARBIDE | 4 | 27°/30° | R ±0.02 | PLAIN

D<Ø3, 30° HELIX

p.C274-275

Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| - | - | POWER MILLING CHUCK | D161 - 176 |
| - | - | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Corner Radius 圆弧角 R | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Overall Length 全长 L2 | Remark 备注 |
|---|---|---|---|---|---|---|
| SEME010100054SE | R0.05 | 1.0 | 4 | 2.5 | 50 | 4mm Shank |
| SEME010100014SE | R0.1 | 1.0 | 4 | 2.5 | 50 | 4mm Shank |
| SEME01010024SE | R0.2 | 1.0 | 4 | 2.5 | 50 | 4mm Shank |
| SEME01010034SE | R0.3 | 1.0 | 4 | 2.5 | 50 | 4mm Shank |
| SEME01010005E | R0.05 | 1.0 | 6 | 2.5 | 50 | - |
| SEME0101001E | R0.1 | 1.0 | 6 | 2.5 | 50 | - |
| SEME0101002E | R0.2 | 1.0 | 6 | 2.5 | 50 | - |
| SEME0101003E | R0.3 | 1.0 | 6 | 2.5 | 50 | - |
| SEME010120054SE | R0.05 | 1.2 | 4 | 3 | 50 | 4mm Shank |
| SEME01012014SE | R0.1 | 1.2 | 4 | 3 | 50 | 4mm Shank |
| SEME01012024SE | R0.2 | 1.2 | 4 | 3 | 50 | 4mm Shank |
| SEME01012034SE | R0.3 | 1.2 | 4 | 3 | 50 | 4mm Shank |
| SEME01012005E | R0.05 | 1.2 | 6 | 3 | 50 | - |
| SEME0101201E | R0.1 | 1.2 | 6 | 3 | 50 | - |
| SEME0101202E | R0.2 | 1.2 | 6 | 3 | 50 | - |
| SEME0101203E | R0.3 | 1.2 | 6 | 3 | 50 | - |
| SEME010150054SE | R0.05 | 1.5 | 4 | 4 | 50 | 4mm Shank |
| SEME01015014SE | R0.1 | 1.5 | 4 | 4 | 50 | 4mm Shank |
| SEME01015024SE | R0.2 | 1.5 | 4 | 4 | 50 | 4mm Shank |
| SEME01015034SE | R0.3 | 1.5 | 4 | 4 | 50 | 4mm Shank |
| SEME01015054SE | R0.5 | 1.5 | 4 | 4 | 50 | 4mm Shank |
| SEME01015005E | R0.05 | 1.5 | 6 | 4 | 50 | - |
| SEME0101501E | R0.1 | 1.5 | 6 | 4 | 50 | - |
| SEME0101502E | R0.2 | 1.5 | 6 | 4 | 50 | - |

▶ NEXT PAGE 下页

| Corner Radius Tolerance (mm) 圆弧角公差 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|
| ± 0.02 | 0 ~ - 0.03 | h5 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |



CARBIDE
HSS
CBN END MILLS
i-Xmill END MILLS
i-SMART MODULAR END MILLS
X5070 END MILLS
4G MILL END MILLS
X-POWER PRO END MILLS
TitaNox-POWER END MILLS
SUS-CUT END MILLS
V7 PLUS END MILLS
ALU-POWER HPC END MILLS
ALU-CUT END MILLS
G-CUT
CRX S END MILLS
K-2 END MILLS
GENERAL CARBIDE END MILLS
ONLY ONE COATED PM60 END MILLS
TANK-POWER END MILLS
GENERAL HSS END MILLS
MILLING CUTTERS
TECHNICAL DATA

# 4G MILL END MILLS

PLAIN SHANK **SEME01** SERIES

## CARBIDE, 4 FLUTE MULTIPLE HELIX CORNER RADIUS (Short, Regular, Long Shank)
## 硬质合金，4刃 不等螺旋 圆鼻 (短刃, 普通刃长, 长柄)

- ▶ New coating and tool geometry applied resulting outstanding cutting abilities and wear resistance.
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- ▶加工模具产业的预硬钢(HRc55以下)表现出色
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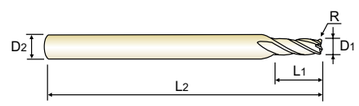


CARBIDE | 4 | 27°/30° | R ±0.02 | PLAIN

D<Ø3, 30° HELIX

p.C274-275

Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| - | - | POWER MILLING CHUCK | D161 - 176 |
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Unit(单位) : mm

| EDP No. | Corner Radius 圆弧角 R | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Overall Length 全长 L2 | Remark 备注 |
|---|---|---|---|---|---|---|
| SEME0101503E | R0.3 | 1.5 | 6 | 4 | 50 | - |
| SEME0101505E | R0.5 | 1.5 | 6 | 4 | 50 | - |
| SEME01020014SE | R0.1 | 2.0 | 4 | 6 | 50 | 4mm Shank |
| SEME01020024SE | R0.2 | 2.0 | 4 | 6 | 50 | 4mm Shank |
| SEME01020034SE | R0.3 | 2.0 | 4 | 6 | 50 | 4mm Shank |
| SEME01020054SE | R0.5 | 2.0 | 4 | 6 | 50 | 4mm Shank |
| SEME0102001E | R0.1 | 2.0 | 6 | 6 | 50 | - |
| SEME0102002E | R0.2 | 2.0 | 6 | 6 | 50 | - |
| SEME0102003E | R0.3 | 2.0 | 6 | 6 | 50 | - |
| SEME0102005E | R0.5 | 2.0 | 6 | 6 | 50 | - |
| SEME01025014SE | R0.1 | 2.5 | 4 | 7 | 60 | 4mm Shank |
| SEME01025024SE | R0.2 | 2.5 | 4 | 7 | 60 | 4mm Shank |
| SEME01025034SE | R0.3 | 2.5 | 4 | 7 | 60 | 4mm Shank |
| SEME01025054SE | R0.5 | 2.5 | 4 | 7 | 60 | 4mm Shank |
| SEME0102501E | R0.1 | 2.5 | 6 | 7 | 60 | - |
| SEME0102502E | R0.2 | 2.5 | 6 | 7 | 60 | - |
| SEME0102503E | R0.3 | 2.5 | 6 | 7 | 60 | - |
| SEME0102505E | R0.5 | 2.5 | 6 | 7 | 60 | - |
| SEME0103001E | R0.1 | 3.0 | 6 | 8 | 60 | - |
| SEME0103002E | R0.2 | 3.0 | 6 | 8 | 60 | - |
| SEME0103003E | R0.3 | 3.0 | 6 | 8 | 60 | - |
| SEME0103005E | R0.5 | 3.0 | 6 | 8 | 60 | - |
| SEME0103010E | R1.0 | 3.0 | 6 | 8 | 60 | - |
| SEME0103501E | R0.1 | 3.5 | 6 | 10 | 70 | - |

▶ NEXT PAGE 下页

| Corner Radius Tolerance (mm) 圆弧角公差 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
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| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |

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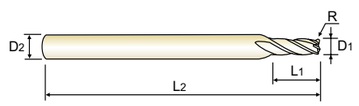


CARBIDE | 4 | 27°/30° | R ±0.02 | PLAIN

p.C274-275

D<Ø3, 30° HELIX

| Recommended Tool Holder | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| | END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
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| | - | - | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Corner Radius 圆弧角 R | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Overall Length 全长 L2 | Remark 备注 |
|---|---|---|---|---|---|---|
| SEME0103502E | R0.2 | 3.5 | 6 | 10 | 70 | - |
| SEME0103503E | R0.3 | 3.5 | 6 | 10 | 70 | - |
| SEME0103505E | R0.5 | 3.5 | 6 | 10 | 70 | - |
| SEME01040014SE | R0.1 | 4.0 | 4 | 10 | 70 | 4mm Shank |
| SEME01040024SE | R0.2 | 4.0 | 4 | 10 | 70 | 4mm Shank |
| SEME01040034SE | R0.3 | 4.0 | 4 | 10 | 70 | 4mm Shank |
| SEME01040054SE | R0.5 | 4.0 | 4 | 10 | 70 | 4mm Shank |
| SEME01040104SE | R1.0 | 4.0 | 4 | 10 | 70 | 4mm Shank |
| SEME01040011004SE | R0.1 | 4.0 | 4 | 10 | 100 | 4mm Shank |
| SEME01040021004SE | R0.2 | 4.0 | 4 | 10 | 100 | 4mm Shank |
| SEME01040031004SE | R0.3 | 4.0 | 4 | 10 | 100 | 4mm Shank |
| SEME01040051004SE | R0.5 | 4.0 | 4 | 10 | 100 | 4mm Shank |
| SEME01040101004SE | R1.0 | 4.0 | 4 | 10 | 100 | 4mm Shank |
| SEME0104001E | R0.1 | 4.0 | 6 | 10 | 70 | Regular |
| SEME0104002E | R0.2 | 4.0 | 6 | 10 | 70 | Regular |
| SEME0104003E | R0.3 | 4.0 | 6 | 10 | 70 | Regular |
| SEME0104005E | R0.5 | 4.0 | 6 | 10 | 70 | Regular |
| SEME0104010E | R1.0 | 4.0 | 6 | 10 | 70 | Regular |
| SEME0104501E | R0.1 | 4.5 | 6 | 11 | 80 | - |
| SEME0104502E | R0.2 | 4.5 | 6 | 11 | 80 | - |
| SEME0104503E | R0.3 | 4.5 | 6 | 11 | 80 | - |
| SEME0104505E | R0.5 | 4.5 | 6 | 11 | 80 | - |
| SEME0105001E | R0.1 | 5.0 | 6 | 13 | 90 | - |
| SEME0105002E | R0.2 | 5.0 | 6 | 13 | 90 | - |

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| Corner Radius Tolerance (mm) 圆弧角公差 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
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| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
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| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
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| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |



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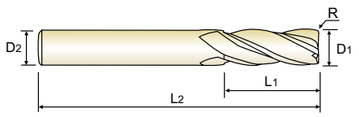


CARBIDE | 4 | 27°/30° | R ±0.02 | PLAIN

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D<Ø3, 30° HELIX

Recommended Tool Holder | Flat Shank | Page | Plain Shank | Page
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Unit(单位) : mm

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|---|---|---|---|---|---|---|
| SEME0105003E | R0.3 | 5.0 | 6 | 13 | 90 | - |
| SEME0105005E | R0.5 | 5.0 | 6 | 13 | 90 | - |
| SEME0105010E | R1.0 | 5.0 | 6 | 13 | 90 | - |
| SEME0105501E | R0.1 | 5.5 | 6 | 13 | 90 | - |
| SEME0105502E | R0.2 | 5.5 | 6 | 13 | 90 | - |
| SEME0105503E | R0.3 | 5.5 | 6 | 13 | 90 | - |
| SEME0105505E | R0.5 | 5.5 | 6 | 13 | 90 | - |
| SEME0105510E | R1.0 | 5.5 | 6 | 13 | 90 | - |
| SEME0106001060E | R0.1 | 6.0 | 6 | 15 | 60 | Short |
| SEME0106002060E | R0.2 | 6.0 | 6 | 15 | 60 | Short |
| SEME0106001E | R0.1 | 6.0 | 6 | 15 | 90 | Regular |
| SEME0106002E | R0.2 | 6.0 | 6 | 15 | 90 | Regular |
| SEME0106003E | R0.3 | 6.0 | 6 | 15 | 90 | Regular |
| SEME0106005E | R0.5 | 6.0 | 6 | 15 | 90 | Regular |
| SEME0106010E | R1.0 | 6.0 | 6 | 15 | 90 | Regular |
| SEME0106015E | R1.5 | 6.0 | 6 | 15 | 90 | Regular |
| SEME0106020E | R2.0 | 6.0 | 6 | 15 | 90 | Regular |
| SEME0106005110E | R0.5 | 6.0 | 6 | 15 | 110 | Long |
| SEME0106010110E | R1.0 | 6.0 | 6 | 15 | 110 | Long |
| SEME0106005130E | R0.5 | 6.0 | 6 | 15 | 130 | Long |
| SEME0106010130E | R1.0 | 6.0 | 6 | 15 | 130 | Long |
| SEME0107001E | R0.1 | 7.0 | 8 | 16 | 90 | - |
| SEME0107002E | R0.2 | 7.0 | 8 | 16 | 90 | - |
| SEME0107003E | R0.3 | 7.0 | 8 | 16 | 90 | - |

▶ NEXT PAGE 下页

| Corner Radius Tolerance (mm) 圆弧角公差 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|
| ± 0.02 | 0 ~ - 0.03 | h5 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |

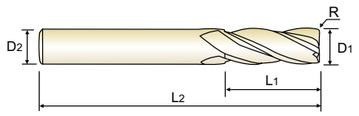
# 4G MILL END MILLS

PLAIN SHANK **SEME01** SERIES

## CARBIDE, 4 FLUTE MULTIPLE HELIX CORNER RADIUS (Short, Regular, Long Shank)
## 硬质合金，4刃 不等螺旋 圆鼻 (短刃, 普通刃长, 长柄)

- ▶ New coating and tool geometry applied resulting outstanding cutting abilities and wear resistance.
- ▶ Excellent performance when cutting prehardened steels, up to HRc55 which are used for molds & dies.
- ▶ Multiple Helix for 3.0mm and over 3.0mm diameter endmills minimizing vibration and decreasing wear in cutting.
- ▶ Available in short, regular and long shank end mills.

- ▶基于新涂层及形状, 实现出色切削性能和耐磨性
- ▶加工模具产业的预硬钢(HRc55以下)表现出色
- ▶基于Ø3.0mm以上采用不等螺旋, 减少切削震动及增加切削耐磨性
- ▶可提供多种产品包括短, 普通和长柄铣刀




CARBIDE | 4 | 27°/30° | R ±0.02 | PLAIN

p.C274-275

D<Ø3, 30° HELIX

| Recommended ToolHolder | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| | END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| | - | - | POWER MILLING CHUCK | D161 - 176 |
| | - | - | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Corner Radius 圆弧角 R | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Overall Length 全长 L2 | Remark 备注 |
|---|---|---|---|---|---|---|
| SEME0107005E | R0.5 | 7.0 | 8 | 16 | 90 | - |
| SEME0107010E | R1.0 | 7.0 | 8 | 16 | 90 | - |
| SEME0107020E | R2.0 | 7.0 | 8 | 16 | 90 | - |
| SEME0108003070E | R0.3 | 8.0 | 8 | 20 | 70 | Short |
| SEME0108005070E | R0.5 | 8.0 | 8 | 20 | 70 | Short |
| SEME0108010070E | R1.0 | 8.0 | 8 | 20 | 70 | Short |
| SEME0108001E | R0.1 | 8.0 | 8 | 20 | 100 | Regular |
| SEME0108002E | R0.2 | 8.0 | 8 | 20 | 100 | Regular |
| SEME0108003E | R0.3 | 8.0 | 8 | 20 | 100 | Regular |
| SEME0108005E | R0.5 | 8.0 | 8 | 20 | 100 | Regular |
| SEME0108010E | R1.0 | 8.0 | 8 | 20 | 100 | Regular |
| SEME0108015E | R1.5 | 8.0 | 8 | 20 | 100 | Regular |
| SEME0108020E | R2.0 | 8.0 | 8 | 20 | 100 | Regular |
| SEME0108025E | R2.5 | 8.0 | 8 | 20 | 100 | Regular |
| SEME0108030E | R3.0 | 8.0 | 8 | 20 | 100 | Regular |
| SEME0108005120E | R0.5 | 8.0 | 8 | 20 | 120 | Long |
| SEME0108010120E | R1.0 | 8.0 | 8 | 20 | 120 | Long |
| SEME0108005150E | R0.5 | 8.0 | 8 | 20 | 150 | Long |
| SEME0108010150E | R1.0 | 8.0 | 8 | 20 | 150 | Long |
| SEME0110003075E | R0.3 | 10.0 | 10 | 25 | 75 | Short |
| SEME0110005075E | R0.5 | 10.0 | 10 | 25 | 75 | Short |
| SEME0110010075E | R1.0 | 10.0 | 10 | 25 | 75 | Short |
| SEME0110001E | R0.1 | 10.0 | 10 | 25 | 100 | Regular |
| SEME0110002E | R0.2 | 10.0 | 10 | 25 | 100 | Regular |

▶ NEXT PAGE 下页

| Corner Radius Tolerance (mm) 圆弧角公差 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|
| ± 0.02 | 0 ~ - 0.03 | h5 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |



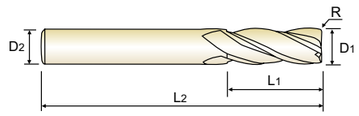
4G MILL END MILLS

PLAIN SHANK SEME01 SERIES

CARBIDE, 4 FLUTE MULTIPLE HELIX CORNER RADIUS (Short, Regular, Long Shank)
硬质合金，4刃 不等螺旋 圆鼻 (短刃, 普通刃长, 长柄)

- ▶ New coating and tool geometry applied resulting outstanding cutting abilities and wear resistance.
- ▶ Excellent performance when cutting prehardened steels, up to HRc55 which are used for molds & dies.
- ▶ Multiple Helix for 3.0mm and over 3.0mm diameter endmills minimizing vibration and decreasing wear in cutting.
- ▶ Available in short, regular and long shank end mills.

- ▶基于新涂层及形状, 实现出色切削性能和耐磨性
- ▶加工模具产业的预硬钢(HRc55以下)表现出色
- ▶基于Ø3.0mm以上采用不等螺旋, 减少切削震动及增加切削耐磨性
- ▶可提供多种产品包括短, 普通和长柄铣刀




CARBIDE | 4 | 27°/30° | R ±0.02 | PLAIN

p.C274-275

D<Ø3, 30° HELIX

Recommended ToolHolder | Flat Shank | Page | Plain Shank | Page
END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK / SHRINK FIT HOLDER | D15 - 46 / D47 - 72
- | - | POWER MILLING CHUCK | D161 - 176
- | - | ER COLLET CHUCK / SK SLIM CHUCK | D73 - 115 / D183 - 201

Unit(单位) : mm

| EDP No. | Corner Radius 圆弧角 R | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Overall Length 全长 L2 | Remark 备注 |
|---|---|---|---|---|---|---|
| SEME0110003E | R0.3 | 10.0 | 10 | 25 | 100 | Regular |
| SEME0110005E | R0.5 | 10.0 | 10 | 25 | 100 | Regular |
| SEME0110010E | R1.0 | 10.0 | 10 | 25 | 100 | Regular |
| SEME0110015E | R1.5 | 10.0 | 10 | 25 | 100 | Regular |
| SEME0110020E | R2.0 | 10.0 | 10 | 25 | 100 | Regular |
| SEME0110025E | R2.5 | 10.0 | 10 | 25 | 100 | Regular |
| SEME0110030E | R3.0 | 10.0 | 10 | 25 | 100 | Regular |
| SEME0110040E | R4.0 | 10.0 | 10 | 25 | 100 | Regular |
| SEME0110005130E | R0.5 | 10.0 | 10 | 22 | 130 | Long |
| SEME0110010130E | R1.0 | 10.0 | 10 | 22 | 130 | Long |
| SEME0110005150E | R0.5 | 10.0 | 10 | 22 | 150 | Long |
| SEME0110010150E | R1.0 | 10.0 | 10 | 22 | 150 | Long |
| SEME0111002E | R0.2 | 11.0 | 12 | 25 | 110 | - |
| SEME0111003E | R0.3 | 11.0 | 12 | 25 | 110 | - |
| SEME0111005E | R0.5 | 11.0 | 12 | 25 | 110 | - |
| SEME0111010E | R1.0 | 11.0 | 12 | 25 | 110 | - |
| SEME0111020E | R2.0 | 11.0 | 12 | 25 | 110 | - |
| SEME0112003080E | R0.3 | 12.0 | 12 | 30 | 80 | Short |
| SEME0112005080E | R0.5 | 12.0 | 12 | 30 | 80 | Short |
| SEME0112010080E | R1.0 | 12.0 | 12 | 30 | 80 | Short |
| SEME0112001E | R0.1 | 12.0 | 12 | 30 | 110 | Regular |
| SEME0112002E | R0.2 | 12.0 | 12 | 30 | 110 | Regular |
| SEME0112003E | R0.3 | 12.0 | 12 | 30 | 110 | Regular |
| SEME0112005E | R0.5 | 12.0 | 12 | 30 | 110 | Regular |

▶ NEXT PAGE 下页

| Corner Radius Tolerance (mm) 圆弧角公差 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|
| ± 0.02 | 0 ~ - 0.03 | h5 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |

# 4G MILL END MILLS

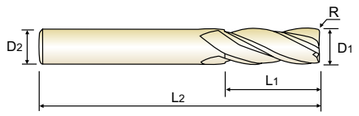
PLAIN SHANK **SEME01** SERIES

## CARBIDE, 4 FLUTE MULTIPLE HELIX CORNER RADIUS (Short, Regular, Long Shank)

## 硬质合金，4刃 不等螺旋 圆鼻 (短刃, 普通刃长, 长柄)

- ▶ New coating and tool geometry applied resulting outstanding cutting abilities and wear resistance.
- ▶ Excellent performance when cutting prehardened steels, up to HRc55 which are used for molds & dies.
- ▶ Multiple Helix for 3.0mm and over 3.0mm diameter endmills minimizing vibration and decreasing wear in cutting.
- ▶ Available in short, regular and long shank end mills.

- ▶基于新涂层及形状, 实现出色切削性能和耐磨性
- ▶加工模具产业的预硬钢(HRc55以下)表现出色
- ▶基于Ø3.0mm以上采用不等螺旋, 减少切削震动及增加切削耐磨性
- ▶可提供多种产品包括短, 普通和长柄铣刀




CARBIDE | 4 | 27°/30° | R ±0.02 | PLAIN

p.C274-275

| Recommended ToolHolder | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| | END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| | - | - | POWER MILLING CHUCK | D161 - 176 |
| | - | - | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

D<Ø3, 30° HELIX

Unit(单位) : mm

| EDP No. | Corner Radius 圆弧角 R | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Overall Length 全长 L2 | Remark 备注 |
|---|---|---|---|---|---|---|
| SEME0112010E | R1.0 | **12.0** | 12 | 30 | 110 | Regular |
| SEME0112015E | R1.5 | **12.0** | 12 | 30 | 110 | Regular |
| SEME0112020E | R2.0 | **12.0** | 12 | 30 | 110 | Regular |
| SEME0112025E | R2.5 | **12.0** | 12 | 30 | 110 | Regular |
| SEME0112030E | R3.0 | **12.0** | 12 | 30 | 110 | Regular |
| SEME0112040E | R4.0 | **12.0** | 12 | 30 | 110 | Regular |
| SEME0112050E | R5.0 | **12.0** | 12 | 30 | 110 | Regular |
| SEME0112005130E | R0.5 | **12.0** | 12 | 30 | 130 | Long |
| SEME0112010130E | R1.0 | **12.0** | 12 | 30 | 130 | Long |
| SEME0112005150E | R0.5 | **12.0** | 12 | 30 | 150 | Long |
| SEME0112010150E | R1.0 | **12.0** | 12 | 30 | 150 | Long |
| SEME0114005E | R0.5 | **14.0** | 16 | 35 | 150 | - |
| SEME0114010E | R1.0 | **14.0** | 16 | 35 | 150 | - |
| SEME0114020E | R2.0 | **14.0** | 16 | 35 | 150 | - |
| SEME0116005E | R0.5 | **16.0** | 16 | 32 | 150 | - |
| SEME0116010E | R1.0 | **16.0** | 16 | 32 | 150 | - |
| SEME0116015E | R1.5 | **16.0** | 16 | 32 | 150 | - |
| SEME0116020E | R2.0 | **16.0** | 16 | 32 | 150 | - |
| SEME0120005E | R0.5 | **20.0** | 20 | 38 | 150 | - |
| SEME0120010E | R1.0 | **20.0** | 20 | 38 | 150 | - |
| SEME0120015E | R1.5 | **20.0** | 20 | 38 | 150 | - |
| SEME0120020E | R2.0 | **20.0** | 20 | 38 | 150 | - |

| Corner Radius Tolerance (mm) 圆弧角公差 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|
| ± 0.02 | 0 ~ - 0.03 | h5 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |



# 4G MILL END MILLS

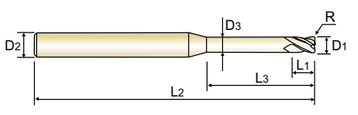
PLAIN SHANK **SEME64** SERIES

## CARBIDE, 4 FLUTE MULTIPLE HELIX CORNER RADIUS with EXTENDED NECK

## 硬质合金，4刃 不等螺旋 圆鼻 颈部加长

- ▶ New coating and tool geometry applied resulting outstanding cutting abilities and wear resistance.
- ▶ Excellent performance when cutting prehardened steels, up to HRc55 which are used for molds & dies.
- ▶Multiple Helix for 3.0mm and over 3.0mm diameter endmills minimizing vibration and decreasing wear in cutting.

- ▶基于新涂层及形状, 实现出色切削性能和耐磨性
- ▶加工模具产业的预硬钢(HRc55以下)表现出色
- ▶基于Ø3.0mm以上采用不等螺旋, 减少切削震动及增加切削耐磨性




CARBIDE | 4 | 27°/30° | R ±0.02 | PLAIN

p.C276-279

| Recommended ToolHolder | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| | END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| | - | - | POWER MILLING CHUCK | D161 - 176 |
| | - | - | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

D<Ø3, 30° HELIX

Unit(单位) : mm

| EDP No. | Corner Radius 圆弧角 R | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Length Below Shank 颈长 L3 | Overall Length 全长 L2 | Neck Diameter 颈径 D3 | Remark 备注 |
|---|---|---|---|---|---|---|---|---|
| SEME6401000503E | R0.05 | **1.0** | 4 | 1.5 | 3 | 50 | 0.95 | - |
| SEME6401000504E | R0.05 | **1.0** | 4 | 1.5 | 4 | 50 | 0.95 | - |
| SEME6401000506E | R0.05 | **1.0** | 4 | 1.5 | 6 | 50 | 0.95 | - |
| SEME6401000508E | R0.05 | **1.0** | 4 | 1.5 | 8 | 50 | 0.95 | - |
| SEME6401000510E | R0.05 | **1.0** | 4 | 1.5 | 10 | 50 | 0.95 | - |
| SEME6401000512E | R0.05 | **1.0** | 4 | 1.5 | 12 | 50 | 0.95 | - |
| SEME6401000514E | R0.05 | **1.0** | 4 | 1.5 | 14 | 50 | 0.95 | - |
| SEME6401000516E | R0.05 | **1.0** | 4 | 1.5 | 16 | 50 | 0.95 | - |
| SEME6401000520E | R0.05 | **1.0** | 4 | 1.5 | 20 | 50 | 0.95 | - |
| SEME640100103E | R0.1 | **1.0** | 4 | 1.5 | 3 | 50 | 0.95 | - |
| SEME640100104E | R0.1 | **1.0** | 4 | 1.5 | 4 | 50 | 0.95 | - |
| SEME640100106E | R0.1 | **1.0** | 4 | 1.5 | 6 | 50 | 0.95 | - |
| SEME640100108E | R0.1 | **1.0** | 4 | 1.5 | 8 | 50 | 0.95 | - |
| SEME640100110E | R0.1 | **1.0** | 4 | 1.5 | 10 | 50 | 0.95 | - |
| SEME640100112E | R0.1 | **1.0** | 4 | 1.5 | 12 | 50 | 0.95 | - |
| SEME640100114E | R0.1 | **1.0** | 4 | 1.5 | 14 | 50 | 0.95 | - |
| SEME640100116E | R0.1 | **1.0** | 4 | 1.5 | 16 | 50 | 0.95 | - |
| SEME640100120E | R0.1 | **1.0** | 4 | 1.5 | 20 | 50 | 0.95 | - |
| SEME640100203E | R0.2 | **1.0** | 4 | 1.5 | 3 | 50 | 0.95 | - |
| SEME640100204E | R0.2 | **1.0** | 4 | 1.5 | 4 | 50 | 0.95 | - |
| SEME640100206E | R0.2 | **1.0** | 4 | 1.5 | 6 | 50 | 0.95 | - |
| SEME640100208E | R0.2 | **1.0** | 4 | 1.5 | 8 | 50 | 0.95 | - |
| SEME640100210E | R0.2 | **1.0** | 4 | 1.5 | 10 | 50 | 0.95 | - |
| SEME640100212E | R0.2 | **1.0** | 4 | 1.5 | 12 | 50 | 0.95 | - |

▶ NEXT PAGE 下页

| Corner Radius Tolerance (mm) 圆弧角公差 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|
| ± 0.02 | 0 ~ - 0.03 | h5 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |

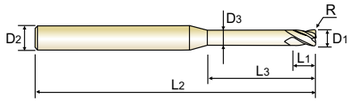
# 4G MILL END MILLS

PLAIN SHANK **SEME64** SERIES

## CARBIDE, 4 FLUTE MULTIPLE HELIX CORNER RADIUS with EXTENDED NECK
## 硬质合金，4刃 不等螺旋 圆鼻 颈部加长

▶ New coating and tool geometry applied resulting outstanding cutting abilities and wear resistance.
▶ Excellent performance when cutting prehardened steels, up to HRc55 which are used for molds & dies.
▶Multiple Helix for 3.0mm and over 3.0mm diameter endmills minimizing vibration and decreasing wear in cutting.

▶基于新涂层及形状, 实现出色切削性能和耐磨性
▶加工模具产业的预硬钢(HRc55以下)表现出色
▶基于Ø3.0mm以上采用不等螺旋,
减少切削震动及增加切削耐磨性




CARBIDE | 4 | 27°/30° | R ±0.02 | PLAIN

D<Ø3, 30° HELIX

p.C276-279

Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| ◎ | - | - | POWER MILLING CHUCK | D161 - 176 |
| ○ | - | - | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Corner Radius 圆弧角 R | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Length Below Shank 颈长 L3 | Overall Length 全长 L2 | Neck Diameter 颈径 D3 | Remark 备注 |
|---|---|---|---|---|---|---|---|---|
| SEME640100214E | R0.2 | 1.0 | 4 | 1.5 | 14 | 50 | 0.95 | - |
| SEME640100216E | R0.2 | 1.0 | 4 | 1.5 | 16 | 50 | 0.95 | - |
| SEME640100220E | R0.2 | 1.0 | 4 | 1.5 | 20 | 50 | 0.95 | - |
| SEME640100303E | R0.3 | 1.0 | 4 | 1.5 | 3 | 50 | 0.95 | - |
| SEME640100304E | R0.3 | 1.0 | 4 | 1.5 | 4 | 50 | 0.95 | - |
| SEME640100306E | R0.3 | 1.0 | 4 | 1.5 | 6 | 50 | 0.95 | - |
| SEME640100308E | R0.3 | 1.0 | 4 | 1.5 | 8 | 50 | 0.95 | - |
| SEME640100310E | R0.3 | 1.0 | 4 | 1.5 | 10 | 50 | 0.95 | - |
| SEME640100312E | R0.3 | 1.0 | 4 | 1.5 | 12 | 50 | 0.95 | - |
| SEME640100314E | R0.3 | 1.0 | 4 | 1.5 | 14 | 50 | 0.95 | - |
| SEME640100316E | R0.3 | 1.0 | 4 | 1.5 | 16 | 50 | 0.95 | - |
| SEME640100320E | R0.3 | 1.0 | 4 | 1.5 | 20 | 50 | 0.95 | - |
| SEME6401200503E | R0.05 | 1.2 | 4 | 1.8 | 3 | 50 | 1.15 | - |
| SEME6401200504E | R0.05 | 1.2 | 4 | 1.8 | 4 | 50 | 1.15 | - |
| SEME6401200506E | R0.05 | 1.2 | 4 | 1.8 | 6 | 50 | 1.15 | - |
| SEME6401200508E | R0.05 | 1.2 | 4 | 1.8 | 8 | 50 | 1.15 | - |
| SEME6401200510E | R0.05 | 1.2 | 4 | 1.8 | 10 | 50 | 1.15 | - |
| SEME6401200512E | R0.05 | 1.2 | 4 | 1.8 | 12 | 50 | 1.15 | - |
| SEME6401200516E | R0.05 | 1.2 | 4 | 1.8 | 16 | 50 | 1.15 | - |
| SEME6401200520E | R0.05 | 1.2 | 4 | 1.8 | 20 | 50 | 1.15 | - |
| SEME640120103E | R0.1 | 1.2 | 4 | 1.8 | 3 | 50 | 1.15 | - |
| SEME640120104E | R0.1 | 1.2 | 4 | 1.8 | 4 | 50 | 1.15 | - |
| SEME640120106E | R0.1 | 1.2 | 4 | 1.8 | 6 | 50 | 1.15 | - |
| SEME640120108E | R0.1 | 1.2 | 4 | 1.8 | 8 | 50 | 1.15 | - |

▶ NEXT PAGE 下页

| Corner Radius Tolerance (mm) 圆弧角公差 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|
| ± 0.02 | 0 ~ - 0.03 | h5 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |



4G MILL END MILLS
PLAIN SHANK SEME64 SERIES
CARBIDE, 4 FLUTE MULTIPLE HELIX CORNER RADIUS with EXTENDED NECK
硬质合金，4刃 不等螺旋 圆鼻 颈部加长
▶ New coating and tool geometry applied resulting outstanding cutting abilities and wear resistance.
▶ Excellent performance when cutting prehardened steels, up to HRc55 which are used for molds & dies.
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▶加工模具产业的预硬钢(HRc55以下)表现出色
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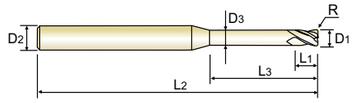
减少切削震动及增加切削耐磨性




CARBIDE | 4 | 27°/30° | R ±0.02 | PLAIN
D<Ø3, 30° HELIX
p.C276-279
Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| ◎ | - | - | POWER MILLING CHUCK | D161 - 176 |
| ○ | - | - | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Corner Radius 圆弧角 R | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Length Below Shank 颈长 L3 | Overall Length 全长 L2 | Neck Diameter 颈径 D3 | Remark 备注 |
|---|---|---|---|---|---|---|---|---|
| SEME640120110E | R0.1 | 1.2 | 4 | 1.8 | 10 | 50 | 1.15 | - |
| SEME640120112E | R0.1 | 1.2 | 4 | 1.8 | 12 | 50 | 1.15 | - |
| SEME640120116E | R0.1 | 1.2 | 4 | 1.8 | 16 | 50 | 1.15 | - |
| SEME640120120E | R0.1 | 1.2 | 4 | 1.8 | 20 | 50 | 1.15 | - |
| SEME640120203E | R0.2 | 1.2 | 4 | 1.8 | 3 | 50 | 1.15 | - |
| SEME640120204E | R0.2 | 1.2 | 4 | 1.8 | 4 | 50 | 1.15 | - |
| SEME640120206E | R0.2 | 1.2 | 4 | 1.8 | 6 | 50 | 1.15 | - |
| SEME640120208E | R0.2 | 1.2 | 4 | 1.8 | 8 | 50 | 1.15 | - |
| SEME640120210E | R0.2 | 1.2 | 4 | 1.8 | 10 | 50 | 1.15 | - |
| SEME640120212E | R0.2 | 1.2 | 4 | 1.8 | 12 | 50 | 1.15 | - |
| SEME640120216E | R0.2 | 1.2 | 4 | 1.8 | 16 | 50 | 1.15 | - |
| SEME640120220E | R0.2 | 1.2 | 4 | 1.8 | 20 | 50 | 1.15 | - |
| SEME640120303E | R0.3 | 1.2 | 4 | 1.8 | 3 | 50 | 1.15 | - |
| SEME640120304E | R0.3 | 1.2 | 4 | 1.8 | 4 | 50 | 1.15 | - |
| SEME640120306E | R0.3 | 1.2 | 4 | 1.8 | 6 | 50 | 1.15 | - |
| SEME640120308E | R0.3 | 1.2 | 4 | 1.8 | 8 | 50 | 1.15 | - |
| SEME640120310E | R0.3 | 1.2 | 4 | 1.8 | 10 | 50 | 1.15 | - |
| SEME640120312E | R0.3 | 1.2 | 4 | 1.8 | 12 | 50 | 1.15 | - |
| SEME640120316E | R0.3 | 1.2 | 4 | 1.8 | 16 | 50 | 1.15 | - |
| SEME640120320E | R0.3 | 1.2 | 4 | 1.8 | 20 | 50 | 1.15 | - |
| SEME6401500504E | R0.05 | 1.5 | 4 | 2.3 | 4 | 50 | 1.45 | - |
| SEME6401500506E | R0.05 | 1.5 | 4 | 2.3 | 6 | 50 | 1.45 | - |
| SEME6401500508E | R0.05 | 1.5 | 4 | 2.3 | 8 | 50 | 1.45 | - |
| SEME6401500510E | R0.05 | 1.5 | 4 | 2.3 | 10 | 50 | 1.45 | - |

▶ NEXT PAGE 下页

| Corner Radius Tolerance (mm) 圆弧角公差 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|
| ± 0.02 | 0 ~ - 0.03 | h5 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |

# 4G MILL END MILLS

PLAIN SHANK **SEME64** SERIES

## CARBIDE, 4 FLUTE MULTIPLE HELIX CORNER RADIUS with EXTENDED NECK
## 硬质合金，4刃 不等螺旋 圆鼻 颈部加长

- ▶ New coating and tool geometry applied resulting outstanding cutting abilities and wear resistance.
- ▶ Excellent performance when cutting prehardened steels, up to HRc55 which are used for molds & dies.
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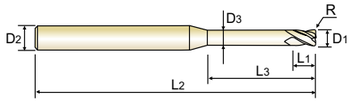
- ▶基于新涂层及形状, 实现出色切削性能和耐磨性
- ▶加工模具产业的预硬钢(HRc55以下)表现出色
- ▶基于Ø3.0mm以上采用不等螺旋, 减少切削震动及增加切削耐磨性




CARBIDE | 4 | 27°/30° | R ±0.02 | PLAIN

D<Ø3, 30° HELIX

p.C276-279

Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| ◎ | - | - | POWER MILLING CHUCK | D161 - 176 |
| ○ | - | - | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Corner Radius 圆弧角 R | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Length Below Shank 颈长 L3 | Overall Length 全长 L2 | Neck Diameter 颈径 D3 | Remark 备注 |
|---|---|---|---|---|---|---|---|---|
| SEME6401500512E | R0.05 | 1.5 | 4 | 2.3 | 12 | 50 | 1.45 | - |
| SEME6401500514E | R0.05 | 1.5 | 4 | 2.3 | 14 | 50 | 1.45 | - |
| SEME6401500516E | R0.05 | 1.5 | 4 | 2.3 | 16 | 50 | 1.45 | - |
| SEME6401500520E | R0.05 | 1.5 | 4 | 2.3 | 20 | 50 | 1.45 | - |
| SEME6401500522E | R0.05 | 1.5 | 4 | 2.3 | 22 | 60 | 1.45 | - |
| SEME6401500526E | R0.05 | 1.5 | 4 | 2.3 | 26 | 60 | 1.45 | - |
| SEME640150104E | R0.1 | 1.5 | 4 | 2.3 | 4 | 50 | 1.45 | - |
| SEME640150106E | R0.1 | 1.5 | 4 | 2.3 | 6 | 50 | 1.45 | - |
| SEME640150108E | R0.1 | 1.5 | 4 | 2.3 | 8 | 50 | 1.45 | - |
| SEME640150110E | R0.1 | 1.5 | 4 | 2.3 | 10 | 50 | 1.45 | - |
| SEME640150112E | R0.1 | 1.5 | 4 | 2.3 | 12 | 50 | 1.45 | - |
| SEME640150114E | R0.1 | 1.5 | 4 | 2.3 | 14 | 50 | 1.45 | - |
| SEME640150116E | R0.1 | 1.5 | 4 | 2.3 | 16 | 50 | 1.45 | - |
| SEME640150118E | R0.1 | 1.5 | 4 | 2.3 | 18 | 50 | 1.45 | |
| SEME640150120E | R0.1 | 1.5 | 4 | 2.3 | 20 | 50 | 1.45 | - |
| SEME640150122E | R0.1 | 1.5 | 4 | 2.3 | 22 | 60 | 1.45 | - |
| SEME640150126E | R0.1 | 1.5 | 4 | 2.3 | 26 | 60 | 1.45 | - |
| SEME640150204E | R0.2 | 1.5 | 4 | 2.3 | 4 | 50 | 1.45 | - |
| SEME640150206E | R0.2 | 1.5 | 4 | 2.3 | 6 | 50 | 1.45 | - |
| SEME640150208E | R0.2 | 1.5 | 4 | 2.3 | 8 | 50 | 1.45 | - |
| SEME640150210E | R0.2 | 1.5 | 4 | 2.3 | 10 | 50 | 1.45 | - |
| SEME640150212E | R0.2 | 1.5 | 4 | 2.3 | 12 | 50 | 1.45 | - |
| SEME640150214E | R0.2 | 1.5 | 4 | 2.3 | 14 | 50 | 1.45 | - |
| SEME640150216E | R0.2 | 1.5 | 4 | 2.3 | 16 | 50 | 1.45 | - |

▶ NEXT PAGE 下页

| Corner Radius Tolerance (mm) 圆弧角公差 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|
| ± 0.02 | 0 ~ - 0.03 | h5 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |



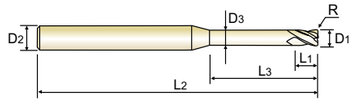
4G MILL END MILLS

PLAIN SHANK SEME64 SERIES

CARBIDE, 4 FLUTE MULTIPLE HELIX CORNER RADIUS with EXTENDED NECK
硬质合金，4刃 不等螺旋 圆鼻 颈部加长

▶ New coating and tool geometry applied resulting outstanding cutting abilities and wear resistance.
▶ Excellent performance when cutting prehardened steels, up to HRc55 which are used for molds & dies.
▶Multiple Helix for 3.0mm and over 3.0mm diameter endmills minimizing vibration and decreasing wear in cutting.

▶基于新涂层及形状, 实现出色切削性能和耐磨性
▶加工模具产业的预硬钢(HRc55以下)表现出色
▶基于Ø3.0mm以上采用不等螺旋, 减少切削震动及增加切削耐磨性




CARBIDE | 4 | 27°/30° | R ±0.02 | PLAIN

D<Ø3, 30° HELIX

p.C276-279

Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| ◎ | - | - | POWER MILLING CHUCK | D161 - 176 |
| ○ | - | - | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Corner Radius 圆弧角 R | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Length Below Shank 颈长 L3 | Overall Length 全长 L2 | Neck Diameter 颈径 D3 | Remark 备注 |
|---|---|---|---|---|---|---|---|---|
| SEME640150220E | R0.2 | 1.5 | 4 | 2.3 | 20 | 50 | 1.45 | - |
| SEME640150222E | R0.2 | 1.5 | 4 | 2.3 | 22 | 60 | 1.45 | - |
| SEME640150226E | R0.2 | 1.5 | 4 | 2.3 | 26 | 60 | 1.45 | - |
| SEME640150304E | R0.3 | 1.5 | 4 | 2.3 | 4 | 50 | 1.45 | - |
| SEME640150306E | R0.3 | 1.5 | 4 | 2.3 | 6 | 50 | 1.45 | - |
| SEME640150308E | R0.3 | 1.5 | 4 | 2.3 | 8 | 50 | 1.45 | - |
| SEME640150310E | R0.3 | 1.5 | 4 | 2.3 | 10 | 50 | 1.45 | - |
| SEME640150312E | R0.3 | 1.5 | 4 | 2.3 | 12 | 50 | 1.45 | - |
| SEME640150314E | R0.3 | 1.5 | 4 | 2.3 | 14 | 50 | 1.45 | - |
| SEME640150316E | R0.3 | 1.5 | 4 | 2.3 | 16 | 50 | 1.45 | - |
| SEME640150320E | R0.3 | 1.5 | 4 | 2.3 | 20 | 50 | 1.45 | - |
| SEME640150322E | R0.3 | 1.5 | 4 | 2.3 | 22 | 60 | 1.45 | - |
| SEME640150326E | R0.3 | 1.5 | 4 | 2.3 | 26 | 60 | 1.45 | - |
| SEME640150504E | R0.5 | 1.5 | 4 | 2.3 | 4 | 50 | 1.45 | - |
| SEME640150506E | R0.5 | 1.5 | 4 | 2.3 | 6 | 50 | 1.45 | - |
| SEME640150508E | R0.5 | 1.5 | 4 | 2.3 | 8 | 50 | 1.45 | - |
| SEME640150510E | R0.5 | 1.5 | 4 | 2.3 | 10 | 50 | 1.45 | - |
| SEME640150512E | R0.5 | 1.5 | 4 | 2.3 | 12 | 50 | 1.45 | - |
| SEME640150514E | R0.5 | 1.5 | 4 | 2.3 | 14 | 50 | 1.45 | - |
| SEME640150516E | R0.5 | 1.5 | 4 | 2.3 | 16 | 50 | 1.45 | - |
| SEME640150520E | R0.5 | 1.5 | 4 | 2.3 | 20 | 50 | 1.45 | - |
| SEME640150522E | R0.5 | 1.5 | 4 | 2.3 | 22 | 60 | 1.45 | - |
| SEME640150526E | R0.5 | 1.5 | 4 | 2.3 | 26 | 60 | 1.45 | - |
| SEME640200106E | R0.1 | 2.0 | 4 | 3 | 6 | 50 | 1.95 | - |

▶ NEXT PAGE 下页

| Corner Radius Tolerance (mm) 圆弧角公差 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|
| ± 0.02 | 0 ~ - 0.03 | h5 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |

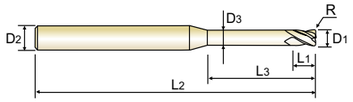
# 4G MILL END MILLS

PLAIN SHANK **SEME64** SERIES

## CARBIDE, 4 FLUTE MULTIPLE HELIX CORNER RADIUS with EXTENDED NECK
## 硬质合金，4刃 不等螺旋 圆鼻 颈部加长

▶ New coating and tool geometry applied resulting outstanding cutting abilities and wear resistance.
▶ Excellent performance when cutting prehardened steels, up to HRc55 which are used for molds & dies.
▶Multiple Helix for 3.0mm and over 3.0mm diameter endmills minimizing vibration and decreasing wear in cutting.

▶基于新涂层及形状, 实现出色切削性能和耐磨性
▶加工模具产业的预硬钢(HRc55以下)表现出色
▶基于Ø3.0mm以上采用不等螺旋,
减少切削震动及增加切削耐磨性




CARBIDE | 4 | 27°/30° | R ±0.02 | PLAIN

D<Ø3, 30° HELIX

p.C276-279

Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| ◎ | - | - | POWER MILLING CHUCK | D161 - 176 |
| ○ | - | - | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Corner Radius 圆弧角 R | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Length Below Shank 颈长 L3 | Overall Length 全长 L2 | Neck Diameter 颈径 D3 | Remark 备注 |
|---|---|---|---|---|---|---|---|---|
| SEME640200108E | R0.1 | 2.0 | 4 | 3 | 8 | 50 | 1.95 | - |
| SEME640200110E | R0.1 | 2.0 | 4 | 3 | 10 | 50 | 1.95 | - |
| SEME640200112E | R0.1 | 2.0 | 4 | 3 | 12 | 50 | 1.95 | - |
| SEME640200114E | R0.1 | 2.0 | 4 | 3 | 14 | 50 | 1.95 | - |
| SEME640200116E | R0.1 | 2.0 | 4 | 3 | 16 | 50 | 1.95 | - |
| SEME640200120E | R0.1 | 2.0 | 4 | 3 | 20 | 50 | 1.95 | - |
| SEME640200122E | R0.1 | 2.0 | 4 | 3 | 22 | 60 | 1.95 | - |
| SEME640200126E | R0.1 | 2.0 | 4 | 3 | 26 | 60 | 1.95 | - |
| SEME640200130E | R0.1 | 2.0 | 4 | 3 | 30 | 70 | 1.95 | - |
| SEME640200206E | R0.2 | 2.0 | 4 | 3 | 6 | 50 | 1.95 | - |
| SEME640200208E | R0.2 | 2.0 | 4 | 3 | 8 | 50 | 1.95 | - |
| SEME640200210E | R0.2 | 2.0 | 4 | 3 | 10 | 50 | 1.95 | - |
| SEME640200212E | R0.2 | 2.0 | 4 | 3 | 12 | 50 | 1.95 | - |
| SEME640200214E | R0.2 | 2.0 | 4 | 3 | 14 | 50 | 1.95 | - |
| SEME640200216E | R0.2 | 2.0 | 4 | 3 | 16 | 50 | 1.95 | - |
| SEME640200220E | R0.2 | 2.0 | 4 | 3 | 20 | 50 | 1.95 | - |
| SEME640200222E | R0.2 | 2.0 | 4 | 3 | 22 | 60 | 1.95 | - |
| SEME640200226E | R0.2 | 2.0 | 4 | 3 | 26 | 60 | 1.95 | - |
| SEME640200230E | R0.2 | 2.0 | 4 | 3 | 30 | 70 | 1.95 | - |
| SEME640200306E | R0.3 | 2.0 | 4 | 3 | 6 | 50 | 1.95 | - |
| SEME640200308E | R0.3 | 2.0 | 4 | 3 | 8 | 50 | 1.95 | - |
| SEME640200310E | R0.3 | 2.0 | 4 | 3 | 10 | 50 | 1.95 | - |
| SEME640200312E | R0.3 | 2.0 | 4 | 3 | 12 | 50 | 1.95 | - |
| SEME640200314E | R0.3 | 2.0 | 4 | 3 | 14 | 50 | 1.95 | - |

▶ NEXT PAGE 下页

| Corner Radius Tolerance (mm) 圆弧角公差 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|
| ± 0.02 | 0 ~ - 0.03 | h5 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |



CARBIDE
HSS
CBN END MILLS
i-Xmill END MILLS
i-SMART MODULAR END MILLS
X5070 END MILLS
4G MILL END MILLS
X-POWER PRO END MILLS
TitaNox-POWER END MILLS
SUS-CUT END MILLS
V7 PLUS END MILLS
ALU-POWER HPC END MILLS
ALU-CUT END MILLS
G-CUT
CRX S END MILLS
K-2 END MILLS
GENERAL CARBIDE END MILLS
ONLY ONE COATED PM60 END MILLS
TANK-POWER END MILLS
GENERAL HSS END MILLS
MILLING CUTTERS
TECHNICAL DATA

# 4G MILL END MILLS

PLAIN SHANK **SEME64** SERIES

## CARBIDE, 4 FLUTE MULTIPLE HELIX CORNER RADIUS with EXTENDED NECK
## 硬质合金，4刃 不等螺旋 圆鼻 颈部加长

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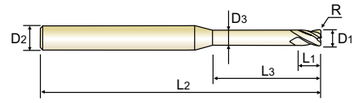
▶Multiple Helix for 3.0mm and over 3.0mm diameter endmills minimizing vibration and decreasing wear in cutting.

▶基于新涂层及形状, 实现出色切削性能和耐磨性
▶加工模具产业的预硬钢(HRc55以下)表现出色
▶基于Ø3.0mm以上采用不等螺旋,
减少切削震动及增加切削耐磨性




CARBIDE | 4 | 27°/30° | R ±0.02 | PLAIN

D<Ø3, 30° HELIX

p.C276-279

Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| ◎ | - | - | POWER MILLING CHUCK | D161 - 176 |
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Unit(单位) : mm

| EDP No. | Corner Radius 圆弧角 R | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Length Below Shank 颈长 L3 | Overall Length 全长 L2 | Neck Diameter 颈径 D3 | Remark 备注 |
|---|---|---|---|---|---|---|---|---|
| SEME640200316E | R0.3 | 2.0 | 4 | 3 | 16 | 50 | 1.95 | - |
| SEME640200320E | R0.3 | 2.0 | 4 | 3 | 20 | 50 | 1.95 | - |
| SEME640200322E | R0.3 | 2.0 | 4 | 3 | 22 | 60 | 1.95 | - |
| SEME640200326E | R0.3 | 2.0 | 4 | 3 | 26 | 60 | 1.95 | - |
| SEME640200330E | R0.3 | 2.0 | 4 | 3 | 30 | 70 | 1.95 | - |
| SEME640200506E | R0.5 | 2.0 | 4 | 3 | 6 | 50 | 1.95 | - |
| SEME640200508E | R0.5 | 2.0 | 4 | 3 | 8 | 50 | 1.95 | - |
| SEME640200510E | R0.5 | 2.0 | 4 | 3 | 10 | 50 | 1.95 | - |
| SEME640200512E | R0.5 | 2.0 | 4 | 3 | 12 | 50 | 1.95 | - |
| SEME640200514E | R0.5 | 2.0 | 4 | 3 | 14 | 50 | 1.95 | - |
| SEME640200516E | R0.5 | 2.0 | 4 | 3 | 16 | 50 | 1.95 | - |
| SEME640200520E | R0.5 | 2.0 | 4 | 3 | 20 | 50 | 1.95 | - |
| SEME640200522E | R0.5 | 2.0 | 4 | 3 | 22 | 60 | 1.95 | - |
| SEME640200526E | R0.5 | 2.0 | 4 | 3 | 26 | 60 | 1.95 | - |
| SEME640200530E | R0.5 | 2.0 | 4 | 3 | 30 | 70 | 1.95 | - |
| SEME640250108E | R0.1 | 2.5 | 4 | 4 | 8 | 50 | 2.40 | - |
| SEME640250110E | R0.1 | 2.5 | 4 | 4 | 10 | 50 | 2.40 | - |
| SEME640250112E | R0.1 | 2.5 | 4 | 4 | 12 | 50 | 2.40 | - |
| SEME640250114E | R0.1 | 2.5 | 4 | 4 | 14 | 50 | 2.40 | - |
| SEME640250116E | R0.1 | 2.5 | 4 | 4 | 16 | 50 | 2.40 | - |
| SEME640250120E | R0.1 | 2.5 | 4 | 4 | 20 | 50 | 2.40 | - |
| SEME640250126E | R0.1 | 2.5 | 4 | 4 | 26 | 60 | 2.40 | - |
| SEME640250130E | R0.1 | 2.5 | 4 | 4 | 30 | 70 | 2.40 | - |
| SEME640250208E | R0.2 | 2.5 | 4 | 4 | 8 | 50 | 2.40 | - |

▶ NEXT PAGE 下页

| Corner Radius Tolerance (mm) 圆弧角公差 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
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| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
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| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |

# 4G MILL END MILLS

PLAIN SHANK **SEME64** SERIES

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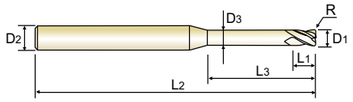
▶加工模具产业的预硬钢(HRc55以下)表现出色
▶基于Ø3.0mm以上采用不等螺旋,
减少切削震动及增加切削耐磨性




CARBIDE | 4 | 27°/30° | R ±0.02 | PLAIN

D<Ø3, 30° HELIX

p.C276-279

Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| ◎ | - | - | POWER MILLING CHUCK | D161 - 176 |
| ○ | - | - | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Corner Radius 圆弧角 R | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Length Below Shank 颈长 L3 | Overall Length 全长 L2 | Neck Diameter 颈径 D3 | Remark 备注 |
|---|---|---|---|---|---|---|---|---|
| SEME640250210E | R0.2 | 2.5 | 4 | 4 | 10 | 50 | 2.40 | - |
| SEME640250212E | R0.2 | 2.5 | 4 | 4 | 12 | 50 | 2.40 | - |
| SEME640250214E | R0.2 | 2.5 | 4 | 4 | 14 | 50 | 2.40 | - |
| SEME640250216E | R0.2 | 2.5 | 4 | 4 | 16 | 50 | 2.40 | - |
| SEME640250220E | R0.2 | 2.5 | 4 | 4 | 20 | 50 | 2.40 | - |
| SEME640250226E | R0.2 | 2.5 | 4 | 4 | 26 | 60 | 2.40 | - |
| SEME640250230E | R0.2 | 2.5 | 4 | 4 | 30 | 70 | 2.40 | - |
| SEME640250308E | R0.3 | 2.5 | 4 | 4 | 8 | 50 | 2.40 | - |
| SEME640250310E | R0.3 | 2.5 | 4 | 4 | 10 | 50 | 2.40 | - |
| SEME640250312E | R0.3 | 2.5 | 4 | 4 | 12 | 50 | 2.40 | - |
| SEME640250314E | R0.3 | 2.5 | 4 | 4 | 14 | 50 | 2.40 | - |
| SEME640250316E | R0.3 | 2.5 | 4 | 4 | 16 | 50 | 2.40 | - |
| SEME640250320E | R0.3 | 2.5 | 4 | 4 | 20 | 50 | 2.40 | - |
| SEME640250326E | R0.3 | 2.5 | 4 | 4 | 26 | 60 | 2.40 | - |
| SEME640250330E | R0.3 | 2.5 | 4 | 4 | 30 | 70 | 2.40 | - |
| SEME640250508E | R0.5 | 2.5 | 4 | 4 | 8 | 50 | 2.40 | - |
| SEME640250510E | R0.5 | 2.5 | 4 | 4 | 10 | 50 | 2.40 | - |
| SEME640250512E | R0.5 | 2.5 | 4 | 4 | 12 | 50 | 2.40 | - |
| SEME640250514E | R0.5 | 2.5 | 4 | 4 | 14 | 50 | 2.40 | - |
| SEME640250516E | R0.5 | 2.5 | 4 | 4 | 16 | 50 | 2.40 | - |
| SEME640250520E | R0.5 | 2.5 | 4 | 4 | 20 | 50 | 2.40 | - |
| SEME640250526E | R0.5 | 2.5 | 4 | 4 | 26 | 60 | 2.40 | - |
| SEME640250530E | R0.5 | 2.5 | 4 | 4 | 30 | 70 | 2.40 | - |
| SEME640300108E | R0.1 | 3.0 | 6 | 4.5 | 8 | 50 | 2.85 | - |

▶ NEXT PAGE 下页

| Corner Radius Tolerance (mm) 圆弧角公差 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|
| ± 0.02 | 0 ~ - 0.03 | h5 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |



CARBIDE
HSS
CBN END MILLS
i-Xmill END MILLS
i-SMART MODULAR END MILLS
X5070 END MILLS
4G MILL END MILLS
X-POWER PRO END MILLS
TitaNox-POWER END MILLS
SUS-CUT END MILLS
V7 PLUS END MILLS
ALU-POWER HPC END MILLS
ALU-CUT END MILLS
G-CUT END MILLS
CRX S END MILLS
K-2 END MILLS
GENERAL CARBIDE END MILLS
ONLY ONE COATED PM60 END MILLS
TANK-POWER END MILLS
GENERAL HSS END MILLS
MILLING CUTTERS
TECHNICAL DATA

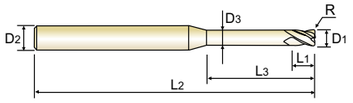
# 4G MILL END MILLS

PLAIN SHANK **SEME64** SERIES

## CARBIDE, 4 FLUTE MULTIPLE HELIX CORNER RADIUS with EXTENDED NECK
## 硬质合金，4刃 不等螺旋 圆鼻 颈部加长

▶ New coating and tool geometry applied resulting outstanding cutting abilities and wear resistance.
▶ Excellent performance when cutting prehardened steels, up to HRc55 which are used for molds & dies.
▶Multiple Helix for 3.0mm and over 3.0mm diameter endmills minimizing vibration and decreasing wear in cutting.

▶基于新涂层及形状, 实现出色切削性能和耐磨性
▶加工模具产业的预硬钢(HRc55以下)表现出色
▶基于Ø3.0mm以上采用不等螺旋,
减少切削震动及增加切削耐磨性




CARBIDE | 4 | 27°/30° | R ±0.02 | PLAIN

D<Ø3, 30° HELIX

p.C276-279

Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| ◎ | - | - | POWER MILLING CHUCK | D161 - 176 |
| ○ | - | - | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Corner Radius 圆弧角 R | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Length Below Shank 颈长 L3 | Overall Length 全长 L2 | Neck Diameter 颈径 D3 | Remark 备注 |
|---|---|---|---|---|---|---|---|---|
| SEME640300110E | R0.1 | 3.0 | 6 | 4.5 | 10 | 50 | 2.85 | - |
| SEME640300112E | R0.1 | 3.0 | 6 | 4.5 | 12 | 50 | 2.85 | - |
| SEME640300114E | R0.1 | 3.0 | 6 | 4.5 | 14 | 60 | 2.85 | - |
| SEME640300116E | R0.1 | 3.0 | 6 | 4.5 | 16 | 60 | 2.85 | - |
| SEME640300120E | R0.1 | 3.0 | 6 | 4.5 | 20 | 60 | 2.85 | - |
| SEME640300126E | R0.1 | 3.0 | 6 | 4.5 | 26 | 65 | 2.85 | - |
| SEME640300130E | R0.1 | 3.0 | 6 | 4.5 | 30 | 70 | 2.85 | - |
| SEME640300135E | R0.1 | 3.0 | 6 | 4.5 | 35 | 70 | 2.85 | - |
| SEME640300140E | R0.1 | 3.0 | 6 | 4.5 | 40 | 80 | 2.85 | - |
| SEME640300208E | R0.2 | 3.0 | 6 | 4.5 | 8 | 50 | 2.85 | - |
| SEME640300210E | R0.2 | 3.0 | 6 | 4.5 | 10 | 50 | 2.85 | - |
| SEME640300212E | R0.2 | 3.0 | 6 | 4.5 | 12 | 50 | 2.85 | - |
| SEME640300214E | R0.2 | 3.0 | 6 | 4.5 | 14 | 60 | 2.85 | - |
| SEME640300216E | R0.2 | 3.0 | 6 | 4.5 | 16 | 60 | 2.85 | - |
| SEME640300218E | R0.2 | 3.0 | 6 | 4.5 | 18 | 60 | 2.85 | - |
| SEME640300220E | R0.2 | 3.0 | 6 | 4.5 | 20 | 60 | 2.85 | - |
| SEME640300226E | R0.2 | 3.0 | 6 | 4.5 | 26 | 65 | 2.85 | - |
| SEME640300230E | R0.2 | 3.0 | 6 | 4.5 | 30 | 70 | 2.85 | - |
| SEME640300235E | R0.2 | 3.0 | 6 | 4.5 | 35 | 70 | 2.85 | - |
| SEME640300240E | R0.2 | 3.0 | 6 | 4.5 | 40 | 80 | 2.85 | - |
| SEME640300308E | R0.3 | 3.0 | 6 | 4.5 | 8 | 50 | 2.85 | - |
| SEME640300310E | R0.3 | 3.0 | 6 | 4.5 | 10 | 50 | 2.85 | - |
| SEME640300312E | R0.3 | 3.0 | 6 | 4.5 | 12 | 50 | 2.85 | - |
| SEME640300314E | R0.3 | 3.0 | 6 | 4.5 | 14 | 60 | 2.85 | - |

▶ NEXT PAGE 下页

| Corner Radius Tolerance (mm) 圆弧角公差 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|
| ± 0.02 | 0 ~ - 0.03 | h5 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |

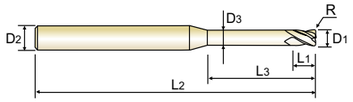
# 4G MILL END MILLS

PLAIN SHANK **SEME64** SERIES

## CARBIDE, 4 FLUTE MULTIPLE HELIX CORNER RADIUS with EXTENDED NECK
## 硬质合金，4刃 不等螺旋 圆鼻 颈部加长

- ▶ New coating and tool geometry applied resulting outstanding cutting abilities and wear resistance.
- ▶ Excellent performance when cutting prehardened steels, up to HRc55 which are used for molds & dies.
- ▶Multiple Helix for 3.0mm and over 3.0mm diameter endmills minimizing vibration and decreasing wear in cutting.

- ▶基于新涂层及形状, 实现出色切削性能和耐磨性
- ▶加工模具产业的预硬钢(HRc55以下)表现出色
- ▶基于Ø3.0mm以上采用不等螺旋, 减少切削震动及增加切削耐磨性




CARBIDE | 4 | 27°/30° | R ±0.02 | PLAIN

p.C276-279

| Recommended Tool Holder | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| | END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| | - | - | POWER MILLING CHUCK | D161 - 176 |
| | - | - | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

D<Ø3, 30˚ HELIX

Unit(单位) : mm

| EDP No. | Corner Radius 圆弧角 R | Mill Diameter 直径 $D_1$ | Shank Diameter 柄径 $D_2$ | Length of Cut 刃长 $L_1$ | Length Below Shank 颈长 $L_3$ | Overall Length 全长 $L_2$ | Neck Diameter 颈径 $D_3$ | Remark 备注 |
|---|---|---|---|---|---|---|---|---|
| SEME640300316E | R0.3 | **3.0** | 6 | 4.5 | 16 | 60 | 2.85 | - |
| SEME640300320E | R0.3 | **3.0** | 6 | 4.5 | 20 | 60 | 2.85 | - |
| SEME640300326E | R0.3 | **3.0** | 6 | 4.5 | 26 | 65 | 2.85 | - |
| SEME640300330E | R0.3 | **3.0** | 6 | 4.5 | 30 | 70 | 2.85 | - |
| SEME640300335E | R0.3 | **3.0** | 6 | 4.5 | 35 | 70 | 2.85 | - |
| SEME640300340E | R0.3 | **3.0** | 6 | 4.5 | 40 | 80 | 2.85 | - |
| SEME640300508E | R0.5 | **3.0** | 6 | 4.5 | 8 | 50 | 2.85 | - |
| SEME640300510E | R0.5 | **3.0** | 6 | 4.5 | 10 | 50 | 2.85 | - |
| SEME640300512E | R0.5 | **3.0** | 6 | 4.5 | 12 | 50 | 2.85 | - |
| SEME640300514E | R0.5 | **3.0** | 6 | 4.5 | 14 | 60 | 2.85 | - |
| SEME640300516E | R0.5 | **3.0** | 6 | 4.5 | 16 | 60 | 2.85 | - |
| SEME640300520E | R0.5 | **3.0** | 6 | 4.5 | 20 | 60 | 2.85 | - |
| SEME640300526E | R0.5 | **3.0** | 6 | 4.5 | 26 | 65 | 2.85 | - |
| SEME640300530E | R0.5 | **3.0** | 6 | 4.5 | 30 | 70 | 2.85 | - |
| SEME640300535E | R0.5 | **3.0** | 6 | 4.5 | 35 | 70 | 2.85 | - |
| SEME640300540E | R0.5 | **3.0** | 6 | 4.5 | 40 | 80 | 2.85 | - |
| SEME640301008E | R1.0 | **3.0** | 6 | 4.5 | 8 | 50 | 2.85 | - |
| SEME640301010E | R1.0 | **3.0** | 6 | 4.5 | 10 | 50 | 2.85 | - |
| SEME640301012E | R1.0 | **3.0** | 6 | 4.5 | 12 | 50 | 2.85 | - |
| SEME640301014E | R1.0 | **3.0** | 6 | 4.5 | 14 | 60 | 2.85 | - |
| SEME640301016E | R1.0 | **3.0** | 6 | 4.5 | 16 | 60 | 2.85 | - |
| SEME640301020E | R1.0 | **3.0** | 6 | 4.5 | 20 | 60 | 2.85 | - |
| SEME640301026E | R1.0 | **3.0** | 6 | 4.5 | 26 | 65 | 2.85 | - |
| SEME640301030E | R1.0 | **3.0** | 6 | 4.5 | 30 | 70 | 2.85 | - |

▶ NEXT PAGE 下页

| Corner Radius Tolerance (mm) 圆弧角公差 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|
| ± 0.02 | 0 ~ - 0.03 | h5 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |



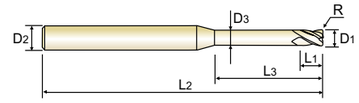
4G MILL END MILLS

PLAIN SHANK SEME64 SERIES

CARBIDE, 4 FLUTE MULTIPLE HELIX CORNER RADIUS with EXTENDED NECK
硬质合金，4刃 不等螺旋 圆鼻 颈部加长

▶ New coating and tool geometry applied resulting outstanding cutting abilities and wear resistance.
▶ Excellent performance when cutting prehardened steels, up to HRc55 which are used for molds & dies.
▶Multiple Helix for 3.0mm and over 3.0mm diameter endmills minimizing vibration and decreasing wear in cutting.

▶基于新涂层及形状, 实现出色切削性能和耐磨性
▶加工模具产业的预硬钢(HRc55以下)表现出色
▶基于Ø3.0mm以上采用不等螺旋, 减少切削震动及增加切削耐磨性




CARBIDE | 4 | 27°/30° | R ±0.02 | PLAIN

p.C276-279

D<Ø3, 30˚ HELIX

| Recommended Tool Holder | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| | END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| | - | - | POWER MILLING CHUCK | D161 - 176 |
| | - | - | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Corner Radius 圆弧角 R | Mill Diameter 直径 $D_1$ | Shank Diameter 柄径 $D_2$ | Length of Cut 刃长 $L_1$ | Length Below Shank 颈长 $L_3$ | Overall Length 全长 $L_2$ | Neck Diameter 颈径 $D_3$ | Remark 备注 |
|---|---|---|---|---|---|---|---|---|
| SEME640301035E | R1.0 | **3.0** | 6 | 4.5 | 35 | 70 | 2.85 | - |
| SEME640301040E | R1.0 | **3.0** | 6 | 4.5 | 40 | 80 | 2.85 | - |
| SEME640400110E | R0.1 | **4.0** | 6 | 6 | 10 | 50 | 3.85 | - |
| SEME640400112E | R0.1 | **4.0** | 6 | 6 | 12 | 50 | 3.85 | - |
| SEME640400114E | R0.1 | **4.0** | 6 | 6 | 14 | 60 | 3.85 | - |
| SEME640400116E | R0.1 | **4.0** | 6 | 6 | 16 | 60 | 3.85 | - |
| SEME640400120E | R0.1 | **4.0** | 6 | 6 | 20 | 60 | 3.85 | - |
| SEME640400126E | R0.1 | **4.0** | 6 | 6 | 26 | 65 | 3.85 | - |
| SEME640400130E | R0.1 | **4.0** | 6 | 6 | 30 | 70 | 3.85 | - |
| SEME640400135E | R0.1 | **4.0** | 6 | 6 | 35 | 70 | 3.85 | - |
| SEME640400140E | R0.1 | **4.0** | 6 | 6 | 40 | 80 | 3.85 | - |
| SEME640400145E | R0.1 | **4.0** | 6 | 6 | 45 | 90 | 3.85 | - |
| SEME640400150E | R0.1 | **4.0** | 6 | 6 | 50 | 100 | 3.85 | - |
| SEME640400210E | R0.2 | **4.0** | 6 | 6 | 10 | 50 | 3.85 | - |
| SEME640400212E | R0.2 | **4.0** | 6 | 6 | 12 | 50 | 3.85 | - |
| SEME640400214E | R0.2 | **4.0** | 6 | 6 | 14 | 60 | 3.85 | - |
| SEME640400216E | R0.2 | **4.0** | 6 | 6 | 16 | 60 | 3.85 | - |
| SEME640400220E | R0.2 | **4.0** | 6 | 6 | 20 | 60 | 3.85 | - |
| SEME640400224E | R0.2 | **4.0** | 6 | 6 | 24 | 65 | 3.85 | - |
| SEME640400226E | R0.2 | **4.0** | 6 | 6 | 26 | 65 | 3.85 | - |
| SEME640400230E | R0.2 | **4.0** | 6 | 6 | 30 | 70 | 3.85 | - |
| SEME640400235E | R0.2 | **4.0** | 6 | 6 | 35 | 70 | 3.85 | - |
| SEME640400240E | R0.2 | **4.0** | 6 | 6 | 40 | 80 | 3.85 | - |
| SEME640400245E | R0.2 | **4.0** | 6 | 6 | 45 | 90 | 3.85 | - |

▶ NEXT PAGE 下页

| Corner Radius Tolerance (mm) 圆弧角公差 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|
| ± 0.02 | 0 ~ - 0.03 | h5 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |

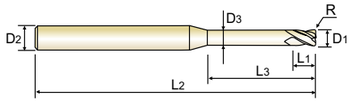
# 4G MILL END MILLS

PLAIN SHANK **SEME64** SERIES

## CARBIDE, 4 FLUTE MULTIPLE HELIX CORNER RADIUS with EXTENDED NECK
## 硬质合金，4刃 不等螺旋 圆鼻 颈部加长

▶ New coating and tool geometry applied resulting outstanding cutting abilities and wear resistance.
▶ Excellent performance when cutting prehardened steels, up to HRc55 which are used for molds & dies.
▶Multiple Helix for 3.0mm and over 3.0mm diameter endmills minimizing vibration and decreasing wear in cutting.

▶基于新涂层及形状, 实现出色切削性能和耐磨性
▶加工模具产业的预硬钢(HRc55以下)表现出色
▶基于Ø3.0mm以上采用不等螺旋,
减少切削震动及增加切削耐磨性




CARBIDE | 4 | 27°/30° | R ±0.02 | PLAIN

D<Ø3, 30° HELIX

p.C276-279

Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| - | - | POWER MILLING CHUCK | D161 - 176 |
| - | - | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Corner Radius 圆弧角 R | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Length Below Shank 颈长 L3 | Overall Length 全长 L2 | Neck Diameter 颈径 D3 | Remark 备注 |
|---|---|---|---|---|---|---|---|---|
| SEME640400250E | R0.2 | 4.0 | 6 | 6 | 50 | 100 | 3.85 | - |
| SEME640400310E | R0.3 | 4.0 | 6 | 6 | 10 | 50 | 3.85 | - |
| SEME640400312E | R0.3 | 4.0 | 6 | 6 | 12 | 50 | 3.85 | - |
| SEME640400314E | R0.3 | 4.0 | 6 | 6 | 14 | 60 | 3.85 | - |
| SEME640400316E | R0.3 | 4.0 | 6 | 6 | 16 | 60 | 3.85 | - |
| SEME640400320E | R0.3 | 4.0 | 6 | 6 | 20 | 60 | 3.85 | - |
| SEME640400326E | R0.3 | 4.0 | 6 | 6 | 26 | 65 | 3.85 | - |
| SEME640400330E | R0.3 | 4.0 | 6 | 6 | 30 | 70 | 3.85 | - |
| SEME640400335E | R0.3 | 4.0 | 6 | 6 | 35 | 70 | 3.85 | - |
| SEME640400340E | R0.3 | 4.0 | 6 | 6 | 40 | 80 | 3.85 | - |
| SEME640400345E | R0.3 | 4.0 | 6 | 6 | 45 | 90 | 3.85 | - |
| SEME640400350E | R0.3 | 4.0 | 6 | 6 | 50 | 100 | 3.85 | - |
| SEME640400510E | R0.5 | 4.0 | 6 | 6 | 10 | 50 | 3.85 | - |
| SEME640400512E | R0.5 | 4.0 | 6 | 6 | 12 | 50 | 3.85 | - |
| SEME640400514E | R0.5 | 4.0 | 6 | 6 | 14 | 60 | 3.85 | - |
| SEME640400516E | R0.5 | 4.0 | 6 | 6 | 16 | 60 | 3.85 | - |
| SEME640400520E | R0.5 | 4.0 | 6 | 6 | 20 | 60 | 3.85 | - |
| SEME640400526E | R0.5 | 4.0 | 6 | 6 | 26 | 65 | 3.85 | - |
| SEME640400530E | R0.5 | 4.0 | 6 | 6 | 30 | 70 | 3.85 | - |
| SEME640400535E | R0.5 | 4.0 | 6 | 6 | 35 | 70 | 3.85 | - |
| SEME640400540E | R0.5 | 4.0 | 6 | 6 | 40 | 80 | 3.85 | - |
| SEME640400545E | R0.5 | 4.0 | 6 | 6 | 45 | 90 | 3.85 | - |
| SEME640400550E | R0.5 | 4.0 | 6 | 6 | 50 | 100 | 3.85 | - |
| SEME640401010E | R1.0 | 4.0 | 6 | 6 | 10 | 50 | 3.85 | - |

▶ NEXT PAGE 下页

| Corner Radius Tolerance (mm) 圆弧角公差 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|
| ± 0.02 | 0 ~ - 0.03 | h5 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |



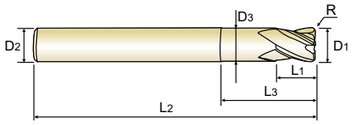
4G MILL END MILLS

PLAIN SHANK SEME64 SERIES

CARBIDE, 4 FLUTE MULTIPLE HELIX CORNER RADIUS with EXTENDED NECK
硬质合金，4刃 不等螺旋 圆鼻 颈部加长

▶ New coating and tool geometry applied resulting outstanding cutting abilities and wear resistance.
▶ Excellent performance when cutting prehardened steels, up to HRc55 which are used for molds & dies.
▶Multiple Helix for 3.0mm and over 3.0mm diameter endmills minimizing vibration and decreasing wear in cutting.

▶基于新涂层及形状, 实现出色切削性能和耐磨性
▶加工模具产业的预硬钢(HRc55以下)表现出色
▶基于Ø3.0mm以上采用不等螺旋,
减少切削震动及增加切削耐磨性




CARBIDE | 4 | 27°/30° | R ±0.02 | PLAIN

D<Ø3, 30° HELIX

p.C276-279

Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| - | - | POWER MILLING CHUCK | D161 - 176 |
| - | - | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Corner Radius 圆弧角 R | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Length Below Shank 颈长 L3 | Overall Length 全长 L2 | Neck Diameter 颈径 D3 | Remark 备注 |
|---|---|---|---|---|---|---|---|---|
| SEME640401012E | R1.0 | 4.0 | 6 | 6 | 12 | 50 | 3.85 | - |
| SEME640401014E | R1.0 | 4.0 | 6 | 6 | 14 | 60 | 3.85 | - |
| SEME640401016E | R1.0 | 4.0 | 6 | 6 | 16 | 60 | 3.85 | - |
| SEME640401020E | R1.0 | 4.0 | 6 | 6 | 20 | 60 | 3.85 | - |
| SEME640401026E | R1.0 | 4.0 | 6 | 6 | 26 | 65 | 3.85 | - |
| SEME640401030E | R1.0 | 4.0 | 6 | 6 | 30 | 70 | 3.85 | - |
| SEME640401035E | R1.0 | 4.0 | 6 | 6 | 35 | 70 | 3.85 | - |
| SEME640401040E | R1.0 | 4.0 | 6 | 6 | 40 | 80 | 3.85 | - |
| SEME640401045E | R1.0 | 4.0 | 6 | 6 | 45 | 90 | 3.85 | - |
| SEME640401050E | R1.0 | 4.0 | 6 | 6 | 50 | 100 | 3.85 | - |
| SEME6405001E | R0.1 | 5.0 | 6 | 8 | 15 | 60 | 4.85 | - |
| SEME6405002E | R0.2 | 5.0 | 6 | 8 | 15 | 60 | 4.85 | - |
| SEME6405003E | R0.3 | 5.0 | 6 | 8 | 15 | 60 | 4.85 | - |
| SEME6405005E | R0.5 | 5.0 | 6 | 8 | 15 | 60 | 4.85 | - |
| SEME6405010E | R1.0 | 5.0 | 6 | 8 | 15 | 60 | 4.85 | - |
| SEME6405015E | R1.5 | 5.0 | 6 | 8 | 15 | 60 | 4.85 | - |
| SEME6405020E | R2.0 | 5.0 | 6 | 8 | 15 | 60 | 4.85 | - |
| SEME6406001E | R0.1 | 6.0 | 6 | 9 | 20 | 60 | 5.85 | Regular |
| SEME6406002E | R0.2 | 6.0 | 6 | 9 | 20 | 60 | 5.85 | Regular |
| SEME6406003E | R0.3 | 6.0 | 6 | 9 | 20 | 60 | 5.85 | Regular |
| SEME6406005E | R0.5 | 6.0 | 6 | 9 | 20 | 60 | 5.85 | Regular |
| SEME6406010E | R1.0 | 6.0 | 6 | 9 | 20 | 60 | 5.85 | Regular |
| SEME6406015E | R1.5 | 6.0 | 6 | 9 | 20 | 60 | 5.85 | Regular |
| SEME6406020E | R2.0 | 6.0 | 6 | 9 | 20 | 60 | 5.85 | Regular |

▶ NEXT PAGE 下页

| Corner Radius Tolerance (mm) 圆弧角公差 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|
| ± 0.02 | 0 ~ - 0.03 | h5 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |

# 4G MILL END MILLS

PLAIN SHANK **SEME64** SERIES

## CARBIDE, 4 FLUTE MULTIPLE HELIX CORNER RADIUS with EXTENDED NECK
## 硬质合金，4刃 不等螺旋 圆鼻 颈部加长

▶ New coating and tool geometry applied resulting outstanding cutting abilities and wear resistance.
▶ Excellent performance when cutting prehardened steels, up to HRc55 which are used for molds & dies.
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▶加工模具产业的预硬钢(HRc55以下)表现出色
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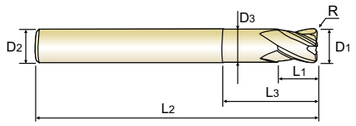
减少切削震动及增加切削耐磨性




CARBIDE | 4 | 27°/30° | R ±0.02 | PLAIN

D<Ø3, 30° HELIX

p.C276-279

Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| - | - | POWER MILLING CHUCK | D161 - 176 |
| - | - | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Corner Radius 圆弧角 R | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Length Below Shank 颈长 L3 | Overall Length 全长 L2 | Neck Diameter 颈径 D3 | Remark 备注 |
|---|---|---|---|---|---|---|---|---|
| SEME6406003090E | R0.3 | **6.0** | 6 | 15 | 30 | 90 | 5.85 | Long |
| SE5E640600524LE | R0.5 | **6.0** | 6 | 9 | 24 | 90 | 5.85 | - |
| SEME6406005090E | R0.5 | **6.0** | 6 | 15 | 30 | 90 | 5.85 | Long |
| SEME6406010090E | R1.0 | **6.0** | 6 | 15 | 30 | 90 | 5.85 | Long |
| SEME6408001E | R0.1 | **8.0** | 8 | 12 | 25 | 70 | 7.70 | Regular |
| SEME6408002E | R0.2 | **8.0** | 8 | 12 | 25 | 70 | 7.70 | Regular |
| SEME6408003E | R0.3 | **8.0** | 8 | 12 | 25 | 70 | 7.70 | Regular |
| SEME6408005E | R0.5 | **8.0** | 8 | 12 | 25 | 70 | 7.70 | Regular |
| SEME6408010E | R1.0 | **8.0** | 8 | 12 | 25 | 70 | 7.70 | Regular |
| SEME6408015E | R1.5 | **8.0** | 8 | 12 | 25 | 70 | 7.70 | Regular |
| SEME6408020E | R2.0 | **8.0** | 8 | 12 | 25 | 70 | 7.70 | Regular |
| SEME6408003100E | R0.3 | **8.0** | 8 | 20 | 35 | 100 | 7.70 | Long |
| SEME6408005100E | R0.5 | **8.0** | 8 | 20 | 35 | 100 | 7.70 | Long |
| SEME6408010100E | R1.0 | **8.0** | 8 | 20 | 35 | 100 | 7.70 | Long |
| SEME6410001E | R0.1 | **10.0** | 10 | 15 | 30 | 75 | 9.70 | Regular |
| SEME6410002E | R0.2 | **10.0** | 10 | 15 | 30 | 75 | 9.70 | Regular |
| SEME6410003E | R0.3 | **10.0** | 10 | 15 | 30 | 75 | 9.70 | Regular |
| SEME6410005E | R0.5 | **10.0** | 10 | 15 | 30 | 75 | 9.70 | Regular |
| SEME6410010E | R1.0 | **10.0** | 10 | 15 | 30 | 75 | 9.70 | Regular |
| SEME6410015E | R1.5 | **10.0** | 10 | 15 | 30 | 75 | 9.70 | Regular |
| SEME6410020E | R2.0 | **10.0** | 10 | 15 | 30 | 75 | 9.70 | Regular |
| SEME6410003100E | R0.3 | **10.0** | 10 | 25 | 40 | 100 | 9.70 | Long |
| SEME6410005100E | R0.5 | **10.0** | 10 | 25 | 40 | 100 | 9.70 | Long |
| SEME6410010100E | R1.0 | **10.0** | 10 | 25 | 40 | 100 | 9.70 | Long |

▶ NEXT PAGE 下页

| Corner Radius Tolerance (mm) 圆弧角公差 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|
| ± 0.02 | 0 ~ - 0.03 | h5 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |



4G MILL END MILLS

PLAIN SHANK SEME64 SERIES

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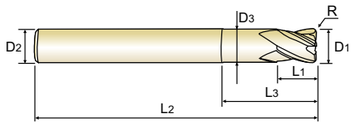


CARBIDE | 4 | 27°/30° | R ±0.02 | PLAIN

D<Ø3, 30° HELIX

p.C276-279

Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| - | - | POWER MILLING CHUCK | D161 - 176 |
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Unit(单位) : mm

| EDP No. | Corner Radius 圆弧角 R | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Length Below Shank 颈长 L3 | Overall Length 全长 L2 | Neck Diameter 颈径 D3 | Remark 备注 |
|---|---|---|---|---|---|---|---|---|
| SEME6412002E | R0.2 | **12.0** | 12 | 18 | 32 | 80 | 11.70 | Regular |
| SEME6412003E | R0.3 | **12.0** | 12 | 18 | 32 | 80 | 11.70 | Regular |
| SEME6412005E | R0.5 | **12.0** | 12 | 18 | 32 | 80 | 11.70 | Regular |
| SEME6412010E | R1.0 | **12.0** | 12 | 18 | 32 | 80 | 11.70 | Regular |
| SEME6412015E | R1.5 | **12.0** | 12 | 18 | 32 | 80 | 11.70 | Regular |
| SEME6412020E | R2.0 | **12.0** | 12 | 18 | 32 | 80 | 11.70 | Regular |
| SEME6412003110E | R0.3 | **12.0** | 12 | 30 | 50 | 110 | 11.70 | Long |
| SEME6412005110E | R0.5 | **12.0** | 12 | 30 | 50 | 110 | 11.70 | Long |
| SEME6412010110E | R1.0 | **12.0** | 12 | 30 | 50 | 110 | 11.70 | Long |
| SEME6416005E | R0.5 | **16.0** | 16 | 20 | 35 | 100 | 15.70 | Regular |
| SEME6416010E | R1.0 | **16.0** | 16 | 20 | 35 | 100 | 15.70 | Regular |
| SEME6416005150E | R0.5 | **16.0** | 16 | 35 | 50 | 150 | 15.70 | Long |
| SEME6416010150E | R1.0 | **16.0** | 16 | 35 | 50 | 150 | 15.70 | Long |
| SEME6420005E | R0.5 | **20.0** | 20 | 25 | 40 | 100 | 19.70 | Regular |
| SEME6420010E | R1.0 | **20.0** | 20 | 25 | 40 | 100 | 19.70 | Regular |
| SEME6420005150E | R0.5 | **20.0** | 20 | 40 | 55 | 150 | 19.70 | Long |
| SEME6420010150E | R1.0 | **20.0** | 20 | 40 | 55 | 150 | 19.70 | Long |

| Corner Radius Tolerance (mm) 圆弧角公差 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|
| ± 0.02 | 0 ~ - 0.03 | h5 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |

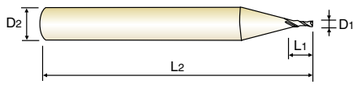
# 4G MILL END MILLS

PLAIN SHANK **SEME35** SERIES

## CARBIDE, 2 FLUTE
## 硬质合金，2刃

▶ New coating and tool geometry applied resulting outstanding cutting abilities and wear resistance.
▶Excellent performance when cutting prehardened steels, up to HRc55 which are used for molds & dies.
▶From a sharp edge geometry at the end tooth, cutting abilities at work process is increased.

▶基于新涂层及形状, 实现出色切削性能和耐磨性
▶加工模具产业的预硬钢(HRc55以下)表现出色
▶基于锋利底刃刀尖设计, 增加切削性能




CARBIDE | 2 | 30° | PLAIN | p.C280-283

Recommended ToolHolder

| Flat Shank | | Page | Plain Shank | Page |
|---|---|---|---|---|
| END MILL HOLDER | D118 - 137 | | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| - | - | | POWER MILLING CHUCK | D161 - 176 |
| - | - | | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Overall Length 全长 L2 |
|---|---|---|---|---|
| SEME35001E | 0.1 | 4 | 0.2 | 40 |
| SEME350015E | 0.15 | 4 | 0.3 | 40 |
| SEME35002E | 0.2 | 4 | 0.4 | 40 |
| SEME350025E | 0.25 | 4 | 0.5 | 40 |
| SEME35003E | 0.3 | 4 | 0.6 | 40 |
| SEME350035E | 0.35 | 4 | 0.7 | 40 |
| SEME35004E | 0.4 | 4 | 0.8 | 40 |
| SEME350045E | 0.45 | 4 | 0.9 | 40 |
| SEME35005E | 0.5 | 4 | 1.0 | 40 |
| SEME350055E | 0.55 | 4 | 1.1 | 40 |
| SEME35006E | 0.6 | 4 | 1.2 | 40 |
| SEME350065E | 0.65 | 4 | 1.3 | 40 |
| SEME35007E | 0.7 | 4 | 1.4 | 40 |
| SEME350075E | 0.75 | 4 | 1.5 | 40 |
| SEME35008E | 0.8 | 4 | 1.6 | 40 |
| SEME350085E | 0.85 | 4 | 1.7 | 40 |
| SEME35009E | 0.9 | 4 | 1.8 | 40 |
| SEME350095E | 0.95 | 4 | 2 | 40 |
| SEME35010E | 1.0 | 6 | 2.5 | 50 |
| SEME35012E | 1.2 | 6 | 3 | 50 |
| SEME35015E | 1.5 | 6 | 4 | 50 |
| SEME35020E | 2.0 | 6 | 6 | 50 |
| SEME35025E | 2.5 | 6 | 7 | 50 |
| SEME35030E | 3.0 | 6 | 8 | 50 |

▶ NEXT PAGE 下页

| Size 尺寸 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|
| up to Ø6 Ø6以下 | 0~ - 0.012 | h5 |
| over Ø6 超过Ø6 | 0~ - 0.015 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | M | | | | | K | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | | High alloyed steel, and tool steel | | | | | | | | | Stainless steel | | | | | Grey cast iron | | | | Nodular cast iron | | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | | | | | | | | | | | |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 | | | | | | | | | | | |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 | | | | | | | | | | | |
| Recommend | ○ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | | Hardened Cast Iron | |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | | 41 | |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | | 55 | |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | | 550 | |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | | ○ | |



CARBIDE
HSS
CBN END MILLS
i-Xmill END MILLS
i-SMART MODULAR END MILLS
X5070 END MILLS
4G MILL END MILLS
X-POWER PRO END MILLS
TitaNox-POWER END MILLS
SUS-CUT END MILLS
V7 PLUS END MILLS
ALU-POWER HPC END MILLS
ALU-CUT END MILLS
G-CUT
CRX S END MILLS
K-2 END MILLS
GENERAL CARBIDE END MILLS
ONLY ONE COATED PM60 END MILLS
TANK-POWER END MILLS
GENERAL HSS END MILLS
MILLING CUTTERS
TECHNICAL DATA

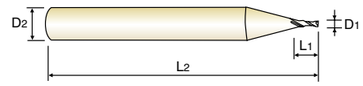
# 4G MILL END MILLS

PLAIN SHANK **SEME35** SERIES

## CARBIDE, 2 FLUTE
## 硬质合金，2刃

▶ New coating and tool geometry applied resulting outstanding cutting abilities and wear resistance.
▶Excellent performance when cutting prehardened steels, up to HRc55 which are used for molds & dies.
▶From a sharp edge geometry at the end tooth, cutting abilities at work process is increased.

▶基于新涂层及形状, 实现出色切削性能和耐磨性
▶加工模具产业的预硬钢(HRc55以下)表现出色
▶基于锋利底刃刀尖设计, 增加切削性能




CARBIDE | 2 | 30° | PLAIN | p.C280-283

Recommended ToolHolder

| Flat Shank | | Page | Plain Shank | Page |
|---|---|---|---|---|
| END MILL HOLDER | D118 - 137 | | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| - | - | | POWER MILLING CHUCK | D161 - 176 |
| - | - | | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Overall Length 全长 L2 |
|---|---|---|---|---|
| SEME35035E | 3.5 | 6 | 10 | 50 |
| SEME35040E | 4.0 | 6 | 10 | 50 |
| SEME35045E | 4.5 | 6 | 14 | 50 |
| SEME35050E | 5.0 | 6 | 15 | 60 |
| SEME35055E | 5.5 | 6 | 15 | 60 |
| SEME35060E | 6.0 | 6 | 15 | 60 |
| SEME35065E | 6.5 | 8 | 18 | 60 |
| SEME35070E | 7.0 | 8 | 20 | 60 |
| SEME35075E | 7.5 | 8 | 20 | 60 |
| SEME35080E | 8.0 | 8 | 20 | 70 |
| SEME35085E | 8.5 | 10 | 22 | 70 |
| SEME35090E | 9.0 | 10 | 22 | 70 |
| SEME35095E | 9.5 | 10 | 24 | 70 |
| SEME35100E | 10.0 | 10 | 25 | 75 |
| SEME35105E | 10.5 | 12 | 26 | 75 |
| SEME35110E | 11.0 | 12 | 30 | 75 |
| SEME35115E | 11.5 | 12 | 30 | 80 |
| SEME35120E | 12.0 | 12 | 30 | 80 |
| SEME35130E | 13.0 | 12 | 35 | 100 |
| SEME3514012SE | 14.0 | 12 | 35 | 100 |
| SEME3514014SE | 14.0 | 14 | 35 | 100 |
| SEME35140E | 14.0 | 16 | 35 | 100 |
| SEME35150E | 15.0 | 16 | 38 | 100 |
| SEME35160E | 16.0 | 16 | 40 | 100 |

▶ NEXT PAGE 下页

| Size 尺寸 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|
| up to Ø6 Ø6以下 | 0~ - 0.012 | h5 |
| over Ø6 超过Ø6 | 0~ - 0.015 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | M | | | | | K | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | | High alloyed steel, and tool steel | | | | | | | | | Stainless steel | | | | | Grey cast iron | | | | Nodular cast iron | | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | | | | | | | | | | | |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 | | | | | | | | | | | |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | | | | | | | | | | | | | | | |
| Recommend | ○ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | | Hardened Cast Iron | |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | | 41 | |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | | 55 | |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | | 550 | |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | | ○ | |

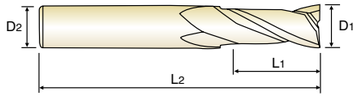
# 4G MILL END MILLS

PLAIN SHANK **SEME35** SERIES

## CARBIDE, 2 FLUTE
## 硬质合金，2刃

▶ New coating and tool geometry applied resulting outstanding cutting abilities and wear resistance.
▶Excellent performance when cutting prehardened steels, up to HRc55 which are used for molds & dies.
▶From a sharp edge geometry at the end tooth, cutting abilities at work process is increased.

▶基于新涂层及形状, 实现出色切削性能和耐磨性
▶加工模具产业的预硬钢(HRc55以下)表现出色
▶基于锋利底刃刀尖设计, 增加切削性能




CARBIDE 2 30° PLAIN p.C280-283

Recommended ToolHolder

| Flat Shank | | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ END MILL HOLDER | D118 - 137 | | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| ◎ - | - | | POWER MILLING CHUCK | D161 - 176 |
| ○ - | - | | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Overall Length 全长 L2 |
|---|---|---|---|---|
| SEME35170E | 17.0 | 16 | 42 | 100 |
| SEME35180E | 18.0 | 16 | 45 | 100 |
| SEME3518018SE | 18.0 | 18 | 45 | 100 |
| SEME35190E | 19.0 | 20 | 45 | 100 |
| SEME35200E | 20.0 | 20 | 45 | 100 |
| SEME35210E | 21.0 | 20 | 45 | 100 |
| SEME35220E | 22.0 | 20 | 45 | 100 |
| SEME35230E | 23.0 | 25 | 50 | 120 |
| SEME35240E | 24.0 | 25 | 50 | 120 |
| SEME35250E | 25.0 | 25 | 50 | 120 |

| Size 尺寸 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|
| up to Ø6 Ø6以下 | 0~ - 0.012 | h5 |
| over Ø6 超过Ø6 | 0~ - 0.015 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |



CARBIDE
HSS
CBN END MILLS
i-Xmill END MILLS
i-SMART MODULAR END MILLS
X5070 END MILLS
4G MILL END MILLS
X-POWER PRO END MILLS
TitaNox-POWER END MILLS
SUS-CUT END MILLS
V7 PLUS END MILLS
ALU-POWER HPC END MILLS
ALU-CUT END MILLS
G-CUT
CRX S END MILLS
K-2 END MILLS
GENERAL CARBIDE END MILLS
ONLY ONE COATED PM60 END MILLS
TANK-POWER END MILLS
GENERAL HSS END MILLS
MILLING CUTTERS
TECHNICAL DATA

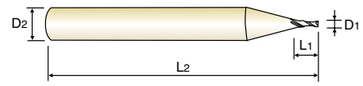
# 4G MILL END MILLS

PLAIN SHANK **SEME35** SERIES

## CARBIDE, 2 FLUTE (4mm Shank)
## 硬质合金，2刃 (4mm 柄径)

▶ New coating and tool geometry applied resulting outstanding cutting abilities and wear resistance.
▶Excellent performance when cutting prehardened steels, up to HRc55 which are used for molds & dies.
▶From a sharp edge geometry at the end tooth, cutting abilities at work process is increased.

▶基于新涂层及形状, 实现出色切削性能和耐磨性
▶加工模具产业的预硬钢(HRc55以下)表现出色
▶基于锋利底刃刀尖设计, 增加切削性能




CARBIDE 2 30° PLAIN p.C280-283

Recommended ToolHolder

| Flat Shank | | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ END MILL HOLDER | D118 - 137 | | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| ◎ - | - | | POWER MILLING CHUCK | D161 - 176 |
| ○ - | - | | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Overall Length 全长 L2 |
|---|---|---|---|---|
| SEME350104SE | 1.0 | 4 | 2.5 | 50 |
| SEME350114SE | 1.1 | 4 | 3 | 50 |
| SEME350124SE | 1.2 | 4 | 3 | 50 |
| SEME350134SE | 1.3 | 4 | 3 | 50 |
| SEME350144SE | 1.4 | 4 | 4 | 50 |
| SEME350154SE | 1.5 | 4 | 4 | 50 |
| SEME350164SE | 1.6 | 4 | 4 | 50 |
| SEME350174SE | 1.7 | 4 | 4 | 50 |
| SEME350184SE | 1.8 | 4 | 5 | 50 |
| SEME350194SE | 1.9 | 4 | 5 | 50 |
| SEME350204SE | 2.0 | 4 | 6 | 50 |
| SEME350214SE | 2.1 | 4 | 6 | 50 |
| SEME350224SE | 2.2 | 4 | 6 | 50 |
| SEME350234SE | 2.3 | 4 | 6 | 50 |
| SEME350244SE | 2.4 | 4 | 6 | 50 |
| SEME350254SE | 2.5 | 4 | 8 | 50 |
| SEME350264SE | 2.6 | 4 | 8 | 50 |
| SEME350274SE | 2.7 | 4 | 8 | 50 |
| SEME350284SE | 2.8 | 4 | 8 | 50 |
| SEME350294SE | 2.9 | 4 | 8 | 50 |
| SEME350304SE | 3.0 | 4 | 8 | 50 |
| SEME350354SE | 3.5 | 4 | 10 | 50 |
| SEME350404SE | 4.0 | 4 | 10 | 50 |
| SEME350404S080E | 4.0 | 4 | 10 | 80 |

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0~ - 0.012 | h5 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |

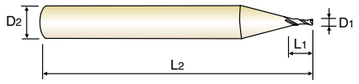
# 4G MILL END MILLS

PLAIN SHANK **SEME35** SERIES

## CARBIDE, 2 FLUTE (3mm Shank)
## 硬质合金，2刃 (3mm 柄径)

▶ New coating and tool geometry applied resulting outstanding cutting abilities and wear resistance.
▶Excellent performance when cutting prehardened steels, up to HRc55 which are used for molds & dies.
▶From a sharp edge geometry at the end tooth, cutting abilities at work process is increased.

▶基于新涂层及形状, 实现出色切削性能和耐磨性
▶加工模具产业的预硬钢(HRc55以下)表现出色
▶基于锋利底刃刀尖设计, 增加切削性能




CARBIDE 2 30° PLAIN p.C280-283

Recommended ToolHolder

| Flat Shank | | Page | Plain Shank | Page |
|---|---|---|---|---|
| END MILL HOLDER | D118 - 137 | | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| - | - | | POWER MILLING CHUCK | D161 - 176 |
| - | - | | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Overall Length 全长 L2 |
|---|---|---|---|---|
| SEME350013SE | 0.1 | 3 | 0.2 | 40 |
| SEME350023SE | 0.2 | 3 | 0.4 | 40 |
| SEME350033SE | 0.3 | 3 | 0.6 | 40 |
| SEME350043SE | 0.4 | 3 | 0.8 | 40 |
| SEME350053SE | 0.5 | 3 | 1.0 | 40 |
| SEME350063SE | 0.6 | 3 | 1.2 | 40 |
| SEME350073SE | 0.7 | 3 | 1.4 | 40 |
| SEME350083SE | 0.8 | 3 | 1.6 | 40 |
| SEME350093SE | 0.9 | 3 | 1.8 | 40 |
| SEME350103SE | 1.0 | 3 | 2.5 | 50 |
| SEME350123SE | 1.2 | 3 | 3 | 50 |
| SEME350153SE | 1.5 | 3 | 4 | 50 |
| SEME350203SE | 2.0 | 3 | 6 | 50 |
| SEME350253SE | 2.5 | 3 | 7 | 50 |
| SEME350303SE | 3.0 | 3 | 8 | 50 |

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0~ - 0.012 | h5 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |



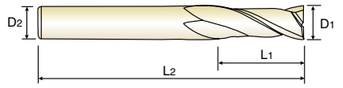
# 4G MILL END MILLS

PLAIN SHANK **SEME70** SERIES

## CARBIDE, 2 FLUTE LONG LENGTH
## 硬质合金，2刃 长刃

▶ New coating and tool geometry applied resulting outstanding cutting abilities and wear resistance.
▶Excellent performance when cutting prehardened steels, up to HRc55 which are used for molds & dies.
▶ Available in various lengths of cut and also overall lengths.

▶基于新涂层及形状, 实现出色切削性能和耐磨性
▶加工模具产业的预硬钢(HRc55以下)表现出色
▶可提供多种刃长和全长




CARBIDE 2 30° PLAIN p.C284-289

Recommended ToolHolder

| Flat Shank | | Page | Plain Shank | Page |
|---|---|---|---|---|
| END MILL HOLDER | D118 - 137 | | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| - | - | | POWER MILLING CHUCK | D161 - 176 |
| - | - | | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Overall Length 全长 L2 |
|---|---|---|---|---|
| SEME7001003E | 1.0 | 6 | 3 | 60 |
| SEME7001004E | 1.0 | 6 | 4 | 60 |
| SEME7001005E | 1.0 | 6 | 5 | 60 |
| SEME7001006E | 1.0 | 6 | 6 | 60 |
| SEME7001007E | 1.0 | 6 | 7 | 60 |
| SEME7001008E | 1.0 | 6 | 8 | 60 |
| SEME7001010E | 1.0 | 6 | 10 | 60 |
| SEME7001012E | 1.0 | 6 | 12 | 60 |
| SEME7001204E | 1.2 | 6 | 4 | 60 |
| SEME7001206E | 1.2 | 6 | 6 | 60 |
| SEME7001208E | 1.2 | 6 | 8 | 60 |
| SEME7001210E | 1.2 | 6 | 10 | 60 |
| SEME7001212E | 1.2 | 6 | 12 | 60 |
| SEME7001506E | 1.5 | 6 | 6 | 60 |
| SEME7001508E | 1.5 | 6 | 8 | 60 |
| SEME7001510E | 1.5 | 6 | 10 | 60 |
| SEME7001512E | 1.5 | 6 | 12 | 60 |
| SEME7001514E | 1.5 | 6 | 14 | 60 |
| SEME7001516E | 1.5 | 6 | 16 | 60 |
| SEME7002008E | 2.0 | 6 | 8 | 60 |
| SEME7002010E | 2.0 | 6 | 10 | 60 |
| SEME7002012E | 2.0 | 6 | 12 | 60 |
| SEME7002014E | 2.0 | 6 | 14 | 60 |
| SEME7002016E | 2.0 | 6 | 16 | 60 |

▶ NEXT PAGE 下页

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.03 | h5 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |

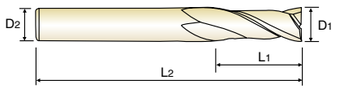
# 4G MILL END MILLS

PLAIN SHANK **SEME70** SERIES

## CARBIDE, 2 FLUTE LONG LENGTH
## 硬质合金，2刃 长刃

▶ New coating and tool geometry applied resulting outstanding cutting abilities and wear resistance.
▶Excellent performance when cutting prehardened steels, up to HRc55 which are used for molds & dies.
▶ Available in various lengths of cut and also overall lengths.

▶基于新涂层及形状, 实现出色切削性能和耐磨性
▶加工模具产业的预硬钢(HRc55以下)表现出色
▶可提供多种刃长和全长




CARBIDE | 2 | 30° | PLAIN | p.C284-289

Recommended ToolHolder

| Flat Shank | | Page | Plain Shank | Page |
|---|---|---|---|---|
| END MILL HOLDER | D118 - 137 | | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| - | - | | POWER MILLING CHUCK | D161 - 176 |
| - | - | | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Overall Length 全长 L2 |
|---|---|---|---|---|
| SEME7002510E | 2.5 | 6 | 10 | 60 |
| SEME7002512E | 2.5 | 6 | 12 | 60 |
| SEME7002516E | 2.5 | 6 | 16 | 60 |
| SEME7002520E | 2.5 | 6 | 20 | 60 |
| SEME7002526E | 2.5 | 6 | 26 | 60 |
| SEME70030163SE | 3.0 | 3 | 16 | 100 |
| SEME7003010E | 3.0 | 6 | 10 | 70 |
| SEME7003012E | 3.0 | 6 | 12 | 70 |
| SEME7003014E | 3.0 | 6 | 14 | 70 |
| SEME7003016E | 3.0 | 6 | 16 | 70 |
| SEME7003020E | 3.0 | 6 | 20 | 70 |
| SEME7003026E | 3.0 | 6 | 26 | 70 |
| SEME7003030E | 3.0 | 6 | 30 | 70 |
| SEME70040204SE | 4.0 | 4 | 20 | 100 |
| SEME7004012E | 4.0 | 6 | 12 | 70 |
| SEME7004016E | 4.0 | 6 | 16 | 70 |
| SEME7004020E | 4.0 | 6 | 20 | 70 |
| SEME7004026E | 4.0 | 6 | 26 | 70 |
| SEME7004030E | 4.0 | 6 | 30 | 70 |
| SEME7005020E | 5.0 | 6 | 20 | 70 |
| SEME7005025E | 5.0 | 6 | 25 | 70 |
| SEME7005025100E | 5.0 | 6 | 25 | 100 |
| SEME7005030E | 5.0 | 6 | 30 | 80 |
| SEME7005035E | 5.0 | 6 | 35 | 90 |

▶ NEXT PAGE 下页

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.03 | h5 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |



CARBIDE
HSS
CBN END MILLS
i-Xmill END MILLS
i-SMART MODULAR END MILLS
X5070 END MILLS
4G MILL END MILLS
X-POWER PRO END MILLS
TitaNox-POWER END MILLS
SUS-CUT END MILLS
V7 PLUS END MILLS
ALU-POWER HPC END MILLS
ALU-CUT END MILLS
G-CUT END MILLS
CRX S END MILLS
K-2 END MILLS
GENERAL CARBIDE END MILLS
ONLY ONE COATED PM60 END MILLS
TANK-POWER END MILLS
GENERAL HSS END MILLS
MILLING CUTTERS
TECHNICAL DATA

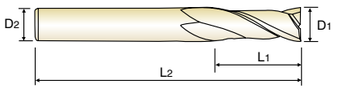
# 4G MILL END MILLS

PLAIN SHANK **SEME70** SERIES

## CARBIDE, 2 FLUTE LONG LENGTH
## 硬质合金，2刃 长刃

▶ New coating and tool geometry applied resulting outstanding cutting abilities and wear resistance.
▶Excellent performance when cutting prehardened steels, up to HRc55 which are used for molds & dies.
▶ Available in various lengths of cut and also overall lengths.

▶基于新涂层及形状, 实现出色切削性能和耐磨性
▶加工模具产业的预硬钢(HRc55以下)表现出色
▶可提供多种刃长和全长




CARBIDE | 2 | 30° | PLAIN | p.C284-289

Recommended ToolHolder

| Flat Shank | | Page | Plain Shank | Page |
|---|---|---|---|---|
| END MILL HOLDER | D118 - 137 | | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| - | - | | POWER MILLING CHUCK | D161 - 176 |
| - | - | | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Overall Length 全长 L2 |
|---|---|---|---|---|
| SEME7005040E | 5.0 | 6 | 40 | 100 |
| SEME7006015E | 6.0 | 6 | 15 | 60 |
| SEME7006015080E | 6.0 | 6 | 15 | 80 |
| SEME7006020E | 6.0 | 6 | 20 | 70 |
| SEME70060200090E | 6.0 | 6 | 20 | 90 |
| SEME7006025E | 6.0 | 6 | 25 | 75 |
| SEME7006030E | 6.0 | 6 | 30 | 80 |
| SEME70060300100E | 6.0 | 6 | 30 | 100 |
| SEME70060300150E | 6.0 | 6 | 30 | 150 |
| SEME7006035E | 6.0 | 6 | 35 | 90 |
| SEME7006040E | 6.0 | 6 | 40 | 90 |
| SEME70060400120E | 6.0 | 6 | 40 | 120 |
| SEME7006045E | 6.0 | 6 | 45 | 150 |
| SEME7008025E | 8.0 | 8 | 25 | 80 |
| SEME7008030E | 8.0 | 8 | 30 | 80 |
| SEME70080300100E | 8.0 | 8 | 30 | 100 |
| SEME7008035E | 8.0 | 8 | 35 | 90 |
| SEME7008040E | 8.0 | 8 | 40 | 90 |
| SEME70080400120E | 8.0 | 8 | 40 | 120 |
| SEME70080400150E | 8.0 | 8 | 40 | 150 |
| SEME7008045E | 8.0 | 8 | 45 | 100 |
| SEME7008050E | 8.0 | 8 | 50 | 100 |
| SEME70080500150E | 8.0 | 8 | 50 | 150 |
| SEME7010030E | 10.0 | 10 | 30 | 80 |

▶ NEXT PAGE 下页

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.03 | h5 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |

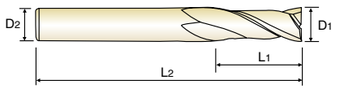
# 4G MILL END MILLS

PLAIN SHANK **SEME70** SERIES

## CARBIDE, 2 FLUTE LONG LENGTH
## 硬质合金，2刃 长刃

▶ New coating and tool geometry applied resulting outstanding cutting abilities and wear resistance.
▶Excellent performance when cutting prehardened steels, up to HRc55 which are used for molds & dies.
▶ Available in various lengths of cut and also overall lengths.

▶基于新涂层及形状, 实现出色切削性能和耐磨性
▶加工模具产业的预硬钢(HRc55以下)表现出色
▶可提供多种刃长和全长




CARBIDE | 2 | 30° | PLAIN | p.C284-289

Recommended ToolHolder

| Flat Shank | | Page | Plain Shank | Page |
|---|---|---|---|---|
| END MILL HOLDER | D118 - 137 | | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| - | - | | POWER MILLING CHUCK | D161 - 176 |
| - | - | | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Overall Length 全长 L2 |
|---|---|---|---|---|
| SEME7010030100E | 10.0 | 10 | 30 | 100 |
| SEME7010035E | 10.0 | 10 | 35 | 90 |
| SEME7010040E | 10.0 | 10 | 40 | 90 |
| SEME7010040120E | 10.0 | 10 | 40 | 120 |
| SEME7010045E | 10.0 | 10 | 45 | 100 |
| SEME7010050E | 10.0 | 10 | 50 | 100 |
| SEME7010050150E | 10.0 | 10 | 50 | 150 |
| SEME7010050200E | 10.0 | 10 | 50 | 200 |
| SEME7010055E | 10.0 | 10 | 55 | 150 |
| SEME7010060E | 10.0 | 10 | 60 | 110 |
| SEME7010060200E | 10.0 | 10 | 60 | 200 |
| SEME7012035E | 12.0 | 12 | 35 | 90 |
| SEME7012040E | 12.0 | 12 | 40 | 100 |
| SEME7012040120E | 12.0 | 12 | 40 | 120 |
| SEME7012045E | 12.0 | 12 | 45 | 130 |
| SEME7012050E | 12.0 | 12 | 50 | 100 |
| SEME7012050150E | 12.0 | 12 | 50 | 150 |
| SEME7012055E | 12.0 | 12 | 55 | 110 |
| SEME7012060E | 12.0 | 12 | 60 | 110 |
| SEME7012060150E | 12.0 | 12 | 60 | 150 |
| SEME7012060200E | 12.0 | 12 | 60 | 200 |
| SEME7012065E | 12.0 | 12 | 65 | 150 |
| SEME7012070E | 12.0 | 12 | 70 | 120 |
| SEME7012070200E | 12.0 | 12 | 70 | 200 |

▶ NEXT PAGE 下页

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.03 | h5 |

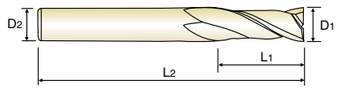
◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |



4G MILL END MILLS
PLAIN SHANK SEME70 SERIES
CARBIDE, 2 FLUTE LONG LENGTH
硬质合金，2刃 长刃
▶ New coating and tool geometry applied resulting outstanding cutting abilities and wear resistance.
▶Excellent performance when cutting prehardened steels, up to HRc55 which are used for molds & dies.
▶ Available in various lengths of cut and also overall lengths.
▶基于新涂层及形状, 实现出色切削性能和耐磨性
▶加工模具产业的预硬钢(HRc55以下)表现出色
▶可提供多种刃长和全长




CARBIDE | 2 | 30° | PLAIN | p.C284-289
Recommended ToolHolder
Flat Shank | Page | Plain Shank | Page
END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK / SHRINK FIT HOLDER | D15 - 46 / D47 - 72
- | - | POWER MILLING CHUCK | D161 - 176
- | - | ER COLLET CHUCK / SK SLIM CHUCK | D73 - 115 / D183 - 201
Unit(单位) : mm

| EDP No. | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Overall Length 全长 L2 |
|---|---|---|---|---|
| SEME7014050E | 14.0 | 16 | 50 | 110 |
| SEME7014060E | 14.0 | 16 | 60 | 150 |
| SEME7016040E | 16.0 | 16 | 40 | 150 |
| SEME7016050E | 16.0 | 16 | 50 | 110 |
| SEME7016050150E | 16.0 | 16 | 50 | 150 |
| SEME7016060E | 16.0 | 16 | 60 | 120 |
| SEME7016070E | 16.0 | 16 | 70 | 130 |
| SEME7016070150E | 16.0 | 16 | 70 | 150 |
| SEME7016070200E | 16.0 | 16 | 70 | 200 |
| SEME7016080E | 16.0 | 16 | 80 | 150 |
| SEME7016090E | 16.0 | 16 | 90 | 150 |
| SEME70160110E | 16.0 | 16 | 110 | 200 |
| SEME70160120E | 16.0 | 16 | 120 | 250 |
| SEME7018050E | 18.0 | 20 | 50 | 120 |
| SEME7018070E | 18.0 | 20 | 70 | 130 |
| SEME70180100E | 18.0 | 20 | 100 | 200 |
| SEME7020050E | 20.0 | 20 | 50 | 110 |
| SEME7020050150E | 20.0 | 20 | 50 | 150 |
| SEME7020060E | 20.0 | 20 | 60 | 130 |
| SEME7020070E | 20.0 | 20 | 70 | 130 |
| SEME7020080E | 20.0 | 20 | 80 | 150 |
| SEME7020090E | 20.0 | 20 | 90 | 150 |
| SEME7020090200E | 20.0 | 20 | 90 | 200 |
| SEME70200110E | 20.0 | 20 | 110 | 200 |

▶ NEXT PAGE 下页

Mill Dia.Tolerance (mm) 直径公差: 0 ~ - 0.03
Shank Dia.Tolerance 柄径公差: h5
◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |

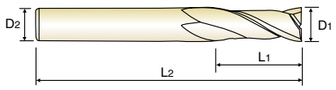
# 4G MILL END MILLS

PLAIN SHANK **SEME70** SERIES

## CARBIDE, 2 FLUTE LONG LENGTH
## 硬质合金，2刃 长刃

▶ New coating and tool geometry applied resulting outstanding cutting abilities and wear resistance.
▶Excellent performance when cutting prehardened steels, up to HRc55 which are used for molds & dies.
▶ Available in various lengths of cut and also overall lengths.

▶基于新涂层及形状, 实现出色切削性能和耐磨性
▶加工模具产业的预硬钢(HRc55以下)表现出色
▶可提供多种刃长和全长




CARBIDE 2 30° PLAIN p.C284-289

Recommended ToolHolder

| Flat Shank | | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ END MILL HOLDER | D118 - 137 | | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| ◎ - | - | | POWER MILLING CHUCK | D161 - 176 |
| ○ - | - | | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Overall Length 全长 L2 |
|---|---|---|---|---|
| SEME70200120E | 20.0 | 20 | 120 | 250 |
| SEME7022075E | 22.0 | 20 | 75 | 150 |
| SEME70220110E | 22.0 | 20 | 110 | 200 |
| SEME7025070E | 25.0 | 25 | 70 | 150 |
| SEME7025090E | 25.0 | 25 | 90 | 150 |
| SEME70250110E | 25.0 | 25 | 110 | 200 |
| SEME70250120E | 25.0 | 25 | 120 | 250 |

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.03 | h5 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |



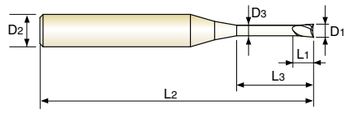
# 4G MILL END MILLS

PLAIN SHANK **SEM845** SERIES

## CARBIDE, 2 FLUTE with EXTENDED NECK
## 硬质合金，2刃 颈部加长

▶ New coating and tool geometry applied resulting outstanding cutting abilities and wear resistance.
▶ Excellent for cutting prehardened steels, carbon steels, alloy steels of molds and dies, up to HRc55 and machine parts.
▶ For 1.0mm and under 1.0mm diameter size products, it is designed with a double neck to increase tool rigidity and to minimize vibration.
▶ Available in several effective lengths of cut and also overall lengths to apply on various rib processing.

▶基于新形状设计, 纳米颗粒基体和涂层, 出色切削性能及耐磨性涂
▶加工模具产业的预硬钢，碳钢，合金钢(HRc55以下)表现出色
▶基于Ø1.0mm以下产品采用双颈设计, 增加刀具强生及减少切削震动
▶按照有效长和全长条件, 可提供各种颈部类型




CARBIDE 2 30° PLAIN p.C290-299

Recommended ToolHolder

| Flat Shank | | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ END MILL HOLDER | D118 - 137 | | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| ◎ - | - | | POWER MILLING CHUCK | D161 - 176 |
| ○ - | - | | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Length Below Shank 颈长 L3 | Overall Length 全长 L2 | Neck Diameter 颈径 D3 |
|---|---|---|---|---|---|---|
| SEM845001003E | 0.1 | 4 | 0.15 | 0.3 | 40 | 0.085 |
| SEM845001005E | 0.1 | 4 | 0.15 | 0.5 | 40 | 0.085 |
| SEM84500101E | 0.1 | 4 | 0.15 | 1 | 40 | 0.085 |
| SEM84500150035SE | 0.15 | 4 | 0.2 | 0.35 | 40 | 0.13 |
| SEM845002005E | 0.2 | 4 | 0.3 | 0.5 | 40 | 0.17 |
| SEM84500201E | 0.2 | 4 | 0.3 | 1 | 40 | 0.17 |
| SEM845002015E | 0.2 | 4 | 0.3 | 1.5 | 40 | 0.17 |
| SEM84500202E | 0.2 | 4 | 0.3 | 2 | 40 | 0.17 |
| SEM84500301E | 0.3 | 4 | 0.5 | 1 | 40 | 0.27 |
| SEM845003015E | 0.3 | 4 | 0.5 | 1.5 | 40 | 0.27 |
| SEM84500302E | 0.3 | 4 | 0.5 | 2 | 40 | 0.27 |
| SEM845003025E | 0.3 | 4 | 0.5 | 2.5 | 40 | 0.27 |
| SEM84500303E | 0.3 | 4 | 0.5 | 3 | 40 | 0.27 |
| SEM84500304E | 0.3 | 4 | 0.5 | 4 | 40 | 0.27 |
| SEM84500305E | 0.3 | 4 | 0.5 | 5 | 40 | 0.27 |
| SEM84500401E | 0.4 | 4 | 0.6 | 1 | 40 | 0.37 |
| SEM845004015E | 0.4 | 4 | 0.6 | 1.5 | 40 | 0.37 |
| SEM84500402E | 0.4 | 4 | 0.6 | 2 | 40 | 0.37 |
| SEM845004025E | 0.4 | 4 | 0.6 | 2.5 | 40 | 0.37 |
| SEM84500403E | 0.4 | 4 | 0.6 | 3 | 40 | 0.37 |
| SEM84500404E | 0.4 | 4 | 0.6 | 4 | 40 | 0.37 |
| SEM84500405E | 0.4 | 4 | 0.6 | 5 | 40 | 0.37 |
| SEM84500406E | 0.4 | 4 | 0.6 | 6 | 40 | 0.37 |
| SEM84500408E | 0.4 | 4 | 0.6 | 8 | 40 | 0.37 |

▶ NEXT PAGE 下页

| Size 尺寸 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|
| up to Ø6 Ø6以下 | 0~ - 0.012 | h5 |
| over Ø6 超过Ø6 | 0~ - 0.015 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |

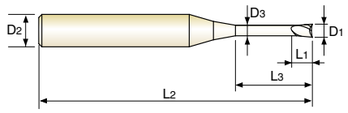
# 4G MILL END MILLS

PLAIN SHANK **SEM845** SERIES

## CARBIDE, 2 FLUTE with EXTENDED NECK
## 硬质合金，2刃 颈部加长

▶ New coating and tool geometry applied resulting outstanding cutting abilities and wear resistance.
▶ Excellent for cutting prehardened steels, carbon steels, alloy steels of molds and dies, up to HRc55 and machine parts.
▶ For 1.0mm and under 1.0mm diameter size products, it is designed with a double neck to increase tool rigidity and to minimize vibration.
▶ Available in several effective lengths of cut and also overall lengths to apply on various rib processing.

▶基于新形状设计，纳米颗粒基体和涂层，出色切削性能及耐磨性涂
▶加工模具产业的预硬钢，碳钢，合金钢(HRc55以下)表现出色
▶基于Ø1.0mm以下产品采用双颈设计，增加刀具强生及减少切削震动
▶按照有效长和全长条件，可提供各种颈部类型




CARBIDE | 2 | 30° | PLAIN | p.C290-299

Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| ◎ | - | - | POWER MILLING CHUCK | D161 - 176 |
| ○ | - | - | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Length Below Shank 颈长 L3 | Overall Length 全长 L2 | Neck Diameter 颈径 D3 |
|---|---|---|---|---|---|---|
| SEM84500410E | 0.4 | 4 | 0.6 | 10 | 40 | 0.37 |
| SEM84500501E | 0.5 | 4 | 0.7 | 1 | 45 | 0.45 |
| SEM845005015E | 0.5 | 4 | 0.7 | 1.5 | 45 | 0.45 |
| SEM84500502E | 0.5 | 4 | 0.7 | 2 | 45 | 0.45 |
| SEM845005025E | 0.5 | 4 | 0.7 | 2.5 | 45 | 0.45 |
| SEM84500503E | 0.5 | 4 | 0.7 | 3 | 45 | 0.45 |
| SEM84500504E | 0.5 | 4 | 0.7 | 4 | 45 | 0.45 |
| SEM84500505E | 0.5 | 4 | 0.7 | 5 | 45 | 0.45 |
| SEM84500506E | 0.5 | 4 | 0.7 | 6 | 45 | 0.45 |
| SEM84500508E | 0.5 | 4 | 0.7 | 8 | 45 | 0.45 |
| SEM84500510E | 0.5 | 4 | 0.7 | 10 | 45 | 0.45 |
| SEM84500512E | 0.5 | 4 | 0.7 | 12 | 45 | 0.45 |
| SEM84500514E | 0.5 | 4 | 0.7 | 14 | 45 | 0.45 |
| SEM84500516E | 0.5 | 4 | 0.7 | 16 | 45 | 0.45 |
| SEM84500602E | 0.6 | 4 | 0.9 | 2 | 45 | 0.55 |
| SEM84500603E | 0.6 | 4 | 0.9 | 3 | 45 | 0.55 |
| SEM84500604E | 0.6 | 4 | 0.9 | 4 | 45 | 0.55 |
| SEM84500605E | 0.6 | 4 | 0.9 | 5 | 45 | 0.55 |
| SEM84500606E | 0.6 | 4 | 0.9 | 6 | 45 | 0.55 |
| SEM84500608E | 0.6 | 4 | 0.9 | 8 | 45 | 0.55 |
| SEM84500610E | 0.6 | 4 | 0.9 | 10 | 45 | 0.55 |
| SEM84500612E | 0.6 | 4 | 0.9 | 12 | 45 | 0.55 |
| SEM84500614E | 0.6 | 4 | 0.9 | 14 | 45 | 0.55 |
| SEM84500616E | 0.6 | 4 | 0.9 | 16 | 45 | 0.55 |

▶ NEXT PAGE 下页

| Size 尺寸 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|
| up to Ø6 Ø6以下 | 0~ - 0.012 | h5 |
| over Ø6 超过Ø6 | 0~ - 0.015 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |



CARBIDE
HSS
CBN END MILLS
i-Xmill END MILLS
i-SMART MODULAR END MILLS
X5070 END MILLS
4G MILL END MILLS
X-POWER PRO END MILLS
TitaNox-POWER END MILLS
SUS-CUT END MILLS
V7 PLUS END MILLS
ALU-POWER HPC END MILLS
ALU-CUT END MILLS
G-CUT
CRX S END MILLS
K-2 END MILLS
GENERAL CARBIDE END MILLS
ONLY ONE COATED PM60 END MILLS
TANK-POWER END MILLS
GENERAL HSS END MILLS
MILLING CUTTERS
TECHNICAL DATA

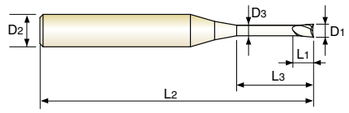
# 4G MILL END MILLS

PLAIN SHANK **SEM845** SERIES

## CARBIDE, 2 FLUTE with EXTENDED NECK
## 硬质合金，2刃 颈部加长

▶ New coating and tool geometry applied resulting outstanding cutting abilities and wear resistance.
▶ Excellent for cutting prehardened steels, carbon steels, alloy steels of molds and dies, up to HRc55 and machine parts.
▶ For 1.0mm and under 1.0mm diameter size products, it is designed with a double neck to increase tool rigidity and to minimize vibration.
▶ Available in several effective lengths of cut and also overall lengths to apply on various rib processing.

▶基于新形状设计，纳米颗粒基体和涂层，出色切削性能及耐磨性涂
▶加工模具产业的预硬钢，碳钢，合金钢(HRc55以下)表现出色
▶基于Ø1.0mm以下产品采用双颈设计，增加刀具强生及减少切削震动
▶按照有效长和全长条件，可提供各种颈部类型




CARBIDE | 2 | 30° | PLAIN | p.C290-299

Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| ◎ | - | - | POWER MILLING CHUCK | D161 - 176 |
| ○ | - | - | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Length Below Shank 颈长 L3 | Overall Length 全长 L2 | Neck Diameter 颈径 D3 |
|---|---|---|---|---|---|---|
| SEM84500702E | 0.7 | 4 | 1.2 | 2 | 45 | 0.65 |
| SEM84500704E | 0.7 | 4 | 1.2 | 4 | 45 | 0.65 |
| SEM84500706E | 0.7 | 4 | 1.2 | 6 | 45 | 0.65 |
| SEM84500708E | 0.7 | 4 | 1.2 | 8 | 45 | 0.65 |
| SEM84500710E | 0.7 | 4 | 1.2 | 10 | 45 | 0.65 |
| SEM84500712E | 0.7 | 4 | 1.2 | 12 | 45 | 0.65 |
| SEM84500802E | 0.8 | 4 | 1.2 | 2 | 45 | 0.75 |
| SEM84500803E | 0.8 | 4 | 1.2 | 3 | 45 | 0.75 |
| SEM84500804E | 0.8 | 4 | 1.2 | 4 | 45 | 0.75 |
| SEM84500805E | 0.8 | 4 | 1.2 | 5 | 45 | 0.75 |
| SEM84500806E | 0.8 | 4 | 1.2 | 6 | 45 | 0.75 |
| SEM84500808E | 0.8 | 4 | 1.2 | 8 | 45 | 0.75 |
| SEM84500810E | 0.8 | 4 | 1.2 | 10 | 45 | 0.75 |
| SEM84500812E | 0.8 | 4 | 1.2 | 12 | 45 | 0.75 |
| SEM84500814E | 0.8 | 4 | 1.2 | 14 | 45 | 0.75 |
| SEM84500816E | 0.8 | 4 | 1.2 | 16 | 45 | 0.75 |
| SEM84500820E | 0.8 | 4 | 1.2 | 20 | 45 | 0.75 |
| SEM84500906E | 0.9 | 4 | 1.3 | 6 | 45 | 0.85 |
| SEM84500908E | 0.9 | 4 | 1.3 | 8 | 45 | 0.85 |
| SEM84500910E | 0.9 | 4 | 1.3 | 10 | 45 | 0.85 |
| SEM84501002E | 1.0 | 4 | 1.5 | 2 | 50 | 0.95 |
| SEM84501003E | 1.0 | 4 | 1.5 | 3 | 50 | 0.95 |
| SEM84501004E | 1.0 | 4 | 1.5 | 4 | 50 | 0.95 |
| SEM84501005E | 1.0 | 4 | 1.5 | 5 | 50 | 0.95 |

▶ NEXT PAGE 下页

| Size 尺寸 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|
| up to Ø6 Ø6以下 | 0~ - 0.012 | h5 |
| over Ø6 超过Ø6 | 0~ - 0.015 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |

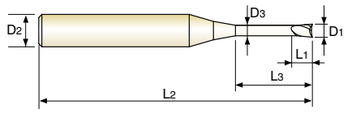
# 4G MILL END MILLS

PLAIN SHANK **SEM845** SERIES

## CARBIDE, 2 FLUTE with EXTENDED NECK
## 硬质合金，2刃 颈部加长

- ▶ New coating and tool geometry applied resulting outstanding cutting abilities and wear resistance.
- ▶ Excellent for cutting prehardened steels, carbon steels, alloy steels of molds and dies, up to HRc55 and machine parts.
- ▶ For 1.0mm and under 1.0mm diameter size products, it is designed with a double neck to increase tool rigidity and to minimize vibration.
- ▶ Available in several effective lengths of cut and also overall lengths to apply on various rib processing.

- ▶基于新形状设计，纳米颗粒基体和涂层，出色切削性能及耐磨性涂
- ▶加工模具产业的预硬钢，碳钢，合金钢(HRc55以下)表现出色
- ▶基于Ø1.0mm以下产品采用双颈设计，增加刀具强生及减少切削震动
- ▶按照有效长和全长条件，可提供各种颈部类型




CARBIDE | 2 | 30° | PLAIN | p.C290-299

Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| ◎ | - | - | POWER MILLING CHUCK | D161 - 176 |
| ○ | - | - | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Length Below Shank 颈长 L3 | Overall Length 全长 L2 | Neck Diameter 颈径 D3 |
|---|---|---|---|---|---|---|
| SEM84501006E | 1.0 | 4 | 1.5 | 6 | 50 | 0.95 |
| SEM84501007E | 1.0 | 4 | 1.5 | 7 | 50 | 0.95 |
| SEM84501008E | 1.0 | 4 | 1.5 | 8 | 50 | 0.95 |
| SEM84501010E | 1.0 | 4 | 1.5 | 10 | 50 | 0.95 |
| SEM84501012E | 1.0 | 4 | 1.5 | 12 | 50 | 0.95 |
| SEM84501014E | 1.0 | 4 | 1.5 | 14 | 50 | 0.95 |
| SEM84501016E | 1.0 | 4 | 1.5 | 16 | 50 | 0.95 |
| SEM84501018E | 1.0 | 4 | 1.5 | 18 | 50 | 0.95 |
| SEM84501020E | 1.0 | 4 | 1.5 | 20 | 50 | 0.95 |
| SEM84501022E | 1.0 | 4 | 1.5 | 22 | 60 | 0.95 |
| SEM84501026E | 1.0 | 4 | 1.5 | 26 | 60 | 0.95 |
| SEM84501030E | 1.0 | 4 | 1.5 | 30 | 70 | 0.95 |
| SEM84501040E | 1.0 | 4 | 1.5 | 40 | 80 | 0.95 |
| SEM84501050E | 1.0 | 4 | 1.5 | 50 | 100 | 0.95 |
| SEM84501204E | 1.2 | 4 | 1.8 | 4 | 50 | 1.15 |
| SEM84501206E | 1.2 | 4 | 1.8 | 6 | 50 | 1.15 |
| SEM84501208E | 1.2 | 4 | 1.8 | 8 | 50 | 1.15 |
| SEM84501210E | 1.2 | 4 | 1.8 | 10 | 50 | 1.15 |
| SEM84501212E | 1.2 | 4 | 1.8 | 12 | 50 | 1.15 |
| SEM84501214E | 1.2 | 4 | 1.8 | 14 | 50 | 1.15 |
| SEM84501216E | 1.2 | 4 | 1.8 | 16 | 50 | 1.15 |
| SEM84501220E | 1.2 | 4 | 1.8 | 20 | 50 | 1.15 |
| SEM84501226E | 1.2 | 4 | 1.8 | 26 | 60 | 1.15 |
| SEM84501230E | 1.2 | 4 | 1.8 | 30 | 70 | 1.15 |

▶ NEXT PAGE 下页

| Size 尺寸 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|
| up to Ø6 Ø6以下 | 0~ - 0.012 | h5 |
| over Ø6 超过Ø6 | 0~ - 0.015 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |



CARBIDE
HSS
CBN END MILLS
i-Xmill END MILLS
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X5070 END MILLS
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X-POWER PRO END MILLS
TitaNox-POWER END MILLS
SUS-CUT END MILLS
V7 PLUS END MILLS
ALU-POWER HPC END MILLS
ALU-CUT END MILLS
G-CUT
CRX S END MILLS
K-2 END MILLS
GENERAL CARBIDE END MILLS
ONLY ONE COATED PM60 END MILLS
TANK-POWER END MILLS
GENERAL HSS END MILLS
MILLING CUTTERS
TECHNICAL DATA

# 4G MILL END MILLS

PLAIN SHANK **SEM845** SERIES

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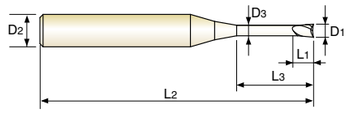
- ▶加工模具产业的预硬钢，碳钢，合金钢(HRc55以下)表现出色
- ▶基于Ø1.0mm以下产品采用双颈设计，增加刀具强生及减少切削震动
- ▶按照有效长和全长条件，可提供各种颈部类型




CARBIDE | 2 | 30° | PLAIN | p.C290-299

Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| ◎ | - | - | POWER MILLING CHUCK | D161 - 176 |
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Unit(单位) : mm

| EDP No. | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Length Below Shank 颈长 L3 | Overall Length 全长 L2 | Neck Diameter 颈径 D3 |
|---|---|---|---|---|---|---|
| SEM84501406E | 1.4 | 4 | 2.1 | 6 | 50 | 1.35 |
| SEM84501408E | 1.4 | 4 | 2.1 | 8 | 50 | 1.35 |
| SEM84501410E | 1.4 | 4 | 2.1 | 10 | 50 | 1.35 |
| SEM84501414E | 1.4 | 4 | 2.1 | 14 | 50 | 1.35 |
| SEM84501416E | 1.4 | 4 | 2.1 | 16 | 50 | 1.35 |
| SEM84501420E | 1.4 | 4 | 2.1 | 20 | 50 | 1.35 |
| SEM84501504E | 1.5 | 4 | 2.3 | 4 | 50 | 1.45 |
| SEM84501505E | 1.5 | 4 | 2.3 | 5 | 50 | 1.45 |
| SEM84501506E | 1.5 | 4 | 2.3 | 6 | 50 | 1.45 |
| SEM84501507E | 1.5 | 4 | 2.3 | 7 | 50 | 1.45 |
| SEM84501508E | 1.5 | 4 | 2.3 | 8 | 50 | 1.45 |
| SEM84501510E | 1.5 | 4 | 2.3 | 10 | 50 | 1.45 |
| SEM84501512E | 1.5 | 4 | 2.3 | 12 | 50 | 1.45 |
| SEM84501514E | 1.5 | 4 | 2.3 | 14 | 50 | 1.45 |
| SEM84501516E | 1.5 | 4 | 2.3 | 16 | 50 | 1.45 |
| SEM84501518E | 1.5 | 4 | 2.3 | 18 | 50 | 1.45 |
| SEM84501520E | 1.5 | 4 | 2.3 | 20 | 50 | 1.45 |
| SEM84501522E | 1.5 | 4 | 2.3 | 22 | 60 | 1.45 |
| SEM84501526E | 1.5 | 4 | 2.3 | 26 | 60 | 1.45 |
| SEM84501530E | 1.5 | 4 | 2.3 | 30 | 70 | 1.45 |
| SEM84501608E | 1.6 | 4 | 2.3 | 8 | 50 | 1.55 |
| SEM84501610E | 1.6 | 4 | 2.3 | 10 | 50 | 1.55 |
| SEM84501612E | 1.6 | 4 | 2.3 | 12 | 50 | 1.55 |
| SEM84501616E | 1.6 | 4 | 2.3 | 16 | 50 | 1.55 |

▶ NEXT PAGE 下页

| Size 尺寸 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|
| up to Ø6 Ø6以下 | 0~ - 0.012 | h5 |
| over Ø6 超过Ø6 | 0~ - 0.015 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |

# 4G MILL END MILLS

PLAIN SHANK **SEM845** SERIES

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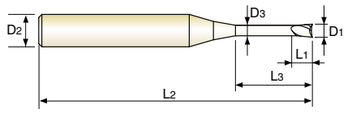
- ▶按照有效长和全长条件，可提供各种颈部类型




CARBIDE | 2 | 30° | PLAIN | p.C290-299

Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| ◎ | - | - | POWER MILLING CHUCK | D161 - 176 |
| ○ | - | - | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Length Below Shank 颈长 L3 | Overall Length 全长 L2 | Neck Diameter 颈径 D3 |
|---|---|---|---|---|---|---|
| SEM84501620E | 1.6 | 4 | 2.3 | 20 | 50 | 1.55 |
| SEM84501808E | 1.8 | 4 | 2.7 | 8 | 50 | 1.75 |
| SEM84501810E | 1.8 | 4 | 2.7 | 10 | 50 | 1.75 |
| SEM84501812E | 1.8 | 4 | 2.7 | 12 | 50 | 1.75 |
| SEM84501816E | 1.8 | 4 | 2.7 | 16 | 50 | 1.75 |
| SEM84501820E | 1.8 | 4 | 2.7 | 20 | 50 | 1.75 |
| SEM84502006E | 2.0 | 4 | 3 | 6 | 50 | 1.95 |
| SEM84502008E | 2.0 | 4 | 3 | 8 | 50 | 1.95 |
| SEM84502010E | 2.0 | 4 | 3 | 10 | 50 | 1.95 |
| SEM84502012E | 2.0 | 4 | 3 | 12 | 50 | 1.95 |
| SEM84502014E | 2.0 | 4 | 3 | 14 | 50 | 1.95 |
| SEM84502016E | 2.0 | 4 | 3 | 16 | 50 | 1.95 |
| SEM84502018E | 2.0 | 4 | 3 | 18 | 50 | 1.95 |
| SEM84502020E | 2.0 | 4 | 3 | 20 | 50 | 1.95 |
| SEM84502022E | 2.0 | 4 | 3 | 22 | 60 | 1.95 |
| SEM84502026E | 2.0 | 4 | 3 | 26 | 60 | 1.95 |
| SEM84502030E | 2.0 | 4 | 3 | 30 | 70 | 1.95 |
| SEM84502035E | 2.0 | 4 | 3 | 35 | 70 | 1.95 |
| SEM84502040E | 2.0 | 4 | 3 | 40 | 80 | 1.95 |
| SEM84502045E | 2.0 | 4 | 3 | 45 | 90 | 1.95 |
| SEM84502050E | 2.0 | 4 | 3 | 50 | 100 | 1.95 |
| SEM84502060E | 2.0 | 4 | 3 | 60 | 110 | 1.95 |
| SEM84502508E | 2.5 | 4 | 4 | 8 | 50 | 2.40 |
| SEM84502510E | 2.5 | 4 | 4 | 10 | 50 | 2.40 |

▶ NEXT PAGE 下页

| Size 尺寸 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|
| up to Ø6 Ø6以下 | 0~ - 0.012 | h5 |
| over Ø6 超过Ø6 | 0~ - 0.015 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |



CARBIDE
HSS
CBN END MILLS
i-Xmill END MILLS
i-SMART MODULAR END MILLS
X5070 END MILLS
4G MILL END MILLS
X-POWER PRO END MILLS
TitaNox-POWER END MILLS
SUS-CUT END MILLS
V7 PLUS END MILLS
ALU-POWER HPC END MILLS
ALU-CUT END MILLS
G-CUT END MILLS
CRX S END MILLS
K-2 END MILLS
GENERAL CARBIDE END MILLS
ONLY ONE COATED PM60 END MILLS
TANK-POWER END MILLS
GENERAL HSS END MILLS
MILLING CUTTERS
TECHNICAL DATA

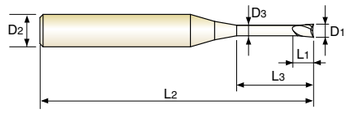
# 4G MILL END MILLS

PLAIN SHANK **SEM845** SERIES

## CARBIDE, 2 FLUTE with EXTENDED NECK
## 硬质合金，2刃 颈部加长

- ▶ New coating and tool geometry applied resulting outstanding cutting abilities and wear resistance.
- ▶ Excellent for cutting prehardened steels, carbon steels, alloy steels of molds and dies, up to HRc55 and machine parts.
- ▶ For 1.0mm and under 1.0mm diameter size products, it is designed with a double neck to increase tool rigidity and to minimize vibration.
- ▶ Available in several effective lengths of cut and also overall lengths to apply on various rib processing.

- ▶基于新形状设计，纳米颗粒基体和涂层，出色切削性能及耐磨性涂
- ▶加工模具产业的预硬钢，碳钢，合金钢(HRc55以下)表现出色
- ▶基于Ø1.0mm以下产品采用双颈设计，增加刀具强生及减少切削震动
- ▶按照有效长和全长条件，可提供各种颈部类型




CARBIDE | 2 | 30° | PLAIN | p.C290-299

Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| ◎ | - | - | POWER MILLING CHUCK | D161 - 176 |
| ○ | - | - | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Length Below Shank 颈长 L3 | Overall Length 全长 L2 | Neck Diameter 颈径 D3 |
|---|---|---|---|---|---|---|
| SEM84502512E | 2.5 | 4 | 4 | 12 | 50 | 2.40 |
| SEM84502514E | 2.5 | 4 | 4 | 14 | 50 | 2.40 |
| SEM84502516E | 2.5 | 4 | 4 | 16 | 50 | 2.40 |
| SEM84502518E | 2.5 | 4 | 4 | 18 | 50 | 2.40 |
| SEM84502520E | 2.5 | 4 | 4 | 20 | 50 | 2.40 |
| SEM84502522E | 2.5 | 4 | 4 | 22 | 60 | 2.40 |
| SEM84502526E | 2.5 | 4 | 4 | 26 | 60 | 2.40 |
| SEM84502530E | 2.5 | 4 | 4 | 30 | 70 | 2.40 |
| SEM84502535E | 2.5 | 4 | 4 | 35 | 70 | 2.40 |
| SEM84502540E | 2.5 | 4 | 4 | 40 | 80 | 2.40 |
| SEM84502545E | 2.5 | 4 | 4 | 45 | 90 | 2.40 |
| SEM84502550E | 2.5 | 4 | 4 | 50 | 100 | 2.40 |
| SEM84503006E | 3.0 | 6 | 4.5 | 6 | 50 | 2.85 |
| SEM84503008E | 3.0 | 6 | 4.5 | 8 | 50 | 2.85 |
| SEM84503010E | 3.0 | 6 | 4.5 | 10 | 50 | 2.85 |
| SEM84503012E | 3.0 | 6 | 4.5 | 12 | 50 | 2.85 |
| SEM84503014E | 3.0 | 6 | 4.5 | 14 | 60 | 2.85 |
| SEM84503016E | 3.0 | 6 | 4.5 | 16 | 60 | 2.85 |
| SEM84503018E | 3.0 | 6 | 4.5 | 18 | 60 | 2.85 |
| SEM84503020E | 3.0 | 6 | 4.5 | 20 | 60 | 2.85 |
| SEM84503022E | 3.0 | 6 | 4.5 | 22 | 65 | 2.85 |
| SEM84503026E | 3.0 | 6 | 4.5 | 26 | 65 | 2.85 |
| SEM84503030E | 3.0 | 6 | 4.5 | 30 | 70 | 2.85 |
| SEM84503035E | 3.0 | 6 | 4.5 | 35 | 70 | 2.85 |

▶ NEXT PAGE 下页

| Size 尺寸 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|
| up to Ø6 Ø6以下 | 0~ - 0.012 | h5 |
| over Ø6 超过Ø6 | 0~ - 0.015 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |

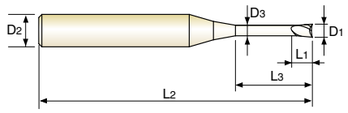
# 4G MILL END MILLS

PLAIN SHANK **SEM845** SERIES

## CARBIDE, 2 FLUTE with EXTENDED NECK
## 硬质合金，2刃 颈部加长

▶ New coating and tool geometry applied resulting outstanding cutting abilities and wear resistance.
▶ Excellent for cutting prehardened steels, carbon steels, alloy steels of molds and dies, up to HRc55 and machine parts.
▶ For 1.0mm and under 1.0mm diameter size products, it is designed with a double neck to increase tool rigidity and to minimize vibration.
▶ Available in several effective lengths of cut and also overall lengths to apply on various rib processing.

▶基于新形状设计，纳米颗粒基体和涂层，出色切削性能及耐磨性涂
▶加工模具产业的预硬钢，碳钢，合金钢(HRc55以下)表现出色
▶基于Ø1.0mm以下产品采用双颈设计，增加刀具强生及减少切削震动
▶按照有效长和全长条件，可提供各种颈部类型




CARBIDE | 2 | 30° | PLAIN | p.C290-299

Recommended ToolHolder

| Flat Shank | | Page | Plain Shank | Page |
|---|---|---|---|---|
| END MILL HOLDER | D118 - 137 | | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| - | - | | POWER MILLING CHUCK | D161 - 176 |
| - | - | | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Length Below Shank 颈长 L3 | Overall Length 全长 L2 | Neck Diameter 颈径 D3 |
|---|---|---|---|---|---|---|
| SEM84503040E | 3.0 | 6 | 4.5 | 40 | 80 | 2.85 |
| SEM84503045E | 3.0 | 6 | 4.5 | 45 | 90 | 2.85 |
| SEM84503050E | 3.0 | 6 | 4.5 | 50 | 100 | 2.85 |
| SEM84503060E | 3.0 | 6 | 4.5 | 60 | 100 | 2.85 |
| SEM84504008E | 4.0 | 6 | 6 | 8 | 50 | 3.85 |
| SEM84504010E | 4.0 | 6 | 6 | 10 | 50 | 3.85 |
| SEM84504012E | 4.0 | 6 | 6 | 12 | 50 | 3.85 |
| SEM84504014E | 4.0 | 6 | 6 | 14 | 60 | 3.85 |
| SEM84504016E | 4.0 | 6 | 6 | 16 | 60 | 3.85 |
| SEM84504018E | 4.0 | 6 | 6 | 18 | 60 | 3.85 |
| SEM84504020E | 4.0 | 6 | 6 | 20 | 60 | 3.85 |
| SEM84504022E | 4.0 | 6 | 6 | 22 | 65 | 3.85 |
| SEM84504026E | 4.0 | 6 | 6 | 26 | 65 | 3.85 |
| SEM84504030E | 4.0 | 6 | 6 | 30 | 70 | 3.85 |
| SEM84504035E | 4.0 | 6 | 6 | 35 | 70 | 3.85 |
| SEM84504040E | 4.0 | 6 | 6 | 40 | 80 | 3.85 |
| SEM84504045E | 4.0 | 6 | 6 | 45 | 90 | 3.85 |
| SEM84504050E | 4.0 | 6 | 6 | 50 | 100 | 3.85 |
| SEM84504060E | 4.0 | 6 | 6 | 60 | 100 | 3.85 |
| SEM84505016E | 5.0 | 6 | 8 | 16 | 60 | 4.85 |
| SEM84505020E | 5.0 | 6 | 8 | 20 | 60 | 4.85 |
| SEM84505026E | 5.0 | 6 | 8 | 26 | 65 | 4.85 |
| SEM84505030E | 5.0 | 6 | 8 | 30 | 70 | 4.85 |
| SEM84505035E | 5.0 | 6 | 8 | 35 | 75 | 4.85 |

▶ NEXT PAGE 下页

| Size 尺寸 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|
| up to Ø6 Ø6以下 | 0~ - 0.012 | h5 |
| over Ø6 超过Ø6 | 0~ - 0.015 | |

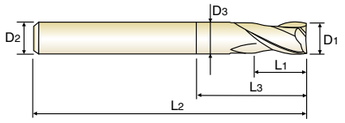
◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |



4G MILL END MILLS
PLAIN SHANK SEM845 SERIES
CARBIDE, 2 FLUTE with EXTENDED NECK
硬质合金，2刃 颈部加长
▶ New coating and tool geometry applied resulting outstanding cutting abilities and wear resistance.
▶ Excellent for cutting prehardened steels, carbon steels, alloy steels of molds and dies, up to HRc55 and machine parts.
▶ For 1.0mm and under 1.0mm diameter size products, it is designed with a double neck to increase tool rigidity and to minimize vibration.
▶ Available in several effective lengths of cut and also overall lengths to apply on various rib processing.
▶基于新形状设计，纳米颗粒基体和涂层，出色切削性能及耐磨性涂
▶加工模具产业的预硬钢，碳钢，合金钢(HRc55以下)表现出色
▶基于Ø1.0mm以下产品采用双颈设计，增加刀具强生及减少切削震动
▶按照有效长和全长条件，可提供各种颈部类型




CARBIDE | 2 | 30° | PLAIN | p.C290-299
Recommended ToolHolder
Flat Shank: END MILL HOLDER D118 - 137; - - ; - -
Plain Shank: HYDRAULIC CHUCK / SHRINK FIT HOLDER D15 - 46 / D47 - 72; POWER MILLING CHUCK D161 - 176; ER COLLET CHUCK / SK SLIM CHUCK D73 - 115 / D183 - 201
Unit(单位) : mm

| EDP No. | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Length Below Shank 颈长 L3 | Overall Length 全长 L2 | Neck Diameter 颈径 D3 |
|---|---|---|---|---|---|---|
| SEM84505040E | 5.0 | 6 | 8 | 40 | 80 | 4.85 |
| SEM84505050E | 5.0 | 6 | 8 | 50 | 90 | 4.85 |
| SEM84505060E | 5.0 | 6 | 8 | 60 | 100 | 4.85 |
| SEM84506015E | 6.0 | 6 | 9 | 15 | 60 | 5.85 |
| SEM84506020E | 6.0 | 6 | 9 | 20 | 60 | 5.85 |
| SEM84506030E | 6.0 | 6 | 9 | 30 | 70 | 5.85 |
| SEM84506032E | 6.0 | 6 | 9 | 32 | 90 | 5.85 |
| SEM84508025E | 8.0 | 8 | 12 | 25 | 70 | 7.70 |
| SEM84508030E | 8.0 | 8 | 12 | 30 | 80 | 7.70 |
| SEM84508042E | 8.0 | 8 | 12 | 42 | 100 | 7.70 |
| SEM84510030E | 10.0 | 10 | 15 | 30 | 75 | 9.70 |
| SEM84510035E | 10.0 | 10 | 15 | 35 | 80 | 9.70 |
| SEM84510045E | 10.0 | 10 | 15 | 45 | 100 | 9.70 |
| SEM84512035E | 12.0 | 12 | 20 | 35 | 80 | 11.70 |
| SEM84512040E | 12.0 | 12 | 20 | 40 | 90 | 11.70 |
| SEM84512050E | 12.0 | 12 | 20 | 50 | 110 | 11.70 |

| Size 尺寸 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|
| up to Ø6 Ø6以下 | 0~ - 0.012 | h5 |
| over Ø6 超过Ø6 | 0~ - 0.015 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |

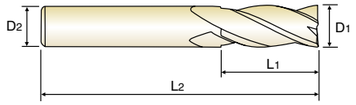
# 4G MILL END MILLS

PLAIN SHANK **SEME36** SERIES

## CARBIDE, 4 FLUTE MULTIPLE HELIX
## 硬质合金，4刃 不等螺旋

- ▶ New coating and tool geometry applied resulting outstanding cutting abilities and wear resistance.
- ▶ Excellent for cutting prehardened steels, carbon steels, alloy steels of molds and dies, up to HRc55 and machine parts.
- ▶ Multiple Helix for 3.0mm and over 3.0mm diameter end mills minimizing vibration and decreasing wear in cutting.

- ▶基于新涂层及形状, 实现出色切削性能和耐磨性
- ▶加工模具产业的预硬钢(HRc55以下)表现出色
- ▶基于Ø3.0mm以上采用不等螺旋, 减少切削震动及增加切削耐磨性




CARBIDE | 4 | 27°/30° | PLAIN | p.C300-303

D<Ø3, 30˚ HELIX

Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| - | - | POWER MILLING CHUCK | D161 - 176 |
| - | - | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Overall Length 全长 L2 | Remark 备注 |
|---|---|---|---|---|---|
| SEME36008E | 0.8 | 4 | 1.6 | 40 | 4mm Shank |
| SEME36009E | 0.9 | 4 | 1.8 | 40 | 4mm Shank |
| SEME360104SE | 1.0 | 4 | 2.5 | 50 | 4mm Shank |
| SEME36010E | 1.0 | 6 | 2.5 | 50 | - |
| SEME360124SE | 1.2 | 4 | 3 | 50 | 4mm Shank |
| SEME36012E | 1.2 | 6 | 3 | 50 | - |
| SEME360154SE | 1.5 | 4 | 4 | 50 | 4mm Shank |
| SEME36015E | 1.5 | 6 | 4 | 50 | - |
| SEME360204SE | 2.0 | 4 | 6 | 50 | 4mm Shank |
| SEME36020E | 2.0 | 6 | 6 | 50 | - |
| SEME360254SE | 2.5 | 4 | 7 | 50 | 4mm Shank |
| SEME36025E | 2.5 | 6 | 7 | 50 | - |
| SEME36030E | 3.0 | 6 | 8 | 50 | - |
| SEME36035E | 3.5 | 6 | 10 | 50 | - |
| SEME36040E | 4.0 | 6 | 10 | 50 | - |
| SEME36045E | 4.5 | 6 | 14 | 50 | - |
| SEME36050E | 5.0 | 6 | 15 | 60 | - |
| SEME36055E | 5.5 | 6 | 15 | 60 | - |
| SEME36060E | 6.0 | 6 | 15 | 60 | - |
| SEME36065E | 6.5 | 8 | 18 | 60 | - |
| SEME36070E | 7.0 | 8 | 20 | 60 | - |
| SEME36075E | 7.5 | 8 | 20 | 60 | - |
| SEME36080E | 8.0 | 8 | 20 | 70 | - |
| SEME36085E | 8.5 | 10 | 22 | 70 | - |

▶ NEXT PAGE 下页

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.03 | h5 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |



CARBIDE
HSS
CBN END MILLS
i-Xmill END MILLS
i-SMART MODULAR END MILLS
X5070 END MILLS
4G MILL END MILLS
X-POWER PRO END MILLS
TitaNox-POWER END MILLS
SUS-CUT END MILLS
V7 PLUS END MILLS
ALU-POWER HPC END MILLS
ALU-CUT END MILLS
G-CUT
CRX S END MILLS
K-2 END MILLS
GENERAL CARBIDE END MILLS
ONLY ONE COATED PM60 END MILLS
TANK-POWER END MILLS
GENERAL HSS END MILLS
MILLING CUTTERS
TECHNICAL DATA

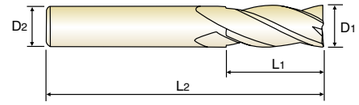
# 4G MILL END MILLS

PLAIN SHANK **SEME36** SERIES

## CARBIDE, 4 FLUTE MULTIPLE HELIX
## 硬质合金，4刃 不等螺旋

- ▶ New coating and tool geometry applied resulting outstanding cutting abilities and wear resistance.
- ▶ Excellent for cutting prehardened steels, carbon steels, alloy steels of molds and dies, up to HRc55 and machine parts.
- ▶ Multiple Helix for 3.0mm and over 3.0mm diameter end mills minimizing vibration and decreasing wear in cutting.

- ▶基于新涂层及形状, 实现出色切削性能和耐磨性
- ▶加工模具产业的预硬钢(HRc55以下)表现出色
- ▶基于Ø3.0mm以上采用不等螺旋, 减少切削震动及增加切削耐磨性




CARBIDE | 4 | 27°/30° | PLAIN | p.C300-303

D<Ø3, 30˚ HELIX

Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| - | - | POWER MILLING CHUCK | D161 - 176 |
| - | - | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Overall Length 全长 L2 | Remark 备注 |
|---|---|---|---|---|---|
| SEME36090E | 9.0 | 10 | 22 | 70 | - |
| SEME36095E | 9.5 | 10 | 24 | 70 | - |
| SEME36100E | 10.0 | 10 | 25 | 75 | - |
| SEME36105E | 10.5 | 12 | 26 | 75 | - |
| SEME36110E | 11.0 | 12 | 30 | 75 | - |
| SEME36115E | 11.5 | 12 | 30 | 80 | - |
| SEME36120E | 12.0 | 12 | 30 | 80 | - |
| SEME36130E | 13.0 | 12 | 35 | 100 | - |
| SEME3614012SE | 14.0 | 12 | 35 | 100 | - |
| SEME3614014SE | 14.0 | 14 | 35 | 100 | - |
| SEME36140E | 14.0 | 16 | 35 | 100 | - |
| SEME36150E | 15.0 | 16 | 38 | 100 | - |
| SEME36160E | 16.0 | 16 | 40 | 100 | - |
| SEME36170E | 17.0 | 16 | 42 | 100 | - |
| SEME36180E | 18.0 | 16 | 45 | 100 | - |
| SEME3618018SE | 18.0 | 18 | 45 | 100 | - |
| SEME36190E | 19.0 | 20 | 45 | 100 | - |
| SEME36200E | 20.0 | 20 | 45 | 100 | - |
| SEME36210E | 21.0 | 20 | 45 | 100 | - |
| SEME36220E | 22.0 | 20 | 45 | 100 | - |
| SEME36230E | 23.0 | 25 | 50 | 120 | - |
| SEME36240E | 24.0 | 25 | 50 | 120 | - |
| SEME36250E | 25.0 | 25 | 50 | 120 | - |

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.03 | h5 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |

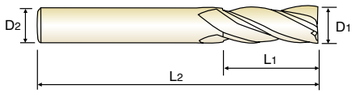
# 4G MILL END MILLS

PLAIN SHANK **SEME71** SERIES

## CARBIDE, 4 FLUTE MULTIPLE HELIX (Sharp corner removal)
## 硬质合金，4刃 不等螺旋（保护刀尖处理）

- ▶ New coating and tool geometry applied resulting outstanding cutting abilities and wear resistance.
- ▶ Excellent for cutting prehardened steels, carbon steels, alloy steels of molds and dies, up to HRc55 and machine parts.
- ▶ Multiple Helix for 3.0mm and over 3.0mm diameter endmills minimizing vibration and decreasing wear in cutting.
  - Equal index flutes design for long length and single helix (38°) end mills.
- ▶ Gash land geometry applied at the end tooth, achieving heavy duty cutting.
- ▶ Available various length products like short, regular and long length end mills etc.
- ▶ Available in short, regular and long shank end mills.

- ▶基于新涂层及形状, 实现出色切削性能和耐磨性
- ▶加工模具产业的预硬钢(HRc55以下)表现出色
- ▶基于Ø3.0mm以上采用不等螺旋,
  减少切削震动及增加切削耐磨性
  - 长刃产品和单螺旋（38度）产品不采用不等螺旋
- ▶基于在底刃的月牙槽形状, 可用重切削
- ▶可提供多种刃长包括短,普通和长刃铣刀等
- ▶可提供短，普通和长柄铣刀




CARBIDE | 4 | 35°/38° | PLAIN | p.C300-303

D<Ø3, Long Length 38˚ HELIX

Recommended ToolHolder

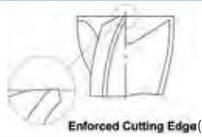
| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| ◎ | - | - | POWER MILLING CHUCK | D161 - 176 |
| ○ | - | - | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Overall Length 全长 L2 | Remark 备注 |
|---|---|---|---|---|---|
| SEME71010014SE | 1.0 | 4 | 1 | 40 | 4mm Shank |
| SEME71010024SE | 1.0 | 4 | 2 | 40 | 4mm Shank |
| SEME710104SE | 1.0 | 4 | 2.5 | 50 | 4mm Shank |
| SEME71010034SE | 1.0 | 4 | 3 | 50 | 4mm Shank |
| SEME71010044SE | 1.0 | 4 | 4 | 50 | 4mm Shank |
| SEME71010064SE | 1.0 | 4 | 6 | 50 | 4mm Shank |
| SEME7101001E | 1.0 | 6 | 1 | 40 | Short |
| SEME7101002E | 1.0 | 6 | 2 | 40 | Short |
| SEME71010E | 1.0 | 6 | 2.5 | 50 | Regular |
| SEME7101003E | 1.0 | 6 | 3 | 50 | Long |
| SEME7101004E | 1.0 | 6 | 4 | 50 | Long |
| SEME7101006E | 1.0 | 6 | 6 | 50 | Long |
| SEME71012024SE | 1.2 | 4 | 2 | 40 | 4mm Shank |
| SEME710124SE | 1.2 | 4 | 3 | 50 | 4mm Shank |
| SEME71012044SE | 1.2 | 4 | 4 | 50 | 4mm Shank |
| SEME71012064SE | 1.2 | 4 | 6 | 50 | 4mm Shank |
| SEME7101202E | 1.2 | 6 | 2 | 40 | Short |
| SEME71012E | 1.2 | 6 | 3 | 50 | Regular |
| SEME7101204E | 1.2 | 6 | 4 | 50 | Long |
| SEME7101206E | 1.2 | 6 | 6 | 50 | Long |
| SEME710150154SE | 1.5 | 4 | 1.5 | 40 | 4mm Shank |
| SEME71015034SE | 1.5 | 4 | 3 | 40 | 4mm Shank |
| SEME710154SE | 1.5 | 4 | 4 | 50 | 4mm Shank |
| SEME71015064SE | 1.5 | 4 | 6 | 50 | 4mm Shank |

▶ NEXT PAGE 下页

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.03 | h5 |



Enforced Cutting Edge(保护尖角处理)

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |



CARBIDE
HSS
CBN END MILLS
i-Xmill END MILLS
i-SMART MODULAR END MILLS
X5070 END MILLS
4G MILL END MILLS
X-POWER PRO END MILLS
TitaNox-POWER END MILLS
SUS-CUT END MILLS
V7 PLUS END MILLS
ALU-POWER HPC END MILLS
ALU-CUT END MILLS
G-CUT
CRX S END MILLS
K-2 END MILLS
GENERAL CARBIDE END MILLS
ONLY ONE COATED PM60 END MILLS
TANK-POWER END MILLS
GENERAL HSS END MILLS
MILLING CUTTERS
TECHNICAL DATA

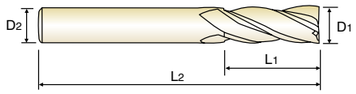
# 4G MILL END MILLS

PLAIN SHANK **SEME71** SERIES

## CARBIDE, 4 FLUTE MULTIPLE HELIX (Sharp corner removal)
## 硬质合金，4刃 不等螺旋（保护刀尖处理）

- ▶ New coating and tool geometry applied resulting outstanding cutting abilities and wear resistance.
- ▶ Excellent for cutting prehardened steels, carbon steels, alloy steels of molds and dies, up to HRc55 and machine parts.
- ▶ Multiple Helix for 3.0mm and over 3.0mm diameter endmills minimizing vibration and decreasing wear in cutting.
  - Equal index flutes design for long length and single helix (38°) end mills.
- ▶ Gash land geometry applied at the end tooth, achieving heavy duty cutting.
- ▶ Available various length products like short, regular and long length end mills etc.
- ▶ Available in short, regular and long shank end mills.

- ▶基于新涂层及形状, 实现出色切削性能和耐磨性
- ▶加工模具产业的预硬钢(HRc55以下)表现出色
- ▶基于Ø3.0mm以上采用不等螺旋,
  减少切削震动及增加切削耐磨性
  - 长刃产品和单螺旋（38度）产品不采用不等螺旋
- ▶基于在底刃的月牙槽形状, 可用重切削
- ▶可提供多种刃长包括短,普通和长刃铣刀等
- ▶可提供短，普通和长柄铣刀




CARBIDE | 4 | 35°/38° | PLAIN | p.C300-303

D<Ø3, Long Length 38˚ HELIX

Recommended ToolHolder

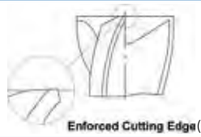
| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| ◎ | - | - | POWER MILLING CHUCK | D161 - 176 |
| ○ | - | - | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Overall Length 全长 L2 | Remark 备注 |
|---|---|---|---|---|---|
| SEME71015084SE | 1.5 | 4 | 8 | 50 | 4mm Shank |
| SEME71015104SE | 1.5 | 4 | 10 | 50 | 4mm Shank |
| SEME71015015E | 1.5 | 6 | 1.5 | 40 | Short |
| SEME7101503E | 1.5 | 6 | 3 | 40 | Short |
| SEME71015E | 1.5 | 6 | 4 | 50 | Regular |
| SEME7101506E | 1.5 | 6 | 6 | 50 | Long |
| SEME7101508E | 1.5 | 6 | 8 | 50 | Long |
| SEME7101510E | 1.5 | 6 | 10 | 50 | Long |
| SEME71020024SE | 2.0 | 4 | 2 | 40 | 4mm Shank |
| SEME71020044SE | 2.0 | 4 | 4 | 40 | 4mm Shank |
| SEME710204SE | 2.0 | 4 | 6 | 50 | 4mm Shank |
| SEME71020084SE | 2.0 | 4 | 8 | 50 | 4mm Shank |
| SEME71020104SE | 2.0 | 4 | 10 | 50 | 4mm Shank |
| SEME71020124SE | 2.0 | 4 | 12 | 50 | 4mm Shank |
| SEME7102002E | 2.0 | 6 | 2 | 40 | Short |
| SEME7102004E | 2.0 | 6 | 4 | 40 | Short |
| SEME71020E | 2.0 | 6 | 6 | 50 | Regular |
| SEME7102008E | 2.0 | 6 | 8 | 50 | Long |
| SEME7102010E | 2.0 | 6 | 10 | 50 | Long |
| SEME7102012E | 2.0 | 6 | 12 | 50 | Long |
| SEME710250254SE | 2.5 | 4 | 2.5 | 40 | 4mm Shank |
| SEME71025054SE | 2.5 | 4 | 5 | 40 | 4mm Shank |
| SEME710254SE | 2.5 | 4 | 7 | 50 | 4mm Shank |
| SEME71025104SE | 2.5 | 4 | 10 | 50 | 4mm Shank |

▶ NEXT PAGE 下页

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.03 | h5 |



Enforced Cutting Edge(保护尖角处理)

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |

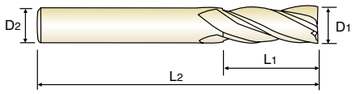
# 4G MILL END MILLS

PLAIN SHANK **SEME71** SERIES

## CARBIDE, 4 FLUTE MULTIPLE HELIX (Sharp corner removal)
## 硬质合金，4刃 不等螺旋（保护刀尖处理）

- ▶ New coating and tool geometry applied resulting outstanding cutting abilities and wear resistance.
- ▶ Excellent for cutting prehardened steels, carbon steels, alloy steels of molds and dies, up to HRc55 and machine parts.
- ▶ Multiple Helix for 3.0mm and over 3.0mm diameter endmills minimizing vibration and decreasing wear in cutting.
  - Equal index flutes design for long length and single helix (38°) end mills.
- ▶ Gash land geometry applied at the end tooth, achieving heavy duty cutting.
- ▶ Available various length products like short, regular and long length end mills etc.
- ▶ Available in short, regular and long shank end mills.

- ▶基于新涂层及形状, 实现出色切削性能和耐磨性
- ▶加工模具产业的预硬钢(HRc55以下)表现出色
- ▶基于Ø3.0mm以上采用不等螺旋, 减少切削震动及增加切削耐磨性
  - 长切产品和单螺旋（38度）产品不采用不等螺旋
- ▶基于在底刃的月牙槽形状, 可用重切削
- ▶可提供多种刃长包括短,普通和长刃铣刀等
- ▶可提供短，普通和长柄铣刀




CARBIDE | 4 | 35°/38° | PLAIN | p.C300-303

D<Ø3, Long Length 38˚ HELIX

Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| ◎ | - | - | POWER MILLING CHUCK | D161 - 176 |
| ○ | - | - | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Overall Length 全长 L2 | Remark 备注 |
|---|---|---|---|---|---|
| SEME71025124SE | 2.5 | 4 | 12 | 50 | 4mm Shank |
| SEME71025025E | 2.5 | 6 | 2.5 | 40 | Short |
| SEME7102505E | 2.5 | 6 | 5 | 40 | Short |
| SEME71025E | 2.5 | 6 | 7 | 50 | Regular |
| SEME7102510E | 2.5 | 6 | 10 | 50 | Long |
| SEME7102512E | 2.5 | 6 | 12 | 50 | Long |
| SEME7103003E | 3.0 | 6 | 3 | 40 | Short |
| SEME7103006E | 3.0 | 6 | 6 | 40 | Short |
| SEME71030E | 3.0 | 6 | 8 | 50 | Regular |
| SEME7103010E | 3.0 | 6 | 10 | 50 | Long |
| SEME7103012E | 3.0 | 6 | 12 | 50 | Long |
| SEME7103014E | 3.0 | 6 | 14 | 50 | Long |
| SEME7104004E | 4.0 | 6 | 4 | 40 | Short |
| SEME7104008E | 4.0 | 6 | 8 | 40 | Short |
| SEME71040E | 4.0 | 6 | 10 | 50 | Regular |
| SEME7104012E | 4.0 | 6 | 12 | 50 | Long |
| SEME7104014E | 4.0 | 6 | 14 | 50 | Long |
| SEME7104016E | 4.0 | 6 | 16 | 50 | Long |
| SEME7105005E | 5.0 | 6 | 5 | 50 | Short |
| SEME7105010E | 5.0 | 6 | 10 | 50 | Short |
| SEME71050E | 5.0 | 6 | 15 | 60 | Regular |
| SEME7105020E | 5.0 | 6 | 20 | 60 | Long |
| SEME7105025E | 5.0 | 6 | 25 | 60 | Long |
| SEME7106006E | 6.0 | 6 | 6 | 50 | Short |

▶ NEXT PAGE 下页

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.03 | h5 |

Enforced Cutting Edge(保护尖角处理)

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |



CARBIDE
HSS
CBN END MILLS
i-Xmill END MILLS
i-SMART MODULAR END MILLS
X5070 END MILLS
4G MILL END MILLS
X-POWER PRO END MILLS
TitaNox-POWER END MILLS
SUS-CUT END MILLS
V7 PLUS END MILLS
ALU-POWER HPC END MILLS
ALU-CUT END MILLS
G-CUT
CRX S END MILLS
K-2 END MILLS
GENERAL CARBIDE END MILLS
ONLY ONE COATED PM60 END MILLS
TANK-POWER END MILLS
GENERAL HSS END MILLS
MILLING CUTTERS
TECHNICAL DATA

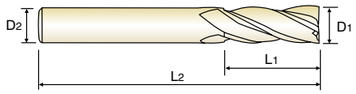
# 4G MILL END MILLS

PLAIN SHANK **SEME71** SERIES

## CARBIDE, 4 FLUTE MULTIPLE HELIX (Sharp corner removal)
## 硬质合金，4刃 不等螺旋（保护刀尖处理）

- ▶ New coating and tool geometry applied resulting outstanding cutting abilities and wear resistance.
- ▶ Excellent for cutting prehardened steels, carbon steels, alloy steels of molds and dies, up to HRc55 and machine parts.
- ▶ Multiple Helix for 3.0mm and over 3.0mm diameter endmills minimizing vibration and decreasing wear in cutting.
  - Equal index flutes design for long length and single helix (38°) end mills.
- ▶ Gash land geometry applied at the end tooth, achieving heavy duty cutting.
- ▶ Available various length products like short, regular and long length end mills etc.
- ▶ Available in short, regular and long shank end mills.

- ▶基于新涂层及形状, 实现出色切削性能和耐磨性
- ▶加工模具产业的预硬钢(HRc55以下)表现出色
- ▶基于Ø3.0mm以上采用不等螺旋, 减少切削震动及增加切削耐磨性
  - 长切产品和单螺旋（38度）产品不采用不等螺旋
- ▶基于在底刃的月牙槽形状, 可用重切削
- ▶可提供多种刃长包括短,普通和长刃铣刀等
- ▶可提供短，普通和长柄铣刀




CARBIDE | 4 | 35°/38° | PLAIN | p.C300-303

D<Ø3, Long Length 38˚ HELIX

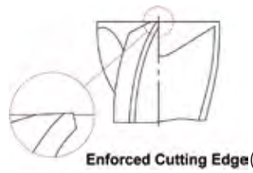
Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| ◎ | - | - | POWER MILLING CHUCK | D161 - 176 |
| ○ | - | - | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Overall Length 全长 L2 | Remark 备注 |
|---|---|---|---|---|---|
| SEME7106012E | 6.0 | 6 | 12 | 50 | Short |
| SEME71060E | 6.0 | 6 | 15 | 60 | Regular |
| SEME7106020E | 6.0 | 6 | 20 | 60 | Long |
| SEME7106025E | 6.0 | 6 | 25 | 60 | Long |
| SEME7108016E | 8.0 | 8 | 16 | 60 | Short |
| SEME71080E | 8.0 | 8 | 20 | 70 | Regular |
| SEME7108025E | 8.0 | 8 | 25 | 70 | Long |
| SEME7108030E | 8.0 | 8 | 30 | 70 | Long |
| SEME7110022E | 10.0 | 10 | 22 | 65 | Short |
| SEME71100E | 10.0 | 10 | 25 | 75 | Regular |
| SEME7110030E | 10.0 | 10 | 30 | 75 | Long |
| SEME7110035E | 10.0 | 10 | 35 | 75 | Long |
| SEME7112026E | 12.0 | 12 | 26 | 70 | Short |
| SEME71120E | 12.0 | 12 | 30 | 80 | Regular |
| SEME7112035E | 12.0 | 12 | 35 | 80 | Long |
| SEME7112040E | 12.0 | 12 | 40 | 80 | Long |
| SEME71140E | 14.0 | 16 | 35 | 100 | Regular |
| SEME7116032E | 16.0 | 16 | 32 | 100 | Short |
| SEME71160E | 16.0 | 16 | 40 | 100 | Regular |
| SEME71180E | 18.0 | 20 | 45 | 100 | Regular |
| SEME71200E | 20.0 | 20 | 45 | 100 | Regular |

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.03 | h5 |



Enforced Cutting Edge(保护尖角处理)

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |

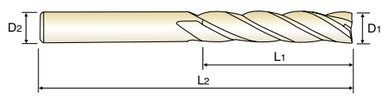
# 4G MILL END MILLS

PLAIN SHANK **SEME72** SERIES

## CARBIDE, 4 FLUTE LONG LENGTH
## 硬质合金，4刃 长刃

- ▶ New coating and tool geometry applied resulting outstanding cutting abilities and wear resistance.
- ▶ Excellent for cutting prehardened steels, carbon steels, alloy steels of molds and dies, up to HRc55 and machine parts.
- ▶ Available in short, regular and long shank end mills.

- ▶基于新涂层及形状, 实现出色切削性能和耐磨性
- ▶加工模具产业的预硬钢(HRc55以下)表现出色
- ▶可提供短，普通和长柄铣刀




CARBIDE | 4 | 30° | PLAIN | p.C304-309

Recommended ToolHolder

| Flat Shank | | Page | Plain Shank | Page |
|---|---|---|---|---|
| END MILL HOLDER | D118 - 137 | | HYDRAULIC CHUCK SHRINK FIT HOLDER | D15 - 46 D47 - 72 |
| - | - | | POWER MILLING CHUCK | D161 - 176 |
| - | - | | ER COLLET CHUCK SK SLIM CHUCK | D73 - 115 D183 - 201 |

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Overall Length 全长 L2 |
|---|---|---|---|---|
| SEME7201003E | 1.0 | 6 | 3 | 60 |
| SEME7201004E | 1.0 | 6 | 4 | 60 |
| SEME7201005E | 1.0 | 6 | 5 | 60 |
| SEME7201006E | 1.0 | 6 | 6 | 60 |
| SEME7201007E | 1.0 | 6 | 7 | 60 |
| SEME7201008E | 1.0 | 6 | 8 | 60 |
| SEME7201010E | 1.0 | 6 | 10 | 60 |
| SEME7201012E | 1.0 | 6 | 12 | 60 |
| SEME7201204E | 1.2 | 6 | 4 | 60 |
| SEME7201206E | 1.2 | 6 | 6 | 60 |
| SEME7201208E | 1.2 | 6 | 8 | 60 |
| SEME7201210E | 1.2 | 6 | 10 | 60 |
| SEME7201212E | 1.2 | 6 | 12 | 60 |
| SEME7201506E | 1.5 | 6 | 6 | 60 |
| SEME7201508E | 1.5 | 6 | 8 | 60 |
| SEME7201510E | 1.5 | 6 | 10 | 60 |
| SEME7201512E | 1.5 | 6 | 12 | 60 |
| SEME7201514E | 1.5 | 6 | 14 | 60 |
| SEME7201516E | 1.5 | 6 | 16 | 60 |
| SEME7202008E | 2.0 | 6 | 8 | 60 |
| SEME7202010E | 2.0 | 6 | 10 | 60 |
| SEME7202012E | 2.0 | 6 | 12 | 60 |
| SEME7202014E | 2.0 | 6 | 14 | 60 |
| SEME7202016E | 2.0 | 6 | 16 | 60 |

▶ NEXT PAGE 下页

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.03 | h5 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |



4G MILL END MILLS
PLAIN SHANK SEME72 SERIES
CARBIDE, 4 FLUTE LONG LENGTH
硬质合金，4刃 长刃
▶ New coating and tool geometry applied resulting outstanding cutting abilities and wear resistance.
▶ Excellent for cutting prehardened steels, carbon steels, alloy steels of molds and dies, up to HRc55 and machine parts.
▶ Available in short, regular and long shank end mills.
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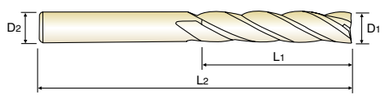
▶加工模具产业的预硬钢(HRc55以下)表现出色
▶可提供短，普通和长柄铣刀




CARBIDE | 4 | 30° | PLAIN | p.C304-309
Recommended ToolHolder
Flat Shank: END MILL HOLDER D118 - 137 | - - | Page
Plain Shank: HYDRAULIC CHUCK SHRINK FIT HOLDER D15 - 46 D47 - 72 | POWER MILLING CHUCK D161 - 176 | ER COLLET CHUCK SK SLIM CHUCK D73 - 115 D183 - 201
Unit(单位) : mm

| EDP No. | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Overall Length 全长 L2 |
|---|---|---|---|---|
| SEME7202510E | 2.5 | 6 | 10 | 60 |
| SEME7202512E | 2.5 | 6 | 12 | 60 |
| SEME7202516E | 2.5 | 6 | 16 | 60 |
| SEME7202520E | 2.5 | 6 | 20 | 60 |
| SEME7202526E | 2.5 | 6 | 26 | 60 |
| SEME72030163SE | 3.0 | 3 | 16 | 100 |
| SEME7203010E | 3.0 | 6 | 10 | 70 |
| SEME7203012E | 3.0 | 6 | 12 | 70 |
| SEME7203014E | 3.0 | 6 | 14 | 70 |
| SEME7203016E | 3.0 | 6 | 16 | 70 |
| SEME7203020E | 3.0 | 6 | 20 | 70 |
| SEME7203026E | 3.0 | 6 | 26 | 70 |
| SEME7203030E | 3.0 | 6 | 30 | 70 |
| SEME72040204SE | 4.0 | 4 | 20 | 100 |
| SEME7204012E | 4.0 | 6 | 12 | 70 |
| SEME7204016E | 4.0 | 6 | 16 | 70 |
| SEME7204020E | 4.0 | 6 | 20 | 70 |
| SEME7204026E | 4.0 | 6 | 26 | 70 |
| SEME7204030E | 4.0 | 6 | 30 | 70 |
| SEME7205020E | 5.0 | 6 | 20 | 70 |
| SEME7205025E | 5.0 | 6 | 25 | 70 |
| SEME7205025100E | 5.0 | 6 | 25 | 100 |
| SEME7205030E | 5.0 | 6 | 30 | 80 |
| SEME7205035E | 5.0 | 6 | 35 | 90 |
| SEME7205040E | 5.0 | 6 | 40 | 100 |

▶ NEXT PAGE 下页

Mill Dia.Tolerance (mm) 直径公差: 0 ~ - 0.03
Shank Dia.Tolerance 柄径公差: h5
◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |

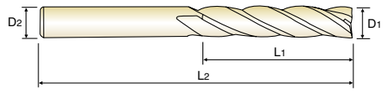
# 4G MILL END MILLS

PLAIN SHANK **SEME72** SERIES

## CARBIDE, 4 FLUTE LONG LENGTH
## 硬质合金，4刃 长刃

▶ New coating and tool geometry applied resulting outstanding cutting abilities and wear resistance.
▶ Excellent for cutting prehardened steels, carbon steels, alloy steels of molds and dies, up to HRc55 and machine parts.
▶ Available in short, regular and long shank end mills.

▶基于新涂层及形状, 实现出色切削性能和耐磨性
▶加工模具产业的预硬钢(HRc55以下)表现出色
▶可提供短，普通和长柄铣刀




CARBIDE | 4 | 30° | PLAIN | p.C304-309

Recommended ToolHolder

| Flat Shank | | Page | Plain Shank | Page |
|---|---|---|---|---|
| END MILL HOLDER | D118 - 137 | | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| - | - | | POWER MILLING CHUCK | D161 - 176 |
| - | - | | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Overall Length 全长 L2 |
|---|---|---|---|---|
| SEME7206015E | 6.0 | 6 | 15 | 60 |
| SEME7206015080E | 6.0 | 6 | 15 | 80 |
| SEME7206020E | 6.0 | 6 | 20 | 70 |
| SEME7206020090E | 6.0 | 6 | 20 | 90 |
| SEME7206025E | 6.0 | 6 | 25 | 75 |
| SEME7206030E | 6.0 | 6 | 30 | 80 |
| SEME7206030100E | 6.0 | 6 | 30 | 100 |
| SEME7206030150E | 6.0 | 6 | 30 | 150 |
| SEME7206035E | 6.0 | 6 | 35 | 90 |
| SEME7206040E | 6.0 | 6 | 40 | 90 |
| SEME7206040120E | 6.0 | 6 | 40 | 120 |
| SEME7206045E | 6.0 | 6 | 45 | 150 |
| SEME7208025E | 8.0 | 8 | 25 | 80 |
| SEME7208030E | 8.0 | 8 | 30 | 80 |
| SEME7208030100E | 8.0 | 8 | 30 | 100 |
| SEME7208035E | 8.0 | 8 | 35 | 90 |
| SEME7208040E | 8.0 | 8 | 40 | 90 |
| SEME7208040120E | 8.0 | 8 | 40 | 120 |
| SEME7208040150E | 8.0 | 8 | 40 | 150 |
| SEME7208045E | 8.0 | 8 | 45 | 100 |
| SEME7208050E | 8.0 | 8 | 50 | 100 |
| SEME7208050150E | 8.0 | 8 | 50 | 150 |

▶ NEXT PAGE 下页

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.03 | h5 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |



CARBIDE
HSS
CBN END MILLS
i-Xmill END MILLS
i-SMART MODULAR END MILLS
X5070 END MILLS
4G MILL END MILLS
X-POWER PRO END MILLS
TitaNox-POWER END MILLS
SUS-CUT END MILLS
V7 PLUS END MILLS
ALU-POWER HPC END MILLS
ALU-CUT END MILLS
G-CUT
CRX S END MILLS
K-2 END MILLS
GENERAL CARBIDE END MILLS
ONLY ONE COATED PM60 END MILLS
TANK-POWER END MILLS
GENERAL HSS END MILLS
MILLING CUTTERS
TECHNICAL DATA

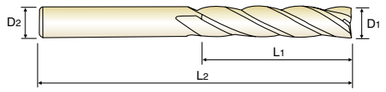
# 4G MILL END MILLS

PLAIN SHANK **SEME72** SERIES

## CARBIDE, 4 FLUTE LONG LENGTH
## 硬质合金，4刃 长刃

▶ New coating and tool geometry applied resulting outstanding cutting abilities and wear resistance.
▶ Excellent for cutting prehardened steels, carbon steels, alloy steels of molds and dies, up to HRc55 and machine parts.
▶ Available in short, regular and long shank end mills.

▶基于新涂层及形状, 实现出色切削性能和耐磨性
▶加工模具产业的预硬钢(HRc55以下)表现出色
▶可提供短，普通和长柄铣刀




CARBIDE | 4 | 30° | PLAIN | p.C304-309

Recommended ToolHolder

| Flat Shank | | Page | Plain Shank | Page |
|---|---|---|---|---|
| END MILL HOLDER | D118 - 137 | | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| - | - | | POWER MILLING CHUCK | D161 - 176 |
| - | - | | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Overall Length 全长 L2 |
|---|---|---|---|---|
| SEME7210030E | 10.0 | 10 | 30 | 80 |
| SEME7210030100E | 10.0 | 10 | 30 | 100 |
| SEME7210035E | 10.0 | 10 | 35 | 90 |
| SEME7210040E | 10.0 | 10 | 40 | 90 |
| SEME7210040120E | 10.0 | 10 | 40 | 120 |
| SEME7210045E | 10.0 | 10 | 45 | 100 |
| SEME7210050E | 10.0 | 10 | 50 | 100 |
| SEME7210050150E | 10.0 | 10 | 50 | 150 |
| SEME7210050200E | 10.0 | 10 | 50 | 200 |
| SEME7210055E | 10.0 | 10 | 55 | 150 |
| SEME7210060E | 10.0 | 10 | 60 | 110 |
| SEME7210060200E | 10.0 | 10 | 60 | 200 |
| SEME7212035E | 12.0 | 12 | 35 | 90 |
| SEME7212040E | 12.0 | 12 | 40 | 100 |
| SEME7212040120E | 12.0 | 12 | 40 | 120 |
| SEME7212045E | 12.0 | 12 | 45 | 130 |
| SEME7212050E | 12.0 | 12 | 50 | 100 |
| SEME7212050150E | 12.0 | 12 | 50 | 150 |
| SEME7212055E | 12.0 | 12 | 55 | 110 |
| SEME7212060E | 12.0 | 12 | 60 | 110 |
| SEME7212060150E | 12.0 | 12 | 60 | 150 |
| SEME7212060200E | 12.0 | 12 | 60 | 200 |
| SEME7212065E | 12.0 | 12 | 65 | 150 |
| SEME7212070E | 12.0 | 12 | 70 | 120 |
| SEME7212070200E | 12.0 | 12 | 70 | 200 |

▶ NEXT PAGE 下页

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.03 | h5 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |

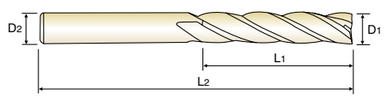
# 4G MILL END MILLS

PLAIN SHANK **SEME72** SERIES

## CARBIDE, 4 FLUTE LONG LENGTH
## 硬质合金，4刃 长刃

- ▶ New coating and tool geometry applied resulting outstanding cutting abilities and wear resistance.
- ▶ Excellent for cutting prehardened steels, carbon steels, alloy steels of molds and dies, up to HRc55 and machine parts.
- ▶ Available in short, regular and long shank end mills.

- ▶基于新涂层及形状, 实现出色切削性能和耐磨性
- ▶加工模具产业的预硬钢(HRc55以下)表现出色
- ▶可提供短，普通和长柄铣刀




CARBIDE | 4 | 30° | PLAIN | p.C304-309

Recommended ToolHolder

| Flat Shank | | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| ◎ | - | - | POWER MILLING CHUCK | D161 - 176 |
| ○ | - | - | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Overall Length 全长 L2 |
|---|---|---|---|---|
| SEME7214050E | 14.0 | 16 | 50 | 110 |
| SEME7214060E | 14.0 | 16 | 60 | 150 |
| SEME7216040E | 16.0 | 16 | 40 | 150 |
| SEME7216050E | 16.0 | 16 | 50 | 110 |
| SEME7216050150E | 16.0 | 16 | 50 | 150 |
| SEME7216060E | 16.0 | 16 | 60 | 120 |
| SEME7216070E | 16.0 | 16 | 70 | 130 |
| SEME7216070150E | 16.0 | 16 | 70 | 150 |
| SEME7216070200E | 16.0 | 16 | 70 | 200 |
| SEME7216080E | 16.0 | 16 | 80 | 150 |
| SEME7216090E | 16.0 | 16 | 90 | 150 |
| SEME72160110E | 16.0 | 16 | 110 | 200 |
| SEME72160120E | 16.0 | 16 | 120 | 250 |
| SEME7218050E | 18.0 | 20 | 50 | 120 |
| SEME7218070E | 18.0 | 20 | 70 | 130 |
| SEME72180100E | 18.0 | 20 | 100 | 200 |
| SEME7220050E | 20.0 | 20 | 50 | 110 |
| SEME7220050150E | 20.0 | 20 | 50 | 150 |
| SEME7220060E | 20.0 | 20 | 60 | 130 |
| SEME7220070E | 20.0 | 20 | 70 | 130 |
| SEME7220080E | 20.0 | 20 | 80 | 150 |
| SEME7220090E | 20.0 | 20 | 90 | 150 |
| SEME7220090200E | 20.0 | 20 | 90 | 200 |
| SEME72200110E | 20.0 | 20 | 110 | 200 |
| SEME72200120E | 20.0 | 20 | 120 | 250 |

▶ NEXT PAGE 下页

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.03 | h5 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | M Stainless steel | | | K Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |



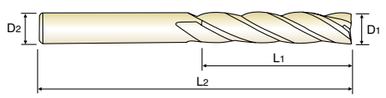
4G MILL END MILLS

PLAIN SHANK SEME72 SERIES

CARBIDE, 4 FLUTE LONG LENGTH
硬质合金，4刃 长刃

- ▶ New coating and tool geometry applied resulting outstanding cutting abilities and wear resistance.
- ▶ Excellent for cutting prehardened steels, carbon steels, alloy steels of molds and dies, up to HRc55 and machine parts.
- ▶ Available in short, regular and long shank end mills.

- ▶基于新涂层及形状, 实现出色切削性能和耐磨性
- ▶加工模具产业的预硬钢(HRc55以下)表现出色
- ▶可提供短，普通和长柄铣刀




CARBIDE | 4 | 30° | PLAIN | p.C304-309

Recommended ToolHolder

| Flat Shank | | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| ◎ | - | - | POWER MILLING CHUCK | D161 - 176 |
| ○ | - | - | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Overall Length 全长 L2 |
|---|---|---|---|---|
| SEME7222075E | 22.0 | 20 | 75 | 150 |
| SEME72220110E | 22.0 | 20 | 110 | 200 |
| SEME7225070E | 25.0 | 25 | 70 | 150 |
| SEME7225090E | 25.0 | 25 | 90 | 150 |
| SEME72250110E | 25.0 | 25 | 110 | 200 |
| SEME72250120E | 25.0 | 25 | 120 | 250 |

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.03 | h5 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | K | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |

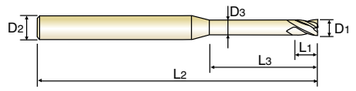
# 4G MILL END MILLS

PLAIN SHANK **SEME73** SERIES

## CARBIDE, 4 FLUTE with EXTENDED NECK
## 硬质合金，4刃 颈部加长

- ▶ New coating and tool geometry applied resulting outstanding cutting abilities and wear resistance.
- ▶ Excellent for cutting prehardened steels, carbon steels, alloy steels of molds and dies, up to HRc55 and machine parts.
- ▶ Available in several effective lengths of cut and also overall lengths than previous standard products.

- ▶基于新涂层及形状, 实现出色切削性能和耐磨性
- ▶加工模具产业的预硬钢(HRc55以下)表现出色
- ▶可提供比以前标准品更多种有效长和全长产品




CARBIDE | 4 | 30° | PLAIN | p.C310-315

Recommended ToolHolder

| Flat Shank | | Page | Plain Shank | Page |
|---|---|---|---|---|
| END MILL HOLDER | D118 - 137 | | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| - | - | | POWER MILLING CHUCK | D161 - 176 |
| - | - | | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Length Below Shank 颈长 L3 | Overall Length 全长 L2 | Neck Diameter 颈径 D3 |
|---|---|---|---|---|---|---|
| SEME7301002E | 1.0 | 4 | 1.5 | 2 | 50 | 0.95 |
| SEME7301003E | 1.0 | 4 | 1.5 | 3 | 50 | 0.95 |
| SEME7301004E | 1.0 | 4 | 1.5 | 4 | 50 | 0.95 |
| SEME7301005E | 1.0 | 4 | 1.5 | 5 | 50 | 0.95 |
| SEME7301006E | 1.0 | 4 | 1.5 | 6 | 50 | 0.95 |
| SEME7301007E | 1.0 | 4 | 1.5 | 7 | 50 | 0.95 |
| SEME7301008E | 1.0 | 4 | 1.5 | 8 | 50 | 0.95 |
| SEME7301010E | 1.0 | 4 | 1.5 | 10 | 50 | 0.95 |
| SEME7301012E | 1.0 | 4 | 1.5 | 12 | 50 | 0.95 |
| SEME7301014E | 1.0 | 4 | 1.5 | 14 | 50 | 0.95 |
| SEME7301016E | 1.0 | 4 | 1.5 | 16 | 50 | 0.95 |
| SEME7301018E | 1.0 | 4 | 1.5 | 18 | 50 | 0.95 |
| SEME7301020E | 1.0 | 4 | 1.5 | 20 | 50 | 0.95 |
| SEME7301022E | 1.0 | 4 | 1.5 | 22 | 60 | 0.95 |
| SEME7301026E | 1.0 | 4 | 1.5 | 26 | 60 | 0.95 |
| SEME7301030E | 1.0 | 4 | 1.5 | 30 | 70 | 0.95 |
| SEME7301040E | 1.0 | 4 | 1.5 | 40 | 80 | 0.95 |
| SEME7301050E | 1.0 | 4 | 1.5 | 50 | 100 | 0.95 |
| SEME7301204E | 1.2 | 4 | 1.8 | 4 | 50 | 1.15 |
| SEME7301206E | 1.2 | 4 | 1.8 | 6 | 50 | 1.15 |
| SEME7301208E | 1.2 | 4 | 1.8 | 8 | 50 | 1.15 |
| SEME7301210E | 1.2 | 4 | 1.8 | 10 | 50 | 1.15 |
| SEME7301212E | 1.2 | 4 | 1.8 | 12 | 50 | 1.15 |
| SEME7301214E | 1.2 | 4 | 1.8 | 14 | 50 | 1.15 |

▶ NEXT PAGE 下页

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.03 | h5 |

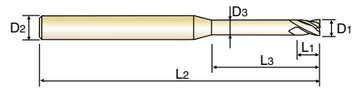
◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |



4G MILL END MILLS
PLAIN SHANK SEME73 SERIES
CARBIDE, 4 FLUTE with EXTENDED NECK
硬质合金，4刃 颈部加长
▶ New coating and tool geometry applied resulting outstanding cutting abilities and wear resistance.
▶ Excellent for cutting prehardened steels, carbon steels, alloy steels of molds and dies, up to HRc55 and machine parts.
▶ Available in several effective lengths of cut and also overall lengths than previous standard products.
▶基于新涂层及形状, 实现出色切削性能和耐磨性
▶加工模具产业的预硬钢(HRc55以下)表现出色
▶可提供比以前标准品更多种有效长和全长产品




CARBIDE | 4 | 30° | PLAIN | p.C310-315
Recommended ToolHolder
Unit(单位) : mm

| EDP No. | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Length Below Shank 颈长 L3 | Overall Length 全长 L2 | Neck Diameter 颈径 D3 |
|---|---|---|---|---|---|---|
| SEME7301216E | 1.2 | 4 | 1.8 | 16 | 50 | 1.15 |
| SEME7301220E | 1.2 | 4 | 1.8 | 20 | 50 | 1.15 |
| SEME7301226E | 1.2 | 4 | 1.8 | 26 | 60 | 1.15 |
| SEME7301230E | 1.2 | 4 | 1.8 | 30 | 70 | 1.15 |
| SEME7301504E | 1.5 | 4 | 2.3 | 4 | 50 | 1.45 |
| SEME7301505E | 1.5 | 4 | 2.3 | 5 | 50 | 1.45 |
| SEME7301506E | 1.5 | 4 | 2.3 | 6 | 50 | 1.45 |
| SEME7301507E | 1.5 | 4 | 2.3 | 7 | 50 | 1.45 |
| SEME7301508E | 1.5 | 4 | 2.3 | 8 | 50 | 1.45 |
| SEME7301510E | 1.5 | 4 | 2.3 | 10 | 50 | 1.45 |
| SEME7301512E | 1.5 | 4 | 2.3 | 12 | 50 | 1.45 |
| SEME7301514E | 1.5 | 4 | 2.3 | 14 | 50 | 1.45 |
| SEME7301516E | 1.5 | 4 | 2.3 | 16 | 50 | 1.45 |
| SEME7301518E | 1.5 | 4 | 2.3 | 18 | 50 | 1.45 |
| SEME7301520E | 1.5 | 4 | 2.3 | 20 | 50 | 1.45 |
| SEME7301522E | 1.5 | 4 | 2.3 | 22 | 60 | 1.45 |
| SEME7301526E | 1.5 | 4 | 2.3 | 26 | 60 | 1.45 |
| SEME7301530E | 1.5 | 4 | 2.3 | 30 | 70 | 1.45 |
| SEME7302006E | 2.0 | 4 | 3 | 6 | 50 | 1.95 |
| SEME7302008E | 2.0 | 4 | 3 | 8 | 50 | 1.95 |
| SEME7302010E | 2.0 | 4 | 3 | 10 | 50 | 1.95 |
| SEME7302012E | 2.0 | 4 | 3 | 12 | 50 | 1.95 |
| SEME7302014E | 2.0 | 4 | 3 | 14 | 50 | 1.95 |
| SEME7302016E | 2.0 | 4 | 3 | 16 | 50 | 1.95 |

▶ NEXT PAGE 下页

Mill Dia.Tolerance (mm) 直径公差: 0 ~ - 0.03
Shank Dia.Tolerance 柄径公差: h5
◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |

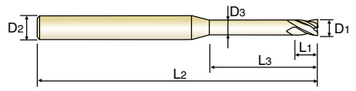
# 4G MILL END MILLS

PLAIN SHANK **SEME73** SERIES

## CARBIDE, 4 FLUTE with EXTENDED NECK
## 硬质合金，4刃 颈部加长

- ▶ New coating and tool geometry applied resulting outstanding cutting abilities and wear resistance.
- ▶ Excellent for cutting prehardened steels, carbon steels, alloy steels of molds and dies, up to HRc55 and machine parts.
- ▶ Available in several effective lengths of cut and also overall lengths than previous standard products.

- ▶基于新涂层及形状, 实现出色切削性能和耐磨性
- ▶加工模具产业的预硬钢(HRc55以下)表现出色
- ▶可提供比以前标准品更多种有效长和全长产品




CARBIDE | 4 | 30° | PLAIN | p.C310-315

Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| ◎ | - | - | POWER MILLING CHUCK | D161 - 176 |
| ○ | - | - | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Length Below Shank 颈长 L3 | Overall Length 全长 L2 | Neck Diameter 颈径 D3 |
|---|---|---|---|---|---|---|
| SEME7302018E | 2.0 | 4 | 3 | 18 | 50 | 1.95 |
| SEME7302020E | 2.0 | 4 | 3 | 20 | 50 | 1.95 |
| SEME7302022E | 2.0 | 4 | 3 | 22 | 60 | 1.95 |
| SEME7302026E | 2.0 | 4 | 3 | 26 | 60 | 1.95 |
| SEME7302030E | 2.0 | 4 | 3 | 30 | 70 | 1.95 |
| SEME7302035E | 2.0 | 4 | 3 | 35 | 70 | 1.95 |
| SEME7302040E | 2.0 | 4 | 3 | 40 | 80 | 1.95 |
| SEME7302045E | 2.0 | 4 | 3 | 45 | 90 | 1.95 |
| SEME7302050E | 2.0 | 4 | 3 | 50 | 100 | 1.95 |
| SEME7302060E | 2.0 | 4 | 3 | 60 | 110 | 1.95 |
| SEME7302508E | 2.5 | 4 | 4 | 8 | 50 | 2.40 |
| SEME7302510E | 2.5 | 4 | 4 | 10 | 50 | 2.40 |
| SEME7302512E | 2.5 | 4 | 4 | 12 | 50 | 2.40 |
| SEME7302514E | 2.5 | 4 | 4 | 14 | 50 | 2.40 |
| SEME7302516E | 2.5 | 4 | 4 | 16 | 50 | 2.40 |
| SEME7302518E | 2.5 | 4 | 4 | 18 | 50 | 2.40 |
| SEME7302520E | 2.5 | 4 | 4 | 20 | 50 | 2.40 |
| SEME7302522E | 2.5 | 4 | 4 | 22 | 60 | 2.40 |
| SEME7302526E | 2.5 | 4 | 4 | 26 | 60 | 2.40 |
| SEME7302530E | 2.5 | 4 | 4 | 30 | 70 | 2.40 |
| SEME7302535E | 2.5 | 4 | 4 | 35 | 70 | 2.40 |
| SEME7302540E | 2.5 | 4 | 4 | 40 | 80 | 2.40 |
| SEME7302545E | 2.5 | 4 | 4 | 45 | 90 | 2.40 |
| SEME7302550E | 2.5 | 4 | 4 | 50 | 100 | 2.40 |
| SEME7303006E | 3.0 | 6 | 4.5 | 6 | 50 | 2.85 |
| SEME7303008E | 3.0 | 6 | 4.5 | 8 | 50 | 2.85 |

▶ NEXT PAGE 下页

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.03 | h5 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |



4G MILL END MILLS
PLAIN SHANK SEME73 SERIES
CARBIDE, 4 FLUTE with EXTENDED NECK
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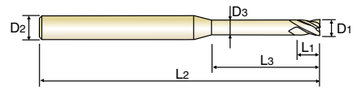
▶ New coating and tool geometry applied resulting outstanding cutting abilities and wear resistance.
▶ Excellent for cutting prehardened steels, carbon steels, alloy steels of molds and dies, up to HRc55 and machine parts.
▶ Available in several effective lengths of cut and also overall lengths than previous standard products.
▶基于新涂层及形状, 实现出色切削性能和耐磨性
▶加工模具产业的预硬钢(HRc55以下)表现出色
▶可提供比以前标准品更多种有效长和全长产品




CARBIDE | 4 | 30° | PLAIN | p.C310-315
Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| ◎ | - | - | POWER MILLING CHUCK | D161 - 176 |
| ○ | - | - | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Length Below Shank 颈长 L3 | Overall Length 全长 L2 | Neck Diameter 颈径 D3 |
|---|---|---|---|---|---|---|
| SEME7303010E | 3.0 | 6 | 4.5 | 10 | 50 | 2.85 |
| SEME7303012E | 3.0 | 6 | 4.5 | 12 | 50 | 2.85 |
| SEME7303014E | 3.0 | 6 | 4.5 | 14 | 60 | 2.85 |
| SEME7303016E | 3.0 | 6 | 4.5 | 16 | 60 | 2.85 |
| SEME7303018E | 3.0 | 6 | 4.5 | 18 | 60 | 2.85 |
| SEME7303020E | 3.0 | 6 | 4.5 | 20 | 60 | 2.85 |
| SEME7303022E | 3.0 | 6 | 4.5 | 22 | 65 | 2.85 |
| SEME7303026E | 3.0 | 6 | 4.5 | 26 | 65 | 2.85 |
| SEME7303030E | 3.0 | 6 | 4.5 | 30 | 70 | 2.85 |
| SEME7303035E | 3.0 | 6 | 4.5 | 35 | 70 | 2.85 |
| SEME7303040E | 3.0 | 6 | 4.5 | 40 | 80 | 2.85 |
| SEME7303045E | 3.0 | 6 | 4.5 | 45 | 90 | 2.85 |
| SEME7303050E | 3.0 | 6 | 4.5 | 50 | 100 | 2.85 |
| SEME7303060E | 3.0 | 6 | 4.5 | 60 | 100 | 2.85 |
| SEME7304008E | 4.0 | 6 | 6 | 8 | 50 | 3.85 |
| SEME7304010E | 4.0 | 6 | 6 | 10 | 50 | 3.85 |
| SEME7304012E | 4.0 | 6 | 6 | 12 | 50 | 3.85 |
| SEME7304014E | 4.0 | 6 | 6 | 14 | 60 | 3.85 |
| SEME7304016E | 4.0 | 6 | 6 | 16 | 60 | 3.85 |
| SEME7304018E | 4.0 | 6 | 6 | 18 | 60 | 3.85 |
| SEME7304020E | 4.0 | 6 | 6 | 20 | 60 | 3.85 |
| SEME7304022E | 4.0 | 6 | 6 | 22 | 65 | 3.85 |
| SEME7304025E | 4.0 | 6 | 6 | 25 | 65 | 3.85 |
| SEME7304026E | 4.0 | 6 | 6 | 26 | 65 | 3.85 |
| SEME7304030E | 4.0 | 6 | 6 | 30 | 70 | 3.85 |
| SEME7304035E | 4.0 | 6 | 6 | 35 | 70 | 3.85 |

▶ NEXT PAGE 下页

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.03 | h5 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | | | ◎ | ○ |

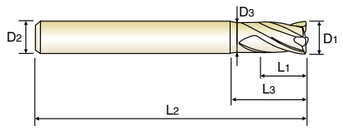
# 4G MILL END MILLS

PLAIN SHANK **SEME73** SERIES

## CARBIDE, 4 FLUTE with EXTENDED NECK
## 硬质合金，4刃 颈部加长

▶ New coating and tool geometry applied resulting outstanding cutting abilities and wear resistance.
▶ Excellent for cutting prehardened steels, carbon steels, alloy steels of molds and dies, up to HRc55 and machine parts.
▶ Available in several effective lengths of cut and also overall lengths than previous standard products.

▶基于新涂层及形状, 实现出色切削性能和耐磨性
▶加工模具产业的预硬钢(HRc55以下)表现出色
▶可提供比以前标准品更多种有效长和全长产品




CARBIDE 4 30° PLAIN p.C310-315

Recommended ToolHolder

| Flat Shank | | Page | Plain Shank | Page |
|---|---|---|---|---|
| END MILL HOLDER | D118 - 137 | | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| - | - | | POWER MILLING CHUCK | D161 - 176 |
| - | - | | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Length Below Shank 颈长 L3 | Overall Length 全长 L2 | Neck Diameter 颈径 D3 |
|---|---|---|---|---|---|---|
| SEME7304040E | 4.0 | 6 | 6 | 40 | 80 | 3.85 |
| SEME7304045E | 4.0 | 6 | 6 | 45 | 90 | 3.85 |
| SEME7304050E | 4.0 | 6 | 6 | 50 | 100 | 3.85 |
| SEME7304060E | 4.0 | 6 | 6 | 60 | 100 | 3.85 |
| SEME7305016E | 5.0 | 6 | 8 | 16 | 60 | 4.85 |
| SEME7305020E | 5.0 | 6 | 8 | 20 | 60 | 4.85 |
| SEME7305026E | 5.0 | 6 | 8 | 26 | 65 | 4.85 |
| SEME7305030E | 5.0 | 6 | 8 | 30 | 70 | 4.85 |
| SEME7305035E | 5.0 | 6 | 8 | 35 | 75 | 4.85 |
| SEME7305040E | 5.0 | 6 | 8 | 40 | 80 | 4.85 |
| SEME7305050E | 5.0 | 6 | 8 | 50 | 90 | 4.85 |
| SEME7305060E | 5.0 | 6 | 8 | 60 | 100 | 4.85 |
| SEME7306015E | 6.0 | 6 | 9 | 15 | 60 | 5.85 |
| SEME7306020E | 6.0 | 6 | 9 | 20 | 60 | 5.85 |
| SEME7306030E | 6.0 | 6 | 9 | 30 | 70 | 5.85 |
| SEME7306032E | 6.0 | 6 | 9 | 32 | 90 | 5.85 |
| SEME7308025E | 8.0 | 8 | 12 | 25 | 70 | 7.70 |
| SEME7308030E | 8.0 | 8 | 12 | 30 | 80 | 7.70 |
| SEME7308042E | 8.0 | 8 | 12 | 42 | 100 | 7.70 |
| SEME7310030E | 10.0 | 10 | 15 | 30 | 75 | 9.70 |
| SEME7310035E | 10.0 | 10 | 15 | 35 | 80 | 9.70 |
| SEME7310045E | 10.0 | 10 | 15 | 45 | 100 | 9.70 |
| SEME7312035E | 12.0 | 12 | 20 | 35 | 80 | 11.70 |
| SEME7312040E | 12.0 | 12 | 20 | 40 | 90 | 11.70 |
| SEME7312050E | 12.0 | 12 | 20 | 50 | 110 | 11.70 |

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.03 | h5 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | | | | | | | | | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | | | | | | | | |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 | | | | | | | | |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 | | | | | | | | |
| Recommend | ○ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |



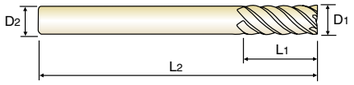
# 4G MILL END MILLS

PLAIN SHANK **SEME75** SERIES

## CARBIDE, 6 FLUTE 45° HELIX (Regular, Long Shank)
## 硬质合金，6刃 45度螺旋 (普通刃长, 长柄)

▶ New coating and tool geometry applied resulting outstanding cutting abilities and wear resistance.
▶ Excellent performance when cutting prehardened steels, up to HRc55 which are used for molds & dies.
▶ From the 45 helix angle, better surface roughness can be achieved at side cutting.
▶ Available in several effective lengths of cut and also overall lengths

▶基于新涂层及形状, 实现出色切削性能和耐磨性
▶加工模具产业的预硬钢(HRc55以下)表现出色
▶基于采用45°螺旋角, 侧铣削提高工件表面粗糙度
▶可提供比以前标准品更多种有效长和全长产品




CARBIDE 6 45° PLAIN p.C316-317

Recommended ToolHolder

| Flat Shank | | Page | Plain Shank | Page |
|---|---|---|---|---|
| END MILL HOLDER | D118 - 137 | | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| - | - | | POWER MILLING CHUCK | D161 - 176 |
| - | - | | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Overall Length 全长 L2 | Remark 备注 |
|---|---|---|---|---|---|
| SEME75060E | 6.0 | 6 | 15 | 60 | Regular |
| SEME7506020E | 6.0 | 6 | 20 | 70 | Long |
| SEME7506030E | 6.0 | 6 | 30 | 80 | Long |
| SEME7506030110E | 6.0 | 6 | 30 | 110 | Long |
| SEME75080E | 8.0 | 8 | 20 | 70 | Regular |
| SEME7508030E | 8.0 | 8 | 30 | 80 | Long |
| SEME7508035E | 8.0 | 8 | 35 | 90 | Long |
| SEME7508040E | 8.0 | 8 | 40 | 90 | Long |
| SEME7508040130E | 8.0 | 8 | 40 | 130 | Long |
| SEME75100E | 10.0 | 10 | 25 | 75 | Regular |
| SEME7510030E | 10.0 | 10 | 30 | 80 | Long |
| SEME7510040E | 10.0 | 10 | 40 | 90 | Long |
| SEME7510050E | 10.0 | 10 | 50 | 100 | Long |
| SEME7510050150E | 10.0 | 10 | 50 | 150 | Long |
| SEME75120E | 12.0 | 12 | 30 | 80 | Regular |
| SEME7512040E | 12.0 | 12 | 40 | 90 | Long |
| SEME7512050E | 12.0 | 12 | 50 | 100 | Long |
| SEME7512060E | 12.0 | 12 | 60 | 110 | Long |
| SEME7512060150E | 12.0 | 12 | 60 | 150 | Long |
| SEME75160E | 16.0 | 16 | 40 | 100 | Regular |
| SEME7516050E | 16.0 | 16 | 50 | 110 | Long |
| SEME7516060E | 16.0 | 16 | 60 | 120 | Long |
| SEME7516090E | 16.0 | 16 | 90 | 150 | Long |
| SEME75160110E | 16.0 | 16 | 110 | 200 | Long |

▶ NEXT PAGE 下页

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.03 | h5 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | | | | | | | | | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | | | | | | | | |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 | | | | | | | | |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 | | | | | | | | |
| Recommend | ○ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |

# 4G MILL END MILLS

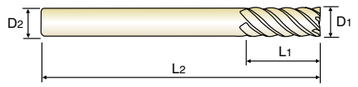
PLAIN SHANK **SEME75** SERIES

## CARBIDE, 6 FLUTE 45° HELIX (Regular, Long Shank)

## 硬质合金，6刃 45度螺旋 (普通刃长, 长柄)

- ▶ New coating and tool geometry applied resulting outstanding cutting abilities and wear resistance.
- ▶ Excellent performance when cutting prehardened steels, up to HRc55 which are used for molds & dies.
- ▶ From the 45 helix angle, better surface roughness can be achieved at side cutting.
- ▶ Available in several effective lengths of cut and also overall lengths

- ▶基于新涂层及形状, 实现出色切削性能和耐磨性
- ▶加工模具产业的预硬钢(HRc55以下)表现出色
- ▶基于采用45°螺旋角, 侧铣削提高工件表面粗糙度
- ▶可提供比以前标准品更多种有效长和全长产品




CARBIDE | 6 | 45° | PLAIN

p.C316-317

Recommended ToolHolder

| Flat Shank | | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| ◎ | - | - | POWER MILLING CHUCK | D161 - 176 |
| ○ | - | - | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Overall Length 全长 L2 | Remark 备注 |
|---|---|---|---|---|---|
| SEME75160110250E | **16.0** | 16 | 110 | 250 | Long |
| SEME75200E | **20.0** | 20 | 45 | 100 | Regular |
| SEME7520060E | **20.0** | 20 | 60 | 120 | Long |
| SEME7520070E | **20.0** | 20 | 70 | 130 | Long |
| SEME75200110E | **20.0** | 20 | 110 | 200 | Long |
| SEME75200110250E | **20.0** | 20 | 110 | 250 | Long |
| SEME75200110300E | **20.0** | 20 | 110 | 300 | Long |

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.03 | h5 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |





# 4G MILL END MILLS

X-SPEED ROUGHER

PLAIN SHANK **G9D75** **G9D76**

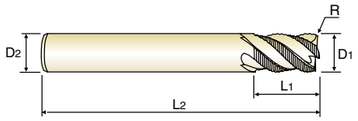
FLAT SHANK **G9D67** **G9D68**

## CARBIDE, 4&5 FLUTE MULTIPLE HELIX CORNER RADIUS

## 硬质合金，4&5刃 不等螺旋 圆鼻

- ▶ Unique flute design for excellent chip evacuation and vibration reduction.
- ▶ Optimal roughing tooth profile to reduce cutting forces.
- ▶ Special tool geometry for high feed rate and heavy cutting.
- ▶ Strong end tooth design for plunge and pocket milling.
- ▶ Custom engineered coating to allow long tool life and excellent chip evacuation.

- ▶基于独有槽型设计, 卓越的排屑性能及减少产品震动
- ▶采用最佳粗加工设计, 减少切削阻力
- ▶独特的刀具设计, 可适应高进给及重切削
- ▶高强度刃部设计为插铣削和型腔铣削
- ▶YG-1自身开发涂层加强刀具寿命和排屑性能




CARBIDE | 4&5 | 44°~45° | PLAIN | FLAT

p.C318

Recommended ToolHolder

| Flat Shank | | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| ◎ | - | - | POWER MILLING CHUCK | D161 - 176 |
| ○ | - | - | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

### SHORT LENGTH 短刃

Unit(单位) : mm

| EDP No. PLAIN | EDP No. FLAT | Corner Radius 圆弧角 R | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Overall Length 全长 L2 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|
| G9D75060 | G9D67060 | R0.5 | **6.0** | 6 | 9 | 57 | 4 |
| G9D75080 | G9D67080 | R0.5 | **8.0** | 8 | 12 | 63 | 4 |
| G9D75100 | G9D67100 | R0.5 | **10.0** | 10 | 15 | 72 | 4 |
| G9D75120 | G9D67120 | R0.5 | **12.0** | 12 | 18 | 83 | 4 |
| G9D75160 | G9D67160 | R1.0 | **16.0** | 16 | 24 | 92 | 5 |
| G9D75200 | G9D67200 | R1.0 | **20.0** | 20 | 30 | 104 | 5 |

### LONG LENGTH 长刃

Unit(单位) : mm

| EDP No. PLAIN | EDP No. FLAT | Corner Radius 圆弧角 R | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Overall Length 全长 L2 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|
| G9D76060 | G9D68060 | R0.5 | **6.0** | 6 | 12 | 57 | 4 |
| G9D76080 | G9D68080 | R0.5 | **8.0** | 8 | 16 | 63 | 4 |
| G9D76100 | G9D68100 | R0.5 | **10.0** | 10 | 20 | 72 | 4 |
| G9D76120 | G9D68120 | R0.5 | **12.0** | 12 | 24 | 83 | 4 |
| G9D76160 | G9D68160 | R1.0 | **16.0** | 16 | 32 | 92 | 5 |
| G9D76200 | G9D68200 | R1.0 | **20.0** | 20 | 40 | 104 | 5 |

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.05 | h5 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ○ | ○ | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | ○ | ○ | ○ | | | | | | | | | | | | | |

# 4G MILL END MILLS

X-SPEED ROUGHER

PLAIN SHANK **G9D77** SERIES

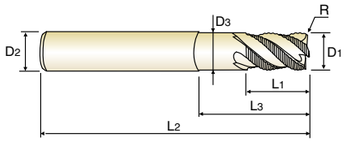
FLAT SHANK **G9D69** SERIES

## CARBIDE, 4&5 FLUTE MULTIPLE HELIX LONG REACH CORNER RADIUS

## 硬质合金，4&5刃 不等螺旋 长有效刃长 圆鼻

- ▶ Unique flute design for excellent chip evacuation and vibration reduction.
- ▶ Optimal roughing tooth profile to reduce cutting forces.
- ▶ Special tool geometry for high feed rate and heavy cutting.
- ▶ Strong end tooth design for plunge and pocket milling.
- ▶ Custom engineered coating to allow long tool life and excellent chip evacuation.

- ▶基于独有槽型设计，卓越的排屑性能及减少产品震动
- ▶采用最佳粗加工设计，减少切削阻力
- ▶独特的刀具设计，可适应高进给及重切削
- ▶高强度刃部设计为插铣削和型腔铣削
- ▶YG-1自身开发涂层加强刀具寿命和排屑性能




CARBIDE | 4&5 | 44°~45° | PLAIN | FLAT

p.C318

Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| ◎ | - | - | POWER MILLING CHUCK | D161 - 176 |
| ○ | - | - | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | | Corner Radius | Mill Diameter | Shank Diameter | Length of Cut | Length Below Shank | Overall Length | Neck Diameter | No. of Flute |
|---|---|---|---|---|---|---|---|---|---|
| | | 圆弧角 | 直径 | 柄径 | 刃长 | 颈长 | 全长 | 颈径 | 槽数 |
| PLAIN | FLAT | R | $D_1$ | $D_2$ | $L_1$ | $L_3$ | $L_2$ | $D_3$ | |
| G9D77060 | G9D69060 | R0.5 | **6.0** | 6 | 9 | 18 | 57 | 5.50 | 4 |
| G9D77080 | G9D69080 | R0.5 | **8.0** | 8 | 12 | 24 | 63 | 7.50 | 4 |
| G9D77100 | G9D69100 | R0.5 | **10.0** | 10 | 15 | 30 | 72 | 9.50 | 4 |
| G9D77120 | G9D69120 | R0.5 | **12.0** | 12 | 18 | 36 | 83 | 11.50 | 4 |
| G9D77160 | G9D69160 | R1.0 | **16.0** | 16 | 24 | 48 | 100 | 15.50 | 5 |
| G9D77200 | G9D69200 | R1.0 | **20.0** | 20 | 30 | 60 | 110 | 19.20 | 5 |

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.05 | h5 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ○ | ○ | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | ○ | ○ | ○ | | | | | | | | | | | | | |



# 4G MILL END MILLS

X-SPEED ROUGHER

FLAT SHANK **GAE53** SERIES

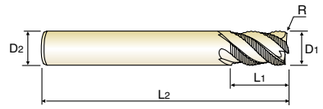
## HSS-PM, 4&5 FLUTE MULTIPLE HELIX SHORT LENGTH CORNER RADIUS

## 粉末高速钢，4&5刃 不等螺旋 短刃 圆鼻

- ▶ Unique flute design for excellent chip evacuation and vibration reduction.
- ▶ Optimal roughing tooth profile to reduce cutting forces.
- ▶ Special tool geometry for high feed rate and heavy cutting.
- ▶ Strong end tooth design for plunge and pocket milling.
- ▶ Custom engineered coating to allow long tool life and excellent chip evacuation.

- ▶基于独有槽型设计，卓越的排屑性能及减少产品震动
- ▶采用最佳粗加工设计，减少切削阻力
- ▶独特的刀具设计，可适应高进给及重切削
- ▶高强度刃部设计为插铣削和型腔铣削
- ▶YG-1自身开发涂层加强刀具寿命和排屑性能

Only available till stock runs out




HSS PM | 4&5 | 44°~45° | FLAT

p.C319

Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK<br>SHRINK FIT HOLDER | D15 - 46<br>D47 - 72 |
| ◎ | - | - | POWER MILLING CHUCK | D161 - 176 |
| ○ | - | - | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| | EDP No. | Corner Radius | Mill Diameter | Shank Diameter | Length of Cut | Overall Length | No. of Flute |
|---|---|---|---|---|---|---|---|
| | | 圆弧角 | 直径 | 柄径 | 刃长 | 全长 | 槽数 |
| | | R | $D_1$ | $D_2$ | $L_1$ | $L_2$ | |
| ▲ | GAE53060 | R0.5 | **6.0** | 6 | 13 | 57 | 4 |
| ▲ | GAE53070 | R0.5 | **7.0** | 10 | 16 | 66 | 4 |
| ▲ | GAE53080 | R0.5 | **8.0** | 10 | 19 | 69 | 4 |
| ▲ | GAE53090 | R0.5 | **9.0** | 10 | 19 | 69 | 4 |
| ▲ | GAE53100 | R0.5 | **10.0** | 10 | 22 | 72 | 4 |
| ▲ | GAE53120 | R0.5 | **12.0** | 12 | 26 | 83 | 4 |
| ▲ | GAE53140 | R1.0 | **14.0** | 16 | 26 | 83 | 5 |
| ▲ | GAE53160 | R1.0 | **16.0** | 16 | 32 | 92 | 5 |
| ▲ | GAE53180 | R1.0 | **18.0** | 20 | 32 | 92 | 5 |
| ▲ | GAE53200 | R1.0 | **20.0** | 20 | 38 | 104 | 5 |

▲ : Only available till stock runs out 只提供到消耗现库存

**Tolerances according to DIN 7160 & 7161 (标准精度)**

| Tolerance range in (精度单位为) ㎛ | | | | | | |
|---|---|---|---|---|---|---|
| Nominal-Diameter in (直径单位为) ㎜ | | | | | | |
| | from 1 to 3 | over 3 to 6 | over 6 to 10 | over 10 to 18 | over 18 to 30 | over 30 to 50 |
| **js12** | ± 50 | ± 60 | ± 75 | ± 90 | ± 105 | ± 125 |
| **h6** | 0<br>- 6 | 0<br>- 8 | 0<br>- 9 | 0<br>- 11 | 0<br>- 13 | 0<br>- 16 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ◎ | ◎ | ○ | ○ | ◎ | ○ | ○ | ○ | ○ | | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | ○ | ○ | ○ | | | | | | | | | | | | | |

# 4G MILL END MILLS

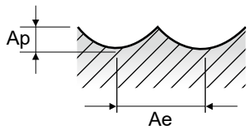
## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

### SEMD98 SERIES — 2 FLUTE BALL NOSE / 2刃 球头

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description 工件材料 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 0.1 | 0.2 | 0.3 | 0.4 | 0.5 | 0.6 | 0.7 | 0.8 | 0.9 | 1.0 | 1.2 | 1.5 | 2.0 | 2.5 |
| P | 1-5 | Non-alloy steel | 0.08D | 0.05D | Vc | 13 | 19 | 28 | 38 | 47 | 57 | 66 | 75 | 85 | 94 | 113 | 141 | 187 | 187 |
| | | | | | fz | 0.007 | 0.012 | 0.015 | 0.019 | 0.024 | 0.029 | 0.034 | 0.039 | 0.044 | 0.048 | 0.051 | 0.054 | 0.057 | 0.074 |
| | | | | | RPM | 41380 | 30239 | 29709 | 30239 | 29921 | 30239 | 30012 | 29842 | 30063 | 29921 | 29974 | 29921 | 29762 | 23810 |
| | | | | | FEED | 579 | 726 | 891 | 1149 | 1436 | 1754 | 2041 | 2328 | 2646 | 2872 | 3057 | 3231 | 3393 | 3524 |
| | 6-8 | Low alloy steel | 0.08D | 0.05D | Vc | 13 | 19 | 28 | 38 | 47 | 57 | 66 | 75 | 85 | 94 | 113 | 141 | 187 | 187 |
| | | | | | fz | 0.007 | 0.012 | 0.015 | 0.019 | 0.024 | 0.029 | 0.034 | 0.039 | 0.044 | 0.048 | 0.051 | 0.054 | 0.057 | 0.074 |
| | | | | | RPM | 41380 | 30239 | 29709 | 30239 | 29921 | 30239 | 30012 | 29842 | 30063 | 29921 | 29974 | 29921 | 29762 | 23810 |
| | | | | | FEED | 579 | 726 | 891 | 1149 | 1436 | 1754 | 2041 | 2328 | 2646 | 2872 | 3057 | 3231 | 3393 | 3524 |
| | 9 | | 0.08D | 0.05D | Vc | 13 | 19 | 28 | 38 | 47 | 57 | 66 | 75 | 85 | 94 | 109 | 136 | 180 | 180 |
| | | | | | fz | 0.006 | 0.011 | 0.014 | 0.017 | 0.021 | 0.025 | 0.029 | 0.033 | 0.038 | 0.042 | 0.045 | 0.047 | 0.05 | 0.066 |
| | | | | | RPM | 41380 | 30239 | 29709 | 30239 | 29921 | 30239 | 30012 | 29842 | 30063 | 29921 | 28913 | 28860 | 28648 | 22918 |
| | | | | | FEED | 497 | 665 | 832 | 1028 | 1257 | 1512 | 1741 | 1970 | 2285 | 2513 | 2602 | 2713 | 2865 | 3025 |
| | 10-11.1 | High alloyed steel, and tool steel | 0.08D | 0.05D | Vc | 13 | 19 | 28 | 38 | 47 | 57 | 66 | 75 | 85 | 94 | 113 | 141 | 187 | 187 |
| | | | | | fz | 0.007 | 0.012 | 0.015 | 0.019 | 0.024 | 0.029 | 0.034 | 0.039 | 0.044 | 0.048 | 0.051 | 0.054 | 0.057 | 0.074 |
| | | | | | RPM | 41380 | 30239 | 29709 | 30239 | 29921 | 30239 | 30012 | 29842 | 30063 | 29921 | 29974 | 29921 | 29762 | 23810 |
| | | | | | FEED | 579 | 726 | 891 | 1149 | 1436 | 1754 | 2041 | 2328 | 2646 | 2872 | 3057 | 3231 | 3393 | 3524 |
| | 11.2 | | 0.08D | 0.05D | Vc | 13 | 19 | 28 | 38 | 47 | 57 | 66 | 75 | 85 | 94 | 109 | 136 | 180 | 180 |
| | | | | | fz | 0.006 | 0.011 | 0.014 | 0.017 | 0.021 | 0.025 | 0.029 | 0.033 | 0.038 | 0.042 | 0.045 | 0.047 | 0.05 | 0.066 |
| | | | | | RPM | 41380 | 30239 | 29709 | 30239 | 29921 | 30239 | 30012 | 29842 | 30063 | 29921 | 28913 | 28860 | 28648 | 22918 |
| | | | | | FEED | 497 | 665 | 832 | 1028 | 1257 | 1512 | 1741 | 1970 | 2285 | 2513 | 2602 | 2713 | 2865 | 3025 |
| K | 15-20 | Grey cast iron Nodular cast iron Malleable cast iron | 0.08D | 0.05D | Vc | 13 | 19 | 28 | 38 | 47 | 57 | 66 | 75 | 85 | 94 | 113 | 141 | 187 | 187 |
| | | | | | fz | 0.007 | 0.012 | 0.015 | 0.019 | 0.024 | 0.029 | 0.034 | 0.039 | 0.044 | 0.048 | 0.051 | 0.054 | 0.057 | 0.074 |
| | | | | | RPM | 41380 | 30239 | 29709 | 30239 | 29921 | 30239 | 30012 | 29842 | 30063 | 29921 | 29974 | 29921 | 29762 | 23810 |
| | | | | | FEED | 579 | 726 | 891 | 1149 | 1436 | 1754 | 2041 | 2328 | 2646 | 2872 | 3057 | 3231 | 3393 | 3524 |
| H | 38.1 - 38.2 | Hardened steel | 0.08D | 0.05D | Vc | 10 | 17 | 25 | 34 | 42 | 51 | 59 | 68 | 76 | 85 | 97 | 122 | 151 | 151 |
| | | | | | fz | 0.006 | 0.011 | 0.013 | 0.017 | 0.021 | 0.024 | 0.029 | 0.033 | 0.038 | 0.042 | 0.045 | 0.047 | 0.05 | 0.063 |
| | | | | | RPM | 31831 | 27056 | 26526 | 27056 | 26738 | 27056 | 26829 | 27056 | 26880 | 27056 | 25730 | 25889 | 24032 | 19226 |
| | | | | | FEED | 382 | 595 | 690 | 920 | 1123 | 1299 | 1556 | 1786 | 2043 | 2273 | 2316 | 2434 | 2403 | 2422 |
| | 40 | Chilled Cast Iron | 0.08D | 0.05D | Vc | 13 | 19 | 28 | 38 | 47 | 57 | 66 | 75 | 85 | 94 | 109 | 136 | 180 | 180 |
| | | | | | fz | 0.006 | 0.011 | 0.014 | 0.017 | 0.021 | 0.025 | 0.029 | 0.033 | 0.038 | 0.042 | 0.045 | 0.047 | 0.05 | 0.066 |
| | | | | | RPM | 41380 | 30239 | 29709 | 30239 | 29921 | 30239 | 30012 | 29842 | 30063 | 29921 | 28913 | 28860 | 28648 | 22918 |
| | | | | | FEED | 497 | 665 | 832 | 1028 | 1257 | 1512 | 1741 | 1970 | 2285 | 2513 | 2602 | 2713 | 2865 | 3025 |
| | 41 | Hardened Cast Iron | 0.08D | 0.05D | Vc | 10 | 17 | 25 | 34 | 42 | 51 | 59 | 68 | 76 | 85 | 97 | 122 | 151 | 151 |
| | | | | | fz | 0.006 | 0.011 | 0.013 | 0.017 | 0.021 | 0.024 | 0.029 | 0.033 | 0.038 | 0.042 | 0.045 | 0.047 | 0.05 | 0.063 |
| | | | | | RPM | 31831 | 27056 | 26526 | 27056 | 26738 | 27056 | 26829 | 27056 | 26880 | 27056 | 25730 | 25889 | 24032 | 19226 |
| | | | | | FEED | 382 | 595 | 690 | 920 | 1123 | 1299 | 1556 | 1786 | 2043 | 2273 | 2316 | 2434 | 2403 | 2422 |

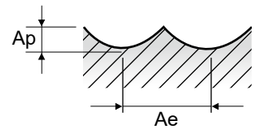
▶ NEXT PAGE 下页






4G MILL END MILLS
RECOMMENDED CUTTING CONDITIONS
推荐加工参数
SEMD98 SERIES — 2 FLUTE BALL NOSE / 2刃 球头
Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| VDI 3323 | Parameter 参数 | Diameter (Ø) 直径 | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3.0 | 3.5 | 4.0 | 4.5 | 5.0 | 5.5 | 6.0 | 6.5 | 7.0 | 8.0 | 8.5 | 9.0 | 10.0 | 11.0 | 12.0 | 13.0 | 14.0 | 15.0 | 16.0 | 18.0 | 20.0 | 25.0 |
| 1-5 | Vc | 187 | 187 | 187 | 184 | 175 | 168 | 157 | 159 | 159 | 167 | 168 | 168 | 175 | 168 | 157 | 162 | 165 | 167 | 168 | 170 | 168 | 167 |
| | fz | 0.091 | 0.106 | 0.121 | 0.136 | 0.156 | 0.164 | 0.174 | 0.179 | 0.184 | 0.189 | 0.192 | 0.195 | 0.199 | 0.205 | 0.212 | 0.218 | 0.224 | 0.23 | 0.238 | 0.25 | 0.264 | 0.27 |
| | RPM | 19841 | 17007 | 14881 | 13015 | 11141 | 9723 | 8329 | 7786 | 7230 | 6645 | 6291 | 5942 | 5570 | 4861 | 4165 | 3967 | 3752 | 3544 | 3342 | 3006 | 2674 | 2126 |
| | FEED | 3611 | 3605 | 3601 | 3540 | 3476 | 3189 | 2899 | 2788 | 2661 | 2512 | 2416 | 2317 | 2217 | 1993 | 1766 | 1729 | 1681 | 1630 | 1591 | 1503 | 1412 | 1148 |
| 6-8 | Vc | 187 | 187 | 187 | 184 | 175 | 168 | 157 | 159 | 159 | 167 | 168 | 168 | 175 | 168 | 157 | 162 | 165 | 167 | 168 | 170 | 168 | 167 |
| | fz | 0.091 | 0.106 | 0.121 | 0.136 | 0.156 | 0.164 | 0.174 | 0.179 | 0.184 | 0.189 | 0.192 | 0.195 | 0.199 | 0.205 | 0.212 | 0.218 | 0.224 | 0.23 | 0.238 | 0.25 | 0.264 | 0.27 |
| | RPM | 19841 | 17007 | 14881 | 13015 | 11141 | 9723 | 8329 | 7786 | 7230 | 6645 | 6291 | 5942 | 5570 | 4861 | 4165 | 3967 | 3752 | 3544 | 3342 | 3006 | 2674 | 2126 |
| | FEED | 3611 | 3605 | 3601 | 3540 | 3476 | 3189 | 2899 | 2788 | 2661 | 2512 | 2416 | 2317 | 2217 | 1993 | 1766 | 1729 | 1681 | 1630 | 1591 | 1503 | 1412 | 1148 |
| 9 | Vc | 180 | 180 | 180 | 177 | 168 | 162 | 152 | 153 | 153 | 161 | 162 | 161 | 168 | 161 | 151 | 155 | 158 | 160 | 161 | 164 | 162 | 162 |
| | fz | 0.083 | 0.097 | 0.111 | 0.122 | 0.138 | 0.144 | 0.153 | 0.156 | 0.159 | 0.164 | 0.167 | 0.17 | 0.174 | 0.18 | 0.188 | 0.197 | 0.208 | 0.221 | 0.206 | 0.215 | 0.227 | 0.231 |
| | RPM | 19099 | 16370 | 14324 | 12520 | 10695 | 9376 | 8064 | 7493 | 6957 | 6406 | 6067 | 5694 | 5348 | 4659 | 4005 | 3795 | 3592 | 3395 | 3203 | 2900 | 2578 | 2063 |
| | FEED | 3170 | 3176 | 3180 | 3055 | 2952 | 2700 | 2468 | 2338 | 2212 | 2101 | 2026 | 1936 | 1861 | 1677 | 1506 | 1495 | 1494 | 1501 | 1320 | 1247 | 1171 | 953 |
| 10 - 11.1 | Vc | 187 | 187 | 187 | 184 | 175 | 168 | 157 | 159 | 159 | 167 | 168 | 168 | 175 | 168 | 157 | 162 | 165 | 167 | 168 | 170 | 168 | 167 |
| | fz | 0.091 | 0.106 | 0.121 | 0.136 | 0.156 | 0.164 | 0.174 | 0.179 | 0.184 | 0.189 | 0.192 | 0.195 | 0.199 | 0.205 | 0.212 | 0.218 | 0.224 | 0.23 | 0.238 | 0.25 | 0.264 | 0.27 |
| | RPM | 19841 | 17007 | 14881 | 13015 | 11141 | 9723 | 8329 | 7786 | 7230 | 6645 | 6291 | 5942 | 5570 | 4861 | 4165 | 3967 | 3752 | 3544 | 3342 | 3006 | 2674 | 2126 |
| | FEED | 3611 | 3605 | 3601 | 3540 | 3476 | 3189 | 2899 | 2788 | 2661 | 2512 | 2416 | 2317 | 2217 | 1993 | 1766 | 1729 | 1681 | 1630 | 1591 | 1503 | 1412 | 1148 |
| 11.2 | Vc | 180 | 180 | 180 | 177 | 168 | 162 | 152 | 153 | 153 | 161 | 162 | 161 | 168 | 161 | 151 | 155 | 158 | 160 | 161 | 164 | 162 | 162 |
| | fz | 0.083 | 0.097 | 0.111 | 0.122 | 0.138 | 0.144 | 0.153 | 0.156 | 0.159 | 0.164 | 0.167 | 0.17 | 0.174 | 0.18 | 0.188 | 0.197 | 0.208 | 0.221 | 0.206 | 0.215 | 0.227 | 0.231 |
| | RPM | 19099 | 16370 | 14324 | 12520 | 10695 | 9376 | 8064 | 7493 | 6957 | 6406 | 6067 | 5694 | 5348 | 4659 | 4005 | 3795 | 3592 | 3395 | 3203 | 2900 | 2578 | 2063 |
| | FEED | 3170 | 3176 | 3180 | 3055 | 2952 | 2700 | 2468 | 2338 | 2212 | 2101 | 2026 | 1936 | 1861 | 1677 | 1506 | 1495 | 1494 | 1501 | 1320 | 1247 | 1171 | 953 |
| 15 - 20 | Vc | 187 | 187 | 187 | 184 | 175 | 168 | 157 | 159 | 159 | 167 | 168 | 168 | 175 | 168 | 157 | 162 | 165 | 167 | 168 | 170 | 168 | 167 |
| | fz | 0.091 | 0.106 | 0.121 | 0.136 | 0.156 | 0.164 | 0.174 | 0.179 | 0.184 | 0.189 | 0.192 | 0.195 | 0.199 | 0.205 | 0.212 | 0.218 | 0.224 | 0.23 | 0.238 | 0.25 | 0.264 | 0.27 |
| | RPM | 19841 | 17007 | 14881 | 13015 | 11141 | 9723 | 8329 | 7786 | 7230 | 6645 | 6291 | 5942 | 5570 | 4861 | 4165 | 3967 | 3752 | 3544 | 3342 | 3006 | 2674 | 2126 |
| | FEED | 3611 | 3605 | 3601 | 3540 | 3476 | 3189 | 2899 | 2788 | 2661 | 2512 | 2416 | 2317 | 2217 | 1993 | 1766 | 1729 | 1681 | 1630 | 1591 | 1503 | 1412 | 1148 |
| 38.1 - 38.2 | Vc | 151 | 151 | 151 | 148 | 141 | 135 | 124 | 127 | 128 | 136 | 136 | 136 | 141 | 136 | 127 | 131 | 133 | 135 | 136 | 137 | 136 | 136 |
| | fz | 0.075 | 0.088 | 0.1 | 0.111 | 0.125 | 0.132 | 0.141 | 0.144 | 0.147 | 0.15 | 0.153 | 0.156 | 0.16 | 0.164 | 0.17 | 0.173 | 0.178 | 0.183 | 0.189 | 0.198 | 0.208 | 0.211 |
| | RPM | 16022 | 13733 | 12016 | 10469 | 8976 | 7813 | 6578 | 6219 | 5821 | 5411 | 5093 | 4810 | 4488 | 3935 | 3369 | 3208 | 3024 | 2865 | 2706 | 2423 | 2165 | 1732 |
| | FEED | 2403 | 2417 | 2403 | 2324 | 2244 | 2063 | 1855 | 1791 | 1711 | 1623 | 1558 | 1501 | 1436 | 1291 | 1145 | 1110 | 1077 | 1049 | 1023 | 959 | 900 | 731 |
| 40 | Vc | 180 | 180 | 180 | 177 | 168 | 162 | 152 | 153 | 153 | 161 | 162 | 161 | 168 | 161 | 151 | 155 | 158 | 160 | 161 | 164 | 162 | 162 |
| | fz | 0.083 | 0.097 | 0.111 | 0.122 | 0.138 | 0.144 | 0.153 | 0.156 | 0.159 | 0.164 | 0.167 | 0.17 | 0.174 | 0.18 | 0.188 | 0.197 | 0.208 | 0.221 | 0.206 | 0.215 | 0.227 | 0.231 |
| | RPM | 19099 | 16370 | 14324 | 12520 | 10695 | 9376 | 8064 | 7493 | 6957 | 6406 | 6067 | 5694 | 5348 | 4659 | 4005 | 3795 | 3592 | 3395 | 3203 | 2900 | 2578 | 2063 |
| | FEED | 3170 | 3176 | 3180 | 3055 | 2952 | 2700 | 2468 | 2338 | 2212 | 2101 | 2026 | 1936 | 1861 | 1677 | 1506 | 1495 | 1494 | 1501 | 1320 | 1247 | 1171 | 953 |
| 41 | Vc | 151 | 151 | 151 | 148 | 141 | 135 | 124 | 127 | 128 | 136 | 136 | 136 | 141 | 136 | 127 | 131 | 133 | 135 | 136 | 137 | 136 | 136 |
| | fz | 0.075 | 0.088 | 0.1 | 0.111 | 0.125 | 0.132 | 0.141 | 0.144 | 0.147 | 0.15 | 0.153 | 0.156 | 0.16 | 0.164 | 0.17 | 0.173 | 0.178 | 0.183 | 0.189 | 0.198 | 0.208 | 0.211 |
| | RPM | 16022 | 13733 | 12016 | 10469 | 8976 | 7813 | 6578 | 6219 | 5821 | 5411 | 5093 | 4810 | 4488 | 3935 | 3369 | 3208 | 3024 | 2865 | 2706 | 2423 | 2165 | 1732 |
| | FEED | 2403 | 2417 | 2403 | 2324 | 2244 | 2063 | 1855 | 1791 | 1711 | 1623 | 1558 | 1501 | 1436 | 1291 | 1145 | 1110 | 1077 | 1049 | 1023 | 959 | 900 | 731 |



# 4G MILL END MILLS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

### SEM846 SERIES
**2 FLUTE BALL NOSE - SLOTTING**
**2刃 球头 - 槽铣削**

Vc (切削速度) = (m/min.) FEED (进给) = (mm/min.)
fz (每齿进给) = (mm/tooth) Ap (切削深度) = (mm)
RPM (转速) = (rev./min.) LBS (颈长) = Length Below Shank

| ISO | VDI 3323 | Material Description 工件材料 | Parameter 参数 | Diameter (Ø) 直径 | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 |
| | | | LBS | 0.2 | 0.3 | 0.5 | 1 | 0.5 | 1 | 1.5 | 2 | 3 | 1 | 1.5 | 2 | 2.5 | 3 | 4 |
| P | 1-5 | Non-alloy steel | Vc | 16 | 16 | 16 | 14 | 31 | 31 | 28 | 28 | 28 | 47 | 47 | 42 | 42 | 42 | 38 |
| | | | fz | 0.002 | 0.002 | 0.002 | 0.002 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.005 | 0.005 | 0.004 | 0.004 | 0.004 | 0.004 |
| | | | RPM | 50930 | 50930 | 50930 | 44563 | 49338 | 49338 | 44563 | 44563 | 44563 | 49869 | 49869 | 44563 | 44563 | 44563 | 40319 |
| | | | FEED | 204 | 204 | 204 | 178 | 296 | 296 | 267 | 267 | 267 | 499 | 499 | 357 | 357 | 357 | 323 |
| | | | Ap | 0.009 | 0.009 | 0.006 | 0.002 | 0.018 | 0.013 | 0.007 | 0.005 | 0.003 | 0.019 | 0.019 | 0.011 | 0.007 | 0.007 | 0.004 |
| | 6-8 | Low alloy steel | Vc | 16 | 16 | 16 | 14 | 31 | 31 | 28 | 28 | 28 | 47 | 47 | 42 | 42 | 42 | 38 |
| | | | fz | 0.002 | 0.002 | 0.002 | 0.002 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.005 | 0.005 | 0.004 | 0.004 | 0.004 | 0.004 |
| | | | RPM | 50930 | 50930 | 50930 | 44563 | 49338 | 49338 | 44563 | 44563 | 44563 | 49869 | 49869 | 44563 | 44563 | 44563 | 40319 |
| | | | FEED | 204 | 204 | 204 | 178 | 296 | 296 | 267 | 267 | 267 | 499 | 499 | 357 | 357 | 357 | 323 |
| | | | Ap | 0.009 | 0.009 | 0.006 | 0.002 | 0.018 | 0.013 | 0.007 | 0.005 | 0.003 | 0.019 | 0.019 | 0.011 | 0.007 | 0.007 | 0.004 |
| | 9 | | Vc | 16 | 16 | 16 | 14 | 31 | 31 | 28 | 28 | 28 | 47 | 47 | 42 | 42 | 42 | 38 |
| | | | fz | 0.002 | 0.002 | 0.002 | 0.002 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.003 |
| | | | RPM | 50930 | 50930 | 50930 | 44563 | 49338 | 49338 | 44563 | 44563 | 44563 | 49869 | 49869 | 44563 | 44563 | 44563 | 40319 |
| | | | FEED | 204 | 204 | 204 | 178 | 296 | 296 | 267 | 267 | 267 | 399 | 399 | 357 | 357 | 357 | 242 |
| | | | Ap | 0.007 | 0.007 | 0.005 | 0.002 | 0.014 | 0.01 | 0.006 | 0.004 | 0.003 | 0.015 | 0.015 | 0.008 | 0.005 | 0.005 | 0.003 |
| | 10-11.1 | High alloyed steel, and tool steel | Vc | 16 | 16 | 16 | 14 | 31 | 31 | 28 | 28 | 28 | 47 | 47 | 42 | 42 | 42 | 38 |
| | | | fz | 0.002 | 0.002 | 0.002 | 0.002 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.005 | 0.005 | 0.004 | 0.004 | 0.004 | 0.004 |
| | | | RPM | 50930 | 50930 | 50930 | 44563 | 49338 | 49338 | 44563 | 44563 | 44563 | 49869 | 49869 | 44563 | 44563 | 44563 | 40319 |
| | | | FEED | 204 | 204 | 204 | 178 | 296 | 296 | 267 | 267 | 267 | 499 | 499 | 357 | 357 | 357 | 323 |
| | | | Ap | 0.009 | 0.009 | 0.006 | 0.002 | 0.018 | 0.013 | 0.007 | 0.005 | 0.003 | 0.019 | 0.019 | 0.011 | 0.007 | 0.007 | 0.004 |
| | 11.2 | | Vc | 16 | 16 | 16 | 14 | 31 | 31 | 28 | 28 | 28 | 47 | 47 | 42 | 42 | 42 | 38 |
| | | | fz | 0.002 | 0.002 | 0.002 | 0.002 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.003 |
| | | | RPM | 50930 | 50930 | 50930 | 44563 | 49338 | 49338 | 44563 | 44563 | 44563 | 49869 | 49869 | 44563 | 44563 | 44563 | 40319 |
| | | | FEED | 204 | 204 | 204 | 178 | 296 | 296 | 267 | 267 | 267 | 399 | 399 | 357 | 357 | 357 | 242 |
| | | | Ap | 0.007 | 0.007 | 0.005 | 0.002 | 0.014 | 0.01 | 0.006 | 0.004 | 0.003 | 0.015 | 0.015 | 0.008 | 0.005 | 0.005 | 0.003 |
| K | 15-20 | Grey cast iron Nodular cast iron Malleable cast iron | Vc | 16 | 16 | 16 | 14 | 31 | 31 | 28 | 28 | 28 | 47 | 47 | 42 | 42 | 42 | 38 |
| | | | fz | 0.002 | 0.002 | 0.002 | 0.002 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.005 | 0.005 | 0.004 | 0.004 | 0.004 | 0.004 |
| | | | RPM | 50930 | 50930 | 50930 | 44563 | 49338 | 49338 | 44563 | 44563 | 44563 | 49869 | 49869 | 44563 | 44563 | 44563 | 40319 |
| | | | FEED | 204 | 204 | 204 | 178 | 296 | 296 | 267 | 267 | 267 | 499 | 499 | 357 | 357 | 357 | 323 |
| | | | Ap | 0.009 | 0.009 | 0.006 | 0.002 | 0.018 | 0.013 | 0.007 | 0.005 | 0.003 | 0.019 | 0.019 | 0.011 | 0.007 | 0.007 | 0.004 |
| H | 38.1 - 38.2 | Hardened steel | Vc | 16 | 16 | 16 | 14 | 27 | 27 | 24 | 24 | 24 | 40 | 40 | 36 | 36 | 36 | 32 |
| | | | fz | 0.002 | 0.002 | 0.002 | 0.002 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.003 |
| | | | RPM | 50930 | 50930 | 50930 | 44563 | 42972 | 42972 | 38197 | 38197 | 38197 | 42441 | 42441 | 38197 | 38197 | 38197 | 33953 |
| | | | FEED | 204 | 204 | 204 | 178 | 258 | 258 | 229 | 229 | 229 | 340 | 340 | 306 | 306 | 306 | 204 |
| | | | Ap | 0.005 | 0.005 | 0.004 | 0.001 | 0.01 | 0.007 | 0.004 | 0.003 | 0.002 | 0.011 | 0.011 | 0.006 | 0.004 | 0.004 | 0.002 |
| | 40 | Chilled Cast Iron | Vc | 16 | 16 | 16 | 14 | 31 | 31 | 28 | 28 | 28 | 47 | 47 | 42 | 42 | 42 | 38 |
| | | | fz | 0.002 | 0.002 | 0.002 | 0.002 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.003 |
| | | | RPM | 50930 | 50930 | 50930 | 44563 | 49338 | 49338 | 44563 | 44563 | 44563 | 49869 | 49869 | 44563 | 44563 | 44563 | 40319 |
| | | | FEED | 204 | 204 | 204 | 178 | 296 | 296 | 267 | 267 | 267 | 399 | 399 | 357 | 357 | 357 | 242 |
| | | | Ap | 0.007 | 0.007 | 0.005 | 0.002 | 0.014 | 0.01 | 0.006 | 0.004 | 0.003 | 0.015 | 0.015 | 0.008 | 0.005 | 0.005 | 0.003 |
| | 41 | Hardened Cast Iron | Vc | 16 | 16 | 16 | 14 | 27 | 27 | 24 | 24 | 24 | 40 | 40 | 36 | 36 | 36 | 32 |
| | | | fz | 0.002 | 0.002 | 0.002 | 0.002 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.003 |
| | | | RPM | 50930 | 50930 | 50930 | 44563 | 42972 | 42972 | 38197 | 38197 | 38197 | 42441 | 42441 | 38197 | 38197 | 38197 | 33953 |
| | | | FEED | 204 | 204 | 204 | 178 | 258 | 258 | 229 | 229 | 229 | 340 | 340 | 306 | 306 | 306 | 204 |
| | | | Ap | 0.005 | 0.005 | 0.004 | 0.001 | 0.01 | 0.007 | 0.004 | 0.003 | 0.002 | 0.011 | 0.011 | 0.006 | 0.004 | 0.004 | 0.002 |

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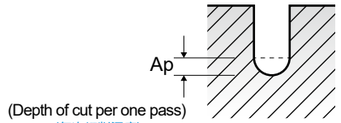




4G MILL END MILLS
RECOMMENDED CUTTING CONDITIONS
推荐加工参数
SEM846 SERIES
2 FLUTE BALL NOSE - SLOTTING
2刃 球头 - 槽铣削
Vc (切削速度) = (m/min.) FEED (进给) = (mm/min.)
fz (每齿进给) = (mm/tooth) Ap (切削深度) = (mm)
RPM (转速) = (rev./min.) LBS (颈长) = Length Below Shank

| VDI 3323 | Parameter 参数 | Diameter (Ø) 直径 | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 0.3 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 |
| | LBS | 5 | 1 | 1.5 | 2 | 2.5 | 3 | 4 | 5 | 6 | 8 | 10 | 1 | 1.5 | 2 | 2.5 | 3 | 4 | 5 | 6 | 8 |
| 1-5 | Vc | 28 | 52 | 52 | 52 | 46 | 46 | 46 | 41 | 41 | 31 | 15 | 54 | 54 | 54 | 54 | 48 | 48 | 48 | 43 | 32 |
| | fz | 0.003 | 0.006 | 0.006 | 0.006 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.004 | 0.004 | 0.01 | 0.01 | 0.01 | 0.01 | 0.009 | 0.009 | 0.009 | 0.008 | 0.007 |
| | RPM | 29709 | 41380 | 41380 | 41380 | 36606 | 36606 | 36606 | 32627 | 32627 | 24669 | 11937 | 34377 | 34377 | 34377 | 34377 | 30558 | 30558 | 30558 | 27375 | 20372 |
| | FEED | 178 | 497 | 497 | 497 | 366 | 366 | 366 | 326 | 326 | 197 | 95 | 688 | 688 | 688 | 688 | 550 | 550 | 550 | 438 | 285 |
| | Ap | 0.003 | 0.036 | 0.025 | 0.025 | 0.014 | 0.014 | 0.009 | 0.009 | 0.005 | 0.004 | 0.004 | 0.045 | 0.045 | 0.032 | 0.032 | 0.018 | 0.018 | 0.011 | 0.011 | 0.007 |
| 6-8 | Vc | 28 | 52 | 52 | 52 | 46 | 46 | 46 | 41 | 41 | 31 | 15 | 54 | 54 | 54 | 54 | 48 | 48 | 48 | 43 | 32 |
| | fz | 0.003 | 0.006 | 0.006 | 0.006 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.004 | 0.004 | 0.01 | 0.01 | 0.01 | 0.01 | 0.009 | 0.009 | 0.009 | 0.008 | 0.007 |
| | RPM | 29709 | 41380 | 41380 | 41380 | 36606 | 36606 | 36606 | 32627 | 32627 | 24669 | 11937 | 34377 | 34377 | 34377 | 34377 | 30558 | 30558 | 30558 | 27375 | 20372 |
| | FEED | 178 | 497 | 497 | 497 | 366 | 366 | 366 | 326 | 326 | 197 | 95 | 688 | 688 | 688 | 688 | 550 | 550 | 550 | 438 | 285 |
| | Ap | 0.003 | 0.036 | 0.025 | 0.025 | 0.014 | 0.014 | 0.009 | 0.009 | 0.005 | 0.004 | 0.004 | 0.045 | 0.045 | 0.032 | 0.032 | 0.018 | 0.018 | 0.011 | 0.011 | 0.007 |
| 9 | Vc | 28 | 49 | 49 | 49 | 44 | 44 | 44 | 39 | 39 | 29 | 15 | 51 | 51 | 51 | 51 | 46 | 46 | 46 | 41 | 30 |
| | fz | 0.003 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.004 | 0.004 | 0.004 | 0.003 | 0.009 | 0.009 | 0.009 | 0.009 | 0.008 | 0.008 | 0.008 | 0.007 | 0.006 |
| | RPM | 29709 | 38993 | 38993 | 38993 | 35014 | 35014 | 35014 | 31035 | 31035 | 23077 | 11937 | 32468 | 32468 | 32468 | 32468 | 29285 | 29285 | 29285 | 26101 | 19099 |
| | FEED | 178 | 390 | 390 | 390 | 350 | 350 | 350 | 248 | 248 | 185 | 72 | 584 | 584 | 584 | 584 | 469 | 469 | 469 | 365 | 229 |
| | Ap | 0.002 | 0.028 | 0.02 | 0.02 | 0.011 | 0.011 | 0.007 | 0.007 | 0.004 | 0.003 | 0.003 | 0.035 | 0.035 | 0.025 | 0.025 | 0.014 | 0.014 | 0.009 | 0.009 | 0.005 |
| 10 - 11.1 | Vc | 28 | 52 | 52 | 52 | 46 | 46 | 46 | 41 | 41 | 31 | 15 | 54 | 54 | 54 | 54 | 48 | 48 | 48 | 43 | 32 |
| | fz | 0.003 | 0.006 | 0.006 | 0.006 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.004 | 0.004 | 0.01 | 0.01 | 0.01 | 0.01 | 0.009 | 0.009 | 0.009 | 0.008 | 0.007 |
| | RPM | 29709 | 41380 | 41380 | 41380 | 36606 | 36606 | 36606 | 32627 | 32627 | 24669 | 11937 | 34377 | 34377 | 34377 | 34377 | 30558 | 30558 | 30558 | 27375 | 20372 |
| | FEED | 178 | 497 | 497 | 497 | 366 | 366 | 366 | 326 | 326 | 197 | 95 | 688 | 688 | 688 | 688 | 550 | 550 | 550 | 438 | 285 |
| | Ap | 0.003 | 0.036 | 0.025 | 0.025 | 0.014 | 0.014 | 0.009 | 0.009 | 0.005 | 0.004 | 0.004 | 0.045 | 0.045 | 0.032 | 0.032 | 0.018 | 0.018 | 0.011 | 0.011 | 0.007 |
| 11.2 | Vc | 28 | 49 | 49 | 49 | 44 | 44 | 44 | 39 | 39 | 29 | 15 | 51 | 51 | 51 | 51 | 46 | 46 | 46 | 41 | 30 |
| | fz | 0.003 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.004 | 0.004 | 0.004 | 0.003 | 0.009 | 0.009 | 0.009 | 0.009 | 0.008 | 0.008 | 0.008 | 0.007 | 0.006 |
| | RPM | 29709 | 38993 | 38993 | 38993 | 35014 | 35014 | 35014 | 31035 | 31035 | 23077 | 11937 | 32468 | 32468 | 32468 | 32468 | 29285 | 29285 | 29285 | 26101 | 19099 |
| | FEED | 178 | 390 | 390 | 390 | 350 | 350 | 350 | 248 | 248 | 185 | 72 | 584 | 584 | 584 | 584 | 469 | 469 | 469 | 365 | 229 |
| | Ap | 0.002 | 0.028 | 0.02 | 0.02 | 0.011 | 0.011 | 0.007 | 0.007 | 0.004 | 0.003 | 0.003 | 0.035 | 0.035 | 0.025 | 0.025 | 0.014 | 0.014 | 0.009 | 0.009 | 0.005 |
| 15 - 20 | Vc | 28 | 52 | 52 | 52 | 46 | 46 | 46 | 41 | 41 | 31 | 15 | 54 | 54 | 54 | 54 | 48 | 48 | 48 | 43 | 32 |
| | fz | 0.003 | 0.006 | 0.006 | 0.006 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.004 | 0.004 | 0.01 | 0.01 | 0.01 | 0.01 | 0.009 | 0.009 | 0.009 | 0.008 | 0.007 |
| | RPM | 29709 | 41380 | 41380 | 41380 | 36606 | 36606 | 36606 | 32627 | 32627 | 24669 | 11937 | 34377 | 34377 | 34377 | 34377 | 30558 | 30558 | 30558 | 27375 | 20372 |
| | FEED | 178 | 497 | 497 | 497 | 366 | 366 | 366 | 326 | 326 | 197 | 95 | 688 | 688 | 688 | 688 | 550 | 550 | 550 | 438 | 285 |
| | Ap | 0.003 | 0.036 | 0.025 | 0.025 | 0.014 | 0.014 | 0.009 | 0.009 | 0.005 | 0.004 | 0.004 | 0.045 | 0.045 | 0.032 | 0.032 | 0.018 | 0.018 | 0.011 | 0.011 | 0.007 |
| 38.1 - 38.2 | Vc | 24 | 43 | 43 | 43 | 39 | 39 | 39 | 34 | 34 | 26 | 13 | 45 | 45 | 45 | 45 | 40 | 40 | 40 | 36 | 27 |
| | fz | 0.003 | 0.005 | 0.005 | 0.005 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.003 | 0.009 | 0.009 | 0.009 | 0.009 | 0.008 | 0.008 | 0.008 | 0.007 | 0.006 |
| | RPM | 25465 | 34218 | 34218 | 34218 | 31035 | 31035 | 31035 | 27056 | 27056 | 20690 | 10345 | 28648 | 28648 | 28648 | 28648 | 25465 | 25465 | 25465 | 22918 | 17189 |
| | FEED | 153 | 342 | 342 | 342 | 248 | 248 | 248 | 216 | 216 | 166 | 62 | 516 | 516 | 516 | 516 | 407 | 407 | 407 | 321 | 206 |
| | Ap | 0.002 | 0.02 | 0.014 | 0.014 | 0.008 | 0.008 | 0.005 | 0.005 | 0.003 | 0.002 | 0.002 | 0.025 | 0.025 | 0.018 | 0.018 | 0.01 | 0.01 | 0.006 | 0.006 | 0.004 |
| 40 | Vc | 28 | 49 | 49 | 49 | 44 | 44 | 44 | 39 | 39 | 29 | 15 | 51 | 51 | 51 | 51 | 46 | 46 | 46 | 41 | 30 |
| | fz | 0.003 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.004 | 0.004 | 0.004 | 0.003 | 0.009 | 0.009 | 0.009 | 0.009 | 0.008 | 0.008 | 0.008 | 0.007 | 0.006 |
| | RPM | 29709 | 38993 | 38993 | 38993 | 35014 | 35014 | 35014 | 31035 | 31035 | 23077 | 11937 | 32468 | 32468 | 32468 | 32468 | 29285 | 29285 | 29285 | 26101 | 19099 |
| | FEED | 178 | 390 | 390 | 390 | 350 | 350 | 350 | 248 | 248 | 185 | 72 | 584 | 584 | 584 | 584 | 469 | 469 | 469 | 365 | 229 |
| | Ap | 0.002 | 0.028 | 0.02 | 0.02 | 0.011 | 0.011 | 0.007 | 0.007 | 0.004 | 0.003 | 0.003 | 0.035 | 0.035 | 0.025 | 0.025 | 0.014 | 0.014 | 0.009 | 0.009 | 0.005 |
| 41 | Vc | 24 | 43 | 43 | 43 | 39 | 39 | 39 | 34 | 34 | 26 | 13 | 45 | 45 | 45 | 45 | 40 | 40 | 40 | 36 | 27 |
| | fz | 0.003 | 0.005 | 0.005 | 0.005 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.003 | 0.009 | 0.009 | 0.009 | 0.009 | 0.008 | 0.008 | 0.008 | 0.007 | 0.006 |
| | RPM | 25465 | 34218 | 34218 | 34218 | 31035 | 31035 | 31035 | 27056 | 27056 | 20690 | 10345 | 28648 | 28648 | 28648 | 28648 | 25465 | 25465 | 25465 | 22918 | 17189 |
| | FEED | 153 | 342 | 342 | 342 | 248 | 248 | 248 | 216 | 216 | 166 | 62 | 516 | 516 | 516 | 516 | 407 | 407 | 407 | 321 | 206 |
| | Ap | 0.002 | 0.02 | 0.014 | 0.014 | 0.008 | 0.008 | 0.005 | 0.005 | 0.003 | 0.002 | 0.002 | 0.025 | 0.025 | 0.018 | 0.018 | 0.01 | 0.01 | 0.006 | 0.006 | 0.004 |

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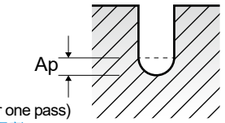

# 4G MILL END MILLS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

### SEM846 SERIES
**2 FLUTE BALL NOSE - SLOTTING**
**2刃 球头 - 槽铣削**

Vc (切削速度) = (m/min.) FEED (进给) = (mm/min.)
fz (每齿进给) = (mm/tooth) Ap (切削深度) = (mm)
RPM (转速) = (rev./min.) LBS (颈长) = Length Below Shank

| ISO | VDI 3323 | Parameter 参数 | Diameter (Ø) 直径 | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 0.5 | 0.5 | 0.5 | 0.5 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.7 | 0.7 |
| | | LBS | 10 | 12 | 14 | 16 | 1 | 2 | 3 | 4 | 5 | 6 | 8 | 10 | 12 | 14 | 16 | 2 | 4 |
| P | 1-5 | Vc | 32 | 16 | 16 | 5 | 64 | 64 | 64 | 58 | 58 | 58 | 52 | 39 | 39 | 19 | 19 | 75 | 68 |
| | | fz | 0.007 | 0.006 | 0.006 | 0.005 | 0.015 | 0.015 | 0.015 | 0.013 | 0.013 | 0.013 | 0.012 | 0.01 | 0.01 | 0.009 | 0.009 | 0.017 | 0.015 |
| | | RPM | 20372 | 10186 | 10186 | 3183 | 33953 | 33953 | 33953 | 30770 | 30770 | 30770 | 27587 | 20690 | 20690 | 10080 | 10080 | 34105 | 30922 |
| | | FEED | 285 | 122 | 122 | 32 | 1019 | 1019 | 1019 | 800 | 800 | 800 | 662 | 414 | 414 | 181 | 181 | 1160 | 928 |
| | | Ap | 0.005 | 0.005 | 0.005 | 0.005 | 0.038 | 0.038 | 0.038 | 0.022 | 0.014 | 0.014 | 0.008 | 0.005 | 0.005 | 0.005 | 0.005 | 0.063 | 0.025 |
| | 6-8 | Vc | 32 | 16 | 16 | 5 | 64 | 64 | 64 | 58 | 58 | 58 | 52 | 39 | 39 | 19 | 19 | 75 | 68 |
| | | fz | 0.007 | 0.006 | 0.006 | 0.005 | 0.015 | 0.015 | 0.015 | 0.013 | 0.013 | 0.013 | 0.012 | 0.01 | 0.01 | 0.009 | 0.009 | 0.017 | 0.015 |
| | | RPM | 20372 | 10186 | 10186 | 3183 | 33953 | 33953 | 33953 | 30770 | 30770 | 30770 | 27587 | 20690 | 20690 | 10080 | 10080 | 34105 | 30922 |
| | | FEED | 285 | 122 | 122 | 32 | 1019 | 1019 | 1019 | 800 | 800 | 800 | 662 | 414 | 414 | 181 | 181 | 1160 | 928 |
| | | Ap | 0.005 | 0.005 | 0.005 | 0.005 | 0.038 | 0.038 | 0.038 | 0.022 | 0.014 | 0.014 | 0.008 | 0.005 | 0.005 | 0.005 | 0.005 | 0.063 | 0.025 |
| | 9 | Vc | 30 | 15 | 15 | 5 | 61 | 61 | 61 | 55 | 55 | 55 | 49 | 37 | 37 | 18 | 18 | 71 | 64 |
| | | fz | 0.006 | 0.005 | 0.005 | 0.005 | 0.013 | 0.013 | 0.013 | 0.012 | 0.012 | 0.012 | 0.01 | 0.009 | 0.009 | 0.008 | 0.008 | 0.014 | 0.013 |
| | | RPM | 19099 | 9549 | 9549 | 3183 | 32362 | 32362 | 32362 | 29178 | 29178 | 29178 | 25995 | 19629 | 19629 | 9549 | 9549 | 32286 | 29103 |
| | | FEED | 229 | 95 | 95 | 32 | 841 | 841 | 841 | 700 | 700 | 700 | 520 | 353 | 353 | 153 | 153 | 904 | 757 |
| | | Ap | 0.004 | 0.004 | 0.004 | 0.004 | 0.029 | 0.029 | 0.029 | 0.017 | 0.011 | 0.011 | 0.006 | 0.004 | 0.004 | 0.004 | 0.004 | 0.049 | 0.02 |
| | 10-11.1 | Vc | 32 | 16 | 16 | 5 | 64 | 64 | 64 | 58 | 58 | 58 | 52 | 39 | 39 | 19 | 19 | 75 | 68 |
| | | fz | 0.007 | 0.006 | 0.006 | 0.005 | 0.015 | 0.015 | 0.015 | 0.013 | 0.013 | 0.013 | 0.012 | 0.01 | 0.01 | 0.009 | 0.009 | 0.017 | 0.015 |
| | | RPM | 20372 | 10186 | 10186 | 3183 | 33953 | 33953 | 33953 | 30770 | 30770 | 30770 | 27587 | 20690 | 20690 | 10080 | 10080 | 34105 | 30922 |
| | | FEED | 285 | 122 | 122 | 32 | 1019 | 1019 | 1019 | 800 | 800 | 800 | 662 | 414 | 414 | 181 | 181 | 1160 | 928 |
| | | Ap | 0.005 | 0.005 | 0.005 | 0.005 | 0.038 | 0.038 | 0.038 | 0.022 | 0.014 | 0.014 | 0.008 | 0.005 | 0.005 | 0.005 | 0.005 | 0.063 | 0.025 |
| | 11.2 | Vc | 30 | 15 | 15 | 5 | 61 | 61 | 61 | 55 | 55 | 55 | 49 | 37 | 37 | 18 | 18 | 71 | 64 |
| | | fz | 0.006 | 0.005 | 0.005 | 0.005 | 0.013 | 0.013 | 0.013 | 0.012 | 0.012 | 0.012 | 0.01 | 0.009 | 0.009 | 0.008 | 0.008 | 0.014 | 0.013 |
| | | RPM | 19099 | 9549 | 9549 | 3183 | 32362 | 32362 | 32362 | 29178 | 29178 | 29178 | 25995 | 19629 | 19629 | 9549 | 9549 | 32286 | 29103 |
| | | FEED | 229 | 95 | 95 | 32 | 841 | 841 | 841 | 700 | 700 | 700 | 520 | 353 | 353 | 153 | 153 | 904 | 757 |
| | | Ap | 0.004 | 0.004 | 0.004 | 0.004 | 0.029 | 0.029 | 0.029 | 0.017 | 0.011 | 0.011 | 0.006 | 0.004 | 0.004 | 0.004 | 0.004 | 0.049 | 0.02 |
| K | 15-20 | Vc | 32 | 16 | 16 | 5 | 64 | 64 | 64 | 58 | 58 | 58 | 52 | 39 | 39 | 19 | 19 | 75 | 68 |
| | | fz | 0.007 | 0.006 | 0.006 | 0.005 | 0.015 | 0.015 | 0.015 | 0.013 | 0.013 | 0.013 | 0.012 | 0.01 | 0.01 | 0.009 | 0.009 | 0.017 | 0.015 |
| | | RPM | 20372 | 10186 | 10186 | 3183 | 33953 | 33953 | 33953 | 30770 | 30770 | 30770 | 27587 | 20690 | 20690 | 10080 | 10080 | 34105 | 30922 |
| | | FEED | 285 | 122 | 122 | 32 | 1019 | 1019 | 1019 | 800 | 800 | 800 | 662 | 414 | 414 | 181 | 181 | 1160 | 928 |
| | | Ap | 0.005 | 0.005 | 0.005 | 0.005 | 0.038 | 0.038 | 0.038 | 0.022 | 0.014 | 0.014 | 0.008 | 0.005 | 0.005 | 0.005 | 0.005 | 0.063 | 0.025 |
| H | 38.1 - 38.2 | Vc | 27 | 13 | 13 | 4 | 54 | 54 | 54 | 48 | 48 | 48 | 43 | 32 | 32 | 16 | 16 | 63 | 56 |
| | | fz | 0.006 | 0.006 | 0.006 | 0.004 | 0.012 | 0.012 | 0.012 | 0.011 | 0.011 | 0.011 | 0.01 | 0.008 | 0.008 | 0.007 | 0.007 | 0.013 | 0.012 |
| | | RPM | 17189 | 8276 | 8276 | 2546 | 28648 | 28648 | 28648 | 25465 | 25465 | 25465 | 22812 | 16977 | 16977 | 8488 | 8488 | 28648 | 25465 |
| | | FEED | 206 | 99 | 99 | 20 | 688 | 688 | 688 | 560 | 560 | 560 | 456 | 272 | 272 | 119 | 119 | 745 | 611 |
| | | Ap | 0.003 | 0.003 | 0.003 | 0.003 | 0.021 | 0.021 | 0.021 | 0.012 | 0.008 | 0.008 | 0.005 | 0.003 | 0.003 | 0.003 | 0.003 | 0.035 | 0.014 |
| | 40 | Vc | 30 | 15 | 15 | 5 | 61 | 61 | 61 | 55 | 55 | 55 | 49 | 37 | 37 | 18 | 18 | 71 | 64 |
| | | fz | 0.006 | 0.005 | 0.005 | 0.005 | 0.013 | 0.013 | 0.013 | 0.012 | 0.012 | 0.012 | 0.01 | 0.009 | 0.009 | 0.008 | 0.008 | 0.014 | 0.013 |
| | | RPM | 19099 | 9549 | 9549 | 3183 | 32362 | 32362 | 32362 | 29178 | 29178 | 29178 | 25995 | 19629 | 19629 | 9549 | 9549 | 32286 | 29103 |
| | | FEED | 229 | 95 | 95 | 32 | 841 | 841 | 841 | 700 | 700 | 700 | 520 | 353 | 353 | 153 | 153 | 904 | 757 |
| | | Ap | 0.004 | 0.004 | 0.004 | 0.004 | 0.029 | 0.029 | 0.029 | 0.017 | 0.011 | 0.011 | 0.006 | 0.004 | 0.004 | 0.004 | 0.004 | 0.049 | 0.02 |
| | 41 | Vc | 27 | 13 | 13 | 4 | 54 | 54 | 54 | 48 | 48 | 48 | 43 | 32 | 32 | 16 | 16 | 63 | 56 |
| | | fz | 0.006 | 0.006 | 0.006 | 0.004 | 0.012 | 0.012 | 0.012 | 0.011 | 0.011 | 0.011 | 0.01 | 0.008 | 0.008 | 0.007 | 0.007 | 0.013 | 0.012 |
| | | RPM | 17189 | 8276 | 8276 | 2546 | 28648 | 28648 | 28648 | 25465 | 25465 | 25465 | 22812 | 16977 | 16977 | 8488 | 8488 | 28648 | 25465 |
| | | FEED | 206 | 99 | 99 | 20 | 688 | 688 | 688 | 560 | 560 | 560 | 456 | 272 | 272 | 119 | 119 | 745 | 611 |
| | | Ap | 0.003 | 0.003 | 0.003 | 0.003 | 0.021 | 0.021 | 0.021 | 0.012 | 0.008 | 0.008 | 0.005 | 0.003 | 0.003 | 0.003 | 0.003 | 0.035 | 0.014 |

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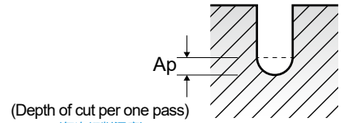




4G MILL END MILLS
RECOMMENDED CUTTING CONDITIONS
推荐加工参数
SEM846 SERIES
2 FLUTE BALL NOSE - SLOTTING
2刃 球头 - 槽铣削
Vc (切削速度) = (m/min.) FEED (进给) = (mm/min.)
fz (每齿进给) = (mm/tooth) Ap (切削深度) = (mm)
RPM (转速) = (rev./min.) LBS (颈长) = Length Below Shank

| VDI 3323 | Parameter 参数 | Diameter (Ø) 直径 | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 0.7 | 0.7 | 0.7 | 0.7 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.9 | 0.9 | 0.9 | 0.9 | 1.0 |
| | LBS | 6 | 8 | 10 | 12 | 2 | 3 | 4 | 5 | 6 | 8 | 10 | 12 | 14 | 16 | 20 | 4 | 6 | 8 | 10 | 2 |
| 1-5 | Vc | 68 | 60 | 60 | 45 | 86 | 86 | 86 | 77 | 77 | 77 | 69 | 69 | 52 | 52 | 26 | 83 | 83 | 83 | 74 | 97 |
| | fz | 0.015 | 0.013 | 0.013 | 0.012 | 0.018 | 0.018 | 0.018 | 0.016 | 0.016 | 0.016 | 0.014 | 0.014 | 0.013 | 0.013 | 0.011 | 0.019 | 0.019 | 0.019 | 0.017 | 0.025 |
| | RPM | 30922 | 27284 | 27284 | 20463 | 34218 | 34218 | 34218 | 30637 | 30637 | 30637 | 27454 | 27454 | 20690 | 20690 | 10345 | 29355 | 29355 | 29355 | 26172 | 30876 |
| | FEED | 928 | 709 | 709 | 491 | 1232 | 1232 | 1232 | 980 | 980 | 980 | 769 | 769 | 538 | 538 | 228 | 1115 | 1115 | 1115 | 890 | 1544 |
| | Ap | 0.016 | 0.016 | 0.009 | 0.006 | 0.072 | 0.05 | 0.05 | 0.029 | 0.029 | 0.018 | 0.018 | 0.011 | 0.007 | 0.007 | 0.007 | 0.032 | 0.032 | 0.02 | 0.02 | 0.09 |
| 6-8 | Vc | 68 | 60 | 60 | 45 | 86 | 86 | 86 | 77 | 77 | 77 | 69 | 69 | 52 | 52 | 26 | 83 | 83 | 83 | 74 | 97 |
| | fz | 0.015 | 0.013 | 0.013 | 0.012 | 0.018 | 0.018 | 0.018 | 0.016 | 0.016 | 0.016 | 0.014 | 0.014 | 0.013 | 0.013 | 0.011 | 0.019 | 0.019 | 0.019 | 0.017 | 0.025 |
| | RPM | 30922 | 27284 | 27284 | 20463 | 34218 | 34218 | 34218 | 30637 | 30637 | 30637 | 27454 | 27454 | 20690 | 20690 | 10345 | 29355 | 29355 | 29355 | 26172 | 30876 |
| | FEED | 928 | 709 | 709 | 491 | 1232 | 1232 | 1232 | 980 | 980 | 980 | 769 | 769 | 538 | 538 | 228 | 1115 | 1115 | 1115 | 890 | 1544 |
| | Ap | 0.016 | 0.016 | 0.009 | 0.006 | 0.072 | 0.05 | 0.05 | 0.029 | 0.029 | 0.018 | 0.018 | 0.011 | 0.007 | 0.007 | 0.007 | 0.032 | 0.032 | 0.02 | 0.02 | 0.09 |
| 9 | Vc | 64 | 57 | 57 | 43 | 81 | 81 | 81 | 73 | 73 | 73 | 65 | 65 | 49 | 49 | 24 | 78 | 78 | 78 | 69 | 91 |
| | fz | 0.013 | 0.012 | 0.012 | 0.01 | 0.016 | 0.016 | 0.016 | 0.014 | 0.014 | 0.014 | 0.013 | 0.013 | 0.011 | 0.011 | 0.01 | 0.017 | 0.017 | 0.017 | 0.015 | 0.023 |
| | RPM | 29103 | 25920 | 25920 | 19553 | 32229 | 32229 | 32229 | 29046 | 29046 | 29046 | 25863 | 25863 | 19496 | 19496 | 9549 | 27587 | 27587 | 27587 | 24404 | 28966 |
| | FEED | 757 | 622 | 622 | 391 | 1031 | 1031 | 1031 | 813 | 813 | 813 | 672 | 672 | 429 | 429 | 191 | 938 | 938 | 938 | 732 | 1332 |
| | Ap | 0.012 | 0.012 | 0.007 | 0.005 | 0.056 | 0.039 | 0.039 | 0.022 | 0.022 | 0.014 | 0.014 | 0.008 | 0.006 | 0.006 | 0.006 | 0.025 | 0.025 | 0.016 | 0.016 | 0.07 |
| 10 - 11.1 | Vc | 68 | 60 | 60 | 45 | 86 | 86 | 86 | 77 | 77 | 77 | 69 | 69 | 52 | 52 | 26 | 83 | 83 | 83 | 74 | 97 |
| | fz | 0.015 | 0.013 | 0.013 | 0.012 | 0.018 | 0.018 | 0.018 | 0.016 | 0.016 | 0.016 | 0.014 | 0.014 | 0.013 | 0.013 | 0.011 | 0.019 | 0.019 | 0.019 | 0.017 | 0.025 |
| | RPM | 30922 | 27284 | 27284 | 20463 | 34218 | 34218 | 34218 | 30637 | 30637 | 30637 | 27454 | 27454 | 20690 | 20690 | 10345 | 29355 | 29355 | 29355 | 26172 | 30876 |
| | FEED | 928 | 709 | 709 | 491 | 1232 | 1232 | 1232 | 980 | 980 | 980 | 769 | 769 | 538 | 538 | 228 | 1115 | 1115 | 1115 | 890 | 1544 |
| | Ap | 0.016 | 0.016 | 0.009 | 0.006 | 0.072 | 0.05 | 0.05 | 0.029 | 0.029 | 0.018 | 0.018 | 0.011 | 0.007 | 0.007 | 0.007 | 0.032 | 0.032 | 0.02 | 0.02 | 0.09 |
| 11.2 | Vc | 64 | 57 | 57 | 43 | 81 | 81 | 81 | 73 | 73 | 73 | 65 | 65 | 49 | 49 | 24 | 78 | 78 | 78 | 69 | 91 |
| | fz | 0.013 | 0.012 | 0.012 | 0.01 | 0.016 | 0.016 | 0.016 | 0.014 | 0.014 | 0.014 | 0.013 | 0.013 | 0.011 | 0.011 | 0.01 | 0.017 | 0.017 | 0.017 | 0.015 | 0.023 |
| | RPM | 29103 | 25920 | 25920 | 19553 | 32229 | 32229 | 32229 | 29046 | 29046 | 29046 | 25863 | 25863 | 19496 | 19496 | 9549 | 27587 | 27587 | 27587 | 24404 | 28966 |
| | FEED | 757 | 622 | 622 | 391 | 1031 | 1031 | 1031 | 813 | 813 | 813 | 672 | 672 | 429 | 429 | 191 | 938 | 938 | 938 | 732 | 1332 |
| | Ap | 0.012 | 0.012 | 0.007 | 0.005 | 0.056 | 0.039 | 0.039 | 0.022 | 0.022 | 0.014 | 0.014 | 0.008 | 0.006 | 0.006 | 0.006 | 0.025 | 0.025 | 0.016 | 0.016 | 0.07 |
| 15 - 20 | Vc | 68 | 60 | 60 | 45 | 86 | 86 | 86 | 77 | 77 | 77 | 69 | 69 | 52 | 52 | 26 | 83 | 83 | 83 | 74 | 97 |
| | fz | 0.015 | 0.013 | 0.013 | 0.012 | 0.018 | 0.018 | 0.018 | 0.016 | 0.016 | 0.016 | 0.014 | 0.014 | 0.013 | 0.013 | 0.011 | 0.019 | 0.019 | 0.019 | 0.017 | 0.025 |
| | RPM | 30922 | 27284 | 27284 | 20463 | 34218 | 34218 | 34218 | 30637 | 30637 | 30637 | 27454 | 27454 | 20690 | 20690 | 10345 | 29355 | 29355 | 29355 | 26172 | 30876 |
| | FEED | 928 | 709 | 709 | 491 | 1232 | 1232 | 1232 | 980 | 980 | 980 | 769 | 769 | 538 | 538 | 228 | 1115 | 1115 | 1115 | 890 | 1544 |
| | Ap | 0.016 | 0.016 | 0.009 | 0.006 | 0.072 | 0.05 | 0.05 | 0.029 | 0.029 | 0.018 | 0.018 | 0.011 | 0.007 | 0.007 | 0.007 | 0.032 | 0.032 | 0.02 | 0.02 | 0.09 |
| 38.1 - 38.2 | Vc | 56 | 50 | 50 | 38 | 72 | 72 | 72 | 64 | 64 | 64 | 57 | 57 | 43 | 43 | 21 | 69 | 69 | 69 | 61 | 81 |
| | fz | 0.012 | 0.011 | 0.011 | 0.009 | 0.015 | 0.015 | 0.015 | 0.014 | 0.014 | 0.014 | 0.012 | 0.012 | 0.011 | 0.011 | 0.009 | 0.016 | 0.016 | 0.016 | 0.014 | 0.021 |
| | RPM | 25465 | 22736 | 22736 | 17280 | 28648 | 28648 | 28648 | 25465 | 25465 | 25465 | 22680 | 22680 | 17109 | 17109 | 8356 | 24404 | 24404 | 24404 | 21574 | 25783 |
| | FEED | 611 | 500 | 500 | 311 | 859 | 859 | 859 | 713 | 713 | 713 | 544 | 544 | 376 | 376 | 150 | 781 | 781 | 781 | 604 | 1083 |
| | Ap | 0.009 | 0.009 | 0.005 | 0.004 | 0.04 | 0.028 | 0.028 | 0.016 | 0.016 | 0.01 | 0.01 | 0.006 | 0.004 | 0.004 | 0.004 | 0.018 | 0.018 | 0.011 | 0.011 | 0.05 |
| 40 | Vc | 64 | 57 | 57 | 43 | 81 | 81 | 81 | 73 | 73 | 73 | 65 | 65 | 49 | 49 | 24 | 78 | 78 | 78 | 69 | 91 |
| | fz | 0.013 | 0.012 | 0.012 | 0.01 | 0.016 | 0.016 | 0.016 | 0.014 | 0.014 | 0.014 | 0.013 | 0.013 | 0.011 | 0.011 | 0.01 | 0.017 | 0.017 | 0.017 | 0.015 | 0.023 |
| | RPM | 29103 | 25920 | 25920 | 19553 | 32229 | 32229 | 32229 | 29046 | 29046 | 29046 | 25863 | 25863 | 19496 | 19496 | 9549 | 27587 | 27587 | 27587 | 24404 | 28966 |
| | FEED | 757 | 622 | 622 | 391 | 1031 | 1031 | 1031 | 813 | 813 | 813 | 672 | 672 | 429 | 429 | 191 | 938 | 938 | 938 | 732 | 1332 |
| | Ap | 0.012 | 0.012 | 0.007 | 0.005 | 0.056 | 0.039 | 0.039 | 0.022 | 0.022 | 0.014 | 0.014 | 0.008 | 0.006 | 0.006 | 0.006 | 0.025 | 0.025 | 0.016 | 0.016 | 0.07 |
| 41 | Vc | 56 | 50 | 50 | 38 | 72 | 72 | 72 | 64 | 64 | 64 | 57 | 57 | 43 | 43 | 21 | 69 | 69 | 69 | 61 | 81 |
| | fz | 0.012 | 0.011 | 0.011 | 0.009 | 0.015 | 0.015 | 0.015 | 0.014 | 0.014 | 0.014 | 0.012 | 0.012 | 0.011 | 0.011 | 0.009 | 0.016 | 0.016 | 0.016 | 0.014 | 0.021 |
| | RPM | 25465 | 22736 | 22736 | 17280 | 28648 | 28648 | 28648 | 25465 | 25465 | 25465 | 22680 | 22680 | 17109 | 17109 | 8356 | 24404 | 24404 | 24404 | 21574 | 25783 |
| | FEED | 611 | 500 | 500 | 311 | 859 | 859 | 859 | 713 | 713 | 713 | 544 | 544 | 376 | 376 | 150 | 781 | 781 | 781 | 604 | 1083 |
| | Ap | 0.009 | 0.009 | 0.005 | 0.004 | 0.04 | 0.028 | 0.028 | 0.016 | 0.016 | 0.01 | 0.01 | 0.006 | 0.004 | 0.004 | 0.004 | 0.018 | 0.018 | 0.011 | 0.011 | 0.05 |

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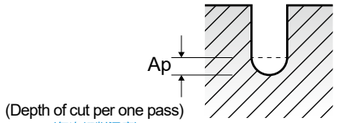

# 4G MILL END MILLS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

### SEM846 SERIES — 2 FLUTE BALL NOSE - SLOTTING
### 2刃 球头 - 槽铣削

Vc (切削速度) = (m/min.) FEED (进给) = (mm/min.)
fz (每齿进给) = (mm/tooth) Ap (切削深度) = (mm)
RPM (转速) = (rev./min.) LBS (颈长) = Length Below Shank

| ISO | VDI 3323 | Parameter 参数 | Diameter (Ø) 直径 | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| | | LBS | 3 | 4 | 5 | 6 | 7 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 26 | 30 | 40 | 50 |
| P | 1-5 | Vc | 97 | 97 | 97 | 87 | 87 | 87 | 87 | 77 | 77 | 58 | 58 | 58 | 29 | 29 | 29 | 10 | 10 |
| | | fz | 0.025 | 0.025 | 0.025 | 0.022 | 0.022 | 0.022 | 0.022 | 0.02 | 0.02 | 0.017 | 0.017 | 0.017 | 0.015 | 0.015 | 0.015 | 0.012 | 0.012 |
| | | RPM | 30876 | 30876 | 30876 | 27693 | 27693 | 27693 | 27693 | 24510 | 24510 | 18462 | 18462 | 18462 | 9231 | 9231 | 9231 | 3183 | 3183 |
| | | FEED | 1544 | 1544 | 1544 | 1218 | 1218 | 1218 | 1218 | 980 | 980 | 628 | 628 | 628 | 277 | 277 | 277 | 76 | 76 |
| | | Ap | 0.09 | 0.063 | 0.063 | 0.036 | 0.036 | 0.036 | 0.023 | 0.023 | 0.014 | 0.014 | 0.009 | 0.009 | 0.009 | 0.009 | 0.009 | 0.009 | 0.006 |
| | 6-8 | Vc | 97 | 97 | 97 | 87 | 87 | 87 | 87 | 77 | 77 | 58 | 58 | 58 | 29 | 29 | 29 | 10 | 10 |
| | | fz | 0.025 | 0.025 | 0.025 | 0.022 | 0.022 | 0.022 | 0.022 | 0.02 | 0.02 | 0.017 | 0.017 | 0.017 | 0.015 | 0.015 | 0.015 | 0.012 | 0.012 |
| | | RPM | 30876 | 30876 | 30876 | 27693 | 27693 | 27693 | 27693 | 24510 | 24510 | 18462 | 18462 | 18462 | 9231 | 9231 | 9231 | 3183 | 3183 |
| | | FEED | 1544 | 1544 | 1544 | 1218 | 1218 | 1218 | 1218 | 980 | 980 | 628 | 628 | 628 | 277 | 277 | 277 | 76 | 76 |
| | | Ap | 0.09 | 0.063 | 0.063 | 0.036 | 0.036 | 0.036 | 0.023 | 0.023 | 0.014 | 0.014 | 0.009 | 0.009 | 0.009 | 0.009 | 0.009 | 0.009 | 0.006 |
| | 9 | Vc | 91 | 91 | 91 | 82 | 82 | 82 | 82 | 73 | 73 | 55 | 55 | 55 | 27 | 27 | 27 | 9 | 9 |
| | | fz | 0.023 | 0.023 | 0.023 | 0.02 | 0.02 | 0.02 | 0.02 | 0.018 | 0.018 | 0.016 | 0.016 | 0.016 | 0.013 | 0.013 | 0.013 | 0.011 | 0.011 |
| | | RPM | 28966 | 28966 | 28966 | 26101 | 26101 | 26101 | 26101 | 23237 | 23237 | 17507 | 17507 | 17507 | 8594 | 8594 | 8594 | 2865 | 2865 |
| | | FEED | 1332 | 1332 | 1332 | 1044 | 1044 | 1044 | 1044 | 837 | 837 | 560 | 560 | 560 | 223 | 223 | 223 | 63 | 63 |
| | | Ap | 0.07 | 0.049 | 0.049 | 0.028 | 0.028 | 0.028 | 0.018 | 0.018 | 0.011 | 0.011 | 0.007 | 0.007 | 0.007 | 0.007 | 0.007 | 0.007 | 0.005 |
| | 10-11.1 | Vc | 97 | 97 | 97 | 87 | 87 | 87 | 87 | 77 | 77 | 58 | 58 | 58 | 29 | 29 | 29 | 10 | 10 |
| | | fz | 0.025 | 0.025 | 0.025 | 0.022 | 0.022 | 0.022 | 0.022 | 0.02 | 0.02 | 0.017 | 0.017 | 0.017 | 0.015 | 0.015 | 0.015 | 0.012 | 0.012 |
| | | RPM | 30876 | 30876 | 30876 | 27693 | 27693 | 27693 | 27693 | 24510 | 24510 | 18462 | 18462 | 18462 | 9231 | 9231 | 9231 | 3183 | 3183 |
| | | FEED | 1544 | 1544 | 1544 | 1218 | 1218 | 1218 | 1218 | 980 | 980 | 628 | 628 | 628 | 277 | 277 | 277 | 76 | 76 |
| | | Ap | 0.09 | 0.063 | 0.063 | 0.036 | 0.036 | 0.036 | 0.023 | 0.023 | 0.014 | 0.014 | 0.009 | 0.009 | 0.009 | 0.009 | 0.009 | 0.009 | 0.006 |
| | 11.2 | Vc | 91 | 91 | 91 | 82 | 82 | 82 | 82 | 73 | 73 | 55 | 55 | 55 | 27 | 27 | 27 | 9 | 9 |
| | | fz | 0.023 | 0.023 | 0.023 | 0.02 | 0.02 | 0.02 | 0.02 | 0.018 | 0.018 | 0.016 | 0.016 | 0.016 | 0.013 | 0.013 | 0.013 | 0.011 | 0.011 |
| | | RPM | 28966 | 28966 | 28966 | 26101 | 26101 | 26101 | 26101 | 23237 | 23237 | 17507 | 17507 | 17507 | 8594 | 8594 | 8594 | 2865 | 2865 |
| | | FEED | 1332 | 1332 | 1332 | 1044 | 1044 | 1044 | 1044 | 837 | 837 | 560 | 560 | 560 | 223 | 223 | 223 | 63 | 63 |
| | | Ap | 0.07 | 0.049 | 0.049 | 0.028 | 0.028 | 0.028 | 0.018 | 0.018 | 0.011 | 0.011 | 0.007 | 0.007 | 0.007 | 0.007 | 0.007 | 0.007 | 0.005 |
| K | 15-20 | Vc | 97 | 97 | 97 | 87 | 87 | 87 | 87 | 77 | 77 | 58 | 58 | 58 | 29 | 29 | 29 | 10 | 10 |
| | | fz | 0.025 | 0.025 | 0.025 | 0.022 | 0.022 | 0.022 | 0.022 | 0.02 | 0.02 | 0.017 | 0.017 | 0.017 | 0.015 | 0.015 | 0.015 | 0.012 | 0.012 |
| | | RPM | 30876 | 30876 | 30876 | 27693 | 27693 | 27693 | 27693 | 24510 | 24510 | 18462 | 18462 | 18462 | 9231 | 9231 | 9231 | 3183 | 3183 |
| | | FEED | 1544 | 1544 | 1544 | 1218 | 1218 | 1218 | 1218 | 980 | 980 | 628 | 628 | 628 | 277 | 277 | 277 | 76 | 76 |
| | | Ap | 0.09 | 0.063 | 0.063 | 0.036 | 0.036 | 0.036 | 0.023 | 0.023 | 0.014 | 0.014 | 0.009 | 0.009 | 0.009 | 0.009 | 0.009 | 0.009 | 0.006 |
| H | 38.1 - 38.2 | Vc | 81 | 81 | 81 | 73 | 73 | 73 | 73 | 65 | 65 | 48 | 48 | 48 | 24 | 24 | 24 | 8 | 8 |
| | | fz | 0.021 | 0.021 | 0.021 | 0.019 | 0.019 | 0.019 | 0.019 | 0.017 | 0.017 | 0.015 | 0.015 | 0.015 | 0.013 | 0.013 | 0.013 | 0.011 | 0.011 |
| | | RPM | 25783 | 25783 | 25783 | 23237 | 23237 | 23237 | 23237 | 20690 | 20690 | 15279 | 15279 | 15279 | 7639 | 7639 | 7639 | 2546 | 2546 |
| | | FEED | 1083 | 1083 | 1083 | 883 | 883 | 883 | 883 | 703 | 703 | 458 | 458 | 458 | 199 | 199 | 199 | 56 | 56 |
| | | Ap | 0.05 | 0.035 | 0.035 | 0.02 | 0.02 | 0.02 | 0.013 | 0.013 | 0.008 | 0.008 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.003 |
| | 40 | Vc | 91 | 91 | 91 | 82 | 82 | 82 | 82 | 73 | 73 | 55 | 55 | 55 | 27 | 27 | 27 | 9 | 9 |
| | | fz | 0.023 | 0.023 | 0.023 | 0.02 | 0.02 | 0.02 | 0.02 | 0.018 | 0.018 | 0.016 | 0.016 | 0.016 | 0.013 | 0.013 | 0.013 | 0.011 | 0.011 |
| | | RPM | 28966 | 28966 | 28966 | 26101 | 26101 | 26101 | 26101 | 23237 | 23237 | 17507 | 17507 | 17507 | 8594 | 8594 | 8594 | 2865 | 2865 |
| | | FEED | 1332 | 1332 | 1332 | 1044 | 1044 | 1044 | 1044 | 837 | 837 | 560 | 560 | 560 | 223 | 223 | 223 | 63 | 63 |
| | | Ap | 0.07 | 0.049 | 0.049 | 0.028 | 0.028 | 0.028 | 0.018 | 0.018 | 0.011 | 0.011 | 0.007 | 0.007 | 0.007 | 0.007 | 0.007 | 0.007 | 0.005 |
| | 41 | Vc | 81 | 81 | 81 | 73 | 73 | 73 | 73 | 65 | 65 | 48 | 48 | 48 | 24 | 24 | 24 | 8 | 8 |
| | | fz | 0.021 | 0.021 | 0.021 | 0.019 | 0.019 | 0.019 | 0.019 | 0.017 | 0.017 | 0.015 | 0.015 | 0.015 | 0.013 | 0.013 | 0.013 | 0.011 | 0.011 |
| | | RPM | 25783 | 25783 | 25783 | 23237 | 23237 | 23237 | 23237 | 20690 | 20690 | 15279 | 15279 | 15279 | 7639 | 7639 | 7639 | 2546 | 2546 |
| | | FEED | 1083 | 1083 | 1083 | 883 | 883 | 883 | 883 | 703 | 703 | 458 | 458 | 458 | 199 | 199 | 199 | 56 | 56 |
| | | Ap | 0.05 | 0.035 | 0.035 | 0.02 | 0.02 | 0.02 | 0.013 | 0.013 | 0.008 | 0.008 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.003 |

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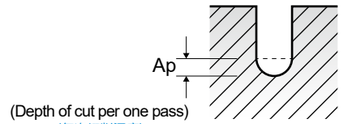


(Depth of cut per one pass)
(每次切削深度)



4G MILL END MILLS
RECOMMENDED CUTTING CONDITIONS
推荐加工参数
SEM846 SERIES — 2 FLUTE BALL NOSE - SLOTTING
2刃 球头 - 槽铣削
Vc (切削速度) = (m/min.) FEED (进给) = (mm/min.)
fz (每齿进给) = (mm/tooth) Ap (切削深度) = (mm)
RPM (转速) = (rev./min.) LBS (颈长) = Length Below Shank

| VDI 3323 | Parameter 参数 | Diameter (Ø) 直径 | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.4 | 1.4 | 1.4 | 1.4 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 |
| | LBS | 4 | 6 | 8 | 10 | 12 | 16 | 20 | 26 | 6 | 8 | 10 | 16 | 4 | 5 | 6 | 7 | 8 | 10 | 12 | 14 |
| 1-5 | Vc | 99 | 99 | 89 | 89 | 89 | 79 | 59 | 30 | 95 | 85 | 85 | 76 | 113 | 113 | 113 | 113 | 101 | 101 | 101 | 101 |
| | fz | 0.026 | 0.026 | 0.024 | 0.024 | 0.024 | 0.021 | 0.018 | 0.016 | 0.03 | 0.027 | 0.027 | 0.024 | 0.033 | 0.033 | 0.033 | 0.033 | 0.03 | 0.03 | 0.03 | 0.03 |
| | RPM | 26261 | 26261 | 23608 | 23608 | 23608 | 20955 | 15650 | 7958 | 21600 | 19326 | 19326 | 17280 | 23979 | 23979 | 23979 | 23979 | 21433 | 21433 | 21433 | 21433 |
| | FEED | 1366 | 1366 | 1133 | 1133 | 1133 | 880 | 563 | 255 | 1296 | 1044 | 1044 | 829 | 1583 | 1583 | 1583 | 1583 | 1286 | 1286 | 1286 | 1286 |
| | Ap | 0.076 | 0.076 | 0.043 | 0.027 | 0.027 | 0.016 | 0.011 | 0.011 | 0.088 | 0.05 | 0.05 | 0.032 | 0.135 | 0.095 | 0.095 | 0.095 | 0.054 | 0.054 | 0.054 | 0.034 |
| 6-8 | Vc | 99 | 99 | 89 | 89 | 89 | 79 | 59 | 30 | 95 | 85 | 85 | 76 | 113 | 113 | 113 | 113 | 101 | 101 | 101 | 101 |
| | fz | 0.026 | 0.026 | 0.024 | 0.024 | 0.024 | 0.021 | 0.018 | 0.016 | 0.03 | 0.027 | 0.027 | 0.024 | 0.033 | 0.033 | 0.033 | 0.033 | 0.03 | 0.03 | 0.03 | 0.03 |
| | RPM | 26261 | 26261 | 23608 | 23608 | 23608 | 20955 | 15650 | 7958 | 21600 | 19326 | 19326 | 17280 | 23979 | 23979 | 23979 | 23979 | 21433 | 21433 | 21433 | 21433 |
| | FEED | 1366 | 1366 | 1133 | 1133 | 1133 | 880 | 563 | 255 | 1296 | 1044 | 1044 | 829 | 1583 | 1583 | 1583 | 1583 | 1286 | 1286 | 1286 | 1286 |
| | Ap | 0.076 | 0.076 | 0.043 | 0.027 | 0.027 | 0.016 | 0.011 | 0.011 | 0.088 | 0.05 | 0.05 | 0.032 | 0.135 | 0.095 | 0.095 | 0.095 | 0.054 | 0.054 | 0.054 | 0.034 |
| 9 | Vc | 93 | 93 | 84 | 84 | 84 | 75 | 56 | 28 | 89 | 80 | 80 | 71 | 106 | 106 | 106 | 106 | 96 | 96 | 96 | 96 |
| | fz | 0.023 | 0.023 | 0.021 | 0.021 | 0.021 | 0.019 | 0.016 | 0.014 | 0.027 | 0.024 | 0.024 | 0.022 | 0.03 | 0.03 | 0.03 | 0.03 | 0.027 | 0.027 | 0.027 | 0.027 |
| | RPM | 24669 | 24669 | 22282 | 22282 | 22282 | 19894 | 14854 | 7427 | 20235 | 18189 | 18189 | 16143 | 22494 | 22494 | 22494 | 22494 | 20372 | 20372 | 20372 | 20372 |
| | FEED | 1135 | 1135 | 936 | 936 | 936 | 756 | 475 | 208 | 1093 | 873 | 873 | 710 | 1350 | 1350 | 1350 | 1350 | 1100 | 1100 | 1100 | 1100 |
| | Ap | 0.059 | 0.059 | 0.034 | 0.021 | 0.021 | 0.013 | 0.008 | 0.008 | 0.069 | 0.039 | 0.039 | 0.025 | 0.105 | 0.074 | 0.074 | 0.074 | 0.042 | 0.042 | 0.042 | 0.026 |
| 10 - 11.1 | Vc | 99 | 99 | 89 | 89 | 89 | 79 | 59 | 30 | 95 | 85 | 85 | 76 | 113 | 113 | 113 | 113 | 101 | 101 | 101 | 101 |
| | fz | 0.026 | 0.026 | 0.024 | 0.024 | 0.024 | 0.021 | 0.018 | 0.016 | 0.03 | 0.027 | 0.027 | 0.024 | 0.033 | 0.033 | 0.033 | 0.033 | 0.03 | 0.03 | 0.03 | 0.03 |
| | RPM | 26261 | 26261 | 23608 | 23608 | 23608 | 20955 | 15650 | 7958 | 21600 | 19326 | 19326 | 17280 | 23979 | 23979 | 23979 | 23979 | 21433 | 21433 | 21433 | 21433 |
| | FEED | 1366 | 1366 | 1133 | 1133 | 1133 | 880 | 563 | 255 | 1296 | 1044 | 1044 | 829 | 1583 | 1583 | 1583 | 1583 | 1286 | 1286 | 1286 | 1286 |
| | Ap | 0.076 | 0.076 | 0.043 | 0.027 | 0.027 | 0.016 | 0.011 | 0.011 | 0.088 | 0.05 | 0.05 | 0.032 | 0.135 | 0.095 | 0.095 | 0.095 | 0.054 | 0.054 | 0.054 | 0.034 |
| 11.2 | Vc | 93 | 93 | 84 | 84 | 84 | 75 | 56 | 28 | 89 | 80 | 80 | 71 | 106 | 106 | 106 | 106 | 96 | 96 | 96 | 96 |
| | fz | 0.023 | 0.023 | 0.021 | 0.021 | 0.021 | 0.019 | 0.016 | 0.014 | 0.027 | 0.024 | 0.024 | 0.022 | 0.03 | 0.03 | 0.03 | 0.03 | 0.027 | 0.027 | 0.027 | 0.027 |
| | RPM | 24669 | 24669 | 22282 | 22282 | 22282 | 19894 | 14854 | 7427 | 20235 | 18189 | 18189 | 16143 | 22494 | 22494 | 22494 | 22494 | 20372 | 20372 | 20372 | 20372 |
| | FEED | 1135 | 1135 | 936 | 936 | 936 | 756 | 475 | 208 | 1093 | 873 | 873 | 710 | 1350 | 1350 | 1350 | 1350 | 1100 | 1100 | 1100 | 1100 |
| | Ap | 0.059 | 0.059 | 0.034 | 0.021 | 0.021 | 0.013 | 0.008 | 0.008 | 0.069 | 0.039 | 0.039 | 0.025 | 0.105 | 0.074 | 0.074 | 0.074 | 0.042 | 0.042 | 0.042 | 0.026 |
| 15 - 20 | Vc | 99 | 99 | 89 | 89 | 89 | 79 | 59 | 30 | 95 | 85 | 85 | 76 | 113 | 113 | 113 | 113 | 101 | 101 | 101 | 101 |
| | fz | 0.026 | 0.026 | 0.024 | 0.024 | 0.024 | 0.021 | 0.018 | 0.016 | 0.03 | 0.027 | 0.027 | 0.024 | 0.033 | 0.033 | 0.033 | 0.033 | 0.03 | 0.03 | 0.03 | 0.03 |
| | RPM | 26261 | 26261 | 23608 | 23608 | 23608 | 20955 | 15650 | 7958 | 21600 | 19326 | 19326 | 17280 | 23979 | 23979 | 23979 | 23979 | 21433 | 21433 | 21433 | 21433 |
| | FEED | 1366 | 1366 | 1133 | 1133 | 1133 | 880 | 563 | 255 | 1296 | 1044 | 1044 | 829 | 1583 | 1583 | 1583 | 1583 | 1286 | 1286 | 1286 | 1286 |
| | Ap | 0.076 | 0.076 | 0.043 | 0.027 | 0.027 | 0.016 | 0.011 | 0.011 | 0.088 | 0.05 | 0.05 | 0.032 | 0.135 | 0.095 | 0.095 | 0.095 | 0.054 | 0.054 | 0.054 | 0.034 |
| 38.1 - 38.2 | Vc | 83 | 83 | 74 | 74 | 74 | 66 | 50 | 25 | 79 | 71 | 71 | 63 | 94 | 94 | 94 | 94 | 85 | 85 | 85 | 85 |
| | fz | 0.022 | 0.022 | 0.02 | 0.02 | 0.02 | 0.017 | 0.015 | 0.013 | 0.026 | 0.023 | 0.023 | 0.021 | 0.027 | 0.027 | 0.027 | 0.027 | 0.024 | 0.024 | 0.024 | 0.024 |
| | RPM | 22016 | 22016 | 19629 | 19629 | 19629 | 17507 | 13263 | 6631 | 17962 | 16143 | 16143 | 14324 | 19947 | 19947 | 19947 | 19947 | 18038 | 18038 | 18038 | 18038 |
| | FEED | 969 | 969 | 785 | 785 | 785 | 595 | 398 | 172 | 934 | 743 | 743 | 602 | 1077 | 1077 | 1077 | 1077 | 866 | 866 | 866 | 866 |
| | Ap | 0.042 | 0.042 | 0.024 | 0.015 | 0.015 | 0.009 | 0.006 | 0.006 | 0.049 | 0.028 | 0.028 | 0.018 | 0.075 | 0.053 | 0.053 | 0.053 | 0.03 | 0.03 | 0.03 | 0.019 |
| 40 | Vc | 93 | 93 | 84 | 84 | 84 | 75 | 56 | 28 | 89 | 80 | 80 | 71 | 106 | 106 | 106 | 106 | 96 | 96 | 96 | 96 |
| | fz | 0.023 | 0.023 | 0.021 | 0.021 | 0.021 | 0.019 | 0.016 | 0.014 | 0.027 | 0.024 | 0.024 | 0.022 | 0.03 | 0.03 | 0.03 | 0.03 | 0.027 | 0.027 | 0.027 | 0.027 |
| | RPM | 24669 | 24669 | 22282 | 22282 | 22282 | 19894 | 14854 | 7427 | 20235 | 18189 | 18189 | 16143 | 22494 | 22494 | 22494 | 22494 | 20372 | 20372 | 20372 | 20372 |
| | FEED | 1135 | 1135 | 936 | 936 | 936 | 756 | 475 | 208 | 1093 | 873 | 873 | 710 | 1350 | 1350 | 1350 | 1350 | 1100 | 1100 | 1100 | 1100 |
| | Ap | 0.059 | 0.059 | 0.034 | 0.021 | 0.021 | 0.013 | 0.008 | 0.008 | 0.069 | 0.039 | 0.039 | 0.025 | 0.105 | 0.074 | 0.074 | 0.074 | 0.042 | 0.042 | 0.042 | 0.026 |
| 41 | Vc | 83 | 83 | 74 | 74 | 74 | 66 | 50 | 25 | 79 | 71 | 71 | 63 | 94 | 94 | 94 | 94 | 85 | 85 | 85 | 85 |
| | fz | 0.022 | 0.022 | 0.02 | 0.02 | 0.02 | 0.017 | 0.015 | 0.013 | 0.026 | 0.023 | 0.023 | 0.021 | 0.027 | 0.027 | 0.027 | 0.027 | 0.024 | 0.024 | 0.024 | 0.024 |
| | RPM | 22016 | 22016 | 19629 | 19629 | 19629 | 17507 | 13263 | 6631 | 17962 | 16143 | 16143 | 14324 | 19947 | 19947 | 19947 | 19947 | 18038 | 18038 | 18038 | 18038 |
| | FEED | 969 | 969 | 785 | 785 | 785 | 595 | 398 | 172 | 934 | 743 | 743 | 602 | 1077 | 1077 | 1077 | 1077 | 866 | 866 | 866 | 866 |
| | Ap | 0.042 | 0.042 | 0.024 | 0.015 | 0.015 | 0.009 | 0.006 | 0.006 | 0.049 | 0.028 | 0.028 | 0.018 | 0.075 | 0.053 | 0.053 | 0.053 | 0.03 | 0.03 | 0.03 | 0.019 |

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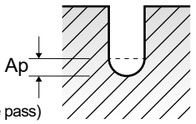


(Depth of cut per one pass)
(每次切削深度)

# 4G MILL END MILLS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

### SEM846 SERIES — 2 FLUTE BALL NOSE - SLOTTING
### 2刃 球头 - 槽铣削

Vc (切削速度) = (m/min.) FEED (进给) = (mm/min.)
fz (每齿进给) = (mm/tooth) Ap (切削深度) = (mm)
RPM (转速) = (rev./min.) LBS (颈长) = Length Below Shank

| ISO | VDI 3323 | Parameter 参数 | Diameter (Ø) 直径 | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.6 | 1.6 | 1.6 | 1.6 | 1.6 | 1.6 | 1.6 | 1.8 | 1.8 |
| | | LBS | 16 | 18 | 20 | 22 | 26 | 30 | 35 | 40 | 4 | 6 | 8 | 10 | 12 | 16 | 20 | 4 | 6 |
| P | 1-5 | Vc | 90 | 90 | 90 | 90 | 68 | 68 | 34 | 34 | 112 | 112 | 112 | 100 | 100 | 100 | 89 | 126 | 126 |
| | | fz | 0.026 | 0.026 | 0.026 | 0.026 | 0.023 | 0.023 | 0.02 | 0.02 | 0.035 | 0.035 | 0.035 | 0.032 | 0.032 | 0.032 | 0.028 | 0.04 | 0.04 |
| | | RPM | 19099 | 19099 | 19099 | 19099 | 14430 | 14430 | 7215 | 7215 | 22282 | 22282 | 22282 | 19894 | 19894 | 19894 | 17706 | 22282 | 22282 |
| | | FEED | 993 | 993 | 993 | 993 | 664 | 664 | 289 | 289 | 1560 | 1560 | 1560 | 1273 | 1273 | 1273 | 992 | 1783 | 1783 |
| | | Ap | 0.034 | 0.034 | 0.02 | 0.02 | 0.014 | 0.014 | 0.01 | 0.01 | 0.101 | 0.101 | 0.101 | 0.058 | 0.058 | 0.036 | 0.036 | 0.113 | 0.113 |
| | 6-8 | Vc | 90 | 90 | 90 | 90 | 68 | 68 | 34 | 34 | 112 | 112 | 112 | 100 | 100 | 100 | 89 | 126 | 126 |
| | | fz | 0.026 | 0.026 | 0.026 | 0.026 | 0.023 | 0.023 | 0.02 | 0.02 | 0.035 | 0.035 | 0.035 | 0.032 | 0.032 | 0.032 | 0.028 | 0.04 | 0.04 |
| | | RPM | 19099 | 19099 | 19099 | 19099 | 14430 | 14430 | 7215 | 7215 | 22282 | 22282 | 22282 | 19894 | 19894 | 19894 | 17706 | 22282 | 22282 |
| | | FEED | 993 | 993 | 993 | 993 | 664 | 664 | 289 | 289 | 1560 | 1560 | 1560 | 1273 | 1273 | 1273 | 992 | 1783 | 1783 |
| | | Ap | 0.034 | 0.034 | 0.02 | 0.02 | 0.014 | 0.014 | 0.01 | 0.01 | 0.101 | 0.101 | 0.101 | 0.058 | 0.058 | 0.036 | 0.036 | 0.113 | 0.113 |
| | 9 | Vc | 85 | 85 | 85 | 85 | 64 | 64 | 32 | 32 | 106 | 106 | 106 | 95 | 95 | 95 | 84 | 119 | 119 |
| | | fz | 0.024 | 0.024 | 0.024 | 0.024 | 0.021 | 0.021 | 0.018 | 0.018 | 0.031 | 0.031 | 0.031 | 0.028 | 0.028 | 0.028 | 0.025 | 0.035 | 0.035 |
| | | RPM | 18038 | 18038 | 18038 | 18038 | 13581 | 13581 | 6791 | 6791 | 21088 | 21088 | 21088 | 18900 | 18900 | 18900 | 16711 | 21044 | 21044 |
| | | FEED | 866 | 866 | 866 | 866 | 570 | 570 | 244 | 244 | 1307 | 1307 | 1307 | 1058 | 1058 | 1058 | 836 | 1473 | 1473 |
| | | Ap | 0.026 | 0.026 | 0.016 | 0.016 | 0.011 | 0.011 | 0.008 | 0.008 | 0.078 | 0.078 | 0.078 | 0.045 | 0.045 | 0.028 | 0.028 | 0.088 | 0.088 |
| | 10-11.1 | Vc | 90 | 90 | 90 | 90 | 68 | 68 | 34 | 34 | 112 | 112 | 112 | 100 | 100 | 100 | 89 | 126 | 126 |
| | | fz | 0.026 | 0.026 | 0.026 | 0.026 | 0.023 | 0.023 | 0.02 | 0.02 | 0.035 | 0.035 | 0.035 | 0.032 | 0.032 | 0.032 | 0.028 | 0.04 | 0.04 |
| | | RPM | 19099 | 19099 | 19099 | 19099 | 14430 | 14430 | 7215 | 7215 | 22282 | 22282 | 22282 | 19894 | 19894 | 19894 | 17706 | 22282 | 22282 |
| | | FEED | 993 | 993 | 993 | 993 | 664 | 664 | 289 | 289 | 1560 | 1560 | 1560 | 1273 | 1273 | 1273 | 992 | 1783 | 1783 |
| | | Ap | 0.034 | 0.034 | 0.02 | 0.02 | 0.014 | 0.014 | 0.01 | 0.01 | 0.101 | 0.101 | 0.101 | 0.058 | 0.058 | 0.036 | 0.036 | 0.113 | 0.113 |
| | 11.2 | Vc | 85 | 85 | 85 | 85 | 64 | 64 | 32 | 32 | 106 | 106 | 106 | 95 | 95 | 95 | 84 | 119 | 119 |
| | | fz | 0.024 | 0.024 | 0.024 | 0.024 | 0.021 | 0.021 | 0.018 | 0.018 | 0.031 | 0.031 | 0.031 | 0.028 | 0.028 | 0.028 | 0.025 | 0.035 | 0.035 |
| | | RPM | 18038 | 18038 | 18038 | 18038 | 13581 | 13581 | 6791 | 6791 | 21088 | 21088 | 21088 | 18900 | 18900 | 18900 | 16711 | 21044 | 21044 |
| | | FEED | 866 | 866 | 866 | 866 | 570 | 570 | 244 | 244 | 1307 | 1307 | 1307 | 1058 | 1058 | 1058 | 836 | 1473 | 1473 |
| | | Ap | 0.026 | 0.026 | 0.016 | 0.016 | 0.011 | 0.011 | 0.008 | 0.008 | 0.078 | 0.078 | 0.078 | 0.045 | 0.045 | 0.028 | 0.028 | 0.088 | 0.088 |
| K | 15-20 | Vc | 90 | 90 | 90 | 90 | 68 | 68 | 34 | 34 | 112 | 112 | 112 | 100 | 100 | 100 | 89 | 126 | 126 |
| | | fz | 0.026 | 0.026 | 0.026 | 0.026 | 0.023 | 0.023 | 0.02 | 0.02 | 0.035 | 0.035 | 0.035 | 0.032 | 0.032 | 0.032 | 0.028 | 0.04 | 0.04 |
| | | RPM | 19099 | 19099 | 19099 | 19099 | 14430 | 14430 | 7215 | 7215 | 22282 | 22282 | 22282 | 19894 | 19894 | 19894 | 17706 | 22282 | 22282 |
| | | FEED | 993 | 993 | 993 | 993 | 664 | 664 | 289 | 289 | 1560 | 1560 | 1560 | 1273 | 1273 | 1273 | 992 | 1783 | 1783 |
| | | Ap | 0.034 | 0.034 | 0.02 | 0.02 | 0.014 | 0.014 | 0.01 | 0.01 | 0.101 | 0.101 | 0.101 | 0.058 | 0.058 | 0.036 | 0.036 | 0.113 | 0.113 |
| H | 38.1 - 38.2 | Vc | 75 | 75 | 75 | 75 | 57 | 57 | 28 | 28 | 93 | 93 | 93 | 84 | 84 | 84 | 74 | 105 | 105 |
| | | fz | 0.022 | 0.022 | 0.022 | 0.022 | 0.019 | 0.019 | 0.016 | 0.016 | 0.03 | 0.03 | 0.03 | 0.027 | 0.027 | 0.027 | 0.024 | 0.033 | 0.033 |
| | | RPM | 15915 | 15915 | 15915 | 15915 | 12096 | 12096 | 5942 | 5942 | 18502 | 18502 | 18502 | 16711 | 16711 | 16711 | 14722 | 18568 | 18568 |
| | | FEED | 700 | 700 | 700 | 700 | 460 | 460 | 190 | 190 | 1110 | 1110 | 1110 | 902 | 902 | 902 | 707 | 1225 | 1225 |
| | | Ap | 0.019 | 0.019 | 0.011 | 0.011 | 0.008 | 0.008 | 0.005 | 0.005 | 0.056 | 0.056 | 0.056 | 0.032 | 0.032 | 0.02 | 0.02 | 0.063 | 0.063 |
| | 40 | Vc | 85 | 85 | 85 | 85 | 64 | 64 | 32 | 32 | 106 | 106 | 106 | 95 | 95 | 95 | 84 | 119 | 119 |
| | | fz | 0.024 | 0.024 | 0.024 | 0.024 | 0.021 | 0.021 | 0.018 | 0.018 | 0.031 | 0.031 | 0.031 | 0.028 | 0.028 | 0.028 | 0.025 | 0.035 | 0.035 |
| | | RPM | 18038 | 18038 | 18038 | 18038 | 13581 | 13581 | 6791 | 6791 | 21088 | 21088 | 21088 | 18900 | 18900 | 18900 | 16711 | 21044 | 21044 |
| | | FEED | 866 | 866 | 866 | 866 | 570 | 570 | 244 | 244 | 1307 | 1307 | 1307 | 1058 | 1058 | 1058 | 836 | 1473 | 1473 |
| | | Ap | 0.026 | 0.026 | 0.016 | 0.016 | 0.011 | 0.011 | 0.008 | 0.008 | 0.078 | 0.078 | 0.078 | 0.045 | 0.045 | 0.028 | 0.028 | 0.088 | 0.088 |
| | 41 | Vc | 75 | 75 | 75 | 75 | 57 | 57 | 28 | 28 | 93 | 93 | 93 | 84 | 84 | 84 | 74 | 105 | 105 |
| | | fz | 0.022 | 0.022 | 0.022 | 0.022 | 0.019 | 0.019 | 0.016 | 0.016 | 0.03 | 0.03 | 0.03 | 0.027 | 0.027 | 0.027 | 0.024 | 0.033 | 0.033 |
| | | RPM | 15915 | 15915 | 15915 | 15915 | 12096 | 12096 | 5942 | 5942 | 18502 | 18502 | 18502 | 16711 | 16711 | 16711 | 14722 | 18568 | 18568 |
| | | FEED | 700 | 700 | 700 | 700 | 460 | 460 | 190 | 190 | 1110 | 1110 | 1110 | 902 | 902 | 902 | 707 | 1225 | 1225 |
| | | Ap | 0.019 | 0.019 | 0.011 | 0.011 | 0.008 | 0.008 | 0.005 | 0.005 | 0.056 | 0.056 | 0.056 | 0.032 | 0.032 | 0.02 | 0.02 | 0.063 | 0.063 |

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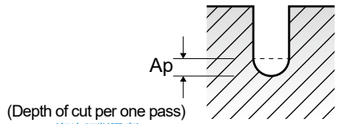




4G MILL END MILLS
RECOMMENDED CUTTING CONDITIONS
推荐加工参数
SEM846 SERIES — 2 FLUTE BALL NOSE - SLOTTING
2刃 球头 - 槽铣削
Vc (切削速度) = (m/min.) FEED (进给) = (mm/min.)
fz (每齿进给) = (mm/tooth) Ap (切削深度) = (mm)
RPM (转速) = (rev./min.) LBS (颈长) = Length Below Shank

| VDI 3323 | Parameter 参数 | Diameter (Ø) 直径 | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| | LBS | 8 | 10 | 12 | 16 | 20 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 26 | 30 | 35 | 40 | 45 | 50 |
| 1-5 | Vc | 126 | 113 | 113 | 113 | 100 | 113 | 113 | 113 | 102 | 102 | 102 | 102 | 102 | 90 | 90 | 90 | 68 | 68 | 34 | 34 |
| | fz | 0.04 | 0.036 | 0.036 | 0.036 | 0.032 | 0.05 | 0.05 | 0.05 | 0.045 | 0.045 | 0.045 | 0.045 | 0.045 | 0.04 | 0.04 | 0.04 | 0.035 | 0.035 | 0.03 | 0.03 |
| | RPM | 22282 | 19983 | 19983 | 19983 | 17684 | 17985 | 17985 | 17985 | 16234 | 16234 | 16234 | 16234 | 16234 | 14324 | 14324 | 14324 | 10823 | 10823 | 5411 | 5411 |
| | FEED | 1783 | 1439 | 1439 | 1439 | 1132 | 1798 | 1798 | 1798 | 1461 | 1461 | 1461 | 1461 | 1461 | 1146 | 1146 | 1146 | 758 | 758 | 325 | 325 |
| | Ap | 0.113 | 0.065 | 0.065 | 0.041 | 0.041 | 0.18 | 0.126 | 0.126 | 0.072 | 0.072 | 0.072 | 0.045 | 0.045 | 0.045 | 0.045 | 0.027 | 0.018 | 0.018 | 0.018 | 0.018 |
| 6-8 | Vc | 126 | 113 | 113 | 113 | 100 | 113 | 113 | 113 | 102 | 102 | 102 | 102 | 102 | 90 | 90 | 90 | 68 | 68 | 34 | 34 |
| | fz | 0.04 | 0.036 | 0.036 | 0.036 | 0.032 | 0.05 | 0.05 | 0.05 | 0.045 | 0.045 | 0.045 | 0.045 | 0.045 | 0.04 | 0.04 | 0.04 | 0.035 | 0.035 | 0.03 | 0.03 |
| | RPM | 22282 | 19983 | 19983 | 19983 | 17684 | 17985 | 17985 | 17985 | 16234 | 16234 | 16234 | 16234 | 16234 | 14324 | 14324 | 14324 | 10823 | 10823 | 5411 | 5411 |
| | FEED | 1783 | 1439 | 1439 | 1439 | 1132 | 1798 | 1798 | 1798 | 1461 | 1461 | 1461 | 1461 | 1461 | 1146 | 1146 | 1146 | 758 | 758 | 325 | 325 |
| | Ap | 0.113 | 0.065 | 0.065 | 0.041 | 0.041 | 0.18 | 0.126 | 0.126 | 0.072 | 0.072 | 0.072 | 0.045 | 0.045 | 0.045 | 0.045 | 0.027 | 0.018 | 0.018 | 0.018 | 0.018 |
| 9 | Vc | 119 | 107 | 107 | 107 | 95 | 107 | 107 | 107 | 96 | 96 | 96 | 96 | 96 | 85 | 85 | 85 | 64 | 64 | 32 | 32 |
| | fz | 0.035 | 0.031 | 0.031 | 0.031 | 0.028 | 0.045 | 0.045 | 0.045 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.036 | 0.036 | 0.036 | 0.031 | 0.031 | 0.027 | 0.027 |
| | RPM | 21044 | 18922 | 18922 | 18922 | 16800 | 17030 | 17030 | 17030 | 15279 | 15279 | 15279 | 15279 | 15279 | 13528 | 13528 | 13528 | 10186 | 10186 | 5093 | 5093 |
| | FEED | 1473 | 1173 | 1173 | 1173 | 941 | 1533 | 1533 | 1533 | 1222 | 1222 | 1222 | 1222 | 1222 | 974 | 974 | 974 | 632 | 632 | 275 | 275 |
| | Ap | 0.088 | 0.05 | 0.05 | 0.032 | 0.032 | 0.14 | 0.098 | 0.098 | 0.056 | 0.056 | 0.056 | 0.035 | 0.035 | 0.035 | 0.035 | 0.021 | 0.014 | 0.014 | 0.014 | 0.014 |
| 10 - 11.1 | Vc | 126 | 113 | 113 | 113 | 100 | 113 | 113 | 113 | 102 | 102 | 102 | 102 | 102 | 90 | 90 | 90 | 68 | 68 | 34 | 34 |
| | fz | 0.04 | 0.036 | 0.036 | 0.036 | 0.032 | 0.05 | 0.05 | 0.05 | 0.045 | 0.045 | 0.045 | 0.045 | 0.045 | 0.04 | 0.04 | 0.04 | 0.035 | 0.035 | 0.03 | 0.03 |
| | RPM | 22282 | 19983 | 19983 | 19983 | 17684 | 17985 | 17985 | 17985 | 16234 | 16234 | 16234 | 16234 | 16234 | 14324 | 14324 | 14324 | 10823 | 10823 | 5411 | 5411 |
| | FEED | 1783 | 1439 | 1439 | 1439 | 1132 | 1798 | 1798 | 1798 | 1461 | 1461 | 1461 | 1461 | 1461 | 1146 | 1146 | 1146 | 758 | 758 | 325 | 325 |
| | Ap | 0.113 | 0.065 | 0.065 | 0.041 | 0.041 | 0.18 | 0.126 | 0.126 | 0.072 | 0.072 | 0.072 | 0.045 | 0.045 | 0.045 | 0.045 | 0.027 | 0.018 | 0.018 | 0.018 | 0.018 |
| 11.2 | Vc | 119 | 107 | 107 | 107 | 95 | 107 | 107 | 107 | 96 | 96 | 96 | 96 | 96 | 85 | 85 | 85 | 64 | 64 | 32 | 32 |
| | fz | 0.035 | 0.031 | 0.031 | 0.031 | 0.028 | 0.045 | 0.045 | 0.045 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.036 | 0.036 | 0.036 | 0.031 | 0.031 | 0.027 | 0.027 |
| | RPM | 21044 | 18922 | 18922 | 18922 | 16800 | 17030 | 17030 | 17030 | 15279 | 15279 | 15279 | 15279 | 15279 | 13528 | 13528 | 13528 | 10186 | 10186 | 5093 | 5093 |
| | FEED | 1473 | 1173 | 1173 | 1173 | 941 | 1533 | 1533 | 1533 | 1222 | 1222 | 1222 | 1222 | 1222 | 974 | 974 | 974 | 632 | 632 | 275 | 275 |
| | Ap | 0.088 | 0.05 | 0.05 | 0.032 | 0.032 | 0.14 | 0.098 | 0.098 | 0.056 | 0.056 | 0.056 | 0.035 | 0.035 | 0.035 | 0.035 | 0.021 | 0.014 | 0.014 | 0.014 | 0.014 |
| 15 - 20 | Vc | 126 | 113 | 113 | 113 | 100 | 113 | 113 | 113 | 102 | 102 | 102 | 102 | 102 | 90 | 90 | 90 | 68 | 68 | 34 | 34 |
| | fz | 0.04 | 0.036 | 0.036 | 0.036 | 0.032 | 0.05 | 0.05 | 0.05 | 0.045 | 0.045 | 0.045 | 0.045 | 0.045 | 0.04 | 0.04 | 0.04 | 0.035 | 0.035 | 0.03 | 0.03 |
| | RPM | 22282 | 19983 | 19983 | 19983 | 17684 | 17985 | 17985 | 17985 | 16234 | 16234 | 16234 | 16234 | 16234 | 14324 | 14324 | 14324 | 10823 | 10823 | 5411 | 5411 |
| | FEED | 1783 | 1439 | 1439 | 1439 | 1132 | 1798 | 1798 | 1798 | 1461 | 1461 | 1461 | 1461 | 1461 | 1146 | 1146 | 1146 | 758 | 758 | 325 | 325 |
| | Ap | 0.113 | 0.065 | 0.065 | 0.041 | 0.041 | 0.18 | 0.126 | 0.126 | 0.072 | 0.072 | 0.072 | 0.045 | 0.045 | 0.045 | 0.045 | 0.027 | 0.018 | 0.018 | 0.018 | 0.018 |
| 38.1 - 38.2 | Vc | 105 | 94 | 94 | 94 | 84 | 94 | 94 | 94 | 85 | 85 | 85 | 85 | 85 | 75 | 75 | 75 | 57 | 57 | 28 | 28 |
| | fz | 0.033 | 0.03 | 0.03 | 0.03 | 0.027 | 0.043 | 0.043 | 0.043 | 0.039 | 0.039 | 0.039 | 0.039 | 0.039 | 0.034 | 0.034 | 0.034 | 0.03 | 0.03 | 0.026 | 0.026 |
| | RPM | 18568 | 16623 | 16623 | 16623 | 14854 | 14961 | 14961 | 14961 | 13528 | 13528 | 13528 | 13528 | 13528 | 11937 | 11937 | 11937 | 9072 | 9072 | 4456 | 4456 |
| | FEED | 1225 | 997 | 997 | 997 | 802 | 1287 | 1287 | 1287 | 1055 | 1055 | 1055 | 1055 | 1055 | 812 | 812 | 812 | 544 | 544 | 232 | 232 |
| | Ap | 0.063 | 0.036 | 0.036 | 0.023 | 0.023 | 0.1 | 0.07 | 0.07 | 0.04 | 0.04 | 0.04 | 0.025 | 0.025 | 0.025 | 0.025 | 0.015 | 0.01 | 0.01 | 0.01 | 0.01 |
| 40 | Vc | 119 | 107 | 107 | 107 | 95 | 107 | 107 | 107 | 96 | 96 | 96 | 96 | 96 | 85 | 85 | 85 | 64 | 64 | 32 | 32 |
| | fz | 0.035 | 0.031 | 0.031 | 0.031 | 0.028 | 0.045 | 0.045 | 0.045 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.036 | 0.036 | 0.036 | 0.031 | 0.031 | 0.027 | 0.027 |
| | RPM | 21044 | 18922 | 18922 | 18922 | 16800 | 17030 | 17030 | 17030 | 15279 | 15279 | 15279 | 15279 | 15279 | 13528 | 13528 | 13528 | 10186 | 10186 | 5093 | 5093 |
| | FEED | 1473 | 1173 | 1173 | 1173 | 941 | 1533 | 1533 | 1533 | 1222 | 1222 | 1222 | 1222 | 1222 | 974 | 974 | 974 | 632 | 632 | 275 | 275 |
| | Ap | 0.088 | 0.05 | 0.05 | 0.032 | 0.032 | 0.14 | 0.098 | 0.098 | 0.056 | 0.056 | 0.056 | 0.035 | 0.035 | 0.035 | 0.035 | 0.021 | 0.014 | 0.014 | 0.014 | 0.014 |
| 41 | Vc | 105 | 94 | 94 | 94 | 84 | 94 | 94 | 94 | 85 | 85 | 85 | 85 | 85 | 75 | 75 | 75 | 57 | 57 | 28 | 28 |
| | fz | 0.033 | 0.03 | 0.03 | 0.03 | 0.027 | 0.043 | 0.043 | 0.043 | 0.039 | 0.039 | 0.039 | 0.039 | 0.039 | 0.034 | 0.034 | 0.034 | 0.03 | 0.03 | 0.026 | 0.026 |
| | RPM | 18568 | 16623 | 16623 | 16623 | 14854 | 14961 | 14961 | 14961 | 13528 | 13528 | 13528 | 13528 | 13528 | 11937 | 11937 | 11937 | 9072 | 9072 | 4456 | 4456 |
| | FEED | 1225 | 997 | 997 | 997 | 802 | 1287 | 1287 | 1287 | 1055 | 1055 | 1055 | 1055 | 1055 | 812 | 812 | 812 | 544 | 544 | 232 | 232 |
| | Ap | 0.063 | 0.036 | 0.036 | 0.023 | 0.023 | 0.1 | 0.07 | 0.07 | 0.04 | 0.04 | 0.04 | 0.025 | 0.025 | 0.025 | 0.025 | 0.015 | 0.01 | 0.01 | 0.01 | 0.01 |

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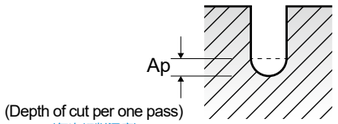

# 4G MILL END MILLS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

### SEM846 SERIES — 2 FLUTE BALL NOSE - SLOTTING
### 2刃 球头 - 槽铣削

Vc (切削速度) = (m/min.) FEED (进给) = (mm/min.)
fz (每齿进给) = (mm/tooth) Ap (切削深度) = (mm)
RPM (转速) = (rev./min.) LBS (颈长) = Length Below Shank

| ISO | VDI 3323 | Parameter 参数 | Diameter (Ø) 直径 | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 2.0 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 3.0 | 3.0 | 3.0 | 3.0 |
| | | LBS | 60 | 8 | 10 | 12 | 16 | 20 | 22 | 26 | 30 | 35 | 40 | 45 | 50 | 6 | 8 | 10 | 12 |
| P | 1-5 | Vc | 34 | 124 | 124 | 124 | 112 | 112 | 112 | 99 | 99 | 99 | 74 | 74 | 74 | 129 | 129 | 129 | 129 |
| | | fz | 0.03 | 0.061 | 0.061 | 0.061 | 0.055 | 0.055 | 0.055 | 0.049 | 0.049 | 0.049 | 0.043 | 0.043 | 0.043 | 0.075 | 0.075 | 0.075 | 0.075 |
| | | RPM | 5411 | 15788 | 15788 | 15788 | 14260 | 14260 | 14260 | 12605 | 12605 | 12605 | 9422 | 9422 | 9422 | 13687 | 13687 | 13687 | 13687 |
| | | FEED | 325 | 1926 | 1926 | 1926 | 1569 | 1569 | 1569 | 1235 | 1235 | 1235 | 810 | 810 | 810 | 2053 | 2053 | 2053 | 2053 |
| | | Ap | 0.018 | 0.158 | 0.158 | 0.158 | 0.09 | 0.09 | 0.056 | 0.056 | 0.056 | 0.034 | 0.034 | 0.023 | 0.023 | 0.27 | 0.27 | 0.189 | 0.189 |
| | 6-8 | Vc | 34 | 124 | 124 | 124 | 112 | 112 | 112 | 99 | 99 | 99 | 74 | 74 | 74 | 129 | 129 | 129 | 129 |
| | | fz | 0.03 | 0.061 | 0.061 | 0.061 | 0.055 | 0.055 | 0.055 | 0.049 | 0.049 | 0.049 | 0.043 | 0.043 | 0.043 | 0.075 | 0.075 | 0.075 | 0.075 |
| | | RPM | 5411 | 15788 | 15788 | 15788 | 14260 | 14260 | 14260 | 12605 | 12605 | 12605 | 9422 | 9422 | 9422 | 13687 | 13687 | 13687 | 13687 |
| | | FEED | 325 | 1926 | 1926 | 1926 | 1569 | 1569 | 1569 | 1235 | 1235 | 1235 | 810 | 810 | 810 | 2053 | 2053 | 2053 | 2053 |
| | | Ap | 0.018 | 0.158 | 0.158 | 0.158 | 0.09 | 0.09 | 0.056 | 0.056 | 0.056 | 0.034 | 0.034 | 0.023 | 0.023 | 0.27 | 0.27 | 0.189 | 0.189 |
| | 9 | Vc | 32 | 117 | 117 | 117 | 105 | 105 | 105 | 94 | 94 | 94 | 70 | 70 | 70 | 122 | 122 | 122 | 122 |
| | | fz | 0.027 | 0.054 | 0.054 | 0.054 | 0.048 | 0.048 | 0.048 | 0.043 | 0.043 | 0.043 | 0.038 | 0.038 | 0.038 | 0.067 | 0.067 | 0.067 | 0.067 |
| | | RPM | 5093 | 14897 | 14897 | 14897 | 13369 | 13369 | 13369 | 11968 | 11968 | 11968 | 8913 | 8913 | 8913 | 12945 | 12945 | 12945 | 12945 |
| | | FEED | 275 | 1609 | 1609 | 1609 | 1283 | 1283 | 1283 | 1029 | 1029 | 1029 | 677 | 677 | 677 | 1735 | 1735 | 1735 | 1735 |
| | | Ap | 0.014 | 0.123 | 0.123 | 0.123 | 0.07 | 0.07 | 0.044 | 0.044 | 0.044 | 0.026 | 0.026 | 0.018 | 0.018 | 0.21 | 0.21 | 0.147 | 0.147 |
| | 10-11.1 | Vc | 34 | 124 | 124 | 124 | 112 | 112 | 112 | 99 | 99 | 99 | 74 | 74 | 74 | 129 | 129 | 129 | 129 |
| | | fz | 0.03 | 0.061 | 0.061 | 0.061 | 0.055 | 0.055 | 0.055 | 0.049 | 0.049 | 0.049 | 0.043 | 0.043 | 0.043 | 0.075 | 0.075 | 0.075 | 0.075 |
| | | RPM | 5411 | 15788 | 15788 | 15788 | 14260 | 14260 | 14260 | 12605 | 12605 | 12605 | 9422 | 9422 | 9422 | 13687 | 13687 | 13687 | 13687 |
| | | FEED | 325 | 1926 | 1926 | 1926 | 1569 | 1569 | 1569 | 1235 | 1235 | 1235 | 810 | 810 | 810 | 2053 | 2053 | 2053 | 2053 |
| | | Ap | 0.018 | 0.158 | 0.158 | 0.158 | 0.09 | 0.09 | 0.056 | 0.056 | 0.056 | 0.034 | 0.034 | 0.023 | 0.023 | 0.27 | 0.27 | 0.189 | 0.189 |
| | 11.2 | Vc | 32 | 117 | 117 | 117 | 105 | 105 | 105 | 94 | 94 | 94 | 70 | 70 | 70 | 122 | 122 | 122 | 122 |
| | | fz | 0.027 | 0.054 | 0.054 | 0.054 | 0.048 | 0.048 | 0.048 | 0.043 | 0.043 | 0.043 | 0.038 | 0.038 | 0.038 | 0.067 | 0.067 | 0.067 | 0.067 |
| | | RPM | 5093 | 14897 | 14897 | 14897 | 13369 | 13369 | 13369 | 11968 | 11968 | 11968 | 8913 | 8913 | 8913 | 12945 | 12945 | 12945 | 12945 |
| | | FEED | 275 | 1609 | 1609 | 1609 | 1283 | 1283 | 1283 | 1029 | 1029 | 1029 | 677 | 677 | 677 | 1735 | 1735 | 1735 | 1735 |
| | | Ap | 0.014 | 0.123 | 0.123 | 0.123 | 0.07 | 0.07 | 0.044 | 0.044 | 0.044 | 0.026 | 0.026 | 0.018 | 0.018 | 0.21 | 0.21 | 0.147 | 0.147 |
| K | 15-20 | Vc | 34 | 124 | 124 | 124 | 112 | 112 | 112 | 99 | 99 | 99 | 74 | 74 | 74 | 129 | 129 | 129 | 129 |
| | | fz | 0.03 | 0.061 | 0.061 | 0.061 | 0.055 | 0.055 | 0.055 | 0.049 | 0.049 | 0.049 | 0.043 | 0.043 | 0.043 | 0.075 | 0.075 | 0.075 | 0.075 |
| | | RPM | 5411 | 15788 | 15788 | 15788 | 14260 | 14260 | 14260 | 12605 | 12605 | 12605 | 9422 | 9422 | 9422 | 13687 | 13687 | 13687 | 13687 |
| | | FEED | 325 | 1926 | 1926 | 1926 | 1569 | 1569 | 1569 | 1235 | 1235 | 1235 | 810 | 810 | 810 | 2053 | 2053 | 2053 | 2053 |
| | | Ap | 0.018 | 0.158 | 0.158 | 0.158 | 0.09 | 0.09 | 0.056 | 0.056 | 0.056 | 0.034 | 0.034 | 0.023 | 0.023 | 0.27 | 0.27 | 0.189 | 0.189 |
| H | 38.1 - 38.2 | Vc | 28 | 104 | 104 | 104 | 93 | 93 | 93 | 83 | 83 | 83 | 62 | 62 | 62 | 107 | 107 | 107 | 107 |
| | | fz | 0.026 | 0.049 | 0.049 | 0.049 | 0.044 | 0.044 | 0.044 | 0.04 | 0.04 | 0.04 | 0.035 | 0.035 | 0.035 | 0.063 | 0.063 | 0.063 | 0.063 |
| | | RPM | 4456 | 13242 | 13242 | 13242 | 11841 | 11841 | 11841 | 10568 | 10568 | 10568 | 7894 | 7894 | 7894 | 11353 | 11353 | 11353 | 11353 |
| | | FEED | 232 | 1298 | 1298 | 1298 | 1042 | 1042 | 1042 | 845 | 845 | 845 | 553 | 553 | 553 | 1430 | 1430 | 1430 | 1430 |
| | | Ap | 0.01 | 0.088 | 0.088 | 0.088 | 0.05 | 0.05 | 0.031 | 0.031 | 0.031 | 0.019 | 0.019 | 0.013 | 0.013 | 0.15 | 0.15 | 0.105 | 0.105 |
| | 40 | Vc | 32 | 117 | 117 | 117 | 105 | 105 | 105 | 94 | 94 | 94 | 70 | 70 | 70 | 122 | 122 | 122 | 122 |
| | | fz | 0.027 | 0.054 | 0.054 | 0.054 | 0.048 | 0.048 | 0.048 | 0.043 | 0.043 | 0.043 | 0.038 | 0.038 | 0.038 | 0.067 | 0.067 | 0.067 | 0.067 |
| | | RPM | 5093 | 14897 | 14897 | 14897 | 13369 | 13369 | 13369 | 11968 | 11968 | 11968 | 8913 | 8913 | 8913 | 12945 | 12945 | 12945 | 12945 |
| | | FEED | 275 | 1609 | 1609 | 1609 | 1283 | 1283 | 1283 | 1029 | 1029 | 1029 | 677 | 677 | 677 | 1735 | 1735 | 1735 | 1735 |
| | | Ap | 0.014 | 0.123 | 0.123 | 0.123 | 0.07 | 0.07 | 0.044 | 0.044 | 0.044 | 0.026 | 0.026 | 0.018 | 0.018 | 0.21 | 0.21 | 0.147 | 0.147 |
| | 41 | Vc | 28 | 104 | 104 | 104 | 93 | 93 | 93 | 83 | 83 | 83 | 62 | 62 | 62 | 107 | 107 | 107 | 107 |
| | | fz | 0.026 | 0.049 | 0.049 | 0.049 | 0.044 | 0.044 | 0.044 | 0.04 | 0.04 | 0.04 | 0.035 | 0.035 | 0.035 | 0.063 | 0.063 | 0.063 | 0.063 |
| | | RPM | 4456 | 13242 | 13242 | 13242 | 11841 | 11841 | 11841 | 10568 | 10568 | 10568 | 7894 | 7894 | 7894 | 11353 | 11353 | 11353 | 11353 |
| | | FEED | 232 | 1298 | 1298 | 1298 | 1042 | 1042 | 1042 | 845 | 845 | 845 | 553 | 553 | 553 | 1430 | 1430 | 1430 | 1430 |
| | | Ap | 0.01 | 0.088 | 0.088 | 0.088 | 0.05 | 0.05 | 0.031 | 0.031 | 0.031 | 0.019 | 0.019 | 0.013 | 0.013 | 0.15 | 0.15 | 0.105 | 0.105 |

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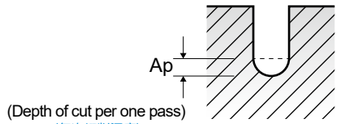




4G MILL END MILLS
RECOMMENDED CUTTING CONDITIONS
推荐加工参数
SEM846 SERIES — 2 FLUTE BALL NOSE - SLOTTING
2刃 球头 - 槽铣削
Vc (切削速度) = (m/min.) FEED (进给) = (mm/min.)
fz (每齿进给) = (mm/tooth) Ap (切削深度) = (mm)
RPM (转速) = (rev./min.) LBS (颈长) = Length Below Shank

| VDI 3323 | Parameter 参数 | Diameter (Ø) 直径 | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| | LBS | 14 | 16 | 18 | 20 | 22 | 26 | 30 | 35 | 40 | 45 | 50 | 60 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 |
| 1-5 | Vc | 129 | 116 | 116 | 116 | 116 | 116 | 116 | 103 | 103 | 103 | 77 | 77 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 111 |
| | fz | 0.075 | 0.067 | 0.067 | 0.067 | 0.067 | 0.067 | 0.067 | 0.06 | 0.06 | 0.06 | 0.052 | 0.052 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.09 |
| | RPM | 13687 | 12308 | 12308 | 12308 | 12308 | 12308 | 12308 | 10929 | 10929 | 10929 | 8170 | 8170 | 9788 | 9788 | 9788 | 9788 | 9788 | 9788 | 9788 | 8833 |
| | FEED | 2053 | 1649 | 1649 | 1649 | 1649 | 1649 | 1649 | 1311 | 1311 | 1311 | 850 | 850 | 1958 | 1958 | 1958 | 1958 | 1958 | 1958 | 1958 | 1590 |
| | Ap | 0.189 | 0.108 | 0.108 | 0.108 | 0.108 | 0.068 | 0.068 | 0.068 | 0.041 | 0.041 | 0.027 | 0.027 | 0.36 | 0.36 | 0.36 | 0.252 | 0.252 | 0.252 | 0.252 | 0.144 |
| 6-8 | Vc | 129 | 116 | 116 | 116 | 116 | 116 | 116 | 103 | 103 | 103 | 77 | 77 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 111 |
| | fz | 0.075 | 0.067 | 0.067 | 0.067 | 0.067 | 0.067 | 0.067 | 0.06 | 0.06 | 0.06 | 0.052 | 0.052 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.09 |
| | RPM | 13687 | 12308 | 12308 | 12308 | 12308 | 12308 | 12308 | 10929 | 10929 | 10929 | 8170 | 8170 | 9788 | 9788 | 9788 | 9788 | 9788 | 9788 | 9788 | 8833 |
| | FEED | 2053 | 1649 | 1649 | 1649 | 1649 | 1649 | 1649 | 1311 | 1311 | 1311 | 850 | 850 | 1958 | 1958 | 1958 | 1958 | 1958 | 1958 | 1958 | 1590 |
| | Ap | 0.189 | 0.108 | 0.108 | 0.108 | 0.108 | 0.068 | 0.068 | 0.068 | 0.041 | 0.041 | 0.027 | 0.027 | 0.36 | 0.36 | 0.36 | 0.252 | 0.252 | 0.252 | 0.252 | 0.144 |
| 9 | Vc | 122 | 109 | 109 | 109 | 109 | 109 | 109 | 97 | 97 | 97 | 73 | 73 | 117 | 117 | 117 | 117 | 117 | 117 | 117 | 105 |
| | fz | 0.067 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.054 | 0.054 | 0.054 | 0.047 | 0.047 | 0.09 | 0.09 | 0.09 | 0.09 | 0.09 | 0.09 | 0.09 | 0.081 |
| | RPM | 12945 | 11565 | 11565 | 11565 | 11565 | 11565 | 11565 | 10292 | 10292 | 10292 | 7746 | 7746 | 9311 | 9311 | 9311 | 9311 | 9311 | 9311 | 9311 | 8356 |
| | FEED | 1735 | 1388 | 1388 | 1388 | 1388 | 1388 | 1388 | 1112 | 1112 | 1112 | 728 | 728 | 1676 | 1676 | 1676 | 1676 | 1676 | 1676 | 1676 | 1354 |
| | Ap | 0.147 | 0.084 | 0.084 | 0.084 | 0.084 | 0.053 | 0.053 | 0.053 | 0.032 | 0.032 | 0.021 | 0.021 | 0.28 | 0.28 | 0.28 | 0.196 | 0.196 | 0.196 | 0.196 | 0.112 |
| 10 - 11.1 | Vc | 129 | 116 | 116 | 116 | 116 | 116 | 116 | 103 | 103 | 103 | 77 | 77 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 111 |
| | fz | 0.075 | 0.067 | 0.067 | 0.067 | 0.067 | 0.067 | 0.067 | 0.06 | 0.06 | 0.06 | 0.052 | 0.052 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.09 |
| | RPM | 13687 | 12308 | 12308 | 12308 | 12308 | 12308 | 12308 | 10929 | 10929 | 10929 | 8170 | 8170 | 9788 | 9788 | 9788 | 9788 | 9788 | 9788 | 9788 | 8833 |
| | FEED | 2053 | 1649 | 1649 | 1649 | 1649 | 1649 | 1649 | 1311 | 1311 | 1311 | 850 | 850 | 1958 | 1958 | 1958 | 1958 | 1958 | 1958 | 1958 | 1590 |
| | Ap | 0.189 | 0.108 | 0.108 | 0.108 | 0.108 | 0.068 | 0.068 | 0.068 | 0.041 | 0.041 | 0.027 | 0.027 | 0.36 | 0.36 | 0.36 | 0.252 | 0.252 | 0.252 | 0.252 | 0.144 |
| 11.2 | Vc | 122 | 109 | 109 | 109 | 109 | 109 | 109 | 97 | 97 | 97 | 73 | 73 | 117 | 117 | 117 | 117 | 117 | 117 | 117 | 105 |
| | fz | 0.067 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.054 | 0.054 | 0.054 | 0.047 | 0.047 | 0.09 | 0.09 | 0.09 | 0.09 | 0.09 | 0.09 | 0.09 | 0.081 |
| | RPM | 12945 | 11565 | 11565 | 11565 | 11565 | 11565 | 11565 | 10292 | 10292 | 10292 | 7746 | 7746 | 9311 | 9311 | 9311 | 9311 | 9311 | 9311 | 9311 | 8356 |
| | FEED | 1735 | 1388 | 1388 | 1388 | 1388 | 1388 | 1388 | 1112 | 1112 | 1112 | 728 | 728 | 1676 | 1676 | 1676 | 1676 | 1676 | 1676 | 1676 | 1354 |
| | Ap | 0.147 | 0.084 | 0.084 | 0.084 | 0.084 | 0.053 | 0.053 | 0.053 | 0.032 | 0.032 | 0.021 | 0.021 | 0.28 | 0.28 | 0.28 | 0.196 | 0.196 | 0.196 | 0.196 | 0.112 |
| 15 - 20 | Vc | 129 | 116 | 116 | 116 | 116 | 116 | 116 | 103 | 103 | 103 | 77 | 77 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 111 |
| | fz | 0.075 | 0.067 | 0.067 | 0.067 | 0.067 | 0.067 | 0.067 | 0.06 | 0.06 | 0.06 | 0.052 | 0.052 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.09 |
| | RPM | 13687 | 12308 | 12308 | 12308 | 12308 | 12308 | 12308 | 10929 | 10929 | 10929 | 8170 | 8170 | 9788 | 9788 | 9788 | 9788 | 9788 | 9788 | 9788 | 8833 |
| | FEED | 2053 | 1649 | 1649 | 1649 | 1649 | 1649 | 1649 | 1311 | 1311 | 1311 | 850 | 850 | 1958 | 1958 | 1958 | 1958 | 1958 | 1958 | 1958 | 1590 |
| | Ap | 0.189 | 0.108 | 0.108 | 0.108 | 0.108 | 0.068 | 0.068 | 0.068 | 0.041 | 0.041 | 0.027 | 0.027 | 0.36 | 0.36 | 0.36 | 0.252 | 0.252 | 0.252 | 0.252 | 0.144 |
| 38.1 - 38.2 | Vc | 107 | 97 | 97 | 97 | 97 | 97 | 97 | 86 | 86 | 86 | 64 | 64 | 103 | 103 | 103 | 103 | 103 | 103 | 103 | 93 |
| | fz | 0.063 | 0.057 | 0.057 | 0.057 | 0.057 | 0.057 | 0.057 | 0.05 | 0.05 | 0.05 | 0.044 | 0.044 | 0.085 | 0.085 | 0.085 | 0.085 | 0.085 | 0.085 | 0.085 | 0.077 |
| | RPM | 11353 | 10292 | 10292 | 10292 | 10292 | 10292 | 10292 | 9125 | 9125 | 9125 | 6791 | 6791 | 8196 | 8196 | 8196 | 8196 | 8196 | 8196 | 8196 | 7401 |
| | FEED | 1430 | 1173 | 1173 | 1173 | 1173 | 1173 | 1173 | 912 | 912 | 912 | 598 | 598 | 1393 | 1393 | 1393 | 1393 | 1393 | 1393 | 1393 | 1140 |
| | Ap | 0.105 | 0.06 | 0.06 | 0.06 | 0.06 | 0.038 | 0.038 | 0.038 | 0.023 | 0.023 | 0.015 | 0.015 | 0.2 | 0.2 | 0.2 | 0.14 | 0.14 | 0.14 | 0.14 | 0.08 |
| 40 | Vc | 122 | 109 | 109 | 109 | 109 | 109 | 109 | 97 | 97 | 97 | 73 | 73 | 117 | 117 | 117 | 117 | 117 | 117 | 117 | 105 |
| | fz | 0.067 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.054 | 0.054 | 0.054 | 0.047 | 0.047 | 0.09 | 0.09 | 0.09 | 0.09 | 0.09 | 0.09 | 0.09 | 0.081 |
| | RPM | 12945 | 11565 | 11565 | 11565 | 11565 | 11565 | 11565 | 10292 | 10292 | 10292 | 7746 | 7746 | 9311 | 9311 | 9311 | 9311 | 9311 | 9311 | 9311 | 8356 |
| | FEED | 1735 | 1388 | 1388 | 1388 | 1388 | 1388 | 1388 | 1112 | 1112 | 1112 | 728 | 728 | 1676 | 1676 | 1676 | 1676 | 1676 | 1676 | 1676 | 1354 |
| | Ap | 0.147 | 0.084 | 0.084 | 0.084 | 0.084 | 0.053 | 0.053 | 0.053 | 0.032 | 0.032 | 0.021 | 0.021 | 0.28 | 0.28 | 0.28 | 0.196 | 0.196 | 0.196 | 0.196 | 0.112 |
| 41 | Vc | 107 | 97 | 97 | 97 | 97 | 97 | 97 | 86 | 86 | 86 | 64 | 64 | 103 | 103 | 103 | 103 | 103 | 103 | 103 | 93 |
| | fz | 0.063 | 0.057 | 0.057 | 0.057 | 0.057 | 0.057 | 0.057 | 0.05 | 0.05 | 0.05 | 0.044 | 0.044 | 0.085 | 0.085 | 0.085 | 0.085 | 0.085 | 0.085 | 0.085 | 0.077 |
| | RPM | 11353 | 10292 | 10292 | 10292 | 10292 | 10292 | 10292 | 9125 | 9125 | 9125 | 6791 | 6791 | 8196 | 8196 | 8196 | 8196 | 8196 | 8196 | 8196 | 7401 |
| | FEED | 1430 | 1173 | 1173 | 1173 | 1173 | 1173 | 1173 | 912 | 912 | 912 | 598 | 598 | 1393 | 1393 | 1393 | 1393 | 1393 | 1393 | 1393 | 1140 |
| | Ap | 0.105 | 0.06 | 0.06 | 0.06 | 0.06 | 0.038 | 0.038 | 0.038 | 0.023 | 0.023 | 0.015 | 0.015 | 0.2 | 0.2 | 0.2 | 0.14 | 0.14 | 0.14 | 0.14 | 0.08 |

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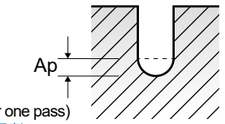

# 4G MILL END MILLS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

### SEM846 SERIES
**2 FLUTE BALL NOSE - SLOTTING**
**2刃 球头 - 槽铣削**

Vc (切削速度) = (m/min.) FEED (进给) = (mm/min.)
fz (每齿进给) = (mm/tooth) Ap (切削深度) = (mm)
RPM (转速) = (rev./min.) LBS (颈长) = Length Below Shank

| ISO | VDI 3323 | Parameter 参数 | Diameter (Ø) 直径 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | LBS | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| | | | 26 | 30 | 35 | 40 | 45 | 50 | 60 | 15 | 20 | 26 | 30 |
| P | 1-5 | Vc | 111 | 111 | 111 | 111 | 99 | 99 | 99 | 121 | 121 | 109 | 109 |
| | | fz | 0.09 | 0.09 | 0.09 | 0.09 | 0.08 | 0.08 | 0.08 | 0.12 | 0.12 | 0.108 | 0.108 |
| | | RPM | 8833 | 8833 | 8833 | 8833 | 7878 | 7878 | 7878 | 7703 | 7703 | 6939 | 6939 |
| | | FEED | 1590 | 1590 | 1590 | 1590 | 1261 | 1261 | 1261 | 1849 | 1849 | 1499 | 1499 |
| | | Ap | 0.144 | 0.144 | 0.09 | 0.09 | 0.09 | 0.09 | 0.054 | 0.315 | 0.315 | 0.18 | 0.18 |
| | 6-8 | Vc | 111 | 111 | 111 | 111 | 99 | 99 | 99 | 121 | 121 | 109 | 109 |
| | | fz | 0.09 | 0.09 | 0.09 | 0.09 | 0.08 | 0.08 | 0.08 | 0.12 | 0.12 | 0.108 | 0.108 |
| | | RPM | 8833 | 8833 | 8833 | 8833 | 7878 | 7878 | 7878 | 7703 | 7703 | 6939 | 6939 |
| | | FEED | 1590 | 1590 | 1590 | 1590 | 1261 | 1261 | 1261 | 1849 | 1849 | 1499 | 1499 |
| | | Ap | 0.144 | 0.144 | 0.09 | 0.09 | 0.09 | 0.09 | 0.054 | 0.315 | 0.315 | 0.18 | 0.18 |
| | 9 | Vc | 105 | 105 | 105 | 105 | 93 | 93 | 93 | 115 | 115 | 103 | 103 |
| | | fz | 0.081 | 0.081 | 0.081 | 0.081 | 0.072 | 0.072 | 0.072 | 0.1 | 0.1 | 0.09 | 0.09 |
| | | RPM | 8356 | 8356 | 8356 | 8356 | 7401 | 7401 | 7401 | 7321 | 7321 | 6557 | 6557 |
| | | FEED | 1354 | 1354 | 1354 | 1354 | 1066 | 1066 | 1066 | 1464 | 1464 | 1180 | 1180 |
| | | Ap | 0.112 | 0.112 | 0.07 | 0.07 | 0.07 | 0.07 | 0.042 | 0.245 | 0.245 | 0.14 | 0.14 |
| | 10-11.1 | Vc | 111 | 111 | 111 | 111 | 99 | 99 | 99 | 121 | 121 | 109 | 109 |
| | | fz | 0.09 | 0.09 | 0.09 | 0.09 | 0.08 | 0.08 | 0.08 | 0.12 | 0.12 | 0.108 | 0.108 |
| | | RPM | 8833 | 8833 | 8833 | 8833 | 7878 | 7878 | 7878 | 7703 | 7703 | 6939 | 6939 |
| | | FEED | 1590 | 1590 | 1590 | 1590 | 1261 | 1261 | 1261 | 1849 | 1849 | 1499 | 1499 |
| | | Ap | 0.144 | 0.144 | 0.09 | 0.09 | 0.09 | 0.09 | 0.054 | 0.315 | 0.315 | 0.18 | 0.18 |
| | 11.2 | Vc | 105 | 105 | 105 | 105 | 93 | 93 | 93 | 115 | 115 | 103 | 103 |
| | | fz | 0.081 | 0.081 | 0.081 | 0.081 | 0.072 | 0.072 | 0.072 | 0.1 | 0.1 | 0.09 | 0.09 |
| | | RPM | 8356 | 8356 | 8356 | 8356 | 7401 | 7401 | 7401 | 7321 | 7321 | 6557 | 6557 |
| | | FEED | 1354 | 1354 | 1354 | 1354 | 1066 | 1066 | 1066 | 1464 | 1464 | 1180 | 1180 |
| | | Ap | 0.112 | 0.112 | 0.07 | 0.07 | 0.07 | 0.07 | 0.042 | 0.245 | 0.245 | 0.14 | 0.14 |
| K | 15-20 | Vc | 111 | 111 | 111 | 111 | 99 | 99 | 99 | 121 | 121 | 109 | 109 |
| | | fz | 0.09 | 0.09 | 0.09 | 0.09 | 0.08 | 0.08 | 0.08 | 0.12 | 0.12 | 0.108 | 0.108 |
| | | RPM | 8833 | 8833 | 8833 | 8833 | 7878 | 7878 | 7878 | 7703 | 7703 | 6939 | 6939 |
| | | FEED | 1590 | 1590 | 1590 | 1590 | 1261 | 1261 | 1261 | 1849 | 1849 | 1499 | 1499 |
| | | Ap | 0.144 | 0.144 | 0.09 | 0.09 | 0.09 | 0.09 | 0.054 | 0.315 | 0.315 | 0.18 | 0.18 |
| H | 38.1 - 38.2 | Vc | 93 | 93 | 93 | 93 | 82 | 82 | 82 | 101 | 101 | 90 | 90 |
| | | fz | 0.077 | 0.077 | 0.077 | 0.077 | 0.068 | 0.068 | 0.068 | 0.1 | 0.1 | 0.09 | 0.09 |
| | | RPM | 7401 | 7401 | 7401 | 7401 | 6525 | 6525 | 6525 | 6430 | 6430 | 5730 | 5730 |
| | | FEED | 1140 | 1140 | 1140 | 1140 | 887 | 887 | 887 | 1286 | 1286 | 1031 | 1031 |
| | | Ap | 0.08 | 0.08 | 0.05 | 0.05 | 0.05 | 0.05 | 0.03 | 0.175 | 0.175 | 0.1 | 0.1 |
| | 40 | Vc | 105 | 105 | 105 | 105 | 93 | 93 | 93 | 115 | 115 | 103 | 103 |
| | | fz | 0.081 | 0.081 | 0.081 | 0.081 | 0.072 | 0.072 | 0.072 | 0.1 | 0.1 | 0.09 | 0.09 |
| | | RPM | 8356 | 8356 | 8356 | 8356 | 7401 | 7401 | 7401 | 7321 | 7321 | 6557 | 6557 |
| | | FEED | 1354 | 1354 | 1354 | 1354 | 1066 | 1066 | 1066 | 1464 | 1464 | 1180 | 1180 |
| | | Ap | 0.112 | 0.112 | 0.07 | 0.07 | 0.07 | 0.07 | 0.042 | 0.245 | 0.245 | 0.14 | 0.14 |
| | 41 | Vc | 93 | 93 | 93 | 93 | 82 | 82 | 82 | 101 | 101 | 90 | 90 |
| | | fz | 0.077 | 0.077 | 0.077 | 0.077 | 0.068 | 0.068 | 0.068 | 0.1 | 0.1 | 0.09 | 0.09 |
| | | RPM | 7401 | 7401 | 7401 | 7401 | 6525 | 6525 | 6525 | 6430 | 6430 | 5730 | 5730 |
| | | FEED | 1140 | 1140 | 1140 | 1140 | 887 | 887 | 887 | 1286 | 1286 | 1031 | 1031 |
| | | Ap | 0.08 | 0.08 | 0.05 | 0.05 | 0.05 | 0.05 | 0.03 | 0.175 | 0.175 | 0.1 | 0.1 |

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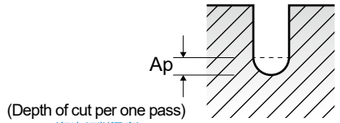




4G MILL END MILLS
RECOMMENDED CUTTING CONDITIONS
推荐加工参数
SEM846 SERIES
2 FLUTE BALL NOSE - SLOTTING
2刃 球头 - 槽铣削
Vc (切削速度) = (m/min.) FEED (进给) = (mm/min.)
fz (每齿进给) = (mm/tooth) Ap (切削深度) = (mm)
RPM (转速) = (rev./min.) LBS (颈长) = Length Below Shank

| VDI 3323 | Parameter 参数 | Diameter (Ø) 直径 | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | LBS | 5.0 | 5.0 | 5.0 | 5.0 | 6.0 | 6.0 | 8.0 | 8.0 | 10.0 | 10.0 | 12.0 | 12.0 | 12.0 |
| | | 35 | 40 | 50 | 60 | 20 | 30 | 25 | 30 | 30 | 40 | 32 | 45 | 50 |
| 1-5 | Vc | 109 | 109 | 109 | 97 | 123 | 123 | 122 | 122 | 121 | 121 | 121 | 121 | 100 |
| | fz | 0.108 | 0.108 | 0.108 | 0.096 | 0.146 | 0.146 | 0.186 | 0.186 | 0.214 | 0.214 | 0.238 | 0.238 | 0.151 |
| | RPM | 6939 | 6939 | 6939 | 6175 | 6525 | 6525 | 4854 | 4854 | 3852 | 3852 | 3210 | 3210 | 2653 |
| | FEED | 1499 | 1499 | 1499 | 1186 | 1905 | 1905 | 1806 | 1806 | 1648 | 1648 | 1528 | 1528 | 801 |
| | Ap | 0.18 | 0.18 | 0.113 | 0.113 | 0.378 | 0.378 | 0.504 | 0.504 | 0.9 | 0.63 | 1.08 | 0.756 | 0.756 |
| 6-8 | Vc | 109 | 109 | 109 | 97 | 123 | 123 | 122 | 122 | 121 | 121 | 121 | 121 | 100 |
| | fz | 0.108 | 0.108 | 0.108 | 0.096 | 0.146 | 0.146 | 0.186 | 0.186 | 0.214 | 0.214 | 0.238 | 0.238 | 0.151 |
| | RPM | 6939 | 6939 | 6939 | 6175 | 6525 | 6525 | 4854 | 4854 | 3852 | 3852 | 3210 | 3210 | 2653 |
| | FEED | 1499 | 1499 | 1499 | 1186 | 1905 | 1905 | 1806 | 1806 | 1648 | 1648 | 1528 | 1528 | 801 |
| | Ap | 0.18 | 0.18 | 0.113 | 0.113 | 0.378 | 0.378 | 0.504 | 0.504 | 0.9 | 0.63 | 1.08 | 0.756 | 0.756 |
| 9 | Vc | 103 | 103 | 103 | 92 | 117 | 117 | 116 | 116 | 116 | 116 | 115 | 115 | 95 |
| | fz | 0.09 | 0.09 | 0.09 | 0.08 | 0.129 | 0.129 | 0.163 | 0.163 | 0.19 | 0.19 | 0.213 | 0.213 | 0.119 |
| | RPM | 6557 | 6557 | 6557 | 5857 | 6207 | 6207 | 4615 | 4615 | 3692 | 3692 | 3050 | 3050 | 2520 |
| | FEED | 1180 | 1180 | 1180 | 937 | 1601 | 1601 | 1505 | 1505 | 1403 | 1403 | 1300 | 1300 | 600 |
| | Ap | 0.14 | 0.14 | 0.088 | 0.088 | 0.294 | 0.294 | 0.392 | 0.392 | 0.7 | 0.49 | 0.84 | 0.588 | 0.588 |
| 10 - 11.1 | Vc | 109 | 109 | 109 | 97 | 123 | 123 | 122 | 122 | 121 | 121 | 121 | 121 | 100 |
| | fz | 0.108 | 0.108 | 0.108 | 0.096 | 0.146 | 0.146 | 0.186 | 0.186 | 0.214 | 0.214 | 0.238 | 0.238 | 0.151 |
| | RPM | 6939 | 6939 | 6939 | 6175 | 6525 | 6525 | 4854 | 4854 | 3852 | 3852 | 3210 | 3210 | 2653 |
| | FEED | 1499 | 1499 | 1499 | 1186 | 1905 | 1905 | 1806 | 1806 | 1648 | 1648 | 1528 | 1528 | 801 |
| | Ap | 0.18 | 0.18 | 0.113 | 0.113 | 0.378 | 0.378 | 0.504 | 0.504 | 0.9 | 0.63 | 1.08 | 0.756 | 0.756 |
| 11.2 | Vc | 103 | 103 | 103 | 92 | 117 | 117 | 116 | 116 | 116 | 116 | 115 | 115 | 95 |
| | fz | 0.09 | 0.09 | 0.09 | 0.08 | 0.129 | 0.129 | 0.163 | 0.163 | 0.19 | 0.19 | 0.213 | 0.213 | 0.119 |
| | RPM | 6557 | 6557 | 6557 | 5857 | 6207 | 6207 | 4615 | 4615 | 3692 | 3692 | 3050 | 3050 | 2520 |
| | FEED | 1180 | 1180 | 1180 | 937 | 1601 | 1601 | 1505 | 1505 | 1403 | 1403 | 1300 | 1300 | 600 |
| | Ap | 0.14 | 0.14 | 0.088 | 0.088 | 0.294 | 0.294 | 0.392 | 0.392 | 0.7 | 0.49 | 0.84 | 0.588 | 0.588 |
| 15 - 20 | Vc | 109 | 109 | 109 | 97 | 123 | 123 | 122 | 122 | 121 | 121 | 121 | 121 | 100 |
| | fz | 0.108 | 0.108 | 0.108 | 0.096 | 0.146 | 0.146 | 0.186 | 0.186 | 0.214 | 0.214 | 0.238 | 0.238 | 0.151 |
| | RPM | 6939 | 6939 | 6939 | 6175 | 6525 | 6525 | 4854 | 4854 | 3852 | 3852 | 3210 | 3210 | 2653 |
| | FEED | 1499 | 1499 | 1499 | 1186 | 1905 | 1905 | 1806 | 1806 | 1648 | 1648 | 1528 | 1528 | 801 |
| | Ap | 0.18 | 0.18 | 0.113 | 0.113 | 0.378 | 0.378 | 0.504 | 0.504 | 0.9 | 0.63 | 1.08 | 0.756 | 0.756 |
| 38.1 - 38.2 | Vc | 90 | 90 | 90 | 80 | 104 | 104 | 101 | 101 | 101 | 101 | 100 | 100 | 82 |
| | fz | 0.09 | 0.09 | 0.09 | 0.08 | 0.121 | 0.121 | 0.16 | 0.16 | 0.188 | 0.188 | 0.208 | 0.208 | 0.08 |
| | RPM | 5730 | 5730 | 5730 | 5093 | 5517 | 5517 | 4019 | 4019 | 3215 | 3215 | 2653 | 2653 | 2175 |
| | FEED | 1031 | 1031 | 1031 | 815 | 1335 | 1335 | 1286 | 1286 | 1209 | 1209 | 1103 | 1103 | 348 |
| | Ap | 0.1 | 0.1 | 0.063 | 0.063 | 0.21 | 0.21 | 0.28 | 0.28 | 0.5 | 0.35 | 0.6 | 0.42 | 0.42 |
| 40 | Vc | 103 | 103 | 103 | 92 | 117 | 117 | 116 | 116 | 116 | 116 | 115 | 115 | 95 |
| | fz | 0.09 | 0.09 | 0.09 | 0.08 | 0.129 | 0.129 | 0.163 | 0.163 | 0.19 | 0.19 | 0.213 | 0.213 | 0.119 |
| | RPM | 6557 | 6557 | 6557 | 5857 | 6207 | 6207 | 4615 | 4615 | 3692 | 3692 | 3050 | 3050 | 2520 |
| | FEED | 1180 | 1180 | 1180 | 937 | 1601 | 1601 | 1505 | 1505 | 1403 | 1403 | 1300 | 1300 | 600 |
| | Ap | 0.14 | 0.14 | 0.088 | 0.088 | 0.294 | 0.294 | 0.392 | 0.392 | 0.7 | 0.49 | 0.84 | 0.588 | 0.588 |
| 41 | Vc | 90 | 90 | 90 | 80 | 104 | 104 | 101 | 101 | 101 | 101 | 100 | 100 | 82 |
| | fz | 0.09 | 0.09 | 0.09 | 0.08 | 0.121 | 0.121 | 0.16 | 0.16 | 0.188 | 0.188 | 0.208 | 0.208 | 0.08 |
| | RPM | 5730 | 5730 | 5730 | 5093 | 5517 | 5517 | 4019 | 4019 | 3215 | 3215 | 2653 | 2653 | 2175 |
| | FEED | 1031 | 1031 | 1031 | 815 | 1335 | 1335 | 1286 | 1286 | 1209 | 1209 | 1103 | 1103 | 348 |
| | Ap | 0.1 | 0.1 | 0.063 | 0.063 | 0.21 | 0.21 | 0.28 | 0.28 | 0.5 | 0.35 | 0.6 | 0.42 | 0.42 |

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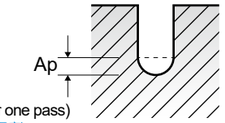




CARBIDE
HSS
CBN END MILLS
i-Xmill END MILLS
i-SMART MODULAR END MILLS
X5070 END MILLS
4G MILL END MILLS
X-POWER PRO END MILLS
TitaNox-POWER END MILLS
SUS-CUT END MILLS
V7 PLUS END MILLS
ALU-POWER HPC END MILLS
ALU-CUT END MILLS
G-CUT END MILLS
CRX S END MILLS
K-2 END MILLS
GENERAL CARBIDE END MILLS
ONLY ONE COATED PM60 END MILLS
TANK-POWER END MILLS
GENERAL HSS END MILLS
MILLING CUTTERS
TECHNICAL DATA

# 4G MILL END MILLS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

### SEMD99 SERIES
**2 FLUTE CORNER RADIUS - SLOTTING**
**2刃 圆鼻- 槽铣削**

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description 工件材料 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 0.2 | 0.3 | 0.4 | 0.5 | 0.6 | 0.7 | 0.8 | 0.9 | 1.0 | 1.2 | 1.5 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1-5 | Non-alloy steel | 1.0D | 0.2D | Vc | 28 | 39 | 52 | 57 | 57 | 66 | 75 | 85 | 87 | 93 | 104 |
| | | | | | fz | 0.002 | 0.002 | 0.002 | 0.003 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.005 | 0.006 |
| | | | | | RPM | 44563 | 41380 | 41380 | 36287 | 30239 | 30012 | 29842 | 30063 | 27693 | 24669 | 22069 |
| | | | | | FEED | 178 | 166 | 166 | 218 | 242 | 240 | 239 | 241 | 222 | 247 | 265 |
| | 6-8 | Low alloy steel | 1.0D | 0.2D | Vc | 28 | 39 | 52 | 57 | 57 | 66 | 75 | 85 | 87 | 93 | 104 |
| | | | | | fz | 0.002 | 0.002 | 0.002 | 0.003 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.005 | 0.006 |
| | | | | | RPM | 44563 | 41380 | 41380 | 36287 | 30239 | 30012 | 29842 | 30063 | 27693 | 24669 | 22069 |
| | | | | | FEED | 178 | 166 | 166 | 218 | 242 | 240 | 239 | 241 | 222 | 247 | 265 |
| | 9 | | 1.0D | 0.2D | Vc | 18 | 25 | 34 | 37 | 37 | 44 | 50 | 53 | 57 | 59 | 64 |
| | | | | | fz | 0.001 | 0.001 | 0.001 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.003 | 0.003 | 0.004 |
| | | | | | RPM | 28648 | 26526 | 27056 | 23555 | 19629 | 20008 | 19894 | 18745 | 18144 | 15650 | 13581 |
| | | | | | FEED | 57 | 53 | 54 | 94 | 79 | 80 | 80 | 75 | 109 | 94 | 109 |
| | 10-11.1 | High alloyed steel, and tool steel | 1.0D | 0.2D | Vc | 28 | 39 | 52 | 57 | 57 | 66 | 75 | 85 | 87 | 93 | 104 |
| | | | | | fz | 0.002 | 0.002 | 0.002 | 0.003 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.005 | 0.006 |
| | | | | | RPM | 44563 | 41380 | 41380 | 36287 | 30239 | 30012 | 29842 | 30063 | 27693 | 24669 | 22069 |
| | | | | | FEED | 178 | 166 | 166 | 218 | 242 | 240 | 239 | 241 | 222 | 247 | 265 |
| | 11.2 | | 1.0D | 0.2D | Vc | 18 | 25 | 34 | 37 | 37 | 44 | 50 | 53 | 57 | 59 | 64 |
| | | | | | fz | 0.001 | 0.001 | 0.001 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.003 | 0.003 | 0.004 |
| | | | | | RPM | 28648 | 26526 | 27056 | 23555 | 19629 | 20008 | 19894 | 18745 | 18144 | 15650 | 13581 |
| | | | | | FEED | 57 | 53 | 54 | 94 | 79 | 80 | 80 | 75 | 109 | 94 | 109 |
| K | 15-20 | Grey cast iron Nodular cast iron Malleable cast iron | 1.0D | 0.2D | Vc | 28 | 39 | 52 | 57 | 57 | 66 | 75 | 85 | 87 | 93 | 104 |
| | | | | | fz | 0.002 | 0.002 | 0.002 | 0.003 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.005 | 0.006 |
| | | | | | RPM | 44563 | 41380 | 41380 | 36287 | 30239 | 30012 | 29842 | 30063 | 27693 | 24669 | 22069 |
| | | | | | FEED | 178 | 166 | 166 | 218 | 242 | 240 | 239 | 241 | 222 | 247 | 265 |
| H | 38.1 - 38.2 | Hardened steel | 1.0D | 0.2D | Vc | 11 | 16 | 21 | 22 | 23 | 27 | 30 | 33 | 35 | 37 | 40 |
| | | | | | fz | 0.001 | 0.001 | 0.001 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.003 | 0.003 | 0.004 |
| | | | | | RPM | 17507 | 16977 | 16711 | 14006 | 12202 | 12278 | 11937 | 11671 | 11141 | 9815 | 8488 |
| | | | | | FEED | 35 | 34 | 33 | 56 | 49 | 49 | 48 | 47 | 67 | 59 | 68 |
| | 40 | Chilled Cast Iron | 1.0D | 0.2D | Vc | 18 | 25 | 34 | 37 | 37 | 44 | 50 | 53 | 57 | 59 | 64 |
| | | | | | fz | 0.001 | 0.001 | 0.001 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.003 | 0.003 | 0.004 |
| | | | | | RPM | 28648 | 26526 | 27056 | 23555 | 19629 | 20008 | 19894 | 18745 | 18144 | 15650 | 13581 |
| | | | | | FEED | 57 | 53 | 54 | 94 | 79 | 80 | 80 | 75 | 109 | 94 | 109 |
| | 41 | Hardened Cast Iron | 1.0D | 0.2D | Vc | 11 | 16 | 21 | 22 | 23 | 27 | 30 | 33 | 35 | 37 | 40 |
| | | | | | fz | 0.001 | 0.001 | 0.001 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.003 | 0.003 | 0.004 |
| | | | | | RPM | 17507 | 16977 | 16711 | 14006 | 12202 | 12278 | 11937 | 11671 | 11141 | 9815 | 8488 |
| | | | | | FEED | 35 | 34 | 33 | 56 | 49 | 49 | 48 | 47 | 67 | 59 | 68 |

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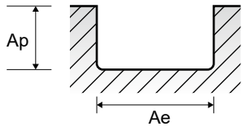
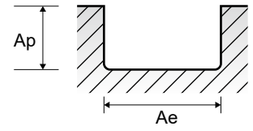





4G MILL END MILLS
RECOMMENDED CUTTING CONDITIONS
推荐加工参数
SEMD99 SERIES
2 FLUTE CORNER RADIUS - SLOTTING
2刃 圆鼻- 槽铣削
Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| VDI 3323 | Parameter 参数 | Diameter (Ø) 直径 2.0 | 2.5 | 3.0 | 3.5 | 4.0 | 4.5 | 5.0 | 5.5 | 6.0 | 7.0 | 8.0 | 10.0 | 11.0 | 12.0 | 14.0 | 16.0 | 20.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1-5 | Vc | 113 | 118 | 125 | 132 | 135 | 141 | 144 | 147 | 149 | 153 | 151 | 158 | 158 | 155 | 159 | 156 | 158 |
| | fz | 0.007 | 0.009 | 0.011 | 0.013 | 0.016 | 0.019 | 0.023 | 0.027 | 0.032 | 0.037 | 0.045 | 0.054 | 0.052 | 0.051 | 0.054 | 0.058 | 0.056 |
| | RPM | 17985 | 15024 | 13263 | 12005 | 10743 | 9974 | 9167 | 8508 | 7905 | 6957 | 6008 | 5029 | 4572 | 4112 | 3615 | 3104 | 2515 |
| | FEED | 252 | 270 | 292 | 312 | 344 | 379 | 422 | 459 | 506 | 515 | 541 | 543 | 475 | 419 | 390 | 360 | 282 |
| 6-8 | Vc | 113 | 118 | 125 | 132 | 135 | 141 | 144 | 147 | 149 | 153 | 151 | 158 | 158 | 155 | 159 | 156 | 158 |
| | fz | 0.007 | 0.009 | 0.011 | 0.013 | 0.016 | 0.019 | 0.023 | 0.027 | 0.032 | 0.037 | 0.045 | 0.054 | 0.052 | 0.051 | 0.054 | 0.058 | 0.056 |
| | RPM | 17985 | 15024 | 13263 | 12005 | 10743 | 9974 | 9167 | 8508 | 7905 | 6957 | 6008 | 5029 | 4572 | 4112 | 3615 | 3104 | 2515 |
| | FEED | 252 | 270 | 292 | 312 | 344 | 379 | 422 | 459 | 506 | 515 | 541 | 543 | 475 | 419 | 390 | 360 | 282 |
| 9 | Vc | 73 | 75 | 81 | 85 | 86 | 89 | 91 | 94 | 95 | 97 | 96 | 103 | 105 | 105 | 107 | 106 | 103 |
| | fz | 0.005 | 0.007 | 0.008 | 0.01 | 0.012 | 0.015 | 0.017 | 0.021 | 0.025 | 0.028 | 0.033 | 0.038 | 0.04 | 0.041 | 0.041 | 0.04 | 0.037 |
| | RPM | 11618 | 9549 | 8594 | 7730 | 6844 | 6295 | 5793 | 5440 | 5040 | 4411 | 3820 | 3279 | 3038 | 2785 | 2433 | 2109 | 1639 |
| | FEED | 116 | 134 | 138 | 155 | 164 | 189 | 197 | 228 | 252 | 247 | 252 | 249 | 243 | 228 | 199 | 169 | 121 |
| 10 - 11.1 | Vc | 113 | 118 | 125 | 132 | 135 | 141 | 144 | 147 | 149 | 153 | 151 | 158 | 158 | 155 | 159 | 156 | 158 |
| | fz | 0.007 | 0.009 | 0.011 | 0.013 | 0.016 | 0.019 | 0.023 | 0.027 | 0.032 | 0.037 | 0.045 | 0.054 | 0.052 | 0.051 | 0.054 | 0.058 | 0.056 |
| | RPM | 17985 | 15024 | 13263 | 12005 | 10743 | 9974 | 9167 | 8508 | 7905 | 6957 | 6008 | 5029 | 4572 | 4112 | 3615 | 3104 | 2515 |
| | FEED | 252 | 270 | 292 | 312 | 344 | 379 | 422 | 459 | 506 | 515 | 541 | 543 | 475 | 419 | 390 | 360 | 282 |
| 11.2 | Vc | 73 | 75 | 81 | 85 | 86 | 89 | 91 | 94 | 95 | 97 | 96 | 103 | 105 | 105 | 107 | 106 | 103 |
| | fz | 0.005 | 0.007 | 0.008 | 0.01 | 0.012 | 0.015 | 0.017 | 0.021 | 0.025 | 0.028 | 0.033 | 0.038 | 0.04 | 0.041 | 0.041 | 0.04 | 0.037 |
| | RPM | 11618 | 9549 | 8594 | 7730 | 6844 | 6295 | 5793 | 5440 | 5040 | 4411 | 3820 | 3279 | 3038 | 2785 | 2433 | 2109 | 1639 |
| | FEED | 116 | 134 | 138 | 155 | 164 | 189 | 197 | 228 | 252 | 247 | 252 | 249 | 243 | 228 | 199 | 169 | 121 |
| 15 - 20 | Vc | 113 | 118 | 125 | 132 | 135 | 141 | 144 | 147 | 149 | 153 | 151 | 158 | 158 | 155 | 159 | 156 | 158 |
| | fz | 0.007 | 0.009 | 0.011 | 0.013 | 0.016 | 0.019 | 0.023 | 0.027 | 0.032 | 0.037 | 0.045 | 0.054 | 0.052 | 0.051 | 0.054 | 0.058 | 0.056 |
| | RPM | 17985 | 15024 | 13263 | 12005 | 10743 | 9974 | 9167 | 8508 | 7905 | 6957 | 6008 | 5029 | 4572 | 4112 | 3615 | 3104 | 2515 |
| | FEED | 252 | 270 | 292 | 312 | 344 | 379 | 422 | 459 | 506 | 515 | 541 | 543 | 475 | 419 | 390 | 360 | 282 |
| 38.1 - 38.2 | Vc | 45 | 48 | 50 | 53 | 54 | 61 | 60 | 61 | 62 | 64 | 63 | 63 | 64 | 63 | 65 | 64 | 63 |
| | fz | 0.005 | 0.006 | 0.007 | 0.008 | 0.009 | 0.01 | 0.013 | 0.016 | 0.018 | 0.021 | 0.024 | 0.03 | 0.03 | 0.03 | 0.03 | 0.031 | 0.03 |
| | RPM | 7162 | 6112 | 5305 | 4820 | 4297 | 4315 | 3820 | 3530 | 3289 | 2910 | 2507 | 2005 | 1852 | 1671 | 1478 | 1273 | 1003 |
| | FEED | 72 | 73 | 74 | 77 | 77 | 86 | 99 | 113 | 118 | 122 | 120 | 120 | 111 | 100 | 89 | 79 | 60 |
| 40 | Vc | 73 | 75 | 81 | 85 | 86 | 89 | 91 | 94 | 95 | 97 | 96 | 103 | 105 | 105 | 107 | 106 | 103 |
| | fz | 0.005 | 0.007 | 0.008 | 0.01 | 0.012 | 0.015 | 0.017 | 0.021 | 0.025 | 0.028 | 0.033 | 0.038 | 0.04 | 0.041 | 0.041 | 0.04 | 0.037 |
| | RPM | 11618 | 9549 | 8594 | 7730 | 6844 | 6295 | 5793 | 5440 | 5040 | 4411 | 3820 | 3279 | 3038 | 2785 | 2433 | 2109 | 1639 |
| | FEED | 116 | 134 | 138 | 155 | 164 | 189 | 197 | 228 | 252 | 247 | 252 | 249 | 243 | 228 | 199 | 169 | 121 |
| 41 | Vc | 45 | 48 | 50 | 53 | 54 | 61 | 60 | 61 | 62 | 64 | 63 | 63 | 64 | 63 | 65 | 64 | 63 |
| | fz | 0.005 | 0.006 | 0.007 | 0.008 | 0.009 | 0.01 | 0.013 | 0.016 | 0.018 | 0.021 | 0.024 | 0.03 | 0.03 | 0.03 | 0.03 | 0.031 | 0.03 |
| | RPM | 7162 | 6112 | 5305 | 4820 | 4297 | 4315 | 3820 | 3530 | 3289 | 2910 | 2507 | 2005 | 1852 | 1671 | 1478 | 1273 | 1003 |
| | FEED | 72 | 73 | 74 | 77 | 77 | 86 | 99 | 113 | 118 | 122 | 120 | 120 | 111 | 100 | 89 | 79 | 60 |






CARBIDE
HSS
CBN END MILLS
i-Xmill END MILLS
i-SMART MODULAR END MILLS
X5070 END MILLS
4G MILL END MILLS
X-POWER PRO END MILLS
TitaNox-POWER END MILLS
SUS-CUT END MILLS
V7 PLUS END MILLS
ALU-POWER HPC END MILLS
ALU-CUT END MILLS
G-CUT END MILLS
CRX S END MILLS
K-2 END MILLS
GENERAL CARBIDE END MILLS
ONLY ONE COATED PM60 END MILLS
TANK-POWER END MILLS
GENERAL HSS END MILLS
MILLING CUTTERS
TECHNICAL DATA

# 4G MILL END MILLS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

### SEME61 SERIES
**2 FLUTE CORNER RADIUS - SLOTTING**
**2刃 圆鼻 - 槽铣削**

Vc (切削速度) = (m/min.) FEED (进给) = (mm/min.)
fz (每齿进给) = (mm/tooth) Ap (切削深度) = (mm)
RPM (转速) = (rev./min.) LBS (颈长) = Length Below Shank

| ISO | VDI 3323 | Material Description 工件材料 | Parameter 参数 | Diameter (Ø) 直径 | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 0.2 | 0.2 | 0.2 | 0.2 | 0.3 | 0.3 | 0.3 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 |
| | | | LBS | 0.5 | 1 | 1.5 | 2 | 1 | 2 | 3 | 1 | 1.5 | 2 | 2.5 | 3 |
| P | 1-5 | Non-alloy steel | Vc | 31 | 31 | 28 | 28 | 47 | 42 | 42 | 63 | 63 | 63 | 57 | 57 |
| | | | fz | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 |
| | | | RPM | 49338 | 49338 | 44563 | 44563 | 49869 | 44563 | 44563 | 50134 | 50134 | 50134 | 45359 | 45359 |
| | | | FEED | 197 | 197 | 178 | 178 | 199 | 178 | 178 | 201 | 201 | 201 | 181 | 181 |
| | | | Ap | 0.04 | 0.028 | 0.016 | 0.01 | 0.042 | 0.024 | 0.015 | 0.08 | 0.056 | 0.056 | 0.032 | 0.032 |
| | 6-8 | Low alloy steel | Vc | 31 | 31 | 28 | 28 | 47 | 42 | 42 | 63 | 63 | 63 | 57 | 57 |
| | | | fz | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 |
| | | | RPM | 49338 | 49338 | 44563 | 44563 | 49869 | 44563 | 44563 | 50134 | 50134 | 50134 | 45359 | 45359 |
| | | | FEED | 197 | 197 | 178 | 178 | 199 | 178 | 178 | 201 | 201 | 201 | 181 | 181 |
| | | | Ap | 0.04 | 0.028 | 0.016 | 0.01 | 0.042 | 0.024 | 0.015 | 0.08 | 0.056 | 0.056 | 0.032 | 0.032 |
| | 9 | | Vc | 22 | 22 | 20 | 20 | 30 | 27 | 27 | 40 | 40 | 40 | 36 | 36 |
| | | | fz | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 |
| | | | RPM | 35014 | 35014 | 31831 | 31831 | 31831 | 28648 | 28648 | 31831 | 31831 | 31831 | 28648 | 28648 |
| | | | FEED | 70 | 70 | 64 | 64 | 64 | 57 | 57 | 64 | 64 | 64 | 57 | 57 |
| | | | Ap | 0.03 | 0.021 | 0.012 | 0.008 | 0.032 | 0.018 | 0.011 | 0.06 | 0.042 | 0.042 | 0.024 | 0.024 |
| | 10-11.1 | High alloyed steel, and tool steel | Vc | 31 | 31 | 28 | 28 | 47 | 42 | 42 | 63 | 63 | 63 | 57 | 57 |
| | | | fz | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 |
| | | | RPM | 49338 | 49338 | 44563 | 44563 | 49869 | 44563 | 44563 | 50134 | 50134 | 50134 | 45359 | 45359 |
| | | | FEED | 197 | 197 | 178 | 178 | 199 | 178 | 178 | 201 | 201 | 201 | 181 | 181 |
| | | | Ap | 0.04 | 0.028 | 0.016 | 0.01 | 0.042 | 0.024 | 0.015 | 0.08 | 0.056 | 0.056 | 0.032 | 0.032 |
| | 11.2 | | Vc | 22 | 22 | 20 | 20 | 30 | 27 | 27 | 40 | 40 | 40 | 36 | 36 |
| | | | fz | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 |
| | | | RPM | 35014 | 35014 | 31831 | 31831 | 31831 | 28648 | 28648 | 31831 | 31831 | 31831 | 28648 | 28648 |
| | | | FEED | 70 | 70 | 64 | 64 | 64 | 57 | 57 | 64 | 64 | 64 | 57 | 57 |
| | | | Ap | 0.03 | 0.021 | 0.012 | 0.008 | 0.032 | 0.018 | 0.011 | 0.06 | 0.042 | 0.042 | 0.024 | 0.024 |
| K | 15-20 | Grey cast iron Nodular cast iron Malleable cast iron | Vc | 31 | 31 | 28 | 28 | 47 | 42 | 42 | 63 | 63 | 63 | 57 | 57 |
| | | | fz | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 |
| | | | RPM | 49338 | 49338 | 44563 | 44563 | 49869 | 44563 | 44563 | 50134 | 50134 | 50134 | 45359 | 45359 |
| | | | FEED | 197 | 197 | 178 | 178 | 199 | 178 | 178 | 201 | 201 | 201 | 181 | 181 |
| | | | Ap | 0.04 | 0.028 | 0.016 | 0.01 | 0.042 | 0.024 | 0.015 | 0.08 | 0.056 | 0.056 | 0.032 | 0.032 |
| H | 38.1 - 38.2 | Hardened steel | Vc | 13 | 13 | 12 | 12 | 19 | 17 | 17 | 25 | 25 | 25 | 23 | 23 |
| | | | fz | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 |
| | | | RPM | 20690 | 20690 | 19099 | 19099 | 20160 | 18038 | 18038 | 19894 | 19894 | 19894 | 18303 | 18303 |
| | | | FEED | 41 | 41 | 38 | 38 | 40 | 36 | 36 | 40 | 40 | 40 | 37 | 37 |
| | | | Ap | 0.024 | 0.017 | 0.01 | 0.006 | 0.025 | 0.014 | 0.009 | 0.048 | 0.034 | 0.034 | 0.019 | 0.019 |
| | 40 | Chilled Cast Iron | Vc | 22 | 22 | 20 | 20 | 30 | 27 | 27 | 40 | 40 | 40 | 36 | 36 |
| | | | fz | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 |
| | | | RPM | 35014 | 35014 | 31831 | 31831 | 31831 | 28648 | 28648 | 31831 | 31831 | 31831 | 28648 | 28648 |
| | | | FEED | 70 | 70 | 64 | 64 | 64 | 57 | 57 | 64 | 64 | 64 | 57 | 57 |
| | | | Ap | 0.03 | 0.021 | 0.012 | 0.008 | 0.032 | 0.018 | 0.011 | 0.06 | 0.042 | 0.042 | 0.024 | 0.024 |
| | 41 | Hardened Cast Iron | Vc | 13 | 13 | 12 | 12 | 19 | 17 | 17 | 25 | 25 | 25 | 23 | 23 |
| | | | fz | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 |
| | | | RPM | 20690 | 20690 | 19099 | 19099 | 20160 | 18038 | 18038 | 19894 | 19894 | 19894 | 18303 | 18303 |
| | | | FEED | 41 | 41 | 38 | 38 | 40 | 36 | 36 | 40 | 40 | 40 | 37 | 37 |
| | | | Ap | 0.024 | 0.017 | 0.01 | 0.006 | 0.025 | 0.014 | 0.009 | 0.048 | 0.034 | 0.034 | 0.019 | 0.019 |

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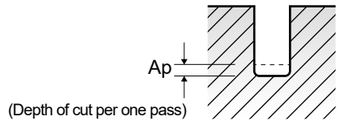




4G MILL END MILLS
RECOMMENDED CUTTING CONDITIONS
推荐加工参数
SEME61 SERIES
2 FLUTE CORNER RADIUS - SLOTTING
2刃 圆鼻 - 槽铣削
Vc (切削速度) = (m/min.) FEED (进给) = (mm/min.)
fz (每齿进给) = (mm/tooth) Ap (切削深度) = (mm)
RPM (转速) = (rev./min.) LBS (颈长) = Length Below Shank

| VDI 3323 | Parameter 参数 | Diameter (Ø) 直径 | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 0.4 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.7 |
| | LBS | 4 | 1 | 1.5 | 2 | 2.5 | 3 | 4 | 5 | 6 | 2 | 3 | 4 | 6 | 8 | 10 | 2 |
| 1-5 | Vc | 57 | 68 | 68 | 68 | 68 | 61 | 61 | 61 | 54 | 69 | 69 | 62 | 62 | 55 | 41 | 80 |
| | fz | 0.002 | 0.003 | 0.003 | 0.003 | 0.003 | 0.002 | 0.002 | 0.002 | 0.002 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.002 | 0.003 |
| | RPM | 45359 | 43290 | 43290 | 43290 | 43290 | 38834 | 38834 | 38834 | 34377 | 36606 | 36606 | 32892 | 32892 | 29178 | 21751 | 36378 |
| | FEED | 181 | 260 | 260 | 260 | 260 | 155 | 155 | 155 | 138 | 220 | 220 | 197 | 197 | 175 | 87 | 218 |
| | Ap | 0.02 | 0.1 | 0.1 | 0.07 | 0.07 | 0.04 | 0.04 | 0.025 | 0.025 | 0.084 | 0.084 | 0.048 | 0.03 | 0.018 | 0.012 | 0.14 |
| 6-8 | Vc | 57 | 68 | 68 | 68 | 68 | 61 | 61 | 61 | 54 | 69 | 69 | 62 | 62 | 55 | 41 | 80 |
| | fz | 0.002 | 0.003 | 0.003 | 0.003 | 0.003 | 0.002 | 0.002 | 0.002 | 0.002 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.002 | 0.003 |
| | RPM | 45359 | 43290 | 43290 | 43290 | 43290 | 38834 | 38834 | 38834 | 34377 | 36606 | 36606 | 32892 | 32892 | 29178 | 21751 | 36378 |
| | FEED | 181 | 260 | 260 | 260 | 260 | 155 | 155 | 155 | 138 | 220 | 220 | 197 | 197 | 175 | 87 | 218 |
| | Ap | 0.02 | 0.1 | 0.1 | 0.07 | 0.07 | 0.04 | 0.04 | 0.025 | 0.025 | 0.084 | 0.084 | 0.048 | 0.03 | 0.018 | 0.012 | 0.14 |
| 9 | Vc | 36 | 44 | 44 | 44 | 44 | 40 | 40 | 40 | 35 | 45 | 45 | 41 | 41 | 36 | 27 | 53 |
| | fz | 0.001 | 0.002 | 0.002 | 0.002 | 0.002 | 0.001 | 0.001 | 0.001 | 0.001 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 |
| | RPM | 28648 | 28011 | 28011 | 28011 | 28011 | 25465 | 25465 | 25465 | 22282 | 23873 | 23873 | 21751 | 21751 | 19099 | 14324 | 24101 |
| | FEED | 57 | 112 | 112 | 112 | 112 | 51 | 51 | 51 | 45 | 95 | 95 | 87 | 87 | 76 | 57 | 96 |
| | Ap | 0.015 | 0.075 | 0.075 | 0.053 | 0.053 | 0.03 | 0.03 | 0.019 | 0.019 | 0.063 | 0.063 | 0.036 | 0.023 | 0.014 | 0.009 | 0.105 |
| 10 - 11.1 | Vc | 57 | 68 | 68 | 68 | 68 | 61 | 61 | 61 | 54 | 69 | 69 | 62 | 62 | 55 | 41 | 80 |
| | fz | 0.002 | 0.003 | 0.003 | 0.003 | 0.003 | 0.002 | 0.002 | 0.002 | 0.002 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.002 | 0.003 |
| | RPM | 45359 | 43290 | 43290 | 43290 | 43290 | 38834 | 38834 | 38834 | 34377 | 36606 | 36606 | 32892 | 32892 | 29178 | 21751 | 36378 |
| | FEED | 181 | 260 | 260 | 260 | 260 | 155 | 155 | 155 | 138 | 220 | 220 | 197 | 197 | 175 | 87 | 218 |
| | Ap | 0.02 | 0.1 | 0.1 | 0.07 | 0.07 | 0.04 | 0.04 | 0.025 | 0.025 | 0.084 | 0.084 | 0.048 | 0.03 | 0.018 | 0.012 | 0.14 |
| 11.2 | Vc | 36 | 44 | 44 | 44 | 44 | 40 | 40 | 40 | 35 | 45 | 45 | 41 | 41 | 36 | 27 | 53 |
| | fz | 0.001 | 0.002 | 0.002 | 0.002 | 0.002 | 0.001 | 0.001 | 0.001 | 0.001 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 |
| | RPM | 28648 | 28011 | 28011 | 28011 | 28011 | 25465 | 25465 | 25465 | 22282 | 23873 | 23873 | 21751 | 21751 | 19099 | 14324 | 24101 |
| | FEED | 57 | 112 | 112 | 112 | 112 | 51 | 51 | 51 | 45 | 95 | 95 | 87 | 87 | 76 | 57 | 96 |
| | Ap | 0.015 | 0.075 | 0.075 | 0.053 | 0.053 | 0.03 | 0.03 | 0.019 | 0.019 | 0.063 | 0.063 | 0.036 | 0.023 | 0.014 | 0.009 | 0.105 |
| 15 - 20 | Vc | 57 | 68 | 68 | 68 | 68 | 61 | 61 | 61 | 54 | 69 | 69 | 62 | 62 | 55 | 41 | 80 |
| | fz | 0.002 | 0.003 | 0.003 | 0.003 | 0.003 | 0.002 | 0.002 | 0.002 | 0.002 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.002 | 0.003 |
| | RPM | 45359 | 43290 | 43290 | 43290 | 43290 | 38834 | 38834 | 38834 | 34377 | 36606 | 36606 | 32892 | 32892 | 29178 | 21751 | 36378 |
| | FEED | 181 | 260 | 260 | 260 | 260 | 155 | 155 | 155 | 138 | 220 | 220 | 197 | 197 | 175 | 87 | 218 |
| | Ap | 0.02 | 0.1 | 0.1 | 0.07 | 0.07 | 0.04 | 0.04 | 0.025 | 0.025 | 0.084 | 0.084 | 0.048 | 0.03 | 0.018 | 0.012 | 0.14 |
| 38.1 - 38.2 | Vc | 23 | 27 | 27 | 27 | 27 | 24 | 24 | 24 | 21 | 27 | 27 | 25 | 25 | 22 | 16 | 32 |
| | fz | 0.001 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.001 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.001 | 0.002 |
| | RPM | 18303 | 17189 | 17189 | 17189 | 17189 | 15279 | 15279 | 15279 | 13369 | 14324 | 14324 | 13263 | 13263 | 11671 | 8488 | 14551 |
| | FEED | 37 | 69 | 69 | 69 | 69 | 61 | 61 | 61 | 27 | 57 | 57 | 53 | 53 | 47 | 17 | 58 |
| | Ap | 0.012 | 0.06 | 0.06 | 0.042 | 0.042 | 0.024 | 0.024 | 0.015 | 0.015 | 0.05 | 0.05 | 0.029 | 0.018 | 0.011 | 0.007 | 0.084 |
| 40 | Vc | 36 | 44 | 44 | 44 | 44 | 40 | 40 | 40 | 35 | 45 | 45 | 41 | 41 | 36 | 27 | 53 |
| | fz | 0.001 | 0.002 | 0.002 | 0.002 | 0.002 | 0.001 | 0.001 | 0.001 | 0.001 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 |
| | RPM | 28648 | 28011 | 28011 | 28011 | 28011 | 25465 | 25465 | 25465 | 22282 | 23873 | 23873 | 21751 | 21751 | 19099 | 14324 | 24101 |
| | FEED | 57 | 112 | 112 | 112 | 112 | 51 | 51 | 51 | 45 | 95 | 95 | 87 | 87 | 76 | 57 | 96 |
| | Ap | 0.015 | 0.075 | 0.075 | 0.053 | 0.053 | 0.03 | 0.03 | 0.019 | 0.019 | 0.063 | 0.063 | 0.036 | 0.023 | 0.014 | 0.009 | 0.105 |
| 41 | Vc | 23 | 27 | 27 | 27 | 27 | 24 | 24 | 24 | 21 | 27 | 27 | 25 | 25 | 22 | 16 | 32 |
| | fz | 0.001 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.001 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.001 | 0.002 |
| | RPM | 18303 | 17189 | 17189 | 17189 | 17189 | 15279 | 15279 | 15279 | 13369 | 14324 | 14324 | 13263 | 13263 | 11671 | 8488 | 14551 |
| | FEED | 37 | 69 | 69 | 69 | 69 | 61 | 61 | 61 | 27 | 57 | 57 | 53 | 53 | 47 | 17 | 58 |
| | Ap | 0.012 | 0.06 | 0.06 | 0.042 | 0.042 | 0.024 | 0.024 | 0.015 | 0.015 | 0.05 | 0.05 | 0.029 | 0.018 | 0.011 | 0.007 | 0.084 |

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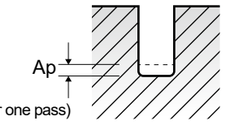

# 4G MILL END MILLS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

### SEME61 SERIES
**2 FLUTE CORNER RADIUS - SLOTTING**
**2刃 圆鼻 - 槽铣削**

Vc (切削速度) = (m/min.) FEED (进给) = (mm/min.)
fz (每齿进给) = (mm/tooth) Ap (切削深度) = (mm)
RPM (转速) = (rev./min.) LBS (颈长) = Length Below Shank

| ISO | VDI 3323 | Parameter 参数 | Diameter (Ø) 直径 | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 0.7 | 0.7 | 0.7 | 0.7 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| | | LBS | 4 | 6 | 8 | 10 | 2 | 3 | 4 | 6 | 8 | 10 | 3 | 4 | 6 | 8 | 10 |
| P | 1-5 | Vc | 72 | 72 | 64 | 64 | 91 | 91 | 91 | 82 | 82 | 73 | 104 | 104 | 94 | 94 | 94 |
| | | fz | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 |
| | | RPM | 32740 | 32740 | 29103 | 29103 | 36208 | 36208 | 36208 | 32627 | 32627 | 29046 | 33104 | 33104 | 29921 | 29921 | 29921 |
| | | FEED | 196 | 196 | 175 | 175 | 217 | 217 | 217 | 196 | 196 | 174 | 265 | 265 | 239 | 239 | 239 |
| | | Ap | 0.056 | 0.035 | 0.035 | 0.021 | 0.16 | 0.112 | 0.112 | 0.064 | 0.04 | 0.04 | 0.2 | 0.14 | 0.08 | 0.08 | 0.05 |
| | 6-8 | Vc | 72 | 72 | 64 | 64 | 91 | 91 | 91 | 82 | 82 | 73 | 104 | 104 | 94 | 94 | 94 |
| | | fz | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 |
| | | RPM | 32740 | 32740 | 29103 | 29103 | 36208 | 36208 | 36208 | 32627 | 32627 | 29046 | 33104 | 33104 | 29921 | 29921 | 29921 |
| | | FEED | 196 | 196 | 175 | 175 | 217 | 217 | 217 | 196 | 196 | 174 | 265 | 265 | 239 | 239 | 239 |
| | | Ap | 0.056 | 0.035 | 0.035 | 0.021 | 0.16 | 0.112 | 0.112 | 0.064 | 0.04 | 0.04 | 0.2 | 0.14 | 0.08 | 0.08 | 0.05 |
| | 9 | Vc | 48 | 48 | 42 | 42 | 60 | 60 | 60 | 54 | 54 | 48 | 68 | 68 | 61 | 61 | 61 |
| | | fz | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.003 | 0.003 | 0.002 | 0.002 | 0.002 |
| | | RPM | 21827 | 21827 | 19099 | 19099 | 23873 | 23873 | 23873 | 21486 | 21486 | 19099 | 21645 | 21645 | 19417 | 19417 | 19417 |
| | | FEED | 87 | 87 | 76 | 76 | 95 | 95 | 95 | 86 | 86 | 76 | 130 | 130 | 78 | 78 | 78 |
| | | Ap | 0.042 | 0.026 | 0.026 | 0.016 | 0.12 | 0.084 | 0.084 | 0.048 | 0.03 | 0.03 | 0.15 | 0.105 | 0.06 | 0.06 | 0.038 |
| | 10-11.1 | Vc | 72 | 72 | 64 | 64 | 91 | 91 | 91 | 82 | 82 | 73 | 104 | 104 | 94 | 94 | 94 |
| | | fz | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 |
| | | RPM | 32740 | 32740 | 29103 | 29103 | 36208 | 36208 | 36208 | 32627 | 32627 | 29046 | 33104 | 33104 | 29921 | 29921 | 29921 |
| | | FEED | 196 | 196 | 175 | 175 | 217 | 217 | 217 | 196 | 196 | 174 | 265 | 265 | 239 | 239 | 239 |
| | | Ap | 0.056 | 0.035 | 0.035 | 0.021 | 0.16 | 0.112 | 0.112 | 0.064 | 0.04 | 0.04 | 0.2 | 0.14 | 0.08 | 0.08 | 0.05 |
| | 11.2 | Vc | 48 | 48 | 42 | 42 | 60 | 60 | 60 | 54 | 54 | 48 | 68 | 68 | 61 | 61 | 61 |
| | | fz | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.003 | 0.003 | 0.002 | 0.002 | 0.002 |
| | | RPM | 21827 | 21827 | 19099 | 19099 | 23873 | 23873 | 23873 | 21486 | 21486 | 19099 | 21645 | 21645 | 19417 | 19417 | 19417 |
| | | FEED | 87 | 87 | 76 | 76 | 95 | 95 | 95 | 86 | 86 | 76 | 130 | 130 | 78 | 78 | 78 |
| | | Ap | 0.042 | 0.026 | 0.026 | 0.016 | 0.12 | 0.084 | 0.084 | 0.048 | 0.03 | 0.03 | 0.15 | 0.105 | 0.06 | 0.06 | 0.038 |
| K | 15-20 | Vc | 72 | 72 | 64 | 64 | 91 | 91 | 91 | 82 | 82 | 73 | 104 | 104 | 94 | 94 | 94 |
| | | fz | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 |
| | | RPM | 32740 | 32740 | 29103 | 29103 | 36208 | 36208 | 36208 | 32627 | 32627 | 29046 | 33104 | 33104 | 29921 | 29921 | 29921 |
| | | FEED | 196 | 196 | 175 | 175 | 217 | 217 | 217 | 196 | 196 | 174 | 265 | 265 | 239 | 239 | 239 |
| | | Ap | 0.056 | 0.035 | 0.035 | 0.021 | 0.16 | 0.112 | 0.112 | 0.064 | 0.04 | 0.04 | 0.2 | 0.14 | 0.08 | 0.08 | 0.05 |
| H | 38.1 - 38.2 | Vc | 29 | 29 | 26 | 26 | 36 | 36 | 36 | 33 | 33 | 29 | 41 | 41 | 37 | 37 | 37 |
| | | fz | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.003 | 0.003 | 0.002 | 0.002 | 0.002 |
| | | RPM | 13187 | 13187 | 11823 | 11823 | 14324 | 14324 | 14324 | 13130 | 13130 | 11539 | 13051 | 13051 | 11777 | 11777 | 11777 |
| | | FEED | 53 | 53 | 47 | 47 | 57 | 57 | 57 | 53 | 53 | 46 | 78 | 78 | 47 | 47 | 47 |
| | | Ap | 0.034 | 0.021 | 0.021 | 0.013 | 0.096 | 0.067 | 0.067 | 0.038 | 0.024 | 0.024 | 0.12 | 0.084 | 0.048 | 0.048 | 0.03 |
| | 40 | Vc | 48 | 48 | 42 | 42 | 60 | 60 | 60 | 54 | 54 | 48 | 68 | 68 | 61 | 61 | 61 |
| | | fz | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.003 | 0.003 | 0.002 | 0.002 | 0.002 |
| | | RPM | 21827 | 21827 | 19099 | 19099 | 23873 | 23873 | 23873 | 21486 | 21486 | 19099 | 21645 | 21645 | 19417 | 19417 | 19417 |
| | | FEED | 87 | 87 | 76 | 76 | 95 | 95 | 95 | 86 | 86 | 76 | 130 | 130 | 78 | 78 | 78 |
| | | Ap | 0.042 | 0.026 | 0.026 | 0.016 | 0.12 | 0.084 | 0.084 | 0.048 | 0.03 | 0.03 | 0.15 | 0.105 | 0.06 | 0.06 | 0.038 |
| | 41 | Vc | 29 | 29 | 26 | 26 | 36 | 36 | 36 | 33 | 33 | 29 | 41 | 41 | 37 | 37 | 37 |
| | | fz | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.003 | 0.003 | 0.002 | 0.002 | 0.002 |
| | | RPM | 13187 | 13187 | 11823 | 11823 | 14324 | 14324 | 14324 | 13130 | 13130 | 11539 | 13051 | 13051 | 11777 | 11777 | 11777 |
| | | FEED | 53 | 53 | 47 | 47 | 57 | 57 | 57 | 53 | 53 | 46 | 78 | 78 | 47 | 47 | 47 |
| | | Ap | 0.034 | 0.021 | 0.021 | 0.013 | 0.096 | 0.067 | 0.067 | 0.038 | 0.024 | 0.024 | 0.12 | 0.084 | 0.048 | 0.048 | 0.03 |

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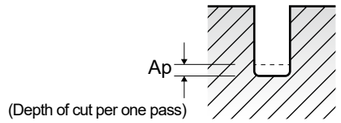


(Depth of cut per one pass)
(每次切削深度)



4G MILL END MILLS
RECOMMENDED CUTTING CONDITIONS
推荐加工参数
SEME61 SERIES
2 FLUTE CORNER RADIUS - SLOTTING
2刃 圆鼻 - 槽铣削
Vc (切削速度) = (m/min.) FEED (进给) = (mm/min.)
fz (每齿进给) = (mm/tooth) Ap (切削深度) = (mm)
RPM (转速) = (rev./min.) LBS (颈长) = Length Below Shank

| VDI 3323 | Parameter 参数 | Diameter (Ø) 直径 | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1.0 | 1.0 | 1.0 | 1.0 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.5 | 1.5 | 1.5 | 1.5 | |
| | LBS | 12 | 14 | 16 | 20 | 3 | 4 | 6 | 8 | 10 | 12 | 16 | 20 | 4 | 6 | 8 | 10 |
| 1-5 | Vc | 83 | 83 | 62 | 62 | 112 | 112 | 112 | 101 | 101 | 101 | 90 | 67 | 124 | 124 | 112 | 112 |
| | fz | 0.003 | 0.003 | 0.003 | 0.003 | 0.005 | 0.005 | 0.005 | 0.004 | 0.004 | 0.004 | 0.004 | 0.003 | 0.006 | 0.006 | 0.005 | 0.005 |
| | RPM | 26420 | 26420 | 19735 | 19735 | 29709 | 29709 | 29709 | 26791 | 26791 | 26791 | 23873 | 17772 | 26314 | 26314 | 23767 | 23767 |
| | FEED | 159 | 159 | 118 | 118 | 297 | 297 | 297 | 214 | 214 | 214 | 191 | 107 | 316 | 316 | 238 | 238 |
| | Ap | 0.05 | 0.03 | 0.03 | 0.02 | 0.24 | 0.168 | 0.168 | 0.096 | 0.06 | 0.06 | 0.036 | 0.024 | 0.3 | 0.21 | 0.12 | 0.12 |
| 6-8 | Vc | 83 | 83 | 62 | 62 | 112 | 112 | 112 | 101 | 101 | 101 | 90 | 67 | 124 | 124 | 112 | 112 |
| | fz | 0.003 | 0.003 | 0.003 | 0.003 | 0.005 | 0.005 | 0.005 | 0.004 | 0.004 | 0.004 | 0.004 | 0.003 | 0.006 | 0.006 | 0.005 | 0.005 |
| | RPM | 26420 | 26420 | 19735 | 19735 | 29709 | 29709 | 29709 | 26791 | 26791 | 26791 | 23873 | 17772 | 26314 | 26314 | 23767 | 23767 |
| | FEED | 159 | 159 | 118 | 118 | 297 | 297 | 297 | 214 | 214 | 214 | 191 | 107 | 316 | 316 | 238 | 238 |
| | Ap | 0.05 | 0.03 | 0.03 | 0.02 | 0.24 | 0.168 | 0.168 | 0.096 | 0.06 | 0.06 | 0.036 | 0.024 | 0.3 | 0.21 | 0.12 | 0.12 |
| 9 | Vc | 54 | 54 | 41 | 41 | 71 | 71 | 71 | 64 | 64 | 64 | 57 | 43 | 76 | 76 | 69 | 69 |
| | fz | 0.002 | 0.002 | 0.002 | 0.002 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.002 | 0.004 | 0.004 | 0.004 | 0.004 |
| | RPM | 17189 | 17189 | 13051 | 13051 | 18833 | 18833 | 18833 | 16977 | 16977 | 16977 | 15120 | 11406 | 16128 | 16128 | 14642 | 14642 |
| | FEED | 69 | 69 | 52 | 52 | 113 | 113 | 113 | 102 | 102 | 102 | 91 | 46 | 129 | 129 | 117 | 117 |
| | Ap | 0.038 | 0.023 | 0.023 | 0.015 | 0.18 | 0.126 | 0.126 | 0.072 | 0.045 | 0.045 | 0.027 | 0.018 | 0.225 | 0.158 | 0.09 | 0.09 |
| 10 - 11.1 | Vc | 83 | 83 | 62 | 62 | 112 | 112 | 112 | 101 | 101 | 101 | 90 | 67 | 124 | 124 | 112 | 112 |
| | fz | 0.003 | 0.003 | 0.003 | 0.003 | 0.005 | 0.005 | 0.005 | 0.004 | 0.004 | 0.004 | 0.004 | 0.003 | 0.006 | 0.006 | 0.005 | 0.005 |
| | RPM | 26420 | 26420 | 19735 | 19735 | 29709 | 29709 | 29709 | 26791 | 26791 | 26791 | 23873 | 17772 | 26314 | 26314 | 23767 | 23767 |
| | FEED | 159 | 159 | 118 | 118 | 297 | 297 | 297 | 214 | 214 | 214 | 191 | 107 | 316 | 316 | 238 | 238 |
| | Ap | 0.05 | 0.03 | 0.03 | 0.02 | 0.24 | 0.168 | 0.168 | 0.096 | 0.06 | 0.06 | 0.036 | 0.024 | 0.3 | 0.21 | 0.12 | 0.12 |
| 11.2 | Vc | 54 | 54 | 41 | 41 | 71 | 71 | 71 | 64 | 64 | 64 | 57 | 43 | 76 | 76 | 69 | 69 |
| | fz | 0.002 | 0.002 | 0.002 | 0.002 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.002 | 0.004 | 0.004 | 0.004 | 0.004 |
| | RPM | 17189 | 17189 | 13051 | 13051 | 18833 | 18833 | 18833 | 16977 | 16977 | 16977 | 15120 | 11406 | 16128 | 16128 | 14642 | 14642 |
| | FEED | 69 | 69 | 52 | 52 | 113 | 113 | 113 | 102 | 102 | 102 | 91 | 46 | 129 | 129 | 117 | 117 |
| | Ap | 0.038 | 0.023 | 0.023 | 0.015 | 0.18 | 0.126 | 0.126 | 0.072 | 0.045 | 0.045 | 0.027 | 0.018 | 0.225 | 0.158 | 0.09 | 0.09 |
| 15 - 20 | Vc | 83 | 83 | 62 | 62 | 112 | 112 | 112 | 101 | 101 | 101 | 90 | 67 | 124 | 124 | 112 | 112 |
| | fz | 0.003 | 0.003 | 0.003 | 0.003 | 0.005 | 0.005 | 0.005 | 0.004 | 0.004 | 0.004 | 0.004 | 0.003 | 0.006 | 0.006 | 0.005 | 0.005 |
| | RPM | 26420 | 26420 | 19735 | 19735 | 29709 | 29709 | 29709 | 26791 | 26791 | 26791 | 23873 | 17772 | 26314 | 26314 | 23767 | 23767 |
| | FEED | 159 | 159 | 118 | 118 | 297 | 297 | 297 | 214 | 214 | 214 | 191 | 107 | 316 | 316 | 238 | 238 |
| | Ap | 0.05 | 0.03 | 0.03 | 0.02 | 0.24 | 0.168 | 0.168 | 0.096 | 0.06 | 0.06 | 0.036 | 0.024 | 0.3 | 0.21 | 0.12 | 0.12 |
| 38.1 - 38.2 | Vc | 33 | 33 | 25 | 25 | 44 | 44 | 44 | 40 | 40 | 40 | 35 | 26 | 48 | 48 | 43 | 43 |
| | fz | 0.002 | 0.002 | 0.002 | 0.002 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.002 | 0.002 | 0.003 | 0.003 | 0.003 | 0.003 |
| | RPM | 10504 | 10504 | 7958 | 7958 | 11671 | 11671 | 11671 | 10610 | 10610 | 10610 | 9284 | 6897 | 10186 | 10186 | 9125 | 9125 |
| | FEED | 42 | 42 | 32 | 32 | 70 | 70 | 70 | 64 | 64 | 64 | 37 | 28 | 61 | 61 | 55 | 55 |
| | Ap | 0.03 | 0.018 | 0.018 | 0.012 | 0.144 | 0.101 | 0.101 | 0.058 | 0.036 | 0.036 | 0.022 | 0.014 | 0.18 | 0.126 | 0.072 | 0.072 |
| 40 | Vc | 54 | 54 | 41 | 41 | 71 | 71 | 71 | 64 | 64 | 64 | 57 | 43 | 76 | 76 | 69 | 69 |
| | fz | 0.002 | 0.002 | 0.002 | 0.002 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.002 | 0.004 | 0.004 | 0.004 | 0.004 |
| | RPM | 17189 | 17189 | 13051 | 13051 | 18833 | 18833 | 18833 | 16977 | 16977 | 16977 | 15120 | 11406 | 16128 | 16128 | 14642 | 14642 |
| | FEED | 69 | 69 | 52 | 52 | 113 | 113 | 113 | 102 | 102 | 102 | 91 | 46 | 129 | 129 | 117 | 117 |
| | Ap | 0.038 | 0.023 | 0.023 | 0.015 | 0.18 | 0.126 | 0.126 | 0.072 | 0.045 | 0.045 | 0.027 | 0.018 | 0.225 | 0.158 | 0.09 | 0.09 |
| 41 | Vc | 33 | 33 | 25 | 25 | 44 | 44 | 44 | 40 | 40 | 40 | 35 | 26 | 48 | 48 | 43 | 43 |
| | fz | 0.002 | 0.002 | 0.002 | 0.002 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.002 | 0.002 | 0.003 | 0.003 | 0.003 | 0.003 |
| | RPM | 10504 | 10504 | 7958 | 7958 | 11671 | 11671 | 11671 | 10610 | 10610 | 10610 | 9284 | 6897 | 10186 | 10186 | 9125 | 9125 |
| | FEED | 42 | 42 | 32 | 32 | 70 | 70 | 70 | 64 | 64 | 64 | 37 | 28 | 61 | 61 | 55 | 55 |
| | Ap | 0.03 | 0.018 | 0.018 | 0.012 | 0.144 | 0.101 | 0.101 | 0.058 | 0.036 | 0.036 | 0.022 | 0.014 | 0.18 | 0.126 | 0.072 | 0.072 |

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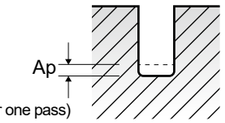


(Depth of cut per one pass)
(每次切削深度)

# 4G MILL END MILLS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

### SEME61 SERIES
**2 FLUTE CORNER RADIUS - SLOTTING**
**2刃 圆鼻 - 槽铣削**

Vc (切削速度) = (m/min.) FEED (进给) = (mm/min.)
fz (每齿进给) = (mm/tooth) Ap (切削深度) = (mm)
RPM (转速) = (rev./min.) LBS (颈长) = Length Below Shank

| ISO | VDI 3323 | Parameter 参数 | Diameter (Ø) 直径 | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| | | LBS | 12 | 14 | 16 | 20 | 22 | 26 | 6 | 8 | 10 | 12 | 14 | 16 | 20 | 22 | 26 |
| P | 1-5 | Vc | 112 | 112 | 100 | 100 | 100 | 75 | 136 | 136 | 136 | 122 | 122 | 122 | 122 | 109 | 109 |
| | | fz | 0.005 | 0.005 | 0.004 | 0.004 | 0.004 | 0.004 | 0.007 | 0.007 | 0.007 | 0.006 | 0.006 | 0.006 | 0.006 | 0.006 | 0.006 |
| | | RPM | 23767 | 23767 | 21221 | 21221 | 21221 | 15915 | 21645 | 21645 | 21645 | 19417 | 19417 | 19417 | 19417 | 17348 | 17348 |
| | | FEED | 238 | 238 | 170 | 170 | 170 | 127 | 303 | 303 | 303 | 233 | 233 | 233 | 233 | 208 | 208 |
| | | Ap | 0.12 | 0.075 | 0.075 | 0.045 | 0.045 | 0.03 | 0.4 | 0.28 | 0.28 | 0.16 | 0.16 | 0.16 | 0.1 | 0.1 | 0.1 |
| | 6-8 | Vc | 112 | 112 | 100 | 100 | 100 | 75 | 136 | 136 | 136 | 122 | 122 | 122 | 122 | 109 | 109 |
| | | fz | 0.005 | 0.005 | 0.004 | 0.004 | 0.004 | 0.004 | 0.007 | 0.007 | 0.007 | 0.006 | 0.006 | 0.006 | 0.006 | 0.006 | 0.006 |
| | | RPM | 23767 | 23767 | 21221 | 21221 | 21221 | 15915 | 21645 | 21645 | 21645 | 19417 | 19417 | 19417 | 19417 | 17348 | 17348 |
| | | FEED | 238 | 238 | 170 | 170 | 170 | 127 | 303 | 303 | 303 | 233 | 233 | 233 | 233 | 208 | 208 |
| | | Ap | 0.12 | 0.075 | 0.075 | 0.045 | 0.045 | 0.03 | 0.4 | 0.28 | 0.28 | 0.16 | 0.16 | 0.16 | 0.1 | 0.1 | 0.1 |
| | 9 | Vc | 69 | 69 | 61 | 61 | 61 | 46 | 87 | 87 | 87 | 78 | 78 | 78 | 78 | 69 | 69 |
| | | fz | 0.004 | 0.004 | 0.003 | 0.003 | 0.003 | 0.003 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.004 | 0.004 |
| | | RPM | 14642 | 14642 | 12945 | 12945 | 12945 | 9762 | 13846 | 13846 | 13846 | 12414 | 12414 | 12414 | 12414 | 10982 | 10982 |
| | | FEED | 117 | 117 | 78 | 78 | 78 | 59 | 138 | 138 | 138 | 124 | 124 | 124 | 124 | 88 | 88 |
| | | Ap | 0.09 | 0.056 | 0.056 | 0.034 | 0.034 | 0.023 | 0.3 | 0.21 | 0.21 | 0.12 | 0.12 | 0.12 | 0.075 | 0.075 | 0.075 |
| | 10-11.1 | Vc | 112 | 112 | 100 | 100 | 100 | 75 | 136 | 136 | 136 | 122 | 122 | 122 | 122 | 109 | 109 |
| | | fz | 0.005 | 0.005 | 0.004 | 0.004 | 0.004 | 0.004 | 0.007 | 0.007 | 0.007 | 0.006 | 0.006 | 0.006 | 0.006 | 0.006 | 0.006 |
| | | RPM | 23767 | 23767 | 21221 | 21221 | 21221 | 15915 | 21645 | 21645 | 21645 | 19417 | 19417 | 19417 | 19417 | 17348 | 17348 |
| | | FEED | 238 | 238 | 170 | 170 | 170 | 127 | 303 | 303 | 303 | 233 | 233 | 233 | 233 | 208 | 208 |
| | | Ap | 0.12 | 0.075 | 0.075 | 0.045 | 0.045 | 0.03 | 0.4 | 0.28 | 0.28 | 0.16 | 0.16 | 0.16 | 0.1 | 0.1 | 0.1 |
| | 11.2 | Vc | 69 | 69 | 61 | 61 | 61 | 46 | 87 | 87 | 87 | 78 | 78 | 78 | 78 | 69 | 69 |
| | | fz | 0.004 | 0.004 | 0.003 | 0.003 | 0.003 | 0.003 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.004 | 0.004 |
| | | RPM | 14642 | 14642 | 12945 | 12945 | 12945 | 9762 | 13846 | 13846 | 13846 | 12414 | 12414 | 12414 | 12414 | 10982 | 10982 |
| | | FEED | 117 | 117 | 78 | 78 | 78 | 59 | 138 | 138 | 138 | 124 | 124 | 124 | 124 | 88 | 88 |
| | | Ap | 0.09 | 0.056 | 0.056 | 0.034 | 0.034 | 0.023 | 0.3 | 0.21 | 0.21 | 0.12 | 0.12 | 0.12 | 0.075 | 0.075 | 0.075 |
| K | 15-20 | Vc | 112 | 112 | 100 | 100 | 100 | 75 | 136 | 136 | 136 | 122 | 122 | 122 | 122 | 109 | 109 |
| | | fz | 0.005 | 0.005 | 0.004 | 0.004 | 0.004 | 0.004 | 0.007 | 0.007 | 0.007 | 0.006 | 0.006 | 0.006 | 0.006 | 0.006 | 0.006 |
| | | RPM | 23767 | 23767 | 21221 | 21221 | 21221 | 15915 | 21645 | 21645 | 21645 | 19417 | 19417 | 19417 | 19417 | 17348 | 17348 |
| | | FEED | 238 | 238 | 170 | 170 | 170 | 127 | 303 | 303 | 303 | 233 | 233 | 233 | 233 | 208 | 208 |
| | | Ap | 0.12 | 0.075 | 0.075 | 0.045 | 0.045 | 0.03 | 0.4 | 0.28 | 0.28 | 0.16 | 0.16 | 0.16 | 0.1 | 0.1 | 0.1 |
| H | 38.1 - 38.2 | Vc | 43 | 43 | 38 | 38 | 38 | 29 | 54 | 54 | 54 | 49 | 49 | 49 | 49 | 43 | 43 |
| | | fz | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.002 | 0.005 | 0.005 | 0.005 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 |
| | | RPM | 9125 | 9125 | 8064 | 8064 | 8064 | 6154 | 8594 | 8594 | 8594 | 7799 | 7799 | 7799 | 7799 | 6844 | 6844 |
| | | FEED | 55 | 55 | 48 | 48 | 48 | 25 | 86 | 86 | 86 | 62 | 62 | 62 | 62 | 55 | 55 |
| | | Ap | 0.072 | 0.045 | 0.045 | 0.027 | 0.027 | 0.018 | 0.24 | 0.168 | 0.168 | 0.096 | 0.096 | 0.096 | 0.06 | 0.06 | 0.06 |
| | 40 | Vc | 69 | 69 | 61 | 61 | 61 | 46 | 87 | 87 | 87 | 78 | 78 | 78 | 78 | 69 | 69 |
| | | fz | 0.004 | 0.004 | 0.003 | 0.003 | 0.003 | 0.003 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.004 | 0.004 |
| | | RPM | 14642 | 14642 | 12945 | 12945 | 12945 | 9762 | 13846 | 13846 | 13846 | 12414 | 12414 | 12414 | 12414 | 10982 | 10982 |
| | | FEED | 117 | 117 | 78 | 78 | 78 | 59 | 138 | 138 | 138 | 124 | 124 | 124 | 124 | 88 | 88 |
| | | Ap | 0.09 | 0.056 | 0.056 | 0.034 | 0.034 | 0.023 | 0.3 | 0.21 | 0.21 | 0.12 | 0.12 | 0.12 | 0.075 | 0.075 | 0.075 |
| | 41 | Vc | 43 | 43 | 38 | 38 | 38 | 29 | 54 | 54 | 54 | 49 | 49 | 49 | 49 | 43 | 43 |
| | | fz | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.002 | 0.005 | 0.005 | 0.005 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 |
| | | RPM | 9125 | 9125 | 8064 | 8064 | 8064 | 6154 | 8594 | 8594 | 8594 | 7799 | 7799 | 7799 | 7799 | 6844 | 6844 |
| | | FEED | 55 | 55 | 48 | 48 | 48 | 25 | 86 | 86 | 86 | 62 | 62 | 62 | 62 | 55 | 55 |
| | | Ap | 0.072 | 0.045 | 0.045 | 0.027 | 0.027 | 0.018 | 0.24 | 0.168 | 0.168 | 0.096 | 0.096 | 0.096 | 0.06 | 0.06 | 0.06 |

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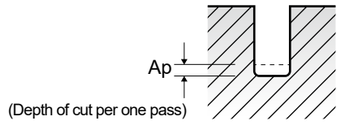




4G MILL END MILLS
RECOMMENDED CUTTING CONDITIONS
推荐加工参数
SEME61 SERIES
2 FLUTE CORNER RADIUS - SLOTTING
2刃 圆鼻 - 槽铣削
Vc (切削速度) = (m/min.) FEED (进给) = (mm/min.)
fz (每齿进给) = (mm/tooth) Ap (切削深度) = (mm)
RPM (转速) = (rev./min.) LBS (颈长) = Length Below Shank

| VDI 3323 | Parameter 参数 | Diameter (Ø) 直径 | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2.0 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| | LBS | 30 | 8 | 10 | 12 | 14 | 16 | 20 | 26 | 30 | 8 | 10 | 12 | 14 | 16 | 20 | 26 |
| 1-5 | Vc | 109 | 141 | 141 | 141 | 127 | 127 | 127 | 113 | 113 | 150 | 150 | 150 | 150 | 135 | 135 | 135 |
| | fz | 0.006 | 0.009 | 0.009 | 0.009 | 0.008 | 0.008 | 0.008 | 0.007 | 0.007 | 0.01 | 0.01 | 0.01 | 0.01 | 0.009 | 0.009 | 0.009 |
| | RPM | 17348 | 17953 | 17953 | 17953 | 16170 | 16170 | 16170 | 14388 | 14388 | 15915 | 15915 | 15915 | 15915 | 14324 | 14324 | 14324 |
| | FEED | 208 | 323 | 323 | 323 | 259 | 259 | 259 | 201 | 201 | 318 | 318 | 318 | 318 | 258 | 258 | 258 |
| | Ap | 0.06 | 0.35 | 0.35 | 0.35 | 0.2 | 0.2 | 0.2 | 0.125 | 0.125 | 0.6 | 0.42 | 0.42 | 0.42 | 0.24 | 0.24 | 0.15 |
| 6-8 | Vc | 109 | 141 | 141 | 141 | 127 | 127 | 127 | 113 | 113 | 150 | 150 | 150 | 150 | 135 | 135 | 135 |
| | fz | 0.006 | 0.009 | 0.009 | 0.009 | 0.008 | 0.008 | 0.008 | 0.007 | 0.007 | 0.01 | 0.01 | 0.01 | 0.01 | 0.009 | 0.009 | 0.009 |
| | RPM | 17348 | 17953 | 17953 | 17953 | 16170 | 16170 | 16170 | 14388 | 14388 | 15915 | 15915 | 15915 | 15915 | 14324 | 14324 | 14324 |
| | FEED | 208 | 323 | 323 | 323 | 259 | 259 | 259 | 201 | 201 | 318 | 318 | 318 | 318 | 258 | 258 | 258 |
| | Ap | 0.06 | 0.35 | 0.35 | 0.35 | 0.2 | 0.2 | 0.2 | 0.125 | 0.125 | 0.6 | 0.42 | 0.42 | 0.42 | 0.24 | 0.24 | 0.15 |
| 9 | Vc | 69 | 90 | 90 | 90 | 81 | 81 | 81 | 72 | 72 | 97 | 97 | 97 | 97 | 87 | 87 | 87 |
| | fz | 0.004 | 0.007 | 0.007 | 0.007 | 0.006 | 0.006 | 0.006 | 0.005 | 0.005 | 0.008 | 0.008 | 0.008 | 0.008 | 0.007 | 0.007 | 0.007 |
| | RPM | 10982 | 11459 | 11459 | 11459 | 10313 | 10313 | 10313 | 9167 | 9167 | 10292 | 10292 | 10292 | 10292 | 9231 | 9231 | 9231 |
| | FEED | 88 | 160 | 160 | 160 | 124 | 124 | 124 | 92 | 92 | 165 | 165 | 165 | 165 | 129 | 129 | 129 |
| | Ap | 0.045 | 0.263 | 0.263 | 0.263 | 0.15 | 0.15 | 0.15 | 0.094 | 0.094 | 0.45 | 0.315 | 0.315 | 0.315 | 0.18 | 0.18 | 0.113 |
| 10 - 11.1 | Vc | 109 | 141 | 141 | 141 | 127 | 127 | 127 | 113 | 113 | 150 | 150 | 150 | 150 | 135 | 135 | 135 |
| | fz | 0.006 | 0.009 | 0.009 | 0.009 | 0.008 | 0.008 | 0.008 | 0.007 | 0.007 | 0.01 | 0.01 | 0.01 | 0.01 | 0.009 | 0.009 | 0.009 |
| | RPM | 17348 | 17953 | 17953 | 17953 | 16170 | 16170 | 16170 | 14388 | 14388 | 15915 | 15915 | 15915 | 15915 | 14324 | 14324 | 14324 |
| | FEED | 208 | 323 | 323 | 323 | 259 | 259 | 259 | 201 | 201 | 318 | 318 | 318 | 318 | 258 | 258 | 258 |
| | Ap | 0.06 | 0.35 | 0.35 | 0.35 | 0.2 | 0.2 | 0.2 | 0.125 | 0.125 | 0.6 | 0.42 | 0.42 | 0.42 | 0.24 | 0.24 | 0.15 |
| 11.2 | Vc | 69 | 90 | 90 | 90 | 81 | 81 | 81 | 72 | 72 | 97 | 97 | 97 | 97 | 87 | 87 | 87 |
| | fz | 0.004 | 0.007 | 0.007 | 0.007 | 0.006 | 0.006 | 0.006 | 0.005 | 0.005 | 0.008 | 0.008 | 0.008 | 0.008 | 0.007 | 0.007 | 0.007 |
| | RPM | 10982 | 11459 | 11459 | 11459 | 10313 | 10313 | 10313 | 9167 | 9167 | 10292 | 10292 | 10292 | 10292 | 9231 | 9231 | 9231 |
| | FEED | 88 | 160 | 160 | 160 | 124 | 124 | 124 | 92 | 92 | 165 | 165 | 165 | 165 | 129 | 129 | 129 |
| | Ap | 0.045 | 0.263 | 0.263 | 0.263 | 0.15 | 0.15 | 0.15 | 0.094 | 0.094 | 0.45 | 0.315 | 0.315 | 0.315 | 0.18 | 0.18 | 0.113 |
| 15 - 20 | Vc | 109 | 141 | 141 | 141 | 127 | 127 | 127 | 113 | 113 | 150 | 150 | 150 | 150 | 135 | 135 | 135 |
| | fz | 0.006 | 0.009 | 0.009 | 0.009 | 0.008 | 0.008 | 0.008 | 0.007 | 0.007 | 0.01 | 0.01 | 0.01 | 0.01 | 0.009 | 0.009 | 0.009 |
| | RPM | 17348 | 17953 | 17953 | 17953 | 16170 | 16170 | 16170 | 14388 | 14388 | 15915 | 15915 | 15915 | 15915 | 14324 | 14324 | 14324 |
| | FEED | 208 | 323 | 323 | 323 | 259 | 259 | 259 | 201 | 201 | 318 | 318 | 318 | 318 | 258 | 258 | 258 |
| | Ap | 0.06 | 0.35 | 0.35 | 0.35 | 0.2 | 0.2 | 0.2 | 0.125 | 0.125 | 0.6 | 0.42 | 0.42 | 0.42 | 0.24 | 0.24 | 0.15 |
| 38.1 - 38.2 | Vc | 43 | 57 | 57 | 57 | 52 | 52 | 52 | 46 | 46 | 59 | 59 | 59 | 59 | 53 | 53 | 53 |
| | fz | 0.004 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.004 | 0.004 | 0.006 | 0.006 | 0.006 | 0.006 | 0.006 | 0.006 | 0.006 |
| | RPM | 6844 | 7257 | 7257 | 7257 | 6621 | 6621 | 6621 | 5857 | 5857 | 6260 | 6260 | 6260 | 6260 | 5623 | 5623 | 5623 |
| | FEED | 55 | 73 | 73 | 73 | 66 | 66 | 66 | 47 | 47 | 75 | 75 | 75 | 75 | 67 | 67 | 67 |
| | Ap | 0.036 | 0.21 | 0.21 | 0.21 | 0.12 | 0.12 | 0.12 | 0.075 | 0.075 | 0.36 | 0.252 | 0.252 | 0.252 | 0.144 | 0.144 | 0.09 |
| 40 | Vc | 69 | 90 | 90 | 90 | 81 | 81 | 81 | 72 | 72 | 97 | 97 | 97 | 97 | 87 | 87 | 87 |
| | fz | 0.004 | 0.007 | 0.007 | 0.007 | 0.006 | 0.006 | 0.006 | 0.005 | 0.005 | 0.008 | 0.008 | 0.008 | 0.008 | 0.007 | 0.007 | 0.007 |
| | RPM | 10982 | 11459 | 11459 | 11459 | 10313 | 10313 | 10313 | 9167 | 9167 | 10292 | 10292 | 10292 | 10292 | 9231 | 9231 | 9231 |
| | FEED | 88 | 160 | 160 | 160 | 124 | 124 | 124 | 92 | 92 | 165 | 165 | 165 | 165 | 129 | 129 | 129 |
| | Ap | 0.045 | 0.263 | 0.263 | 0.263 | 0.15 | 0.15 | 0.15 | 0.094 | 0.094 | 0.45 | 0.315 | 0.315 | 0.315 | 0.18 | 0.18 | 0.113 |
| 41 | Vc | 43 | 57 | 57 | 57 | 52 | 52 | 52 | 46 | 46 | 59 | 59 | 59 | 59 | 53 | 53 | 53 |
| | fz | 0.004 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.004 | 0.004 | 0.006 | 0.006 | 0.006 | 0.006 | 0.006 | 0.006 | 0.006 |
| | RPM | 6844 | 7257 | 7257 | 7257 | 6621 | 6621 | 6621 | 5857 | 5857 | 6260 | 6260 | 6260 | 6260 | 5623 | 5623 | 5623 |
| | FEED | 55 | 73 | 73 | 73 | 66 | 66 | 66 | 47 | 47 | 75 | 75 | 75 | 75 | 67 | 67 | 67 |
| | Ap | 0.036 | 0.21 | 0.21 | 0.21 | 0.12 | 0.12 | 0.12 | 0.075 | 0.075 | 0.36 | 0.252 | 0.252 | 0.252 | 0.144 | 0.144 | 0.09 |

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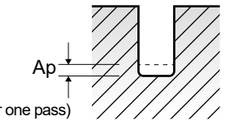

# 4G MILL END MILLS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

### SEME61 SERIES
**2 FLUTE CORNER RADIUS - SLOTTING**
**2刃 圆鼻 - 槽铣削**

Vc (切削速度) = (m/min.) FEED (进给) = (mm/min.)
fz (每齿进给) = (mm/tooth) Ap (切削深度) = (mm)
RPM (转速) = (rev./min.) LBS (颈长) = Length Below Shank

| ISO | VDI 3323 | Parameter 参数 | Diameter (Ø) 直径 | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 3.0 | 3.0 | 3.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| | | LBS | 30 | 35 | 40 | 10 | 12 | 14 | 16 | 20 | 26 | 30 | 35 | 40 | 45 |
| P | 1-5 | Vc | 135 | 120 | 120 | 161 | 161 | 161 | 161 | 161 | 145 | 145 | 145 | 145 | 129 |
| | | fz | 0.009 | 0.008 | 0.008 | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 | 0.014 | 0.014 | 0.014 | 0.014 | 0.012 |
| | | RPM | 14324 | 12732 | 12732 | 12812 | 12812 | 12812 | 12812 | 12812 | 11539 | 11539 | 11539 | 11539 | 10265 |
| | | FEED | 258 | 204 | 204 | 410 | 410 | 410 | 410 | 410 | 323 | 323 | 323 | 323 | 246 |
| | | Ap | 0.15 | 0.15 | 0.09 | 0.8 | 0.8 | 0.56 | 0.56 | 0.56 | 0.32 | 0.32 | 0.2 | 0.2 | 0.2 |
| | 6-8 | Vc | 135 | 120 | 120 | 161 | 161 | 161 | 161 | 161 | 145 | 145 | 145 | 145 | 129 |
| | | fz | 0.009 | 0.008 | 0.008 | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 | 0.014 | 0.014 | 0.014 | 0.014 | 0.012 |
| | | RPM | 14324 | 12732 | 12732 | 12812 | 12812 | 12812 | 12812 | 12812 | 11539 | 11539 | 11539 | 11539 | 10265 |
| | | FEED | 258 | 204 | 204 | 410 | 410 | 410 | 410 | 410 | 323 | 323 | 323 | 323 | 246 |
| | | Ap | 0.15 | 0.15 | 0.09 | 0.8 | 0.8 | 0.56 | 0.56 | 0.56 | 0.32 | 0.32 | 0.2 | 0.2 | 0.2 |
| | 9 | Vc | 87 | 78 | 78 | 103 | 103 | 103 | 103 | 103 | 93 | 93 | 93 | 93 | 82 |
| | | fz | 0.007 | 0.006 | 0.006 | 0.012 | 0.012 | 0.012 | 0.012 | 0.012 | 0.011 | 0.011 | 0.011 | 0.011 | 0.01 |
| | | RPM | 9231 | 8276 | 8276 | 8196 | 8196 | 8196 | 8196 | 8196 | 7401 | 7401 | 7401 | 7401 | 6525 |
| | | FEED | 129 | 99 | 99 | 197 | 197 | 197 | 197 | 197 | 163 | 163 | 163 | 163 | 131 |
| | | Ap | 0.113 | 0.113 | 0.068 | 0.6 | 0.6 | 0.42 | 0.42 | 0.42 | 0.24 | 0.24 | 0.15 | 0.15 | 0.15 |
| | 10-11.1 | Vc | 135 | 120 | 120 | 161 | 161 | 161 | 161 | 161 | 145 | 145 | 145 | 145 | 129 |
| | | fz | 0.009 | 0.008 | 0.008 | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 | 0.014 | 0.014 | 0.014 | 0.014 | 0.012 |
| | | RPM | 14324 | 12732 | 12732 | 12812 | 12812 | 12812 | 12812 | 12812 | 11539 | 11539 | 11539 | 11539 | 10265 |
| | | FEED | 258 | 204 | 204 | 410 | 410 | 410 | 410 | 410 | 323 | 323 | 323 | 323 | 246 |
| | | Ap | 0.15 | 0.15 | 0.09 | 0.8 | 0.8 | 0.56 | 0.56 | 0.56 | 0.32 | 0.32 | 0.2 | 0.2 | 0.2 |
| | 11.2 | Vc | 87 | 78 | 78 | 103 | 103 | 103 | 103 | 103 | 93 | 93 | 93 | 93 | 82 |
| | | fz | 0.007 | 0.006 | 0.006 | 0.012 | 0.012 | 0.012 | 0.012 | 0.012 | 0.011 | 0.011 | 0.011 | 0.011 | 0.01 |
| | | RPM | 9231 | 8276 | 8276 | 8196 | 8196 | 8196 | 8196 | 8196 | 7401 | 7401 | 7401 | 7401 | 6525 |
| | | FEED | 129 | 99 | 99 | 197 | 197 | 197 | 197 | 197 | 163 | 163 | 163 | 163 | 131 |
| | | Ap | 0.113 | 0.113 | 0.068 | 0.6 | 0.6 | 0.42 | 0.42 | 0.42 | 0.24 | 0.24 | 0.15 | 0.15 | 0.15 |
| K | 15-20 | Vc | 135 | 120 | 120 | 161 | 161 | 161 | 161 | 161 | 145 | 145 | 145 | 145 | 129 |
| | | fz | 0.009 | 0.008 | 0.008 | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 | 0.014 | 0.014 | 0.014 | 0.014 | 0.012 |
| | | RPM | 14324 | 12732 | 12732 | 12812 | 12812 | 12812 | 12812 | 12812 | 11539 | 11539 | 11539 | 11539 | 10265 |
| | | FEED | 258 | 204 | 204 | 410 | 410 | 410 | 410 | 410 | 323 | 323 | 323 | 323 | 246 |
| | | Ap | 0.15 | 0.15 | 0.09 | 0.8 | 0.8 | 0.56 | 0.56 | 0.56 | 0.32 | 0.32 | 0.2 | 0.2 | 0.2 |
| H | 38.1 - 38.2 | Vc | 53 | 48 | 48 | 65 | 65 | 65 | 65 | 65 | 58 | 58 | 58 | 58 | 52 |
| | | fz | 0.006 | 0.005 | 0.005 | 0.009 | 0.009 | 0.009 | 0.009 | 0.009 | 0.008 | 0.008 | 0.008 | 0.008 | 0.007 |
| | | RPM | 5623 | 5093 | 5093 | 5173 | 5173 | 5173 | 5173 | 5173 | 4615 | 4615 | 4615 | 4615 | 4138 |
| | | FEED | 67 | 51 | 51 | 93 | 93 | 93 | 93 | 93 | 74 | 74 | 74 | 74 | 58 |
| | | Ap | 0.09 | 0.09 | 0.054 | 0.48 | 0.48 | 0.336 | 0.336 | 0.336 | 0.192 | 0.192 | 0.12 | 0.12 | 0.12 |
| | 40 | Vc | 87 | 78 | 78 | 103 | 103 | 103 | 103 | 103 | 93 | 93 | 93 | 93 | 82 |
| | | fz | 0.007 | 0.006 | 0.006 | 0.012 | 0.012 | 0.012 | 0.012 | 0.012 | 0.011 | 0.011 | 0.011 | 0.011 | 0.01 |
| | | RPM | 9231 | 8276 | 8276 | 8196 | 8196 | 8196 | 8196 | 8196 | 7401 | 7401 | 7401 | 7401 | 6525 |
| | | FEED | 129 | 99 | 99 | 197 | 197 | 197 | 197 | 197 | 163 | 163 | 163 | 163 | 131 |
| | | Ap | 0.113 | 0.113 | 0.068 | 0.6 | 0.6 | 0.42 | 0.42 | 0.42 | 0.24 | 0.24 | 0.15 | 0.15 | 0.15 |
| | 41 | Vc | 53 | 48 | 48 | 65 | 65 | 65 | 65 | 65 | 58 | 58 | 58 | 58 | 52 |
| | | fz | 0.006 | 0.005 | 0.005 | 0.009 | 0.009 | 0.009 | 0.009 | 0.009 | 0.008 | 0.008 | 0.008 | 0.008 | 0.007 |
| | | RPM | 5623 | 5093 | 5093 | 5173 | 5173 | 5173 | 5173 | 5173 | 4615 | 4615 | 4615 | 4615 | 4138 |
| | | FEED | 67 | 51 | 51 | 93 | 93 | 93 | 93 | 93 | 74 | 74 | 74 | 74 | 58 |
| | | Ap | 0.09 | 0.09 | 0.054 | 0.48 | 0.48 | 0.336 | 0.336 | 0.336 | 0.192 | 0.192 | 0.12 | 0.12 | 0.12 |

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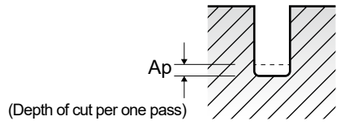
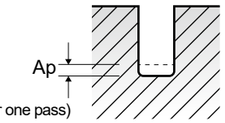





4G MILL END MILLS
RECOMMENDED CUTTING CONDITIONS
推荐加工参数
SEME61 SERIES
2 FLUTE CORNER RADIUS - SLOTTING
2刃 圆鼻 - 槽铣削
Vc (切削速度) = (m/min.) FEED (进给) = (mm/min.)
fz (每齿进给) = (mm/tooth) Ap (切削深度) = (mm)
RPM (转速) = (rev./min.) LBS (颈长) = Length Below Shank

| VDI 3323 | Parameter 参数 | Diameter (Ø) 直径 | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 4.0 | 5.0 | 6.0 | 6.0 | 8.0 | 8.0 | 10.0 | 10.0 | 12.0 | 12.0 | 16.0 | 16.0 | 20.0 | 20.0 |
| | LBS | 50 | 15 | 20 | 30 | 25 | 35 | 30 | 40 | 32 | 45 | 35 | 50 | 40 | 55 |
| 1-5 | Vc | 129 | 173 | 179 | 179 | 181 | 181 | 188 | 188 | 188 | 188 | 187 | 187 | 188 | 188 |
| | fz | 0.012 | 0.023 | 0.032 | 0.032 | 0.044 | 0.044 | 0.053 | 0.053 | 0.05 | 0.05 | 0.06 | 0.06 | 0.055 | 0.055 |
| | RPM | 10265 | 11014 | 9496 | 9496 | 7202 | 7202 | 5984 | 5984 | 4987 | 4987 | 3720 | 3720 | 2992 | 2992 |
| | FEED | 246 | 507 | 608 | 608 | 634 | 634 | 634 | 634 | 499 | 499 | 446 | 446 | 329 | 329 |
| | Ap | 0.2 | 1 | 0.84 | 0.84 | 1.12 | 1.12 | 2 | 1.4 | 2.4 | 1.68 | 3.2 | 2.24 | 4 | 4 |
| 6-8 | Vc | 129 | 173 | 179 | 179 | 181 | 181 | 188 | 188 | 188 | 188 | 187 | 187 | 188 | 188 |
| | fz | 0.012 | 0.023 | 0.032 | 0.032 | 0.044 | 0.044 | 0.053 | 0.053 | 0.05 | 0.05 | 0.06 | 0.06 | 0.055 | 0.055 |
| | RPM | 10265 | 11014 | 9496 | 9496 | 7202 | 7202 | 5984 | 5984 | 4987 | 4987 | 3720 | 3720 | 2992 | 2992 |
| | FEED | 246 | 507 | 608 | 608 | 634 | 634 | 634 | 634 | 499 | 499 | 446 | 446 | 329 | 329 |
| | Ap | 0.2 | 1 | 0.84 | 0.84 | 1.12 | 1.12 | 2 | 1.4 | 2.4 | 1.68 | 3.2 | 2.24 | 4 | 4 |
| 9 | Vc | 82 | 110 | 113 | 113 | 114 | 114 | 126 | 126 | 126 | 126 | 127 | 127 | 123 | 123 |
| | fz | 0.01 | 0.017 | 0.025 | 0.025 | 0.033 | 0.033 | 0.038 | 0.038 | 0.04 | 0.04 | 0.042 | 0.042 | 0.036 | 0.036 |
| | RPM | 6525 | 7003 | 5995 | 5995 | 4536 | 4536 | 4011 | 4011 | 3342 | 3342 | 2527 | 2527 | 1958 | 1958 |
| | FEED | 131 | 238 | 300 | 300 | 299 | 299 | 305 | 305 | 267 | 267 | 212 | 212 | 141 | 141 |
| | Ap | 0.15 | 0.75 | 0.63 | 0.63 | 0.84 | 0.84 | 1.5 | 1.05 | 1.8 | 1.26 | 2.4 | 1.68 | 3 | 3 |
| 10 - 11.1 | Vc | 129 | 173 | 179 | 179 | 181 | 181 | 188 | 188 | 188 | 188 | 187 | 187 | 188 | 188 |
| | fz | 0.012 | 0.023 | 0.032 | 0.032 | 0.044 | 0.044 | 0.053 | 0.053 | 0.05 | 0.05 | 0.06 | 0.06 | 0.055 | 0.055 |
| | RPM | 10265 | 11014 | 9496 | 9496 | 7202 | 7202 | 5984 | 5984 | 4987 | 4987 | 3720 | 3720 | 2992 | 2992 |
| | FEED | 246 | 507 | 608 | 608 | 634 | 634 | 634 | 634 | 499 | 499 | 446 | 446 | 329 | 329 |
| | Ap | 0.2 | 1 | 0.84 | 0.84 | 1.12 | 1.12 | 2 | 1.4 | 2.4 | 1.68 | 3.2 | 2.24 | 4 | 4 |
| 11.2 | Vc | 82 | 110 | 113 | 113 | 114 | 114 | 126 | 126 | 126 | 126 | 127 | 127 | 123 | 123 |
| | fz | 0.01 | 0.017 | 0.025 | 0.025 | 0.033 | 0.033 | 0.038 | 0.038 | 0.04 | 0.04 | 0.042 | 0.042 | 0.036 | 0.036 |
| | RPM | 6525 | 7003 | 5995 | 5995 | 4536 | 4536 | 4011 | 4011 | 3342 | 3342 | 2527 | 2527 | 1958 | 1958 |
| | FEED | 131 | 238 | 300 | 300 | 299 | 299 | 305 | 305 | 267 | 267 | 212 | 212 | 141 | 141 |
| | Ap | 0.15 | 0.75 | 0.63 | 0.63 | 0.84 | 0.84 | 1.5 | 1.05 | 1.8 | 1.26 | 2.4 | 1.68 | 3 | 3 |
| 15 - 20 | Vc | 129 | 173 | 179 | 179 | 181 | 181 | 188 | 188 | 188 | 188 | 187 | 187 | 188 | 188 |
| | fz | 0.012 | 0.023 | 0.032 | 0.032 | 0.044 | 0.044 | 0.053 | 0.053 | 0.05 | 0.05 | 0.06 | 0.06 | 0.055 | 0.055 |
| | RPM | 10265 | 11014 | 9496 | 9496 | 7202 | 7202 | 5984 | 5984 | 4987 | 4987 | 3720 | 3720 | 2992 | 2992 |
| | FEED | 246 | 507 | 608 | 608 | 634 | 634 | 634 | 634 | 499 | 499 | 446 | 446 | 329 | 329 |
| | Ap | 0.2 | 1 | 0.84 | 0.84 | 1.12 | 1.12 | 2 | 1.4 | 2.4 | 1.68 | 3.2 | 2.24 | 4 | 4 |
| 38.1 - 38.2 | Vc | 52 | 72 | 74 | 74 | 76 | 76 | 76 | 76 | 75 | 75 | 77 | 77 | 75 | 75 |
| | fz | 0.007 | 0.013 | 0.018 | 0.018 | 0.023 | 0.023 | 0.029 | 0.029 | 0.03 | 0.03 | 0.031 | 0.031 | 0.029 | 0.029 |
| | RPM | 4138 | 4584 | 3926 | 3926 | 3024 | 3024 | 2419 | 2419 | 1989 | 1989 | 1532 | 1532 | 1194 | 1194 |
| | FEED | 58 | 119 | 141 | 141 | 139 | 139 | 140 | 140 | 119 | 119 | 95 | 95 | 69 | 69 |
| | Ap | 0.12 | 0.6 | 0.504 | 0.504 | 0.672 | 0.672 | 1.2 | 0.84 | 1.44 | 1.008 | 1.92 | 1.344 | 2.4 | 2.4 |
| 40 | Vc | 82 | 110 | 113 | 113 | 114 | 114 | 126 | 126 | 126 | 126 | 127 | 127 | 123 | 123 |
| | fz | 0.01 | 0.017 | 0.025 | 0.025 | 0.033 | 0.033 | 0.038 | 0.038 | 0.04 | 0.04 | 0.042 | 0.042 | 0.036 | 0.036 |
| | RPM | 6525 | 7003 | 5995 | 5995 | 4536 | 4536 | 4011 | 4011 | 3342 | 3342 | 2527 | 2527 | 1958 | 1958 |
| | FEED | 131 | 238 | 300 | 300 | 299 | 299 | 305 | 305 | 267 | 267 | 212 | 212 | 141 | 141 |
| | Ap | 0.15 | 0.75 | 0.63 | 0.63 | 0.84 | 0.84 | 1.5 | 1.05 | 1.8 | 1.26 | 2.4 | 1.68 | 3 | 3 |
| 41 | Vc | 52 | 72 | 74 | 74 | 76 | 76 | 76 | 76 | 75 | 75 | 77 | 77 | 75 | 75 |
| | fz | 0.007 | 0.013 | 0.018 | 0.018 | 0.023 | 0.023 | 0.029 | 0.029 | 0.03 | 0.03 | 0.031 | 0.031 | 0.029 | 0.029 |
| | RPM | 4138 | 4584 | 3926 | 3926 | 3024 | 3024 | 2419 | 2419 | 1989 | 1989 | 1532 | 1532 | 1194 | 1194 |
| | FEED | 58 | 119 | 141 | 141 | 139 | 139 | 140 | 140 | 119 | 119 | 95 | 95 | 69 | 69 |
| | Ap | 0.12 | 0.6 | 0.504 | 0.504 | 0.672 | 0.672 | 1.2 | 0.84 | 1.44 | 1.008 | 1.92 | 1.344 | 2.4 | 2.4 |



# 4G MILL END MILLS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

### SEME01 SERIES
**4 FLUTE CORNER RADIUS - SIDE CUTTING**
**4刃 圆鼻- 侧铣削**

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description 工件材料 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 1.0 | 1.2 | 1.5 | 2.0 | 2.5 | 3.0 | 3.5 | 4.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1-5 | Non-alloy steel | 0.05D | 2D | Vc | 87 | 93 | 104 | 113 | 118 | 125 | 132 | 135 |
| | | | | | fz | 0.003 | 0.003 | 0.004 | 0.004 | 0.006 | 0.006 | 0.008 | 0.01 |
| | | | | | RPM | 27693 | 24669 | 22069 | 17985 | 15024 | 13263 | 12005 | 10743 |
| | | | | | FEED | 332 | 296 | 353 | 288 | 361 | 318 | 384 | 430 |
| | 6-8 | Low alloy steel | 0.05D | 2D | Vc | 87 | 93 | 104 | 113 | 118 | 125 | 132 | 135 |
| | | | | | fz | 0.003 | 0.003 | 0.004 | 0.004 | 0.006 | 0.006 | 0.008 | 0.01 |
| | | | | | RPM | 27693 | 24669 | 22069 | 17985 | 15024 | 13263 | 12005 | 10743 |
| | | | | | FEED | 332 | 296 | 353 | 288 | 361 | 318 | 384 | 430 |
| | 9 | | 0.05D | 2D | Vc | 57 | 59 | 64 | 73 | 75 | 81 | 85 | 86 |
| | | | | | fz | 0.003 | 0.004 | 0.004 | 0.005 | 0.007 | 0.008 | 0.009 | 0.011 |
| | | | | | RPM | 18144 | 15650 | 13581 | 11618 | 9549 | 8594 | 7730 | 6844 |
| | | | | | FEED | 218 | 250 | 217 | 232 | 267 | 275 | 278 | 301 |
| | 10-11.1 | High alloyed steel, and tool steel | 0.05D | 2D | Vc | 87 | 93 | 104 | 113 | 118 | 125 | 132 | 135 |
| | | | | | fz | 0.003 | 0.003 | 0.004 | 0.004 | 0.006 | 0.006 | 0.008 | 0.01 |
| | | | | | RPM | 27693 | 24669 | 22069 | 17985 | 15024 | 13263 | 12005 | 10743 |
| | | | | | FEED | 332 | 296 | 353 | 288 | 361 | 318 | 384 | 430 |
| | 11.2 | | 0.05D | 2D | Vc | 57 | 59 | 64 | 73 | 75 | 81 | 85 | 86 |
| | | | | | fz | 0.003 | 0.004 | 0.004 | 0.005 | 0.007 | 0.008 | 0.009 | 0.011 |
| | | | | | RPM | 18144 | 15650 | 13581 | 11618 | 9549 | 8594 | 7730 | 6844 |
| | | | | | FEED | 218 | 250 | 217 | 232 | 267 | 275 | 278 | 301 |
| K | 15-20 | Grey cast iron Nodular cast iron Malleable cast iron | 0.05D | 2D | Vc | 87 | 93 | 104 | 113 | 118 | 125 | 132 | 135 |
| | | | | | fz | 0.003 | 0.003 | 0.004 | 0.004 | 0.006 | 0.006 | 0.008 | 0.01 |
| | | | | | RPM | 27693 | 24669 | 22069 | 17985 | 15024 | 13263 | 12005 | 10743 |
| | | | | | FEED | 332 | 296 | 353 | 288 | 361 | 318 | 384 | 430 |
| H | 38.1 - 38.2 | Hardened steel | 0.02D | 2D | Vc | 35 | 37 | 40 | 45 | 48 | 50 | 53 | 54 |
| | | | | | fz | 0.003 | 0.003 | 0.004 | 0.005 | 0.005 | 0.006 | 0.007 | 0.008 |
| | | | | | RPM | 11141 | 9815 | 8488 | 7162 | 6112 | 5305 | 4820 | 4297 |
| | | | | | FEED | 134 | 118 | 136 | 143 | 122 | 127 | 135 | 138 |
| | 40 | Chilled Cast Iron | 0.05D | 2D | Vc | 57 | 59 | 64 | 73 | 75 | 81 | 85 | 86 |
| | | | | | fz | 0.003 | 0.004 | 0.004 | 0.005 | 0.007 | 0.008 | 0.009 | 0.011 |
| | | | | | RPM | 18144 | 15650 | 13581 | 11618 | 9549 | 8594 | 7730 | 6844 |
| | | | | | FEED | 218 | 250 | 217 | 232 | 267 | 275 | 278 | 301 |
| | 41 | Hardened Cast Iron | 0.02D | 2D | Vc | 35 | 37 | 40 | 45 | 48 | 50 | 53 | 54 |
| | | | | | fz | 0.003 | 0.003 | 0.004 | 0.005 | 0.005 | 0.006 | 0.007 | 0.008 |
| | | | | | RPM | 11141 | 9815 | 8488 | 7162 | 6112 | 5305 | 4820 | 4297 |
| | | | | | FEED | 134 | 118 | 136 | 143 | 122 | 127 | 135 | 138 |

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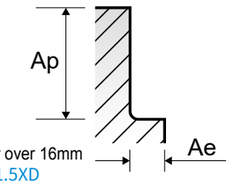



* 1.5XD Axial cutting depth should be for diameter over 16mm
* 如直径超过16mm轴向切削深度(Ap)应为是1.5XD



CARBIDE
HSS
CBN END MILLS
i-Xmill END MILLS
i-SMART MODULAR END MILLS
X5070 END MILLS
4G MILL END MILLS
X-POWER PRO END MILLS
TitaNox-POWER END MILLS
SUS-CUT END MILLS
V7 PLUS END MILLS
ALU-POWER HPC END MILLS
ALU-CUT END MILLS
G-CUT END MILLS
CRX S END MILLS
K-2 END MILLS
GENERAL CARBIDE END MILLS
ONLY ONE COATED PM60 END MILLS
TANK-POWER END MILLS
GENERAL HSS END MILLS
MILLING CUTTERS
TECHNICAL DATA

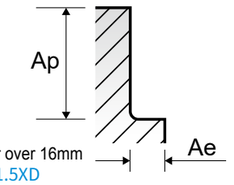
# 4G MILL END MILLS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

### SEME01 SERIES
**4 FLUTE CORNER RADIUS - SIDE CUTTING**
**4刃 圆鼻- 侧铣削**

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| VDI 3323 | Parameter 参数 | Diameter (Ø) 直径 4.5 | 5.0 | 5.5 | 6.0 | 7.0 | 8.0 | 10.0 | 11.0 | 12.0 | 14.0 | 16.0 | 20.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1-5 | Vc | 141 | 144 | 147 | 149 | 153 | 151 | 158 | 158 | 155 | 159 | 156 | 158 |
| | fz | 0.011 | 0.012 | 0.013 | 0.014 | 0.016 | 0.019 | 0.023 | 0.022 | 0.022 | 0.022 | 0.023 | 0.023 |
| | RPM | 9974 | 9167 | 8508 | 7905 | 6957 | 6008 | 5029 | 4572 | 4112 | 3615 | 3104 | 2515 |
| | FEED | 439 | 440 | 442 | 443 | 445 | 457 | 463 | 402 | 362 | 318 | 286 | 231 |
| 6-8 | Vc | 141 | 144 | 147 | 149 | 153 | 151 | 158 | 158 | 155 | 159 | 156 | 158 |
| | fz | 0.011 | 0.012 | 0.013 | 0.014 | 0.016 | 0.019 | 0.023 | 0.022 | 0.022 | 0.022 | 0.023 | 0.023 |
| | RPM | 9974 | 9167 | 8508 | 7905 | 6957 | 6008 | 5029 | 4572 | 4112 | 3615 | 3104 | 2515 |
| | FEED | 439 | 440 | 442 | 443 | 445 | 457 | 463 | 402 | 362 | 318 | 286 | 231 |
| 9 | Vc | 89 | 91 | 94 | 95 | 97 | 96 | 103 | 105 | 105 | 107 | 106 | 103 |
| | fz | 0.013 | 0.016 | 0.017 | 0.018 | 0.02 | 0.024 | 0.027 | 0.028 | 0.029 | 0.028 | 0.027 | 0.027 |
| | RPM | 6295 | 5793 | 5440 | 5040 | 4411 | 3820 | 3279 | 3038 | 2785 | 2433 | 2109 | 1639 |
| | FEED | 327 | 371 | 370 | 363 | 353 | 367 | 354 | 340 | 323 | 272 | 228 | 177 |
| 10 - 11.1 | Vc | 141 | 144 | 147 | 149 | 153 | 151 | 158 | 158 | 155 | 159 | 156 | 158 |
| | fz | 0.011 | 0.012 | 0.013 | 0.014 | 0.016 | 0.019 | 0.023 | 0.022 | 0.022 | 0.022 | 0.023 | 0.023 |
| | RPM | 9974 | 9167 | 8508 | 7905 | 6957 | 6008 | 5029 | 4572 | 4112 | 3615 | 3104 | 2515 |
| | FEED | 439 | 440 | 442 | 443 | 445 | 457 | 463 | 402 | 362 | 318 | 286 | 231 |
| 11.2 | Vc | 89 | 91 | 94 | 95 | 97 | 96 | 103 | 105 | 105 | 107 | 106 | 103 |
| | fz | 0.013 | 0.016 | 0.017 | 0.018 | 0.02 | 0.024 | 0.027 | 0.028 | 0.029 | 0.028 | 0.027 | 0.027 |
| | RPM | 6295 | 5793 | 5440 | 5040 | 4411 | 3820 | 3279 | 3038 | 2785 | 2433 | 2109 | 1639 |
| | FEED | 327 | 371 | 370 | 363 | 353 | 367 | 354 | 340 | 323 | 272 | 228 | 177 |
| 15 - 20 | Vc | 141 | 144 | 147 | 149 | 153 | 151 | 158 | 158 | 155 | 159 | 156 | 158 |
| | fz | 0.011 | 0.012 | 0.013 | 0.014 | 0.016 | 0.019 | 0.023 | 0.022 | 0.022 | 0.022 | 0.023 | 0.023 |
| | RPM | 9974 | 9167 | 8508 | 7905 | 6957 | 6008 | 5029 | 4572 | 4112 | 3615 | 3104 | 2515 |
| | FEED | 439 | 440 | 442 | 443 | 445 | 457 | 463 | 402 | 362 | 318 | 286 | 231 |
| 38.1 - 38.2 | Vc | 57 | 60 | 61 | 62 | 64 | 63 | 63 | 64 | 63 | 65 | 64 | 63 |
| | fz | 0.01 | 0.011 | 0.012 | 0.013 | 0.015 | 0.017 | 0.021 | 0.021 | 0.021 | 0.021 | 0.022 | 0.023 |
| | RPM | 4032 | 3820 | 3530 | 3289 | 2910 | 2507 | 2005 | 1852 | 1671 | 1478 | 1273 | 1003 |
| | FEED | 161 | 168 | 169 | 171 | 175 | 170 | 168 | 156 | 140 | 124 | 112 | 92 |
| 40 | Vc | 89 | 91 | 94 | 95 | 97 | 96 | 103 | 105 | 105 | 107 | 106 | 103 |
| | fz | 0.013 | 0.016 | 0.017 | 0.018 | 0.02 | 0.024 | 0.027 | 0.028 | 0.029 | 0.028 | 0.027 | 0.027 |
| | RPM | 6295 | 5793 | 5440 | 5040 | 4411 | 3820 | 3279 | 3038 | 2785 | 2433 | 2109 | 1639 |
| | FEED | 327 | 371 | 370 | 363 | 353 | 367 | 354 | 340 | 323 | 272 | 228 | 177 |
| 41 | Vc | 57 | 60 | 61 | 62 | 64 | 63 | 63 | 64 | 63 | 65 | 64 | 63 |
| | fz | 0.01 | 0.011 | 0.012 | 0.013 | 0.015 | 0.017 | 0.021 | 0.021 | 0.021 | 0.021 | 0.022 | 0.023 |
| | RPM | 4032 | 3820 | 3530 | 3289 | 2910 | 2507 | 2005 | 1852 | 1671 | 1478 | 1273 | 1003 |
| | FEED | 161 | 168 | 169 | 171 | 175 | 170 | 168 | 156 | 140 | 124 | 112 | 92 |




* 1.5XD Axial cutting depth should be for diameter over 16mm
* 如直径超过16mm轴向切削深度(Ap)应为是1.5XD

# 4G MILL END MILLS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

### SEME64 SERIES
**4 FLUTE CORNER RADIUS - SIDE CUTTING**
**4刃 圆鼻- 侧铣削**

Vc (切削速度) = (m/min.) FEED (进给) = (mm/min.)
fz (每齿进给) = (mm/tooth) Ae (切削宽度) = (mm)
RPM (转速) = (rev./min.) LBS (颈长) = Length Below Shank

| ISO | VDI 3323 | Material Description 工件材料 | Parameter 参数 | Diameter (Ø) 直径 | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 |
| | | | LBS | 4 | 6 | 8 | 10 | 12 | 16 | 20 | 22 | 26 | 3 | 4 | 6 | 8 | 10 | 12 | 16 |
| P | 1-5 | Non-alloy steel | Vc | 104 | 94 | 94 | 94 | 83 | 62 | 62 | 31 | 31 | 112 | 112 | 112 | 101 | 101 | 101 | 90 |
| | | | fz | 0.003 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.002 |
| | | | RPM | 33104 | 29921 | 29921 | 29921 | 26420 | 19735 | 19735 | 9868 | 9868 | 29709 | 29709 | 29709 | 26791 | 26791 | 26791 | 23873 |
| | | | FEED | 397 | 239 | 239 | 239 | 211 | 158 | 158 | 79 | 79 | 357 | 357 | 357 | 321 | 321 | 321 | 191 |
| | | | Ae | 0.021 | 0.012 | 0.012 | 0.008 | 0.008 | 0.005 | 0.003 | 0.003 | 0.003 | 0.036 | 0.025 | 0.025 | 0.014 | 0.009 | 0.009 | 0.005 |
| | 6-8 | Low alloy steel | Vc | 104 | 94 | 94 | 94 | 83 | 62 | 62 | 31 | 31 | 112 | 112 | 112 | 101 | 101 | 101 | 90 |
| | | | fz | 0.003 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.002 |
| | | | RPM | 33104 | 29921 | 29921 | 29921 | 26420 | 19735 | 19735 | 9868 | 9868 | 29709 | 29709 | 29709 | 26791 | 26791 | 26791 | 23873 |
| | | | FEED | 397 | 239 | 239 | 239 | 211 | 158 | 158 | 79 | 79 | 357 | 357 | 357 | 321 | 321 | 321 | 191 |
| | | | Ae | 0.021 | 0.012 | 0.012 | 0.008 | 0.008 | 0.005 | 0.003 | 0.003 | 0.003 | 0.036 | 0.025 | 0.025 | 0.014 | 0.009 | 0.009 | 0.005 |
| | 9 | | Vc | 68 | 61 | 61 | 61 | 54 | 41 | 41 | 20 | 20 | 71 | 71 | 71 | 64 | 64 | 64 | 57 |
| | | | fz | 0.003 | 0.003 | 0.003 | 0.003 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.004 | 0.004 | 0.004 | 0.003 | 0.003 | 0.003 | 0.003 |
| | | | RPM | 21645 | 19417 | 19417 | 19417 | 17189 | 13051 | 13051 | 6366 | 6366 | 18833 | 18833 | 18833 | 16977 | 16977 | 16977 | 15120 |
| | | | FEED | 260 | 233 | 233 | 233 | 138 | 104 | 104 | 51 | 51 | 301 | 301 | 301 | 204 | 204 | 204 | 181 |
| | | | Ae | 0.016 | 0.009 | 0.009 | 0.006 | 0.006 | 0.003 | 0.002 | 0.002 | 0.002 | 0.027 | 0.01 | 0.019 | 0.011 | 0.007 | 0.007 | 0.004 |
| | 10-11.1 | High alloyed steel, and tool steel | Vc | 104 | 94 | 94 | 94 | 83 | 62 | 62 | 31 | 31 | 112 | 112 | 112 | 101 | 101 | 101 | 90 |
| | | | fz | 0.003 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.002 |
| | | | RPM | 33104 | 29921 | 29921 | 29921 | 26420 | 19735 | 19735 | 9868 | 9868 | 29709 | 29709 | 29709 | 26791 | 26791 | 26791 | 23873 |
| | | | FEED | 397 | 239 | 239 | 239 | 211 | 158 | 158 | 79 | 79 | 357 | 357 | 357 | 321 | 321 | 321 | 191 |
| | | | Ae | 0.021 | 0.012 | 0.012 | 0.008 | 0.008 | 0.005 | 0.003 | 0.003 | 0.003 | 0.036 | 0.025 | 0.025 | 0.014 | 0.009 | 0.009 | 0.005 |
| | 11.2 | | Vc | 68 | 61 | 61 | 61 | 54 | 41 | 41 | 20 | 20 | 71 | 71 | 71 | 64 | 64 | 64 | 57 |
| | | | fz | 0.003 | 0.003 | 0.003 | 0.003 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.004 | 0.004 | 0.004 | 0.003 | 0.003 | 0.003 | 0.003 |
| | | | RPM | 21645 | 19417 | 19417 | 19417 | 17189 | 13051 | 13051 | 6366 | 6366 | 18833 | 18833 | 18833 | 16977 | 16977 | 16977 | 15120 |
| | | | FEED | 260 | 233 | 233 | 233 | 138 | 104 | 104 | 51 | 51 | 301 | 301 | 301 | 204 | 204 | 204 | 181 |
| | | | Ae | 0.016 | 0.009 | 0.009 | 0.006 | 0.006 | 0.003 | 0.002 | 0.002 | 0.002 | 0.027 | 0.01 | 0.019 | 0.011 | 0.007 | 0.007 | 0.004 |
| K | 15-20 | Grey cast iron Nodular cast iron Malleable cast iron | Vc | 104 | 94 | 94 | 94 | 83 | 62 | 62 | 31 | 31 | 112 | 112 | 112 | 101 | 101 | 101 | 90 |
| | | | fz | 0.003 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.002 |
| | | | RPM | 33104 | 29921 | 29921 | 29921 | 26420 | 19735 | 19735 | 9868 | 9868 | 29709 | 29709 | 29709 | 26791 | 26791 | 26791 | 23873 |
| | | | FEED | 397 | 239 | 239 | 239 | 211 | 158 | 158 | 79 | 79 | 357 | 357 | 357 | 321 | 321 | 321 | 191 |
| | | | Ae | 0.021 | 0.012 | 0.012 | 0.008 | 0.008 | 0.005 | 0.003 | 0.003 | 0.003 | 0.036 | 0.025 | 0.025 | 0.014 | 0.009 | 0.009 | 0.005 |
| H | 38.1 - 38.2 | Hardened steel | Vc | 41 | 37 | 37 | 37 | 33 | 25 | 25 | 12 | 12 | 44 | 44 | 44 | 40 | 40 | 40 | 35 |
| | | | fz | 0.003 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.002 |
| | | | RPM | 13051 | 11777 | 11777 | 11777 | 10504 | 7958 | 7958 | 3820 | 3820 | 11671 | 11671 | 11671 | 10610 | 10610 | 10610 | 9284 |
| | | | FEED | 157 | 94 | 94 | 94 | 84 | 64 | 64 | 31 | 31 | 140 | 140 | 140 | 127 | 127 | 127 | 74 |
| | | | Ae | 0.013 | 0.007 | 0.007 | 0.005 | 0.005 | 0.003 | 0.002 | 0.002 | 0.002 | 0.022 | 0.015 | 0.015 | 0.009 | 0.005 | 0.005 | 0.003 |
| | 40 | Chilled Cast Iron | Vc | 68 | 61 | 61 | 61 | 54 | 41 | 41 | 20 | 20 | 71 | 71 | 71 | 64 | 64 | 64 | 57 |
| | | | fz | 0.003 | 0.003 | 0.003 | 0.003 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.004 | 0.004 | 0.004 | 0.003 | 0.003 | 0.003 | 0.003 |
| | | | RPM | 21645 | 19417 | 19417 | 19417 | 17189 | 13051 | 13051 | 6366 | 6366 | 18833 | 18833 | 18833 | 16977 | 16977 | 16977 | 15120 |
| | | | FEED | 260 | 233 | 233 | 233 | 138 | 104 | 104 | 51 | 51 | 301 | 301 | 301 | 204 | 204 | 204 | 181 |
| | | | Ae | 0.016 | 0.009 | 0.009 | 0.006 | 0.006 | 0.003 | 0.002 | 0.002 | 0.002 | 0.027 | 0.01 | 0.019 | 0.011 | 0.007 | 0.007 | 0.004 |
| | 41 | Hardened Cast Iron | Vc | 41 | 37 | 37 | 37 | 33 | 25 | 25 | 12 | 12 | 44 | 44 | 44 | 40 | 40 | 40 | 35 |
| | | | fz | 0.003 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.002 |
| | | | RPM | 13051 | 11777 | 11777 | 11777 | 10504 | 7958 | 7958 | 3820 | 3820 | 11671 | 11671 | 11671 | 10610 | 10610 | 10610 | 9284 |
| | | | FEED | 157 | 94 | 94 | 94 | 84 | 64 | 64 | 31 | 31 | 140 | 140 | 140 | 127 | 127 | 127 | 74 |
| | | | Ae | 0.013 | 0.007 | 0.007 | 0.005 | 0.005 | 0.003 | 0.002 | 0.002 | 0.002 | 0.022 | 0.015 | 0.015 | 0.009 | 0.005 | 0.005 | 0.003 |

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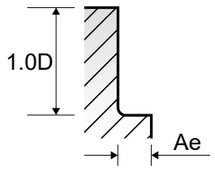




4G MILL END MILLS
RECOMMENDED CUTTING CONDITIONS
推荐加工参数
SEME64 SERIES
4 FLUTE CORNER RADIUS - SIDE CUTTING
4刃 圆鼻- 侧铣削
Vc (切削速度) = (m/min.) FEED (进给) = (mm/min.)
fz (每齿进给) = (mm/tooth) Ae (切削宽度) = (mm)
RPM (转速) = (rev./min.) LBS (颈长) = Length Below Shank

| VDI 3323 | Parameter 参数 | Diameter (Ø) 直径 | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1.2 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.5 |
| | LBS | 20 | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 20 | 22 | 26 | 6 | 8 | 10 | 12 | 14 | 16 | 20 | 22 | 26 | 30 | 8 |
| 1-5 | Vc | 67 | 124 | 124 | 112 | 112 | 112 | 112 | 100 | 100 | 100 | 75 | 136 | 136 | 136 | 122 | 122 | 122 | 122 | 109 | 109 | 109 | 141 |
| | fz | 0.002 | 0.004 | 0.004 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.002 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.005 |
| | RPM | 17772 | 26314 | 26314 | 23767 | 23767 | 23767 | 23767 | 21221 | 21221 | 21221 | 15915 | 21645 | 21645 | 21645 | 19417 | 19417 | 19417 | 19417 | 17348 | 17348 | 17348 | 17953 |
| | FEED | 142 | 421 | 421 | 285 | 285 | 285 | 285 | 255 | 255 | 255 | 127 | 346 | 346 | 346 | 311 | 311 | 311 | 311 | 278 | 278 | 278 | 359 |
| | Ae | 0.004 | 0.045 | 0.032 | 0.018 | 0.018 | 0.018 | 0.011 | 0.011 | 0.007 | 0.007 | 0.005 | 0.06 | 0.042 | 0.042 | 0.024 | 0.024 | 0.024 | 0.015 | 0.015 | 0.015 | 0.009 | 0.053 |
| 6-8 | Vc | 67 | 124 | 124 | 112 | 112 | 112 | 112 | 100 | 100 | 100 | 75 | 136 | 136 | 136 | 122 | 122 | 122 | 122 | 109 | 109 | 109 | 141 |
| | fz | 0.002 | 0.004 | 0.004 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.002 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.005 |
| | RPM | 17772 | 26314 | 26314 | 23767 | 23767 | 23767 | 23767 | 21221 | 21221 | 21221 | 15915 | 21645 | 21645 | 21645 | 19417 | 19417 | 19417 | 19417 | 17348 | 17348 | 17348 | 17953 |
| | FEED | 142 | 421 | 421 | 285 | 285 | 285 | 285 | 255 | 255 | 255 | 127 | 346 | 346 | 346 | 311 | 311 | 311 | 311 | 278 | 278 | 278 | 359 |
| | Ae | 0.004 | 0.045 | 0.032 | 0.018 | 0.018 | 0.018 | 0.011 | 0.011 | 0.007 | 0.007 | 0.005 | 0.06 | 0.042 | 0.042 | 0.024 | 0.024 | 0.024 | 0.015 | 0.015 | 0.015 | 0.009 | 0.053 |
| 9 | Vc | 43 | 76 | 76 | 69 | 69 | 69 | 69 | 61 | 61 | 61 | 46 | 87 | 87 | 87 | 78 | 78 | 78 | 78 | 69 | 69 | 69 | 90 |
| | fz | 0.002 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.003 | 0.003 | 0.003 | 0.003 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.004 | 0.004 | 0.004 | 0.007 |
| | RPM | 11406 | 16128 | 16128 | 14642 | 14642 | 14642 | 14642 | 12945 | 12945 | 12945 | 9762 | 13846 | 13846 | 13846 | 12414 | 12414 | 12414 | 12414 | 10982 | 10982 | 10982 | 11459 |
| | FEED | 91 | 258 | 258 | 234 | 234 | 234 | 234 | 155 | 155 | 155 | 117 | 277 | 277 | 277 | 248 | 248 | 248 | 248 | 176 | 176 | 176 | 321 |
| | Ae | 0.003 | 0.034 | 0.024 | 0.014 | 0.014 | 0.014 | 0.008 | 0.008 | 0.005 | 0.005 | 0.003 | 0.045 | 0.032 | 0.032 | 0.018 | 0.018 | 0.018 | 0.011 | 0.011 | 0.011 | 0.007 | 0.039 |
| 10 - 11.1 | Vc | 67 | 124 | 124 | 112 | 112 | 112 | 112 | 100 | 100 | 100 | 75 | 136 | 136 | 136 | 122 | 122 | 122 | 122 | 109 | 109 | 109 | 141 |
| | fz | 0.002 | 0.004 | 0.004 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.002 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.005 |
| | RPM | 17772 | 26314 | 26314 | 23767 | 23767 | 23767 | 23767 | 21221 | 21221 | 21221 | 15915 | 21645 | 21645 | 21645 | 19417 | 19417 | 19417 | 19417 | 17348 | 17348 | 17348 | 17953 |
| | FEED | 142 | 421 | 421 | 285 | 285 | 285 | 285 | 255 | 255 | 255 | 127 | 346 | 346 | 346 | 311 | 311 | 311 | 311 | 278 | 278 | 278 | 359 |
| | Ae | 0.004 | 0.045 | 0.032 | 0.018 | 0.018 | 0.018 | 0.011 | 0.011 | 0.007 | 0.007 | 0.005 | 0.06 | 0.042 | 0.042 | 0.024 | 0.024 | 0.024 | 0.015 | 0.015 | 0.015 | 0.009 | 0.053 |
| 11.2 | Vc | 43 | 76 | 76 | 69 | 69 | 69 | 69 | 61 | 61 | 61 | 46 | 87 | 87 | 87 | 78 | 78 | 78 | 78 | 69 | 69 | 69 | 90 |
| | fz | 0.002 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.003 | 0.003 | 0.003 | 0.003 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.004 | 0.004 | 0.004 | 0.007 |
| | RPM | 11406 | 16128 | 16128 | 14642 | 14642 | 14642 | 14642 | 12945 | 12945 | 12945 | 9762 | 13846 | 13846 | 13846 | 12414 | 12414 | 12414 | 12414 | 10982 | 10982 | 10982 | 11459 |
| | FEED | 91 | 258 | 258 | 234 | 234 | 234 | 234 | 155 | 155 | 155 | 117 | 277 | 277 | 277 | 248 | 248 | 248 | 248 | 176 | 176 | 176 | 321 |
| | Ae | 0.003 | 0.034 | 0.024 | 0.014 | 0.014 | 0.014 | 0.008 | 0.008 | 0.005 | 0.005 | 0.003 | 0.045 | 0.032 | 0.032 | 0.018 | 0.018 | 0.018 | 0.011 | 0.011 | 0.011 | 0.007 | 0.039 |
| 15 - 20 | Vc | 67 | 124 | 124 | 112 | 112 | 112 | 112 | 100 | 100 | 100 | 75 | 136 | 136 | 136 | 122 | 122 | 122 | 122 | 109 | 109 | 109 | 141 |
| | fz | 0.002 | 0.004 | 0.004 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.002 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.005 |
| | RPM | 17772 | 26314 | 26314 | 23767 | 23767 | 23767 | 23767 | 21221 | 21221 | 21221 | 15915 | 21645 | 21645 | 21645 | 19417 | 19417 | 19417 | 19417 | 17348 | 17348 | 17348 | 17953 |
| | FEED | 142 | 421 | 421 | 285 | 285 | 285 | 285 | 255 | 255 | 255 | 127 | 346 | 346 | 346 | 311 | 311 | 311 | 311 | 278 | 278 | 278 | 359 |
| | Ae | 0.004 | 0.045 | 0.032 | 0.018 | 0.018 | 0.018 | 0.011 | 0.011 | 0.007 | 0.007 | 0.005 | 0.06 | 0.042 | 0.042 | 0.024 | 0.024 | 0.024 | 0.015 | 0.015 | 0.015 | 0.009 | 0.053 |
| 38.1 - 38.2 | Vc | 26 | 48 | 48 | 43 | 43 | 43 | 43 | 38 | 38 | 38 | 29 | 54 | 54 | 54 | 49 | 49 | 49 | 49 | 43 | 43 | 43 | 57 |
| | fz | 0.002 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.002 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.003 | 0.003 | 0.003 | 0.005 |
| | RPM | 6897 | 10186 | 10186 | 9125 | 9125 | 9125 | 9125 | 8064 | 8064 | 8064 | 6154 | 8594 | 8594 | 8594 | 7799 | 7799 | 7799 | 7799 | 6844 | 6844 | 6844 | 7257 |
| | FEED | 55 | 122 | 122 | 109 | 109 | 109 | 109 | 97 | 97 | 97 | 49 | 138 | 138 | 138 | 125 | 125 | 125 | 125 | 82 | 82 | 82 | 145 |
| | Ae | 0.002 | 0.027 | 0.019 | 0.011 | 0.011 | 0.011 | 0.007 | 0.007 | 0.004 | 0.004 | 0.003 | 0.036 | 0.025 | 0.025 | 0.014 | 0.014 | 0.014 | 0.009 | 0.009 | 0.009 | 0.005 | 0.032 |
| 40 | Vc | 43 | 76 | 76 | 69 | 69 | 69 | 69 | 61 | 61 | 61 | 46 | 87 | 87 | 87 | 78 | 78 | 78 | 78 | 69 | 69 | 69 | 90 |
| | fz | 0.002 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.003 | 0.003 | 0.003 | 0.003 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.004 | 0.004 | 0.004 | 0.007 |
| | RPM | 11406 | 16128 | 16128 | 14642 | 14642 | 14642 | 14642 | 12945 | 12945 | 12945 | 9762 | 13846 | 13846 | 13846 | 12414 | 12414 | 12414 | 12414 | 10982 | 10982 | 10982 | 11459 |
| | FEED | 91 | 258 | 258 | 234 | 234 | 234 | 234 | 155 | 155 | 155 | 117 | 277 | 277 | 277 | 248 | 248 | 248 | 248 | 176 | 176 | 176 | 321 |
| | Ae | 0.003 | 0.034 | 0.024 | 0.014 | 0.014 | 0.014 | 0.008 | 0.008 | 0.005 | 0.005 | 0.003 | 0.045 | 0.032 | 0.032 | 0.018 | 0.018 | 0.018 | 0.011 | 0.011 | 0.011 | 0.007 | 0.039 |
| 41 | Vc | 26 | 48 | 48 | 43 | 43 | 43 | 43 | 38 | 38 | 38 | 29 | 54 | 54 | 54 | 49 | 49 | 49 | 49 | 43 | 43 | 43 | 57 |
| | fz | 0.002 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.002 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.003 | 0.003 | 0.003 | 0.005 |
| | RPM | 6897 | 10186 | 10186 | 9125 | 9125 | 9125 | 9125 | 8064 | 8064 | 8064 | 6154 | 8594 | 8594 | 8594 | 7799 | 7799 | 7799 | 7799 | 6844 | 6844 | 6844 | 7257 |
| | FEED | 55 | 122 | 122 | 109 | 109 | 109 | 109 | 97 | 97 | 97 | 49 | 138 | 138 | 138 | 125 | 125 | 125 | 125 | 82 | 82 | 82 | 145 |
| | Ae | 0.002 | 0.027 | 0.019 | 0.011 | 0.011 | 0.011 | 0.007 | 0.007 | 0.004 | 0.004 | 0.003 | 0.036 | 0.025 | 0.025 | 0.014 | 0.014 | 0.014 | 0.009 | 0.009 | 0.009 | 0.005 | 0.032 |

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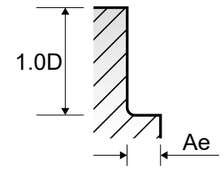

# 4G MILL END MILLS

# RECOMMENDED CUTTING CONDITIONS
# 推荐加工参数

## SEME64 SERIES
### 4 FLUTE CORNER RADIUS - SIDE CUTTING
### 4刃 圆鼻- 侧铣削

Vc (切削速度) = (m/min.) FEED (进给) = (mm/min.)
fz (每齿进给) = (mm/tooth) Ae (切削宽度) = (mm)
RPM (转速) = (rev./min.) LBS (颈长) = Length Below Shank

| ISO | VDI 3323 | Parameter 参数 | Diameter (Ø) 直径 | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 4.0 | 4.0 |
| | | LBS | 10 | 12 | 14 | 16 | 20 | 26 | 30 | 8 | 10 | 12 | 14 | 16 | 20 | 26 | 30 | 35 | 40 | 10 | 12 |
| P | 1-5 | Vc | 141 | 141 | 127 | 127 | 127 | 113 | 113 | 150 | 150 | 150 | 150 | 135 | 135 | 135 | 135 | 120 | 120 | 161 | 161 |
| | | fz | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.004 | 0.004 | 0.006 | 0.006 | 0.006 | 0.006 | 0.006 | 0.006 | 0.006 | 0.006 | 0.005 | 0.005 | 0.01 | 0.01 |
| | | RPM | 17953 | 17953 | 16170 | 16170 | 16170 | 14388 | 14388 | 15915 | 15915 | 15915 | 15915 | 14324 | 14324 | 14324 | 14324 | 12732 | 12732 | 12812 | 12812 |
| | | FEED | 359 | 359 | 323 | 323 | 323 | 230 | 230 | 382 | 382 | 382 | 382 | 344 | 344 | 344 | 344 | 255 | 255 | 512 | 512 |
| | | Ae | 0.053 | 0.053 | 0.03 | 0.03 | 0.03 | 0.019 | 0.019 | 0.09 | 0.063 | 0.063 | 0.063 | 0.036 | 0.036 | 0.023 | 0.023 | 0.023 | 0.014 | 0.12 | 0.12 |
| | 6-8 | Vc | 141 | 141 | 127 | 127 | 127 | 113 | 113 | 150 | 150 | 150 | 150 | 135 | 135 | 135 | 135 | 120 | 120 | 161 | 161 |
| | | fz | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.004 | 0.004 | 0.006 | 0.006 | 0.006 | 0.006 | 0.006 | 0.006 | 0.006 | 0.006 | 0.005 | 0.005 | 0.01 | 0.01 |
| | | RPM | 17953 | 17953 | 16170 | 16170 | 16170 | 14388 | 14388 | 15915 | 15915 | 15915 | 15915 | 14324 | 14324 | 14324 | 14324 | 12732 | 12732 | 12812 | 12812 |
| | | FEED | 359 | 359 | 323 | 323 | 323 | 230 | 230 | 382 | 382 | 382 | 382 | 344 | 344 | 344 | 344 | 255 | 255 | 512 | 512 |
| | | Ae | 0.053 | 0.053 | 0.03 | 0.03 | 0.03 | 0.019 | 0.019 | 0.09 | 0.063 | 0.063 | 0.063 | 0.036 | 0.036 | 0.023 | 0.023 | 0.023 | 0.014 | 0.12 | 0.12 |
| | 9 | Vc | 90 | 90 | 81 | 81 | 81 | 72 | 72 | 97 | 97 | 97 | 97 | 87 | 87 | 87 | 87 | 78 | 78 | 103 | 103 |
| | | fz | 0.007 | 0.007 | 0.006 | 0.006 | 0.006 | 0.005 | 0.005 | 0.008 | 0.008 | 0.008 | 0.008 | 0.007 | 0.007 | 0.007 | 0.007 | 0.006 | 0.006 | 0.011 | 0.011 |
| | | RPM | 11459 | 11459 | 10313 | 10313 | 10313 | 9167 | 9167 | 10292 | 10292 | 10292 | 10292 | 9231 | 9231 | 9231 | 9231 | 8276 | 8276 | 8196 | 8196 |
| | | FEED | 321 | 321 | 248 | 248 | 248 | 183 | 183 | 329 | 329 | 329 | 329 | 258 | 258 | 258 | 258 | 199 | 199 | 361 | 361 |
| | | Ae | 0.039 | 0.039 | 0.023 | 0.023 | 0.023 | 0.014 | 0.014 | 0.068 | 0.047 | 0.047 | 0.047 | 0.027 | 0.027 | 0.017 | 0.017 | 0.017 | 0.01 | 0.09 | 0.09 |
| | 10-11.1 | Vc | 141 | 141 | 127 | 127 | 127 | 113 | 113 | 150 | 150 | 150 | 150 | 135 | 135 | 135 | 135 | 120 | 120 | 161 | 161 |
| | | fz | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.004 | 0.004 | 0.006 | 0.006 | 0.006 | 0.006 | 0.006 | 0.006 | 0.006 | 0.006 | 0.005 | 0.005 | 0.01 | 0.01 |
| | | RPM | 17953 | 17953 | 16170 | 16170 | 16170 | 14388 | 14388 | 15915 | 15915 | 15915 | 15915 | 14324 | 14324 | 14324 | 14324 | 12732 | 12732 | 12812 | 12812 |
| | | FEED | 359 | 359 | 323 | 323 | 323 | 230 | 230 | 382 | 382 | 382 | 382 | 344 | 344 | 344 | 344 | 255 | 255 | 512 | 512 |
| | | Ae | 0.053 | 0.053 | 0.03 | 0.03 | 0.03 | 0.019 | 0.019 | 0.09 | 0.063 | 0.063 | 0.063 | 0.036 | 0.036 | 0.023 | 0.023 | 0.023 | 0.014 | 0.12 | 0.12 |
| | 11.2 | Vc | 90 | 90 | 81 | 81 | 81 | 72 | 72 | 97 | 97 | 97 | 97 | 87 | 87 | 87 | 87 | 78 | 78 | 103 | 103 |
| | | fz | 0.007 | 0.007 | 0.006 | 0.006 | 0.006 | 0.005 | 0.005 | 0.008 | 0.008 | 0.008 | 0.008 | 0.007 | 0.007 | 0.007 | 0.007 | 0.006 | 0.006 | 0.011 | 0.011 |
| | | RPM | 11459 | 11459 | 10313 | 10313 | 10313 | 9167 | 9167 | 10292 | 10292 | 10292 | 10292 | 9231 | 9231 | 9231 | 9231 | 8276 | 8276 | 8196 | 8196 |
| | | FEED | 321 | 321 | 248 | 248 | 248 | 183 | 183 | 329 | 329 | 329 | 329 | 258 | 258 | 258 | 258 | 199 | 199 | 361 | 361 |
| | | Ae | 0.039 | 0.039 | 0.023 | 0.023 | 0.023 | 0.014 | 0.014 | 0.068 | 0.047 | 0.047 | 0.047 | 0.027 | 0.027 | 0.017 | 0.017 | 0.017 | 0.01 | 0.09 | 0.09 |
| K | 15-20 | Vc | 141 | 141 | 127 | 127 | 127 | 113 | 113 | 150 | 150 | 150 | 150 | 135 | 135 | 135 | 135 | 120 | 120 | 161 | 161 |
| | | fz | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.004 | 0.004 | 0.006 | 0.006 | 0.006 | 0.006 | 0.006 | 0.006 | 0.006 | 0.006 | 0.005 | 0.005 | 0.01 | 0.01 |
| | | RPM | 17953 | 17953 | 16170 | 16170 | 16170 | 14388 | 14388 | 15915 | 15915 | 15915 | 15915 | 14324 | 14324 | 14324 | 14324 | 12732 | 12732 | 12812 | 12812 |
| | | FEED | 359 | 359 | 323 | 323 | 323 | 230 | 230 | 382 | 382 | 382 | 382 | 344 | 344 | 344 | 344 | 255 | 255 | 512 | 512 |
| | | Ae | 0.053 | 0.053 | 0.03 | 0.03 | 0.03 | 0.019 | 0.019 | 0.09 | 0.063 | 0.063 | 0.063 | 0.036 | 0.036 | 0.023 | 0.023 | 0.023 | 0.014 | 0.12 | 0.12 |
| H | 38.1 - 38.2 | Vc | 57 | 57 | 52 | 52 | 52 | 46 | 46 | 59 | 59 | 59 | 59 | 53 | 53 | 53 | 53 | 48 | 48 | 65 | 65 |
| | | fz | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.004 | 0.004 | 0.006 | 0.006 | 0.006 | 0.006 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.008 | 0.008 |
| | | RPM | 7257 | 7257 | 6621 | 6621 | 6621 | 5857 | 5857 | 6260 | 6260 | 6260 | 6260 | 5623 | 5623 | 5623 | 5623 | 5093 | 5093 | 5173 | 5173 |
| | | FEED | 145 | 145 | 132 | 132 | 132 | 94 | 94 | 150 | 150 | 150 | 150 | 112 | 112 | 112 | 112 | 102 | 102 | 166 | 166 |
| | | Ae | 0.032 | 0.032 | 0.018 | 0.018 | 0.018 | 0.011 | 0.011 | 0.054 | 0.038 | 0.038 | 0.038 | 0.022 | 0.022 | 0.014 | 0.014 | 0.014 | 0.008 | 0.072 | 0.072 |
| | 40 | Vc | 90 | 90 | 81 | 81 | 81 | 72 | 72 | 97 | 97 | 97 | 97 | 87 | 87 | 87 | 87 | 78 | 78 | 103 | 103 |
| | | fz | 0.007 | 0.007 | 0.006 | 0.006 | 0.006 | 0.005 | 0.005 | 0.008 | 0.008 | 0.008 | 0.008 | 0.007 | 0.007 | 0.007 | 0.007 | 0.006 | 0.006 | 0.011 | 0.011 |
| | | RPM | 11459 | 11459 | 10313 | 10313 | 10313 | 9167 | 9167 | 10292 | 10292 | 10292 | 10292 | 9231 | 9231 | 9231 | 9231 | 8276 | 8276 | 8196 | 8196 |
| | | FEED | 321 | 321 | 248 | 248 | 248 | 183 | 183 | 329 | 329 | 329 | 329 | 258 | 258 | 258 | 258 | 199 | 199 | 361 | 361 |
| | | Ae | 0.039 | 0.039 | 0.023 | 0.023 | 0.023 | 0.014 | 0.014 | 0.068 | 0.047 | 0.047 | 0.047 | 0.027 | 0.027 | 0.017 | 0.017 | 0.017 | 0.01 | 0.09 | 0.09 |
| | 41 | Vc | 57 | 57 | 52 | 52 | 52 | 46 | 46 | 59 | 59 | 59 | 59 | 53 | 53 | 53 | 53 | 48 | 48 | 65 | 65 |
| | | fz | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.004 | 0.004 | 0.006 | 0.006 | 0.006 | 0.006 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.008 | 0.008 |
| | | RPM | 7257 | 7257 | 6621 | 6621 | 6621 | 5857 | 5857 | 6260 | 6260 | 6260 | 6260 | 5623 | 5623 | 5623 | 5623 | 5093 | 5093 | 5173 | 5173 |
| | | FEED | 145 | 145 | 132 | 132 | 132 | 94 | 94 | 150 | 150 | 150 | 150 | 112 | 112 | 112 | 112 | 102 | 102 | 166 | 166 |
| | | Ae | 0.032 | 0.032 | 0.018 | 0.018 | 0.018 | 0.011 | 0.011 | 0.054 | 0.038 | 0.038 | 0.038 | 0.022 | 0.022 | 0.014 | 0.014 | 0.014 | 0.008 | 0.072 | 0.072 |

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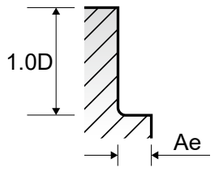
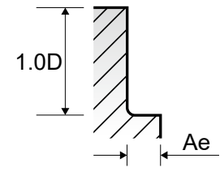





4G MILL END MILLS
RECOMMENDED CUTTING CONDITIONS
推荐加工参数
SEME64 SERIES
4 FLUTE CORNER RADIUS - SIDE CUTTING
4刃 圆鼻- 侧铣削
Vc (切削速度) = (m/min.) FEED (进给) = (mm/min.)
fz (每齿进给) = (mm/tooth) Ae (切削宽度) = (mm)
RPM (转速) = (rev./min.) LBS (颈长) = Length Below Shank

| VDI 3323 | Parameter 参数 | Diameter (Ø) 直径 | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 5.0 | 6.0 | 6.0 | 8.0 | 8.0 | 10.0 | 10.0 | 12.0 | 12.0 | 16.0 | 16.0 | 20.0 | 20.0 |
| | LBS | 14 | 16 | 20 | 26 | 30 | 35 | 40 | 45 | 50 | 15 | 20 | 30 | 25 | 35 | 30 | 40 | 32 | 45 | 35 | 50 | 40 | 55 |
| 1-5 | Vc | 161 | 161 | 161 | 145 | 145 | 145 | 145 | 129 | 129 | 173 | 179 | 179 | 181 | 181 | 188 | 188 | 188 | 188 | 187 | 187 | 188 | 188 |
| | fz | 0.01 | 0.01 | 0.01 | 0.009 | 0.009 | 0.009 | 0.009 | 0.008 | 0.008 | 0.012 | 0.013 | 0.013 | 0.019 | 0.019 | 0.023 | 0.023 | 0.022 | 0.022 | 0.022 | 0.022 | 0.023 | 0.023 |
| | RPM | 12812 | 12812 | 12812 | 11539 | 11539 | 11539 | 11539 | 10265 | 10265 | 11014 | 9496 | 9496 | 7202 | 7202 | 5984 | 5984 | 4987 | 4987 | 3720 | 3720 | 2992 | 2992 |
| | FEED | 512 | 512 | 512 | 415 | 415 | 415 | 415 | 328 | 328 | 529 | 494 | 494 | 547 | 547 | 551 | 551 | 439 | 439 | 327 | 327 | 275 | 275 |
| | Ae | 0.084 | 0.084 | 0.084 | 0.048 | 0.048 | 0.03 | 0.03 | 0.03 | 0.03 | 0.15 | 0.126 | 0.126 | 0.168 | 0.168 | 0.3 | 0.21 | 0.36 | 0.252 | 0.48 | 0.336 | 0.6 | 0.6 |
| 6-8 | Vc | 161 | 161 | 161 | 145 | 145 | 145 | 145 | 129 | 129 | 173 | 179 | 179 | 181 | 181 | 188 | 188 | 188 | 188 | 187 | 187 | 188 | 188 |
| | fz | 0.01 | 0.01 | 0.01 | 0.009 | 0.009 | 0.009 | 0.009 | 0.008 | 0.008 | 0.012 | 0.013 | 0.013 | 0.019 | 0.019 | 0.023 | 0.023 | 0.022 | 0.022 | 0.022 | 0.022 | 0.023 | 0.023 |
| | RPM | 12812 | 12812 | 12812 | 11539 | 11539 | 11539 | 11539 | 10265 | 10265 | 11014 | 9496 | 9496 | 7202 | 7202 | 5984 | 5984 | 4987 | 4987 | 3720 | 3720 | 2992 | 2992 |
| | FEED | 512 | 512 | 512 | 415 | 415 | 415 | 415 | 328 | 328 | 529 | 494 | 494 | 547 | 547 | 551 | 551 | 439 | 439 | 327 | 327 | 275 | 275 |
| | Ae | 0.084 | 0.084 | 0.084 | 0.048 | 0.048 | 0.03 | 0.03 | 0.03 | 0.03 | 0.15 | 0.126 | 0.126 | 0.168 | 0.168 | 0.3 | 0.21 | 0.36 | 0.252 | 0.48 | 0.336 | 0.6 | 0.6 |
| 9 | Vc | 103 | 103 | 103 | 93 | 93 | 93 | 93 | 82 | 82 | 110 | 113 | 113 | 114 | 114 | 126 | 126 | 126 | 126 | 127 | 127 | 123 | 123 |
| | fz | 0.011 | 0.011 | 0.011 | 0.01 | 0.01 | 0.01 | 0.01 | 0.009 | 0.009 | 0.015 | 0.018 | 0.018 | 0.024 | 0.024 | 0.027 | 0.027 | 0.028 | 0.028 | 0.028 | 0.028 | 0.027 | 0.027 |
| | RPM | 8196 | 8196 | 8196 | 7401 | 7401 | 7401 | 7401 | 6525 | 6525 | 7003 | 5995 | 5995 | 4536 | 4536 | 4011 | 4011 | 3342 | 3342 | 2527 | 2527 | 1958 | 1958 |
| | FEED | 361 | 361 | 361 | 296 | 296 | 296 | 296 | 235 | 235 | 420 | 432 | 432 | 435 | 435 | 433 | 433 | 374 | 374 | 283 | 283 | 211 | 211 |
| | Ae | 0.063 | 0.063 | 0.063 | 0.036 | 0.036 | 0.023 | 0.023 | 0.023 | 0.023 | 0.113 | 0.095 | 0.095 | 0.126 | 0.126 | 0.225 | 0.158 | 0.27 | 0.189 | 0.36 | 0.252 | 0.45 | 0.45 |
| 10 - 11.1 | Vc | 161 | 161 | 161 | 145 | 145 | 145 | 145 | 129 | 129 | 173 | 179 | 179 | 181 | 181 | 188 | 188 | 188 | 188 | 187 | 187 | 188 | 188 |
| | fz | 0.01 | 0.01 | 0.01 | 0.009 | 0.009 | 0.009 | 0.009 | 0.008 | 0.008 | 0.012 | 0.013 | 0.013 | 0.019 | 0.019 | 0.023 | 0.023 | 0.022 | 0.022 | 0.022 | 0.022 | 0.023 | 0.023 |
| | RPM | 12812 | 12812 | 12812 | 11539 | 11539 | 11539 | 11539 | 10265 | 10265 | 11014 | 9496 | 9496 | 7202 | 7202 | 5984 | 5984 | 4987 | 4987 | 3720 | 3720 | 2992 | 2992 |
| | FEED | 512 | 512 | 512 | 415 | 415 | 415 | 415 | 328 | 328 | 529 | 494 | 494 | 547 | 547 | 551 | 551 | 439 | 439 | 327 | 327 | 275 | 275 |
| | Ae | 0.084 | 0.084 | 0.084 | 0.048 | 0.048 | 0.03 | 0.03 | 0.03 | 0.03 | 0.15 | 0.126 | 0.126 | 0.168 | 0.168 | 0.3 | 0.21 | 0.36 | 0.252 | 0.48 | 0.336 | 0.6 | 0.6 |
| 11.2 | Vc | 103 | 103 | 103 | 93 | 93 | 93 | 93 | 82 | 82 | 110 | 113 | 113 | 114 | 114 | 126 | 126 | 126 | 126 | 127 | 127 | 123 | 123 |
| | fz | 0.011 | 0.011 | 0.011 | 0.01 | 0.01 | 0.01 | 0.01 | 0.009 | 0.009 | 0.015 | 0.018 | 0.018 | 0.024 | 0.024 | 0.027 | 0.027 | 0.028 | 0.028 | 0.028 | 0.028 | 0.027 | 0.027 |
| | RPM | 8196 | 8196 | 8196 | 7401 | 7401 | 7401 | 7401 | 6525 | 6525 | 7003 | 5995 | 5995 | 4536 | 4536 | 4011 | 4011 | 3342 | 3342 | 2527 | 2527 | 1958 | 1958 |
| | FEED | 361 | 361 | 361 | 296 | 296 | 296 | 296 | 235 | 235 | 420 | 432 | 432 | 435 | 435 | 433 | 433 | 374 | 374 | 283 | 283 | 211 | 211 |
| | Ae | 0.063 | 0.063 | 0.063 | 0.036 | 0.036 | 0.023 | 0.023 | 0.023 | 0.023 | 0.113 | 0.095 | 0.095 | 0.126 | 0.126 | 0.225 | 0.158 | 0.27 | 0.189 | 0.36 | 0.252 | 0.45 | 0.45 |
| 15 - 20 | Vc | 161 | 161 | 161 | 145 | 145 | 145 | 145 | 129 | 129 | 173 | 179 | 179 | 181 | 181 | 188 | 188 | 188 | 188 | 187 | 187 | 188 | 188 |
| | fz | 0.01 | 0.01 | 0.01 | 0.009 | 0.009 | 0.009 | 0.009 | 0.008 | 0.008 | 0.012 | 0.013 | 0.013 | 0.019 | 0.019 | 0.023 | 0.023 | 0.022 | 0.022 | 0.022 | 0.022 | 0.023 | 0.023 |
| | RPM | 12812 | 12812 | 12812 | 11539 | 11539 | 11539 | 11539 | 10265 | 10265 | 11014 | 9496 | 9496 | 7202 | 7202 | 5984 | 5984 | 4987 | 4987 | 3720 | 3720 | 2992 | 2992 |
| | FEED | 512 | 512 | 512 | 415 | 415 | 415 | 415 | 328 | 328 | 529 | 494 | 494 | 547 | 547 | 551 | 551 | 439 | 439 | 327 | 327 | 275 | 275 |
| | Ae | 0.084 | 0.084 | 0.084 | 0.048 | 0.048 | 0.03 | 0.03 | 0.03 | 0.03 | 0.15 | 0.126 | 0.126 | 0.168 | 0.168 | 0.3 | 0.21 | 0.36 | 0.252 | 0.48 | 0.336 | 0.6 | 0.6 |
| 38.1 - 38.2 | Vc | 65 | 65 | 65 | 58 | 58 | 58 | 58 | 52 | 52 | 72 | 74 | 74 | 76 | 76 | 76 | 76 | 75 | 75 | 77 | 77 | 75 | 75 |
| | fz | 0.008 | 0.008 | 0.008 | 0.007 | 0.007 | 0.007 | 0.007 | 0.006 | 0.006 | 0.011 | 0.013 | 0.013 | 0.017 | 0.017 | 0.021 | 0.021 | 0.02 | 0.02 | 0.022 | 0.022 | 0.021 | 0.021 |
| | RPM | 5173 | 5173 | 5173 | 4615 | 4615 | 4615 | 4615 | 4138 | 4138 | 4584 | 3926 | 3926 | 3024 | 3024 | 2419 | 2419 | 1989 | 1989 | 1532 | 1532 | 1194 | 1194 |
| | FEED | 166 | 166 | 166 | 129 | 129 | 129 | 129 | 99 | 99 | 202 | 204 | 204 | 206 | 206 | 203 | 203 | 159 | 159 | 135 | 135 | 100 | 100 |
| | Ae | 0.05 | 0.05 | 0.05 | 0.029 | 0.029 | 0.018 | 0.018 | 0.018 | 0.018 | 0.09 | 0.076 | 0.076 | 0.101 | 0.101 | 0.18 | 0.126 | 0.216 | 0.151 | 0.288 | 0.202 | 0.36 | 0.36 |
| 40 | Vc | 103 | 103 | 103 | 93 | 93 | 93 | 93 | 82 | 82 | 110 | 113 | 113 | 114 | 114 | 126 | 126 | 126 | 126 | 127 | 127 | 123 | 123 |
| | fz | 0.011 | 0.011 | 0.011 | 0.01 | 0.01 | 0.01 | 0.01 | 0.009 | 0.009 | 0.015 | 0.018 | 0.018 | 0.024 | 0.024 | 0.027 | 0.027 | 0.028 | 0.028 | 0.028 | 0.028 | 0.027 | 0.027 |
| | RPM | 8196 | 8196 | 8196 | 7401 | 7401 | 7401 | 7401 | 6525 | 6525 | 7003 | 5995 | 5995 | 4536 | 4536 | 4011 | 4011 | 3342 | 3342 | 2527 | 2527 | 1958 | 1958 |
| | FEED | 361 | 361 | 361 | 296 | 296 | 296 | 296 | 235 | 235 | 420 | 432 | 432 | 435 | 435 | 433 | 433 | 374 | 374 | 283 | 283 | 211 | 211 |
| | Ae | 0.063 | 0.063 | 0.063 | 0.036 | 0.036 | 0.023 | 0.023 | 0.023 | 0.023 | 0.113 | 0.095 | 0.095 | 0.126 | 0.126 | 0.225 | 0.158 | 0.27 | 0.189 | 0.36 | 0.252 | 0.45 | 0.45 |
| 41 | Vc | 65 | 65 | 65 | 58 | 58 | 58 | 58 | 52 | 52 | 72 | 74 | 74 | 76 | 76 | 76 | 76 | 75 | 75 | 77 | 77 | 75 | 75 |
| | fz | 0.008 | 0.008 | 0.008 | 0.007 | 0.007 | 0.007 | 0.007 | 0.006 | 0.006 | 0.011 | 0.013 | 0.013 | 0.017 | 0.017 | 0.021 | 0.021 | 0.02 | 0.02 | 0.022 | 0.022 | 0.021 | 0.021 |
| | RPM | 5173 | 5173 | 5173 | 4615 | 4615 | 4615 | 4615 | 4138 | 4138 | 4584 | 3926 | 3926 | 3024 | 3024 | 2419 | 2419 | 1989 | 1989 | 1532 | 1532 | 1194 | 1194 |
| | FEED | 166 | 166 | 166 | 129 | 129 | 129 | 129 | 99 | 99 | 202 | 204 | 204 | 206 | 206 | 203 | 203 | 159 | 159 | 135 | 135 | 100 | 100 |
| | Ae | 0.05 | 0.05 | 0.05 | 0.029 | 0.029 | 0.018 | 0.018 | 0.018 | 0.018 | 0.09 | 0.076 | 0.076 | 0.101 | 0.101 | 0.18 | 0.126 | 0.216 | 0.151 | 0.288 | 0.202 | 0.36 | 0.36 |



# 4G MILL END MILLS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

### SEME35 SERIES — 2 FLUTE - SLOTTING / 2刃- 槽铣削

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description 工件材料 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 0.1 | 0.2 | 0.3 | 0.4 | 0.5 | 0.6 | 0.7 | 0.8 | 0.9 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1-5 | Non-alloy steel | 1.0D | 0.5D (up to Ø3: 0.2D) (up to Ø1: 0.15D) | Vc | 13 | 26 | 37 | 49 | 57 | 60 | 62 | 63 | 66 |
| | | | | | fz | 0.001 | 0.001 | 0.001 | 0.001 | 0.002 | 0.002 | 0.003 | 0.003 | 0.004 |
| | | | | | RPM | 41380 | 41380 | 39258 | 38993 | 36287 | 31831 | 28193 | 25067 | 23343 |
| | | | | | FEED | 83 | 83 | 79 | 78 | 145 | 127 | 169 | 150 | 187 |
| | 6-8 | Low alloy steel | 1.0D | 0.5D (up to Ø3: 0.2D) (up to Ø1: 0.15D) | Vc | 13 | 26 | 37 | 49 | 57 | 60 | 62 | 63 | 66 |
| | | | | | fz | 0.001 | 0.001 | 0.001 | 0.001 | 0.002 | 0.002 | 0.003 | 0.003 | 0.004 |
| | | | | | RPM | 41380 | 41380 | 39258 | 38993 | 36287 | 31831 | 28193 | 25067 | 23343 |
| | | | | | FEED | 83 | 83 | 79 | 78 | 145 | 127 | 169 | 150 | 187 |
| | 9 | | 1.0D | 0.5D (up to Ø3: 0.2D) (up to Ø1: 0.15D) | Vc | 8 | 16 | 22 | 29 | 34 | 36 | 37 | 38 | 40 |
| | | | | | fz | 0.001 | 0.001 | 0.001 | 0.001 | 0.002 | 0.002 | 0.003 | 0.003 | 0.003 |
| | | | | | RPM | 25465 | 25465 | 23343 | 23077 | 21645 | 19099 | 16825 | 15120 | 14147 |
| | | | | | FEED | 51 | 51 | 47 | 46 | 87 | 76 | 101 | 91 | 85 |
| | 10 - 11.1 | High alloyed steel, and tool steel | 1.0D | 0.5D (up to Ø3: 0.2D) (up to Ø1: 0.15D) | Vc | 13 | 26 | 37 | 49 | 57 | 60 | 62 | 63 | 66 |
| | | | | | fz | 0.001 | 0.001 | 0.001 | 0.001 | 0.002 | 0.002 | 0.003 | 0.003 | 0.004 |
| | | | | | RPM | 41380 | 41380 | 39258 | 38993 | 36287 | 31831 | 28193 | 25067 | 23343 |
| | | | | | FEED | 83 | 83 | 79 | 78 | 145 | 127 | 169 | 150 | 187 |
| | 11.2 | | 1.0D | 0.5D (up to Ø3: 0.2D) (up to Ø1: 0.15D) | Vc | 8 | 16 | 22 | 29 | 34 | 36 | 37 | 38 | 40 |
| | | | | | fz | 0.001 | 0.001 | 0.001 | 0.001 | 0.002 | 0.002 | 0.003 | 0.003 | 0.003 |
| | | | | | RPM | 25465 | 25465 | 23343 | 23077 | 21645 | 19099 | 16825 | 15120 | 14147 |
| | | | | | FEED | 51 | 51 | 47 | 46 | 87 | 76 | 101 | 91 | 85 |
| M | 14.1 | Stainless steel | 1.0D | 0.5D (up to Ø1: 0.02D) | Vc | 7 | 13 | 18 | 25 | 28 | 30 | 31 | 31 | 33 |
| | | | | | fz | 0.001 | 0.001 | 0.001 | 0.001 | 0.002 | 0.002 | 0.003 | 0.003 | 0.003 |
| | | | | | RPM | 22282 | 20690 | 19099 | 19894 | 17825 | 15915 | 14097 | 12335 | 11671 |
| | | | | | FEED | 45 | 41 | 38 | 40 | 71 | 64 | 85 | 74 | 70 |
| K | 15-20 | Grey cast iron Nodular cast iron Malleable cast iron | 1.0D | 0.5D (up to Ø3: 0.2D) (up to Ø1: 0.15D) | Vc | 13 | 26 | 37 | 49 | 57 | 60 | 62 | 63 | 66 |
| | | | | | fz | 0.001 | 0.001 | 0.001 | 0.001 | 0.002 | 0.002 | 0.003 | 0.003 | 0.004 |
| | | | | | RPM | 41380 | 41380 | 39258 | 38993 | 36287 | 31831 | 28193 | 25067 | 23343 |
| | | | | | FEED | 83 | 83 | 79 | 78 | 145 | 127 | 169 | 150 | 187 |
| H | 38.1 - 38.2 | Hardened steel | 1.0D | 0.05D (up to Ø1: 0.02D) | Vc | 5 | 11 | 15 | 20 | 23 | 24 | 25 | 25 | 27 |
| | | | | | fz | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.002 | 0.002 |
| | | | | | RPM | 15915 | 17507 | 15915 | 15915 | 14642 | 12732 | 11368 | 9947 | 9549 |
| | | | | | FEED | 16 | 35 | 32 | 32 | 29 | 25 | 23 | 40 | 38 |
| | 40 | Chilled Cast Iron | 1.0D | 0.05D (up to Ø1: 0.02D) | Vc | 8 | 16 | 22 | 29 | 34 | 36 | 37 | 38 | 40 |
| | | | | | fz | 0.001 | 0.001 | 0.001 | 0.001 | 0.002 | 0.002 | 0.003 | 0.003 | 0.003 |
| | | | | | RPM | 25465 | 25465 | 23343 | 23077 | 21645 | 19099 | 16825 | 15120 | 14147 |
| | | | | | FEED | 51 | 51 | 47 | 46 | 87 | 76 | 101 | 91 | 85 |
| | 41 | Hardened Cast Iron | 1.0D | 0.05D (up to Ø1: 0.02D) | Vc | 5 | 11 | 15 | 20 | 23 | 24 | 25 | 25 | 27 |
| | | | | | fz | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.002 | 0.002 |
| | | | | | RPM | 15915 | 17507 | 15915 | 15915 | 14642 | 12732 | 11368 | 9947 | 9549 |
| | | | | | FEED | 16 | 35 | 32 | 32 | 29 | 25 | 23 | 40 | 38 |

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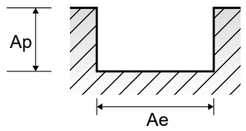




4G MILL END MILLS
RECOMMENDED CUTTING CONDITIONS
推荐加工参数
SEME35 SERIES — 2 FLUTE - SLOTTING / 2刃- 槽铣削
Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| VDI 3323 | Parameter 参数 | Diameter (Ø) 直径 1.0 | 1.2 | 1.5 | 2.0 | 2.5 | 3.0 | 3.5 | 4.0 | 4.5 | 5.0 | 5.5 | 6.0 | 6.5 | 7.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1-5 | Vc | 68 | 68 | 71 | 73 | 80 | 84 | 91 | 95 | 98 | 99 | 102 | 105 | 107 | 107 |
| | fz | 0.004 | 0.005 | 0.006 | 0.009 | 0.01 | 0.012 | 0.016 | 0.021 | 0.023 | 0.027 | 0.03 | 0.033 | 0.036 | 0.039 |
| | RPM | 21645 | 18038 | 15067 | 11618 | 10186 | 8913 | 8276 | 7560 | 6932 | 6303 | 5903 | 5570 | 5240 | 4866 |
| | FEED | 173 | 180 | 181 | 209 | 204 | 214 | 265 | 318 | 319 | 340 | 354 | 368 | 377 | 380 |
| 6-8 | Vc | 68 | 68 | 71 | 73 | 80 | 84 | 91 | 95 | 98 | 99 | 102 | 105 | 107 | 107 |
| | fz | 0.004 | 0.005 | 0.006 | 0.009 | 0.01 | 0.012 | 0.016 | 0.021 | 0.023 | 0.027 | 0.03 | 0.033 | 0.036 | 0.039 |
| | RPM | 21645 | 18038 | 15067 | 11618 | 10186 | 8913 | 8276 | 7560 | 6932 | 6303 | 5903 | 5570 | 5240 | 4866 |
| | FEED | 173 | 180 | 181 | 209 | 204 | 214 | 265 | 318 | 319 | 340 | 354 | 368 | 377 | 380 |
| 9 | Vc | 41 | 41 | 42 | 48 | 52 | 52 | 56 | 58 | 59 | 59 | 62 | 63 | 64 | 65 |
| | fz | 0.004 | 0.005 | 0.006 | 0.008 | 0.01 | 0.013 | 0.017 | 0.021 | 0.023 | 0.026 | 0.03 | 0.034 | 0.036 | 0.037 |
| | RPM | 13051 | 10876 | 8913 | 7639 | 6621 | 5517 | 5093 | 4615 | 4173 | 3756 | 3588 | 3342 | 3134 | 2956 |
| | FEED | 104 | 109 | 107 | 122 | 132 | 143 | 173 | 194 | 192 | 195 | 215 | 227 | 226 | 219 |
| 10 - 11.1 | Vc | 68 | 68 | 71 | 73 | 80 | 84 | 91 | 95 | 98 | 99 | 102 | 105 | 107 | 107 |
| | fz | 0.004 | 0.005 | 0.006 | 0.009 | 0.01 | 0.012 | 0.016 | 0.021 | 0.023 | 0.027 | 0.03 | 0.033 | 0.036 | 0.039 |
| | RPM | 21645 | 18038 | 15067 | 11618 | 10186 | 8913 | 8276 | 7560 | 6932 | 6303 | 5903 | 5570 | 5240 | 4866 |
| | FEED | 173 | 180 | 181 | 209 | 204 | 214 | 265 | 318 | 319 | 340 | 354 | 368 | 377 | 380 |
| 11.2 | Vc | 41 | 41 | 42 | 48 | 52 | 52 | 56 | 58 | 59 | 59 | 62 | 63 | 64 | 65 |
| | fz | 0.004 | 0.005 | 0.006 | 0.008 | 0.01 | 0.013 | 0.017 | 0.021 | 0.023 | 0.026 | 0.03 | 0.034 | 0.036 | 0.037 |
| | RPM | 13051 | 10876 | 8913 | 7639 | 6621 | 5517 | 5093 | 4615 | 4173 | 3756 | 3588 | 3342 | 3134 | 2956 |
| | FEED | 104 | 109 | 107 | 122 | 132 | 143 | 173 | 194 | 192 | 195 | 215 | 227 | 226 | 219 |
| 14.1 | Vc | 34 | 34 | 35 | 40 | 43 | 44 | 47 | 49 | 50 | 50 | 52 | 54 | 54 | 54 |
| | fz | 0.004 | 0.005 | 0.006 | 0.008 | 0.01 | 0.014 | 0.016 | 0.021 | 0.023 | 0.027 | 0.03 | 0.033 | 0.036 | 0.038 |
| | RPM | 10823 | 9019 | 7427 | 6366 | 5475 | 4669 | 4274 | 3899 | 3537 | 3183 | 3009 | 2865 | 2644 | 2456 |
| | FEED | 87 | 90 | 89 | 102 | 109 | 131 | 137 | 164 | 163 | 172 | 181 | 189 | 190 | 187 |
| 15 - 20 | Vc | 68 | 68 | 71 | 73 | 80 | 84 | 91 | 95 | 98 | 99 | 102 | 105 | 107 | 107 |
| | fz | 0.004 | 0.005 | 0.006 | 0.009 | 0.01 | 0.012 | 0.016 | 0.021 | 0.023 | 0.027 | 0.03 | 0.033 | 0.036 | 0.039 |
| | RPM | 21645 | 18038 | 15067 | 11618 | 10186 | 8913 | 8276 | 7560 | 6932 | 6303 | 5903 | 5570 | 5240 | 4866 |
| | FEED | 173 | 180 | 181 | 209 | 204 | 214 | 265 | 318 | 319 | 340 | 354 | 368 | 377 | 380 |
| 38.1 - 38.2 | Vc | 27 | 27 | 28 | 32 | 33 | 32 | 35 | 37 | 37 | 36 | 37 | 38 | 39 | 40 |
| | fz | 0.002 | 0.002 | 0.003 | 0.004 | 0.005 | 0.006 | 0.007 | 0.007 | 0.009 | 0.011 | 0.013 | 0.015 | 0.016 | 0.018 |
| | RPM | 8594 | 7162 | 5942 | 5093 | 4202 | 3395 | 3183 | 2944 | 2617 | 2292 | 2141 | 2016 | 1910 | 1819 |
| | FEED | 34 | 29 | 36 | 41 | 42 | 41 | 45 | 41 | 47 | 50 | 56 | 60 | 61 | 65 |
| 40 | Vc | 41 | 41 | 42 | 48 | 52 | 52 | 56 | 58 | 59 | 59 | 62 | 63 | 64 | 65 |
| | fz | 0.004 | 0.005 | 0.006 | 0.008 | 0.01 | 0.013 | 0.017 | 0.021 | 0.023 | 0.026 | 0.03 | 0.034 | 0.036 | 0.037 |
| | RPM | 13051 | 10876 | 8913 | 7639 | 6621 | 5517 | 5093 | 4615 | 4173 | 3756 | 3588 | 3342 | 3134 | 2956 |
| | FEED | 104 | 109 | 107 | 122 | 132 | 143 | 173 | 194 | 192 | 195 | 215 | 227 | 226 | 219 |
| 41 | Vc | 27 | 27 | 28 | 32 | 33 | 32 | 35 | 37 | 37 | 36 | 37 | 38 | 39 | 40 |
| | fz | 0.002 | 0.002 | 0.003 | 0.004 | 0.005 | 0.006 | 0.007 | 0.007 | 0.009 | 0.011 | 0.013 | 0.015 | 0.016 | 0.018 |
| | RPM | 8594 | 7162 | 5942 | 5093 | 4202 | 3395 | 3183 | 2944 | 2617 | 2292 | 2141 | 2016 | 1910 | 1819 |
| | FEED | 34 | 29 | 36 | 41 | 42 | 41 | 45 | 41 | 47 | 50 | 56 | 60 | 61 | 65 |

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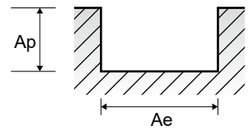

# 4G MILL END MILLS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

**SEME35** SERIES — 2 FLUTE - SLOTTING / 2刃- 槽铣削

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 7.5 | 8.0 | 8.5 | 9.0 | 9.5 | 10.0 | 10.5 | 11.0 | 11.5 | 12.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1-5 | 1.0D | 0.5D (up to Ø3: 0.2D) (up to Ø1: 0.15D) | Vc | 107 | 106 | 106 | 105 | 104 | 102 | 103 | 104 | 104 | 103 |
| | | | | fz | 0.043 | 0.048 | 0.049 | 0.05 | 0.051 | 0.053 | 0.053 | 0.053 | 0.053 | 0.054 |
| | | | | RPM | 4541 | 4218 | 3970 | 3714 | 3485 | 3247 | 3122 | 3009 | 2879 | 2732 |
| | | | | FEED | 391 | 405 | 389 | 371 | 355 | 344 | 331 | 319 | 305 | 295 |
| | 6-8 | 1.0D | 0.5D (up to Ø3: 0.2D) (up to Ø1: 0.15D) | Vc | 107 | 106 | 106 | 105 | 104 | 102 | 103 | 104 | 104 | 103 |
| | | | | fz | 0.043 | 0.048 | 0.049 | 0.05 | 0.051 | 0.053 | 0.053 | 0.053 | 0.053 | 0.054 |
| | | | | RPM | 4541 | 4218 | 3970 | 3714 | 3485 | 3247 | 3122 | 3009 | 2879 | 2732 |
| | | | | FEED | 391 | 405 | 389 | 371 | 355 | 344 | 331 | 319 | 305 | 295 |
| | 9 | 1.0D | 0.5D (up to Ø3: 0.2D) (up to Ø1: 0.15D) | Vc | 64 | 63 | 64 | 64 | 64 | 63 | 63 | 64 | 64 | 63 |
| | | | | fz | 0.039 | 0.042 | 0.042 | 0.042 | 0.042 | 0.043 | 0.042 | 0.041 | 0.04 | 0.04 |
| | | | | RPM | 2716 | 2507 | 2397 | 2264 | 2144 | 2005 | 1910 | 1852 | 1771 | 1671 |
| | | | | FEED | 212 | 211 | 201 | 190 | 180 | 172 | 160 | 152 | 142 | 134 |
| | 10 - 11.1 | 1.0D | 0.5D (up to Ø3: 0.2D) (up to Ø1: 0.15D) | Vc | 107 | 106 | 106 | 105 | 104 | 102 | 103 | 104 | 104 | 103 |
| | | | | fz | 0.043 | 0.048 | 0.049 | 0.05 | 0.051 | 0.053 | 0.053 | 0.053 | 0.053 | 0.054 |
| | | | | RPM | 4541 | 4218 | 3970 | 3714 | 3485 | 3247 | 3122 | 3009 | 2879 | 2732 |
| | | | | FEED | 391 | 405 | 389 | 371 | 355 | 344 | 331 | 319 | 305 | 295 |
| | 11.2 | 1.0D | 0.5D (up to Ø3: 0.2D) (up to Ø1: 0.15D) | Vc | 64 | 63 | 64 | 64 | 64 | 63 | 63 | 64 | 64 | 63 |
| | | | | fz | 0.039 | 0.042 | 0.042 | 0.042 | 0.042 | 0.043 | 0.042 | 0.041 | 0.04 | 0.04 |
| | | | | RPM | 2716 | 2507 | 2397 | 2264 | 2144 | 2005 | 1910 | 1852 | 1771 | 1671 |
| | | | | FEED | 212 | 211 | 201 | 190 | 180 | 172 | 160 | 152 | 142 | 134 |
| M | 14.1 | 1.0D | 0.5D (up to Ø1: 0.02D) | Vc | 54 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 52 | 51 |
| | | | | fz | 0.042 | 0.045 | 0.046 | 0.048 | 0.049 | 0.051 | 0.05 | 0.049 | 0.049 | 0.05 |
| | | | | RPM | 2292 | 2109 | 1985 | 1874 | 1776 | 1687 | 1607 | 1534 | 1439 | 1353 |
| | | | | FEED | 193 | 190 | 183 | 180 | 174 | 172 | 161 | 150 | 141 | 135 |
| K | 15-20 | 1.0D | 0.5D (up to Ø3: 0.2D) (up to Ø1: 0.15D) | Vc | 107 | 106 | 106 | 105 | 104 | 102 | 103 | 104 | 104 | 103 |
| | | | | fz | 0.043 | 0.048 | 0.049 | 0.05 | 0.051 | 0.053 | 0.053 | 0.053 | 0.053 | 0.054 |
| | | | | RPM | 4541 | 4218 | 3970 | 3714 | 3485 | 3247 | 3122 | 3009 | 2879 | 2732 |
| | | | | FEED | 391 | 405 | 389 | 371 | 355 | 344 | 331 | 319 | 305 | 295 |
| H | 38.1 - 38.2 | 1.0D | 0.05D (up to Ø1: 0.02D) | Vc | 41 | 42 | 43 | 43 | 43 | 43 | 43 | 44 | 44 | 44 |
| | | | | fz | 0.021 | 0.024 | 0.023 | 0.022 | 0.022 | 0.023 | 0.023 | 0.023 | 0.024 | 0.025 |
| | | | | RPM | 1740 | 1671 | 1610 | 1521 | 1441 | 1369 | 1304 | 1273 | 1218 | 1167 |
| | | | | FEED | 73 | 80 | 74 | 67 | 63 | 63 | 60 | 59 | 58 | 58 |
| | 40 | 1.0D | 0.05D (up to Ø1: 0.02D) | Vc | 64 | 63 | 64 | 64 | 64 | 63 | 63 | 64 | 64 | 63 |
| | | | | fz | 0.039 | 0.042 | 0.042 | 0.042 | 0.042 | 0.043 | 0.042 | 0.041 | 0.04 | 0.04 |
| | | | | RPM | 2716 | 2507 | 2397 | 2264 | 2144 | 2005 | 1910 | 1852 | 1771 | 1671 |
| | | | | FEED | 212 | 211 | 201 | 190 | 180 | 172 | 160 | 152 | 142 | 134 |
| | 41 | 1.0D | 0.05D (up to Ø1: 0.02D) | Vc | 41 | 42 | 43 | 43 | 43 | 43 | 43 | 44 | 44 | 44 |
| | | | | fz | 0.021 | 0.024 | 0.023 | 0.022 | 0.022 | 0.023 | 0.023 | 0.023 | 0.024 | 0.025 |
| | | | | RPM | 1740 | 1671 | 1610 | 1521 | 1441 | 1369 | 1304 | 1273 | 1218 | 1167 |
| | | | | FEED | 73 | 80 | 74 | 67 | 63 | 63 | 60 | 59 | 58 | 58 |

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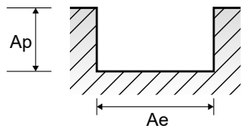




4G MILL END MILLS
RECOMMENDED CUTTING CONDITIONS
推荐加工参数
SEME35 SERIES — 2 FLUTE - SLOTTING / 2刃- 槽铣削
Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| VDI 3323 | Parameter 参数 | Diameter (Ø) 直径 13.0 | 14.0 | 15.0 | 16.0 | 17.0 | 18.0 | 19.0 | 20.0 | 21.0 | 22.0 | 23.0 | 24.0 | 25.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1-5 | Vc | 106 | 109 | 110 | 111 | 111 | 110 | 108 | 106 | 107 | 107 | 107 | 107 | 107 |
| | fz | 0.054 | 0.054 | 0.052 | 0.052 | 0.052 | 0.053 | 0.052 | 0.054 | 0.053 | 0.053 | 0.051 | 0.049 | 0.05 |
| | RPM | 2595 | 2478 | 2334 | 2208 | 2078 | 1945 | 1809 | 1687 | 1622 | 1548 | 1481 | 1419 | 1362 |
| | FEED | 280 | 268 | 243 | 230 | 216 | 206 | 188 | 182 | 172 | 164 | 151 | 139 | 136 |
| 6-8 | Vc | 106 | 109 | 110 | 111 | 111 | 110 | 108 | 106 | 107 | 107 | 107 | 107 | 107 |
| | fz | 0.054 | 0.054 | 0.052 | 0.052 | 0.052 | 0.053 | 0.052 | 0.054 | 0.053 | 0.053 | 0.051 | 0.049 | 0.05 |
| | RPM | 2595 | 2478 | 2334 | 2208 | 2078 | 1945 | 1809 | 1687 | 1622 | 1548 | 1481 | 1419 | 1362 |
| | FEED | 280 | 268 | 243 | 230 | 216 | 206 | 188 | 182 | 172 | 164 | 151 | 139 | 136 |
| 9 | Vc | 65 | 67 | 68 | 68 | 69 | 68 | 68 | 67 | 67 | 67 | 67 | 67 | 66 |
| | fz | 0.041 | 0.041 | 0.042 | 0.042 | 0.041 | 0.041 | 0.04 | 0.04 | 0.04 | 0.041 | 0.042 | 0.043 | 0.044 |
| | RPM | 1592 | 1523 | 1443 | 1353 | 1292 | 1203 | 1139 | 1066 | 1016 | 969 | 927 | 889 | 840 |
| | FEED | 131 | 125 | 121 | 114 | 106 | 99 | 91 | 85 | 81 | 79 | 78 | 76 | 74 |
| 10 - 11.1 | Vc | 106 | 109 | 110 | 111 | 111 | 110 | 108 | 106 | 107 | 107 | 107 | 107 | 107 |
| | fz | 0.054 | 0.054 | 0.052 | 0.052 | 0.052 | 0.053 | 0.052 | 0.054 | 0.053 | 0.053 | 0.051 | 0.049 | 0.05 |
| | RPM | 2595 | 2478 | 2334 | 2208 | 2078 | 1945 | 1809 | 1687 | 1622 | 1548 | 1481 | 1419 | 1362 |
| | FEED | 280 | 268 | 243 | 230 | 216 | 206 | 188 | 182 | 172 | 164 | 151 | 139 | 136 |
| 11.2 | Vc | 65 | 67 | 68 | 68 | 69 | 68 | 68 | 67 | 67 | 67 | 67 | 67 | 66 |
| | fz | 0.041 | 0.041 | 0.042 | 0.042 | 0.041 | 0.041 | 0.04 | 0.04 | 0.04 | 0.041 | 0.042 | 0.043 | 0.044 |
| | RPM | 1592 | 1523 | 1443 | 1353 | 1292 | 1203 | 1139 | 1066 | 1016 | 969 | 927 | 889 | 840 |
| | FEED | 131 | 125 | 121 | 114 | 106 | 99 | 91 | 85 | 81 | 79 | 78 | 76 | 74 |
| 14.1 | Vc | 52 | 53 | 53 | 53 | 54 | 54 | 53 | 53 | 53 | 54 | 54 | 54 | 53 |
| | fz | 0.051 | 0.052 | 0.053 | 0.054 | 0.052 | 0.053 | 0.05 | 0.05 | 0.05 | 0.049 | 0.048 | 0.047 | 0.046 |
| | RPM | 1273 | 1205 | 1125 | 1054 | 1011 | 955 | 888 | 844 | 803 | 781 | 747 | 716 | 675 |
| | FEED | 130 | 125 | 119 | 114 | 105 | 101 | 89 | 84 | 80 | 77 | 72 | 67 | 62 |
| 15 - 20 | Vc | 106 | 109 | 110 | 111 | 111 | 110 | 108 | 106 | 107 | 107 | 107 | 107 | 107 |
| | fz | 0.054 | 0.054 | 0.052 | 0.052 | 0.052 | 0.053 | 0.052 | 0.054 | 0.053 | 0.053 | 0.051 | 0.049 | 0.05 |
| | RPM | 2595 | 2478 | 2334 | 2208 | 2078 | 1945 | 1809 | 1687 | 1622 | 1548 | 1481 | 1419 | 1362 |
| | FEED | 280 | 268 | 243 | 230 | 216 | 206 | 188 | 182 | 172 | 164 | 151 | 139 | 136 |
| 38.1 - 38.2 | Vc | 45 | 45 | 45 | 45 | 45 | 45 | 44 | 43 | 43 | 43 | 43 | 43 | 42 |
| | fz | 0.025 | 0.024 | 0.023 | 0.023 | 0.023 | 0.023 | 0.023 | 0.024 | 0.022 | 0.022 | 0.021 | 0.02 | 0.019 |
| | RPM | 1102 | 1023 | 955 | 895 | 843 | 796 | 737 | 684 | 652 | 622 | 595 | 570 | 535 |
| | FEED | 55 | 49 | 44 | 41 | 39 | 37 | 34 | 33 | 29 | 27 | 25 | 23 | 20 |
| 40 | Vc | 65 | 67 | 68 | 68 | 69 | 68 | 68 | 67 | 67 | 67 | 67 | 67 | 66 |
| | fz | 0.041 | 0.041 | 0.042 | 0.042 | 0.041 | 0.041 | 0.04 | 0.04 | 0.04 | 0.041 | 0.042 | 0.043 | 0.044 |
| | RPM | 1592 | 1523 | 1443 | 1353 | 1292 | 1203 | 1139 | 1066 | 1016 | 969 | 927 | 889 | 840 |
| | FEED | 131 | 125 | 121 | 114 | 106 | 99 | 91 | 85 | 81 | 79 | 78 | 76 | 74 |
| 41 | Vc | 45 | 45 | 45 | 45 | 45 | 45 | 44 | 43 | 43 | 43 | 43 | 43 | 42 |
| | fz | 0.025 | 0.024 | 0.023 | 0.023 | 0.023 | 0.023 | 0.023 | 0.024 | 0.022 | 0.022 | 0.021 | 0.02 | 0.019 |
| | RPM | 1102 | 1023 | 955 | 895 | 843 | 796 | 737 | 684 | 652 | 622 | 595 | 570 | 535 |
| | FEED | 55 | 49 | 44 | 41 | 39 | 37 | 34 | 33 | 29 | 27 | 25 | 23 | 20 |

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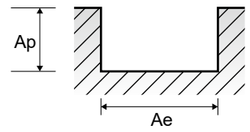




CARBIDE
HSS
CBN END MILLS
i-Xmill END MILLS
i-SMART MODULAR END MILLS
X5070 END MILLS
4G MILL END MILLS
X-POWER PRO END MILLS
TitaNox-POWER END MILLS
SUS-CUT END MILLS
V7 PLUS END MILLS
ALU-POWER HPC END MILLS
ALU-CUT END MILLS
G-CUT END MILLS
CRX S END MILLS
K-2 END MILLS
GENERAL CARBIDE END MILLS
ONLY ONE COATED PM60 END MILLS
TANK-POWER END MILLS
GENERAL HSS END MILLS
MILLING CUTTERS
TECHNICAL DATA

# 4G MILL END MILLS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

### SEME70 SERIES — 2 FLUTE - SLOTTING / 2刃 - 槽铣削

Vc (切削速度) = (m/min.) FEED (进给) = (mm/min.)
fz (每齿进给) = (mm/tooth) LOC (刃长) = Length of Cut
RPM (转速) = (rev./min.)

| ISO | VDI 3323 | Material Description 工件材料 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.2 | 1.2 | 1.2 | 1.2 | |
| | | | | | LOC | 3 | 4 | 5 | 6 | 7 | 8 | 10 | 12 | 4 | 6 | 8 | 10 |
| P | 1-5 | Non-alloy steel | 1.0D | 0.3D (up to Ø3:0.4mm) | Vc | 50 | 50 | 50 | 45 | 45 | 45 | 45 | 40 | 51 | 51 | 46 | 46 |
| | | | | | fz | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.003 | 0.003 | 0.002 | 0.002 |
| | | | | | RPM | 15915 | 15915 | 15915 | 14324 | 14324 | 14324 | 14324 | 12732 | 13528 | 13528 | 12202 | 12202 |
| | | | | | FEED | 64 | 64 | 64 | 57 | 57 | 57 | 57 | 51 | 81 | 81 | 49 | 49 |
| | 6-8 | Low alloy steel | 1.0D | 0.3D (up to Ø3:0.4mm) | Vc | 50 | 50 | 50 | 45 | 45 | 45 | 45 | 40 | 51 | 51 | 46 | 46 |
| | | | | | fz | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.003 | 0.003 | 0.002 | 0.002 |
| | | | | | RPM | 15915 | 15915 | 15915 | 14324 | 14324 | 14324 | 14324 | 12732 | 13528 | 13528 | 12202 | 12202 |
| | | | | | FEED | 64 | 64 | 64 | 57 | 57 | 57 | 57 | 51 | 81 | 81 | 49 | 49 |
| | 9 | | 1.0D | 0.3D (up to Ø3:0.4mm) | Vc | 40 | 40 | 40 | 36 | 36 | 36 | 36 | 32 | 41 | 41 | 37 | 37 |
| | | | | | fz | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.003 | 0.003 | 0.003 | 0.002 |
| | | | | | RPM | 12732 | 12732 | 12732 | 11459 | 11459 | 11459 | 11459 | 10186 | 10876 | 10876 | 9815 | 9815 |
| | | | | | FEED | 51 | 51 | 51 | 46 | 46 | 46 | 46 | 41 | 65 | 65 | 59 | 39 |
| | 10-11.1 | High alloyed steel, and tool steel | 1.0D | 0.3D (up to Ø3:0.4mm) | Vc | 50 | 50 | 50 | 45 | 45 | 45 | 45 | 40 | 51 | 51 | 46 | 46 |
| | | | | | fz | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.003 | 0.003 | 0.002 | 0.002 |
| | | | | | RPM | 15915 | 15915 | 15915 | 14324 | 14324 | 14324 | 14324 | 12732 | 13528 | 13528 | 12202 | 12202 |
| | | | | | FEED | 64 | 64 | 64 | 57 | 57 | 57 | 57 | 51 | 81 | 81 | 49 | 49 |
| | 11.2 | | 1.0D | 0.3D (up to Ø3:0.4mm) | Vc | 40 | 40 | 40 | 36 | 36 | 36 | 36 | 32 | 41 | 41 | 37 | 37 |
| | | | | | fz | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.003 | 0.003 | 0.003 | 0.002 |
| | | | | | RPM | 12732 | 12732 | 12732 | 11459 | 11459 | 11459 | 11459 | 10186 | 10876 | 10876 | 9815 | 9815 |
| | | | | | FEED | 51 | 51 | 51 | 46 | 46 | 46 | 46 | 41 | 65 | 65 | 59 | 39 |
| K | 15-20 | Grey cast iron Nodular cast iron Malleable cast iron | 1.0D | 0.3D (up to Ø3:0.4mm) | Vc | 50 | 50 | 50 | 45 | 45 | 45 | 45 | 40 | 51 | 51 | 46 | 46 |
| | | | | | fz | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.003 | 0.003 | 0.002 | 0.002 |
| | | | | | RPM | 15915 | 15915 | 15915 | 14324 | 14324 | 14324 | 14324 | 12732 | 13528 | 13528 | 12202 | 12202 |
| | | | | | FEED | 64 | 64 | 64 | 57 | 57 | 57 | 57 | 51 | 81 | 81 | 49 | 49 |
| H | 38.1 - 38.2 | Hardened steel | 1.0D | 0.05D | Vc | 25 | 25 | 25 | 23 | 23 | 23 | 23 | 20 | 25 | 25 | 23 | 23 |
| | | | | | fz | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.001 | 0.001 | 0.001 | 0.002 | 0.002 | 0.002 | 0.002 |
| | | | | | RPM | 7958 | 7958 | 7958 | 7321 | 7321 | 7321 | 7321 | 6366 | 6631 | 6631 | 6101 | 6101 |
| | | | | | FEED | 32 | 32 | 32 | 29 | 29 | 15 | 15 | 13 | 27 | 27 | 24 | 24 |
| | 40 | Chilled Cast Iron | 1.0D | 0.3D (up to Ø3:0.4mm) | Vc | 40 | 40 | 40 | 36 | 36 | 36 | 36 | 32 | 41 | 41 | 37 | 37 |
| | | | | | fz | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.003 | 0.003 | 0.003 | 0.002 |
| | | | | | RPM | 12732 | 12732 | 12732 | 11459 | 11459 | 11459 | 11459 | 10186 | 10876 | 10876 | 9815 | 9815 |
| | | | | | FEED | 51 | 51 | 51 | 46 | 46 | 46 | 46 | 41 | 65 | 65 | 59 | 39 |
| | 41 | Hardened Cast Iron | 1.0D | 0.05D | Vc | 25 | 25 | 25 | 23 | 23 | 23 | 23 | 20 | 25 | 25 | 23 | 23 |
| | | | | | fz | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.001 | 0.001 | 0.001 | 0.002 | 0.002 | 0.002 | 0.002 |
| | | | | | RPM | 7958 | 7958 | 7958 | 7321 | 7321 | 7321 | 7321 | 6366 | 6631 | 6631 | 6101 | 6101 |
| | | | | | FEED | 32 | 32 | 32 | 29 | 29 | 15 | 15 | 13 | 27 | 27 | 24 | 24 |

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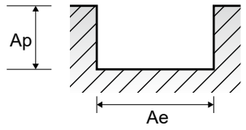




CARBIDE
HSS
CBN END MILLS
i-Xmill END MILLS
i-SMART MODULAR END MILLS
X5070 END MILLS
4G MILL END MILLS
X-POWER PRO END MILLS
TitaNox-POWER END MILLS
SUS-CUT END MILLS
V7 PLUS END MILLS
ALU-POWER HPC END MILLS
ALU-CUT END MILLS
G-CUT END MILLS
CRX S END MILLS
K-2 END MILLS
GENERAL CARBIDE END MILLS
ONLY ONE COATED PM60 END MILLS
TANK-POWER END MILLS
GENERAL HSS END MILLS
MILLING CUTTERS
TECHNICAL DATA

# 4G MILL END MILLS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

### SEME70 SERIES — 2 FLUTE - SLOTTING / 2刃 - 槽铣削

Vc (切削速度) = (m/min.) FEED (进给) = (mm/min.)
fz (每齿进给) = (mm/tooth) LOC (刃长) = Length of Cut
RPM (转速) = (rev./min.)

| VDI 3323 | Parameter 参数 | Diameter (Ø) 直径sa | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1.2 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 3.0 | 3.0 | 3.0 |
| | LOC | 12 | 6 | 8 | 10 | 12 | 14 | 16 | 8 | 10 | 12 | 14 | 16 | 10 | 12 | 16 | 20 | 26 | 10 | 12 | 14 |
| 1-5 | Vc | 46 | 53 | 48 | 48 | 48 | 48 | 42 | 57 | 57 | 51 | 51 | 51 | 60 | 60 | 54 | 54 | 48 | 60 | 60 | 60 |
| | fz | 0.002 | 0.004 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.005 | 0.005 | 0.004 | 0.004 | 0.004 | 0.006 | 0.006 | 0.005 | 0.005 | 0.004 | 0.008 | 0.008 | 0.008 |
| | RPM | 12202 | 11247 | 10186 | 10186 | 10186 | 10186 | 8913 | 9072 | 9072 | 8117 | 8117 | 8117 | 7639 | 7639 | 6875 | 6875 | 6112 | 6366 | 6366 | 6366 |
| | FEED | 49 | 90 | 61 | 61 | 61 | 61 | 53 | 91 | 91 | 65 | 65 | 65 | 92 | 92 | 69 | 69 | 49 | 102 | 102 | 102 |
| 6-8 | Vc | 46 | 53 | 48 | 48 | 48 | 48 | 42 | 57 | 57 | 51 | 51 | 51 | 60 | 60 | 54 | 54 | 48 | 60 | 60 | 60 |
| | fz | 0.002 | 0.004 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.005 | 0.005 | 0.004 | 0.004 | 0.004 | 0.006 | 0.006 | 0.005 | 0.005 | 0.004 | 0.008 | 0.008 | 0.008 |
| | RPM | 12202 | 11247 | 10186 | 10186 | 10186 | 10186 | 8913 | 9072 | 9072 | 8117 | 8117 | 8117 | 7639 | 7639 | 6875 | 6875 | 6112 | 6366 | 6366 | 6366 |
| | FEED | 49 | 90 | 61 | 61 | 61 | 61 | 53 | 91 | 91 | 65 | 65 | 65 | 92 | 92 | 69 | 69 | 49 | 102 | 102 | 102 |
| 9 | Vc | 37 | 42 | 38 | 38 | 38 | 38 | 34 | 46 | 46 | 41 | 41 | 41 | 49 | 49 | 44 | 44 | 39 | 49 | 49 | 49 |
| | fz | 0.002 | 0.004 | 0.004 | 0.003 | 0.003 | 0.003 | 0.003 | 0.005 | 0.005 | 0.005 | 0.005 | 0.004 | 0.006 | 0.006 | 0.006 | 0.005 | 0.005 | 0.008 | 0.008 | 0.008 |
| | RPM | 9815 | 8913 | 8064 | 8064 | 8064 | 8064 | 7215 | 7321 | 7321 | 6525 | 6525 | 6525 | 6239 | 6239 | 5602 | 5602 | 4966 | 5199 | 5199 | 5199 |
| | FEED | 39 | 71 | 65 | 48 | 48 | 48 | 43 | 73 | 73 | 65 | 65 | 52 | 75 | 75 | 67 | 56 | 50 | 83 | 83 | 83 |
| 10 - 11.1 | Vc | 46 | 53 | 48 | 48 | 48 | 48 | 42 | 57 | 57 | 51 | 51 | 51 | 60 | 60 | 54 | 54 | 48 | 60 | 60 | 60 |
| | fz | 0.002 | 0.004 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.005 | 0.005 | 0.004 | 0.004 | 0.004 | 0.006 | 0.006 | 0.005 | 0.005 | 0.004 | 0.008 | 0.008 | 0.008 |
| | RPM | 12202 | 11247 | 10186 | 10186 | 10186 | 10186 | 8913 | 9072 | 9072 | 8117 | 8117 | 8117 | 7639 | 7639 | 6875 | 6875 | 6112 | 6366 | 6366 | 6366 |
| | FEED | 49 | 90 | 61 | 61 | 61 | 61 | 53 | 91 | 91 | 65 | 65 | 65 | 92 | 92 | 69 | 69 | 49 | 102 | 102 | 102 |
| 11.2 | Vc | 37 | 42 | 38 | 38 | 38 | 38 | 34 | 46 | 46 | 41 | 41 | 41 | 49 | 49 | 44 | 44 | 39 | 49 | 49 | 49 |
| | fz | 0.002 | 0.004 | 0.004 | 0.003 | 0.003 | 0.003 | 0.003 | 0.005 | 0.005 | 0.005 | 0.005 | 0.004 | 0.006 | 0.006 | 0.006 | 0.005 | 0.005 | 0.008 | 0.008 | 0.008 |
| | RPM | 9815 | 8913 | 8064 | 8064 | 8064 | 8064 | 7215 | 7321 | 7321 | 6525 | 6525 | 6525 | 6239 | 6239 | 5602 | 5602 | 4966 | 5199 | 5199 | 5199 |
| | FEED | 39 | 71 | 65 | 48 | 48 | 48 | 43 | 73 | 73 | 65 | 65 | 52 | 75 | 75 | 67 | 56 | 50 | 83 | 83 | 83 |
| 15 - 20 | Vc | 46 | 53 | 48 | 48 | 48 | 48 | 42 | 57 | 57 | 51 | 51 | 51 | 60 | 60 | 54 | 54 | 48 | 60 | 60 | 60 |
| | fz | 0.002 | 0.004 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.005 | 0.005 | 0.004 | 0.004 | 0.004 | 0.006 | 0.006 | 0.005 | 0.005 | 0.004 | 0.008 | 0.008 | 0.008 |
| | RPM | 12202 | 11247 | 10186 | 10186 | 10186 | 10186 | 8913 | 9072 | 9072 | 8117 | 8117 | 8117 | 7639 | 7639 | 6875 | 6875 | 6112 | 6366 | 6366 | 6366 |
| | FEED | 49 | 90 | 61 | 61 | 61 | 61 | 53 | 91 | 91 | 65 | 65 | 65 | 92 | 92 | 69 | 69 | 49 | 102 | 102 | 102 |
| 38.1 - 38.2 | Vc | 23 | 26 | 24 | 24 | 24 | 24 | 21 | 29 | 29 | 26 | 26 | 26 | 30 | 30 | 27 | 27 | 24 | 30 | 30 | 30 |
| | fz | 0.002 | 0.003 | 0.003 | 0.002 | 0.002 | 0.002 | 0.002 | 0.004 | 0.004 | 0.004 | 0.004 | 0.003 | 0.005 | 0.005 | 0.004 | 0.004 | 0.003 | 0.006 | 0.006 | 0.006 |
| | RPM | 6101 | 5517 | 5093 | 5093 | 5093 | 5093 | 4456 | 4615 | 4615 | 4138 | 4138 | 4138 | 3820 | 3820 | 3438 | 3438 | 3056 | 3183 | 3183 | 3183 |
| | FEED | 24 | 33 | 31 | 20 | 20 | 20 | 18 | 37 | 37 | 33 | 33 | 25 | 38 | 38 | 28 | 28 | 18 | 38 | 38 | 38 |
| 40 | Vc | 37 | 42 | 38 | 38 | 38 | 38 | 34 | 46 | 46 | 41 | 41 | 41 | 49 | 49 | 44 | 44 | 39 | 49 | 49 | 49 |
| | fz | 0.002 | 0.004 | 0.004 | 0.003 | 0.003 | 0.003 | 0.003 | 0.005 | 0.005 | 0.005 | 0.005 | 0.004 | 0.006 | 0.006 | 0.006 | 0.005 | 0.005 | 0.008 | 0.008 | 0.008 |
| | RPM | 9815 | 8913 | 8064 | 8064 | 8064 | 8064 | 7215 | 7321 | 7321 | 6525 | 6525 | 6525 | 6239 | 6239 | 5602 | 5602 | 4966 | 5199 | 5199 | 5199 |
| | FEED | 39 | 71 | 65 | 48 | 48 | 48 | 43 | 73 | 73 | 65 | 65 | 52 | 75 | 75 | 67 | 56 | 50 | 83 | 83 | 83 |
| 41 | Vc | 23 | 26 | 24 | 24 | 24 | 24 | 21 | 29 | 29 | 26 | 26 | 26 | 30 | 30 | 27 | 27 | 24 | 30 | 30 | 30 |
| | fz | 0.002 | 0.003 | 0.003 | 0.002 | 0.002 | 0.002 | 0.002 | 0.004 | 0.004 | 0.004 | 0.004 | 0.003 | 0.005 | 0.005 | 0.004 | 0.004 | 0.003 | 0.006 | 0.006 | 0.006 |
| | RPM | 6101 | 5517 | 5093 | 5093 | 5093 | 5093 | 4456 | 4615 | 4615 | 4138 | 4138 | 4138 | 3820 | 3820 | 3438 | 3438 | 3056 | 3183 | 3183 | 3183 |
| | FEED | 24 | 33 | 31 | 20 | 20 | 20 | 18 | 37 | 37 | 33 | 33 | 25 | 38 | 38 | 28 | 28 | 18 | 38 | 38 | 38 |

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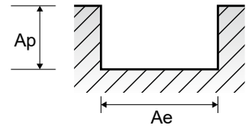

# 4G MILL END MILLS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

### SEME70 SERIES — 2 FLUTE - SLOTTING
### 2刃 - 槽铣削

Vc (切削速度) = (m/min.) FEED (进给) = (mm/min.)
fz (每齿进给) = (mm/tooth) LOC (刃长) = Length of Cut
RPM (转速) = (rev./min.)

| ISO | VDI 3323 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | LOC | 3.0 | 3.0 | 3.0 | 3.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 6.0 |
| | | | | | 16 | 20 | 26 | 30 | 12 | 16 | 20 | 26 | 30 | 20 | 25 | 30 | 35 | 40 | 15 |
| P | 1-5 | 1.0D | 0.3D (up to Ø3:0.4mm) | Vc | 54 | 54 | 54 | 54 | 65 | 65 | 65 | 58 | 58 | 69 | 69 | 62 | 62 | 62 | 72 |
| | | | | fz | 0.008 | 0.007 | 0.006 | 0.006 | 0.012 | 0.012 | 0.012 | 0.01 | 0.01 | 0.017 | 0.017 | 0.015 | 0.015 | 0.014 | 0.024 |
| | | | | RPM | 5730 | 5730 | 5730 | 5730 | 5173 | 5173 | 5173 | 4615 | 4615 | 4393 | 4393 | 3947 | 3947 | 3947 | 3820 |
| | | | | FEED | 92 | 80 | 69 | 69 | 124 | 124 | 124 | 92 | 92 | 149 | 149 | 118 | 118 | 111 | 183 |
| | 6-8 | 1.0D | 0.3D (up to Ø3:0.4mm) | Vc | 54 | 54 | 54 | 54 | 65 | 65 | 65 | 58 | 58 | 69 | 69 | 62 | 62 | 62 | 72 |
| | | | | fz | 0.008 | 0.007 | 0.006 | 0.006 | 0.012 | 0.012 | 0.012 | 0.01 | 0.01 | 0.017 | 0.017 | 0.015 | 0.015 | 0.014 | 0.024 |
| | | | | RPM | 5730 | 5730 | 5730 | 5730 | 5173 | 5173 | 5173 | 4615 | 4615 | 4393 | 4393 | 3947 | 3947 | 3947 | 3820 |
| | | | | FEED | 92 | 80 | 69 | 69 | 124 | 124 | 124 | 92 | 92 | 149 | 149 | 118 | 118 | 111 | 183 |
| | 9 | 1.0D | 0.3D (up to Ø3:0.4mm) | Vc | 44 | 44 | 44 | 44 | 52 | 52 | 52 | 46 | 46 | 55 | 55 | 49 | 49 | 49 | 57 |
| | | | | fz | 0.008 | 0.008 | 0.006 | 0.006 | 0.012 | 0.012 | 0.012 | 0.012 | 0.012 | 0.018 | 0.018 | 0.016 | 0.016 | 0.014 | 0.025 |
| | | | | RPM | 4669 | 4669 | 4669 | 4669 | 4138 | 4138 | 4138 | 3661 | 3661 | 3501 | 3501 | 3119 | 3119 | 3119 | 3024 |
| | | | | FEED | 75 | 75 | 56 | 56 | 99 | 99 | 99 | 88 | 88 | 126 | 126 | 100 | 100 | 87 | 151 |
| | 10-11.1 | 1.0D | 0.3D (up to Ø3:0.4mm) | Vc | 54 | 54 | 54 | 54 | 65 | 65 | 65 | 58 | 58 | 69 | 69 | 62 | 62 | 62 | 72 |
| | | | | fz | 0.008 | 0.007 | 0.006 | 0.006 | 0.012 | 0.012 | 0.012 | 0.01 | 0.01 | 0.017 | 0.017 | 0.015 | 0.015 | 0.014 | 0.024 |
| | | | | RPM | 5730 | 5730 | 5730 | 5730 | 5173 | 5173 | 5173 | 4615 | 4615 | 4393 | 4393 | 3947 | 3947 | 3947 | 3820 |
| | | | | FEED | 92 | 80 | 69 | 69 | 124 | 124 | 124 | 92 | 92 | 149 | 149 | 118 | 118 | 111 | 183 |
| | 11.2 | 1.0D | 0.3D (up to Ø3:0.4mm) | Vc | 44 | 44 | 44 | 44 | 52 | 52 | 52 | 46 | 46 | 55 | 55 | 49 | 49 | 49 | 57 |
| | | | | fz | 0.008 | 0.008 | 0.006 | 0.006 | 0.012 | 0.012 | 0.012 | 0.012 | 0.012 | 0.018 | 0.018 | 0.016 | 0.016 | 0.014 | 0.025 |
| | | | | RPM | 4669 | 4669 | 4669 | 4669 | 4138 | 4138 | 4138 | 3661 | 3661 | 3501 | 3501 | 3119 | 3119 | 3119 | 3024 |
| | | | | FEED | 75 | 75 | 56 | 56 | 99 | 99 | 99 | 88 | 88 | 126 | 126 | 100 | 100 | 87 | 151 |
| K | 15-20 | 1.0D | 0.3D (up to Ø3:0.4mm) | Vc | 54 | 54 | 54 | 54 | 65 | 65 | 65 | 58 | 58 | 69 | 69 | 62 | 62 | 62 | 72 |
| | | | | fz | 0.008 | 0.007 | 0.006 | 0.006 | 0.012 | 0.012 | 0.012 | 0.01 | 0.01 | 0.017 | 0.017 | 0.015 | 0.015 | 0.014 | 0.024 |
| | | | | RPM | 5730 | 5730 | 5730 | 5730 | 5173 | 5173 | 5173 | 4615 | 4615 | 4393 | 4393 | 3947 | 3947 | 3947 | 3820 |
| | | | | FEED | 92 | 80 | 69 | 69 | 124 | 124 | 124 | 92 | 92 | 149 | 149 | 118 | 118 | 111 | 183 |
| H | 38.1 - 38.2 | 1.0D | 0.05D | Vc | 27 | 27 | 27 | 27 | 32 | 32 | 32 | 29 | 29 | 36 | 36 | 32 | 32 | 32 | 37 |
| | | | | fz | 0.007 | 0.006 | 0.005 | 0.005 | 0.01 | 0.01 | 0.01 | 0.009 | 0.009 | 0.012 | 0.012 | 0.011 | 0.011 | 0.01 | 0.018 |
| | | | | RPM | 2865 | 2865 | 2865 | 2865 | 2546 | 2546 | 2546 | 2308 | 2308 | 2292 | 2292 | 2037 | 2037 | 2037 | 1963 |
| | | | | FEED | 40 | 34 | 29 | 29 | 51 | 51 | 51 | 42 | 42 | 55 | 55 | 45 | 45 | 41 | 71 |
| | 40 | 1.0D | 0.3D (up to Ø3:0.4mm) | Vc | 44 | 44 | 44 | 44 | 52 | 52 | 52 | 46 | 46 | 55 | 55 | 49 | 49 | 49 | 57 |
| | | | | fz | 0.008 | 0.008 | 0.006 | 0.006 | 0.012 | 0.012 | 0.012 | 0.012 | 0.012 | 0.018 | 0.018 | 0.016 | 0.016 | 0.014 | 0.025 |
| | | | | RPM | 4669 | 4669 | 4669 | 4669 | 4138 | 4138 | 4138 | 3661 | 3661 | 3501 | 3501 | 3119 | 3119 | 3119 | 3024 |
| | | | | FEED | 75 | 75 | 56 | 56 | 99 | 99 | 99 | 88 | 88 | 126 | 126 | 100 | 100 | 87 | 151 |
| | 41 | 1.0D | 0.05D | Vc | 27 | 27 | 27 | 27 | 32 | 32 | 32 | 29 | 29 | 36 | 36 | 32 | 32 | 32 | 37 |
| | | | | fz | 0.007 | 0.006 | 0.005 | 0.005 | 0.01 | 0.01 | 0.01 | 0.009 | 0.009 | 0.012 | 0.012 | 0.011 | 0.011 | 0.01 | 0.018 |
| | | | | RPM | 4669 | 4669 | 4669 | 4669 | 4138 | 4138 | 4138 | 3661 | 3661 | 3501 | 3501 | 3119 | 3119 | 3119 | 3024 |
| | | | | FEED | 75 | 75 | 56 | 56 | 99 | 99 | 99 | 88 | 88 | 126 | 126 | 100 | 100 | 87 | 151 |

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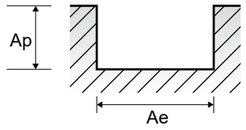




4G MILL END MILLS
RECOMMENDED CUTTING CONDITIONS
推荐加工参数
SEME70 SERIES — 2 FLUTE - SLOTTING
2刃 - 槽铣削
Vc (切削速度) = (m/min.) FEED (进给) = (mm/min.)
fz (每齿进给) = (mm/tooth) LOC (刃长) = Length of Cut
RPM (转速) = (rev./min.)

| VDI 3323 | Parameter 参数 | Diameter (Ø) 直径 | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | LOC | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 12.0 |
| | | 20 | 25 | 30 | 35 | 40 | 45 | 25 | 30 | 35 | 40 | 45 | 50 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 35 |
| 1-5 | Vc | 72 | 72 | 72 | 64 | 64 | 64 | 72 | 72 | 72 | 72 | 65 | 65 | 77 | 77 | 77 | 77 | 77 | 69 | 69 | 75 |
| | fz | 0.024 | 0.024 | 0.02 | 0.02 | 0.018 | 0.018 | 0.033 | 0.033 | 0.033 | 0.028 | 0.028 | 0.025 | 0.039 | 0.039 | 0.039 | 0.033 | 0.033 | 0.033 | 0.029 | 0.038 |
| | RPM | 3820 | 3820 | 3820 | 3395 | 3395 | 3395 | 2865 | 2865 | 2865 | 2865 | 2586 | 2586 | 2451 | 2451 | 2451 | 2451 | 2451 | 2196 | 2196 | 1989 |
| | FEED | 183 | 183 | 153 | 136 | 122 | 122 | 189 | 189 | 189 | 160 | 145 | 129 | 191 | 191 | 191 | 162 | 162 | 145 | 127 | 151 |
| 6-8 | Vc | 72 | 72 | 72 | 64 | 64 | 64 | 72 | 72 | 72 | 72 | 65 | 65 | 77 | 77 | 77 | 77 | 77 | 69 | 69 | 75 |
| | fz | 0.024 | 0.024 | 0.02 | 0.02 | 0.018 | 0.018 | 0.033 | 0.033 | 0.033 | 0.028 | 0.028 | 0.025 | 0.039 | 0.039 | 0.039 | 0.033 | 0.033 | 0.033 | 0.029 | 0.038 |
| | RPM | 3820 | 3820 | 3820 | 3395 | 3395 | 3395 | 2865 | 2865 | 2865 | 2865 | 2586 | 2586 | 2451 | 2451 | 2451 | 2451 | 2451 | 2196 | 2196 | 1989 |
| | FEED | 183 | 183 | 153 | 136 | 122 | 122 | 189 | 189 | 189 | 160 | 145 | 129 | 191 | 191 | 191 | 162 | 162 | 145 | 127 | 151 |
| 9 | Vc | 57 | 57 | 57 | 52 | 52 | 52 | 57 | 57 | 57 | 57 | 52 | 52 | 63 | 63 | 63 | 63 | 63 | 57 | 57 | 63 |
| | fz | 0.025 | 0.025 | 0.021 | 0.021 | 0.018 | 0.018 | 0.033 | 0.033 | 0.033 | 0.027 | 0.028 | 0.024 | 0.038 | 0.038 | 0.038 | 0.031 | 0.031 | 0.032 | 0.028 | 0.04 |
| | RPM | 3024 | 3024 | 3024 | 2759 | 2759 | 2759 | 2268 | 2268 | 2268 | 2268 | 2069 | 2069 | 2005 | 2005 | 2005 | 2005 | 2005 | 1814 | 1814 | 1671 |
| | FEED | 151 | 151 | 127 | 116 | 99 | 99 | 150 | 150 | 150 | 122 | 116 | 99 | 152 | 152 | 152 | 124 | 124 | 116 | 102 | 134 |
| 10 - 11.1 | Vc | 72 | 72 | 72 | 64 | 64 | 64 | 72 | 72 | 72 | 72 | 65 | 65 | 77 | 77 | 77 | 77 | 77 | 69 | 69 | 75 |
| | fz | 0.024 | 0.024 | 0.02 | 0.02 | 0.018 | 0.018 | 0.033 | 0.033 | 0.033 | 0.028 | 0.028 | 0.025 | 0.039 | 0.039 | 0.039 | 0.033 | 0.033 | 0.033 | 0.029 | 0.038 |
| | RPM | 3820 | 3820 | 3820 | 3395 | 3395 | 3395 | 2865 | 2865 | 2865 | 2865 | 2586 | 2586 | 2451 | 2451 | 2451 | 2451 | 2451 | 2196 | 2196 | 1989 |
| | FEED | 183 | 183 | 153 | 136 | 122 | 122 | 189 | 189 | 189 | 160 | 145 | 129 | 191 | 191 | 191 | 162 | 162 | 145 | 127 | 151 |
| 11.2 | Vc | 57 | 57 | 57 | 52 | 52 | 52 | 57 | 57 | 57 | 57 | 52 | 52 | 63 | 63 | 63 | 63 | 63 | 57 | 57 | 63 |
| | fz | 0.025 | 0.025 | 0.021 | 0.021 | 0.018 | 0.018 | 0.033 | 0.033 | 0.033 | 0.027 | 0.028 | 0.024 | 0.038 | 0.038 | 0.038 | 0.031 | 0.031 | 0.032 | 0.028 | 0.04 |
| | RPM | 3024 | 3024 | 3024 | 2759 | 2759 | 2759 | 2268 | 2268 | 2268 | 2268 | 2069 | 2069 | 2005 | 2005 | 2005 | 2005 | 2005 | 1814 | 1814 | 1671 |
| | FEED | 151 | 151 | 127 | 116 | 99 | 99 | 150 | 150 | 150 | 122 | 116 | 99 | 152 | 152 | 152 | 124 | 124 | 116 | 102 | 134 |
| 15 - 20 | Vc | 72 | 72 | 72 | 64 | 64 | 64 | 72 | 72 | 72 | 72 | 65 | 65 | 77 | 77 | 77 | 77 | 77 | 69 | 69 | 75 |
| | fz | 0.024 | 0.024 | 0.02 | 0.02 | 0.018 | 0.018 | 0.033 | 0.033 | 0.033 | 0.028 | 0.028 | 0.025 | 0.039 | 0.039 | 0.039 | 0.033 | 0.033 | 0.033 | 0.029 | 0.038 |
| | RPM | 3820 | 3820 | 3820 | 3395 | 3395 | 3395 | 2865 | 2865 | 2865 | 2865 | 2586 | 2586 | 2451 | 2451 | 2451 | 2451 | 2451 | 2196 | 2196 | 1989 |
| | FEED | 183 | 183 | 153 | 136 | 122 | 122 | 189 | 189 | 189 | 160 | 145 | 129 | 191 | 191 | 191 | 162 | 162 | 145 | 127 | 151 |
| 38.1 - 38.2 | Vc | 37 | 37 | 37 | 33 | 33 | 33 | 38 | 38 | 38 | 38 | 34 | 34 | 38 | 38 | 38 | 38 | 38 | 34 | 34 | 38 |
| | fz | 0.018 | 0.018 | 0.015 | 0.016 | 0.014 | 0.014 | 0.023 | 0.023 | 0.023 | 0.02 | 0.02 | 0.018 | 0.029 | 0.029 | 0.029 | 0.025 | 0.025 | 0.025 | 0.023 | 0.027 |
| | RPM | 1963 | 1963 | 1963 | 1751 | 1751 | 1751 | 1512 | 1512 | 1512 | 1512 | 1353 | 1353 | 1210 | 1210 | 1210 | 1210 | 1210 | 1082 | 1082 | 1008 |
| | FEED | 71 | 71 | 59 | 56 | 49 | 49 | 70 | 70 | 70 | 60 | 54 | 49 | 70 | 70 | 70 | 60 | 60 | 54 | 50 | 54 |
| 40 | Vc | 57 | 57 | 57 | 52 | 52 | 52 | 57 | 57 | 57 | 57 | 52 | 52 | 63 | 63 | 63 | 63 | 63 | 57 | 57 | 63 |
| | fz | 0.025 | 0.025 | 0.021 | 0.021 | 0.018 | 0.018 | 0.033 | 0.033 | 0.033 | 0.027 | 0.028 | 0.024 | 0.038 | 0.038 | 0.038 | 0.031 | 0.031 | 0.032 | 0.028 | 0.04 |
| | RPM | 3024 | 3024 | 3024 | 2759 | 2759 | 2759 | 2268 | 2268 | 2268 | 2268 | 2069 | 2069 | 2005 | 2005 | 2005 | 2005 | 2005 | 1814 | 1814 | 1671 |
| | FEED | 151 | 151 | 127 | 116 | 99 | 99 | 150 | 150 | 150 | 122 | 116 | 99 | 152 | 152 | 152 | 124 | 124 | 116 | 102 | 134 |
| 41 | Vc | 37 | 37 | 37 | 33 | 33 | 33 | 38 | 38 | 38 | 38 | 34 | 34 | 38 | 38 | 38 | 38 | 38 | 34 | 34 | 38 |
| | fz | 0.018 | 0.018 | 0.015 | 0.016 | 0.014 | 0.014 | 0.023 | 0.023 | 0.023 | 0.02 | 0.02 | 0.018 | 0.029 | 0.029 | 0.029 | 0.025 | 0.025 | 0.025 | 0.023 | 0.027 |
| | RPM | 1963 | 1963 | 1963 | 1751 | 1751 | 1751 | 1512 | 1512 | 1512 | 1512 | 1353 | 1353 | 1210 | 1210 | 1210 | 1210 | 1210 | 1082 | 1082 | 1008 |
| | FEED | 71 | 71 | 59 | 56 | 49 | 49 | 70 | 70 | 70 | 60 | 54 | 49 | 70 | 70 | 70 | 60 | 60 | 54 | 50 | 54 |

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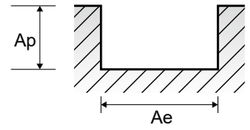




CARBIDE
HSS
CBN END MILLS
i-Xmill END MILLS
i-SMART MODULAR END MILLS
X5070 END MILLS
4G MILL END MILLS
X-POWER PRO END MILLS
TitaNox-POWER END MILLS
SUS-CUT END MILLS
V7 PLUS END MILLS
ALU-POWER HPC END MILLS
ALU-CUT END MILLS
G-CUT END MILLS
CRX S END MILLS
K-2 END MILLS
GENERAL CARBIDE END MILLS
ONLY ONE COATED PM60 END MILLS
TANK-POWER END MILLS
GENERAL HSS END MILLS
MILLING CUTTERS
TECHNICAL DATA

# 4G MILL END MILLS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

### SEME70 SERIES — 2 FLUTE - SLOTTING
### 2刃 - 槽铣削

Vc (切削速度) = (m/min.) FEED (进给) = (mm/min.)
fz (每齿进给) = (mm/tooth) LOC (刀长) = Length of Cut
RPM (转速) = (rev./min.)

| ISO | VDI 3323 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | LOC | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 14.0 | 14.0 | 16.0 | 16.0 | 16.0 | 16.0 | 16.0 | 16.0 |
| | | | | | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 50 | 60 | 40 | 50 | 60 | 70 | 80 | |
| P | 1-5 | 1.0D | 0.3D (up to Ø3:0.4mm) | Vc | 75 | 75 | 75 | 75 | 75 | 68 | 68 | 81 | 81 | 85 | 85 | 85 | 85 | 85 | |
| | | | | fz | 0.038 | 0.033 | 0.033 | 0.033 | 0.028 | 0.028 | 0.028 | 0.034 | 0.034 | 0.041 | 0.041 | 0.035 | 0.035 | 0.031 | |
| | | | | RPM | 1989 | 1989 | 1989 | 1989 | 1989 | 1804 | 1804 | 1842 | 1842 | 1691 | 1691 | 1691 | 1691 | 1691 | |
| | | | | FEED | 151 | 131 | 131 | 131 | 111 | 101 | 101 | 125 | 125 | 139 | 139 | 118 | 118 | 105 | |
| | 6-8 | 1.0D | 0.3D (up to Ø3:0.4mm) | Vc | 75 | 75 | 75 | 75 | 75 | 68 | 68 | 81 | 81 | 85 | 85 | 85 | 85 | 85 | |
| | | | | fz | 0.038 | 0.033 | 0.033 | 0.033 | 0.028 | 0.028 | 0.028 | 0.034 | 0.034 | 0.041 | 0.041 | 0.035 | 0.035 | 0.031 | |
| | | | | RPM | 1989 | 1989 | 1989 | 1989 | 1989 | 1804 | 1804 | 1842 | 1842 | 1691 | 1691 | 1691 | 1691 | 1691 | |
| | | | | FEED | 151 | 131 | 131 | 131 | 111 | 101 | 101 | 125 | 125 | 139 | 139 | 118 | 118 | 105 | |
| | 9 | 1.0D | 0.3D (up to Ø3:0.4mm) | Vc | 63 | 63 | 63 | 63 | 63 | 57 | 57 | 65 | 65 | 64 | 64 | 64 | 64 | 64 | |
| | | | | fz | 0.04 | 0.034 | 0.034 | 0.034 | 0.03 | 0.03 | 0.03 | 0.034 | 0.034 | 0.041 | 0.041 | 0.035 | 0.035 | 0.031 | |
| | | | | RPM | 1671 | 1671 | 1671 | 1671 | 1671 | 1512 | 1512 | 1478 | 1478 | 1273 | 1273 | 1273 | 1273 | 1273 | |
| | | | | FEED | 134 | 114 | 114 | 114 | 100 | 91 | 91 | 100 | 100 | 104 | 104 | 89 | 89 | 79 | |
| | 10-11.1 | 1.0D | 0.3D (up to Ø3:0.4mm) | Vc | 75 | 75 | 75 | 75 | 75 | 68 | 68 | 81 | 81 | 85 | 85 | 85 | 85 | 85 | |
| | | | | fz | 0.038 | 0.033 | 0.033 | 0.033 | 0.028 | 0.028 | 0.028 | 0.034 | 0.034 | 0.041 | 0.041 | 0.035 | 0.035 | 0.031 | |
| | | | | RPM | 1989 | 1989 | 1989 | 1989 | 1989 | 1804 | 1804 | 1842 | 1842 | 1691 | 1691 | 1691 | 1691 | 1691 | |
| | | | | FEED | 151 | 131 | 131 | 131 | 111 | 101 | 101 | 125 | 125 | 139 | 139 | 118 | 118 | 105 | |
| | 11.2 | 1.0D | 0.3D (up to Ø3:0.4mm) | Vc | 63 | 63 | 63 | 63 | 63 | 57 | 57 | 65 | 65 | 64 | 64 | 64 | 64 | 64 | |
| | | | | fz | 0.04 | 0.034 | 0.034 | 0.034 | 0.03 | 0.03 | 0.03 | 0.034 | 0.034 | 0.041 | 0.041 | 0.035 | 0.035 | 0.031 | |
| | | | | RPM | 1671 | 1671 | 1671 | 1671 | 1671 | 1512 | 1512 | 1478 | 1478 | 1273 | 1273 | 1273 | 1273 | 1273 | |
| | | | | FEED | 134 | 114 | 114 | 114 | 100 | 91 | 91 | 100 | 100 | 104 | 104 | 89 | 89 | 79 | |
| K | 15-20 | 1.0D | 0.3D (up to Ø3:0.4mm) | Vc | 75 | 75 | 75 | 75 | 75 | 68 | 68 | 81 | 81 | 85 | 85 | 85 | 85 | 85 | |
| | | | | fz | 0.038 | 0.033 | 0.033 | 0.033 | 0.028 | 0.028 | 0.028 | 0.034 | 0.034 | 0.041 | 0.041 | 0.035 | 0.035 | 0.031 | |
| | | | | RPM | 1989 | 1989 | 1989 | 1989 | 1989 | 1804 | 1804 | 1842 | 1842 | 1691 | 1691 | 1691 | 1691 | 1691 | |
| | | | | FEED | 151 | 131 | 131 | 131 | 111 | 101 | 101 | 125 | 125 | 139 | 139 | 118 | 118 | 105 | |
| H | 38.1 - 38.2 | 1.0D | 0.05D | Vc | 38 | 38 | 38 | 38 | 38 | 34 | 34 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | |
| | | | | fz | 0.027 | 0.022 | 0.022 | 0.022 | 0.02 | 0.019 | 0.019 | 0.025 | 0.025 | 0.031 | 0.031 | 0.025 | 0.025 | 0.022 | |
| | | | | RPM | 1008 | 1008 | 1008 | 1008 | 1008 | 902 | 902 | 909 | 909 | 796 | 796 | 796 | 796 | 796 | |
| | | | | FEED | 54 | 44 | 44 | 44 | 40 | 34 | 34 | 45 | 45 | 49 | 49 | 40 | 40 | 35 | |
| | 40 | 1.0D | 0.3D (up to Ø3:0.4mm) | Vc | 63 | 63 | 63 | 63 | 63 | 57 | 57 | 65 | 65 | 64 | 64 | 64 | 64 | 64 | |
| | | | | fz | 0.04 | 0.034 | 0.034 | 0.034 | 0.03 | 0.03 | 0.03 | 0.034 | 0.034 | 0.041 | 0.041 | 0.035 | 0.035 | 0.031 | |
| | | | | RPM | 1671 | 1671 | 1671 | 1671 | 1671 | 1512 | 1512 | 1478 | 1478 | 1273 | 1273 | 1273 | 1273 | 1273 | |
| | | | | FEED | 134 | 114 | 114 | 114 | 100 | 91 | 91 | 100 | 100 | 104 | 104 | 89 | 89 | 79 | |
| | 41 | 1.0D | 0.05D | Vc | 38 | 38 | 38 | 38 | 38 | 34 | 34 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | |
| | | | | fz | 0.027 | 0.022 | 0.022 | 0.022 | 0.02 | 0.019 | 0.019 | 0.025 | 0.025 | 0.031 | 0.031 | 0.025 | 0.025 | 0.022 | |
| | | | | RPM | 1008 | 1008 | 1008 | 1008 | 1008 | 902 | 902 | 909 | 909 | 796 | 796 | 796 | 796 | 796 | |
| | | | | FEED | 54 | 44 | 44 | 44 | 40 | 34 | 34 | 45 | 45 | 49 | 49 | 40 | 40 | 35 | |

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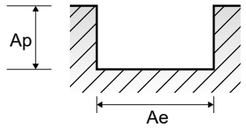


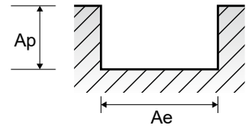



4G MILL END MILLS
RECOMMENDED CUTTING CONDITIONS
推荐加工参数

### SEME70 SERIES — 2 FLUTE - SLOTTING
### 2刃 - 槽铣削

Vc (切削速度) = (m/min.) FEED (进给) = (mm/min.)
fz (每齿进给) = (mm/tooth) LOC (刀长) = Length of Cut
RPM (转速) = (rev./min.)

| VDI 3323 | Parameter 参数 | Diameter (Ø) 直径 | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | LOC | 16.0 | 16.0 | 16.0 | 18.0 | 18.0 | 18.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 22.0 | 22.0 | 25.0 | 25.0 | 25.0 | 25.0 |
| | | 90 | 110 | 120 | 50 | 70 | 100 | 50 | 60 | 70 | 80 | 90 | 110 | 120 | 75 | 110 | 70 | 90 | 110 | 120 |
| 1-5 | Vc | 77 | 77 | 77 | 82 | 82 | 74 | 77 | 77 | 77 | 77 | 77 | 69 | 69 | 76 | 76 | 77 | 77 | 77 | 77 |
| | fz | 0.031 | 0.031 | 0.031 | 0.041 | 0.034 | 0.031 | 0.041 | 0.041 | 0.035 | 0.035 | 0.031 | 0.032 | 0.032 | 0.034 | 0.032 | 0.041 | 0.036 | 0.036 | 0.031 |
| | RPM | 1532 | 1532 | 1532 | 1450 | 1450 | 1309 | 1225 | 1225 | 1225 | 1225 | 1225 | 1098 | 1098 | 1100 | 1100 | 980 | 980 | 980 | 980 |
| | FEED | 95 | 95 | 95 | 119 | 99 | 81 | 100 | 100 | 86 | 86 | 76 | 70 | 70 | 75 | 70 | 80 | 71 | 71 | 61 |
| 6-8 | Vc | 77 | 77 | 77 | 82 | 82 | 74 | 77 | 77 | 77 | 77 | 77 | 69 | 69 | 76 | 76 | 77 | 77 | 77 | 77 |
| | fz | 0.031 | 0.031 | 0.031 | 0.041 | 0.034 | 0.031 | 0.041 | 0.041 | 0.035 | 0.035 | 0.031 | 0.032 | 0.032 | 0.034 | 0.032 | 0.041 | 0.036 | 0.036 | 0.031 |
| | RPM | 1532 | 1532 | 1532 | 1450 | 1450 | 1309 | 1225 | 1225 | 1225 | 1225 | 1225 | 1098 | 1098 | 1100 | 1100 | 980 | 980 | 980 | 980 |
| | FEED | 95 | 95 | 95 | 119 | 99 | 81 | 100 | 100 | 86 | 86 | 76 | 70 | 70 | 75 | 70 | 80 | 71 | 71 | 61 |
| 9 | Vc | 58 | 58 | 58 | 63 | 63 | 57 | 60 | 60 | 60 | 60 | 60 | 54 | 54 | 58 | 58 | 59 | 59 | 59 | 59 |
| | fz | 0.03 | 0.03 | 0.03 | 0.04 | 0.033 | 0.03 | 0.039 | 0.039 | 0.034 | 0.034 | 0.029 | 0.029 | 0.029 | 0.033 | 0.03 | 0.04 | 0.033 | 0.033 | 0.03 |
| | RPM | 1154 | 1154 | 1154 | 1114 | 1114 | 1008 | 955 | 955 | 955 | 955 | 955 | 859 | 859 | 839 | 839 | 751 | 751 | 751 | 751 |
| | FEED | 69 | 69 | 69 | 89 | 74 | 60 | 74 | 74 | 65 | 65 | 55 | 50 | 50 | 55 | 50 | 60 | 50 | 50 | 45 |
| 10 - 11.1 | Vc | 77 | 77 | 77 | 82 | 82 | 74 | 77 | 77 | 77 | 77 | 77 | 69 | 69 | 76 | 76 | 77 | 77 | 77 | 77 |
| | fz | 0.031 | 0.031 | 0.031 | 0.041 | 0.034 | 0.031 | 0.041 | 0.041 | 0.035 | 0.035 | 0.031 | 0.032 | 0.032 | 0.034 | 0.032 | 0.041 | 0.036 | 0.036 | 0.031 |
| | RPM | 1532 | 1532 | 1532 | 1450 | 1450 | 1309 | 1225 | 1225 | 1225 | 1225 | 1225 | 1098 | 1098 | 1100 | 1100 | 980 | 980 | 980 | 980 |
| | FEED | 95 | 95 | 95 | 119 | 99 | 81 | 100 | 100 | 86 | 86 | 76 | 70 | 70 | 75 | 70 | 80 | 71 | 71 | 61 |
| 11.2 | Vc | 58 | 58 | 58 | 63 | 63 | 57 | 60 | 60 | 60 | 60 | 60 | 54 | 54 | 58 | 58 | 59 | 59 | 59 | 59 |
| | fz | 0.03 | 0.03 | 0.03 | 0.04 | 0.033 | 0.03 | 0.039 | 0.039 | 0.034 | 0.034 | 0.029 | 0.029 | 0.029 | 0.033 | 0.03 | 0.04 | 0.033 | 0.033 | 0.03 |
| | RPM | 1154 | 1154 | 1154 | 1114 | 1114 | 1008 | 955 | 955 | 955 | 955 | 955 | 859 | 859 | 839 | 839 | 751 | 751 | 751 | 751 |
| | FEED | 69 | 69 | 69 | 89 | 74 | 60 | 74 | 74 | 65 | 65 | 55 | 50 | 50 | 55 | 50 | 60 | 50 | 50 | 45 |
| 15 - 20 | Vc | 77 | 77 | 77 | 82 | 82 | 74 | 77 | 77 | 77 | 77 | 77 | 69 | 69 | 76 | 76 | 77 | 77 | 77 | 77 |
| | fz | 0.031 | 0.031 | 0.031 | 0.041 | 0.034 | 0.031 | 0.041 | 0.041 | 0.035 | 0.035 | 0.031 | 0.032 | 0.032 | 0.034 | 0.032 | 0.041 | 0.036 | 0.036 | 0.031 |
| | RPM | 1532 | 1532 | 1532 | 1450 | 1450 | 1309 | 1225 | 1225 | 1225 | 1225 | 1225 | 1098 | 1098 | 1100 | 1100 | 980 | 980 | 980 | 980 |
| | FEED | 95 | 95 | 95 | 119 | 99 | 81 | 100 | 100 | 86 | 86 | 76 | 70 | 70 | 75 | 70 | 80 | 71 | 71 | 61 |
| 38.1 - 38.2 | Vc | 36 | 36 | 36 | 40 | 40 | 36 | 38 | 38 | 38 | 38 | 38 | 34 | 34 | 38 | 38 | 38 | 38 | 38 | 38 |
| | fz | 0.021 | 0.021 | 0.021 | 0.029 | 0.025 | 0.024 | 0.029 | 0.029 | 0.025 | 0.025 | 0.021 | 0.023 | 0.023 | 0.027 | 0.023 | 0.031 | 0.026 | 0.026 | 0.026 |
| | RPM | 716 | 716 | 716 | 707 | 707 | 637 | 605 | 605 | 605 | 605 | 605 | 541 | 541 | 550 | 550 | 484 | 484 | 484 | 484 |
| | FEED | 30 | 30 | 30 | 41 | 35 | 31 | 35 | 35 | 30 | 30 | 25 | 25 | 25 | 30 | 25 | 30 | 25 | 25 | 25 |
| 40 | Vc | 58 | 58 | 58 | 63 | 63 | 57 | 60 | 60 | 60 | 60 | 60 | 54 | 54 | 58 | 58 | 59 | 59 | 59 | 59 |
| | fz | 0.03 | 0.03 | 0.03 | 0.04 | 0.033 | 0.03 | 0.039 | 0.039 | 0.034 | 0.034 | 0.029 | 0.029 | 0.029 | 0.033 | 0.03 | 0.04 | 0.033 | 0.033 | 0.03 |
| | RPM | 1154 | 1154 | 1154 | 1114 | 1114 | 1008 | 955 | 955 | 955 | 955 | 955 | 859 | 859 | 839 | 839 | 751 | 751 | 751 | 751 |
| | FEED | 69 | 69 | 69 | 89 | 74 | 60 | 74 | 74 | 65 | 65 | 55 | 50 | 50 | 55 | 50 | 60 | 50 | 50 | 45 |
| 41 | Vc | 36 | 36 | 36 | 40 | 40 | 36 | 38 | 38 | 38 | 38 | 38 | 34 | 34 | 38 | 38 | 38 | 38 | 38 | 38 |
| | fz | 0.021 | 0.021 | 0.021 | 0.029 | 0.025 | 0.024 | 0.029 | 0.029 | 0.025 | 0.025 | 0.021 | 0.023 | 0.023 | 0.027 | 0.023 | 0.031 | 0.026 | 0.026 | 0.026 |
| | RPM | 716 | 716 | 716 | 707 | 707 | 637 | 605 | 605 | 605 | 605 | 605 | 541 | 541 | 550 | 550 | 484 | 484 | 484 | 484 |
| | FEED | 30 | 30 | 30 | 41 | 35 | 31 | 35 | 35 | 30 | 30 | 25 | 25 | 25 | 30 | 25 | 30 | 25 | 25 | 25 |



# 4G MILL END MILLS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

**SEM845** SERIES — **2 FLUTE - SLOTTING** / **2刃- 槽铣削**

Vc (切削速度) = (m/min.) FEED (进给) = (mm/min.)
fz (每齿进给) = (mm/tooth) Ap (切削深度) = (mm)
RPM (转速) = (rev./min.) LBS (颈长) = Length Below Shank

| ISO | VDI 3323 | Material Description 工件材料 | Parameter 参数 | Diameter (Ø) 直径 | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 0.1 | 0.1 | 0.1 | 0.15 | 0.2 | 0.2 | 0.2 | 0.2 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.4 | 0.4 |
| | | | LBS | 0.3 | 0.5 | 1 | 0.35 | 0.5 | 1 | 1.5 | 2 | 1 | 1.5 | 2 | 2.5 | 3 | 4 | 5 | 1 | 1.5 |
| P | 1-5 | Non-alloy steel | Vc | 16 | 16 | 14 | 20 | 24 | 24 | 22 | 22 | 32 | 32 | 29 | 29 | 29 | 26 | 19 | 34 | 34 |
| | | | fz | 0.003 | 0.003 | 0.003 | 0.004 | 0.005 | 0.005 | 0.004 | 0.004 | 0.006 | 0.006 | 0.005 | 0.005 | 0.005 | 0.005 | 0.004 | 0.01 | 0.01 |
| | | | RPM | 50930 | 50930 | 44563 | 42441 | 38197 | 38197 | 35014 | 33953 | 33953 | 30770 | 30770 | 30770 | 27587 | 20160 | 27056 | 27056 | |
| | | | FEED | 306 | 306 | 267 | 340 | 382 | 382 | 280 | 280 | 407 | 407 | 308 | 308 | 308 | 276 | 161 | 541 | 541 |
| | | | Ap | 0.009 | 0.006 | 0.002 | 0.013 | 0.018 | 0.013 | 0.007 | 0.005 | 0.019 | 0.019 | 0.011 | 0.007 | 0.007 | 0.004 | 0.003 | 0.036 | 0.025 |
| | 6-8 | Low alloy steel | Vc | 16 | 16 | 14 | 20 | 24 | 24 | 22 | 22 | 32 | 32 | 29 | 29 | 29 | 26 | 19 | 34 | 34 |
| | | | fz | 0.003 | 0.003 | 0.003 | 0.004 | 0.005 | 0.005 | 0.004 | 0.004 | 0.006 | 0.006 | 0.005 | 0.005 | 0.005 | 0.005 | 0.004 | 0.01 | 0.01 |
| | | | RPM | 50930 | 50930 | 44563 | 42441 | 38197 | 38197 | 35014 | 35014 | 33953 | 33953 | 30770 | 30770 | 30770 | 27587 | 20160 | 27056 | 27056 |
| | | | FEED | 306 | 306 | 267 | 340 | 382 | 382 | 280 | 280 | 407 | 407 | 308 | 308 | 308 | 276 | 161 | 541 | 541 |
| | | | Ap | 0.009 | 0.006 | 0.002 | 0.013 | 0.018 | 0.013 | 0.007 | 0.005 | 0.019 | 0.019 | 0.011 | 0.007 | 0.007 | 0.004 | 0.003 | 0.036 | 0.025 |
| | 9 | | Vc | 15 | 15 | 13 | 19 | 23 | 23 | 21 | 21 | 30 | 30 | 27 | 27 | 27 | 24 | 18 | 32 | 32 |
| | | | fz | 0.002 | 0.002 | 0.002 | 0.003 | 0.004 | 0.004 | 0.003 | 0.003 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.003 | 0.003 | 0.007 | 0.007 |
| | | | RPM | 47746 | 47746 | 41380 | 40319 | 36606 | 36606 | 33423 | 33423 | 31831 | 31831 | 28648 | 28648 | 28648 | 25465 | 19099 | 25465 | 25465 |
| | | | FEED | 191 | 191 | 166 | 242 | 293 | 293 | 201 | 201 | 255 | 255 | 229 | 229 | 229 | 153 | 115 | 357 | 357 |
| | | | Ap | 0.007 | 0.005 | 0.002 | 0.010 | 0.014 | 0.01 | 0.006 | 0.004 | 0.015 | 0.015 | 0.008 | 0.005 | 0.005 | 0.003 | 0.002 | 0.028 | 0.02 |
| | 10-11.1 | High alloyed steel, and tool steel | Vc | 16 | 16 | 14 | 20 | 24 | 24 | 22 | 22 | 32 | 32 | 29 | 29 | 29 | 26 | 19 | 34 | 34 |
| | | | fz | 0.003 | 0.003 | 0.003 | 0.004 | 0.005 | 0.005 | 0.004 | 0.004 | 0.006 | 0.006 | 0.005 | 0.005 | 0.005 | 0.005 | 0.004 | 0.01 | 0.01 |
| | | | RPM | 50930 | 50930 | 44563 | 42441 | 38197 | 38197 | 35014 | 35014 | 33953 | 33953 | 30770 | 30770 | 30770 | 27587 | 20160 | 27056 | 27056 |
| | | | FEED | 306 | 306 | 267 | 340 | 382 | 382 | 280 | 280 | 407 | 407 | 308 | 308 | 308 | 276 | 161 | 541 | 541 |
| | | | Ap | 0.009 | 0.006 | 0.002 | 0.013 | 0.018 | 0.013 | 0.007 | 0.005 | 0.019 | 0.019 | 0.011 | 0.007 | 0.007 | 0.004 | 0.003 | 0.036 | 0.025 |
| | 11.2 | | Vc | 15 | 15 | 13 | 19 | 23 | 23 | 21 | 21 | 30 | 30 | 27 | 27 | 27 | 24 | 18 | 32 | 32 |
| | | | fz | 0.002 | 0.002 | 0.002 | 0.003 | 0.004 | 0.004 | 0.003 | 0.003 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.003 | 0.003 | 0.007 | 0.007 |
| | | | RPM | 47746 | 47746 | 41380 | 40319 | 36606 | 36606 | 33423 | 33423 | 31831 | 31831 | 28648 | 28648 | 28648 | 25465 | 19099 | 25465 | 25465 |
| | | | FEED | 191 | 191 | 166 | 242 | 293 | 293 | 201 | 201 | 255 | 255 | 229 | 229 | 229 | 153 | 115 | 357 | 357 |
| | | | Ap | 0.007 | 0.005 | 0.002 | 0.010 | 0.014 | 0.01 | 0.006 | 0.004 | 0.015 | 0.015 | 0.008 | 0.005 | 0.005 | 0.003 | 0.002 | 0.028 | 0.02 |
| K | 15-20 | Grey cast iron Nodular cast iron Malleable cast iron | Vc | 16 | 16 | 14 | 20 | 24 | 24 | 22 | 22 | 32 | 32 | 29 | 29 | 29 | 26 | 19 | 34 | 34 |
| | | | fz | 0.003 | 0.003 | 0.003 | 0.004 | 0.005 | 0.005 | 0.004 | 0.004 | 0.006 | 0.006 | 0.005 | 0.005 | 0.005 | 0.005 | 0.004 | 0.01 | 0.01 |
| | | | RPM | 50930 | 50930 | 44563 | 42441 | 38197 | 38197 | 35014 | 35014 | 33953 | 33953 | 30770 | 30770 | 30770 | 27587 | 20160 | 27056 | 27056 |
| | | | FEED | 306 | 306 | 267 | 340 | 382 | 382 | 280 | 280 | 407 | 407 | 308 | 308 | 308 | 276 | 161 | 541 | 541 |
| | | | Ap | 0.009 | 0.006 | 0.002 | 0.013 | 0.018 | 0.013 | 0.007 | 0.005 | 0.019 | 0.019 | 0.011 | 0.007 | 0.007 | 0.004 | 0.003 | 0.036 | 0.025 |
| H | 38.1 - 38.2 | Hardened steel | Vc | 13 | 13 | 11 | 16 | 20 | 20 | 18 | 18 | 27 | 27 | 24 | 24 | 24 | 21 | 16 | 29 | 29 |
| | | | fz | 0.002 | 0.002 | 0.002 | 0.002 | 0.003 | 0.003 | 0.003 | 0.003 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.003 | 0.003 | 0.006 | 0.006 |
| | | | RPM | 41380 | 41380 | 35014 | 33953 | 31831 | 31831 | 28648 | 28648 | 28648 | 28648 | 25465 | 25465 | 25465 | 22282 | 16977 | 23077 | 23077 |
| | | | FEED | 166 | 166 | 140 | 136 | 191 | 191 | 172 | 172 | 229 | 229 | 204 | 204 | 204 | 134 | 102 | 277 | 277 |
| | | | Ap | 0.005 | 0.004 | 0.001 | 0.007 | 0.01 | 0.007 | 0.004 | 0.003 | 0.011 | 0.011 | 0.006 | 0.004 | 0.004 | 0.002 | 0.002 | 0.02 | 0.014 |
| | 40 | Chilled Cast Iron | Vc | 15 | 15 | 13 | 19 | 23 | 23 | 21 | 21 | 30 | 30 | 27 | 27 | 27 | 24 | 18 | 32 | 32 |
| | | | fz | 0.002 | 0.002 | 0.002 | 0.003 | 0.004 | 0.004 | 0.003 | 0.003 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.003 | 0.003 | 0.007 | 0.007 |
| | | | RPM | 47746 | 47746 | 41380 | 40319 | 36606 | 36606 | 33423 | 33423 | 31831 | 31831 | 28648 | 28648 | 28648 | 25465 | 19099 | 25465 | 25465 |
| | | | FEED | 191 | 191 | 166 | 242 | 293 | 293 | 201 | 201 | 255 | 255 | 229 | 229 | 229 | 153 | 115 | 357 | 357 |
| | | | Ap | 0.007 | 0.005 | 0.002 | 0.010 | 0.014 | 0.01 | 0.006 | 0.004 | 0.015 | 0.015 | 0.008 | 0.005 | 0.005 | 0.003 | 0.002 | 0.028 | 0.02 |
| | 41 | Hardened Cast Iron | Vc | 13 | 13 | 11 | 16 | 20 | 20 | 18 | 18 | 27 | 27 | 24 | 24 | 24 | 21 | 16 | 29 | 29 |
| | | | fz | 0.002 | 0.002 | 0.002 | 0.002 | 0.003 | 0.003 | 0.003 | 0.003 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.003 | 0.003 | 0.006 | 0.006 |
| | | | RPM | 41380 | 41380 | 35014 | 33953 | 31831 | 31831 | 28648 | 28648 | 28648 | 28648 | 25465 | 25465 | 25465 | 22282 | 16977 | 23077 | 23077 |
| | | | FEED | 166 | 166 | 140 | 136 | 191 | 191 | 172 | 172 | 229 | 229 | 204 | 204 | 204 | 134 | 102 | 277 | 277 |
| | | | Ap | 0.005 | 0.004 | 0.001 | 0.007 | 0.01 | 0.007 | 0.004 | 0.003 | 0.011 | 0.011 | 0.006 | 0.004 | 0.004 | 0.002 | 0.002 | 0.02 | 0.014 |

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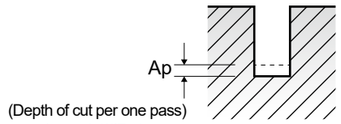




4G MILL END MILLS
RECOMMENDED CUTTING CONDITIONS
推荐加工参数
SEM845 SERIES 2 FLUTE - SLOTTING 2刃- 槽铣削
Vc (切削速度) = (m/min.) FEED (进给) = (mm/min.)
fz (每齿进给) = (mm/tooth) Ap (切削深度) = (mm)
RPM (转速) = (rev./min.) LBS (颈长) = Length Below Shank

| VDI 3323 | Parameter 参数 | Diameter (Ø) 直径 | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.6 | 0.6 |
| | LBS | 2 | 2.5 | 3 | 4 | 5 | 6 | 8 | 10 | 1 | 1.5 | 2 | 2.5 | 3 | 4 | 5 | 6 | 8 | 10 | 12 | 14 | 16 | 2 | 3 |
| 1-5 | Vc | 34 | 31 | 31 | 31 | 28 | 28 | 21 | 10 | 43 | 43 | 43 | 43 | 39 | 39 | 39 | 34 | 26 | 26 | 13 | 13 | 4 | 52 | 52 |
| | fz | 0.01 | 0.009 | 0.009 | 0.009 | 0.008 | 0.008 | 0.007 | 0.006 | 0.01 | 0.01 | 0.01 | 0.01 | 0.009 | 0.009 | 0.009 | 0.008 | 0.007 | 0.007 | 0.006 | 0.006 | 0.005 | 0.014 | 0.014 |
| | RPM | 27056 | 24669 | 24669 | 24669 | 22282 | 22282 | 16711 | 7958 | 27375 | 27375 | 27375 | 27375 | 24828 | 24828 | 24828 | 21645 | 16552 | 16552 | 8276 | 8276 | 2546 | 27587 | 27587 |
| | FEED | 541 | 444 | 444 | 444 | 357 | 357 | 234 | 95 | 547 | 547 | 547 | 547 | 447 | 447 | 447 | 346 | 232 | 232 | 99 | 99 | 25 | 772 | 772 |
| | Ap | 0.025 | 0.014 | 0.014 | 0.009 | 0.009 | 0.005 | 0.004 | 0.004 | 0.045 | 0.045 | 0.032 | 0.032 | 0.018 | 0.018 | 0.011 | 0.011 | 0.007 | 0.005 | 0.005 | 0.005 | 0.005 | 0.038 | 0.038 |
| 6-8 | Vc | 34 | 31 | 31 | 31 | 28 | 28 | 21 | 10 | 43 | 43 | 43 | 43 | 39 | 39 | 39 | 34 | 26 | 26 | 13 | 13 | 4 | 52 | 52 |
| | fz | 0.01 | 0.009 | 0.009 | 0.009 | 0.008 | 0.008 | 0.007 | 0.006 | 0.01 | 0.01 | 0.01 | 0.01 | 0.009 | 0.009 | 0.009 | 0.008 | 0.007 | 0.007 | 0.006 | 0.006 | 0.005 | 0.014 | 0.014 |
| | RPM | 27056 | 24669 | 24669 | 24669 | 22282 | 22282 | 16711 | 7958 | 27375 | 27375 | 27375 | 27375 | 24828 | 24828 | 24828 | 21645 | 16552 | 16552 | 8276 | 8276 | 2546 | 27587 | 27587 |
| | FEED | 541 | 444 | 444 | 444 | 357 | 357 | 234 | 95 | 547 | 547 | 547 | 547 | 447 | 447 | 447 | 346 | 232 | 232 | 99 | 99 | 25 | 772 | 772 |
| | Ap | 0.025 | 0.014 | 0.014 | 0.009 | 0.009 | 0.005 | 0.004 | 0.004 | 0.045 | 0.045 | 0.032 | 0.032 | 0.018 | 0.018 | 0.011 | 0.011 | 0.007 | 0.005 | 0.005 | 0.005 | 0.005 | 0.038 | 0.038 |
| 9 | Vc | 32 | 29 | 29 | 29 | 26 | 26 | 19 | 10 | 41 | 41 | 41 | 41 | 36 | 36 | 36 | 32 | 24 | 24 | 12 | 12 | 4 | 49 | 49 |
| | fz | 0.007 | 0.007 | 0.007 | 0.007 | 0.006 | 0.006 | 0.005 | 0.005 | 0.008 | 0.008 | 0.008 | 0.008 | 0.007 | 0.007 | 0.007 | 0.007 | 0.006 | 0.006 | 0.005 | 0.005 | 0.004 | 0.011 | 0.011 |
| | RPM | 25465 | 23077 | 23077 | 23077 | 20690 | 20690 | 15120 | 7958 | 26101 | 26101 | 26101 | 26101 | 22918 | 22918 | 22918 | 20372 | 15279 | 15279 | 7639 | 7639 | 2546 | 25995 | 25995 |
| | FEED | 357 | 323 | 323 | 323 | 248 | 248 | 151 | 80 | 418 | 418 | 418 | 418 | 321 | 321 | 321 | 285 | 183 | 183 | 76 | 76 | 20 | 572 | 572 |
| | Ap | 0.02 | 0.011 | 0.011 | 0.007 | 0.007 | 0.004 | 0.003 | 0.003 | 0.035 | 0.035 | 0.025 | 0.025 | 0.014 | 0.014 | 0.009 | 0.009 | 0.005 | 0.004 | 0.004 | 0.004 | 0.004 | 0.029 | 0.029 |
| 10 - 11.1 | Vc | 34 | 31 | 31 | 31 | 28 | 28 | 21 | 10 | 43 | 43 | 43 | 43 | 39 | 39 | 39 | 34 | 26 | 26 | 13 | 13 | 4 | 52 | 52 |
| | fz | 0.01 | 0.009 | 0.009 | 0.009 | 0.008 | 0.008 | 0.007 | 0.006 | 0.01 | 0.01 | 0.01 | 0.01 | 0.009 | 0.009 | 0.009 | 0.008 | 0.007 | 0.007 | 0.006 | 0.006 | 0.005 | 0.014 | 0.014 |
| | RPM | 27056 | 24669 | 24669 | 24669 | 22282 | 22282 | 16711 | 7958 | 27375 | 27375 | 27375 | 27375 | 24828 | 24828 | 24828 | 21645 | 16552 | 16552 | 8276 | 8276 | 2546 | 27587 | 27587 |
| | FEED | 541 | 444 | 444 | 444 | 357 | 357 | 234 | 95 | 547 | 547 | 547 | 547 | 447 | 447 | 447 | 346 | 232 | 232 | 99 | 99 | 25 | 772 | 772 |
| | Ap | 0.025 | 0.014 | 0.014 | 0.009 | 0.009 | 0.005 | 0.004 | 0.004 | 0.045 | 0.045 | 0.032 | 0.032 | 0.018 | 0.018 | 0.011 | 0.011 | 0.007 | 0.005 | 0.005 | 0.005 | 0.005 | 0.038 | 0.038 |
| 11.2 | Vc | 32 | 29 | 29 | 29 | 26 | 26 | 19 | 10 | 41 | 41 | 41 | 41 | 36 | 36 | 36 | 32 | 24 | 24 | 12 | 12 | 4 | 49 | 49 |
| | fz | 0.007 | 0.007 | 0.007 | 0.007 | 0.006 | 0.006 | 0.005 | 0.005 | 0.008 | 0.008 | 0.008 | 0.008 | 0.007 | 0.007 | 0.007 | 0.007 | 0.006 | 0.006 | 0.005 | 0.005 | 0.004 | 0.011 | 0.011 |
| | RPM | 25465 | 23077 | 23077 | 23077 | 20690 | 20690 | 15120 | 7958 | 26101 | 26101 | 26101 | 26101 | 22918 | 22918 | 22918 | 20372 | 15279 | 15279 | 7639 | 7639 | 2546 | 25995 | 25995 |
| | FEED | 357 | 323 | 323 | 323 | 248 | 248 | 151 | 80 | 418 | 418 | 418 | 418 | 321 | 321 | 321 | 285 | 183 | 183 | 76 | 76 | 20 | 572 | 572 |
| | Ap | 0.02 | 0.011 | 0.011 | 0.007 | 0.007 | 0.004 | 0.003 | 0.003 | 0.035 | 0.035 | 0.025 | 0.025 | 0.014 | 0.014 | 0.009 | 0.009 | 0.005 | 0.004 | 0.004 | 0.004 | 0.004 | 0.029 | 0.029 |
| 15 - 20 | Vc | 34 | 31 | 31 | 31 | 28 | 28 | 21 | 10 | 43 | 43 | 43 | 43 | 39 | 39 | 39 | 34 | 26 | 26 | 13 | 13 | 4 | 52 | 52 |
| | fz | 0.01 | 0.009 | 0.009 | 0.009 | 0.008 | 0.008 | 0.007 | 0.006 | 0.01 | 0.01 | 0.01 | 0.01 | 0.009 | 0.009 | 0.009 | 0.008 | 0.007 | 0.007 | 0.006 | 0.006 | 0.005 | 0.014 | 0.014 |
| | RPM | 27056 | 24669 | 24669 | 24669 | 22282 | 22282 | 16711 | 7958 | 27375 | 27375 | 27375 | 27375 | 24828 | 24828 | 24828 | 21645 | 16552 | 16552 | 8276 | 8276 | 2546 | 27587 | 27587 |
| | FEED | 541 | 444 | 444 | 444 | 357 | 357 | 234 | 95 | 547 | 547 | 547 | 547 | 447 | 447 | 447 | 346 | 232 | 232 | 99 | 99 | 25 | 772 | 772 |
| | Ap | 0.025 | 0.014 | 0.014 | 0.009 | 0.009 | 0.005 | 0.004 | 0.004 | 0.045 | 0.045 | 0.032 | 0.032 | 0.018 | 0.018 | 0.011 | 0.011 | 0.007 | 0.005 | 0.005 | 0.005 | 0.005 | 0.038 | 0.038 |
| 38.1 - 38.2 | Vc | 29 | 26 | 26 | 26 | 23 | 23 | 17 | 9 | 36 | 36 | 36 | 36 | 32 | 32 | 32 | 29 | 21 | 21 | 11 | 11 | 4 | 43 | 43 |
| | fz | 0.006 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.004 | 0.004 | 0.006 | 0.006 | 0.006 | 0.006 | 0.006 | 0.006 | 0.006 | 0.005 | 0.004 | 0.004 | 0.004 | 0.004 | 0.003 | 0.009 | 0.009 |
| | RPM | 23077 | 20690 | 20690 | 20690 | 18303 | 18303 | 13528 | 7162 | 22918 | 22918 | 22918 | 22918 | 20372 | 20372 | 20372 | 18462 | 13369 | 13369 | 7003 | 7003 | 2546 | 22812 | 22812 |
| | FEED | 277 | 207 | 207 | 207 | 183 | 183 | 108 | 57 | 275 | 275 | 275 | 275 | 244 | 244 | 244 | 185 | 107 | 107 | 56 | 56 | 15 | 411 | 411 |
| | Ap | 0.014 | 0.008 | 0.008 | 0.005 | 0.005 | 0.003 | 0.002 | 0.002 | 0.025 | 0.025 | 0.018 | 0.018 | 0.01 | 0.01 | 0.006 | 0.006 | 0.004 | 0.003 | 0.003 | 0.003 | 0.003 | 0.021 | 0.021 |
| 40 | Vc | 32 | 29 | 29 | 29 | 26 | 26 | 19 | 10 | 41 | 41 | 41 | 41 | 36 | 36 | 36 | 32 | 24 | 24 | 12 | 12 | 4 | 49 | 49 |
| | fz | 0.007 | 0.007 | 0.007 | 0.007 | 0.006 | 0.006 | 0.005 | 0.005 | 0.008 | 0.008 | 0.008 | 0.008 | 0.007 | 0.007 | 0.007 | 0.007 | 0.006 | 0.006 | 0.005 | 0.005 | 0.004 | 0.011 | 0.011 |
| | RPM | 25465 | 23077 | 23077 | 23077 | 20690 | 20690 | 15120 | 7958 | 26101 | 26101 | 26101 | 26101 | 22918 | 22918 | 22918 | 20372 | 15279 | 15279 | 7639 | 7639 | 2546 | 25995 | 25995 |
| | FEED | 357 | 323 | 323 | 323 | 248 | 248 | 151 | 80 | 418 | 418 | 418 | 418 | 321 | 321 | 321 | 285 | 183 | 183 | 76 | 76 | 20 | 572 | 572 |
| | Ap | 0.02 | 0.011 | 0.011 | 0.007 | 0.007 | 0.004 | 0.003 | 0.003 | 0.035 | 0.035 | 0.025 | 0.025 | 0.014 | 0.014 | 0.009 | 0.009 | 0.005 | 0.004 | 0.004 | 0.004 | 0.004 | 0.029 | 0.029 |
| 41 | Vc | 29 | 26 | 26 | 26 | 23 | 23 | 17 | 9 | 36 | 36 | 36 | 36 | 32 | 32 | 32 | 29 | 21 | 21 | 11 | 11 | 4 | 43 | 43 |
| | fz | 0.006 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.004 | 0.004 | 0.006 | 0.006 | 0.006 | 0.006 | 0.006 | 0.006 | 0.006 | 0.005 | 0.004 | 0.004 | 0.004 | 0.004 | 0.003 | 0.009 | 0.009 |
| | RPM | 23077 | 20690 | 20690 | 20690 | 18303 | 18303 | 13528 | 7162 | 22918 | 22918 | 22918 | 22918 | 20372 | 20372 | 20372 | 18462 | 13369 | 13369 | 7003 | 7003 | 2546 | 22812 | 22812 |
| | FEED | 277 | 207 | 207 | 207 | 183 | 183 | 108 | 57 | 275 | 275 | 275 | 275 | 244 | 244 | 244 | 185 | 107 | 107 | 56 | 56 | 15 | 411 | 411 |
| | Ap | 0.014 | 0.008 | 0.008 | 0.005 | 0.005 | 0.003 | 0.002 | 0.002 | 0.025 | 0.025 | 0.018 | 0.018 | 0.01 | 0.01 | 0.006 | 0.006 | 0.004 | 0.003 | 0.003 | 0.003 | 0.003 | 0.021 | 0.021 |

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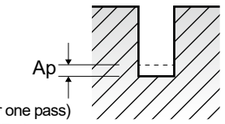

# 4G MILL END MILLS

# RECOMMENDED CUTTING CONDITIONS
# 推荐加工参数

## SEM845 SERIES 2 FLUTE - SLOTTING 2刃- 槽铣削

Vc (切削速度) = (m/min.) FEED (进给) = (mm/min.)
fz (每齿进给) = (mm/tooth) Ap (切削深度) = (mm)
RPM (转速) = (rev./min.) LBS (颈长) = Length Below Shank

| ISO | VDI 3323 | Parameter 参数 | Diameter (Ø) 直径 | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 |
| | | LBS | 4 | 5 | 6 | 8 | 10 | 12 | 14 | 16 | 2 | 4 | 6 | 8 | 10 | 12 | 2 | 3 | 4 | 5 | 6 | 8 |
| P | 1-5 | Vc | 46 | 46 | 46 | 41 | 31 | 31 | 15 | 15 | 60 | 54 | 54 | 48 | 48 | 36 | 69 | 69 | 69 | 62 | 62 | 62 |
| | | fz | 0.013 | 0.013 | 0.013 | 0.011 | 0.01 | 0.01 | 0.009 | 0.009 | 0.014 | 0.013 | 0.013 | 0.011 | 0.011 | 0.01 | 0.014 | 0.014 | 0.014 | 0.013 | 0.013 | 0.013 |
| | | RPM | 24404 | 24404 | 24404 | 21751 | 16446 | 16446 | 7958 | 7958 | 27284 | 24555 | 24555 | 21827 | 21827 | 16370 | 27454 | 27454 | 27454 | 24669 | 24669 | 24669 |
| | | FEED | 634 | 634 | 634 | 479 | 329 | 329 | 143 | 143 | 764 | 638 | 638 | 480 | 480 | 327 | 769 | 769 | 769 | 641 | 641 | 641 |
| | | Ap | 0.022 | 0.014 | 0.014 | 0.008 | 0.005 | 0.005 | 0.005 | 0.005 | 0.063 | 0.025 | 0.016 | 0.016 | 0.009 | 0.006 | 0.072 | 0.05 | 0.05 | 0.029 | 0.029 | 0.018 |
| | 6-8 | Vc | 46 | 46 | 46 | 41 | 31 | 31 | 15 | 15 | 60 | 54 | 54 | 48 | 48 | 36 | 69 | 69 | 69 | 62 | 62 | 62 |
| | | fz | 0.013 | 0.013 | 0.013 | 0.011 | 0.01 | 0.01 | 0.009 | 0.009 | 0.014 | 0.013 | 0.013 | 0.011 | 0.011 | 0.01 | 0.014 | 0.014 | 0.014 | 0.013 | 0.013 | 0.013 |
| | | RPM | 24404 | 24404 | 24404 | 21751 | 16446 | 16446 | 7958 | 7958 | 27284 | 24555 | 24555 | 21827 | 21827 | 16370 | 27454 | 27454 | 27454 | 24669 | 24669 | 24669 |
| | | FEED | 634 | 634 | 634 | 479 | 329 | 329 | 143 | 143 | 764 | 638 | 638 | 480 | 480 | 327 | 769 | 769 | 769 | 641 | 641 | 641 |
| | | Ap | 0.022 | 0.014 | 0.014 | 0.008 | 0.005 | 0.005 | 0.005 | 0.005 | 0.063 | 0.025 | 0.016 | 0.016 | 0.009 | 0.006 | 0.072 | 0.05 | 0.05 | 0.029 | 0.029 | 0.018 |
| | 9 | Vc | 44 | 44 | 44 | 39 | 29 | 29 | 15 | 15 | 57 | 51 | 51 | 45 | 45 | 34 | 65 | 65 | 65 | 58 | 58 | 58 |
| | | fz | 0.009 | 0.009 | 0.009 | 0.008 | 0.007 | 0.007 | 0.006 | 0.006 | 0.011 | 0.009 | 0.009 | 0.008 | 0.008 | 0.007 | 0.012 | 0.012 | 0.012 | 0.011 | 0.011 | 0.011 |
| | | RPM | 23343 | 23343 | 23343 | 20690 | 15385 | 15385 | 7958 | 7958 | 25920 | 23191 | 23191 | 20463 | 20463 | 15461 | 25863 | 25863 | 25863 | 23077 | 23077 | 23077 |
| | | FEED | 420 | 420 | 420 | 331 | 215 | 215 | 95 | 95 | 570 | 417 | 417 | 327 | 327 | 216 | 621 | 621 | 621 | 508 | 508 | 508 |
| | | Ap | 0.017 | 0.011 | 0.011 | 0.006 | 0.004 | 0.004 | 0.004 | 0.004 | 0.049 | 0.02 | 0.012 | 0.012 | 0.007 | 0.005 | 0.056 | 0.039 | 0.039 | 0.022 | 0.022 | 0.014 |
| | 10-11.1 | Vc | 46 | 46 | 46 | 41 | 31 | 31 | 15 | 15 | 60 | 54 | 54 | 48 | 48 | 36 | 69 | 69 | 69 | 62 | 62 | 62 |
| | | fz | 0.013 | 0.013 | 0.013 | 0.011 | 0.01 | 0.01 | 0.009 | 0.009 | 0.014 | 0.013 | 0.013 | 0.011 | 0.011 | 0.01 | 0.014 | 0.014 | 0.014 | 0.013 | 0.013 | 0.013 |
| | | RPM | 24404 | 24404 | 24404 | 21751 | 16446 | 16446 | 7958 | 7958 | 27284 | 24555 | 24555 | 21827 | 21827 | 16370 | 27454 | 27454 | 27454 | 24669 | 24669 | 24669 |
| | | FEED | 634 | 634 | 634 | 479 | 329 | 329 | 143 | 143 | 764 | 638 | 638 | 480 | 480 | 327 | 769 | 769 | 769 | 641 | 641 | 641 |
| | | Ap | 0.022 | 0.014 | 0.014 | 0.008 | 0.005 | 0.005 | 0.005 | 0.005 | 0.063 | 0.025 | 0.016 | 0.016 | 0.009 | 0.006 | 0.072 | 0.05 | 0.05 | 0.029 | 0.029 | 0.018 |
| | 11.2 | Vc | 44 | 44 | 44 | 39 | 29 | 29 | 15 | 15 | 57 | 51 | 51 | 45 | 45 | 34 | 65 | 65 | 65 | 58 | 58 | 58 |
| | | fz | 0.009 | 0.009 | 0.009 | 0.008 | 0.007 | 0.007 | 0.006 | 0.006 | 0.011 | 0.009 | 0.009 | 0.008 | 0.008 | 0.007 | 0.012 | 0.012 | 0.012 | 0.011 | 0.011 | 0.011 |
| | | RPM | 23343 | 23343 | 23343 | 20690 | 15385 | 15385 | 7958 | 7958 | 25920 | 23191 | 23191 | 20463 | 20463 | 15461 | 25863 | 25863 | 25863 | 23077 | 23077 | 23077 |
| | | FEED | 420 | 420 | 420 | 331 | 215 | 215 | 95 | 95 | 570 | 417 | 417 | 327 | 327 | 216 | 621 | 621 | 621 | 508 | 508 | 508 |
| | | Ap | 0.017 | 0.011 | 0.011 | 0.006 | 0.004 | 0.004 | 0.004 | 0.004 | 0.049 | 0.02 | 0.012 | 0.012 | 0.007 | 0.005 | 0.056 | 0.039 | 0.039 | 0.022 | 0.022 | 0.014 |
| K | 15-20 | Vc | 46 | 46 | 46 | 41 | 31 | 31 | 15 | 15 | 60 | 54 | 54 | 48 | 48 | 36 | 69 | 69 | 69 | 62 | 62 | 62 |
| | | fz | 0.013 | 0.013 | 0.013 | 0.011 | 0.01 | 0.01 | 0.009 | 0.009 | 0.014 | 0.013 | 0.013 | 0.011 | 0.011 | 0.01 | 0.014 | 0.014 | 0.014 | 0.013 | 0.013 | 0.013 |
| | | RPM | 24404 | 24404 | 24404 | 21751 | 16446 | 16446 | 7958 | 7958 | 27284 | 24555 | 24555 | 21827 | 21827 | 16370 | 27454 | 27454 | 27454 | 24669 | 24669 | 24669 |
| | | FEED | 634 | 634 | 634 | 479 | 329 | 329 | 143 | 143 | 764 | 638 | 638 | 480 | 480 | 327 | 769 | 769 | 769 | 641 | 641 | 641 |
| | | Ap | 0.022 | 0.014 | 0.014 | 0.008 | 0.005 | 0.005 | 0.005 | 0.005 | 0.063 | 0.025 | 0.016 | 0.016 | 0.009 | 0.006 | 0.072 | 0.05 | 0.05 | 0.029 | 0.029 | 0.018 |
| H | 38.1 - 38.2 | Vc | 39 | 39 | 39 | 34 | 26 | 26 | 13 | 13 | 50 | 45 | 45 | 40 | 40 | 30 | 57 | 57 | 57 | 52 | 52 | 52 |
| | | fz | 0.008 | 0.008 | 0.008 | 0.007 | 0.006 | 0.006 | 0.005 | 0.005 | 0.009 | 0.008 | 0.008 | 0.007 | 0.007 | 0.006 | 0.01 | 0.01 | 0.01 | 0.009 | 0.009 | 0.009 |
| | | RPM | 20690 | 20690 | 20690 | 18038 | 13793 | 13793 | 6897 | 6897 | 22736 | 20463 | 20463 | 18189 | 18189 | 13642 | 22680 | 22680 | 22680 | 20690 | 20690 | 20690 |
| | | FEED | 331 | 331 | 331 | 253 | 166 | 166 | 69 | 69 | 409 | 327 | 327 | 255 | 255 | 164 | 454 | 454 | 454 | 372 | 372 | 372 |
| | | Ap | 0.012 | 0.008 | 0.008 | 0.005 | 0.003 | 0.003 | 0.003 | 0.003 | 0.035 | 0.014 | 0.009 | 0.009 | 0.005 | 0.004 | 0.04 | 0.028 | 0.028 | 0.016 | 0.016 | 0.01 |
| | 40 | Vc | 44 | 44 | 44 | 39 | 29 | 29 | 15 | 15 | 57 | 51 | 51 | 45 | 45 | 34 | 65 | 65 | 65 | 58 | 58 | 58 |
| | | fz | 0.009 | 0.009 | 0.009 | 0.008 | 0.007 | 0.007 | 0.006 | 0.006 | 0.011 | 0.009 | 0.009 | 0.008 | 0.008 | 0.007 | 0.012 | 0.012 | 0.012 | 0.011 | 0.011 | 0.011 |
| | | RPM | 23343 | 23343 | 23343 | 20690 | 15385 | 15385 | 7958 | 7958 | 25920 | 23191 | 23191 | 20463 | 20463 | 15461 | 25863 | 25863 | 25863 | 23077 | 23077 | 23077 |
| | | FEED | 420 | 420 | 420 | 331 | 215 | 215 | 95 | 95 | 570 | 417 | 417 | 327 | 327 | 216 | 621 | 621 | 621 | 508 | 508 | 508 |
| | | Ap | 0.017 | 0.011 | 0.011 | 0.006 | 0.004 | 0.004 | 0.004 | 0.004 | 0.049 | 0.02 | 0.012 | 0.012 | 0.007 | 0.005 | 0.056 | 0.039 | 0.039 | 0.022 | 0.022 | 0.014 |
| | 41 | Vc | 39 | 39 | 39 | 34 | 26 | 26 | 13 | 13 | 50 | 45 | 45 | 40 | 40 | 30 | 57 | 57 | 57 | 52 | 52 | 52 |
| | | fz | 0.008 | 0.008 | 0.008 | 0.007 | 0.006 | 0.006 | 0.005 | 0.005 | 0.009 | 0.008 | 0.008 | 0.007 | 0.007 | 0.006 | 0.01 | 0.01 | 0.01 | 0.009 | 0.009 | 0.009 |
| | | RPM | 20690 | 20690 | 20690 | 18038 | 13793 | 13793 | 6897 | 6897 | 22736 | 20463 | 20463 | 18189 | 18189 | 13642 | 22680 | 22680 | 22680 | 20690 | 20690 | 20690 |
| | | FEED | 331 | 331 | 331 | 253 | 166 | 166 | 69 | 69 | 409 | 327 | 327 | 255 | 255 | 164 | 454 | 454 | 454 | 372 | 372 | 372 |
| | | Ap | 0.012 | 0.008 | 0.008 | 0.005 | 0.003 | 0.003 | 0.003 | 0.003 | 0.035 | 0.014 | 0.009 | 0.009 | 0.005 | 0.004 | 0.04 | 0.028 | 0.028 | 0.016 | 0.016 | 0.01 |

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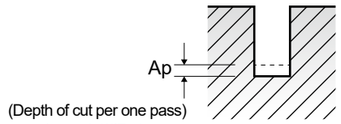




4G MILL END MILLS
RECOMMENDED CUTTING CONDITIONS
推荐加工参数
SEM845 SERIES 2 FLUTE - SLOTTING 2刃- 槽铣削
Vc (切削速度) = (m/min.) FEED (进给) = (mm/min.)
fz (每齿进给) = (mm/tooth) Ap (切削深度) = (mm)
RPM (转速) = (rev./min.) LBS (颈长) = Length Below Shank

| VDI 3323 | Parameter 参数 | Diameter (Ø) 直径 | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.9 | 0.9 | 0.9 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| | LBS | 10 | 12 | 14 | 16 | 20 | 6 | 8 | 10 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 |
| 1-5 | Vc | 55 | 55 | 41 | 41 | 21 | 63 | 63 | 56 | 77 | 77 | 77 | 77 | 70 | 70 | 70 | 70 | 62 | 62 | 46 | 46 | 46 | 23 |
| | fz | 0.011 | 0.011 | 0.01 | 0.01 | 0.009 | 0.013 | 0.013 | 0.012 | 0.021 | 0.021 | 0.021 | 0.021 | 0.019 | 0.019 | 0.019 | 0.019 | 0.017 | 0.017 | 0.015 | 0.015 | 0.015 | 0.013 |
| | RPM | 21884 | 21884 | 16313 | 16313 | 8356 | 22282 | 22282 | 19806 | 24510 | 24510 | 24510 | 24510 | 22282 | 22282 | 22282 | 22282 | 19735 | 19735 | 14642 | 14642 | 14642 | 7321 |
| | FEED | 481 | 481 | 326 | 326 | 150 | 579 | 579 | 475 | 1029 | 1029 | 1029 | 1029 | 847 | 847 | 847 | 847 | 671 | 671 | 439 | 439 | 439 | 190 |
| | Ap | 0.018 | 0.011 | 0.007 | 0.007 | 0.007 | 0.032 | 0.02 | 0.02 | 0.09 | 0.09 | 0.063 | 0.063 | 0.036 | 0.036 | 0.036 | 0.023 | 0.023 | 0.014 | 0.014 | 0.009 | 0.009 | 0.009 |
| 6-8 | Vc | 55 | 55 | 41 | 41 | 21 | 63 | 63 | 56 | 77 | 77 | 77 | 77 | 70 | 70 | 70 | 70 | 62 | 62 | 46 | 46 | 46 | 23 |
| | fz | 0.011 | 0.011 | 0.01 | 0.01 | 0.009 | 0.013 | 0.013 | 0.012 | 0.021 | 0.021 | 0.021 | 0.021 | 0.019 | 0.019 | 0.019 | 0.019 | 0.017 | 0.017 | 0.015 | 0.015 | 0.015 | 0.013 |
| | RPM | 21884 | 21884 | 16313 | 16313 | 8356 | 22282 | 22282 | 19806 | 24510 | 24510 | 24510 | 24510 | 22282 | 22282 | 22282 | 22282 | 19735 | 19735 | 14642 | 14642 | 14642 | 7321 |
| | FEED | 481 | 481 | 326 | 326 | 150 | 579 | 579 | 475 | 1029 | 1029 | 1029 | 1029 | 847 | 847 | 847 | 847 | 671 | 671 | 439 | 439 | 439 | 190 |
| | Ap | 0.018 | 0.011 | 0.007 | 0.007 | 0.007 | 0.032 | 0.02 | 0.02 | 0.09 | 0.09 | 0.063 | 0.063 | 0.036 | 0.036 | 0.036 | 0.023 | 0.023 | 0.014 | 0.014 | 0.009 | 0.009 | 0.009 |
| 9 | Vc | 52 | 52 | 39 | 39 | 19 | 59 | 59 | 53 | 73 | 73 | 73 | 73 | 66 | 66 | 66 | 66 | 59 | 59 | 44 | 44 | 44 | 22 |
| | fz | 0.009 | 0.009 | 0.008 | 0.008 | 0.007 | 0.01 | 0.01 | 0.009 | 0.019 | 0.019 | 0.019 | 0.019 | 0.017 | 0.017 | 0.017 | 0.017 | 0.015 | 0.015 | 0.013 | 0.013 | 0.013 | 0.011 |
| | RPM | 20690 | 20690 | 15518 | 15518 | 7560 | 20867 | 20867 | 18745 | 23237 | 23237 | 23237 | 23237 | 21008 | 21008 | 21008 | 21008 | 18780 | 18780 | 14006 | 14006 | 14006 | 7003 |
| | FEED | 372 | 372 | 248 | 248 | 106 | 417 | 417 | 337 | 883 | 883 | 883 | 883 | 714 | 714 | 714 | 714 | 563 | 563 | 364 | 364 | 364 | 154 |
| | Ap | 0.014 | 0.008 | 0.006 | 0.006 | 0.006 | 0.025 | 0.016 | 0.016 | 0.07 | 0.07 | 0.049 | 0.049 | 0.028 | 0.028 | 0.028 | 0.018 | 0.018 | 0.011 | 0.011 | 0.007 | 0.007 | 0.007 |
| 10 - 11.1 | Vc | 55 | 55 | 41 | 41 | 21 | 63 | 63 | 56 | 77 | 77 | 77 | 77 | 70 | 70 | 70 | 70 | 62 | 62 | 46 | 46 | 46 | 23 |
| | fz | 0.011 | 0.011 | 0.01 | 0.01 | 0.009 | 0.013 | 0.013 | 0.012 | 0.021 | 0.021 | 0.021 | 0.021 | 0.019 | 0.019 | 0.019 | 0.019 | 0.017 | 0.017 | 0.015 | 0.015 | 0.015 | 0.013 |
| | RPM | 21884 | 21884 | 16313 | 16313 | 8356 | 22282 | 22282 | 19806 | 24510 | 24510 | 24510 | 24510 | 22282 | 22282 | 22282 | 22282 | 19735 | 19735 | 14642 | 14642 | 14642 | 7321 |
| | FEED | 481 | 481 | 326 | 326 | 150 | 579 | 579 | 475 | 1029 | 1029 | 1029 | 1029 | 847 | 847 | 847 | 847 | 671 | 671 | 439 | 439 | 439 | 190 |
| | Ap | 0.018 | 0.011 | 0.007 | 0.007 | 0.007 | 0.032 | 0.02 | 0.02 | 0.09 | 0.09 | 0.063 | 0.063 | 0.036 | 0.036 | 0.036 | 0.023 | 0.023 | 0.014 | 0.014 | 0.009 | 0.009 | 0.009 |
| 11.2 | Vc | 52 | 52 | 39 | 39 | 19 | 59 | 59 | 53 | 73 | 73 | 73 | 73 | 66 | 66 | 66 | 66 | 59 | 59 | 44 | 44 | 44 | 22 |
| | fz | 0.009 | 0.009 | 0.008 | 0.008 | 0.007 | 0.01 | 0.01 | 0.009 | 0.019 | 0.019 | 0.019 | 0.019 | 0.017 | 0.017 | 0.017 | 0.017 | 0.015 | 0.015 | 0.013 | 0.013 | 0.013 | 0.011 |
| | RPM | 20690 | 20690 | 15518 | 15518 | 7560 | 20867 | 20867 | 18745 | 23237 | 23237 | 23237 | 23237 | 21008 | 21008 | 21008 | 21008 | 18780 | 18780 | 14006 | 14006 | 14006 | 7003 |
| | FEED | 372 | 372 | 248 | 248 | 106 | 417 | 417 | 337 | 883 | 883 | 883 | 883 | 714 | 714 | 714 | 714 | 563 | 563 | 364 | 364 | 364 | 154 |
| | Ap | 0.014 | 0.008 | 0.006 | 0.006 | 0.006 | 0.025 | 0.016 | 0.016 | 0.07 | 0.07 | 0.049 | 0.049 | 0.028 | 0.028 | 0.028 | 0.018 | 0.018 | 0.011 | 0.011 | 0.007 | 0.007 | 0.007 |
| 15 - 20 | Vc | 55 | 55 | 41 | 41 | 21 | 63 | 63 | 56 | 77 | 77 | 77 | 77 | 70 | 70 | 70 | 70 | 62 | 62 | 46 | 46 | 46 | 23 |
| | fz | 0.011 | 0.011 | 0.01 | 0.01 | 0.009 | 0.013 | 0.013 | 0.012 | 0.021 | 0.021 | 0.021 | 0.021 | 0.019 | 0.019 | 0.019 | 0.019 | 0.017 | 0.017 | 0.015 | 0.015 | 0.015 | 0.013 |
| | RPM | 21884 | 21884 | 16313 | 16313 | 8356 | 22282 | 22282 | 19806 | 24510 | 24510 | 24510 | 24510 | 22282 | 22282 | 22282 | 22282 | 19735 | 19735 | 14642 | 14642 | 14642 | 7321 |
| | FEED | 481 | 481 | 326 | 326 | 150 | 579 | 579 | 475 | 1029 | 1029 | 1029 | 1029 | 847 | 847 | 847 | 847 | 671 | 671 | 439 | 439 | 439 | 190 |
| | Ap | 0.018 | 0.011 | 0.007 | 0.007 | 0.007 | 0.032 | 0.02 | 0.02 | 0.09 | 0.09 | 0.063 | 0.063 | 0.036 | 0.036 | 0.036 | 0.023 | 0.023 | 0.014 | 0.014 | 0.009 | 0.009 | 0.009 |
| 38.1 - 38.2 | Vc | 46 | 46 | 34 | 34 | 17 | 52 | 52 | 46 | 64 | 64 | 64 | 64 | 58 | 58 | 58 | 58 | 52 | 52 | 39 | 39 | 39 | 19 |
| | fz | 0.008 | 0.008 | 0.007 | 0.007 | 0.006 | 0.009 | 0.009 | 0.008 | 0.016 | 0.016 | 0.016 | 0.016 | 0.015 | 0.015 | 0.015 | 0.015 | 0.013 | 0.013 | 0.011 | 0.011 | 0.011 | 0.01 |
| | RPM | 18303 | 18303 | 13528 | 13528 | 6764 | 18391 | 18391 | 16269 | 20372 | 20372 | 20372 | 20372 | 18462 | 18462 | 18462 | 18462 | 16552 | 16552 | 12414 | 12414 | 12414 | 6048 |
| | FEED | 293 | 293 | 189 | 189 | 81 | 331 | 331 | 260 | 652 | 652 | 652 | 652 | 554 | 554 | 554 | 554 | 430 | 430 | 273 | 273 | 273 | 121 |
| | Ap | 0.01 | 0.006 | 0.004 | 0.004 | 0.004 | 0.018 | 0.011 | 0.011 | 0.05 | 0.05 | 0.035 | 0.035 | 0.02 | 0.02 | 0.02 | 0.013 | 0.013 | 0.008 | 0.008 | 0.005 | 0.005 | 0.005 |
| 40 | Vc | 52 | 52 | 39 | 39 | 19 | 59 | 59 | 53 | 73 | 73 | 73 | 73 | 66 | 66 | 66 | 66 | 59 | 59 | 44 | 44 | 44 | 22 |
| | fz | 0.009 | 0.009 | 0.008 | 0.008 | 0.007 | 0.01 | 0.01 | 0.009 | 0.019 | 0.019 | 0.019 | 0.019 | 0.017 | 0.017 | 0.017 | 0.017 | 0.015 | 0.015 | 0.013 | 0.013 | 0.013 | 0.011 |
| | RPM | 20690 | 20690 | 15518 | 15518 | 7560 | 20867 | 20867 | 18745 | 23237 | 23237 | 23237 | 23237 | 21008 | 21008 | 21008 | 21008 | 18780 | 18780 | 14006 | 14006 | 14006 | 7003 |
| | FEED | 372 | 372 | 248 | 248 | 106 | 417 | 417 | 337 | 883 | 883 | 883 | 883 | 714 | 714 | 714 | 714 | 563 | 563 | 364 | 364 | 364 | 154 |
| | Ap | 0.014 | 0.008 | 0.006 | 0.006 | 0.006 | 0.025 | 0.016 | 0.016 | 0.07 | 0.07 | 0.049 | 0.049 | 0.028 | 0.028 | 0.028 | 0.018 | 0.018 | 0.011 | 0.011 | 0.007 | 0.007 | 0.007 |
| 41 | Vc | 46 | 46 | 34 | 34 | 17 | 52 | 52 | 46 | 64 | 64 | 64 | 64 | 58 | 58 | 58 | 58 | 52 | 52 | 39 | 39 | 39 | 19 |
| | fz | 0.008 | 0.008 | 0.007 | 0.007 | 0.006 | 0.009 | 0.009 | 0.008 | 0.016 | 0.016 | 0.016 | 0.016 | 0.015 | 0.015 | 0.015 | 0.015 | 0.013 | 0.013 | 0.011 | 0.011 | 0.011 | 0.01 |
| | RPM | 18303 | 18303 | 13528 | 13528 | 6764 | 18391 | 18391 | 16269 | 20372 | 20372 | 20372 | 20372 | 18462 | 18462 | 18462 | 18462 | 16552 | 16552 | 12414 | 12414 | 12414 | 6048 |
| | FEED | 293 | 293 | 189 | 189 | 81 | 331 | 331 | 260 | 652 | 652 | 652 | 652 | 554 | 554 | 554 | 554 | 430 | 430 | 273 | 273 | 273 | 121 |
| | Ap | 0.01 | 0.006 | 0.004 | 0.004 | 0.004 | 0.018 | 0.011 | 0.011 | 0.05 | 0.05 | 0.035 | 0.035 | 0.02 | 0.02 | 0.02 | 0.013 | 0.013 | 0.008 | 0.008 | 0.005 | 0.005 | 0.005 |

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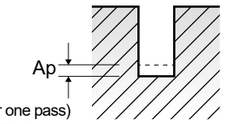

# 4G MILL END MILLS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

### SEM845 SERIES — 2 FLUTE - SLOTTING / 2刃- 槽铣削

Vc (切削速度) = (m/min.) FEED (进给) = (mm/min.)
fz (每齿进给) = (mm/tooth) Ap (切削深度) = (mm)
RPM (转速) = (rev./min.) LBS (颈长) = Length Below Shank

| ISO | VDI 3323 | Parameter 参数 | Diameter (Ø) 直径 | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1.0 | 1.0 | 1.0 | 1.0 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 |
| | | LBS | 26 | 30 | 40 | 50 | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 20 | 26 | 30 | 6 | 8 | 10 | 14 | 16 | 20 |
| P | 1-5 | Vc | 23 | 23 | 8 | 8 | 83 | 83 | 74 | 74 | 74 | 66 | 66 | 50 | 25 | 25 | 84 | 76 | 76 | 76 | 68 | 68 |
| | | fz | 0.013 | 0.013 | 0.01 | 0.01 | 0.021 | 0.021 | 0.019 | 0.019 | 0.019 | 0.017 | 0.017 | 0.015 | 0.013 | 0.013 | 0.021 | 0.019 | 0.019 | 0.019 | 0.017 | 0.017 |
| | | RPM | 7321 | 7321 | 2546 | 2546 | 22016 | 22016 | 19629 | 19629 | 19629 | 17507 | 17507 | 13263 | 6631 | 6631 | 19099 | 17280 | 17280 | 17280 | 15461 | 15461 |
| | | FEED | 190 | 190 | 51 | 51 | 925 | 925 | 746 | 746 | 746 | 595 | 595 | 398 | 172 | 172 | 802 | 657 | 657 | 657 | 526 | 526 |
| | | Ap | 0.009 | 0.009 | 0.009 | 0.006 | 0.076 | 0.076 | 0.043 | 0.027 | 0.027 | 0.027 | 0.016 | 0.011 | 0.011 | 0.011 | 0.088 | 0.05 | 0.05 | 0.032 | 0.032 | 0.019 |
| | 6-8 | Vc | 23 | 23 | 8 | 8 | 83 | 83 | 74 | 74 | 74 | 66 | 66 | 50 | 25 | 25 | 84 | 76 | 76 | 76 | 68 | 68 |
| | | fz | 0.013 | 0.013 | 0.01 | 0.01 | 0.021 | 0.021 | 0.019 | 0.019 | 0.019 | 0.017 | 0.017 | 0.015 | 0.013 | 0.013 | 0.021 | 0.019 | 0.019 | 0.019 | 0.017 | 0.017 |
| | | RPM | 7321 | 7321 | 2546 | 2546 | 22016 | 22016 | 19629 | 19629 | 19629 | 17507 | 17507 | 13263 | 6631 | 6631 | 19099 | 17280 | 17280 | 17280 | 15461 | 15461 |
| | | FEED | 190 | 190 | 51 | 51 | 925 | 925 | 746 | 746 | 746 | 595 | 595 | 398 | 172 | 172 | 802 | 657 | 657 | 657 | 526 | 526 |
| | | Ap | 0.009 | 0.009 | 0.009 | 0.006 | 0.076 | 0.076 | 0.043 | 0.027 | 0.027 | 0.027 | 0.016 | 0.011 | 0.011 | 0.011 | 0.088 | 0.05 | 0.05 | 0.032 | 0.032 | 0.019 |
| | 9 | Vc | 22 | 22 | 7 | 7 | 78 | 78 | 70 | 70 | 70 | 62 | 62 | 47 | 23 | 23 | 80 | 72 | 72 | 72 | 64 | 64 |
| | | fz | 0.011 | 0.011 | 0.01 | 0.01 | 0.017 | 0.017 | 0.016 | 0.016 | 0.016 | 0.014 | 0.014 | 0.012 | 0.01 | 0.01 | 0.016 | 0.014 | 0.014 | 0.014 | 0.013 | 0.013 |
| | | RPM | 7003 | 7003 | 2228 | 2228 | 20690 | 20690 | 18568 | 18568 | 18568 | 16446 | 16446 | 12467 | 6101 | 6101 | 18189 | 16370 | 16370 | 16370 | 14551 | 14551 |
| | | FEED | 154 | 154 | 45 | 45 | 703 | 703 | 594 | 594 | 594 | 460 | 460 | 299 | 122 | 122 | 582 | 458 | 458 | 458 | 378 | 378 |
| | | Ap | 0.007 | 0.007 | 0.007 | 0.005 | 0.059 | 0.059 | 0.034 | 0.021 | 0.021 | 0.021 | 0.013 | 0.008 | 0.008 | 0.008 | 0.069 | 0.039 | 0.039 | 0.025 | 0.025 | 0.015 |
| | 10-11.1 | Vc | 23 | 23 | 8 | 8 | 83 | 83 | 74 | 74 | 74 | 66 | 66 | 50 | 25 | 25 | 84 | 76 | 76 | 76 | 68 | 68 |
| | | fz | 0.013 | 0.013 | 0.01 | 0.01 | 0.021 | 0.021 | 0.019 | 0.019 | 0.019 | 0.017 | 0.017 | 0.015 | 0.013 | 0.013 | 0.021 | 0.019 | 0.019 | 0.019 | 0.017 | 0.017 |
| | | RPM | 7321 | 7321 | 2546 | 2546 | 22016 | 22016 | 19629 | 19629 | 19629 | 17507 | 17507 | 13263 | 6631 | 6631 | 19099 | 17280 | 17280 | 17280 | 15461 | 15461 |
| | | FEED | 190 | 190 | 51 | 51 | 925 | 925 | 746 | 746 | 746 | 595 | 595 | 398 | 172 | 172 | 802 | 657 | 657 | 657 | 526 | 526 |
| | | Ap | 0.009 | 0.009 | 0.009 | 0.006 | 0.076 | 0.076 | 0.043 | 0.027 | 0.027 | 0.027 | 0.016 | 0.011 | 0.011 | 0.011 | 0.088 | 0.05 | 0.05 | 0.032 | 0.032 | 0.019 |
| | 11.2 | Vc | 22 | 22 | 7 | 7 | 78 | 78 | 70 | 70 | 70 | 62 | 62 | 47 | 23 | 23 | 80 | 72 | 72 | 72 | 64 | 64 |
| | | fz | 0.011 | 0.011 | 0.01 | 0.01 | 0.017 | 0.017 | 0.016 | 0.016 | 0.016 | 0.014 | 0.014 | 0.012 | 0.01 | 0.01 | 0.016 | 0.014 | 0.014 | 0.014 | 0.013 | 0.013 |
| | | RPM | 7003 | 7003 | 2228 | 2228 | 20690 | 20690 | 18568 | 18568 | 18568 | 16446 | 16446 | 12467 | 6101 | 6101 | 18189 | 16370 | 16370 | 16370 | 14551 | 14551 |
| | | FEED | 154 | 154 | 45 | 45 | 703 | 703 | 594 | 594 | 594 | 460 | 460 | 299 | 122 | 122 | 582 | 458 | 458 | 458 | 378 | 378 |
| | | Ap | 0.007 | 0.007 | 0.007 | 0.005 | 0.059 | 0.059 | 0.034 | 0.021 | 0.021 | 0.021 | 0.013 | 0.008 | 0.008 | 0.008 | 0.069 | 0.039 | 0.039 | 0.025 | 0.025 | 0.015 |
| K | 15-20 | Vc | 23 | 23 | 8 | 8 | 83 | 83 | 74 | 74 | 74 | 66 | 66 | 50 | 25 | 25 | 84 | 76 | 76 | 76 | 68 | 68 |
| | | fz | 0.013 | 0.013 | 0.01 | 0.01 | 0.021 | 0.021 | 0.019 | 0.019 | 0.019 | 0.017 | 0.017 | 0.015 | 0.013 | 0.013 | 0.021 | 0.019 | 0.019 | 0.019 | 0.017 | 0.017 |
| | | RPM | 7321 | 7321 | 2546 | 2546 | 22016 | 22016 | 19629 | 19629 | 19629 | 17507 | 17507 | 13263 | 6631 | 6631 | 19099 | 17280 | 17280 | 17280 | 15461 | 15461 |
| | | FEED | 190 | 190 | 51 | 51 | 925 | 925 | 746 | 746 | 746 | 595 | 595 | 398 | 172 | 172 | 802 | 657 | 657 | 657 | 526 | 526 |
| | | Ap | 0.009 | 0.009 | 0.009 | 0.006 | 0.076 | 0.076 | 0.043 | 0.027 | 0.027 | 0.027 | 0.016 | 0.011 | 0.011 | 0.011 | 0.088 | 0.05 | 0.05 | 0.032 | 0.032 | 0.019 |
| H | 38.1 - 38.2 | Vc | 19 | 19 | 6 | 6 | 69 | 69 | 62 | 62 | 62 | 55 | 55 | 41 | 21 | 21 | 70 | 63 | 63 | 63 | 56 | 56 |
| | | fz | 0.01 | 0.01 | 0.009 | 0.009 | 0.013 | 0.013 | 0.012 | 0.012 | 0.012 | 0.011 | 0.011 | 0.009 | 0.008 | 0.008 | 0.013 | 0.012 | 0.012 | 0.012 | 0.011 | 0.011 |
| | | RPM | 6048 | 6048 | 1910 | 1910 | 18303 | 18303 | 16446 | 16446 | 16446 | 14589 | 14589 | 10876 | 5570 | 5570 | 15915 | 14324 | 14324 | 14324 | 12732 | 12732 |
| | | FEED | 121 | 121 | 34 | 34 | 476 | 476 | 395 | 395 | 395 | 321 | 321 | 196 | 89 | 89 | 414 | 344 | 344 | 344 | 280 | 280 |
| | | Ap | 0.005 | 0.005 | 0.005 | 0.003 | 0.042 | 0.042 | 0.024 | 0.015 | 0.015 | 0.015 | 0.009 | 0.006 | 0.006 | 0.006 | 0.049 | 0.028 | 0.028 | 0.018 | 0.018 | 0.011 |
| | 40 | Vc | 22 | 22 | 7 | 7 | 78 | 78 | 70 | 70 | 70 | 62 | 62 | 47 | 23 | 23 | 80 | 72 | 72 | 72 | 64 | 64 |
| | | fz | 0.011 | 0.011 | 0.01 | 0.01 | 0.017 | 0.017 | 0.016 | 0.016 | 0.016 | 0.014 | 0.014 | 0.012 | 0.01 | 0.01 | 0.016 | 0.014 | 0.014 | 0.014 | 0.013 | 0.013 |
| | | RPM | 7003 | 7003 | 2228 | 2228 | 20690 | 20690 | 18568 | 18568 | 18568 | 16446 | 16446 | 12467 | 6101 | 6101 | 18189 | 16370 | 16370 | 16370 | 14551 | 14551 |
| | | FEED | 154 | 154 | 45 | 45 | 703 | 703 | 594 | 594 | 594 | 460 | 460 | 299 | 122 | 122 | 582 | 458 | 458 | 458 | 378 | 378 |
| | | Ap | 0.007 | 0.007 | 0.007 | 0.005 | 0.059 | 0.059 | 0.034 | 0.021 | 0.021 | 0.021 | 0.013 | 0.008 | 0.008 | 0.008 | 0.069 | 0.039 | 0.039 | 0.025 | 0.025 | 0.015 |
| | 41 | Vc | 19 | 19 | 6 | 6 | 69 | 69 | 62 | 62 | 62 | 55 | 55 | 41 | 21 | 21 | 70 | 63 | 63 | 63 | 56 | 56 |
| | | fz | 0.01 | 0.01 | 0.009 | 0.009 | 0.013 | 0.013 | 0.012 | 0.012 | 0.012 | 0.011 | 0.011 | 0.009 | 0.008 | 0.008 | 0.013 | 0.012 | 0.012 | 0.012 | 0.011 | 0.011 |
| | | RPM | 6048 | 6048 | 1910 | 1910 | 18303 | 18303 | 16446 | 16446 | 16446 | 14589 | 14589 | 10876 | 5570 | 5570 | 15915 | 14324 | 14324 | 14324 | 12732 | 12732 |
| | | FEED | 121 | 121 | 34 | 34 | 476 | 476 | 395 | 395 | 395 | 321 | 321 | 196 | 89 | 89 | 414 | 344 | 344 | 344 | 280 | 280 |
| | | Ap | 0.005 | 0.005 | 0.005 | 0.003 | 0.042 | 0.042 | 0.024 | 0.015 | 0.015 | 0.015 | 0.009 | 0.006 | 0.006 | 0.006 | 0.049 | 0.028 | 0.028 | 0.018 | 0.018 | 0.011 |

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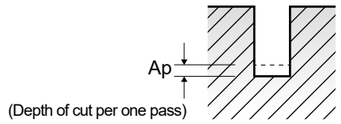




4G MILL END MILLS
RECOMMENDED CUTTING CONDITIONS
推荐加工参数
SEM845 SERIES — 2 FLUTE - SLOTTING / 2刃- 槽铣削
Vc (切削速度) = (m/min.) FEED (进给) = (mm/min.)
fz (每齿进给) = (mm/tooth) Ap (切削深度) = (mm)
RPM (转速) = (rev./min.) LBS (颈长) = Length Below Shank

| VDI 3323 | Parameter 参数 | Diameter (Ø) 直径 | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.6 | 1.6 | 1.6 | 1.6 | 1.6 | 1.8 | 1.8 | 1.8 |
| | LBS | 4 | 5 | 6 | 7 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 26 | 30 | 8 | 10 | 12 | 16 | 20 | 8 | 10 | 12 |
| 1-5 | Vc | 90 | 90 | 90 | 90 | 81 | 81 | 81 | 81 | 72 | 72 | 72 | 72 | 54 | 54 | 89 | 81 | 81 | 81 | 72 | 101 | 91 | 91 |
| | fz | 0.024 | 0.024 | 0.024 | 0.024 | 0.021 | 0.021 | 0.021 | 0.021 | 0.019 | 0.019 | 0.019 | 0.019 | 0.016 | 0.016 | 0.024 | 0.021 | 0.021 | 0.021 | 0.019 | 0.024 | 0.021 | 0.021 |
| | RPM | 19099 | 19099 | 19099 | 19099 | 17189 | 17189 | 17189 | 17189 | 15279 | 15279 | 15279 | 15279 | 11459 | 11459 | 17706 | 16114 | 16114 | 16114 | 14324 | 17861 | 16092 | 16092 |
| | FEED | 917 | 917 | 917 | 917 | 722 | 722 | 722 | 722 | 581 | 581 | 581 | 581 | 367 | 367 | 850 | 677 | 677 | 677 | 544 | 857 | 676 | 676 |
| | Ap | 0.135 | 0.095 | 0.095 | 0.095 | 0.054 | 0.054 | 0.054 | 0.034 | 0.034 | 0.034 | 0.02 | 0.02 | 0.014 | 0.014 | 0.101 | 0.058 | 0.058 | 0.036 | 0.036 | 0.113 | 0.065 | 0.065 |
| 6-8 | Vc | 90 | 90 | 90 | 90 | 81 | 81 | 81 | 81 | 72 | 72 | 72 | 72 | 54 | 54 | 89 | 81 | 81 | 81 | 72 | 101 | 91 | 91 |
| | fz | 0.024 | 0.024 | 0.024 | 0.024 | 0.021 | 0.021 | 0.021 | 0.021 | 0.019 | 0.019 | 0.019 | 0.019 | 0.016 | 0.016 | 0.024 | 0.021 | 0.021 | 0.021 | 0.019 | 0.024 | 0.021 | 0.021 |
| | RPM | 19099 | 19099 | 19099 | 19099 | 17189 | 17189 | 17189 | 17189 | 15279 | 15279 | 15279 | 15279 | 11459 | 11459 | 17706 | 16114 | 16114 | 16114 | 14324 | 17861 | 16092 | 16092 |
| | FEED | 917 | 917 | 917 | 917 | 722 | 722 | 722 | 722 | 581 | 581 | 581 | 581 | 367 | 367 | 850 | 677 | 677 | 677 | 544 | 857 | 676 | 676 |
| | Ap | 0.135 | 0.095 | 0.095 | 0.095 | 0.054 | 0.054 | 0.054 | 0.034 | 0.034 | 0.034 | 0.02 | 0.02 | 0.014 | 0.014 | 0.101 | 0.058 | 0.058 | 0.036 | 0.036 | 0.113 | 0.065 | 0.065 |
| 9 | Vc | 85 | 85 | 85 | 85 | 77 | 77 | 77 | 77 | 68 | 68 | 68 | 68 | 51 | 51 | 84 | 76 | 76 | 76 | 68 | 95 | 86 | 86 |
| | fz | 0.018 | 0.018 | 0.018 | 0.018 | 0.016 | 0.016 | 0.016 | 0.016 | 0.014 | 0.014 | 0.014 | 0.014 | 0.012 | 0.012 | 0.019 | 0.018 | 0.018 | 0.018 | 0.016 | 0.019 | 0.018 | 0.018 |
| | RPM | 18038 | 18038 | 18038 | 18038 | 16340 | 16340 | 16340 | 16340 | 14430 | 14430 | 14430 | 14430 | 10823 | 10823 | 16711 | 15120 | 15120 | 15120 | 13528 | 16800 | 15208 | 15208 |
| | FEED | 649 | 649 | 649 | 649 | 523 | 523 | 523 | 523 | 404 | 404 | 404 | 404 | 260 | 260 | 635 | 544 | 544 | 544 | 433 | 638 | 547 | 547 |
| | Ap | 0.105 | 0.074 | 0.074 | 0.074 | 0.042 | 0.042 | 0.042 | 0.026 | 0.026 | 0.026 | 0.016 | 0.016 | 0.011 | 0.011 | 0.078 | 0.045 | 0.045 | 0.028 | 0.028 | 0.088 | 0.05 | 0.05 |
| 10 - 11.1 | Vc | 90 | 90 | 90 | 90 | 81 | 81 | 81 | 81 | 72 | 72 | 72 | 72 | 54 | 54 | 89 | 81 | 81 | 81 | 72 | 101 | 91 | 91 |
| | fz | 0.024 | 0.024 | 0.024 | 0.024 | 0.021 | 0.021 | 0.021 | 0.021 | 0.019 | 0.019 | 0.019 | 0.019 | 0.016 | 0.016 | 0.024 | 0.021 | 0.021 | 0.021 | 0.019 | 0.024 | 0.021 | 0.021 |
| | RPM | 19099 | 19099 | 19099 | 19099 | 17189 | 17189 | 17189 | 17189 | 15279 | 15279 | 15279 | 15279 | 11459 | 11459 | 17706 | 16114 | 16114 | 16114 | 14324 | 17861 | 16092 | 16092 |
| | FEED | 917 | 917 | 917 | 917 | 722 | 722 | 722 | 722 | 581 | 581 | 581 | 581 | 367 | 367 | 850 | 677 | 677 | 677 | 544 | 857 | 676 | 676 |
| | Ap | 0.135 | 0.095 | 0.095 | 0.095 | 0.054 | 0.054 | 0.054 | 0.034 | 0.034 | 0.034 | 0.02 | 0.02 | 0.014 | 0.014 | 0.101 | 0.058 | 0.058 | 0.036 | 0.036 | 0.113 | 0.065 | 0.065 |
| 11.2 | Vc | 85 | 85 | 85 | 85 | 77 | 77 | 77 | 77 | 68 | 68 | 68 | 68 | 51 | 51 | 84 | 76 | 76 | 76 | 68 | 95 | 86 | 86 |
| | fz | 0.018 | 0.018 | 0.018 | 0.018 | 0.016 | 0.016 | 0.016 | 0.016 | 0.014 | 0.014 | 0.014 | 0.014 | 0.012 | 0.012 | 0.019 | 0.018 | 0.018 | 0.018 | 0.016 | 0.019 | 0.018 | 0.018 |
| | RPM | 18038 | 18038 | 18038 | 18038 | 16340 | 16340 | 16340 | 16340 | 14430 | 14430 | 14430 | 14430 | 10823 | 10823 | 16711 | 15120 | 15120 | 15120 | 13528 | 16800 | 15208 | 15208 |
| | FEED | 649 | 649 | 649 | 649 | 523 | 523 | 523 | 523 | 404 | 404 | 404 | 404 | 260 | 260 | 635 | 544 | 544 | 544 | 433 | 638 | 547 | 547 |
| | Ap | 0.105 | 0.074 | 0.074 | 0.074 | 0.042 | 0.042 | 0.042 | 0.026 | 0.026 | 0.026 | 0.016 | 0.016 | 0.011 | 0.011 | 0.078 | 0.045 | 0.045 | 0.028 | 0.028 | 0.088 | 0.05 | 0.05 |
| 15 - 20 | Vc | 90 | 90 | 90 | 90 | 81 | 81 | 81 | 81 | 72 | 72 | 72 | 72 | 54 | 54 | 89 | 81 | 81 | 81 | 72 | 101 | 91 | 91 |
| | fz | 0.024 | 0.024 | 0.024 | 0.024 | 0.021 | 0.021 | 0.021 | 0.021 | 0.019 | 0.019 | 0.019 | 0.019 | 0.016 | 0.016 | 0.024 | 0.021 | 0.021 | 0.021 | 0.019 | 0.024 | 0.021 | 0.021 |
| | RPM | 19099 | 19099 | 19099 | 19099 | 17189 | 17189 | 17189 | 17189 | 15279 | 15279 | 15279 | 15279 | 11459 | 11459 | 17706 | 16114 | 16114 | 16114 | 14324 | 17861 | 16092 | 16092 |
| | FEED | 917 | 917 | 917 | 917 | 722 | 722 | 722 | 722 | 581 | 581 | 581 | 581 | 367 | 367 | 850 | 677 | 677 | 677 | 544 | 857 | 676 | 676 |
| | Ap | 0.135 | 0.095 | 0.095 | 0.095 | 0.054 | 0.054 | 0.054 | 0.034 | 0.034 | 0.034 | 0.02 | 0.02 | 0.014 | 0.014 | 0.101 | 0.058 | 0.058 | 0.036 | 0.036 | 0.113 | 0.065 | 0.065 |
| 38.1 - 38.2 | Vc | 75 | 75 | 75 | 75 | 68 | 68 | 68 | 68 | 60 | 60 | 60 | 60 | 45 | 45 | 74 | 67 | 67 | 67 | 60 | 84 | 75 | 75 |
| | fz | 0.015 | 0.015 | 0.015 | 0.015 | 0.013 | 0.013 | 0.013 | 0.013 | 0.012 | 0.012 | 0.012 | 0.012 | 0.01 | 0.01 | 0.017 | 0.015 | 0.015 | 0.015 | 0.013 | 0.017 | 0.015 | 0.015 |
| | RPM | 15915 | 15915 | 15915 | 15915 | 14430 | 14430 | 14430 | 14430 | 12732 | 12732 | 12732 | 12732 | 9549 | 9549 | 14722 | 13329 | 13329 | 13329 | 11937 | 14854 | 13263 | 13263 |
| | FEED | 477 | 477 | 477 | 477 | 375 | 375 | 375 | 375 | 306 | 306 | 306 | 306 | 191 | 191 | 501 | 400 | 400 | 400 | 310 | 505 | 398 | 398 |
| | Ap | 0.075 | 0.053 | 0.053 | 0.053 | 0.03 | 0.03 | 0.03 | 0.019 | 0.019 | 0.019 | 0.011 | 0.011 | 0.008 | 0.008 | 0.056 | 0.032 | 0.032 | 0.02 | 0.02 | 0.063 | 0.036 | 0.036 |
| 40 | Vc | 85 | 85 | 85 | 85 | 77 | 77 | 77 | 77 | 68 | 68 | 68 | 68 | 51 | 51 | 84 | 76 | 76 | 76 | 68 | 95 | 86 | 86 |
| | fz | 0.018 | 0.018 | 0.018 | 0.018 | 0.016 | 0.016 | 0.016 | 0.016 | 0.014 | 0.014 | 0.014 | 0.014 | 0.012 | 0.012 | 0.019 | 0.018 | 0.018 | 0.018 | 0.016 | 0.019 | 0.018 | 0.018 |
| | RPM | 18038 | 18038 | 18038 | 18038 | 16340 | 16340 | 16340 | 16340 | 14430 | 14430 | 14430 | 14430 | 10823 | 10823 | 16711 | 15120 | 15120 | 15120 | 13528 | 16800 | 15208 | 15208 |
| | FEED | 649 | 649 | 649 | 649 | 523 | 523 | 523 | 523 | 404 | 404 | 404 | 404 | 260 | 260 | 635 | 544 | 544 | 544 | 433 | 638 | 547 | 547 |
| | Ap | 0.105 | 0.074 | 0.074 | 0.074 | 0.042 | 0.042 | 0.042 | 0.026 | 0.026 | 0.026 | 0.016 | 0.016 | 0.011 | 0.011 | 0.078 | 0.045 | 0.045 | 0.028 | 0.028 | 0.088 | 0.05 | 0.05 |
| 41 | Vc | 75 | 75 | 75 | 75 | 68 | 68 | 68 | 68 | 60 | 60 | 60 | 60 | 45 | 45 | 74 | 67 | 67 | 67 | 60 | 84 | 75 | 75 |
| | fz | 0.015 | 0.015 | 0.015 | 0.015 | 0.013 | 0.013 | 0.013 | 0.013 | 0.012 | 0.012 | 0.012 | 0.012 | 0.01 | 0.01 | 0.017 | 0.015 | 0.015 | 0.015 | 0.013 | 0.017 | 0.015 | 0.015 |
| | RPM | 15915 | 15915 | 15915 | 15915 | 14430 | 14430 | 14430 | 14430 | 12732 | 12732 | 12732 | 12732 | 9549 | 9549 | 14722 | 13329 | 13329 | 13329 | 11937 | 14854 | 13263 | 13263 |
| | FEED | 477 | 477 | 477 | 477 | 375 | 375 | 375 | 375 | 306 | 306 | 306 | 306 | 191 | 191 | 501 | 400 | 400 | 400 | 310 | 505 | 398 | 398 |
| | Ap | 0.075 | 0.053 | 0.053 | 0.053 | 0.03 | 0.03 | 0.03 | 0.019 | 0.019 | 0.019 | 0.011 | 0.011 | 0.008 | 0.008 | 0.056 | 0.032 | 0.032 | 0.02 | 0.02 | 0.063 | 0.036 | 0.036 |

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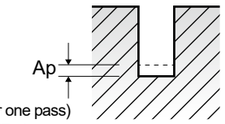




CARBIDE
HSS
CBN END MILLS
i-Xmill END MILLS
i-SMART MODULAR END MILLS
X5070 END MILLS
4G MILL END MILLS
X-POWER PRO END MILLS
TitaNox-POWER END MILLS
SUS-CUT END MILLS
V7 PLUS END MILLS
ALU-POWER HPC END MILLS
ALU-CUT END MILLS
G-CUT END MILLS
CRX S END MILLS
K-2 END MILLS
GENERAL CARBIDE END MILLS
ONLY ONE COATED PM60 END MILLS
TANK-POWER END MILLS
GENERAL HSS END MILLS
MILLING CUTTERS
TECHNICAL DATA

# 4G MILL END MILLS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

### SEM845 SERIES — 2 FLUTE - SLOTTING / 2刃- 槽铣削

Vc (切削速度) = (m/min.) FEED (进给) = (mm/min.)
fz (每齿进给) = (mm/tooth) Ap (切削深度) = (mm)
RPM (转速) = (rev./min.) LBS (颈长) = Length Below Shank

| ISO | VDI 3323 | Parameter 参数 | Diameter (Ø) 直径 | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1.8 | 1.8 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.5 | 2.5 |
| | | LBS | 16 | 20 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 26 | 30 | 35 | 40 | 45 | 50 | 60 | 8 | 10 |
| P | 1-5 | Vc | 91 | 81 | 90 | 90 | 90 | 81 | 81 | 81 | 81 | 81 | 72 | 72 | 72 | 54 | 54 | 27 | 27 | 27 | 97 | 97 |
| | | fz | 0.021 | 0.019 | 0.028 | 0.028 | 0.028 | 0.026 | 0.026 | 0.026 | 0.026 | 0.026 | 0.023 | 0.023 | 0.023 | 0.02 | 0.02 | 0.017 | 0.017 | 0.017 | 0.039 | 0.039 |
| | | RPM | 16092 | 14324 | 14324 | 14324 | 14324 | 12892 | 12892 | 12892 | 12892 | 12892 | 11459 | 11459 | 11459 | 8594 | 8594 | 4297 | 4297 | 4297 | 12350 | 12350 |
| | | FEED | 676 | 544 | 802 | 802 | 802 | 670 | 670 | 670 | 670 | 670 | 527 | 527 | 527 | 344 | 344 | 146 | 146 | 146 | 963 | 963 |
| | | Ap | 0.041 | 0.041 | 0.18 | 0.126 | 0.126 | 0.072 | 0.072 | 0.072 | 0.045 | 0.045 | 0.045 | 0.045 | 0.027 | 0.018 | 0.018 | 0.018 | 0.018 | 0.018 | 0.158 | 0.158 |
| | 6-8 | Vc | 91 | 81 | 90 | 90 | 90 | 81 | 81 | 81 | 81 | 81 | 72 | 72 | 72 | 54 | 54 | 27 | 27 | 27 | 97 | 97 |
| | | fz | 0.021 | 0.019 | 0.028 | 0.028 | 0.028 | 0.026 | 0.026 | 0.026 | 0.026 | 0.026 | 0.023 | 0.023 | 0.023 | 0.02 | 0.02 | 0.017 | 0.017 | 0.017 | 0.039 | 0.039 |
| | | RPM | 16092 | 14324 | 14324 | 14324 | 14324 | 12892 | 12892 | 12892 | 12892 | 12892 | 11459 | 11459 | 11459 | 8594 | 8594 | 4297 | 4297 | 4297 | 12350 | 12350 |
| | | FEED | 676 | 544 | 802 | 802 | 802 | 670 | 670 | 670 | 670 | 670 | 527 | 527 | 527 | 344 | 344 | 146 | 146 | 146 | 963 | 963 |
| | | Ap | 0.041 | 0.041 | 0.18 | 0.126 | 0.126 | 0.072 | 0.072 | 0.072 | 0.045 | 0.045 | 0.045 | 0.045 | 0.027 | 0.018 | 0.018 | 0.018 | 0.018 | 0.018 | 0.158 | 0.158 |
| | 9 | Vc | 86 | 76 | 85 | 85 | 85 | 77 | 77 | 77 | 77 | 77 | 68 | 68 | 68 | 51 | 51 | 26 | 26 | 26 | 91 | 91 |
| | | fz | 0.018 | 0.016 | 0.023 | 0.023 | 0.023 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.018 | 0.018 | 0.018 | 0.016 | 0.016 | 0.013 | 0.013 | 0.013 | 0.029 | 0.029 |
| | | RPM | 15208 | 13440 | 13528 | 13528 | 13528 | 12255 | 12255 | 12255 | 12255 | 12255 | 10823 | 10823 | 10823 | 8117 | 8117 | 4138 | 4138 | 4138 | 11586 | 11586 |
| | | FEED | 547 | 430 | 622 | 622 | 622 | 490 | 490 | 490 | 490 | 490 | 390 | 390 | 390 | 260 | 260 | 108 | 108 | 108 | 672 | 672 |
| | | Ap | 0.032 | 0.032 | 0.14 | 0.098 | 0.098 | 0.056 | 0.056 | 0.056 | 0.035 | 0.035 | 0.035 | 0.035 | 0.021 | 0.014 | 0.014 | 0.014 | 0.014 | 0.014 | 0.123 | 0.123 |
| | 10-11.1 | Vc | 91 | 81 | 90 | 90 | 90 | 81 | 81 | 81 | 81 | 81 | 72 | 72 | 72 | 54 | 54 | 27 | 27 | 27 | 97 | 97 |
| | | fz | 0.021 | 0.019 | 0.028 | 0.028 | 0.028 | 0.026 | 0.026 | 0.026 | 0.026 | 0.026 | 0.023 | 0.023 | 0.023 | 0.02 | 0.02 | 0.017 | 0.017 | 0.017 | 0.039 | 0.039 |
| | | RPM | 16092 | 14324 | 14324 | 14324 | 14324 | 12892 | 12892 | 12892 | 12892 | 12892 | 11459 | 11459 | 11459 | 8594 | 8594 | 4297 | 4297 | 4297 | 12350 | 12350 |
| | | FEED | 676 | 544 | 802 | 802 | 802 | 670 | 670 | 670 | 670 | 670 | 527 | 527 | 527 | 344 | 344 | 146 | 146 | 146 | 963 | 963 |
| | | Ap | 0.041 | 0.041 | 0.18 | 0.126 | 0.126 | 0.072 | 0.072 | 0.072 | 0.045 | 0.045 | 0.045 | 0.045 | 0.027 | 0.018 | 0.018 | 0.018 | 0.018 | 0.018 | 0.158 | 0.158 |
| | 11.2 | Vc | 86 | 76 | 85 | 85 | 85 | 77 | 77 | 77 | 77 | 77 | 68 | 68 | 68 | 51 | 51 | 26 | 26 | 26 | 91 | 91 |
| | | fz | 0.018 | 0.016 | 0.023 | 0.023 | 0.023 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.018 | 0.018 | 0.018 | 0.016 | 0.016 | 0.013 | 0.013 | 0.013 | 0.029 | 0.029 |
| | | RPM | 15208 | 13440 | 13528 | 13528 | 13528 | 12255 | 12255 | 12255 | 12255 | 12255 | 10823 | 10823 | 10823 | 8117 | 8117 | 4138 | 4138 | 4138 | 11586 | 11586 |
| | | FEED | 547 | 430 | 622 | 622 | 622 | 490 | 490 | 490 | 490 | 490 | 390 | 390 | 390 | 260 | 260 | 108 | 108 | 108 | 672 | 672 |
| | | Ap | 0.032 | 0.032 | 0.14 | 0.098 | 0.098 | 0.056 | 0.056 | 0.056 | 0.035 | 0.035 | 0.035 | 0.035 | 0.021 | 0.014 | 0.014 | 0.014 | 0.014 | 0.014 | 0.123 | 0.123 |
| K | 15-20 | Vc | 91 | 81 | 90 | 90 | 90 | 81 | 81 | 81 | 81 | 81 | 72 | 72 | 72 | 54 | 54 | 27 | 27 | 27 | 97 | 97 |
| | | fz | 0.021 | 0.019 | 0.028 | 0.028 | 0.028 | 0.026 | 0.026 | 0.026 | 0.026 | 0.026 | 0.023 | 0.023 | 0.023 | 0.02 | 0.02 | 0.017 | 0.017 | 0.017 | 0.039 | 0.039 |
| | | RPM | 16092 | 14324 | 14324 | 14324 | 14324 | 12892 | 12892 | 12892 | 12892 | 12892 | 11459 | 11459 | 11459 | 8594 | 8594 | 4297 | 4297 | 4297 | 12350 | 12350 |
| | | FEED | 676 | 544 | 802 | 802 | 802 | 670 | 670 | 670 | 670 | 670 | 527 | 527 | 527 | 344 | 344 | 146 | 146 | 146 | 963 | 963 |
| | | Ap | 0.041 | 0.041 | 0.18 | 0.126 | 0.126 | 0.072 | 0.072 | 0.072 | 0.045 | 0.045 | 0.045 | 0.045 | 0.027 | 0.018 | 0.018 | 0.018 | 0.018 | 0.018 | 0.158 | 0.158 |
| H | 38.1 - 38.2 | Vc | 75 | 67 | 75 | 75 | 75 | 68 | 68 | 68 | 68 | 68 | 60 | 60 | 60 | 45 | 45 | 23 | 23 | 23 | 81 | 81 |
| | | fz | 0.015 | 0.013 | 0.02 | 0.02 | 0.02 | 0.018 | 0.018 | 0.018 | 0.018 | 0.018 | 0.016 | 0.016 | 0.016 | 0.014 | 0.014 | 0.012 | 0.012 | 0.012 | 0.025 | 0.025 |
| | | RPM | 13263 | 11848 | 11937 | 11937 | 11937 | 10823 | 10823 | 10823 | 10823 | 10823 | 9549 | 9549 | 9549 | 7162 | 7162 | 3661 | 3661 | 3661 | 10313 | 10313 |
| | | FEED | 398 | 308 | 477 | 477 | 477 | 390 | 390 | 390 | 390 | 390 | 306 | 306 | 306 | 201 | 201 | 88 | 88 | 88 | 516 | 516 |
| | | Ap | 0.023 | 0.023 | 0.1 | 0.07 | 0.07 | 0.04 | 0.04 | 0.04 | 0.025 | 0.025 | 0.025 | 0.025 | 0.015 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.088 | 0.088 |
| | 40 | Vc | 86 | 76 | 85 | 85 | 85 | 77 | 77 | 77 | 77 | 77 | 68 | 68 | 68 | 51 | 51 | 26 | 26 | 26 | 91 | 91 |
| | | fz | 0.018 | 0.016 | 0.023 | 0.023 | 0.023 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.018 | 0.018 | 0.018 | 0.016 | 0.016 | 0.013 | 0.013 | 0.013 | 0.029 | 0.029 |
| | | RPM | 15208 | 13440 | 13528 | 13528 | 13528 | 12255 | 12255 | 12255 | 12255 | 12255 | 10823 | 10823 | 10823 | 8117 | 8117 | 4138 | 4138 | 4138 | 11586 | 11586 |
| | | FEED | 547 | 430 | 622 | 622 | 622 | 490 | 490 | 490 | 490 | 490 | 390 | 390 | 390 | 260 | 260 | 108 | 108 | 108 | 672 | 672 |
| | | Ap | 0.032 | 0.032 | 0.14 | 0.098 | 0.098 | 0.056 | 0.056 | 0.056 | 0.035 | 0.035 | 0.035 | 0.035 | 0.021 | 0.014 | 0.014 | 0.014 | 0.014 | 0.014 | 0.123 | 0.123 |
| | 41 | Vc | 75 | 67 | 75 | 75 | 75 | 68 | 68 | 68 | 68 | 68 | 60 | 60 | 60 | 45 | 45 | 23 | 23 | 23 | 81 | 81 |
| | | fz | 0.015 | 0.013 | 0.02 | 0.02 | 0.02 | 0.018 | 0.018 | 0.018 | 0.018 | 0.018 | 0.016 | 0.016 | 0.016 | 0.014 | 0.014 | 0.012 | 0.012 | 0.012 | 0.025 | 0.025 |
| | | RPM | 13263 | 11848 | 11937 | 11937 | 11937 | 10823 | 10823 | 10823 | 10823 | 10823 | 9549 | 9549 | 9549 | 7162 | 7162 | 3661 | 3661 | 3661 | 10313 | 10313 |
| | | FEED | 398 | 308 | 477 | 477 | 477 | 390 | 390 | 390 | 390 | 390 | 306 | 306 | 306 | 201 | 201 | 88 | 88 | 88 | 516 | 516 |
| | | Ap | 0.023 | 0.023 | 0.1 | 0.07 | 0.07 | 0.04 | 0.04 | 0.04 | 0.025 | 0.025 | 0.025 | 0.025 | 0.015 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.088 | 0.088 |

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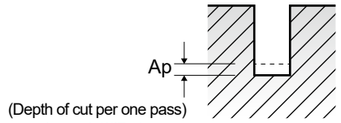




4G MILL END MILLS
RECOMMENDED CUTTING CONDITIONS
推荐加工参数
SEM845 SERIES — 2 FLUTE - SLOTTING / 2刃- 槽铣削
Vc (切削速度) = (m/min.) FEED (进给) = (mm/min.)
fz (每齿进给) = (mm/tooth) Ap (切削深度) = (mm)
RPM (转速) = (rev./min.) LBS (颈长) = Length Below Shank

| VDI 3323 | Parameter 参数 | Diameter (Ø) 直径 | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| | LBS | 12 | 14 | 16 | 18 | 20 | 22 | 26 | 30 | 35 | 40 | 45 | 50 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 26 |
| 1-5 | Vc | 97 | 87 | 87 | 87 | 87 | 87 | 77 | 77 | 77 | 58 | 58 | 58 | 103 | 103 | 103 | 103 | 103 | 92 | 92 | 92 | 92 | 92 |
| | fz | 0.039 | 0.035 | 0.035 | 0.035 | 0.035 | 0.035 | 0.032 | 0.032 | 0.032 | 0.027 | 0.027 | 0.027 | 0.039 | 0.039 | 0.039 | 0.039 | 0.039 | 0.035 | 0.035 | 0.035 | 0.035 | 0.035 |
| | RPM | 12350 | 11077 | 11077 | 11077 | 11077 | 11077 | 9804 | 9804 | 9804 | 7385 | 7385 | 7385 | 10929 | 10929 | 10929 | 10929 | 10929 | 9762 | 9762 | 9762 | 9762 | 9762 |
| | FEED | 963 | 775 | 775 | 775 | 775 | 775 | 627 | 627 | 627 | 399 | 399 | 399 | 852 | 852 | 852 | 852 | 852 | 683 | 683 | 683 | 683 | 683 |
| | Ap | 0.158 | 0.09 | 0.09 | 0.09 | 0.09 | 0.056 | 0.056 | 0.056 | 0.034 | 0.034 | 0.023 | 0.023 | 0.27 | 0.27 | 0.189 | 0.189 | 0.189 | 0.108 | 0.108 | 0.108 | 0.108 | 0.068 |
| 6-8 | Vc | 97 | 87 | 87 | 87 | 87 | 87 | 77 | 77 | 77 | 58 | 58 | 58 | 103 | 103 | 103 | 103 | 103 | 92 | 92 | 92 | 92 | 92 |
| | fz | 0.039 | 0.035 | 0.035 | 0.035 | 0.035 | 0.035 | 0.032 | 0.032 | 0.032 | 0.027 | 0.027 | 0.027 | 0.039 | 0.039 | 0.039 | 0.039 | 0.039 | 0.035 | 0.035 | 0.035 | 0.035 | 0.035 |
| | RPM | 12350 | 11077 | 11077 | 11077 | 11077 | 11077 | 9804 | 9804 | 9804 | 7385 | 7385 | 7385 | 10929 | 10929 | 10929 | 10929 | 10929 | 9762 | 9762 | 9762 | 9762 | 9762 |
| | FEED | 963 | 775 | 775 | 775 | 775 | 775 | 627 | 627 | 627 | 399 | 399 | 399 | 852 | 852 | 852 | 852 | 852 | 683 | 683 | 683 | 683 | 683 |
| | Ap | 0.158 | 0.09 | 0.09 | 0.09 | 0.09 | 0.056 | 0.056 | 0.056 | 0.034 | 0.034 | 0.023 | 0.023 | 0.27 | 0.27 | 0.189 | 0.189 | 0.189 | 0.108 | 0.108 | 0.108 | 0.108 | 0.068 |
| 9 | Vc | 91 | 82 | 82 | 82 | 82 | 82 | 73 | 73 | 73 | 55 | 55 | 55 | 97 | 97 | 97 | 97 | 97 | 87 | 87 | 87 | 87 | 87 |
| | fz | 0.029 | 0.026 | 0.026 | 0.026 | 0.026 | 0.026 | 0.023 | 0.023 | 0.023 | 0.02 | 0.02 | 0.02 | 0.029 | 0.029 | 0.029 | 0.029 | 0.029 | 0.026 | 0.026 | 0.026 | 0.026 | 0.026 |
| | RPM | 11586 | 10441 | 10441 | 10441 | 10441 | 10441 | 9295 | 9295 | 9295 | 7003 | 7003 | 7003 | 10292 | 10292 | 10292 | 10292 | 10292 | 9231 | 9231 | 9231 | 9231 | 9231 |
| | FEED | 672 | 543 | 543 | 543 | 543 | 543 | 428 | 428 | 428 | 280 | 280 | 280 | 597 | 597 | 597 | 597 | 597 | 480 | 480 | 480 | 480 | 480 |
| | Ap | 0.123 | 0.07 | 0.07 | 0.07 | 0.07 | 0.044 | 0.044 | 0.044 | 0.026 | 0.026 | 0.018 | 0.018 | 0.21 | 0.21 | 0.147 | 0.147 | 0.147 | 0.084 | 0.084 | 0.084 | 0.084 | 0.053 |
| 10 - 11.1 | Vc | 97 | 87 | 87 | 87 | 87 | 87 | 77 | 77 | 77 | 58 | 58 | 58 | 103 | 103 | 103 | 103 | 103 | 92 | 92 | 92 | 92 | 92 |
| | fz | 0.039 | 0.035 | 0.035 | 0.035 | 0.035 | 0.035 | 0.032 | 0.032 | 0.032 | 0.027 | 0.027 | 0.027 | 0.039 | 0.039 | 0.039 | 0.039 | 0.039 | 0.035 | 0.035 | 0.035 | 0.035 | 0.035 |
| | RPM | 12350 | 11077 | 11077 | 11077 | 11077 | 11077 | 9804 | 9804 | 9804 | 7385 | 7385 | 7385 | 10929 | 10929 | 10929 | 10929 | 10929 | 9762 | 9762 | 9762 | 9762 | 9762 |
| | FEED | 963 | 775 | 775 | 775 | 775 | 775 | 627 | 627 | 627 | 399 | 399 | 399 | 852 | 852 | 852 | 852 | 852 | 683 | 683 | 683 | 683 | 683 |
| | Ap | 0.158 | 0.09 | 0.09 | 0.09 | 0.09 | 0.056 | 0.056 | 0.056 | 0.034 | 0.034 | 0.023 | 0.023 | 0.27 | 0.27 | 0.189 | 0.189 | 0.189 | 0.108 | 0.108 | 0.108 | 0.108 | 0.068 |
| 11.2 | Vc | 91 | 82 | 82 | 82 | 82 | 82 | 73 | 73 | 73 | 55 | 55 | 55 | 97 | 97 | 97 | 97 | 97 | 87 | 87 | 87 | 87 | 87 |
| | fz | 0.029 | 0.026 | 0.026 | 0.026 | 0.026 | 0.026 | 0.023 | 0.023 | 0.023 | 0.02 | 0.02 | 0.02 | 0.029 | 0.029 | 0.029 | 0.029 | 0.029 | 0.026 | 0.026 | 0.026 | 0.026 | 0.026 |
| | RPM | 11586 | 10441 | 10441 | 10441 | 10441 | 10441 | 9295 | 9295 | 9295 | 7003 | 7003 | 7003 | 10292 | 10292 | 10292 | 10292 | 10292 | 9231 | 9231 | 9231 | 9231 | 9231 |
| | FEED | 672 | 543 | 543 | 543 | 543 | 543 | 428 | 428 | 428 | 280 | 280 | 280 | 597 | 597 | 597 | 597 | 597 | 480 | 480 | 480 | 480 | 480 |
| | Ap | 0.123 | 0.07 | 0.07 | 0.07 | 0.07 | 0.044 | 0.044 | 0.044 | 0.026 | 0.026 | 0.018 | 0.018 | 0.21 | 0.21 | 0.147 | 0.147 | 0.147 | 0.084 | 0.084 | 0.084 | 0.084 | 0.053 |
| 15 - 20 | Vc | 97 | 87 | 87 | 87 | 87 | 87 | 77 | 77 | 77 | 58 | 58 | 58 | 103 | 103 | 103 | 103 | 103 | 92 | 92 | 92 | 92 | 92 |
| | fz | 0.039 | 0.035 | 0.035 | 0.035 | 0.035 | 0.035 | 0.032 | 0.032 | 0.032 | 0.027 | 0.027 | 0.027 | 0.039 | 0.039 | 0.039 | 0.039 | 0.039 | 0.035 | 0.035 | 0.035 | 0.035 | 0.035 |
| | RPM | 12350 | 11077 | 11077 | 11077 | 11077 | 11077 | 9804 | 9804 | 9804 | 7385 | 7385 | 7385 | 10929 | 10929 | 10929 | 10929 | 10929 | 9762 | 9762 | 9762 | 9762 | 9762 |
| | FEED | 963 | 775 | 775 | 775 | 775 | 775 | 627 | 627 | 627 | 399 | 399 | 399 | 852 | 852 | 852 | 852 | 852 | 683 | 683 | 683 | 683 | 683 |
| | Ap | 0.158 | 0.09 | 0.09 | 0.09 | 0.09 | 0.056 | 0.056 | 0.056 | 0.034 | 0.034 | 0.023 | 0.023 | 0.27 | 0.27 | 0.189 | 0.189 | 0.189 | 0.108 | 0.108 | 0.108 | 0.108 | 0.068 |
| 38.1 - 38.2 | Vc | 81 | 73 | 73 | 73 | 73 | 73 | 65 | 65 | 65 | 49 | 49 | 49 | 62 | 62 | 62 | 62 | 62 | 56 | 56 | 56 | 56 | 56 |
| | fz | 0.025 | 0.022 | 0.022 | 0.022 | 0.022 | 0.022 | 0.02 | 0.02 | 0.02 | 0.017 | 0.017 | 0.017 | 0.034 | 0.034 | 0.034 | 0.034 | 0.034 | 0.031 | 0.031 | 0.031 | 0.031 | 0.031 |
| | RPM | 10313 | 9295 | 9295 | 9295 | 9295 | 9295 | 8276 | 8276 | 8276 | 6239 | 6239 | 6239 | 6578 | 6578 | 6578 | 6578 | 6578 | 5942 | 5942 | 5942 | 5942 | 5942 |
| | FEED | 516 | 409 | 409 | 409 | 409 | 409 | 331 | 331 | 331 | 212 | 212 | 212 | 447 | 447 | 447 | 447 | 447 | 368 | 368 | 368 | 368 | 368 |
| | Ap | 0.088 | 0.05 | 0.05 | 0.05 | 0.05 | 0.031 | 0.031 | 0.031 | 0.019 | 0.019 | 0.013 | 0.013 | 0.15 | 0.15 | 0.105 | 0.105 | 0.105 | 0.06 | 0.06 | 0.06 | 0.06 | 0.038 |
| 40 | Vc | 91 | 82 | 82 | 82 | 82 | 82 | 73 | 73 | 73 | 55 | 55 | 55 | 97 | 97 | 97 | 97 | 97 | 87 | 87 | 87 | 87 | 87 |
| | fz | 0.029 | 0.026 | 0.026 | 0.026 | 0.026 | 0.026 | 0.023 | 0.023 | 0.023 | 0.02 | 0.02 | 0.02 | 0.029 | 0.029 | 0.029 | 0.029 | 0.029 | 0.026 | 0.026 | 0.026 | 0.026 | 0.026 |
| | RPM | 11586 | 10441 | 10441 | 10441 | 10441 | 10441 | 9295 | 9295 | 9295 | 7003 | 7003 | 7003 | 10292 | 10292 | 10292 | 10292 | 10292 | 9231 | 9231 | 9231 | 9231 | 9231 |
| | FEED | 672 | 543 | 543 | 543 | 543 | 543 | 428 | 428 | 428 | 280 | 280 | 280 | 597 | 597 | 597 | 597 | 597 | 480 | 480 | 480 | 480 | 480 |
| | Ap | 0.123 | 0.07 | 0.07 | 0.07 | 0.07 | 0.044 | 0.044 | 0.044 | 0.026 | 0.026 | 0.018 | 0.018 | 0.21 | 0.21 | 0.147 | 0.147 | 0.147 | 0.084 | 0.084 | 0.084 | 0.084 | 0.053 |
| 41 | Vc | 81 | 73 | 73 | 73 | 73 | 73 | 65 | 65 | 65 | 49 | 49 | 49 | 62 | 62 | 62 | 62 | 62 | 56 | 56 | 56 | 56 | 56 |
| | fz | 0.025 | 0.022 | 0.022 | 0.022 | 0.022 | 0.022 | 0.02 | 0.02 | 0.02 | 0.017 | 0.017 | 0.017 | 0.034 | 0.034 | 0.034 | 0.034 | 0.034 | 0.031 | 0.031 | 0.031 | 0.031 | 0.031 |
| | RPM | 10313 | 9295 | 9295 | 9295 | 9295 | 9295 | 8276 | 8276 | 8276 | 6239 | 6239 | 6239 | 6578 | 6578 | 6578 | 6578 | 6578 | 5942 | 5942 | 5942 | 5942 | 5942 |
| | FEED | 516 | 409 | 409 | 409 | 409 | 409 | 331 | 331 | 331 | 212 | 212 | 212 | 447 | 447 | 447 | 447 | 447 | 368 | 368 | 368 | 368 | 368 |
| | Ap | 0.088 | 0.05 | 0.05 | 0.05 | 0.05 | 0.031 | 0.031 | 0.031 | 0.019 | 0.019 | 0.013 | 0.013 | 0.15 | 0.15 | 0.105 | 0.105 | 0.105 | 0.06 | 0.06 | 0.06 | 0.06 | 0.038 |

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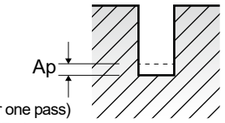

# 4G MILL END MILLS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

### SEM845 SERIES — 2 FLUTE - SLOTTING / 2刃- 槽铣削

Vc (切削速度) = (m/min.) FEED (进给) = (mm/min.)
fz (每齿进给) = (mm/tooth) Ap (切削深度) = (mm)
RPM (转速) = (rev./min.) LBS (颈长) = Length Below Shank

| ISO | VDI 3323 | Parameter 参数 | Diameter (Ø) 直径 | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| | | LBS | 30 | 35 | 40 | 45 | 50 | 60 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 26 | 30 | 35 | 40 | 45 | 50 |
| P | 1-5 | Vc | 92 | 82 | 82 | 82 | 62 | 62 | 101 | 101 | 101 | 101 | 101 | 101 | 101 | 90 | 90 | 90 | 90 | 90 | 80 | 80 |
| | | fz | 0.035 | 0.032 | 0.032 | 0.032 | 0.028 | 0.028 | 0.081 | 0.081 | 0.081 | 0.081 | 0.081 | 0.081 | 0.081 | 0.073 | 0.073 | 0.073 | 0.073 | 0.073 | 0.065 | 0.065 |
| | | RPM | 9762 | 8700 | 8700 | 8700 | 6578 | 6578 | 8037 | 8037 | 8037 | 8037 | 8037 | 8037 | 8037 | 7162 | 7162 | 7162 | 7162 | 7162 | 6366 | 6366 |
| | | FEED | 683 | 557 | 557 | 557 | 368 | 368 | 1302 | 1302 | 1302 | 1302 | 1302 | 1302 | 1302 | 1046 | 1046 | 1046 | 1046 | 1046 | 828 | 828 |
| | | Ap | 0.068 | 0.068 | 0.041 | 0.041 | 0.027 | 0.027 | 0.36 | 0.36 | 0.36 | 0.252 | 0.252 | 0.252 | 0.252 | 0.144 | 0.144 | 0.144 | 0.09 | 0.09 | 0.09 | 0.09 |
| | 6-8 | Vc | 92 | 82 | 82 | 82 | 62 | 62 | 101 | 101 | 101 | 101 | 101 | 101 | 101 | 90 | 90 | 90 | 90 | 90 | 80 | 80 |
| | | fz | 0.035 | 0.032 | 0.032 | 0.032 | 0.028 | 0.028 | 0.081 | 0.081 | 0.081 | 0.081 | 0.081 | 0.081 | 0.081 | 0.073 | 0.073 | 0.073 | 0.073 | 0.073 | 0.065 | 0.065 |
| | | RPM | 9762 | 8700 | 8700 | 8700 | 6578 | 6578 | 8037 | 8037 | 8037 | 8037 | 8037 | 8037 | 8037 | 7162 | 7162 | 7162 | 7162 | 7162 | 6366 | 6366 |
| | | FEED | 683 | 557 | 557 | 557 | 368 | 368 | 1302 | 1302 | 1302 | 1302 | 1302 | 1302 | 1302 | 1046 | 1046 | 1046 | 1046 | 1046 | 828 | 828 |
| | | Ap | 0.068 | 0.068 | 0.041 | 0.041 | 0.027 | 0.027 | 0.36 | 0.36 | 0.36 | 0.252 | 0.252 | 0.252 | 0.252 | 0.144 | 0.144 | 0.144 | 0.09 | 0.09 | 0.09 | 0.09 |
| | 9 | Vc | 87 | 78 | 78 | 78 | 58 | 58 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 86 | 86 | 86 | 86 | 86 | 76 | 76 |
| | | fz | 0.026 | 0.023 | 0.023 | 0.023 | 0.021 | 0.021 | 0.076 | 0.076 | 0.076 | 0.076 | 0.076 | 0.076 | 0.076 | 0.069 | 0.069 | 0.069 | 0.069 | 0.069 | 0.061 | 0.061 |
| | | RPM | 9231 | 8276 | 8276 | 8276 | 6154 | 6154 | 7639 | 7639 | 7639 | 7639 | 7639 | 7639 | 7639 | 6844 | 6844 | 6844 | 6844 | 6844 | 6048 | 6048 |
| | | FEED | 480 | 381 | 381 | 381 | 258 | 258 | 1161 | 1161 | 1161 | 1161 | 1161 | 1161 | 1161 | 944 | 944 | 944 | 944 | 944 | 738 | 738 |
| | | Ap | 0.053 | 0.053 | 0.032 | 0.032 | 0.021 | 0.021 | 0.28 | 0.28 | 0.28 | 0.196 | 0.196 | 0.196 | 0.196 | 0.112 | 0.112 | 0.112 | 0.07 | 0.07 | 0.07 | 0.07 |
| | 10-11.1 | Vc | 92 | 82 | 82 | 82 | 62 | 62 | 101 | 101 | 101 | 101 | 101 | 101 | 101 | 90 | 90 | 90 | 90 | 90 | 80 | 80 |
| | | fz | 0.035 | 0.032 | 0.032 | 0.032 | 0.028 | 0.028 | 0.081 | 0.081 | 0.081 | 0.081 | 0.081 | 0.081 | 0.081 | 0.073 | 0.073 | 0.073 | 0.073 | 0.073 | 0.065 | 0.065 |
| | | RPM | 9762 | 8700 | 8700 | 8700 | 6578 | 6578 | 8037 | 8037 | 8037 | 8037 | 8037 | 8037 | 8037 | 7162 | 7162 | 7162 | 7162 | 7162 | 6366 | 6366 |
| | | FEED | 683 | 557 | 557 | 557 | 368 | 368 | 1302 | 1302 | 1302 | 1302 | 1302 | 1302 | 1302 | 1046 | 1046 | 1046 | 1046 | 1046 | 828 | 828 |
| | | Ap | 0.068 | 0.068 | 0.041 | 0.041 | 0.027 | 0.027 | 0.36 | 0.36 | 0.36 | 0.252 | 0.252 | 0.252 | 0.252 | 0.144 | 0.144 | 0.144 | 0.09 | 0.09 | 0.09 | 0.09 |
| | 11.2 | Vc | 87 | 78 | 78 | 78 | 58 | 58 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 86 | 86 | 86 | 86 | 86 | 76 | 76 |
| | | fz | 0.026 | 0.023 | 0.023 | 0.023 | 0.021 | 0.021 | 0.076 | 0.076 | 0.076 | 0.076 | 0.076 | 0.076 | 0.076 | 0.069 | 0.069 | 0.069 | 0.069 | 0.069 | 0.061 | 0.061 |
| | | RPM | 9231 | 8276 | 8276 | 8276 | 6154 | 6154 | 7639 | 7639 | 7639 | 7639 | 7639 | 7639 | 7639 | 6844 | 6844 | 6844 | 6844 | 6844 | 6048 | 6048 |
| | | FEED | 480 | 381 | 381 | 381 | 258 | 258 | 1161 | 1161 | 1161 | 1161 | 1161 | 1161 | 1161 | 944 | 944 | 944 | 944 | 944 | 738 | 738 |
| | | Ap | 0.053 | 0.053 | 0.032 | 0.032 | 0.021 | 0.021 | 0.28 | 0.28 | 0.28 | 0.196 | 0.196 | 0.196 | 0.196 | 0.112 | 0.112 | 0.112 | 0.07 | 0.07 | 0.07 | 0.07 |
| K | 15-20 | Vc | 92 | 82 | 82 | 82 | 62 | 62 | 101 | 101 | 101 | 101 | 101 | 101 | 101 | 90 | 90 | 90 | 90 | 90 | 80 | 80 |
| | | fz | 0.035 | 0.032 | 0.032 | 0.032 | 0.028 | 0.028 | 0.081 | 0.081 | 0.081 | 0.081 | 0.081 | 0.081 | 0.081 | 0.073 | 0.073 | 0.073 | 0.073 | 0.073 | 0.065 | 0.065 |
| | | RPM | 9762 | 8700 | 8700 | 8700 | 6578 | 6578 | 8037 | 8037 | 8037 | 8037 | 8037 | 8037 | 8037 | 7162 | 7162 | 7162 | 7162 | 7162 | 6366 | 6366 |
| | | FEED | 683 | 557 | 557 | 557 | 368 | 368 | 1302 | 1302 | 1302 | 1302 | 1302 | 1302 | 1302 | 1046 | 1046 | 1046 | 1046 | 1046 | 828 | 828 |
| | | Ap | 0.068 | 0.068 | 0.041 | 0.041 | 0.027 | 0.027 | 0.36 | 0.36 | 0.36 | 0.252 | 0.252 | 0.252 | 0.252 | 0.144 | 0.144 | 0.144 | 0.09 | 0.09 | 0.09 | 0.09 |
| H | 38.1 - 38.2 | Vc | 56 | 50 | 50 | 50 | 37 | 37 | 84 | 84 | 84 | 84 | 84 | 84 | 84 | 76 | 76 | 76 | 76 | 76 | 67 | 67 |
| | | fz | 0.031 | 0.027 | 0.027 | 0.027 | 0.024 | 0.024 | 0.057 | 0.057 | 0.057 | 0.057 | 0.057 | 0.057 | 0.057 | 0.052 | 0.052 | 0.052 | 0.052 | 0.052 | 0.046 | 0.046 |
| | | RPM | 5942 | 5305 | 5305 | 5305 | 3926 | 3926 | 6685 | 6685 | 6685 | 6685 | 6685 | 6685 | 6685 | 6048 | 6048 | 6048 | 6048 | 6048 | 5332 | 5332 |
| | | FEED | 368 | 286 | 286 | 286 | 188 | 188 | 762 | 762 | 762 | 762 | 762 | 762 | 762 | 629 | 629 | 629 | 629 | 629 | 491 | 491 |
| | | Ap | 0.038 | 0.038 | 0.023 | 0.023 | 0.015 | 0.015 | 0.2 | 0.2 | 0.2 | 0.14 | 0.14 | 0.14 | 0.14 | 0.08 | 0.08 | 0.08 | 0.05 | 0.05 | 0.05 | 0.05 |
| | 40 | Vc | 87 | 78 | 78 | 78 | 58 | 58 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 86 | 86 | 86 | 86 | 86 | 76 | 76 |
| | | fz | 0.026 | 0.023 | 0.023 | 0.023 | 0.021 | 0.021 | 0.076 | 0.076 | 0.076 | 0.076 | 0.076 | 0.076 | 0.076 | 0.069 | 0.069 | 0.069 | 0.069 | 0.069 | 0.061 | 0.061 |
| | | RPM | 9231 | 8276 | 8276 | 8276 | 6154 | 6154 | 7639 | 7639 | 7639 | 7639 | 7639 | 7639 | 7639 | 6844 | 6844 | 6844 | 6844 | 6844 | 6048 | 6048 |
| | | FEED | 480 | 381 | 381 | 381 | 258 | 258 | 1161 | 1161 | 1161 | 1161 | 1161 | 1161 | 1161 | 944 | 944 | 944 | 944 | 944 | 738 | 738 |
| | | Ap | 0.053 | 0.053 | 0.032 | 0.032 | 0.021 | 0.021 | 0.28 | 0.28 | 0.28 | 0.196 | 0.196 | 0.196 | 0.196 | 0.112 | 0.112 | 0.112 | 0.07 | 0.07 | 0.07 | 0.07 |
| | 41 | Vc | 56 | 50 | 50 | 50 | 37 | 37 | 84 | 84 | 84 | 84 | 84 | 84 | 84 | 76 | 76 | 76 | 76 | 76 | 67 | 67 |
| | | fz | 0.031 | 0.027 | 0.027 | 0.027 | 0.024 | 0.024 | 0.057 | 0.057 | 0.057 | 0.057 | 0.057 | 0.057 | 0.057 | 0.052 | 0.052 | 0.052 | 0.052 | 0.052 | 0.046 | 0.046 |
| | | RPM | 5942 | 5305 | 5305 | 5305 | 3926 | 3926 | 6685 | 6685 | 6685 | 6685 | 6685 | 6685 | 6685 | 6048 | 6048 | 6048 | 6048 | 6048 | 5332 | 5332 |
| | | FEED | 368 | 286 | 286 | 286 | 188 | 188 | 762 | 762 | 762 | 762 | 762 | 762 | 762 | 629 | 629 | 629 | 629 | 629 | 491 | 491 |
| | | Ap | 0.038 | 0.038 | 0.023 | 0.023 | 0.015 | 0.015 | 0.2 | 0.2 | 0.2 | 0.14 | 0.14 | 0.14 | 0.14 | 0.08 | 0.08 | 0.08 | 0.05 | 0.05 | 0.05 | 0.05 |

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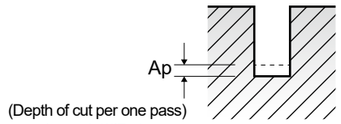
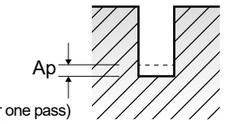





4G MILL END MILLS
RECOMMENDED CUTTING CONDITIONS
推荐加工参数
SEM845 SERIES — 2 FLUTE - SLOTTING / 2刃- 槽铣削
Vc (切削速度) = (m/min.) FEED (进给) = (mm/min.)
fz (每齿进给) = (mm/tooth) Ap (切削深度) = (mm)
RPM (转速) = (rev./min.) LBS (颈长) = Length Below Shank

| VDI 3323 | Parameter 参数 | Diameter (Ø) 直径 | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 4.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 6.0 | 6.0 | 6.0 | 6.0 | 8.0 | 8.0 | 8.0 | 10.0 | 10.0 | 10.0 | 12.0 | 12.0 | 12.0 |
| | LBS | 60 | 16 | 20 | 26 | 30 | 35 | 40 | 50 | 60 | 15 | 20 | 30 | 32 | 25 | 30 | 42 | 30 | 35 | 45 | 35 | 40 | 50 |
| 1-5 | Vc | 80 | 101 | 101 | 90 | 90 | 90 | 90 | 90 | 80 | 100 | 100 | 100 | 90 | 101 | 101 | 90 | 101 | 101 | 101 | 100 | 100 | 100 |
| | fz | 0.065 | 0.09 | 0.09 | 0.081 | 0.081 | 0.081 | 0.081 | 0.081 | 0.072 | 0.1 | 0.1 | 0.1 | 0.09 | 0.119 | 0.119 | 0.107 | 0.141 | 0.141 | 0.141 | 0.151 | 0.151 | 0.151 |
| | RPM | 6366 | 6430 | 6430 | 5730 | 5730 | 5730 | 5730 | 5730 | 5093 | 5305 | 5305 | 5305 | 4775 | 4019 | 4019 | 3581 | 3215 | 3215 | 3215 | 2653 | 2653 | 2653 |
| | FEED | 828 | 1157 | 1157 | 928 | 928 | 928 | 928 | 928 | 733 | 1061 | 1061 | 1061 | 859 | 956 | 956 | 766 | 907 | 907 | 907 | 801 | 801 | 801 |
| | Ap | 0.054 | 0.315 | 0.315 | 0.18 | 0.18 | 0.18 | 0.18 | 0.113 | 0.113 | 0.54 | 0.378 | 0.378 | 0.216 | 0.504 | 0.504 | 0.288 | 0.9 | 0.63 | 0.63 | 1.08 | 0.756 | 0.756 |
| 6-8 | Vc | 80 | 101 | 101 | 90 | 90 | 90 | 90 | 90 | 80 | 100 | 100 | 100 | 90 | 101 | 101 | 90 | 101 | 101 | 101 | 100 | 100 | 100 |
| | fz | 0.065 | 0.09 | 0.09 | 0.081 | 0.081 | 0.081 | 0.081 | 0.081 | 0.072 | 0.1 | 0.1 | 0.1 | 0.09 | 0.119 | 0.119 | 0.107 | 0.141 | 0.141 | 0.141 | 0.151 | 0.151 | 0.151 |
| | RPM | 6366 | 6430 | 6430 | 5730 | 5730 | 5730 | 5730 | 5730 | 5093 | 5305 | 5305 | 5305 | 4775 | 4019 | 4019 | 3581 | 3215 | 3215 | 3215 | 2653 | 2653 | 2653 |
| | FEED | 828 | 1157 | 1157 | 928 | 928 | 928 | 928 | 928 | 733 | 1061 | 1061 | 1061 | 859 | 956 | 956 | 766 | 907 | 907 | 907 | 801 | 801 | 801 |
| | Ap | 0.054 | 0.315 | 0.315 | 0.18 | 0.18 | 0.18 | 0.18 | 0.113 | 0.113 | 0.54 | 0.378 | 0.378 | 0.216 | 0.504 | 0.504 | 0.288 | 0.9 | 0.63 | 0.63 | 1.08 | 0.756 | 0.756 |
| 9 | Vc | 76 | 96 | 96 | 86 | 86 | 86 | 86 | 86 | 77 | 94 | 94 | 94 | 85 | 96 | 96 | 85 | 96 | 96 | 96 | 95 | 95 | 95 |
| | fz | 0.061 | 0.074 | 0.074 | 0.066 | 0.066 | 0.066 | 0.066 | 0.066 | 0.059 | 0.082 | 0.082 | 0.082 | 0.074 | 0.099 | 0.099 | 0.089 | 0.111 | 0.111 | 0.111 | 0.119 | 0.119 | 0.119 |
| | RPM | 6048 | 6112 | 6112 | 5475 | 5475 | 5475 | 5475 | 5475 | 4902 | 4987 | 4987 | 4987 | 4509 | 3820 | 3820 | 3382 | 3056 | 3056 | 3056 | 2520 | 2520 | 2520 |
| | FEED | 738 | 905 | 905 | 723 | 723 | 723 | 723 | 723 | 578 | 818 | 818 | 818 | 667 | 756 | 756 | 602 | 678 | 678 | 678 | 600 | 600 | 600 |
| | Ap | 0.042 | 0.245 | 0.245 | 0.14 | 0.14 | 0.14 | 0.14 | 0.088 | 0.088 | 0.42 | 0.294 | 0.294 | 0.168 | 0.392 | 0.392 | 0.224 | 0.7 | 0.49 | 0.49 | 0.84 | 0.588 | 0.588 |
| 10 - 11.1 | Vc | 80 | 101 | 101 | 90 | 90 | 90 | 90 | 90 | 80 | 100 | 100 | 100 | 90 | 101 | 101 | 90 | 101 | 101 | 101 | 100 | 100 | 100 |
| | fz | 0.065 | 0.09 | 0.09 | 0.081 | 0.081 | 0.081 | 0.081 | 0.081 | 0.072 | 0.1 | 0.1 | 0.1 | 0.09 | 0.119 | 0.119 | 0.107 | 0.141 | 0.141 | 0.141 | 0.151 | 0.151 | 0.151 |
| | RPM | 6366 | 6430 | 6430 | 5730 | 5730 | 5730 | 5730 | 5730 | 5093 | 5305 | 5305 | 5305 | 4775 | 4019 | 4019 | 3581 | 3215 | 3215 | 3215 | 2653 | 2653 | 2653 |
| | FEED | 828 | 1157 | 1157 | 928 | 928 | 928 | 928 | 928 | 733 | 1061 | 1061 | 1061 | 859 | 956 | 956 | 766 | 907 | 907 | 907 | 801 | 801 | 801 |
| | Ap | 0.054 | 0.315 | 0.315 | 0.18 | 0.18 | 0.18 | 0.18 | 0.113 | 0.113 | 0.54 | 0.378 | 0.378 | 0.216 | 0.504 | 0.504 | 0.288 | 0.9 | 0.63 | 0.63 | 1.08 | 0.756 | 0.756 |
| 11.2 | Vc | 76 | 96 | 96 | 86 | 86 | 86 | 86 | 86 | 77 | 94 | 94 | 94 | 85 | 96 | 96 | 85 | 96 | 96 | 96 | 95 | 95 | 95 |
| | fz | 0.061 | 0.074 | 0.074 | 0.066 | 0.066 | 0.066 | 0.066 | 0.066 | 0.059 | 0.082 | 0.082 | 0.082 | 0.074 | 0.099 | 0.099 | 0.089 | 0.111 | 0.111 | 0.111 | 0.119 | 0.119 | 0.119 |
| | RPM | 6048 | 6112 | 6112 | 5475 | 5475 | 5475 | 5475 | 5475 | 4902 | 4987 | 4987 | 4987 | 4509 | 3820 | 3820 | 3382 | 3056 | 3056 | 3056 | 2520 | 2520 | 2520 |
| | FEED | 738 | 905 | 905 | 723 | 723 | 723 | 723 | 723 | 578 | 818 | 818 | 818 | 667 | 756 | 756 | 602 | 678 | 678 | 678 | 600 | 600 | 600 |
| | Ap | 0.042 | 0.245 | 0.245 | 0.14 | 0.14 | 0.14 | 0.14 | 0.088 | 0.088 | 0.42 | 0.294 | 0.294 | 0.168 | 0.392 | 0.392 | 0.224 | 0.7 | 0.49 | 0.49 | 0.84 | 0.588 | 0.588 |
| 15 - 20 | Vc | 80 | 101 | 101 | 90 | 90 | 90 | 90 | 90 | 80 | 100 | 100 | 100 | 90 | 101 | 101 | 90 | 101 | 101 | 101 | 100 | 100 | 100 |
| | fz | 0.065 | 0.09 | 0.09 | 0.081 | 0.081 | 0.081 | 0.081 | 0.081 | 0.072 | 0.1 | 0.1 | 0.1 | 0.09 | 0.119 | 0.119 | 0.107 | 0.141 | 0.141 | 0.141 | 0.151 | 0.151 | 0.151 |
| | RPM | 6366 | 6430 | 6430 | 5730 | 5730 | 5730 | 5730 | 5730 | 5093 | 5305 | 5305 | 5305 | 4775 | 4019 | 4019 | 3581 | 3215 | 3215 | 3215 | 2653 | 2653 | 2653 |
| | FEED | 828 | 1157 | 1157 | 928 | 928 | 928 | 928 | 928 | 733 | 1061 | 1061 | 1061 | 859 | 956 | 956 | 766 | 907 | 907 | 907 | 801 | 801 | 801 |
| | Ap | 0.054 | 0.315 | 0.315 | 0.18 | 0.18 | 0.18 | 0.18 | 0.113 | 0.113 | 0.54 | 0.378 | 0.378 | 0.216 | 0.504 | 0.504 | 0.288 | 0.9 | 0.63 | 0.63 | 1.08 | 0.756 | 0.756 |
| 38.1 - 38.2 | Vc | 67 | 85 | 85 | 76 | 76 | 76 | 76 | 76 | 68 | 83 | 83 | 83 | 75 | 83 | 83 | 74 | 83 | 83 | 83 | 82 | 82 | 82 |
| | fz | 0.046 | 0.056 | 0.056 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.045 | 0.063 | 0.063 | 0.063 | 0.056 | 0.076 | 0.076 | 0.069 | 0.076 | 0.076 | 0.076 | 0.08 | 0.08 | 0.08 |
| | RPM | 5332 | 5411 | 5411 | 4838 | 4838 | 4838 | 4838 | 4838 | 4329 | 4403 | 4403 | 4403 | 3979 | 3302 | 3302 | 2944 | 2642 | 2642 | 2642 | 2175 | 2175 | 2175 |
| | FEED | 491 | 606 | 606 | 484 | 484 | 484 | 484 | 484 | 390 | 555 | 555 | 555 | 446 | 502 | 502 | 406 | 402 | 402 | 402 | 348 | 348 | 348 |
| | Ap | 0.03 | 0.175 | 0.175 | 0.1 | 0.1 | 0.1 | 0.1 | 0.063 | 0.063 | 0.3 | 0.21 | 0.21 | 0.12 | 0.28 | 0.28 | 0.16 | 0.5 | 0.35 | 0.35 | 0.6 | 0.42 | 0.42 |
| 40 | Vc | 76 | 96 | 96 | 86 | 86 | 86 | 86 | 86 | 77 | 94 | 94 | 94 | 85 | 96 | 96 | 85 | 96 | 96 | 96 | 95 | 95 | 95 |
| | fz | 0.061 | 0.074 | 0.074 | 0.066 | 0.066 | 0.066 | 0.066 | 0.066 | 0.059 | 0.082 | 0.082 | 0.082 | 0.074 | 0.099 | 0.099 | 0.089 | 0.111 | 0.111 | 0.111 | 0.119 | 0.119 | 0.119 |
| | RPM | 6048 | 6112 | 6112 | 5475 | 5475 | 5475 | 5475 | 5475 | 4902 | 4987 | 4987 | 4987 | 4509 | 3820 | 3820 | 3382 | 3056 | 3056 | 3056 | 2520 | 2520 | 2520 |
| | FEED | 738 | 905 | 905 | 723 | 723 | 723 | 723 | 723 | 578 | 818 | 818 | 818 | 667 | 756 | 756 | 602 | 678 | 678 | 678 | 600 | 600 | 600 |
| | Ap | 0.042 | 0.245 | 0.245 | 0.14 | 0.14 | 0.14 | 0.14 | 0.088 | 0.088 | 0.42 | 0.294 | 0.294 | 0.168 | 0.392 | 0.392 | 0.224 | 0.7 | 0.49 | 0.49 | 0.84 | 0.588 | 0.588 |
| 41 | Vc | 67 | 85 | 85 | 76 | 76 | 76 | 76 | 76 | 68 | 83 | 83 | 83 | 75 | 83 | 83 | 74 | 83 | 83 | 83 | 82 | 82 | 82 |
| | fz | 0.046 | 0.056 | 0.056 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.045 | 0.063 | 0.063 | 0.063 | 0.056 | 0.076 | 0.076 | 0.069 | 0.076 | 0.076 | 0.076 | 0.08 | 0.08 | 0.08 |
| | RPM | 5332 | 5411 | 5411 | 4838 | 4838 | 4838 | 4838 | 4838 | 4329 | 4403 | 4403 | 4403 | 3979 | 3302 | 3302 | 2944 | 2642 | 2642 | 2642 | 2175 | 2175 | 2175 |
| | FEED | 491 | 606 | 606 | 484 | 484 | 484 | 484 | 484 | 390 | 555 | 555 | 555 | 446 | 502 | 502 | 406 | 402 | 402 | 402 | 348 | 348 | 348 |
| | Ap | 0.03 | 0.175 | 0.175 | 0.1 | 0.1 | 0.1 | 0.1 | 0.063 | 0.063 | 0.3 | 0.21 | 0.21 | 0.12 | 0.28 | 0.28 | 0.16 | 0.5 | 0.35 | 0.35 | 0.6 | 0.42 | 0.42 |



# 4G MILL END MILLS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

### SEME36, SEME71 SERIES

**4 FLUTE - SIDE CUTTING**
**4刃 - 侧铣削**

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description 工件材料 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 0.8 | 0.9 | 1.0 | 1.2 | 1.5 | 2.0 | 2.5 | 3.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1-5 | Non-alloy steel | 0.05D | 1.0D | Vc | 79 | 83 | 84 | 85 | 88 | 91 | 101 | 105 |
| | | | | | fz | 0.002 | 0.002 | 0.002 | 0.003 | 0.004 | 0.005 | 0.006 | 0.008 |
| | | | | | RPM | 31433 | 29355 | 26738 | 22547 | 18674 | 14483 | 12860 | 11141 |
| | | | | | FEED | 251 | 235 | 214 | 271 | 299 | 290 | 309 | 357 |
| | 6-8 | Low alloy steel | 0.05D | 1.0D | Vc | 79 | 83 | 84 | 85 | 88 | 91 | 101 | 105 |
| | | | | | fz | 0.002 | 0.002 | 0.002 | 0.003 | 0.004 | 0.005 | 0.006 | 0.008 |
| | | | | | RPM | 31433 | 29355 | 26738 | 22547 | 18674 | 14483 | 12860 | 11141 |
| | | | | | FEED | 251 | 235 | 214 | 271 | 299 | 290 | 309 | 357 |
| | 9 | | 0.05D | 1.0D | Vc | 47 | 50 | 51 | 51 | 53 | 59 | 64 | 66 |
| | | | | | fz | 0.002 | 0.002 | 0.002 | 0.003 | 0.004 | 0.005 | 0.006 | 0.008 |
| | | | | | RPM | 18701 | 17684 | 16234 | 13528 | 11247 | 9390 | 8149 | 7003 |
| | | | | | FEED | 150 | 141 | 130 | 162 | 180 | 188 | 196 | 224 |
| | 10-11.1 | High alloyed steel, and tool steel | 0.05D | 1.0D | Vc | 79 | 83 | 84 | 85 | 88 | 91 | 101 | 105 |
| | | | | | fz | 0.002 | 0.002 | 0.002 | 0.003 | 0.004 | 0.005 | 0.006 | 0.008 |
| | | | | | RPM | 31433 | 29355 | 26738 | 22547 | 18674 | 14483 | 12860 | 11141 |
| | | | | | FEED | 251 | 235 | 214 | 271 | 299 | 290 | 309 | 357 |
| | 11.2 | | 0.05D | 1.0D | Vc | 47 | 50 | 51 | 51 | 53 | 59 | 64 | 66 |
| | | | | | fz | 0.002 | 0.002 | 0.002 | 0.003 | 0.004 | 0.005 | 0.006 | 0.008 |
| | | | | | RPM | 18701 | 17684 | 16234 | 13528 | 11247 | 9390 | 8149 | 7003 |
| | | | | | FEED | 150 | 141 | 130 | 162 | 180 | 188 | 196 | 224 |
| M | 14.1 | Stainless steel | 0.05D | 1.0D | Vc | 39 | 41 | 42 | 42 | 44 | 50 | 54 | 54 |
| | | | | | fz | 0.002 | 0.002 | 0.002 | 0.003 | 0.004 | 0.005 | 0.006 | 0.008 |
| | | | | | RPM | 15518 | 14501 | 13369 | 11141 | 9337 | 7958 | 6875 | 5730 |
| | | | | | FEED | 124 | 116 | 107 | 134 | 149 | 159 | 165 | 183 |
| K | 15-20 | Grey cast iron Nodular cast iron Malleable cast iron | 0.05D | 1.0D | Vc | 79 | 83 | 84 | 85 | 88 | 91 | 101 | 105 |
| | | | | | fz | 0.002 | 0.002 | 0.002 | 0.003 | 0.004 | 0.005 | 0.006 | 0.008 |
| | | | | | RPM | 31433 | 29355 | 26738 | 22547 | 18674 | 14483 | 12860 | 11141 |
| | | | | | FEED | 251 | 235 | 214 | 271 | 299 | 290 | 309 | 357 |
| H | 38.1 - 38.2 | Hardened steel | 0.05D | 1.0D | Vc | 31 | 33 | 34 | 34 | 35 | 40 | 41 | 40 |
| | | | | | fz | 0.001 | 0.001 | 0.001 | 0.001 | 0.002 | 0.002 | 0.003 | 0.004 |
| | | | | | RPM | 12335 | 11671 | 10823 | 9019 | 7427 | 6366 | 5220 | 4244 |
| | | | | | FEED | 49 | 47 | 43 | 36 | 59 | 51 | 63 | 68 |
| | 40 | Chilled Cast Iron | 0.05D | 1.0D | Vc | 47 | 50 | 51 | 51 | 53 | 59 | 64 | 66 |
| | | | | | fz | 0.002 | 0.002 | 0.002 | 0.003 | 0.004 | 0.005 | 0.006 | 0.008 |
| | | | | | RPM | 18701 | 17684 | 16234 | 13528 | 11247 | 9390 | 8149 | 7003 |
| | | | | | FEED | 150 | 141 | 130 | 162 | 180 | 188 | 196 | 224 |
| | 41 | Hardened Cast Iron | 0.05D | 1.0D | Vc | 31 | 33 | 34 | 34 | 35 | 40 | 41 | 40 |
| | | | | | fz | 0.001 | 0.001 | 0.001 | 0.001 | 0.002 | 0.002 | 0.003 | 0.004 |
| | | | | | RPM | 12335 | 11671 | 10823 | 9019 | 7427 | 6366 | 5220 | 4244 |
| | | | | | FEED | 49 | 47 | 43 | 36 | 59 | 51 | 63 | 68 |

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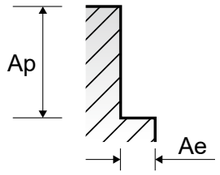




4G MILL END MILLS
RECOMMENDED CUTTING CONDITIONS
推荐加工参数
SEME36, SEME71 SERIES
4 FLUTE - SIDE CUTTING
4刃 - 侧铣削
Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| VDI 3323 | Parameter 参数 | Diameter (Ø) 直径 3.5 | 4.0 | 4.5 | 5.0 | 5.5 | 6.0 | 6.5 | 7.0 | 7.5 | 8.0 | 8.5 | 9.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1-5 | Vc | 113 | 119 | 122 | 124 | 128 | 131 | 133 | 134 | 134 | 132 | 132 | 132 |
| | fz | 0.011 | 0.016 | 0.018 | 0.02 | 0.022 | 0.025 | 0.027 | 0.03 | 0.032 | 0.035 | 0.036 | 0.037 |
| | RPM | 10277 | 9470 | 8630 | 7894 | 7408 | 6950 | 6513 | 6093 | 5687 | 5252 | 4943 | 4669 |
| | FEED | 452 | 606 | 621 | 632 | 652 | 695 | 703 | 731 | 728 | 735 | 712 | 691 |
| 6-8 | Vc | 113 | 119 | 122 | 124 | 128 | 131 | 133 | 134 | 134 | 132 | 132 | 132 |
| | fz | 0.011 | 0.016 | 0.018 | 0.02 | 0.022 | 0.025 | 0.027 | 0.03 | 0.032 | 0.035 | 0.036 | 0.037 |
| | RPM | 10277 | 9470 | 8630 | 7894 | 7408 | 6950 | 6513 | 6093 | 5687 | 5252 | 4943 | 4669 |
| | FEED | 452 | 606 | 621 | 632 | 652 | 695 | 703 | 731 | 728 | 735 | 712 | 691 |
| 9 | Vc | 70 | 73 | 74 | 74 | 77 | 79 | 80 | 81 | 80 | 79 | 80 | 80 |
| | fz | 0.011 | 0.016 | 0.018 | 0.02 | 0.023 | 0.026 | 0.027 | 0.028 | 0.03 | 0.032 | 0.032 | 0.031 |
| | RPM | 6366 | 5809 | 5234 | 4711 | 4456 | 4191 | 3918 | 3683 | 3395 | 3143 | 2996 | 2829 |
| | FEED | 280 | 372 | 377 | 377 | 410 | 436 | 423 | 413 | 407 | 402 | 383 | 351 |
| 10 - 11.1 | Vc | 113 | 119 | 122 | 124 | 128 | 131 | 133 | 134 | 134 | 132 | 132 | 132 |
| | fz | 0.011 | 0.016 | 0.018 | 0.02 | 0.022 | 0.025 | 0.027 | 0.03 | 0.032 | 0.035 | 0.036 | 0.037 |
| | RPM | 10277 | 9470 | 8630 | 7894 | 7408 | 6950 | 6513 | 6093 | 5687 | 5252 | 4943 | 4669 |
| | FEED | 452 | 606 | 621 | 632 | 652 | 695 | 703 | 731 | 728 | 735 | 712 | 691 |
| 11.2 | Vc | 70 | 73 | 74 | 74 | 77 | 79 | 80 | 81 | 80 | 79 | 80 | 80 |
| | fz | 0.011 | 0.016 | 0.018 | 0.02 | 0.023 | 0.026 | 0.027 | 0.028 | 0.03 | 0.032 | 0.032 | 0.031 |
| | RPM | 6366 | 5809 | 5234 | 4711 | 4456 | 4191 | 3918 | 3683 | 3395 | 3143 | 2996 | 2829 |
| | FEED | 280 | 372 | 377 | 377 | 410 | 436 | 423 | 413 | 407 | 402 | 383 | 351 |
| 14.1 | Vc | 58 | 61 | 62 | 62 | 65 | 67 | 68 | 68 | 67 | 66 | 66 | 67 |
| | fz | 0.011 | 0.015 | 0.017 | 0.02 | 0.022 | 0.024 | 0.026 | 0.029 | 0.031 | 0.035 | 0.036 | 0.036 |
| | RPM | 5275 | 4854 | 4386 | 3947 | 3762 | 3554 | 3330 | 3092 | 2844 | 2626 | 2472 | 2370 |
| | FEED | 232 | 291 | 298 | 316 | 331 | 341 | 346 | 359 | 353 | 368 | 356 | 341 |
| 15 - 20 | Vc | 113 | 119 | 122 | 124 | 128 | 131 | 133 | 134 | 134 | 132 | 132 | 132 |
| | fz | 0.011 | 0.016 | 0.018 | 0.02 | 0.022 | 0.025 | 0.027 | 0.03 | 0.032 | 0.035 | 0.036 | 0.037 |
| | RPM | 10277 | 9470 | 8630 | 7894 | 7408 | 6950 | 6513 | 6093 | 5687 | 5252 | 4943 | 4669 |
| | FEED | 452 | 606 | 621 | 632 | 652 | 695 | 703 | 731 | 728 | 735 | 712 | 691 |
| 38.1 - 38.2 | Vc | 43 | 46 | 47 | 46 | 47 | 47 | 49 | 51 | 52 | 53 | 53 | 54 |
| | fz | 0.004 | 0.004 | 0.005 | 0.006 | 0.007 | 0.009 | 0.01 | 0.011 | 0.013 | 0.014 | 0.014 | 0.014 |
| | RPM | 3911 | 3661 | 3325 | 2928 | 2720 | 2493 | 2400 | 2319 | 2207 | 2109 | 1985 | 1910 |
| | FEED | 63 | 59 | 66 | 70 | 76 | 90 | 96 | 102 | 115 | 118 | 111 | 107 |
| 40 | Vc | 70 | 73 | 74 | 74 | 77 | 79 | 80 | 81 | 80 | 79 | 80 | 80 |
| | fz | 0.011 | 0.016 | 0.018 | 0.02 | 0.023 | 0.026 | 0.027 | 0.028 | 0.03 | 0.032 | 0.032 | 0.031 |
| | RPM | 6366 | 5809 | 5234 | 4711 | 4456 | 4191 | 3918 | 3683 | 3395 | 3143 | 2996 | 2829 |
| | FEED | 280 | 372 | 377 | 377 | 410 | 436 | 423 | 413 | 407 | 402 | 383 | 351 |
| 41 | Vc | 43 | 46 | 47 | 46 | 47 | 47 | 49 | 51 | 52 | 53 | 53 | 54 |
| | fz | 0.004 | 0.004 | 0.005 | 0.006 | 0.007 | 0.009 | 0.01 | 0.011 | 0.013 | 0.014 | 0.014 | 0.014 |
| | RPM | 3911 | 3661 | 3325 | 2928 | 2720 | 2493 | 2400 | 2319 | 2207 | 2109 | 1985 | 1910 |
| | FEED | 63 | 59 | 66 | 70 | 76 | 90 | 96 | 102 | 115 | 118 | 111 | 107 |

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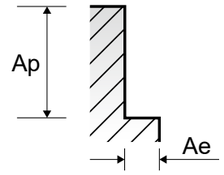

# 4G MILL END MILLS

# RECOMMENDED CUTTING CONDITIONS
# 推荐加工参数

## SEME36, SEME71 SERIES

**4 FLUTE - SIDE CUTTING**
**4刃 - 侧铣削**

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 9.5 | 10.0 | 10.5 | 11.0 | 11.5 | 12.0 | 13.0 | 14.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1-5 | 0.05D | 1.0D | Vc | 130 | 128 | 129 | 130 | 130 | 129 | 133 | 136 |
| | | | | fz | 0.038 | 0.039 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 |
| | | | | RPM | 4356 | 4074 | 3911 | 3762 | 3598 | 3422 | 3257 | 3092 |
| | | | | FEED | 662 | 636 | 626 | 602 | 576 | 547 | 521 | 495 |
| | 6-8 | 0.05D | 1.0D | Vc | 130 | 128 | 129 | 130 | 130 | 129 | 133 | 136 |
| | | | | fz | 0.038 | 0.039 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 |
| | | | | RPM | 4356 | 4074 | 3911 | 3762 | 3598 | 3422 | 3257 | 3092 |
| | | | | FEED | 662 | 636 | 626 | 602 | 576 | 547 | 521 | 495 |
| | 9 | 0.05D | 1.0D | Vc | 79 | 79 | 79 | 79 | 79 | 79 | 82 | 84 |
| | | | | fz | 0.031 | 0.032 | 0.032 | 0.032 | 0.032 | 0.032 | 0.031 | 0.031 |
| | | | | RPM | 2647 | 2515 | 2395 | 2286 | 2187 | 2096 | 2008 | 1910 |
| | | | | FEED | 328 | 322 | 307 | 293 | 280 | 268 | 249 | 237 |
| | 10-11.1 | 0.05D | 1.0D | Vc | 130 | 128 | 129 | 130 | 130 | 129 | 133 | 136 |
| | | | | fz | 0.038 | 0.039 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 |
| | | | | RPM | 4356 | 4074 | 3911 | 3762 | 3598 | 3422 | 3257 | 3092 |
| | | | | FEED | 662 | 636 | 626 | 602 | 576 | 547 | 521 | 495 |
| | 11.2 | 0.05D | 1.0D | Vc | 79 | 79 | 79 | 79 | 79 | 79 | 82 | 84 |
| | | | | fz | 0.031 | 0.032 | 0.032 | 0.032 | 0.032 | 0.032 | 0.031 | 0.031 |
| | | | | RPM | 2647 | 2515 | 2395 | 2286 | 2187 | 2096 | 2008 | 1910 |
| | | | | FEED | 328 | 322 | 307 | 293 | 280 | 268 | 249 | 237 |
| M | 14.1 | 0.05D | 1.0D | Vc | 67 | 66 | 66 | 66 | 65 | 64 | 66 | 68 |
| | | | | fz | 0.037 | 0.038 | 0.038 | 0.038 | 0.038 | 0.037 | 0.037 | 0.037 |
| | | | | RPM | 2245 | 2101 | 2001 | 1910 | 1799 | 1698 | 1616 | 1546 |
| | | | | FEED | 332 | 319 | 304 | 290 | 273 | 251 | 239 | 229 |
| K | 15-20 | 0.05D | 1.0D | Vc | 130 | 128 | 129 | 130 | 130 | 129 | 133 | 136 |
| | | | | fz | 0.038 | 0.039 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 |
| | | | | RPM | 4356 | 4074 | 3911 | 3762 | 3598 | 3422 | 3257 | 3092 |
| | | | | FEED | 662 | 636 | 626 | 602 | 576 | 547 | 521 | 495 |
| H | 38.1 - 38.2 | 0.05D | 1.0D | Vc | 54 | 53 | 54 | 55 | 55 | 55 | 56 | 57 |
| | | | | fz | 0.014 | 0.014 | 0.014 | 0.014 | 0.015 | 0.015 | 0.015 | 0.015 |
| | | | | RPM | 1809 | 1687 | 1637 | 1592 | 1522 | 1459 | 1371 | 1296 |
| | | | | FEED | 101 | 94 | 92 | 89 | 91 | 88 | 82 | 78 |
| | 40 | 0.05D | 1.0D | Vc | 79 | 79 | 79 | 79 | 79 | 79 | 82 | 84 |
| | | | | fz | 0.031 | 0.032 | 0.032 | 0.032 | 0.032 | 0.032 | 0.031 | 0.031 |
| | | | | RPM | 2647 | 2515 | 2395 | 2286 | 2187 | 2096 | 2008 | 1910 |
| | | | | FEED | 328 | 322 | 307 | 293 | 280 | 268 | 249 | 237 |
| | 41 | 0.05D | 1.0D | Vc | 54 | 53 | 54 | 55 | 55 | 55 | 56 | 57 |
| | | | | fz | 0.014 | 0.014 | 0.014 | 0.014 | 0.015 | 0.015 | 0.015 | 0.015 |
| | | | | RPM | 1809 | 1687 | 1637 | 1592 | 1522 | 1459 | 1371 | 1296 |
| | | | | FEED | 101 | 94 | 92 | 89 | 91 | 88 | 82 | 78 |

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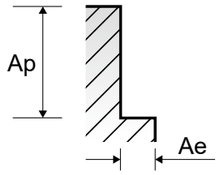
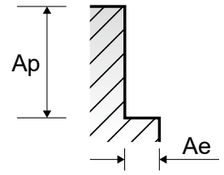





4G MILL END MILLS
RECOMMENDED CUTTING CONDITIONS
推荐加工参数
SEME36, SEME71 SERIES
4 FLUTE - SIDE CUTTING
4刃 - 侧铣削
Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| VDI 3323 | Parameter 参数 | Diameter (Ø) 直径 15.0 | 16.0 | 17.0 | 18.0 | 19.0 | 20.0 | 21.0 | 22.0 | 23.0 | 24.0 | 25.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1-5 | Vc | 138 | 138 | 138 | 137 | 135 | 132 | 133 | 134 | 134 | 134 | 134 |
| | fz | 0.039 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.039 | 0.039 |
| | RPM | 2928 | 2745 | 2584 | 2423 | 2262 | 2101 | 2016 | 1939 | 1855 | 1777 | 1706 |
| | FEED | 457 | 439 | 413 | 388 | 362 | 336 | 323 | 310 | 297 | 277 | 266 |
| 6-8 | Vc | 138 | 138 | 138 | 137 | 135 | 132 | 133 | 134 | 134 | 134 | 134 |
| | fz | 0.039 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.039 | 0.039 |
| | RPM | 2928 | 2745 | 2584 | 2423 | 2262 | 2101 | 2016 | 1939 | 1855 | 1777 | 1706 |
| | FEED | 457 | 439 | 413 | 388 | 362 | 336 | 323 | 310 | 297 | 277 | 266 |
| 9 | Vc | 85 | 85 | 86 | 85 | 85 | 84 | 84 | 84 | 84 | 84 | 82 |
| | fz | 0.031 | 0.032 | 0.031 | 0.031 | 0.032 | 0.032 | 0.032 | 0.033 | 0.031 | 0.032 | 0.032 |
| | RPM | 1804 | 1691 | 1610 | 1503 | 1424 | 1337 | 1273 | 1215 | 1163 | 1114 | 1044 |
| | FEED | 224 | 216 | 200 | 186 | 182 | 171 | 163 | 160 | 144 | 143 | 134 |
| 10 - 11.1 | Vc | 138 | 138 | 138 | 137 | 135 | 132 | 133 | 134 | 134 | 134 | 134 |
| | fz | 0.039 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.039 | 0.039 |
| | RPM | 2928 | 2745 | 2584 | 2423 | 2262 | 2101 | 2016 | 1939 | 1855 | 1777 | 1706 |
| | FEED | 457 | 439 | 413 | 388 | 362 | 336 | 323 | 310 | 297 | 277 | 266 |
| 11.2 | Vc | 85 | 85 | 86 | 85 | 85 | 84 | 84 | 84 | 84 | 84 | 82 |
| | fz | 0.031 | 0.032 | 0.031 | 0.031 | 0.032 | 0.032 | 0.032 | 0.033 | 0.031 | 0.032 | 0.032 |
| | RPM | 1804 | 1691 | 1610 | 1503 | 1424 | 1337 | 1273 | 1215 | 1163 | 1114 | 1044 |
| | FEED | 224 | 216 | 200 | 186 | 182 | 171 | 163 | 160 | 144 | 143 | 134 |
| 14.1 | Vc | 69 | 69 | 69 | 68 | 67 | 66 | 67 | 67 | 67 | 67 | 67 |
| | fz | 0.038 | 0.038 | 0.039 | 0.038 | 0.039 | 0.038 | 0.037 | 0.037 | 0.038 | 0.037 | 0.037 |
| | RPM | 1464 | 1373 | 1292 | 1203 | 1122 | 1050 | 1016 | 969 | 927 | 889 | 853 |
| | FEED | 223 | 209 | 202 | 183 | 175 | 160 | 150 | 143 | 141 | 132 | 126 |
| 15 - 20 | Vc | 138 | 138 | 138 | 137 | 135 | 132 | 133 | 134 | 134 | 134 | 134 |
| | fz | 0.039 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.039 | 0.039 |
| | RPM | 2928 | 2745 | 2584 | 2423 | 2262 | 2101 | 2016 | 1939 | 1855 | 1777 | 1706 |
| | FEED | 457 | 439 | 413 | 388 | 362 | 336 | 323 | 310 | 297 | 277 | 266 |
| 38.1 - 38.2 | Vc | 57 | 57 | 57 | 56 | 55 | 53 | 54 | 54 | 54 | 54 | 53 |
| | fz | 0.014 | 0.014 | 0.014 | 0.014 | 0.013 | 0.012 | 0.013 | 0.013 | 0.012 | 0.011 | 0.012 |
| | RPM | 1210 | 1134 | 1067 | 990 | 921 | 844 | 819 | 781 | 747 | 716 | 675 |
| | FEED | 68 | 64 | 60 | 55 | 48 | 40 | 43 | 41 | 36 | 32 | 32 |
| 40 | Vc | 85 | 85 | 86 | 85 | 85 | 84 | 84 | 84 | 84 | 84 | 82 |
| | fz | 0.031 | 0.032 | 0.031 | 0.031 | 0.032 | 0.032 | 0.032 | 0.033 | 0.031 | 0.032 | 0.032 |
| | RPM | 1804 | 1691 | 1610 | 1503 | 1424 | 1337 | 1273 | 1215 | 1163 | 1114 | 1044 |
| | FEED | 224 | 216 | 200 | 186 | 182 | 171 | 163 | 160 | 144 | 143 | 134 |
| 41 | Vc | 57 | 57 | 57 | 56 | 55 | 53 | 54 | 54 | 54 | 54 | 53 |
| | fz | 0.014 | 0.014 | 0.014 | 0.014 | 0.013 | 0.012 | 0.013 | 0.013 | 0.012 | 0.011 | 0.012 |
| | RPM | 1210 | 1134 | 1067 | 990 | 921 | 844 | 819 | 781 | 747 | 716 | 675 |
| | FEED | 68 | 64 | 60 | 55 | 48 | 40 | 43 | 41 | 36 | 32 | 32 |






CARBIDE
HSS
CBN END MILLS
i-Xmill END MILLS
i-SMART MODULAR END MILLS
X5070 END MILLS
4G MILL END MILLS
X-POWER PRO END MILLS
TitaNox-POWER END MILLS
SUS-CUT END MILLS
V7 PLUS END MILLS
ALU-POWER HPC END MILLS
ALU-CUT END MILLS
G-CUT END MILLS
CRX S END MILLS
K-2 END MILLS
GENERAL CARBIDE END MILLS
ONLY ONE COATED PM60 END MILLS
TANK-POWER END MILLS
GENERAL HSS END MILLS
MILLING CUTTERS
TECHNICAL DATA

# 4G MILL END MILLS

# RECOMMENDED CUTTING CONDITIONS
# 推荐加工参数

## SEME72 SERIES
**4 FLUTE - SIDE CUTTING**
**4刃 - 侧铣削**

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)
LOC (刃长) = Length of Cut

| ISO | VDI 3323 | Material Description 工件材料 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.2 | 1.2 | 1.2 | 1.2 | |
| | | | | | LOC | 3 | 4 | 5 | 6 | 7 | 8 | 10 | 12 | 4 | 6 | 8 | 10 |
| P | 1-5 | Non-alloy steel | 0.05D | 2.5D | Vc | 60 | 60 | 60 | 54 | 54 | 54 | 54 | 48 | 61 | 61 | 55 | 55 |
| | | | | | fz | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.003 | 0.003 | 0.003 | 0.002 |
| | | | | | RPM | 19099 | 19099 | 19099 | 17189 | 17189 | 17189 | 17189 | 15279 | 16181 | 16181 | 14589 | 14589 |
| | | | | | FEED | 153 | 153 | 153 | 138 | 138 | 138 | 138 | 122 | 194 | 194 | 175 | 117 |
| | 6-8 | Low alloy steel | 0.05D | 2.5D | Vc | 60 | 60 | 60 | 54 | 54 | 54 | 54 | 48 | 61 | 61 | 55 | 55 |
| | | | | | fz | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.003 | 0.003 | 0.003 | 0.002 |
| | | | | | RPM | 19099 | 19099 | 19099 | 17189 | 17189 | 17189 | 17189 | 15279 | 16181 | 16181 | 14589 | 14589 |
| | | | | | FEED | 153 | 153 | 153 | 138 | 138 | 138 | 138 | 122 | 194 | 194 | 175 | 117 |
| | 9 | | 0.05D | 2.5D | Vc | 34 | 34 | 34 | 31 | 31 | 31 | 31 | 28 | 35 | 35 | 31 | 31 |
| | | | | | fz | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.001 | 0.001 | 0.001 | 0.002 | 0.002 | 0.002 | 0.002 |
| | | | | | RPM | 10823 | 10823 | 10823 | 9868 | 9868 | 9868 | 9868 | 8913 | 9284 | 9284 | 8223 | 8223 |
| | | | | | FEED | 87 | 87 | 87 | 79 | 79 | 39 | 39 | 36 | 74 | 74 | 66 | 66 |
| | 10-11.1 | High alloyed steel, and tool steel | 0.05D | 2.5D | Vc | 60 | 60 | 60 | 54 | 54 | 54 | 54 | 48 | 61 | 61 | 55 | 55 |
| | | | | | fz | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.003 | 0.003 | 0.003 | 0.002 |
| | | | | | RPM | 19099 | 19099 | 19099 | 17189 | 17189 | 17189 | 17189 | 15279 | 16181 | 16181 | 14589 | 14589 |
| | | | | | FEED | 153 | 153 | 153 | 138 | 138 | 138 | 138 | 122 | 194 | 194 | 175 | 117 |
| | 11.2 | | 0.05D | 2.5D | Vc | 34 | 34 | 34 | 31 | 31 | 31 | 31 | 28 | 35 | 35 | 31 | 31 |
| | | | | | fz | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.001 | 0.001 | 0.001 | 0.002 | 0.002 | 0.002 | 0.002 |
| | | | | | RPM | 10823 | 10823 | 10823 | 9868 | 9868 | 9868 | 9868 | 8913 | 9284 | 9284 | 8223 | 8223 |
| | | | | | FEED | 87 | 87 | 87 | 79 | 79 | 39 | 39 | 36 | 74 | 74 | 66 | 66 |
| K | 15-20 | Grey cast iron Nodular cast iron Malleable cast iron | 0.05D | 2.5D | Vc | 60 | 60 | 60 | 54 | 54 | 54 | 54 | 48 | 61 | 61 | 55 | 55 |
| | | | | | fz | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.003 | 0.003 | 0.003 | 0.002 |
| | | | | | RPM | 19099 | 19099 | 19099 | 17189 | 17189 | 17189 | 17189 | 15279 | 16181 | 16181 | 14589 | 14589 |
| | | | | | FEED | 153 | 153 | 153 | 138 | 138 | 138 | 138 | 122 | 194 | 194 | 175 | 117 |
| H | 38.1 - 38.2 | Hardened steel | 0.02D | 2.0D | Vc | 21 | 21 | 21 | 19 | 19 | 19 | 19 | 17 | 21 | 21 | 19 | 19 |
| | | | | | fz | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.002 | 0.002 | 0.002 | 0.001 |
| | | | | | RPM | 6685 | 6685 | 6685 | 6048 | 6048 | 6048 | 6048 | 5411 | 5570 | 5570 | 5040 | 5040 |
| | | | | | FEED | 27 | 27 | 27 | 24 | 24 | 24 | 24 | 22 | 45 | 45 | 40 | 20 |
| | 40 | Chilled Cast Iron | 0.05D | 2.5D | Vc | 34 | 34 | 34 | 31 | 31 | 31 | 31 | 28 | 35 | 35 | 31 | 31 |
| | | | | | fz | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.001 | 0.001 | 0.001 | 0.002 | 0.002 | 0.002 | 0.002 |
| | | | | | RPM | 10823 | 10823 | 10823 | 9868 | 9868 | 9868 | 9868 | 8913 | 9284 | 9284 | 8223 | 8223 |
| | | | | | FEED | 87 | 87 | 87 | 79 | 79 | 39 | 39 | 36 | 74 | 74 | 66 | 66 |
| | 41 | Hardened Cast Iron | 0.02D | 2.0D | Vc | 21 | 21 | 21 | 19 | 19 | 19 | 19 | 17 | 21 | 21 | 19 | 19 |
| | | | | | fz | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.002 | 0.002 | 0.002 | 0.001 |
| | | | | | RPM | 6685 | 6685 | 6685 | 6048 | 6048 | 6048 | 6048 | 5411 | 5570 | 5570 | 5040 | 5040 |
| | | | | | FEED | 27 | 27 | 27 | 24 | 24 | 24 | 24 | 22 | 45 | 45 | 40 | 20 |

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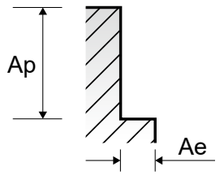




4G MILL END MILLS
RECOMMENDED CUTTING CONDITIONS
推荐加工参数
SEME72 SERIES
4 FLUTE - SIDE CUTTING
4刃 - 侧铣削
Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)
LOC (刃长) = Length of Cut

| VDI 3323 | Parameter 参数 | Diameter (Ø) 直径 | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1.2 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 3.0 | 3.0 |
| | LOC | 12 | 6 | 8 | 10 | 12 | 14 | 16 | 8 | 10 | 12 | 14 | 16 | 10 | 12 | 16 | 20 | 26 | 10 | 12 |
| 1-5 | Vc | 55 | 65 | 59 | 59 | 59 | 59 | 52 | 66 | 66 | 60 | 60 | 60 | 71 | 71 | 64 | 64 | 57 | 70 | 70 |
| | fz | 0.002 | 0.004 | 0.004 | 0.004 | 0.003 | 0.003 | 0.003 | 0.006 | 0.006 | 0.005 | 0.005 | 0.005 | 0.007 | 0.007 | 0.006 | 0.006 | 0.005 | 0.009 | 0.009 |
| | RPM | 14589 | 13793 | 12520 | 12520 | 12520 | 12520 | 11035 | 10504 | 10504 | 9549 | 9549 | 9549 | 9040 | 9040 | 8149 | 8149 | 7257 | 7427 | 7427 |
| | FEED | 117 | 221 | 200 | 200 | 150 | 150 | 132 | 252 | 252 | 191 | 191 | 191 | 253 | 253 | 196 | 196 | 145 | 267 | 267 |
| 6-8 | Vc | 55 | 65 | 59 | 59 | 59 | 59 | 52 | 66 | 66 | 60 | 60 | 60 | 71 | 71 | 64 | 64 | 57 | 70 | 70 |
| | fz | 0.002 | 0.004 | 0.004 | 0.004 | 0.003 | 0.003 | 0.003 | 0.006 | 0.006 | 0.005 | 0.005 | 0.005 | 0.007 | 0.007 | 0.006 | 0.006 | 0.005 | 0.009 | 0.009 |
| | RPM | 14589 | 13793 | 12520 | 12520 | 12520 | 12520 | 11035 | 10504 | 10504 | 9549 | 9549 | 9549 | 9040 | 9040 | 8149 | 8149 | 7257 | 7427 | 7427 |
| | FEED | 117 | 221 | 200 | 200 | 150 | 150 | 132 | 252 | 252 | 191 | 191 | 191 | 253 | 253 | 196 | 196 | 145 | 267 | 267 |
| 9 | Vc | 31 | 37 | 33 | 33 | 33 | 33 | 30 | 38 | 38 | 34 | 34 | 34 | 41 | 41 | 37 | 37 | 32 | 40 | 40 |
| | fz | 0.002 | 0.003 | 0.003 | 0.002 | 0.002 | 0.002 | 0.002 | 0.004 | 0.004 | 0.004 | 0.004 | 0.003 | 0.005 | 0.005 | 0.005 | 0.004 | 0.004 | 0.007 | 0.007 |
| | RPM | 8223 | 7852 | 7003 | 7003 | 7003 | 7003 | 6366 | 6048 | 6048 | 5411 | 5411 | 5411 | 5220 | 5220 | 4711 | 4711 | 4074 | 4244 | 4244 |
| | FEED | 66 | 94 | 84 | 56 | 56 | 56 | 51 | 97 | 97 | 87 | 87 | 65 | 104 | 104 | 94 | 75 | 65 | 119 | 119 |
| 10 - 11.1 | Vc | 55 | 65 | 59 | 59 | 59 | 59 | 52 | 66 | 66 | 60 | 60 | 60 | 71 | 71 | 64 | 64 | 57 | 70 | 70 |
| | fz | 0.002 | 0.004 | 0.004 | 0.004 | 0.003 | 0.003 | 0.003 | 0.006 | 0.006 | 0.005 | 0.005 | 0.005 | 0.007 | 0.007 | 0.006 | 0.006 | 0.005 | 0.009 | 0.009 |
| | RPM | 14589 | 13793 | 12520 | 12520 | 12520 | 12520 | 11035 | 10504 | 10504 | 9549 | 9549 | 9549 | 9040 | 9040 | 8149 | 8149 | 7257 | 7427 | 7427 |
| | FEED | 117 | 221 | 200 | 200 | 150 | 150 | 132 | 252 | 252 | 191 | 191 | 191 | 253 | 253 | 196 | 196 | 145 | 267 | 267 |
| 11.2 | Vc | 31 | 37 | 33 | 33 | 33 | 33 | 30 | 38 | 38 | 34 | 34 | 34 | 41 | 41 | 37 | 37 | 32 | 40 | 40 |
| | fz | 0.002 | 0.003 | 0.003 | 0.002 | 0.002 | 0.002 | 0.002 | 0.004 | 0.004 | 0.004 | 0.004 | 0.003 | 0.005 | 0.005 | 0.005 | 0.004 | 0.004 | 0.007 | 0.007 |
| | RPM | 8223 | 7852 | 7003 | 7003 | 7003 | 7003 | 6366 | 6048 | 6048 | 5411 | 5411 | 5411 | 5220 | 5220 | 4711 | 4711 | 4074 | 4244 | 4244 |
| | FEED | 66 | 94 | 84 | 56 | 56 | 56 | 51 | 97 | 97 | 87 | 87 | 65 | 104 | 104 | 94 | 75 | 65 | 119 | 119 |
| 15 - 20 | Vc | 55 | 65 | 59 | 59 | 59 | 59 | 52 | 66 | 66 | 60 | 60 | 60 | 71 | 71 | 64 | 64 | 57 | 70 | 70 |
| | fz | 0.002 | 0.004 | 0.004 | 0.004 | 0.003 | 0.003 | 0.003 | 0.006 | 0.006 | 0.005 | 0.005 | 0.005 | 0.007 | 0.007 | 0.006 | 0.006 | 0.005 | 0.009 | 0.009 |
| | RPM | 14589 | 13793 | 12520 | 12520 | 12520 | 12520 | 11035 | 10504 | 10504 | 9549 | 9549 | 9549 | 9040 | 9040 | 8149 | 8149 | 7257 | 7427 | 7427 |
| | FEED | 117 | 221 | 200 | 200 | 150 | 150 | 132 | 252 | 252 | 191 | 191 | 191 | 253 | 253 | 196 | 196 | 145 | 267 | 267 |
| 38.1 - 38.2 | Vc | 19 | 23 | 20 | 20 | 20 | 20 | 18 | 24 | 24 | 21 | 21 | 21 | 25 | 25 | 23 | 23 | 20 | 25 | 25 |
| | fz | 0.001 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.004 | 0.004 | 0.003 | 0.003 | 0.003 | 0.005 | 0.005 | 0.004 | 0.004 | 0.003 | 0.006 | 0.006 |
| | RPM | 5040 | 4881 | 4244 | 4244 | 4244 | 4244 | 3820 | 3820 | 3820 | 3342 | 3342 | 3342 | 3183 | 3183 | 2928 | 2928 | 2546 | 2653 | 2653 |
| | FEED | 20 | 39 | 34 | 34 | 34 | 34 | 31 | 61 | 61 | 40 | 40 | 40 | 64 | 64 | 47 | 47 | 31 | 64 | 64 |
| 40 | Vc | 31 | 37 | 33 | 33 | 33 | 33 | 30 | 38 | 38 | 34 | 34 | 34 | 41 | 41 | 37 | 37 | 32 | 40 | 40 |
| | fz | 0.002 | 0.003 | 0.003 | 0.002 | 0.002 | 0.002 | 0.002 | 0.004 | 0.004 | 0.004 | 0.004 | 0.003 | 0.005 | 0.005 | 0.005 | 0.004 | 0.004 | 0.007 | 0.007 |
| | RPM | 8223 | 7852 | 7003 | 7003 | 7003 | 7003 | 6366 | 6048 | 6048 | 5411 | 5411 | 5411 | 5220 | 5220 | 4711 | 4711 | 4074 | 4244 | 4244 |
| | FEED | 66 | 94 | 84 | 56 | 56 | 56 | 51 | 97 | 97 | 87 | 87 | 65 | 104 | 104 | 94 | 75 | 65 | 119 | 119 |
| 41 | Vc | 19 | 23 | 20 | 20 | 20 | 20 | 18 | 24 | 24 | 21 | 21 | 21 | 25 | 25 | 23 | 23 | 20 | 25 | 25 |
| | fz | 0.001 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.004 | 0.004 | 0.003 | 0.003 | 0.003 | 0.005 | 0.005 | 0.004 | 0.004 | 0.003 | 0.006 | 0.006 |
| | RPM | 5040 | 4881 | 4244 | 4244 | 4244 | 4244 | 3820 | 3820 | 3820 | 3342 | 3342 | 3342 | 3183 | 3183 | 2928 | 2928 | 2546 | 2653 | 2653 |
| | FEED | 20 | 39 | 34 | 34 | 34 | 34 | 31 | 61 | 61 | 40 | 40 | 40 | 64 | 64 | 47 | 47 | 31 | 64 | 64 |

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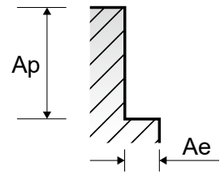




CARBIDE
HSS
CBN END MILLS
i-Xmill END MILLS
i-SMART MODULAR END MILLS
X5070 END MILLS
4G MILL END MILLS
X-POWER PRO END MILLS
TitaNox-POWER END MILLS
SUS-CUT END MILLS
V7 PLUS END MILLS
ALU-POWER HPC END MILLS
ALU-CUT END MILLS
G-CUT END MILLS
CRX S END MILLS
K-2 END MILLS
GENERAL CARBIDE END MILLS
ONLY ONE COATED PM60 END MILLS
TANK-POWER END MILLS
GENERAL HSS END MILLS
MILLING CUTTERS
TECHNICAL DATA

# 4G MILL END MILLS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

**SEME72** SERIES

**4 FLUTE - SIDE CUTTING**
**4刃 - 侧铣削**

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)
LOC (刃长) = Length of Cut

| ISO | VDI 3323 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | LOC | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| P | 1-5 | 0.05D | 2.5D | Vc | 70 | 63 | 63 | 63 | 63 | 75 | 75 | 75 | 68 | 68 | 80 | 80 | 72 | 72 | 72 |
| | | | | fz | 0.009 | 0.009 | 0.008 | 0.008 | 0.008 | 0.014 | 0.014 | 0.014 | 0.013 | 0.013 | 0.021 | 0.021 | 0.019 | 0.019 | 0.017 |
| | | | | RPM | 7427 | 6685 | 6685 | 6685 | 6685 | 5968 | 5968 | 5968 | 5411 | 5411 | 5093 | 5093 | 4584 | 4584 | 4584 |
| | | | | FEED | 267 | 241 | 214 | 214 | 214 | 334 | 334 | 334 | 281 | 281 | 428 | 428 | 348 | 348 | 312 |
| | 6-8 | 0.05D | 2.5D | Vc | 70 | 63 | 63 | 63 | 63 | 75 | 75 | 75 | 68 | 68 | 80 | 80 | 72 | 72 | 72 |
| | | | | fz | 0.009 | 0.009 | 0.008 | 0.008 | 0.008 | 0.014 | 0.014 | 0.014 | 0.013 | 0.013 | 0.021 | 0.021 | 0.019 | 0.019 | 0.017 |
| | | | | RPM | 7427 | 6685 | 6685 | 6685 | 6685 | 5968 | 5968 | 5968 | 5411 | 5411 | 5093 | 5093 | 4584 | 4584 | 4584 |
| | | | | FEED | 267 | 241 | 214 | 214 | 214 | 334 | 334 | 334 | 281 | 281 | 428 | 428 | 348 | 348 | 312 |
| | 9 | 0.05D | 2.5D | Vc | 40 | 36 | 36 | 36 | 36 | 43 | 43 | 43 | 39 | 39 | 46 | 46 | 41 | 41 | 41 |
| | | | | fz | 0.007 | 0.007 | 0.006 | 0.006 | 0.006 | 0.01 | 0.01 | 0.01 | 0.009 | 0.009 | 0.015 | 0.015 | 0.013 | 0.013 | 0.011 |
| | | | | RPM | 4244 | 3820 | 3820 | 3820 | 3820 | 3422 | 3422 | 3422 | 3104 | 3104 | 2928 | 2928 | 2610 | 2610 | 2610 |
| | | | | FEED | 119 | 107 | 92 | 92 | 92 | 137 | 137 | 137 | 112 | 112 | 176 | 176 | 136 | 136 | 115 |
| | 10-11.1 | 0.05D | 2.5D | Vc | 70 | 63 | 63 | 63 | 63 | 75 | 75 | 75 | 68 | 68 | 80 | 80 | 72 | 72 | 72 |
| | | | | fz | 0.009 | 0.009 | 0.008 | 0.008 | 0.008 | 0.014 | 0.014 | 0.014 | 0.013 | 0.013 | 0.021 | 0.021 | 0.019 | 0.019 | 0.017 |
| | | | | RPM | 7427 | 6685 | 6685 | 6685 | 6685 | 5968 | 5968 | 5968 | 5411 | 5411 | 5093 | 5093 | 4584 | 4584 | 4584 |
| | | | | FEED | 267 | 241 | 214 | 214 | 214 | 334 | 334 | 334 | 281 | 281 | 428 | 428 | 348 | 348 | 312 |
| | 11.2 | 0.05D | 2.5D | Vc | 40 | 36 | 36 | 36 | 36 | 43 | 43 | 43 | 39 | 39 | 46 | 46 | 41 | 41 | 41 |
| | | | | fz | 0.007 | 0.007 | 0.006 | 0.006 | 0.006 | 0.01 | 0.01 | 0.01 | 0.009 | 0.009 | 0.015 | 0.015 | 0.013 | 0.013 | 0.011 |
| | | | | RPM | 4244 | 3820 | 3820 | 3820 | 3820 | 3422 | 3422 | 3422 | 3104 | 3104 | 2928 | 2928 | 2610 | 2610 | 2610 |
| | | | | FEED | 119 | 107 | 92 | 92 | 92 | 137 | 137 | 137 | 112 | 112 | 176 | 176 | 136 | 136 | 115 |
| K | 15-20 | 0.05D | 2.5D | Vc | 70 | 63 | 63 | 63 | 63 | 75 | 75 | 75 | 68 | 68 | 80 | 80 | 72 | 72 | 72 |
| | | | | fz | 0.009 | 0.009 | 0.008 | 0.008 | 0.008 | 0.014 | 0.014 | 0.014 | 0.013 | 0.013 | 0.021 | 0.021 | 0.019 | 0.019 | 0.017 |
| | | | | RPM | 7427 | 6685 | 6685 | 6685 | 6685 | 5968 | 5968 | 5968 | 5411 | 5411 | 5093 | 5093 | 4584 | 4584 | 4584 |
| | | | | FEED | 267 | 241 | 214 | 214 | 214 | 334 | 334 | 334 | 281 | 281 | 428 | 428 | 348 | 348 | 312 |
| H | 38.1 - 38.2 | 0.02D | 2.0D | Vc | 25 | 22 | 22 | 22 | 22 | 27 | 27 | 27 | 24 | 24 | 30 | 30 | 27 | 27 | 27 |
| | | | | fz | 0.006 | 0.006 | 0.006 | 0.005 | 0.005 | 0.008 | 0.008 | 0.008 | 0.008 | 0.008 | 0.011 | 0.011 | 0.01 | 0.01 | 0.009 |
| | | | | RPM | 2653 | 2334 | 2334 | 2334 | 2334 | 2149 | 2149 | 2149 | 1910 | 1910 | 1910 | 1910 | 1719 | 1719 | 1719 |
| | | | | FEED | 64 | 56 | 56 | 47 | 47 | 69 | 69 | 69 | 61 | 61 | 84 | 84 | 69 | 69 | 62 |
| | 40 | 0.05D | 2.5D | Vc | 40 | 36 | 36 | 36 | 36 | 43 | 43 | 43 | 39 | 39 | 46 | 46 | 41 | 41 | 41 |
| | | | | fz | 0.007 | 0.007 | 0.006 | 0.006 | 0.006 | 0.01 | 0.01 | 0.01 | 0.009 | 0.009 | 0.015 | 0.015 | 0.013 | 0.013 | 0.011 |
| | | | | RPM | 4244 | 3820 | 3820 | 3820 | 3820 | 3422 | 3422 | 3422 | 3104 | 3104 | 2928 | 2928 | 2610 | 2610 | 2610 |
| | | | | FEED | 119 | 107 | 92 | 92 | 92 | 137 | 137 | 137 | 112 | 112 | 176 | 176 | 136 | 136 | 115 |
| | 41 | 0.02D | 2.0D | Vc | 25 | 22 | 22 | 22 | 22 | 27 | 27 | 27 | 24 | 24 | 30 | 30 | 27 | 27 | 27 |
| | | | | fz | 0.006 | 0.006 | 0.006 | 0.005 | 0.005 | 0.008 | 0.008 | 0.008 | 0.008 | 0.008 | 0.011 | 0.011 | 0.01 | 0.01 | 0.009 |
| | | | | RPM | 2653 | 2334 | 2334 | 2334 | 2334 | 2149 | 2149 | 2149 | 1910 | 1910 | 1910 | 1910 | 1719 | 1719 | 1719 |
| | | | | FEED | 64 | 56 | 56 | 47 | 47 | 69 | 69 | 69 | 61 | 61 | 84 | 84 | 69 | 69 | 62 |

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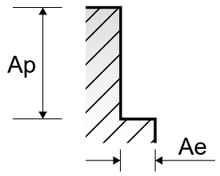




CARBIDE
HSS
CBN END MILLS
i-Xmill END MILLS
i-SMART MODULAR END MILLS
X5070 END MILLS
4G MILL END MILLS
X-POWER PRO END MILLS
TitaNox-POWER END MILLS
SUS-CUT END MILLS
V7 PLUS END MILLS
ALU-POWER HPC END MILLS
ALU-CUT END MILLS
G-CUT END MILLS
CRX S END MILLS
K-2 END MILLS
GENERAL CARBIDE END MILLS
ONLY ONE COATED PM60 END MILLS
TANK-POWER END MILLS
GENERAL HSS END MILLS
MILLING CUTTERS
TECHNICAL DATA

# 4G MILL END MILLS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

**SEME72** SERIES

**4 FLUTE - SIDE CUTTING**
**4刃 - 侧铣削**

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)
LOC (刃长) = Length of Cut

| VDI 3323 | Parameter 参数 | Diameter (Ø) 直径 | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | LOC | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 |
| | | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 25 | 30 | 35 | 40 | 45 | 50 | 30 | 35 | 40 | 45 | 50 | 55 |
| 1-5 | Vc | 83 | 83 | 83 | 83 | 75 | 75 | 75 | 84 | 84 | 84 | 84 | 76 | 76 | 89 | 89 | 89 | 89 | 89 | 80 |
| | fz | 0.029 | 0.029 | 0.029 | 0.025 | 0.025 | 0.022 | 0.022 | 0.041 | 0.041 | 0.041 | 0.035 | 0.035 | 0.031 | 0.049 | 0.049 | 0.049 | 0.042 | 0.042 | 0.041 |
| | RPM | 4403 | 4403 | 4403 | 4403 | 3979 | 3979 | 3979 | 3342 | 3342 | 3342 | 3342 | 3024 | 3024 | 2833 | 2833 | 2833 | 2833 | 2833 | 2546 |
| | FEED | 511 | 511 | 511 | 440 | 398 | 350 | 350 | 548 | 548 | 548 | 468 | 423 | 375 | 555 | 555 | 555 | 476 | 476 | 418 |
| 6-8 | Vc | 83 | 83 | 83 | 83 | 75 | 75 | 75 | 84 | 84 | 84 | 84 | 76 | 76 | 89 | 89 | 89 | 89 | 89 | 80 |
| | fz | 0.029 | 0.029 | 0.029 | 0.025 | 0.025 | 0.022 | 0.022 | 0.041 | 0.041 | 0.041 | 0.035 | 0.035 | 0.031 | 0.049 | 0.049 | 0.049 | 0.042 | 0.042 | 0.041 |
| | RPM | 4403 | 4403 | 4403 | 4403 | 3979 | 3979 | 3979 | 3342 | 3342 | 3342 | 3342 | 3024 | 3024 | 2833 | 2833 | 2833 | 2833 | 2833 | 2546 |
| | FEED | 511 | 511 | 511 | 440 | 398 | 350 | 350 | 548 | 548 | 548 | 468 | 423 | 375 | 555 | 555 | 555 | 476 | 476 | 418 |
| 9 | Vc | 48 | 48 | 48 | 48 | 43 | 43 | 43 | 48 | 48 | 48 | 48 | 43 | 43 | 52 | 52 | 52 | 52 | 52 | 46 |
| | fz | 0.021 | 0.021 | 0.021 | 0.018 | 0.018 | 0.016 | 0.016 | 0.028 | 0.028 | 0.028 | 0.024 | 0.024 | 0.021 | 0.033 | 0.033 | 0.033 | 0.028 | 0.028 | 0.028 |
| | RPM | 2546 | 2546 | 2546 | 2546 | 2281 | 2281 | 2281 | 1910 | 1910 | 1910 | 1910 | 1711 | 1711 | 1655 | 1655 | 1655 | 1655 | 1655 | 1464 |
| | FEED | 214 | 214 | 214 | 183 | 164 | 146 | 146 | 214 | 214 | 214 | 183 | 164 | 144 | 218 | 218 | 218 | 185 | 185 | 164 |
| 10 - 11.1 | Vc | 83 | 83 | 83 | 83 | 75 | 75 | 75 | 84 | 84 | 84 | 84 | 76 | 76 | 89 | 89 | 89 | 89 | 89 | 80 |
| | fz | 0.029 | 0.029 | 0.029 | 0.025 | 0.025 | 0.022 | 0.022 | 0.041 | 0.041 | 0.041 | 0.035 | 0.035 | 0.031 | 0.049 | 0.049 | 0.049 | 0.042 | 0.042 | 0.041 |
| | RPM | 4403 | 4403 | 4403 | 4403 | 3979 | 3979 | 3979 | 3342 | 3342 | 3342 | 3342 | 3024 | 3024 | 2833 | 2833 | 2833 | 2833 | 2833 | 2546 |
| | FEED | 511 | 511 | 511 | 440 | 398 | 350 | 350 | 548 | 548 | 548 | 468 | 423 | 375 | 555 | 555 | 555 | 476 | 476 | 418 |
| 11.2 | Vc | 48 | 48 | 48 | 48 | 43 | 43 | 43 | 48 | 48 | 48 | 48 | 43 | 43 | 52 | 52 | 52 | 52 | 52 | 46 |
| | fz | 0.021 | 0.021 | 0.021 | 0.018 | 0.018 | 0.016 | 0.016 | 0.028 | 0.028 | 0.028 | 0.024 | 0.024 | 0.021 | 0.033 | 0.033 | 0.033 | 0.028 | 0.028 | 0.028 |
| | RPM | 2546 | 2546 | 2546 | 2546 | 2281 | 2281 | 2281 | 1910 | 1910 | 1910 | 1910 | 1711 | 1711 | 1655 | 1655 | 1655 | 1655 | 1655 | 1464 |
| | FEED | 214 | 214 | 214 | 183 | 164 | 146 | 146 | 214 | 214 | 214 | 183 | 164 | 144 | 218 | 218 | 218 | 185 | 185 | 164 |
| 15 - 20 | Vc | 83 | 83 | 83 | 83 | 75 | 75 | 75 | 84 | 84 | 84 | 84 | 76 | 76 | 89 | 89 | 89 | 89 | 89 | 80 |
| | fz | 0.029 | 0.029 | 0.029 | 0.025 | 0.025 | 0.022 | 0.022 | 0.041 | 0.041 | 0.041 | 0.035 | 0.035 | 0.031 | 0.049 | 0.049 | 0.049 | 0.042 | 0.042 | 0.041 |
| | RPM | 4403 | 4403 | 4403 | 4403 | 3979 | 3979 | 3979 | 3342 | 3342 | 3342 | 3342 | 3024 | 3024 | 2833 | 2833 | 2833 | 2833 | 2833 | 2546 |
| | FEED | 511 | 511 | 511 | 440 | 398 | 350 | 350 | 548 | 548 | 548 | 468 | 423 | 375 | 555 | 555 | 555 | 476 | 476 | 418 |
| 38.1 - 38.2 | Vc | 31 | 31 | 31 | 31 | 28 | 28 | 28 | 32 | 32 | 32 | 32 | 28 | 28 | 32 | 32 | 32 | 32 | 32 | 29 |
| | fz | 0.017 | 0.017 | 0.017 | 0.014 | 0.014 | 0.013 | 0.013 | 0.022 | 0.022 | 0.022 | 0.018 | 0.019 | 0.017 | 0.027 | 0.027 | 0.027 | 0.022 | 0.022 | 0.023 |
| | RPM | 1645 | 1645 | 1645 | 1645 | 1485 | 1485 | 1485 | 1273 | 1273 | 1273 | 1273 | 1114 | 1114 | 1019 | 1019 | 1019 | 1019 | 1019 | 923 |
| | FEED | 112 | 112 | 112 | 92 | 83 | 77 | 77 | 112 | 112 | 112 | 92 | 85 | 76 | 110 | 110 | 110 | 90 | 90 | 85 |
| 40 | Vc | 48 | 48 | 48 | 48 | 43 | 43 | 43 | 48 | 48 | 48 | 48 | 43 | 43 | 52 | 52 | 52 | 52 | 52 | 46 |
| | fz | 0.021 | 0.021 | 0.021 | 0.018 | 0.018 | 0.016 | 0.016 | 0.028 | 0.028 | 0.028 | 0.024 | 0.024 | 0.021 | 0.033 | 0.033 | 0.033 | 0.028 | 0.028 | 0.028 |
| | RPM | 2546 | 2546 | 2546 | 2546 | 2281 | 2281 | 2281 | 1910 | 1910 | 1910 | 1910 | 1711 | 1711 | 1655 | 1655 | 1655 | 1655 | 1655 | 1464 |
| | FEED | 214 | 214 | 214 | 183 | 164 | 146 | 146 | 214 | 214 | 214 | 183 | 164 | 144 | 218 | 218 | 218 | 185 | 185 | 164 |
| 41 | Vc | 31 | 31 | 31 | 31 | 28 | 28 | 28 | 32 | 32 | 32 | 32 | 28 | 28 | 32 | 32 | 32 | 32 | 32 | 29 |
| | fz | 0.017 | 0.017 | 0.017 | 0.014 | 0.014 | 0.013 | 0.013 | 0.022 | 0.022 | 0.022 | 0.018 | 0.019 | 0.017 | 0.027 | 0.027 | 0.027 | 0.022 | 0.022 | 0.023 |
| | RPM | 1645 | 1645 | 1645 | 1645 | 1485 | 1485 | 1485 | 1273 | 1273 | 1273 | 1273 | 1114 | 1114 | 1019 | 1019 | 1019 | 1019 | 1019 | 923 |
| | FEED | 112 | 112 | 112 | 92 | 83 | 77 | 77 | 112 | 112 | 112 | 92 | 85 | 76 | 110 | 110 | 110 | 90 | 90 | 85 |

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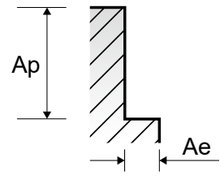

# 4G MILL END MILLS

# RECOMMENDED CUTTING CONDITIONS
# 推荐加工参数

## SEME72 SERIES
**4 FLUTE - SIDE CUTTING**
**4刃 - 侧铣削**

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)
LOC (刃长) = Length of Cut

| ISO | VDI 3323 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | 10.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 14.0 | 14.0 | 16.0 | 16.0 | 16.0 | 16.0 |
| | | | | LOC | 60 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 50 | 60 | 40 | 50 | 60 | 70 |
| P | 1-5 | 0.05D | 2.5D | Vc | 80 | 87 | 87 | 87 | 87 | 87 | 87 | 78 | 78 | 93 | 93 | 98 | 98 | 98 | 98 |
| | | | | fz | 0.037 | 0.047 | 0.047 | 0.04 | 0.04 | 0.04 | 0.035 | 0.035 | 0.035 | 0.041 | 0.041 | 0.05 | 0.05 | 0.042 | 0.042 |
| | | | | RPM | 2546 | 2308 | 2308 | 2308 | 2308 | 2308 | 2308 | 2069 | 2069 | 2114 | 2114 | 1950 | 1950 | 1950 | 1950 |
| | | | | FEED | 377 | 434 | 434 | 369 | 369 | 369 | 323 | 290 | 290 | 347 | 347 | 390 | 390 | 328 | 328 |
| | 6-8 | 0.05D | 2.5D | Vc | 80 | 87 | 87 | 87 | 87 | 87 | 87 | 78 | 78 | 93 | 93 | 98 | 98 | 98 | 98 |
| | | | | fz | 0.037 | 0.047 | 0.047 | 0.04 | 0.04 | 0.04 | 0.035 | 0.035 | 0.035 | 0.041 | 0.041 | 0.05 | 0.05 | 0.042 | 0.042 |
| | | | | RPM | 2546 | 2308 | 2308 | 2308 | 2308 | 2308 | 2308 | 2069 | 2069 | 2114 | 2114 | 1950 | 1950 | 1950 | 1950 |
| | | | | FEED | 377 | 434 | 434 | 369 | 369 | 369 | 323 | 290 | 290 | 347 | 347 | 390 | 390 | 328 | 328 |
| | 9 | 0.05D | 2.5D | Vc | 46 | 52 | 52 | 52 | 52 | 52 | 52 | 47 | 47 | 54 | 54 | 54 | 54 | 54 | 54 |
| | | | | fz | 0.024 | 0.034 | 0.034 | 0.03 | 0.03 | 0.03 | 0.026 | 0.026 | 0.026 | 0.029 | 0.029 | 0.035 | 0.035 | 0.03 | 0.03 |
| | | | | RPM | 1464 | 1379 | 1379 | 1379 | 1379 | 1379 | 1379 | 1247 | 1247 | 1228 | 1228 | 1074 | 1074 | 1074 | 1074 |
| | | | | FEED | 141 | 188 | 188 | 166 | 166 | 166 | 143 | 130 | 130 | 142 | 142 | 150 | 150 | 129 | 129 |
| | 10-11.1 | 0.05D | 2.5D | Vc | 80 | 87 | 87 | 87 | 87 | 87 | 87 | 78 | 78 | 93 | 93 | 98 | 98 | 98 | 98 |
| | | | | fz | 0.037 | 0.047 | 0.047 | 0.04 | 0.04 | 0.04 | 0.035 | 0.035 | 0.035 | 0.041 | 0.041 | 0.05 | 0.05 | 0.042 | 0.042 |
| | | | | RPM | 2546 | 2308 | 2308 | 2308 | 2308 | 2308 | 2308 | 2069 | 2069 | 2114 | 2114 | 1950 | 1950 | 1950 | 1950 |
| | | | | FEED | 377 | 434 | 434 | 369 | 369 | 369 | 323 | 290 | 290 | 347 | 347 | 390 | 390 | 328 | 328 |
| | 11.2 | 0.05D | 2.5D | Vc | 46 | 52 | 52 | 52 | 52 | 52 | 52 | 47 | 47 | 54 | 54 | 54 | 54 | 54 | 54 |
| | | | | fz | 0.024 | 0.034 | 0.034 | 0.03 | 0.03 | 0.03 | 0.026 | 0.026 | 0.026 | 0.029 | 0.029 | 0.035 | 0.035 | 0.03 | 0.03 |
| | | | | RPM | 1464 | 1379 | 1379 | 1379 | 1379 | 1379 | 1379 | 1247 | 1247 | 1228 | 1228 | 1074 | 1074 | 1074 | 1074 |
| | | | | FEED | 141 | 188 | 188 | 166 | 166 | 166 | 143 | 130 | 130 | 142 | 142 | 150 | 150 | 129 | 129 |
| K | 15-20 | 0.05D | 2.5D | Vc | 80 | 87 | 87 | 87 | 87 | 87 | 87 | 78 | 78 | 93 | 93 | 98 | 98 | 98 | 98 |
| | | | | fz | 0.037 | 0.047 | 0.047 | 0.04 | 0.04 | 0.04 | 0.035 | 0.035 | 0.035 | 0.041 | 0.041 | 0.05 | 0.05 | 0.042 | 0.042 |
| | | | | RPM | 2546 | 2308 | 2308 | 2308 | 2308 | 2308 | 2308 | 2069 | 2069 | 2114 | 2114 | 1950 | 1950 | 1950 | 1950 |
| | | | | FEED | 377 | 434 | 434 | 369 | 369 | 369 | 323 | 290 | 290 | 347 | 347 | 390 | 390 | 328 | 328 |
| H | 38.1 - 38.2 | 0.02D | 2.0D | Vc | 29 | 32 | 32 | 32 | 32 | 32 | 32 | 29 | 29 | 33 | 33 | 34 | 34 | 34 | 34 |
| | | | | fz | 0.021 | 0.025 | 0.025 | 0.021 | 0.021 | 0.021 | 0.019 | 0.018 | 0.018 | 0.021 | 0.021 | 0.026 | 0.026 | 0.022 | 0.022 |
| | | | | RPM | 923 | 849 | 849 | 849 | 849 | 849 | 849 | 769 | 769 | 750 | 750 | 676 | 676 | 676 | 676 |
| | | | | FEED | 78 | 85 | 85 | 71 | 71 | 71 | 65 | 55 | 55 | 63 | 63 | 70 | 70 | 60 | 60 |
| | 40 | 0.05D | 2.5D | Vc | 46 | 52 | 52 | 52 | 52 | 52 | 52 | 47 | 47 | 54 | 54 | 54 | 54 | 54 | 54 |
| | | | | fz | 0.024 | 0.034 | 0.034 | 0.03 | 0.03 | 0.03 | 0.026 | 0.026 | 0.026 | 0.029 | 0.029 | 0.035 | 0.035 | 0.03 | 0.03 |
| | | | | RPM | 1464 | 1379 | 1379 | 1379 | 1379 | 1379 | 1379 | 1247 | 1247 | 1228 | 1228 | 1074 | 1074 | 1074 | 1074 |
| | | | | FEED | 141 | 188 | 188 | 166 | 166 | 166 | 143 | 130 | 130 | 142 | 142 | 150 | 150 | 129 | 129 |
| | 41 | 0.02D | 2.0D | Vc | 29 | 32 | 32 | 32 | 32 | 32 | 32 | 29 | 29 | 33 | 33 | 34 | 34 | 34 | 34 |
| | | | | fz | 0.021 | 0.025 | 0.025 | 0.021 | 0.021 | 0.021 | 0.019 | 0.018 | 0.018 | 0.021 | 0.021 | 0.026 | 0.026 | 0.022 | 0.022 |
| | | | | RPM | 1464 | 1379 | 1379 | 1379 | 1379 | 1379 | 1379 | 1247 | 1247 | 1228 | 1228 | 1074 | 1074 | 1074 | 1074 |
| | | | | FEED | 141 | 188 | 188 | 166 | 166 | 166 | 143 | 130 | 130 | 142 | 142 | 150 | 150 | 129 | 129 |

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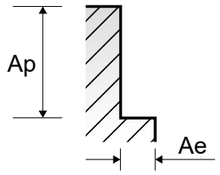





CARBIDE
HSS
CBN END MILLS
i-Xmill END MILLS
i-SMART MODULAR END MILLS
X5070 END MILLS
4G MILL END MILLS
X-POWER PRO END MILLS
TitaNox-POWER END MILLS
SUS-CUT END MILLS
V7 PLUS END MILLS
ALU-POWER HPC END MILLS
ALU-CUT END MILLS
G-CUT END MILLS
CRX S END MILLS
K-2 END MILLS
GENERAL CARBIDE END MILLS
ONLY ONE COATED PM60 END MILLS
TANK-POWER END MILLS
GENERAL HSS END MILLS
MILLING CUTTERS
TECHNICAL DATA

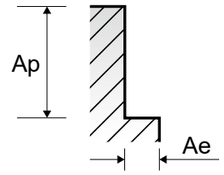
# 4G MILL END MILLS

# RECOMMENDED CUTTING CONDITIONS
# 推荐加工参数

## SEME72 SERIES
**4 FLUTE - SIDE CUTTING**
**4刃 - 侧铣削**

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)
LOC (刃长) = Length of Cut

| VDI 3323 | Parameter 参数 | Diameter (Ø) 直径 | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 16.0 | 16.0 | 16.0 | 16.0 | 18.0 | 18.0 | 18.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 22.0 | 22.0 | 25.0 | 25.0 | 25.0 | 25.0 |
| | LOC | 80 | 90 | 110 | 120 | 50 | 70 | 100 | 50 | 60 | 70 | 80 | 90 | 110 | 120 | 75 | 110 | 70 | 90 | 110 | 120 |
| 1-5 | Vc | 98 | 88 | 88 | 88 | 95 | 95 | 85 | 89 | 89 | 89 | 89 | 89 | 80 | 80 | 87 | 87 | 86 | 86 | 86 | 86 |
| | fz | 0.037 | 0.037 | 0.037 | 0.037 | 0.049 | 0.042 | 0.037 | 0.048 | 0.048 | 0.041 | 0.041 | 0.036 | 0.036 | 0.036 | 0.041 | 0.036 | 0.049 | 0.042 | 0.042 | 0.036 |
| | RPM | 1950 | 1751 | 1751 | 1751 | 1680 | 1680 | 1503 | 1416 | 1416 | 1416 | 1416 | 1416 | 1273 | 1273 | 1259 | 1259 | 1095 | 1095 | 1095 | 1095 |
| | FEED | 289 | 259 | 259 | 259 | 329 | 282 | 222 | 272 | 272 | 232 | 232 | 204 | 183 | 183 | 206 | 181 | 215 | 184 | 184 | 158 |
| 6-8 | Vc | 98 | 88 | 88 | 88 | 95 | 95 | 85 | 89 | 89 | 89 | 89 | 89 | 80 | 80 | 87 | 87 | 86 | 86 | 86 | 86 |
| | fz | 0.037 | 0.037 | 0.037 | 0.037 | 0.049 | 0.042 | 0.037 | 0.048 | 0.048 | 0.041 | 0.041 | 0.036 | 0.036 | 0.036 | 0.041 | 0.036 | 0.049 | 0.042 | 0.042 | 0.036 |
| | RPM | 1950 | 1751 | 1751 | 1751 | 1680 | 1680 | 1503 | 1416 | 1416 | 1416 | 1416 | 1416 | 1273 | 1273 | 1259 | 1259 | 1095 | 1095 | 1095 | 1095 |
| | FEED | 289 | 259 | 259 | 259 | 329 | 282 | 222 | 272 | 272 | 232 | 232 | 204 | 183 | 183 | 206 | 181 | 215 | 184 | 184 | 158 |
| 9 | Vc | 54 | 48 | 48 | 48 | 53 | 53 | 48 | 52 | 52 | 52 | 52 | 52 | 46 | 46 | 57 | 57 | 64 | 64 | 64 | 64 |
| | fz | 0.027 | 0.026 | 0.026 | 0.026 | 0.035 | 0.029 | 0.025 | 0.034 | 0.034 | 0.027 | 0.027 | 0.024 | 0.026 | 0.026 | 0.027 | 0.024 | 0.034 | 0.027 | 0.027 | 0.024 |
| | RPM | 1074 | 955 | 955 | 955 | 937 | 937 | 849 | 828 | 828 | 828 | 828 | 828 | 732 | 732 | 825 | 825 | 815 | 815 | 815 | 815 |
| | FEED | 116 | 99 | 99 | 99 | 131 | 109 | 85 | 113 | 113 | 89 | 89 | 79 | 76 | 76 | 89 | 79 | 111 | 88 | 88 | 78 |
| 10 - 11.1 | Vc | 98 | 88 | 88 | 88 | 95 | 95 | 85 | 89 | 89 | 89 | 89 | 89 | 80 | 80 | 87 | 87 | 86 | 86 | 86 | 86 |
| | fz | 0.037 | 0.037 | 0.037 | 0.037 | 0.049 | 0.042 | 0.037 | 0.048 | 0.048 | 0.041 | 0.041 | 0.036 | 0.036 | 0.036 | 0.041 | 0.036 | 0.049 | 0.042 | 0.042 | 0.036 |
| | RPM | 1950 | 1751 | 1751 | 1751 | 1680 | 1680 | 1503 | 1416 | 1416 | 1416 | 1416 | 1416 | 1273 | 1273 | 1259 | 1259 | 1095 | 1095 | 1095 | 1095 |
| | FEED | 289 | 259 | 259 | 259 | 329 | 282 | 222 | 272 | 272 | 232 | 232 | 204 | 183 | 183 | 206 | 181 | 215 | 184 | 184 | 158 |
| 11.2 | Vc | 54 | 48 | 48 | 48 | 53 | 53 | 48 | 52 | 52 | 52 | 52 | 52 | 46 | 46 | 57 | 57 | 64 | 64 | 64 | 64 |
| | fz | 0.027 | 0.026 | 0.026 | 0.026 | 0.035 | 0.029 | 0.025 | 0.034 | 0.034 | 0.027 | 0.027 | 0.024 | 0.026 | 0.026 | 0.027 | 0.024 | 0.034 | 0.027 | 0.027 | 0.024 |
| | RPM | 1074 | 955 | 955 | 955 | 937 | 937 | 849 | 828 | 828 | 828 | 828 | 828 | 732 | 732 | 825 | 825 | 815 | 815 | 815 | 815 |
| | FEED | 116 | 99 | 99 | 99 | 131 | 109 | 85 | 113 | 113 | 89 | 89 | 79 | 76 | 76 | 89 | 79 | 111 | 88 | 88 | 78 |
| 15 - 20 | Vc | 98 | 88 | 88 | 88 | 95 | 95 | 85 | 89 | 89 | 89 | 89 | 89 | 80 | 80 | 87 | 87 | 86 | 86 | 86 | 86 |
| | fz | 0.037 | 0.037 | 0.037 | 0.037 | 0.049 | 0.042 | 0.037 | 0.048 | 0.048 | 0.041 | 0.041 | 0.036 | 0.036 | 0.036 | 0.041 | 0.036 | 0.049 | 0.042 | 0.042 | 0.036 |
| | RPM | 1950 | 1751 | 1751 | 1751 | 1680 | 1680 | 1503 | 1416 | 1416 | 1416 | 1416 | 1416 | 1273 | 1273 | 1259 | 1259 | 1095 | 1095 | 1095 | 1095 |
| | FEED | 289 | 259 | 259 | 259 | 329 | 282 | 222 | 272 | 272 | 232 | 232 | 204 | 183 | 183 | 206 | 181 | 215 | 184 | 184 | 158 |
| 38.1 - 38.2 | Vc | 34 | 30 | 30 | 30 | 33 | 33 | 30 | 31 | 31 | 31 | 31 | 31 | 28 | 28 | 35 | 35 | 39 | 39 | 39 | 39 |
| | fz | 0.021 | 0.021 | 0.021 | 0.021 | 0.028 | 0.023 | 0.021 | 0.028 | 0.028 | 0.023 | 0.023 | 0.02 | 0.019 | 0.019 | 0.023 | 0.02 | 0.028 | 0.023 | 0.023 | 0.02 |
| | RPM | 676 | 597 | 597 | 597 | 584 | 584 | 531 | 493 | 493 | 493 | 493 | 493 | 446 | 446 | 506 | 506 | 497 | 497 | 497 | 497 |
| | FEED | 57 | 50 | 50 | 50 | 65 | 54 | 45 | 55 | 55 | 45 | 45 | 39 | 34 | 34 | 47 | 41 | 56 | 46 | 46 | 40 |
| 40 | Vc | 54 | 48 | 48 | 48 | 53 | 53 | 48 | 52 | 52 | 52 | 52 | 52 | 46 | 46 | 57 | 57 | 64 | 64 | 64 | 64 |
| | fz | 0.027 | 0.026 | 0.026 | 0.026 | 0.035 | 0.029 | 0.025 | 0.034 | 0.034 | 0.027 | 0.027 | 0.024 | 0.026 | 0.026 | 0.027 | 0.024 | 0.034 | 0.027 | 0.027 | 0.024 |
| | RPM | 1074 | 955 | 955 | 955 | 937 | 937 | 849 | 828 | 828 | 828 | 828 | 828 | 732 | 732 | 825 | 825 | 815 | 815 | 815 | 815 |
| | FEED | 116 | 99 | 99 | 99 | 131 | 109 | 85 | 113 | 113 | 89 | 89 | 79 | 76 | 76 | 89 | 79 | 111 | 88 | 88 | 78 |
| 41 | Vc | 34 | 30 | 30 | 30 | 33 | 33 | 30 | 31 | 31 | 31 | 31 | 31 | 28 | 28 | 35 | 35 | 39 | 39 | 39 | 39 |
| | fz | 0.021 | 0.021 | 0.021 | 0.021 | 0.028 | 0.023 | 0.021 | 0.028 | 0.028 | 0.023 | 0.023 | 0.02 | 0.019 | 0.019 | 0.023 | 0.02 | 0.028 | 0.023 | 0.023 | 0.02 |
| | RPM | 676 | 597 | 597 | 597 | 584 | 584 | 531 | 493 | 493 | 493 | 493 | 493 | 446 | 446 | 506 | 506 | 497 | 497 | 497 | 497 |
| | FEED | 57 | 50 | 50 | 50 | 65 | 54 | 45 | 55 | 55 | 45 | 45 | 39 | 34 | 34 | 47 | 41 | 56 | 46 | 46 | 40 |



# 4G MILL END MILLS

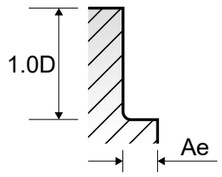
## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

### SEME73 SERIES
**4 FLUTE - SIDE CUTTING**
**4刃 - 侧铣削**

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)
Ae (切削宽度) = (mm)
LBS (颈长) = Length Below Shank

| ISO | VDI 3323 | Material Description 工件材料 | Parameter 参数 | Diameter (Ø) 直径 | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| | | | LBS | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 26 | 30 | 40 |
| P | 1-5 | Non-alloy steel | Vc | 69 | 69 | 69 | 69 | 62 | 62 | 62 | 62 | 55 | 55 | 41 | 41 | 41 | 21 | 21 | 21 | 7 |
| | | | fz | 0.004 | 0.004 | 0.004 | 0.004 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 |
| | | | RPM | 21963 | 21963 | 21963 | 21963 | 19735 | 19735 | 19735 | 19735 | 17507 | 17507 | 13051 | 13051 | 13051 | 6685 | 6685 | 6685 | 2228 |
| | | | FEED | 351 | 351 | 351 | 351 | 237 | 237 | 237 | 237 | 210 | 210 | 104 | 104 | 104 | 53 | 53 | 53 | 18 |
| | | | Ae | 0.021 | 0.021 | 0.015 | 0.015 | 0.008 | 0.008 | 0.008 | 0.005 | 0.005 | 0.003 | 0.003 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 |
| | 6-8 | Low alloy steel | Vc | 69 | 69 | 69 | 69 | 62 | 62 | 62 | 62 | 55 | 55 | 41 | 41 | 41 | 21 | 21 | 21 | 7 |
| | | | fz | 0.004 | 0.004 | 0.004 | 0.004 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 |
| | | | RPM | 21963 | 21963 | 21963 | 21963 | 19735 | 19735 | 19735 | 19735 | 17507 | 17507 | 13051 | 13051 | 13051 | 6685 | 6685 | 6685 | 2228 |
| | | | FEED | 351 | 351 | 351 | 351 | 237 | 237 | 237 | 237 | 210 | 210 | 104 | 104 | 104 | 53 | 53 | 53 | 18 |
| | | | Ae | 0.021 | 0.021 | 0.015 | 0.015 | 0.008 | 0.008 | 0.008 | 0.005 | 0.005 | 0.003 | 0.003 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 |
| | 9 | | Vc | 42 | 42 | 42 | 42 | 38 | 38 | 38 | 38 | 34 | 34 | 25 | 25 | 25 | 13 | 13 | 13 | 4 |
| | | | fz | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 |
| | | | RPM | 13369 | 13369 | 13369 | 13369 | 12096 | 12096 | 12096 | 12096 | 10823 | 10823 | 7958 | 7958 | 7958 | 4138 | 4138 | 4138 | 1273 |
| | | | FEED | 160 | 160 | 160 | 160 | 145 | 145 | 145 | 145 | 130 | 130 | 64 | 64 | 64 | 33 | 33 | 33 | 10 |
| | | | Ae | 0.016 | 0.016 | 0.011 | 0.011 | 0.006 | 0.006 | 0.006 | 0.004 | 0.004 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 |
| | 10-11.1 | High alloyed steel, and tool steel | Vc | 69 | 69 | 69 | 69 | 62 | 62 | 62 | 62 | 55 | 55 | 41 | 41 | 41 | 21 | 21 | 21 | 7 |
| | | | fz | 0.004 | 0.004 | 0.004 | 0.004 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 |
| | | | RPM | 21963 | 21963 | 21963 | 21963 | 19735 | 19735 | 19735 | 19735 | 17507 | 17507 | 13051 | 13051 | 13051 | 6685 | 6685 | 6685 | 2228 |
| | | | FEED | 351 | 351 | 351 | 351 | 237 | 237 | 237 | 237 | 210 | 210 | 104 | 104 | 104 | 53 | 53 | 53 | 18 |
| | | | Ae | 0.021 | 0.021 | 0.015 | 0.015 | 0.008 | 0.008 | 0.008 | 0.005 | 0.005 | 0.003 | 0.003 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 |
| | 11.2 | | Vc | 42 | 42 | 42 | 42 | 38 | 38 | 38 | 38 | 34 | 34 | 25 | 25 | 25 | 13 | 13 | 13 | 4 |
| | | | fz | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 |
| | | | RPM | 13369 | 13369 | 13369 | 13369 | 12096 | 12096 | 12096 | 12096 | 10823 | 10823 | 7958 | 7958 | 7958 | 4138 | 4138 | 4138 | 1273 |
| | | | FEED | 160 | 160 | 160 | 160 | 145 | 145 | 145 | 145 | 130 | 130 | 64 | 64 | 64 | 33 | 33 | 33 | 10 |
| | | | Ae | 0.016 | 0.016 | 0.011 | 0.011 | 0.006 | 0.006 | 0.006 | 0.004 | 0.004 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 |
| K | 15-20 | Grey cast iron Nodular cast iron Malleable cast iron | Vc | 69 | 69 | 69 | 69 | 62 | 62 | 62 | 62 | 55 | 55 | 41 | 41 | 41 | 21 | 21 | 21 | 7 |
| | | | fz | 0.004 | 0.004 | 0.004 | 0.004 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 |
| | | | RPM | 21963 | 21963 | 21963 | 21963 | 19735 | 19735 | 19735 | 19735 | 17507 | 17507 | 13051 | 13051 | 13051 | 6685 | 6685 | 6685 | 2228 |
| | | | FEED | 351 | 351 | 351 | 351 | 237 | 237 | 237 | 237 | 210 | 210 | 104 | 104 | 104 | 53 | 53 | 53 | 18 |
| | | | Ae | 0.021 | 0.021 | 0.015 | 0.015 | 0.008 | 0.008 | 0.008 | 0.005 | 0.005 | 0.003 | 0.003 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 |
| H | 38.1 - 38.2 | Hardened steel | Vc | 27 | 27 | 27 | 27 | 24 | 24 | 24 | 24 | 21 | 21 | 16 | 16 | 16 | 8 | 8 | 8 | 3 |
| | | | fz | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 |
| | | | RPM | 8594 | 8594 | 8594 | 8594 | 7639 | 7639 | 7639 | 7639 | 6685 | 6685 | 5093 | 5093 | 5093 | 2546 | 2546 | 2546 | 955 |
| | | | FEED | 34 | 34 | 34 | 34 | 31 | 31 | 31 | 31 | 27 | 27 | 20 | 20 | 20 | 10 | 10 | 10 | 4 |
| | | | Ae | 0.013 | 0.013 | 0.009 | 0.009 | 0.005 | 0.005 | 0.005 | 0.003 | 0.003 | 0.002 | 0.002 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 |
| | 40 | Chilled Cast Iron | Vc | 42 | 42 | 42 | 42 | 38 | 38 | 38 | 38 | 34 | 34 | 25 | 25 | 25 | 13 | 13 | 13 | 4 |
| | | | fz | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 |
| | | | RPM | 13369 | 13369 | 13369 | 13369 | 12096 | 12096 | 12096 | 12096 | 10823 | 10823 | 7958 | 7958 | 7958 | 4138 | 4138 | 4138 | 1273 |
| | | | FEED | 160 | 160 | 160 | 160 | 145 | 145 | 145 | 145 | 130 | 130 | 64 | 64 | 64 | 33 | 33 | 33 | 10 |
| | | | Ae | 0.016 | 0.016 | 0.011 | 0.011 | 0.006 | 0.006 | 0.006 | 0.004 | 0.004 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 |
| | 41 | Hardened Cast Iron | Vc | 27 | 27 | 27 | 27 | 24 | 24 | 24 | 24 | 21 | 21 | 16 | 16 | 16 | 8 | 8 | 8 | 3 |
| | | | fz | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 |
| | | | RPM | 8594 | 8594 | 8594 | 8594 | 7639 | 7639 | 7639 | 7639 | 6685 | 6685 | 5093 | 5093 | 5093 | 2546 | 2546 | 2546 | 955 |
| | | | FEED | 34 | 34 | 34 | 34 | 31 | 31 | 31 | 31 | 27 | 27 | 20 | 20 | 20 | 10 | 10 | 10 | 4 |
| | | | Ae | 0.013 | 0.013 | 0.009 | 0.009 | 0.005 | 0.005 | 0.005 | 0.003 | 0.003 | 0.002 | 0.002 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 |

▶ NEXT PAGE 下页






4G MILL END MILLS
RECOMMENDED CUTTING CONDITIONS
推荐加工参数

SEME73 SERIES
4 FLUTE - SIDE CUTTING
4刃 - 侧铣削

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)
Ae (切削宽度) = (mm)
LBS (颈长) = Length Below Shank

| VDI 3323 | Parameter 参数 | Diameter (Ø) 直径 | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1.0 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 |
| | LBS | 50 | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 20 | 26 | 30 | 4 | 5 | 6 | 7 | 8 | 10 | 12 | 14 | 16 | 18 | 20 |
| 1-5 | Vc | 7 | 74 | 74 | 66 | 66 | 66 | 59 | 59 | 44 | 22 | 22 | 80 | 80 | 80 | 80 | 72 | 72 | 72 | 72 | 64 | 64 | 64 |
| | fz | 0.002 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.003 | 0.003 | 0.003 | 0.002 | 0.002 | 0.005 | 0.005 | 0.005 | 0.005 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 |
| | RPM | 2228 | 19629 | 19629 | 17507 | 17507 | 17507 | 15650 | 15650 | 11671 | 5836 | 5836 | 16977 | 16977 | 16977 | 16977 | 15279 | 15279 | 15279 | 15279 | 13581 | 13581 | 13581 |
| | FEED | 18 | 314 | 314 | 280 | 280 | 280 | 188 | 188 | 140 | 47 | 47 | 340 | 340 | 340 | 340 | 244 | 244 | 244 | 244 | 217 | 217 | 217 |
| | Ae | 0.002 | 0.018 | 0.018 | 0.01 | 0.006 | 0.006 | 0.006 | 0.004 | 0.003 | 0.003 | 0.003 | 0.032 | 0.022 | 0.022 | 0.022 | 0.013 | 0.013 | 0.013 | 0.008 | 0.008 | 0.008 | 0.005 |
| 6-8 | Vc | 7 | 74 | 74 | 66 | 66 | 66 | 59 | 59 | 44 | 22 | 22 | 80 | 80 | 80 | 80 | 72 | 72 | 72 | 72 | 64 | 64 | 64 |
| | fz | 0.002 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.003 | 0.003 | 0.003 | 0.002 | 0.002 | 0.005 | 0.005 | 0.005 | 0.005 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 |
| | RPM | 2228 | 19629 | 19629 | 17507 | 17507 | 17507 | 15650 | 15650 | 11671 | 5836 | 5836 | 16977 | 16977 | 16977 | 16977 | 15279 | 15279 | 15279 | 15279 | 13581 | 13581 | 13581 |
| | FEED | 18 | 314 | 314 | 280 | 280 | 280 | 188 | 188 | 140 | 47 | 47 | 340 | 340 | 340 | 340 | 244 | 244 | 244 | 244 | 217 | 217 | 217 |
| | Ae | 0.002 | 0.018 | 0.018 | 0.01 | 0.006 | 0.006 | 0.006 | 0.004 | 0.003 | 0.003 | 0.003 | 0.032 | 0.022 | 0.022 | 0.022 | 0.013 | 0.013 | 0.013 | 0.008 | 0.008 | 0.008 | 0.005 |
| 9 | Vc | 4 | 46 | 46 | 41 | 41 | 41 | 36 | 36 | 27 | 14 | 14 | 50 | 50 | 50 | 50 | 45 | 45 | 45 | 45 | 40 | 40 | 40 |
| | fz | 0.002 | 0.004 | 0.004 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.002 | 0.002 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 |
| | RPM | 1273 | 12202 | 12202 | 10876 | 10876 | 10876 | 9549 | 9549 | 7162 | 3714 | 3714 | 10610 | 10610 | 10610 | 10610 | 9549 | 9549 | 9549 | 9549 | 8488 | 8488 | 8488 |
| | FEED | 10 | 195 | 195 | 131 | 131 | 131 | 115 | 115 | 86 | 30 | 30 | 170 | 170 | 170 | 170 | 153 | 153 | 153 | 153 | 136 | 136 | 136 |
| | Ae | 0.002 | 0.013 | 0.013 | 0.008 | 0.005 | 0.005 | 0.005 | 0.003 | 0.002 | 0.002 | 0.002 | 0.024 | 0.017 | 0.017 | 0.017 | 0.009 | 0.009 | 0.009 | 0.006 | 0.006 | 0.006 | 0.004 |
| 10 - 11.1 | Vc | 7 | 74 | 74 | 66 | 66 | 66 | 59 | 59 | 44 | 22 | 22 | 80 | 80 | 80 | 80 | 72 | 72 | 72 | 72 | 64 | 64 | 64 |
| | fz | 0.002 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.003 | 0.003 | 0.003 | 0.002 | 0.002 | 0.005 | 0.005 | 0.005 | 0.005 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 |
| | RPM | 2228 | 19629 | 19629 | 17507 | 17507 | 17507 | 15650 | 15650 | 11671 | 5836 | 5836 | 16977 | 16977 | 16977 | 16977 | 15279 | 15279 | 15279 | 15279 | 13581 | 13581 | 13581 |
| | FEED | 18 | 314 | 314 | 280 | 280 | 280 | 188 | 188 | 140 | 47 | 47 | 340 | 340 | 340 | 340 | 244 | 244 | 244 | 244 | 217 | 217 | 217 |
| | Ae | 0.002 | 0.018 | 0.018 | 0.01 | 0.006 | 0.006 | 0.006 | 0.004 | 0.003 | 0.003 | 0.003 | 0.032 | 0.022 | 0.022 | 0.022 | 0.013 | 0.013 | 0.013 | 0.008 | 0.008 | 0.008 | 0.005 |
| 11.2 | Vc | 4 | 46 | 46 | 41 | 41 | 41 | 36 | 36 | 27 | 14 | 14 | 50 | 50 | 50 | 50 | 45 | 45 | 45 | 45 | 40 | 40 | 40 |
| | fz | 0.002 | 0.004 | 0.004 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.002 | 0.002 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 |
| | RPM | 1273 | 12202 | 12202 | 10876 | 10876 | 10876 | 9549 | 9549 | 7162 | 3714 | 3714 | 10610 | 10610 | 10610 | 10610 | 9549 | 9549 | 9549 | 9549 | 8488 | 8488 | 8488 |
| | FEED | 10 | 195 | 195 | 131 | 131 | 131 | 115 | 115 | 86 | 30 | 30 | 170 | 170 | 170 | 170 | 153 | 153 | 153 | 153 | 136 | 136 | 136 |
| | Ae | 0.002 | 0.013 | 0.013 | 0.008 | 0.005 | 0.005 | 0.005 | 0.003 | 0.002 | 0.002 | 0.002 | 0.024 | 0.017 | 0.017 | 0.017 | 0.009 | 0.009 | 0.009 | 0.006 | 0.006 | 0.006 | 0.004 |
| 15 - 20 | Vc | 7 | 74 | 74 | 66 | 66 | 66 | 59 | 59 | 44 | 22 | 22 | 80 | 80 | 80 | 80 | 72 | 72 | 72 | 72 | 64 | 64 | 64 |
| | fz | 0.002 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.003 | 0.003 | 0.003 | 0.002 | 0.002 | 0.005 | 0.005 | 0.005 | 0.005 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 |
| | RPM | 2228 | 19629 | 19629 | 17507 | 17507 | 17507 | 15650 | 15650 | 11671 | 5836 | 5836 | 16977 | 16977 | 16977 | 16977 | 15279 | 15279 | 15279 | 15279 | 13581 | 13581 | 13581 |
| | FEED | 18 | 314 | 314 | 280 | 280 | 280 | 188 | 188 | 140 | 47 | 47 | 340 | 340 | 340 | 340 | 244 | 244 | 244 | 244 | 217 | 217 | 217 |
| | Ae | 0.002 | 0.018 | 0.018 | 0.01 | 0.006 | 0.006 | 0.006 | 0.004 | 0.003 | 0.003 | 0.003 | 0.032 | 0.022 | 0.022 | 0.022 | 0.013 | 0.013 | 0.013 | 0.008 | 0.008 | 0.008 | 0.005 |
| 38.1 - 38.2 | Vc | 3 | 28 | 28 | 25 | 25 | 25 | 23 | 23 | 17 | 8 | 8 | 31 | 31 | 31 | 31 | 28 | 28 | 28 | 28 | 25 | 25 | 25 |
| | fz | 0.001 | 0.002 | 0.002 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.001 | 0.001 | 0.001 |
| | RPM | 955 | 7427 | 7427 | 6631 | 6631 | 6631 | 6101 | 6101 | 4509 | 2122 | 2122 | 6578 | 6578 | 6578 | 6578 | 5942 | 5942 | 5942 | 5942 | 5305 | 5305 | 5305 |
| | FEED | 4 | 59 | 59 | 27 | 27 | 27 | 24 | 24 | 18 | 8 | 8 | 53 | 53 | 53 | 53 | 48 | 48 | 48 | 48 | 21 | 21 | 21 |
| | Ae | 0.001 | 0.011 | 0.011 | 0.006 | 0.004 | 0.004 | 0.004 | 0.002 | 0.002 | 0.002 | 0.002 | 0.019 | 0.013 | 0.013 | 0.013 | 0.008 | 0.008 | 0.008 | 0.005 | 0.005 | 0.005 | 0.003 |
| 40 | Vc | 4 | 46 | 46 | 41 | 41 | 41 | 36 | 36 | 27 | 14 | 14 | 50 | 50 | 50 | 50 | 45 | 45 | 45 | 45 | 40 | 40 | 40 |
| | fz | 0.002 | 0.004 | 0.004 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.002 | 0.002 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 |
| | RPM | 1273 | 12202 | 12202 | 10876 | 10876 | 10876 | 9549 | 9549 | 7162 | 3714 | 3714 | 10610 | 10610 | 10610 | 10610 | 9549 | 9549 | 9549 | 9549 | 8488 | 8488 | 8488 |
| | FEED | 10 | 195 | 195 | 131 | 131 | 131 | 115 | 115 | 86 | 30 | 30 | 170 | 170 | 170 | 170 | 153 | 153 | 153 | 153 | 136 | 136 | 136 |
| | Ae | 0.002 | 0.013 | 0.013 | 0.008 | 0.005 | 0.005 | 0.005 | 0.003 | 0.002 | 0.002 | 0.002 | 0.024 | 0.017 | 0.017 | 0.017 | 0.009 | 0.009 | 0.009 | 0.006 | 0.006 | 0.006 | 0.004 |
| 41 | Vc | 3 | 28 | 28 | 25 | 25 | 25 | 23 | 23 | 17 | 8 | 8 | 31 | 31 | 31 | 31 | 28 | 28 | 28 | 28 | 25 | 25 | 25 |
| | fz | 0.001 | 0.002 | 0.002 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.001 | 0.001 | 0.001 |
| | RPM | 955 | 7427 | 7427 | 6631 | 6631 | 6631 | 6101 | 6101 | 4509 | 2122 | 2122 | 6578 | 6578 | 6578 | 6578 | 5942 | 5942 | 5942 | 5942 | 5305 | 5305 | 5305 |
| | FEED | 4 | 59 | 59 | 27 | 27 | 27 | 24 | 24 | 18 | 8 | 8 | 53 | 53 | 53 | 53 | 48 | 48 | 48 | 48 | 21 | 21 | 21 |
| | Ae | 0.001 | 0.011 | 0.011 | 0.006 | 0.004 | 0.004 | 0.004 | 0.002 | 0.002 | 0.002 | 0.002 | 0.019 | 0.013 | 0.013 | 0.013 | 0.008 | 0.008 | 0.008 | 0.005 | 0.005 | 0.005 | 0.003 |

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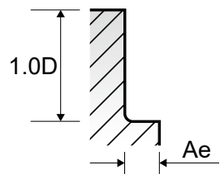

# 4G MILL END MILLS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

### SEME73 SERIES — 4 FLUTE - SIDE CUTTING
### 4刃 - 侧铣削

Vc (切削速度) = (m/min.) FEED (进给) = (mm/min.)
fz (每齿进给) = (mm/tooth) Ae (切削宽度) = (mm)
RPM (转速) = (rev./min.) LBS (颈长) = Length Below Shank

| ISO | VDI 3323 | Parameter 参数 | Diameter (Ø) 直径 | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1.5 | 1.5 | 1.5 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.5 | 2.5 |
| | | LBS | 22 | 26 | 30 | 6 | 8 | 10 | 12 | 16 | 18 | 20 | 22 | 26 | 30 | 35 | 40 | 45 | 50 | 60 | 8 | 10 |
| P | 1-5 | Vc | 64 | 48 | 48 | 87 | 87 | 87 | 79 | 79 | 79 | 79 | 70 | 70 | 70 | 52 | 52 | 26 | 26 | 26 | 94 | 94 |
| | | fz | 0.004 | 0.003 | 0.003 | 0.006 | 0.006 | 0.006 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.007 | 0.007 |
| | | RPM | 13581 | 10186 | 10186 | 13846 | 13846 | 13846 | 12573 | 12573 | 12573 | 12573 | 11141 | 11141 | 11141 | 8276 | 8276 | 4138 | 4138 | 4138 | 11968 | 11968 |
| | | FEED | 217 | 122 | 122 | 332 | 332 | 332 | 251 | 251 | 251 | 251 | 223 | 223 | 223 | 132 | 132 | 66 | 66 | 66 | 335 | 335 |
| | | Ae | 0.005 | 0.003 | 0.003 | 0.042 | 0.029 | 0.029 | 0.017 | 0.017 | 0.011 | 0.011 | 0.011 | 0.011 | 0.006 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.037 | 0.037 |
| | 6-8 | Vc | 64 | 48 | 48 | 87 | 87 | 87 | 79 | 79 | 79 | 79 | 70 | 70 | 70 | 52 | 52 | 26 | 26 | 26 | 94 | 94 |
| | | fz | 0.004 | 0.003 | 0.003 | 0.006 | 0.006 | 0.006 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.007 | 0.007 |
| | | RPM | 13581 | 10186 | 10186 | 13846 | 13846 | 13846 | 12573 | 12573 | 12573 | 12573 | 11141 | 11141 | 11141 | 8276 | 8276 | 4138 | 4138 | 4138 | 11968 | 11968 |
| | | FEED | 217 | 122 | 122 | 332 | 332 | 332 | 251 | 251 | 251 | 251 | 223 | 223 | 223 | 132 | 132 | 66 | 66 | 66 | 335 | 335 |
| | | Ae | 0.005 | 0.003 | 0.003 | 0.042 | 0.029 | 0.029 | 0.017 | 0.017 | 0.011 | 0.011 | 0.011 | 0.011 | 0.006 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.037 | 0.037 |
| | 9 | Vc | 40 | 30 | 30 | 57 | 57 | 57 | 51 | 51 | 51 | 51 | 46 | 46 | 46 | 34 | 34 | 17 | 17 | 17 | 60 | 60 |
| | | fz | 0.004 | 0.003 | 0.003 | 0.006 | 0.006 | 0.006 | 0.005 | 0.005 | 0.005 | 0.005 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.003 | 0.003 | 0.003 | 0.007 | 0.007 |
| | | RPM | 8488 | 6366 | 6366 | 9072 | 9072 | 9072 | 8117 | 8117 | 8117 | 8117 | 7321 | 7321 | 7321 | 5411 | 5411 | 2706 | 2706 | 2706 | 7639 | 7639 |
| | | FEED | 136 | 76 | 76 | 218 | 218 | 218 | 162 | 162 | 162 | 162 | 117 | 117 | 117 | 87 | 87 | 32 | 32 | 32 | 214 | 214 |
| | | Ae | 0.004 | 0.002 | 0.002 | 0.032 | 0.022 | 0.022 | 0.013 | 0.013 | 0.008 | 0.008 | 0.008 | 0.008 | 0.005 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.028 | 0.028 |
| | 10-11.1 | Vc | 64 | 48 | 48 | 87 | 87 | 87 | 79 | 79 | 79 | 79 | 70 | 70 | 70 | 52 | 52 | 26 | 26 | 26 | 94 | 94 |
| | | fz | 0.004 | 0.003 | 0.003 | 0.006 | 0.006 | 0.006 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.007 | 0.007 |
| | | RPM | 13581 | 10186 | 10186 | 13846 | 13846 | 13846 | 12573 | 12573 | 12573 | 12573 | 11141 | 11141 | 11141 | 8276 | 8276 | 4138 | 4138 | 4138 | 11968 | 11968 |
| | | FEED | 217 | 122 | 122 | 332 | 332 | 332 | 251 | 251 | 251 | 251 | 223 | 223 | 223 | 132 | 132 | 66 | 66 | 66 | 335 | 335 |
| | | Ae | 0.005 | 0.003 | 0.003 | 0.042 | 0.029 | 0.029 | 0.017 | 0.017 | 0.011 | 0.011 | 0.011 | 0.011 | 0.006 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.037 | 0.037 |
| | 11.2 | Vc | 40 | 30 | 30 | 57 | 57 | 57 | 51 | 51 | 51 | 51 | 46 | 46 | 46 | 34 | 34 | 17 | 17 | 17 | 60 | 60 |
| | | fz | 0.004 | 0.003 | 0.003 | 0.006 | 0.006 | 0.006 | 0.005 | 0.005 | 0.005 | 0.005 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.003 | 0.003 | 0.003 | 0.007 | 0.007 |
| | | RPM | 8488 | 6366 | 6366 | 9072 | 9072 | 9072 | 8117 | 8117 | 8117 | 8117 | 7321 | 7321 | 7321 | 5411 | 5411 | 2706 | 2706 | 2706 | 7639 | 7639 |
| | | FEED | 136 | 76 | 76 | 218 | 218 | 218 | 162 | 162 | 162 | 162 | 117 | 117 | 117 | 87 | 87 | 32 | 32 | 32 | 214 | 214 |
| | | Ae | 0.004 | 0.002 | 0.002 | 0.032 | 0.022 | 0.022 | 0.013 | 0.013 | 0.008 | 0.008 | 0.008 | 0.008 | 0.005 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.028 | 0.028 |
| K | 15-20 | Vc | 64 | 48 | 48 | 87 | 87 | 87 | 79 | 79 | 79 | 79 | 70 | 70 | 70 | 52 | 52 | 26 | 26 | 26 | 94 | 94 |
| | | fz | 0.004 | 0.003 | 0.003 | 0.006 | 0.006 | 0.006 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.007 | 0.007 |
| | | RPM | 13581 | 10186 | 10186 | 13846 | 13846 | 13846 | 12573 | 12573 | 12573 | 12573 | 11141 | 11141 | 11141 | 8276 | 8276 | 4138 | 4138 | 4138 | 11968 | 11968 |
| | | FEED | 217 | 122 | 122 | 332 | 332 | 332 | 251 | 251 | 251 | 251 | 223 | 223 | 223 | 132 | 132 | 66 | 66 | 66 | 335 | 335 |
| | | Ae | 0.005 | 0.003 | 0.003 | 0.042 | 0.029 | 0.029 | 0.017 | 0.017 | 0.011 | 0.011 | 0.011 | 0.011 | 0.006 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.037 | 0.037 |
| H | 38.1 - 38.2 | Vc | 25 | 18 | 18 | 38 | 38 | 38 | 34 | 34 | 34 | 34 | 30 | 30 | 30 | 23 | 23 | 11 | 11 | 11 | 35 | 35 |
| | | fz | 0.001 | 0.001 | 0.001 | 0.003 | 0.003 | 0.003 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.001 | 0.001 | 0.001 | 0.003 | 0.003 |
| | | RPM | 5305 | 3820 | 3820 | 6048 | 6048 | 6048 | 5411 | 5411 | 5411 | 5411 | 4775 | 4775 | 4775 | 3661 | 3661 | 1751 | 1751 | 1751 | 4456 | 4456 |
| | | FEED | 21 | 15 | 15 | 73 | 73 | 73 | 43 | 43 | 43 | 43 | 38 | 38 | 38 | 29 | 29 | 7 | 7 | 7 | 53 | 53 |
| | | Ae | 0.003 | 0.002 | 0.002 | 0.025 | 0.018 | 0.018 | 0.01 | 0.01 | 0.006 | 0.006 | 0.006 | 0.006 | 0.004 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.022 | 0.022 |
| | 40 | Vc | 40 | 30 | 30 | 57 | 57 | 57 | 51 | 51 | 51 | 51 | 46 | 46 | 46 | 34 | 34 | 17 | 17 | 17 | 60 | 60 |
| | | fz | 0.004 | 0.003 | 0.003 | 0.006 | 0.006 | 0.006 | 0.005 | 0.005 | 0.005 | 0.005 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.003 | 0.003 | 0.003 | 0.007 | 0.007 |
| | | RPM | 8488 | 6366 | 6366 | 9072 | 9072 | 9072 | 8117 | 8117 | 8117 | 8117 | 7321 | 7321 | 7321 | 5411 | 5411 | 2706 | 2706 | 2706 | 7639 | 7639 |
| | | FEED | 136 | 76 | 76 | 218 | 218 | 218 | 162 | 162 | 162 | 162 | 117 | 117 | 117 | 87 | 87 | 32 | 32 | 32 | 214 | 214 |
| | | Ae | 0.004 | 0.002 | 0.002 | 0.032 | 0.022 | 0.022 | 0.013 | 0.013 | 0.008 | 0.008 | 0.008 | 0.008 | 0.005 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.028 | 0.028 |
| | 41 | Vc | 25 | 18 | 18 | 38 | 38 | 38 | 34 | 34 | 34 | 34 | 30 | 30 | 30 | 23 | 23 | 11 | 11 | 11 | 35 | 35 |
| | | fz | 0.001 | 0.001 | 0.001 | 0.003 | 0.003 | 0.003 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.001 | 0.001 | 0.001 | 0.003 | 0.003 |
| | | RPM | 5305 | 3820 | 3820 | 6048 | 6048 | 6048 | 5411 | 5411 | 5411 | 5411 | 4775 | 4775 | 4775 | 3661 | 3661 | 1751 | 1751 | 1751 | 4456 | 4456 |
| | | FEED | 21 | 15 | 15 | 73 | 73 | 73 | 43 | 43 | 43 | 43 | 38 | 38 | 38 | 29 | 29 | 7 | 7 | 7 | 53 | 53 |
| | | Ae | 0.003 | 0.002 | 0.002 | 0.025 | 0.018 | 0.018 | 0.01 | 0.01 | 0.006 | 0.006 | 0.006 | 0.006 | 0.004 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.022 | 0.022 |

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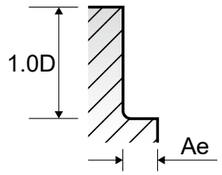




4G MILL END MILLS
RECOMMENDED CUTTING CONDITIONS
推荐加工参数

SEME73 SERIES — 4 FLUTE - SIDE CUTTING
4刃 - 侧铣削

Vc (切削速度) = (m/min.) FEED (进给) = (mm/min.)
fz (每齿进给) = (mm/tooth) Ae (切削宽度) = (mm)
RPM (转速) = (rev./min.) LBS (颈长) = Length Below Shank

| VDI 3323 | Parameter 参数 | Diameter (Ø) 直径 | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| | LBS | 12 | 14 | 16 | 18 | 20 | 22 | 26 | 30 | 35 | 40 | 45 | 50 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 26 |
| 1-5 | Vc | 94 | 85 | 85 | 85 | 85 | 85 | 75 | 75 | 75 | 57 | 57 | 57 | 101 | 101 | 101 | 101 | 101 | 91 | 91 | 91 | 91 | 91 |
| | fz | 0.007 | 0.007 | 0.007 | 0.007 | 0.007 | 0.007 | 0.006 | 0.006 | 0.006 | 0.005 | 0.005 | 0.005 | 0.009 | 0.009 | 0.009 | 0.009 | 0.009 | 0.008 | 0.008 | 0.008 | 0.008 | 0.008 |
| | RPM | 11968 | 10823 | 10823 | 10823 | 10823 | 10823 | 9549 | 9549 | 9549 | 7257 | 7257 | 7257 | 10716 | 10716 | 10716 | 10716 | 10716 | 9655 | 9655 | 9655 | 9655 | 9655 |
| | FEED | 335 | 303 | 303 | 303 | 303 | 303 | 229 | 229 | 229 | 145 | 145 | 145 | 386 | 386 | 386 | 386 | 386 | 309 | 309 | 309 | 309 | 309 |
| | Ae | 0.037 | 0.021 | 0.021 | 0.021 | 0.021 | 0.013 | 0.013 | 0.013 | 0.008 | 0.008 | 0.005 | 0.005 | 0.063 | 0.063 | 0.044 | 0.044 | 0.044 | 0.025 | 0.025 | 0.025 | 0.025 | 0.016 |
| 6-8 | Vc | 94 | 85 | 85 | 85 | 85 | 85 | 75 | 75 | 75 | 57 | 57 | 57 | 101 | 101 | 101 | 101 | 101 | 91 | 91 | 91 | 91 | 91 |
| | fz | 0.007 | 0.007 | 0.007 | 0.007 | 0.007 | 0.007 | 0.006 | 0.006 | 0.006 | 0.005 | 0.005 | 0.005 | 0.009 | 0.009 | 0.009 | 0.009 | 0.009 | 0.008 | 0.008 | 0.008 | 0.008 | 0.008 |
| | RPM | 11968 | 10823 | 10823 | 10823 | 10823 | 10823 | 9549 | 9549 | 9549 | 7257 | 7257 | 7257 | 10716 | 10716 | 10716 | 10716 | 10716 | 9655 | 9655 | 9655 | 9655 | 9655 |
| | FEED | 335 | 303 | 303 | 303 | 303 | 303 | 229 | 229 | 229 | 145 | 145 | 145 | 386 | 386 | 386 | 386 | 386 | 309 | 309 | 309 | 309 | 309 |
| | Ae | 0.037 | 0.021 | 0.021 | 0.021 | 0.021 | 0.013 | 0.013 | 0.013 | 0.008 | 0.008 | 0.005 | 0.005 | 0.063 | 0.063 | 0.044 | 0.044 | 0.044 | 0.025 | 0.025 | 0.025 | 0.025 | 0.016 |
| 9 | Vc | 60 | 54 | 54 | 54 | 54 | 54 | 48 | 48 | 48 | 36 | 36 | 36 | 63 | 63 | 63 | 63 | 63 | 57 | 57 | 57 | 57 | 57 |
| | fz | 0.007 | 0.007 | 0.007 | 0.007 | 0.007 | 0.007 | 0.006 | 0.006 | 0.006 | 0.005 | 0.005 | 0.005 | 0.009 | 0.009 | 0.009 | 0.009 | 0.009 | 0.008 | 0.008 | 0.008 | 0.008 | 0.008 |
| | RPM | 7639 | 6875 | 6875 | 6875 | 6875 | 6875 | 6112 | 6112 | 6112 | 4584 | 4584 | 4584 | 6685 | 6685 | 6685 | 6685 | 6685 | 6048 | 6048 | 6048 | 6048 | 6048 |
| | FEED | 214 | 193 | 193 | 193 | 193 | 193 | 147 | 147 | 147 | 92 | 92 | 92 | 241 | 241 | 241 | 241 | 241 | 194 | 194 | 194 | 194 | 194 |
| | Ae | 0.028 | 0.016 | 0.016 | 0.016 | 0.016 | 0.01 | 0.01 | 0.01 | 0.006 | 0.006 | 0.004 | 0.004 | 0.047 | 0.047 | 0.033 | 0.033 | 0.033 | 0.019 | 0.019 | 0.019 | 0.019 | 0.012 |
| 10 - 11.1 | Vc | 94 | 85 | 85 | 85 | 85 | 85 | 75 | 75 | 75 | 57 | 57 | 57 | 101 | 101 | 101 | 101 | 101 | 91 | 91 | 91 | 91 | 91 |
| | fz | 0.007 | 0.007 | 0.007 | 0.007 | 0.007 | 0.007 | 0.006 | 0.006 | 0.006 | 0.005 | 0.005 | 0.005 | 0.009 | 0.009 | 0.009 | 0.009 | 0.009 | 0.008 | 0.008 | 0.008 | 0.008 | 0.008 |
| | RPM | 11968 | 10823 | 10823 | 10823 | 10823 | 10823 | 9549 | 9549 | 9549 | 7257 | 7257 | 7257 | 10716 | 10716 | 10716 | 10716 | 10716 | 9655 | 9655 | 9655 | 9655 | 9655 |
| | FEED | 335 | 303 | 303 | 303 | 303 | 303 | 229 | 229 | 229 | 145 | 145 | 145 | 386 | 386 | 386 | 386 | 386 | 309 | 309 | 309 | 309 | 309 |
| | Ae | 0.037 | 0.021 | 0.021 | 0.021 | 0.021 | 0.013 | 0.013 | 0.013 | 0.008 | 0.008 | 0.005 | 0.005 | 0.063 | 0.063 | 0.044 | 0.044 | 0.044 | 0.025 | 0.025 | 0.025 | 0.025 | 0.016 |
| 11.2 | Vc | 60 | 54 | 54 | 54 | 54 | 54 | 48 | 48 | 48 | 36 | 36 | 36 | 63 | 63 | 63 | 63 | 63 | 57 | 57 | 57 | 57 | 57 |
| | fz | 0.007 | 0.007 | 0.007 | 0.007 | 0.007 | 0.007 | 0.006 | 0.006 | 0.006 | 0.005 | 0.005 | 0.005 | 0.009 | 0.009 | 0.009 | 0.009 | 0.009 | 0.008 | 0.008 | 0.008 | 0.008 | 0.008 |
| | RPM | 7639 | 6875 | 6875 | 6875 | 6875 | 6875 | 6112 | 6112 | 6112 | 4584 | 4584 | 4584 | 6685 | 6685 | 6685 | 6685 | 6685 | 6048 | 6048 | 6048 | 6048 | 6048 |
| | FEED | 214 | 193 | 193 | 193 | 193 | 193 | 147 | 147 | 147 | 92 | 92 | 92 | 241 | 241 | 241 | 241 | 241 | 194 | 194 | 194 | 194 | 194 |
| | Ae | 0.028 | 0.016 | 0.016 | 0.016 | 0.016 | 0.01 | 0.01 | 0.01 | 0.006 | 0.006 | 0.004 | 0.004 | 0.047 | 0.047 | 0.033 | 0.033 | 0.033 | 0.019 | 0.019 | 0.019 | 0.019 | 0.012 |
| 15 - 20 | Vc | 94 | 85 | 85 | 85 | 85 | 85 | 75 | 75 | 75 | 57 | 57 | 57 | 101 | 101 | 101 | 101 | 101 | 91 | 91 | 91 | 91 | 91 |
| | fz | 0.007 | 0.007 | 0.007 | 0.007 | 0.007 | 0.007 | 0.006 | 0.006 | 0.006 | 0.005 | 0.005 | 0.005 | 0.009 | 0.009 | 0.009 | 0.009 | 0.009 | 0.008 | 0.008 | 0.008 | 0.008 | 0.008 |
| | RPM | 11968 | 10823 | 10823 | 10823 | 10823 | 10823 | 9549 | 9549 | 9549 | 7257 | 7257 | 7257 | 10716 | 10716 | 10716 | 10716 | 10716 | 9655 | 9655 | 9655 | 9655 | 9655 |
| | FEED | 335 | 303 | 303 | 303 | 303 | 303 | 229 | 229 | 229 | 145 | 145 | 145 | 386 | 386 | 386 | 386 | 386 | 309 | 309 | 309 | 309 | 309 |
| | Ae | 0.037 | 0.021 | 0.021 | 0.021 | 0.021 | 0.013 | 0.013 | 0.013 | 0.008 | 0.008 | 0.005 | 0.005 | 0.063 | 0.063 | 0.044 | 0.044 | 0.044 | 0.025 | 0.025 | 0.025 | 0.025 | 0.016 |
| 38.1 - 38.2 | Vc | 35 | 32 | 32 | 32 | 32 | 32 | 28 | 28 | 28 | 21 | 21 | 21 | 38 | 38 | 38 | 38 | 38 | 34 | 34 | 34 | 34 | 34 |
| | fz | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.002 | 0.002 | 0.002 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 |
| | RPM | 4456 | 4074 | 4074 | 4074 | 4074 | 4074 | 3565 | 3565 | 3565 | 2674 | 2674 | 2674 | 4032 | 4032 | 4032 | 4032 | 4032 | 3608 | 3608 | 3608 | 3608 | 3608 |
| | FEED | 53 | 49 | 49 | 49 | 49 | 49 | 43 | 43 | 43 | 21 | 21 | 21 | 65 | 65 | 65 | 65 | 65 | 58 | 58 | 58 | 58 | 58 |
| | Ae | 0.022 | 0.013 | 0.013 | 0.013 | 0.013 | 0.008 | 0.008 | 0.008 | 0.005 | 0.005 | 0.003 | 0.003 | 0.038 | 0.038 | 0.026 | 0.026 | 0.026 | 0.015 | 0.015 | 0.015 | 0.015 | 0.009 |
| 40 | Vc | 60 | 54 | 54 | 54 | 54 | 54 | 48 | 48 | 48 | 36 | 36 | 36 | 63 | 63 | 63 | 63 | 63 | 57 | 57 | 57 | 57 | 57 |
| | fz | 0.007 | 0.007 | 0.007 | 0.007 | 0.007 | 0.007 | 0.006 | 0.006 | 0.006 | 0.005 | 0.005 | 0.005 | 0.009 | 0.009 | 0.009 | 0.009 | 0.009 | 0.008 | 0.008 | 0.008 | 0.008 | 0.008 |
| | RPM | 7639 | 6875 | 6875 | 6875 | 6875 | 6875 | 6112 | 6112 | 6112 | 4584 | 4584 | 4584 | 6685 | 6685 | 6685 | 6685 | 6685 | 6048 | 6048 | 6048 | 6048 | 6048 |
| | FEED | 214 | 193 | 193 | 193 | 193 | 193 | 147 | 147 | 147 | 92 | 92 | 92 | 241 | 241 | 241 | 241 | 241 | 194 | 194 | 194 | 194 | 194 |
| | Ae | 0.028 | 0.016 | 0.016 | 0.016 | 0.016 | 0.01 | 0.01 | 0.01 | 0.006 | 0.006 | 0.004 | 0.004 | 0.047 | 0.047 | 0.033 | 0.033 | 0.033 | 0.019 | 0.019 | 0.019 | 0.019 | 0.012 |
| 41 | Vc | 35 | 32 | 32 | 32 | 32 | 32 | 28 | 28 | 28 | 21 | 21 | 21 | 38 | 38 | 38 | 38 | 38 | 34 | 34 | 34 | 34 | 34 |
| | fz | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.002 | 0.002 | 0.002 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 |
| | RPM | 4456 | 4074 | 4074 | 4074 | 4074 | 4074 | 3565 | 3565 | 3565 | 2674 | 2674 | 2674 | 4032 | 4032 | 4032 | 4032 | 4032 | 3608 | 3608 | 3608 | 3608 | 3608 |
| | FEED | 53 | 49 | 49 | 49 | 49 | 49 | 43 | 43 | 43 | 21 | 21 | 21 | 65 | 65 | 65 | 65 | 65 | 58 | 58 | 58 | 58 | 58 |
| | Ae | 0.022 | 0.013 | 0.013 | 0.013 | 0.013 | 0.008 | 0.008 | 0.008 | 0.005 | 0.005 | 0.003 | 0.003 | 0.038 | 0.038 | 0.026 | 0.026 | 0.026 | 0.015 | 0.015 | 0.015 | 0.015 | 0.009 |

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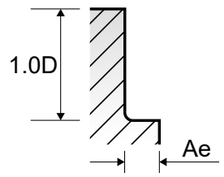

# 4G MILL END MILLS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

### SEME73 SERIES — 4 FLUTE - SIDE CUTTING
### 4刃 - 侧铣削

Vc (切削速度) = (m/min.) FEED (进给) = (mm/min.)
fz (每齿进给) = (mm/tooth) Ae (切削宽度) = (mm)
RPM (转速) = (rev./min.) LBS (颈长) = Length Below Shank

| ISO | VDI 3323 | Parameter 参数 | Diameter (Ø) 直径 | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| | | LBS | 30 | 35 | 40 | 45 | 50 | 60 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 26 | 30 | 35 | 40 | 45 | 50 |
| P | 1-5 | Vc | 91 | 81 | 81 | 81 | 61 | 61 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 103 | 103 | 103 | 103 | 103 | 91 | 91 |
| | | fz | 0.008 | 0.007 | 0.007 | 0.007 | 0.006 | 0.006 | 0.019 | 0.019 | 0.019 | 0.019 | 0.019 | 0.019 | 0.019 | 0.017 | 0.017 | 0.017 | 0.017 | 0.017 | 0.015 | 0.015 |
| | | RPM | 9655 | 8594 | 8594 | 8594 | 6472 | 6472 | 9072 | 9072 | 9072 | 9072 | 9072 | 9072 | 9072 | 8196 | 8196 | 8196 | 8196 | 8196 | 7242 | 7242 |
| | | FEED | 309 | 241 | 241 | 241 | 155 | 155 | 689 | 689 | 689 | 689 | 689 | 689 | 689 | 557 | 557 | 557 | 557 | 557 | 434 | 434 |
| | | Ae | 0.016 | 0.016 | 0.009 | 0.009 | 0.006 | 0.006 | 0.084 | 0.084 | 0.084 | 0.059 | 0.059 | 0.059 | 0.059 | 0.034 | 0.034 | 0.034 | 0.021 | 0.021 | 0.021 | 0.021 |
| | 6-8 | Vc | 91 | 81 | 81 | 81 | 61 | 61 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 103 | 103 | 103 | 103 | 103 | 91 | 91 |
| | | fz | 0.008 | 0.007 | 0.007 | 0.007 | 0.006 | 0.006 | 0.019 | 0.019 | 0.019 | 0.019 | 0.019 | 0.019 | 0.019 | 0.017 | 0.017 | 0.017 | 0.017 | 0.017 | 0.015 | 0.015 |
| | | RPM | 9655 | 8594 | 8594 | 8594 | 6472 | 6472 | 9072 | 9072 | 9072 | 9072 | 9072 | 9072 | 9072 | 8196 | 8196 | 8196 | 8196 | 8196 | 7242 | 7242 |
| | | FEED | 309 | 241 | 241 | 241 | 155 | 155 | 689 | 689 | 689 | 689 | 689 | 689 | 689 | 557 | 557 | 557 | 557 | 557 | 434 | 434 |
| | | Ae | 0.016 | 0.016 | 0.009 | 0.009 | 0.006 | 0.006 | 0.084 | 0.084 | 0.084 | 0.059 | 0.059 | 0.059 | 0.059 | 0.034 | 0.034 | 0.034 | 0.021 | 0.021 | 0.021 | 0.021 |
| | 9 | Vc | 57 | 50 | 50 | 50 | 38 | 38 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 63 | 63 | 63 | 63 | 63 | 56 | 56 |
| | | fz | 0.008 | 0.007 | 0.007 | 0.007 | 0.006 | 0.006 | 0.019 | 0.019 | 0.019 | 0.019 | 0.019 | 0.019 | 0.019 | 0.017 | 0.017 | 0.017 | 0.017 | 0.017 | 0.015 | 0.015 |
| | | RPM | 6048 | 5305 | 5305 | 5305 | 4032 | 4032 | 5570 | 5570 | 5570 | 5570 | 5570 | 5570 | 5570 | 5013 | 5013 | 5013 | 5013 | 5013 | 4456 | 4456 |
| | | FEED | 194 | 149 | 149 | 149 | 97 | 97 | 423 | 423 | 423 | 423 | 423 | 423 | 423 | 341 | 341 | 341 | 341 | 341 | 267 | 267 |
| | | Ae | 0.012 | 0.012 | 0.007 | 0.007 | 0.005 | 0.005 | 0.063 | 0.063 | 0.063 | 0.044 | 0.044 | 0.044 | 0.044 | 0.025 | 0.025 | 0.025 | 0.016 | 0.016 | 0.016 | 0.016 |
| | 10-11.1 | Vc | 91 | 81 | 81 | 81 | 61 | 61 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 103 | 103 | 103 | 103 | 103 | 91 | 91 |
| | | fz | 0.008 | 0.007 | 0.007 | 0.007 | 0.006 | 0.006 | 0.019 | 0.019 | 0.019 | 0.019 | 0.019 | 0.019 | 0.019 | 0.017 | 0.017 | 0.017 | 0.017 | 0.017 | 0.015 | 0.015 |
| | | RPM | 9655 | 8594 | 8594 | 8594 | 6472 | 6472 | 9072 | 9072 | 9072 | 9072 | 9072 | 9072 | 9072 | 8196 | 8196 | 8196 | 8196 | 8196 | 7242 | 7242 |
| | | FEED | 309 | 241 | 241 | 241 | 155 | 155 | 689 | 689 | 689 | 689 | 689 | 689 | 689 | 557 | 557 | 557 | 557 | 557 | 434 | 434 |
| | | Ae | 0.016 | 0.016 | 0.009 | 0.009 | 0.006 | 0.006 | 0.084 | 0.084 | 0.084 | 0.059 | 0.059 | 0.059 | 0.059 | 0.034 | 0.034 | 0.034 | 0.021 | 0.021 | 0.021 | 0.021 |
| | 11.2 | Vc | 57 | 50 | 50 | 50 | 38 | 38 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 63 | 63 | 63 | 63 | 63 | 56 | 56 |
| | | fz | 0.008 | 0.007 | 0.007 | 0.007 | 0.006 | 0.006 | 0.019 | 0.019 | 0.019 | 0.019 | 0.019 | 0.019 | 0.019 | 0.017 | 0.017 | 0.017 | 0.017 | 0.017 | 0.015 | 0.015 |
| | | RPM | 6048 | 5305 | 5305 | 5305 | 4032 | 4032 | 5570 | 5570 | 5570 | 5570 | 5570 | 5570 | 5570 | 5013 | 5013 | 5013 | 5013 | 5013 | 4456 | 4456 |
| | | FEED | 194 | 149 | 149 | 149 | 97 | 97 | 423 | 423 | 423 | 423 | 423 | 423 | 423 | 341 | 341 | 341 | 341 | 341 | 267 | 267 |
| | | Ae | 0.012 | 0.012 | 0.007 | 0.007 | 0.005 | 0.005 | 0.063 | 0.063 | 0.063 | 0.044 | 0.044 | 0.044 | 0.044 | 0.025 | 0.025 | 0.025 | 0.016 | 0.016 | 0.016 | 0.016 |
| K | 15-20 | Vc | 91 | 81 | 81 | 81 | 61 | 61 | 114 | 114 | 114 | 114 | 114 | 114 | 114 | 103 | 103 | 103 | 103 | 103 | 91 | 91 |
| | | fz | 0.008 | 0.007 | 0.007 | 0.007 | 0.006 | 0.006 | 0.019 | 0.019 | 0.019 | 0.019 | 0.019 | 0.019 | 0.019 | 0.017 | 0.017 | 0.017 | 0.017 | 0.017 | 0.015 | 0.015 |
| | | RPM | 9655 | 8594 | 8594 | 8594 | 6472 | 6472 | 9072 | 9072 | 9072 | 9072 | 9072 | 9072 | 9072 | 8196 | 8196 | 8196 | 8196 | 8196 | 7242 | 7242 |
| | | FEED | 309 | 241 | 241 | 241 | 155 | 155 | 689 | 689 | 689 | 689 | 689 | 689 | 689 | 557 | 557 | 557 | 557 | 557 | 434 | 434 |
| | | Ae | 0.016 | 0.016 | 0.009 | 0.009 | 0.006 | 0.006 | 0.084 | 0.084 | 0.084 | 0.059 | 0.059 | 0.059 | 0.059 | 0.034 | 0.034 | 0.034 | 0.021 | 0.021 | 0.021 | 0.021 |
| H | 38.1 - 38.2 | Vc | 34 | 30 | 30 | 30 | 23 | 23 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 40 | 40 | 40 | 40 | 40 | 35 | 35 |
| | | fz | 0.004 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 |
| | | RPM | 3608 | 3183 | 3183 | 3183 | 2440 | 2440 | 3501 | 3501 | 3501 | 3501 | 3501 | 3501 | 3501 | 3183 | 3183 | 3183 | 3183 | 3183 | 2785 | 2785 |
| | | FEED | 58 | 38 | 38 | 38 | 29 | 29 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 51 | 51 | 51 | 51 | 51 | 45 | 45 |
| | | Ae | 0.009 | 0.009 | 0.006 | 0.006 | 0.004 | 0.004 | 0.05 | 0.05 | 0.05 | 0.035 | 0.035 | 0.035 | 0.035 | 0.02 | 0.02 | 0.02 | 0.013 | 0.013 | 0.013 | 0.013 |
| | 40 | Vc | 57 | 50 | 50 | 50 | 38 | 38 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 63 | 63 | 63 | 63 | 63 | 56 | 56 |
| | | fz | 0.008 | 0.007 | 0.007 | 0.007 | 0.006 | 0.006 | 0.019 | 0.019 | 0.019 | 0.019 | 0.019 | 0.019 | 0.019 | 0.017 | 0.017 | 0.017 | 0.017 | 0.017 | 0.015 | 0.015 |
| | | RPM | 6048 | 5305 | 5305 | 5305 | 4032 | 4032 | 5570 | 5570 | 5570 | 5570 | 5570 | 5570 | 5570 | 5013 | 5013 | 5013 | 5013 | 5013 | 4456 | 4456 |
| | | FEED | 194 | 149 | 149 | 149 | 97 | 97 | 423 | 423 | 423 | 423 | 423 | 423 | 423 | 341 | 341 | 341 | 341 | 341 | 267 | 267 |
| | | Ae | 0.012 | 0.012 | 0.007 | 0.007 | 0.005 | 0.005 | 0.063 | 0.063 | 0.063 | 0.044 | 0.044 | 0.044 | 0.044 | 0.025 | 0.025 | 0.025 | 0.016 | 0.016 | 0.016 | 0.016 |
| | 41 | Vc | 34 | 30 | 30 | 30 | 23 | 23 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 40 | 40 | 40 | 40 | 40 | 35 | 35 |
| | | fz | 0.004 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 |
| | | RPM | 3608 | 3183 | 3183 | 3183 | 2440 | 2440 | 3501 | 3501 | 3501 | 3501 | 3501 | 3501 | 3501 | 3183 | 3183 | 3183 | 3183 | 3183 | 2785 | 2785 |
| | | FEED | 58 | 38 | 38 | 38 | 29 | 29 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 51 | 51 | 51 | 51 | 51 | 45 | 45 |
| | | Ae | 0.009 | 0.009 | 0.006 | 0.006 | 0.004 | 0.004 | 0.05 | 0.05 | 0.05 | 0.035 | 0.035 | 0.035 | 0.035 | 0.02 | 0.02 | 0.02 | 0.013 | 0.013 | 0.013 | 0.013 |

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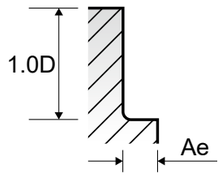


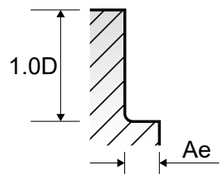



4G MILL END MILLS
RECOMMENDED CUTTING CONDITIONS
推荐加工参数

### SEME73 SERIES — 4 FLUTE - SIDE CUTTING
### 4刃 - 侧铣削

Vc (切削速度) = (m/min.) FEED (进给) = (mm/min.)
fz (每齿进给) = (mm/tooth) Ae (切削宽度) = (mm)
RPM (转速) = (rev./min.) LBS (颈长) = Length Below Shank

| VDI 3323 | Parameter 参数 | Diameter (Ø) 直径 | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 4.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 6.0 | 6.0 | 6.0 | 6.0 | 8.0 | 8.0 | 8.0 | 10.0 | 10.0 | 10.0 | 12.0 | 12.0 | 12.0 |
| | LBS | 60 | 16 | 20 | 26 | 30 | 35 | 40 | 50 | 60 | 15 | 20 | 30 | 32 | 25 | 30 | 42 | 30 | 35 | 45 | 35 | 40 | 50 |
| 1-5 | Vc | 91 | 119 | 119 | 107 | 107 | 107 | 107 | 107 | 95 | 126 | 126 | 126 | 113 | 127 | 127 | 114 | 123 | 123 | 123 | 124 | 124 | 124 |
| | fz | 0.015 | 0.024 | 0.024 | 0.022 | 0.022 | 0.022 | 0.022 | 0.022 | 0.019 | 0.03 | 0.03 | 0.03 | 0.027 | 0.042 | 0.042 | 0.038 | 0.047 | 0.047 | 0.047 | 0.047 | 0.047 | 0.047 |
| | RPM | 7242 | 7576 | 7576 | 6812 | 6812 | 6812 | 6812 | 6812 | 6048 | 6685 | 6685 | 6685 | 5995 | 5053 | 5053 | 4536 | 3915 | 3915 | 3915 | 3289 | 3289 | 3289 |
| | FEED | 434 | 727 | 727 | 599 | 599 | 599 | 599 | 599 | 460 | 802 | 802 | 802 | 647 | 849 | 849 | 689 | 736 | 736 | 736 | 618 | 618 | 618 |
| | Ae | 0.013 | 0.074 | 0.074 | 0.042 | 0.042 | 0.042 | 0.042 | 0.026 | 0.026 | 0.126 | 0.088 | 0.088 | 0.05 | 0.118 | 0.118 | 0.067 | 0.21 | 0.147 | 0.147 | 0.252 | 0.176 | 0.176 |
| 6-8 | Vc | 91 | 119 | 119 | 107 | 107 | 107 | 107 | 107 | 95 | 126 | 126 | 126 | 113 | 127 | 127 | 114 | 123 | 123 | 123 | 124 | 124 | 124 |
| | fz | 0.015 | 0.024 | 0.024 | 0.022 | 0.022 | 0.022 | 0.022 | 0.022 | 0.019 | 0.03 | 0.03 | 0.03 | 0.027 | 0.042 | 0.042 | 0.038 | 0.047 | 0.047 | 0.047 | 0.047 | 0.047 | 0.047 |
| | RPM | 7242 | 7576 | 7576 | 6812 | 6812 | 6812 | 6812 | 6812 | 6048 | 6685 | 6685 | 6685 | 5995 | 5053 | 5053 | 4536 | 3915 | 3915 | 3915 | 3289 | 3289 | 3289 |
| | FEED | 434 | 727 | 727 | 599 | 599 | 599 | 599 | 599 | 460 | 802 | 802 | 802 | 647 | 849 | 849 | 689 | 736 | 736 | 736 | 618 | 618 | 618 |
| | Ae | 0.013 | 0.074 | 0.074 | 0.042 | 0.042 | 0.042 | 0.042 | 0.026 | 0.026 | 0.126 | 0.088 | 0.088 | 0.05 | 0.118 | 0.118 | 0.067 | 0.21 | 0.147 | 0.147 | 0.252 | 0.176 | 0.176 |
| 9 | Vc | 56 | 71 | 71 | 64 | 64 | 64 | 64 | 64 | 57 | 76 | 76 | 76 | 68 | 76 | 76 | 68 | 75 | 75 | 75 | 76 | 76 | 76 |
| | fz | 0.015 | 0.024 | 0.024 | 0.021 | 0.021 | 0.021 | 0.021 | 0.021 | 0.019 | 0.03 | 0.03 | 0.03 | 0.027 | 0.037 | 0.037 | 0.034 | 0.038 | 0.038 | 0.038 | 0.037 | 0.037 | 0.037 |
| | RPM | 4456 | 4520 | 4520 | 4074 | 4074 | 4074 | 4074 | 4074 | 3629 | 4032 | 4032 | 4032 | 3608 | 3024 | 3024 | 2706 | 2387 | 2387 | 2387 | 2016 | 2016 | 2016 |
| | FEED | 267 | 434 | 434 | 342 | 342 | 342 | 342 | 342 | 276 | 484 | 484 | 484 | 390 | 448 | 448 | 368 | 363 | 363 | 363 | 298 | 298 | 298 |
| | Ae | 0.009 | 0.055 | 0.055 | 0.032 | 0.032 | 0.032 | 0.032 | 0.02 | 0.02 | 0.095 | 0.066 | 0.066 | 0.038 | 0.088 | 0.088 | 0.05 | 0.158 | 0.11 | 0.11 | 0.189 | 0.132 | 0.132 |
| 10 - 11.1 | Vc | 91 | 119 | 119 | 107 | 107 | 107 | 107 | 107 | 95 | 126 | 126 | 126 | 113 | 127 | 127 | 114 | 123 | 123 | 123 | 124 | 124 | 124 |
| | fz | 0.015 | 0.024 | 0.024 | 0.022 | 0.022 | 0.022 | 0.022 | 0.022 | 0.019 | 0.03 | 0.03 | 0.03 | 0.027 | 0.042 | 0.042 | 0.038 | 0.047 | 0.047 | 0.047 | 0.047 | 0.047 | 0.047 |
| | RPM | 7242 | 7576 | 7576 | 6812 | 6812 | 6812 | 6812 | 6812 | 6048 | 6685 | 6685 | 6685 | 5995 | 5053 | 5053 | 4536 | 3915 | 3915 | 3915 | 3289 | 3289 | 3289 |
| | FEED | 434 | 727 | 727 | 599 | 599 | 599 | 599 | 599 | 460 | 802 | 802 | 802 | 647 | 849 | 849 | 689 | 736 | 736 | 736 | 618 | 618 | 618 |
| | Ae | 0.013 | 0.074 | 0.074 | 0.042 | 0.042 | 0.042 | 0.042 | 0.026 | 0.026 | 0.126 | 0.088 | 0.088 | 0.05 | 0.118 | 0.118 | 0.067 | 0.21 | 0.147 | 0.147 | 0.252 | 0.176 | 0.176 |
| 11.2 | Vc | 56 | 71 | 71 | 64 | 64 | 64 | 64 | 64 | 57 | 76 | 76 | 76 | 68 | 76 | 76 | 68 | 75 | 75 | 75 | 76 | 76 | 76 |
| | fz | 0.015 | 0.024 | 0.024 | 0.021 | 0.021 | 0.021 | 0.021 | 0.021 | 0.019 | 0.03 | 0.03 | 0.03 | 0.027 | 0.037 | 0.037 | 0.034 | 0.038 | 0.038 | 0.038 | 0.037 | 0.037 | 0.037 |
| | RPM | 4456 | 4520 | 4520 | 4074 | 4074 | 4074 | 4074 | 4074 | 3629 | 4032 | 4032 | 4032 | 3608 | 3024 | 3024 | 2706 | 2387 | 2387 | 2387 | 2016 | 2016 | 2016 |
| | FEED | 267 | 434 | 434 | 342 | 342 | 342 | 342 | 342 | 276 | 484 | 484 | 484 | 390 | 448 | 448 | 368 | 363 | 363 | 363 | 298 | 298 | 298 |
| | Ae | 0.009 | 0.055 | 0.055 | 0.032 | 0.032 | 0.032 | 0.032 | 0.02 | 0.02 | 0.095 | 0.066 | 0.066 | 0.038 | 0.088 | 0.088 | 0.05 | 0.158 | 0.11 | 0.11 | 0.189 | 0.132 | 0.132 |
| 15 - 20 | Vc | 91 | 119 | 119 | 107 | 107 | 107 | 107 | 107 | 95 | 126 | 126 | 126 | 113 | 127 | 127 | 114 | 123 | 123 | 123 | 124 | 124 | 124 |
| | fz | 0.015 | 0.024 | 0.024 | 0.022 | 0.022 | 0.022 | 0.022 | 0.022 | 0.019 | 0.03 | 0.03 | 0.03 | 0.027 | 0.042 | 0.042 | 0.038 | 0.047 | 0.047 | 0.047 | 0.047 | 0.047 | 0.047 |
| | RPM | 7242 | 7576 | 7576 | 6812 | 6812 | 6812 | 6812 | 6812 | 6048 | 6685 | 6685 | 6685 | 5995 | 5053 | 5053 | 4536 | 3915 | 3915 | 3915 | 3289 | 3289 | 3289 |
| | FEED | 434 | 727 | 727 | 599 | 599 | 599 | 599 | 599 | 460 | 802 | 802 | 802 | 647 | 849 | 849 | 689 | 736 | 736 | 736 | 618 | 618 | 618 |
| | Ae | 0.013 | 0.074 | 0.074 | 0.042 | 0.042 | 0.042 | 0.042 | 0.026 | 0.026 | 0.126 | 0.088 | 0.088 | 0.05 | 0.118 | 0.118 | 0.067 | 0.21 | 0.147 | 0.147 | 0.252 | 0.176 | 0.176 |
| 38.1 - 38.2 | Vc | 35 | 44 | 44 | 39 | 39 | 39 | 39 | 39 | 35 | 45 | 45 | 45 | 41 | 51 | 51 | 45 | 51 | 51 | 51 | 53 | 53 | 53 |
| | fz | 0.004 | 0.008 | 0.008 | 0.007 | 0.007 | 0.007 | 0.007 | 0.007 | 0.006 | 0.01 | 0.01 | 0.01 | 0.009 | 0.016 | 0.016 | 0.015 | 0.016 | 0.016 | 0.016 | 0.017 | 0.017 | 0.017 |
| | RPM | 2785 | 2801 | 2801 | 2483 | 2483 | 2483 | 2483 | 2483 | 2228 | 2387 | 2387 | 2387 | 2175 | 2029 | 2029 | 1790 | 1623 | 1623 | 1623 | 1406 | 1406 | 1406 |
| | FEED | 45 | 90 | 90 | 70 | 70 | 70 | 70 | 70 | 53 | 95 | 95 | 95 | 78 | 130 | 130 | 107 | 104 | 104 | 104 | 96 | 96 | 96 |
| | Ae | 0.008 | 0.044 | 0.044 | 0.025 | 0.025 | 0.025 | 0.025 | 0.016 | 0.016 | 0.076 | 0.053 | 0.053 | 0.03 | 0.071 | 0.071 | 0.04 | 0.126 | 0.088 | 0.088 | 0.151 | 0.106 | 0.106 |
| 40 | Vc | 56 | 71 | 71 | 64 | 64 | 64 | 64 | 64 | 57 | 76 | 76 | 76 | 68 | 76 | 76 | 68 | 75 | 75 | 75 | 76 | 76 | 76 |
| | fz | 0.015 | 0.024 | 0.024 | 0.021 | 0.021 | 0.021 | 0.021 | 0.021 | 0.019 | 0.03 | 0.03 | 0.03 | 0.027 | 0.037 | 0.037 | 0.034 | 0.038 | 0.038 | 0.038 | 0.037 | 0.037 | 0.037 |
| | RPM | 4456 | 4520 | 4520 | 4074 | 4074 | 4074 | 4074 | 4074 | 3629 | 4032 | 4032 | 4032 | 3608 | 3024 | 3024 | 2706 | 2387 | 2387 | 2387 | 2016 | 2016 | 2016 |
| | FEED | 267 | 434 | 434 | 342 | 342 | 342 | 342 | 342 | 276 | 484 | 484 | 484 | 390 | 448 | 448 | 368 | 363 | 363 | 363 | 298 | 298 | 298 |
| | Ae | 0.009 | 0.055 | 0.055 | 0.032 | 0.032 | 0.032 | 0.032 | 0.02 | 0.02 | 0.095 | 0.066 | 0.066 | 0.038 | 0.088 | 0.088 | 0.05 | 0.158 | 0.11 | 0.11 | 0.189 | 0.132 | 0.132 |
| 41 | Vc | 35 | 44 | 44 | 39 | 39 | 39 | 39 | 39 | 35 | 45 | 45 | 45 | 41 | 51 | 51 | 45 | 51 | 51 | 51 | 53 | 53 | 53 |
| | fz | 0.004 | 0.008 | 0.008 | 0.007 | 0.007 | 0.007 | 0.007 | 0.007 | 0.006 | 0.01 | 0.01 | 0.01 | 0.009 | 0.016 | 0.016 | 0.015 | 0.016 | 0.016 | 0.016 | 0.017 | 0.017 | 0.017 |
| | RPM | 2785 | 2801 | 2801 | 2483 | 2483 | 2483 | 2483 | 2483 | 2228 | 2387 | 2387 | 2387 | 2175 | 2029 | 2029 | 1790 | 1623 | 1623 | 1623 | 1406 | 1406 | 1406 |
| | FEED | 45 | 90 | 90 | 70 | 70 | 70 | 70 | 70 | 53 | 95 | 95 | 95 | 78 | 130 | 130 | 107 | 104 | 104 | 104 | 96 | 96 | 96 |
| | Ae | 0.008 | 0.044 | 0.044 | 0.025 | 0.025 | 0.025 | 0.025 | 0.016 | 0.016 | 0.076 | 0.053 | 0.053 | 0.03 | 0.071 | 0.071 | 0.04 | 0.126 | 0.088 | 0.088 | 0.151 | 0.106 | 0.106 |



# 4G MILL END MILLS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

### SEME75 SERIES — 6 FLUTE - SIDE CUTTING
### 6刃 - 侧铣削

Vc (切削速度) = (m/min.) FEED (进给) = (mm/min.)
fz (每齿进给) = (mm/tooth) LOC (刃长) = Length of Cut
RPM (转速) = (rev./min.)

### NORMAL SPEED 普通速度

| ISO | VDI 3323 | Material Description 工件材料 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 6.0 | 6.0 | 6.0 | 8.0 | 8.0 | 8.0 | 8.0 | 10.0 | 10.0 | 10.0 |
| | | | | | LOC | 15 | 20 | 30 | 20 | 30 | 35 | 40 | 25 | 30 | 40 |
| P | 1-5 | Non-alloy steel | 0.1D | 1.5D | Vc | 110 | 110 | 110 | 111 | 111 | 111 | 111 | 111 | 111 | 111 |
| | | | | | fz | 0.06 | 0.06 | 0.051 | 0.079 | 0.079 | 0.079 | 0.067 | 0.099 | 0.099 | 0.099 |
| | | | | | RPM | 5836 | 5836 | 5836 | 4417 | 4417 | 4417 | 4417 | 3533 | 3533 | 3533 |
| | | | | | FEED | 2101 | 2101 | 1786 | 2093 | 2093 | 2093 | 1775 | 2099 | 2099 | 2099 |
| | 6-8 | Low alloy steel | 0.1D | 1.5D | Vc | 110 | 110 | 110 | 111 | 111 | 111 | 111 | 111 | 111 | 111 |
| | | | | | fz | 0.06 | 0.06 | 0.051 | 0.079 | 0.079 | 0.079 | 0.067 | 0.099 | 0.099 | 0.099 |
| | | | | | RPM | 5836 | 5836 | 5836 | 4417 | 4417 | 4417 | 4417 | 3533 | 3533 | 3533 |
| | | | | | FEED | 2101 | 2101 | 1786 | 2093 | 2093 | 2093 | 1775 | 2099 | 2099 | 2099 |
| | 9 | | 0.05D | 1.5D | Vc | 77 | 77 | 77 | 78 | 78 | 78 | 78 | 76 | 76 | 76 |
| | | | | | fz | 0.059 | 0.059 | 0.05 | 0.078 | 0.078 | 0.078 | 0.066 | 0.099 | 0.099 | 0.099 |
| | | | | | RPM | 4085 | 4085 | 4085 | 3104 | 3104 | 3104 | 3104 | 2419 | 2419 | 2419 |
| | | | | | FEED | 1446 | 1446 | 1225 | 1452 | 1452 | 1452 | 1229 | 1437 | 1437 | 1437 |
| | 10-11.1 | High alloyed steel, and tool steel | 0.1D | 1.5D | Vc | 110 | 110 | 110 | 111 | 111 | 111 | 111 | 111 | 111 | 111 |
| | | | | | fz | 0.06 | 0.06 | 0.051 | 0.079 | 0.079 | 0.079 | 0.067 | 0.099 | 0.099 | 0.099 |
| | | | | | RPM | 5836 | 5836 | 5836 | 4417 | 4417 | 4417 | 4417 | 3533 | 3533 | 3533 |
| | | | | | FEED | 2101 | 2101 | 1786 | 2093 | 2093 | 2093 | 1775 | 2099 | 2099 | 2099 |
| | 11.2 | | 0.05D | 1.5D | Vc | 77 | 77 | 77 | 78 | 78 | 78 | 78 | 76 | 76 | 76 |
| | | | | | fz | 0.059 | 0.059 | 0.05 | 0.078 | 0.078 | 0.078 | 0.066 | 0.099 | 0.099 | 0.099 |
| | | | | | RPM | 4085 | 4085 | 4085 | 3104 | 3104 | 3104 | 3104 | 2419 | 2419 | 2419 |
| | | | | | FEED | 1446 | 1446 | 1225 | 1452 | 1452 | 1452 | 1229 | 1437 | 1437 | 1437 |
| K | 15-20 | Grey cast iron Nodular cast iron Malleable cast iron | 0.1D | 1.5D | Vc | 110 | 110 | 110 | 111 | 111 | 111 | 111 | 111 | 111 | 111 |
| | | | | | fz | 0.06 | 0.06 | 0.051 | 0.079 | 0.079 | 0.079 | 0.067 | 0.099 | 0.099 | 0.099 |
| | | | | | RPM | 5836 | 5836 | 5836 | 4417 | 4417 | 4417 | 4417 | 3533 | 3533 | 3533 |
| | | | | | FEED | 2101 | 2101 | 1786 | 2093 | 2093 | 2093 | 1775 | 2099 | 2099 | 2099 |
| H | 38.1 - 38.2 | Hardened steel | 0.05D | 1.0D | Vc | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 33 | 33 | 33 |
| | | | | | fz | 0.022 | 0.022 | 0.019 | 0.03 | 0.03 | 0.03 | 0.026 | 0.035 | 0.035 | 0.035 |
| | | | | | RPM | 1645 | 1645 | 1645 | 1233 | 1233 | 1233 | 1233 | 1050 | 1050 | 1050 |
| | | | | | FEED | 217 | 217 | 187 | 222 | 222 | 222 | 192 | 221 | 221 | 221 |
| | 40 | Chilled Cast Iron | 0.05D | 1.5D | Vc | 77 | 77 | 77 | 78 | 78 | 78 | 78 | 76 | 76 | 76 |
| | | | | | fz | 0.059 | 0.059 | 0.05 | 0.078 | 0.078 | 0.078 | 0.066 | 0.099 | 0.099 | 0.099 |
| | | | | | RPM | 4085 | 4085 | 4085 | 3104 | 3104 | 3104 | 3104 | 2419 | 2419 | 2419 |
| | | | | | FEED | 1446 | 1446 | 1225 | 1452 | 1452 | 1452 | 1229 | 1437 | 1437 | 1437 |
| | 41 | Hardened Cast Iron | 0.05D | 1.0D | Vc | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 33 | 33 | 33 |
| | | | | | fz | 0.022 | 0.022 | 0.019 | 0.03 | 0.03 | 0.03 | 0.026 | 0.035 | 0.035 | 0.035 |
| | | | | | RPM | 1645 | 1645 | 1645 | 1233 | 1233 | 1233 | 1233 | 1050 | 1050 | 1050 |
| | | | | | FEED | 217 | 217 | 187 | 222 | 222 | 222 | 192 | 221 | 221 | 221 |

### HIGH SPEED 高速度

| ISO | VDI 3323 | Material Description 工件材料 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 6.0 | 6.0 | 6.0 | 8.0 | 8.0 | 8.0 | 8.0 | 10.0 | 10.0 | 10.0 |
| | | | | | LOC | 15 | 20 | 30 | 20 | 30 | 35 | 40 | 25 | 30 | 40 |
| P | 11.2 | High alloyed steel, and tool steel | 0.05D | 1.5D | Vc | 333 | 333 | 333 | 333 | 333 | 333 | 333 | 329 | 329 | 329 |
| | | | | | fz | 0.06 | 0.06 | 0.051 | 0.081 | 0.081 | 0.081 | 0.068 | 0.1 | 0.1 | 0.1 |
| | | | | | RPM | 17666 | 17666 | 17666 | 13250 | 13250 | 13250 | 13250 | 10472 | 10472 | 10472 |
| | | | | | FEED | 6360 | 6360 | 5406 | 6439 | 6439 | 6439 | 5406 | 6283 | 6283 | 6283 |
| H | 38.1 - 38.2 | Hardened steel | 0.05D | 1.0D | Vc | 166 | 166 | 166 | 166 | 166 | 166 | 166 | 166 | 166 | 166 |
| | | | | | fz | 0.061 | 0.061 | 0.051 | 0.081 | 0.081 | 0.081 | 0.069 | 0.101 | 0.101 | 0.101 |
| | | | | | RPM | 8807 | 8807 | 8807 | 6605 | 6605 | 6605 | 6605 | 5284 | 5284 | 5284 |
| | | | | | FEED | 3223 | 3223 | 2695 | 3210 | 3210 | 3210 | 2734 | 3202 | 3202 | 3202 |
| | 40 | Chilled Cast Iron | 0.05D | 1.5D | Vc | 333 | 333 | 333 | 333 | 333 | 333 | 333 | 329 | 329 | 329 |
| | | | | | fz | 0.06 | 0.06 | 0.051 | 0.081 | 0.081 | 0.081 | 0.068 | 0.1 | 0.1 | 0.1 |
| | | | | | RPM | 17666 | 17666 | 17666 | 13250 | 13250 | 13250 | 13250 | 10472 | 10472 | 10472 |
| | | | | | FEED | 6360 | 6360 | 5406 | 6439 | 6439 | 6439 | 5406 | 6283 | 6283 | 6283 |
| | 41 | Hardened Cast Iron | 0.05D | 1.0D | Vc | 166 | 166 | 166 | 166 | 166 | 166 | 166 | 166 | 166 | 166 |
| | | | | | fz | 0.061 | 0.061 | 0.051 | 0.081 | 0.081 | 0.081 | 0.069 | 0.101 | 0.101 | 0.101 |
| | | | | | RPM | 8807 | 8807 | 8807 | 6605 | 6605 | 6605 | 6605 | 5284 | 5284 | 5284 |
| | | | | | FEED | 3223 | 3223 | 2695 | 3210 | 3210 | 3210 | 2734 | 3202 | 3202 | 3202 |

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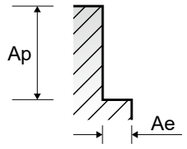


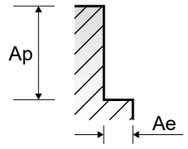



4G MILL END MILLS
RECOMMENDED CUTTING CONDITIONS
推荐加工参数
SEME75 SERIES — 6 FLUTE - SIDE CUTTING
6刃 - 侧铣削
Vc (切削速度) = (m/min.) FEED (进给) = (mm/min.)
fz (每齿进给) = (mm/tooth) LOC (刃长) = Length of Cut
RPM (转速) = (rev./min.)
NORMAL SPEED 普通速度

| VDI 3323 | Parameter 参数 | Diameter (Ø) 直径 | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 10.0 | 12.0 | 12.0 | 12.0 | 12.0 | 16.0 | 16.0 | 16.0 | 16.0 | 16.0 | 20.0 | 20.0 | 20.0 | 20.0 |
| | LOC | 50 | 30 | 40 | 50 | 60 | 40 | 50 | 60 | 90 | 110 | 45 | 60 | 70 | 110 |
| 1-5 | Vc | 111 | 112 | 112 | 112 | 112 | 111 | 111 | 111 | 100 | 100 | 111 | 111 | 111 | 100 |
| | fz | 0.084 | 0.099 | 0.099 | 0.084 | 0.074 | 0.1 | 0.1 | 0.085 | 0.075 | 0.075 | 0.1 | 0.1 | 0.085 | 0.075 |
| | RPM | 3533 | 2971 | 2971 | 2971 | 2971 | 2208 | 2208 | 2208 | 1989 | 1989 | 1767 | 1767 | 1767 | 1592 |
| | FEED | 1781 | 1765 | 1765 | 1497 | 1319 | 1325 | 1325 | 1126 | 895 | 895 | 1060 | 1060 | 901 | 716 |
| 6-8 | Vc | 111 | 112 | 112 | 112 | 112 | 111 | 111 | 111 | 100 | 100 | 111 | 111 | 111 | 100 |
| | fz | 0.084 | 0.099 | 0.099 | 0.084 | 0.074 | 0.1 | 0.1 | 0.085 | 0.075 | 0.075 | 0.1 | 0.1 | 0.085 | 0.075 |
| | RPM | 3533 | 2971 | 2971 | 2971 | 2971 | 2208 | 2208 | 2208 | 1989 | 1989 | 1767 | 1767 | 1767 | 1592 |
| | FEED | 1781 | 1765 | 1765 | 1497 | 1319 | 1325 | 1325 | 1126 | 895 | 895 | 1060 | 1060 | 901 | 716 |
| 9 | Vc | 76 | 79 | 79 | 79 | 79 | 78 | 78 | 78 | 70 | 70 | 77 | 77 | 77 | 68 |
| | fz | 0.084 | 0.097 | 0.097 | 0.082 | 0.073 | 0.099 | 0.099 | 0.085 | 0.075 | 0.075 | 0.099 | 0.099 | 0.084 | 0.075 |
| | RPM | 2419 | 2096 | 2096 | 2096 | 2096 | 1552 | 1552 | 1552 | 1393 | 1393 | 1225 | 1225 | 1225 | 1082 |
| | FEED | 1219 | 1220 | 1220 | 1031 | 918 | 922 | 922 | 791 | 627 | 627 | 728 | 728 | 618 | 487 |
| 10 - 11.1 | Vc | 111 | 112 | 112 | 112 | 112 | 111 | 111 | 111 | 100 | 100 | 111 | 111 | 111 | 100 |
| | fz | 0.084 | 0.099 | 0.099 | 0.084 | 0.074 | 0.1 | 0.1 | 0.085 | 0.075 | 0.075 | 0.1 | 0.1 | 0.085 | 0.075 |
| | RPM | 3533 | 2971 | 2971 | 2971 | 2971 | 2208 | 2208 | 2208 | 1989 | 1989 | 1767 | 1767 | 1767 | 1592 |
| | FEED | 1781 | 1765 | 1765 | 1497 | 1319 | 1325 | 1325 | 1126 | 895 | 895 | 1060 | 1060 | 901 | 716 |
| 11.2 | Vc | 76 | 79 | 79 | 79 | 79 | 78 | 78 | 78 | 70 | 70 | 77 | 77 | 77 | 68 |
| | fz | 0.084 | 0.097 | 0.097 | 0.082 | 0.073 | 0.099 | 0.099 | 0.085 | 0.075 | 0.075 | 0.099 | 0.099 | 0.084 | 0.075 |
| | RPM | 2419 | 2096 | 2096 | 2096 | 2096 | 1552 | 1552 | 1552 | 1393 | 1393 | 1225 | 1225 | 1225 | 1082 |
| | FEED | 1219 | 1220 | 1220 | 1031 | 918 | 922 | 922 | 791 | 627 | 627 | 728 | 728 | 618 | 487 |
| 15 - 20 | Vc | 111 | 112 | 112 | 112 | 112 | 111 | 111 | 111 | 100 | 100 | 111 | 111 | 111 | 100 |
| | fz | 0.084 | 0.099 | 0.099 | 0.084 | 0.074 | 0.1 | 0.1 | 0.085 | 0.075 | 0.075 | 0.1 | 0.1 | 0.085 | 0.075 |
| | RPM | 3533 | 2971 | 2971 | 2971 | 2971 | 2208 | 2208 | 2208 | 1989 | 1989 | 1767 | 1767 | 1767 | 1592 |
| | FEED | 1781 | 1765 | 1765 | 1497 | 1319 | 1325 | 1325 | 1126 | 895 | 895 | 1060 | 1060 | 901 | 716 |
| 38.1 - 38.2 | Vc | 33 | 33 | 33 | 33 | 33 | 34 | 34 | 34 | 31 | 31 | 33 | 33 | 33 | 30 |
| | fz | 0.03 | 0.036 | 0.036 | 0.031 | 0.027 | 0.034 | 0.034 | 0.029 | 0.026 | 0.026 | 0.037 | 0.037 | 0.032 | 0.028 |
| | RPM | 1050 | 875 | 875 | 875 | 875 | 676 | 676 | 676 | 617 | 617 | 525 | 525 | 525 | 477 |
| | FEED | 189 | 189 | 189 | 163 | 142 | 138 | 138 | 118 | 96 | 96 | 117 | 117 | 101 | 80 |
| 40 | Vc | 76 | 79 | 79 | 79 | 79 | 78 | 78 | 78 | 70 | 70 | 77 | 77 | 77 | 68 |
| | fz | 0.084 | 0.097 | 0.097 | 0.082 | 0.073 | 0.099 | 0.099 | 0.085 | 0.075 | 0.075 | 0.099 | 0.099 | 0.084 | 0.075 |
| | RPM | 2419 | 2096 | 2096 | 2096 | 2096 | 1552 | 1552 | 1552 | 1393 | 1393 | 1225 | 1225 | 1225 | 1082 |
| | FEED | 1219 | 1220 | 1220 | 1031 | 918 | 922 | 922 | 791 | 627 | 627 | 728 | 728 | 618 | 487 |
| 41 | Vc | 33 | 33 | 33 | 33 | 33 | 34 | 34 | 34 | 31 | 31 | 33 | 33 | 33 | 30 |
| | fz | 0.03 | 0.036 | 0.036 | 0.031 | 0.027 | 0.034 | 0.034 | 0.029 | 0.026 | 0.026 | 0.037 | 0.037 | 0.032 | 0.028 |
| | RPM | 1050 | 875 | 875 | 875 | 875 | 676 | 676 | 676 | 617 | 617 | 525 | 525 | 525 | 477 |
| | FEED | 189 | 189 | 189 | 163 | 142 | 138 | 138 | 118 | 96 | 96 | 117 | 117 | 101 | 80 |

### HIGH SPEED 高速度

| VDI 3323 | Parameter 参数 | Diameter (Ø) 直径 | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 10.0 | 12.0 | 12.0 | 12.0 | 12.0 | 16.0 | 16.0 | 16.0 | 16.0 | 16.0 | 20.0 | 20.0 | 20.0 | 20.0 |
| | LOC | 50 | 30 | 40 | 50 | 60 | 40 | 50 | 60 | 90 | 110 | 45 | 60 | 70 | 110 |
| 11.2 | Vc | 329 | 333 | 333 | 333 | 333 | 333 | 333 | 333 | 299 | 299 | 332 | 332 | 332 | 299 |
| | fz | 0.085 | 0.1 | 0.1 | 0.085 | 0.075 | 0.1 | 0.1 | 0.085 | 0.075 | 0.075 | 0.101 | 0.101 | 0.086 | 0.076 |
| | RPM | 10472 | 8833 | 8833 | 8833 | 8833 | 6625 | 6625 | 6625 | 5948 | 5948 | 5284 | 5284 | 5284 | 4759 |
| | FEED | 5341 | 5300 | 5300 | 4505 | 3975 | 3975 | 3975 | 3379 | 2677 | 2677 | 3202 | 3202 | 2727 | 2170 |
| 38.1 - 38.2 | Vc | 166 | 166 | 166 | 166 | 166 | 167 | 167 | 167 | 150 | 150 | 166 | 166 | 166 | 150 |
| | fz | 0.086 | 0.1 | 0.1 | 0.085 | 0.075 | 0.1 | 0.1 | 0.085 | 0.075 | 0.075 | 0.097 | 0.097 | 0.083 | 0.073 |
| | RPM | 5284 | 4403 | 4403 | 4403 | 4403 | 3322 | 3322 | 3322 | 2984 | 2984 | 2642 | 2642 | 2642 | 2387 |
| | FEED | 2727 | 2642 | 2642 | 2246 | 1981 | 1993 | 1993 | 1694 | 1343 | 1343 | 1538 | 1538 | 1316 | 1046 |
| 40 | Vc | 329 | 333 | 333 | 333 | 333 | 333 | 333 | 333 | 299 | 299 | 332 | 332 | 332 | 299 |
| | fz | 0.085 | 0.1 | 0.1 | 0.085 | 0.075 | 0.1 | 0.1 | 0.085 | 0.075 | 0.075 | 0.101 | 0.101 | 0.086 | 0.076 |
| | RPM | 10472 | 8833 | 8833 | 8833 | 8833 | 6625 | 6625 | 6625 | 5948 | 5948 | 5284 | 5284 | 5284 | 4759 |
| | FEED | 5341 | 5300 | 5300 | 4505 | 3975 | 3975 | 3975 | 3379 | 2677 | 2677 | 3202 | 3202 | 2727 | 2170 |
| 41 | Vc | 166 | 166 | 166 | 166 | 166 | 167 | 167 | 167 | 150 | 150 | 166 | 166 | 166 | 150 |
| | fz | 0.086 | 0.1 | 0.1 | 0.085 | 0.075 | 0.1 | 0.1 | 0.085 | 0.075 | 0.075 | 0.097 | 0.097 | 0.083 | 0.073 |
| | RPM | 5284 | 4403 | 4403 | 4403 | 4403 | 3322 | 3322 | 3322 | 2984 | 2984 | 2642 | 2642 | 2642 | 2387 |
| | FEED | 2727 | 2642 | 2642 | 2246 | 1981 | 1993 | 1993 | 1694 | 1343 | 1343 | 1538 | 1538 | 1316 | 1046 |



# 4G MILL END MILLS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

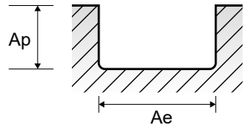
**G9D75 G9D76 G9D77 G9D67 G9D68 G9D69**

### 4&5 FLUTE CORNER RADIUS ROUGHING
### 4&5刃 圆鼻 粗加工

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

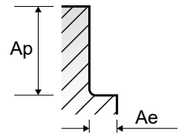
### SLOTTING - 槽铣削

| ISO | VDI 3323 | Material Description 工件材料 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 6.0 | 8.0 | 10.0 | 12.0 | 16.0 | 20.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1-3 | Non-alloy steel | 1.0D | 1.0D | Vc | 225 | 225 | 225 | 225 | 225 | 225 |
| | | | | | fz | 0.032 | 0.046 | 0.057 | 0.064 | 0.067 | 0.074 |
| | | | | | RPM | 11937 | 8952 | 7162 | 5968 | 4476 | 3581 |
| | | | | | FEED | 1528 | 1647 | 1633 | 1528 | 1500 | 1325 |
| | 4-5 | | 1.0D | 0.8D | Vc | 200 | 205 | 200 | 205 | 205 | 200 |
| | | | | | fz | 0.026 | 0.036 | 0.046 | 0.053 | 0.051 | 0.056 |
| | | | | | RPM | 10610 | 8157 | 6366 | 5438 | 4078 | 3183 |
| | | | | | FEED | 1103 | 1175 | 1171 | 1153 | 1040 | 891 |
| | 6 | Low alloy steel | 1.0D | 1.0D | Vc | 225 | 225 | 225 | 225 | 225 | 225 |
| | | | | | fz | 0.032 | 0.046 | 0.057 | 0.064 | 0.067 | 0.074 |
| | | | | | RPM | 11937 | 8952 | 7162 | 5968 | 4476 | 3581 |
| | | | | | FEED | 1528 | 1647 | 1633 | 1528 | 1500 | 1325 |
| | 7-9 | | 1.0D | 0.8D | Vc | 200 | 205 | 200 | 205 | 205 | 200 |
| | | | | | fz | 0.026 | 0.036 | 0.046 | 0.053 | 0.051 | 0.056 |
| | | | | | RPM | 10610 | 8157 | 6366 | 5438 | 4078 | 3183 |
| | | | | | FEED | 1103 | 1175 | 1171 | 1153 | 1040 | 891 |
| | 10 | High alloyed steel, and tool steel | 1.0D | 1.0D | Vc | 225 | 225 | 225 | 225 | 225 | 225 |
| | | | | | fz | 0.032 | 0.046 | 0.057 | 0.064 | 0.067 | 0.074 |
| | | | | | RPM | 11937 | 8952 | 7162 | 5968 | 4476 | 3581 |
| | | | | | FEED | 1528 | 1647 | 1633 | 1528 | 1500 | 1325 |
| | 11.1 | | 1.0D | 0.8D | Vc | 200 | 205 | 200 | 205 | 205 | 200 |
| | | | | | fz | 0.026 | 0.036 | 0.046 | 0.053 | 0.051 | 0.056 |
| | | | | | RPM | 10610 | 8157 | 6366 | 5438 | 4078 | 3183 |
| | | | | | FEED | 1103 | 1175 | 1171 | 1153 | 1040 | 891 |
| K | 15-20 | Grey cast iron Nodular cast iron Malleable cast iron | 1.0D | 1.0D | Vc | 225 | 225 | 225 | 225 | 225 | 225 |
| | | | | | fz | 0.032 | 0.046 | 0.057 | 0.064 | 0.067 | 0.074 |
| | | | | | RPM | 11937 | 8952 | 7162 | 5968 | 4476 | 3581 |
| | | | | | FEED | 1528 | 1647 | 1633 | 1528 | 1500 | 1325 |




### SIDE CUTTING - 侧铣削

| ISO | VDI 3323 | Material Description 工件材料 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 6.0 | 8.0 | 10.0 | 12.0 | 16.0 | 20.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1-3 | Non-alloy steel | 0.5D | 1.0D | Vc | 300 | 300 | 300 | 300 | 300 | 300 |
| | | | | | fz | 0.041 | 0.057 | 0.071 | 0.08 | 0.082 | 0.089 |
| | | | | | RPM | 15915 | 11937 | 9549 | 7958 | 5968 | 4775 |
| | | | | | FEED | 2610 | 2722 | 2712 | 2546 | 2447 | 2125 |
| | 4-5 | | 0.35D | 1.0D | Vc | 270 | 270 | 265 | 270 | 270 | 270 |
| | | | | | fz | 0.032 | 0.046 | 0.057 | 0.065 | 0.065 | 0.07 |
| | | | | | RPM | 14324 | 10743 | 8435 | 7162 | 5371 | 4297 |
| | | | | | FEED | 1833 | 1977 | 1923 | 1862 | 1746 | 1504 |
| | 6 | Low alloy steel | 0.5D | 1.0D | Vc | 300 | 300 | 300 | 300 | 300 | 300 |
| | | | | | fz | 0.041 | 0.057 | 0.071 | 0.08 | 0.082 | 0.089 |
| | | | | | RPM | 15915 | 11937 | 9549 | 7958 | 5968 | 4775 |
| | | | | | FEED | 2610 | 2722 | 2712 | 2546 | 2447 | 2125 |
| | 7-9 | | 0.35D | 1.0D | Vc | 270 | 270 | 265 | 270 | 270 | 270 |
| | | | | | fz | 0.032 | 0.046 | 0.057 | 0.065 | 0.065 | 0.07 |
| | | | | | RPM | 14324 | 10743 | 8435 | 7162 | 5371 | 4297 |
| | | | | | FEED | 1833 | 1977 | 1923 | 1862 | 1746 | 1504 |
| | 10 | High alloyed steel, and tool steel | 0.5D | 1.0D | Vc | 300 | 300 | 300 | 300 | 300 | 300 |
| | | | | | fz | 0.041 | 0.057 | 0.071 | 0.08 | 0.082 | 0.089 |
| | | | | | RPM | 15915 | 11937 | 9549 | 7958 | 5968 | 4775 |
| | | | | | FEED | 2610 | 2722 | 2712 | 2546 | 2447 | 2125 |
| | 11.1 | | 0.35D | 1.0D | Vc | 270 | 270 | 265 | 270 | 270 | 270 |
| | | | | | fz | 0.032 | 0.046 | 0.057 | 0.065 | 0.065 | 0.07 |
| | | | | | RPM | 14324 | 10743 | 8435 | 7162 | 5371 | 4297 |
| | | | | | FEED | 1833 | 1977 | 1923 | 1862 | 1746 | 1504 |
| K | 15-20 | Grey cast iron Nodular cast iron Malleable cast iron | 0.5D | 1.0D | Vc | 300 | 300 | 300 | 300 | 300 | 300 |
| | | | | | fz | 0.041 | 0.057 | 0.071 | 0.08 | 0.082 | 0.089 |
| | | | | | RPM | 15915 | 11937 | 9549 | 7958 | 5968 | 4775 |
| | | | | | FEED | 2610 | 2722 | 2712 | 2546 | 2447 | 2125 |





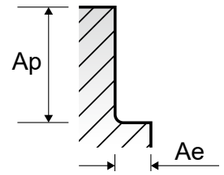

4G MILL END MILLS
RECOMMENDED CUTTING CONDITIONS
推荐加工参数

**GAE53 SERIES**

### 4&5 FLUTE CORNER RADIUS ROUGHING(HSS-PM) - SIDE CUTTING
### 4&5刃 圆鼻 粗加工(粉末高速钢) - 侧铣削

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

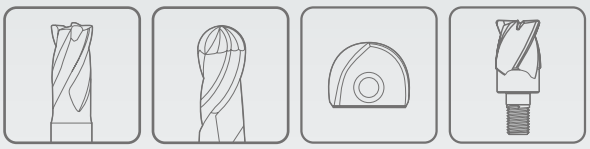
| ISO | VDI 3323 | Material Description 工件材料 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 6.0 | 8.0 | 10.0 | 12.0 | 14.0 | 16.0 | 18.0 | 20.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | 0.5D | 1.5D | Vc | 60 | 70 | 70 | 70 | 70 | 70 | 70 | 70 |
| | | | | | fz | 0.019 | 0.027 | 0.05 | 0.06 | 0.055 | 0.063 | 0.072 | 0.08 |
| | | | | | RPM | 3183 | 2785 | 2228 | 1857 | 1592 | 1393 | 1238 | 1114 |
| | | | | | FEED | 242 | 301 | 446 | 446 | 438 | 439 | 446 | 446 |
| | 2 | | 0.5D | 1.5D | Vc | 48 | 54 | 54 | 54 | 54 | 54 | 54 | 54 |
| | | | | | fz | 0.018 | 0.028 | 0.049 | 0.063 | 0.073 | 0.081 | 0.085 | 0.101 |
| | | | | | RPM | 2546 | 2149 | 1719 | 1432 | 1228 | 1074 | 955 | 859 |
| | | | | | FEED | 183 | 241 | 337 | 361 | 448 | 435 | 406 | 434 |
| | 3-4 | | 0.5D | 1.5D | Vc | 34 | 38 | 38 | 38 | 38 | 38 | 38 | 38 |
| | | | | | fz | 0.017 | 0.027 | 0.043 | 0.059 | 0.069 | 0.08 | 0.086 | 0.1 |
| | | | | | RPM | 1804 | 1512 | 1210 | 1008 | 864 | 756 | 672 | 605 |
| | | | | | FEED | 123 | 163 | 208 | 238 | 298 | 302 | 289 | 302 |
| | 5 | | 0.5D | 1.5D | Vc | 28 | 32 | 32 | 32 | 32 | 32 | 32 | 32 |
| | | | | | fz | 0.018 | 0.028 | 0.041 | 0.055 | 0.065 | 0.075 | 0.082 | 0.092 |
| | | | | | RPM | 1485 | 1273 | 1019 | 849 | 728 | 637 | 566 | 509 |
| | | | | | FEED | 107 | 143 | 167 | 187 | 236 | 239 | 232 | 234 |
| | 6 | Low alloy steel | 0.5D | 1.5D | Vc | 48 | 54 | 54 | 54 | 54 | 54 | 54 | 54 |
| | | | | | fz | 0.018 | 0.028 | 0.049 | 0.063 | 0.073 | 0.081 | 0.085 | 0.101 |
| | | | | | RPM | 2546 | 2149 | 1719 | 1432 | 1228 | 1074 | 955 | 859 |
| | | | | | FEED | 183 | 241 | 337 | 361 | 448 | 435 | 406 | 434 |
| | 7 | | 0.5D | 1.5D | Vc | 34 | 38 | 38 | 38 | 38 | 38 | 38 | 38 |
| | | | | | fz | 0.017 | 0.027 | 0.043 | 0.059 | 0.069 | 0.08 | 0.086 | 0.1 |
| | | | | | RPM | 1804 | 1512 | 1210 | 1008 | 864 | 756 | 672 | 605 |
| | | | | | FEED | 123 | 163 | 208 | 238 | 298 | 302 | 289 | 302 |
| | 8-9 | | 0.5D | 1.5D | Vc | 28 | 32 | 32 | 32 | 32 | 32 | 32 | 32 |
| | | | | | fz | 0.018 | 0.028 | 0.041 | 0.055 | 0.065 | 0.075 | 0.082 | 0.092 |
| | | | | | RPM | 1485 | 1273 | 1019 | 849 | 728 | 637 | 566 | 509 |
| | | | | | FEED | 107 | 143 | 167 | 187 | 236 | 239 | 232 | 234 |
| | 10 | High alloyed steel, and tool steel | 0.5D | 1.5D | Vc | 48 | 54 | 54 | 54 | 54 | 54 | 54 | 54 |
| | | | | | fz | 0.018 | 0.028 | 0.049 | 0.063 | 0.073 | 0.081 | 0.085 | 0.101 |
| | | | | | RPM | 2546 | 2149 | 1719 | 1432 | 1228 | 1074 | 955 | 859 |
| | | | | | FEED | 183 | 241 | 337 | 361 | 448 | 435 | 406 | 434 |
| | 11.1 | | 0.5D | 1.5D | Vc | 28 | 32 | 32 | 32 | 32 | 32 | 32 | 32 |
| | | | | | fz | 0.018 | 0.028 | 0.041 | 0.055 | 0.065 | 0.075 | 0.082 | 0.092 |
| | | | | | RPM | 1485 | 1273 | 1019 | 849 | 728 | 637 | 566 | 509 |
| | | | | | FEED | 107 | 143 | 167 | 187 | 236 | 239 | 232 | 234 |
| M | 14.1 | Stainless steel | 0.5D | 1.5D | Vc | 33 | 36 | 36 | 36 | 36 | 36 | 36 | 36 |
| | | | | | fz | 0.019 | 0.029 | 0.045 | 0.064 | 0.074 | 0.085 | 0.093 | 0.107 |
| | | | | | RPM | 1751 | 1432 | 1146 | 955 | 819 | 716 | 637 | 573 |
| | | | | | FEED | 133 | 166 | 206 | 244 | 303 | 304 | 296 | 307 |
| K | 15-20 | Grey cast iron Nodular cast iron Malleable cast iron | 0.5D | 1.5D | Vc | 48 | 54 | 54 | 54 | 54 | 54 | 54 | 54 |
| | | | | | fz | 0.018 | 0.028 | 0.049 | 0.063 | 0.073 | 0.081 | 0.085 | 0.101 |
| | | | | | RPM | 2546 | 2149 | 1719 | 1432 | 1228 | 1074 | 955 | 859 |
| | | | | | FEED | 183 | 241 | 337 | 361 | 448 | 435 | 406 | 434 |






CARBIDE
HSS
CBN END MILLS
i-Xmill END MILLS
i-SMART MODULAR END MILLS
X5070 END MILLS
4G MILL END MILLS
X-POWER PRO END MILLS
TitaNox-POWER END MILLS
SUS-CUT END MILLS
V7 PLUS END MILLS
ALU-POWER HPC END MILLS
ALU-CUT END MILLS
G-CUT END MILLS
CRX S END MILLS
K-2 END MILLS
GENERAL CARBIDE END MILLS
ONLY ONE COATED PM60 END MILLS
TANK-POWER END MILLS
GENERAL HSS END MILLS
MILLING CUTTERS
TECHNICAL DATA

Global Cutting Tool Leader **YG-1**



# MILLING

YG

Leading Through Innovation

# SOLID CARBIDE

# X-POWER PRO

# END MILLS

**- For Pre-Hardened Steels up to HRc55**

- 适用于加工预硬钢(~HRc55)

# SELECTION GUIDE
## 选用指南

YG MILLING TOOLS

## SOLID CARBIDE
# X-POWER PRO
# END MILLS

for Pre-Hardened Steels up to HRc55,
Mold & Die, Dry & Wet Cutting
适用于加工预硬钢(~HRc55)，模具，干&湿切削

Please visit globalyg1.com/mat for material search

◎ : Excellent (优秀) ○ : Good (良好)

Recommended cutting conditions (推荐加工参数) : p.C336

| SERIES 系列 | GMH31 | GMH32 |
|---|---|---|
| FLUTE 槽数 | 2 | 2 |
| HELIX ANGLE 螺旋角度 | 30° | 30° |
| CUTTING EDGE SHAPE 类型 | BALL NOSE | BALL NOSE |
| SIZE MIN 最小尺寸 | R0.1 | R0.2 |
| SIZE MAX 最大尺寸 | R10.0 | R3.0 |
| PAGE 页数 | C324 | C325-326 |
| | SHORT LENGTH | RIB PROCESSING |
| | Y-Coating | Y-Coating |

| ISO | VDI 3323 | Material Description 工件材料 | Composition / Structure / Heat Treatment 成分 / 结构 / 热处理 | | HB | HRc | | |
|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | About 0.15% C | Annealed | 125 | | ○ | ○ |
| | 2 | | About 0.45% C | Annealed | 190 | 13 | ○ | ○ |
| | 3 | | About 0.45% C | Quenched & Tempered | 250 | 25 | ○ | ○ |
| | 4 | | About 0.75% C | Annealed | 270 | 28 | ◎ | ◎ |
| | 5 | | About 0.75% C | Quenched & Tempered | 300 | 32 | ◎ | ◎ |
| | 6 | Low alloy steel | | Annealed | 180 | 10 | ○ | ○ |
| | 7 | | | Quenched & Tempered | 275 | 29 | ◎ | ◎ |
| | 8 | | | Quenched & Tempered | 300 | 32 | ◎ | ◎ |
| | 9 | | | Quenched & Tempered | 350 | 38 | ◎ | ◎ |
| | 10 | High alloyed steel, and tool steel | | Annealed | 200 | 15 | ○ | ○ |
| | 11 | | | Quenched & Tempered | 325 | 35 | ◎ | ◎ |
| M | 12 | Stainless steel | Ferritic / Martensitic | Annealed | 200 | 15 | | |
| | 13 | | Martensitic | Quenched & Tempered | 240 | 23 | | |
| | 14 | | Austenitic | | 180 | 10 | | |
| K | 15 | Grey cast iron | Pearlitic / ferritic | | 180 | 10 | ○ | ○ |
| | 16 | | Pearlitic (Martensitic) | | 260 | 26 | ○ | ○ |
| | 17 | Nodular cast iron | Ferritic | | 160 | 3 | ○ | ○ |
| | 18 | | Pearlitic | | 250 | 25 | ○ | ○ |
| | 19 | Malleable cast iron | Ferritic | | 130 | | ○ | ○ |
| | 20 | | Pearlitic | | 230 | 21 | ○ | ○ |
| N | 21 | Aluminum-wrought alloy | Not Curable | | 60 | | | |
| | 22 | | Curable | Hardened | 100 | | | |
| | 23 | Aluminum-cast, alloyed | ≤ 12% Si, Not Curable | | 75 | | | |
| | 24 | | ≤ 12% Si, Curable | Hardened | 90 | | | |
| | 25 | | > 12% Si, Not Curable | | 130 | | | |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | Cutting Alloys, PB>1% | | 110 | | | |
| | 27 | | CuZn, CuSnZn (Brass) | | 90 | | | |
| | 28 | | CuSn, lead-free copper and electrolytic copper | | 100 | | | |
| | 29 | Non Metallic Materials | Duroplastic, Fiber Reinforced Plastic | | | | | |
| | 30 | | Rubber, Wood, etc. | | | | | |
| S | 31 | Heat Resistant Super Alloys | Fe Based | Annealed | 200 | 15 | | |
| | 32 | | | Cured | 280 | 30 | | |
| | 33 | | Ni or Co Based | Annealed | 250 | 25 | | |
| | 34 | | | Cured | 350 | 38 | | |
| | 35 | | | Cast | 320 | 34 | | |
| | 36 | Titanium Alloys | Pure Titanium | | 400 Rm | | | |
| | 37 | | Alpha + Beta Alloys | Hardened | 1050 Rm | | | |
| H | 38 | Hardened steel | | Hardened | 550 | 55 | ○ | ○ |
| | 39 | | | Hardened | 630 | 60 | ○ | |
| | 40 | Chilled Cast Iron | | Cast | 400 | 42 | ◎ | ◎ |
| | 41 | Hardened Cast Iron | | Hardened | 550 | 55 | ○ | ○ |

| GMH37 | GMH38 | GMH33 | GMH34 | GMH35 | GMH36 | GMH39 | GM814 |
|---|---|---|---|---|---|---|---|
| 2 | 4 | 2 | 2 | 4 | 4 | 6 | 3&4 |
| 30° | 30° | 30° | 30° | 30° | 30° | 45° | 20° |
| CORNER RADIUS | CORNER RADIUS | SQUARE | SQUARE | SQUARE | SQUARE | SQUARE | ROUGHING |
| D3.0 | D3.0 | D1.0 | D0.4 | D1.0 | D2.0 | D6.0 | D6.0 |
| D12.0 | D12 | D20.0 | D4.0 | D20.0 | D20.0 | D16.0 | D20.0 |
| C327 | C328 | C329 | C330-331 | C332 | C333 | C334 | C335 |
| LONG LENGTH | LONG LENGTH | SHORT LENGTH | RIB PROCESSING | SHORT LENGTH | LONG LENGTH | LONG LENGTH | LONG LENGTH |
| Y-Coating | Y-Coating | Y-Coating | Y-Coating | Y-Coating | Y-Coating | Y-Coating | Y-Coating |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 1 | |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 2 | |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 3 | |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 4 | |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 5 | |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 6 | P |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 7 | |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 8 | |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 9 | |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 10 | |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 11 | |
| | ○ | ○ | | ○ | | | ○ | 12 | |
| | ○ | ○ | | ○ | | | ○ | 13 | M |
| | ○ | ○ | | ○ | | | ○ | 14 | |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 15 | |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 16 | |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 17 | |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 18 | K |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 19 | |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 20 | |
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| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 38 | |
| | | | | | | | | 39 | H |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 40 | |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 41 | |

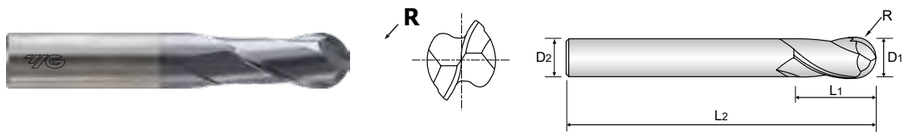
BALL NOSE = 球头　CORNER RADIUS = 圆鼻　SQUARE = 平头　ROUGHING = 粗加工
SHORT LENGTH = 短刃　LONG LENGTH = 长刃　RIB PROCESSING = 颈部加长

# X-POWER PRO END MILLS

PLAIN SHANK **GMH31** SERIES

## CARBIDE, 2 FLUTE SHORT LENGTH BALL NOSE
## 硬质合金，2刃 短刃 球头

- ▶ Economic type with short overall length.
- ▶ Radius tolerance ±0.02mm & short length of cut.
- ▶ 短全长的经济型系列
- ▶ 圆弧角 ±0.02mm，而短刃长




CARBIDE | 2 | 30° | R ±0.02 | PLAIN

p.C336-337

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| HYDRAULIC CHUCK | D15 - 46 |
| SHRINK FIT HOLDER | D47 - 72 |
| POWER MILLING CHUCK | D161 - 176 |
| ER COLLET CHUCK | D73 - 115 |
| SK SLIM CHUCK | D183 - 201 |

Unit(单位) : mm

| EDP No. | Radius of Ball Nose 圆弧角 R(±0.02) | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Overall Length 全长 L2 |
|---|---|---|---|---|---|
| GMH31002 | R0.1 | 0.2 | 4 | 0.4 | 50 |
| GMH31003 | R0.15 | 0.3 | 4 | 0.6 | 50 |
| GMH31004 | R0.2 | 0.4 | 4 | 0.8 | 50 |
| GMH31005 | R0.25 | 0.5 | 4 | 1 | 50 |
| GMH31006 | R0.3 | 0.6 | 4 | 1.2 | 50 |
| GMH31008 | R0.4 | 0.8 | 4 | 1.6 | 50 |
| GMH31010 | R0.5 | 1.0 | 4 | 2 | 50 |
| GMH31015 | R0.75 | 1.5 | 4 | 4 | 50 |
| GMH31020 | R1.0 | 2.0 | 4 | 5 | 50 |
| GMH31030 | R1.5 | 3.0 | 4 | 6 | 50 |
| GMH31901 | R1.5 | 3.0 | 6 | 6 | 50 |
| GMH31040 | R2.0 | 4.0 | 4 | 8 | 50 |
| GMH31902 | R2.0 | 4.0 | 6 | 9 | 50 |
| GMH31060 | R3.0 | 6.0 | 6 | 12 | 50 |
| GMH31080 | R4.0 | 8.0 | 8 | 14 | 60 |
| GMH31100 | R5.0 | 10.0 | 10 | 20 | 75 |
| GMH31120 | R6.0 | 12.0 | 12 | 24 | 75 |
| GMH31160 | R8.0 | 16.0 | 16 | 32 | 100 |
| GMH31200 | R10.0 | 20.0 | 20 | 40 | 100 |

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.03 | h5 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ○ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

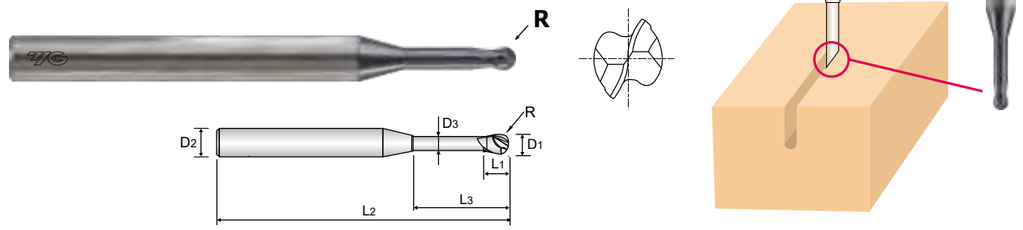
| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | ○ | ◎ | ○ |



# X-POWER PRO END MILLS

PLAIN SHANK **GMH32** SERIES

## CARBIDE, 2 FLUTE BALL NOSE for RIB PROCESSING
## 硬质合金，2刃 球头 深腔加工




CARBIDE | 2 | 30° | R ±0.01 | PLAIN

p.C338-339

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| HYDRAULIC CHUCK | D15 - 46 |
| SHRINK FIT HOLDER | D47 - 72 |
| POWER MILLING CHUCK | D161 - 176 |
| ER COLLET CHUCK | D73 - 115 |
| SK SLIM CHUCK | D183 - 201 |

Unit(单位) : mm

| EDP No. | Radius of Ball Nose 圆弧角 R(±0.01) | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Length Below Shank 颈长 L3 | Overall Length 全长 L2 | Neck Diameter 颈径 D3 |
|---|---|---|---|---|---|---|---|
| GMH32004 | R0.2 | 0.4 | 4 | 0.3 | 2 | 45 | 0.37 |
| GMH32901 | R0.2 | 0.4 | 4 | 0.3 | 3 | 45 | 0.37 |
| GMH32902 | R0.2 | 0.4 | 4 | 0.3 | 4 | 45 | 0.37 |
| GMH32005 | R0.25 | 0.5 | 4 | 0.4 | 2 | 45 | 0.45 |
| GMH32903 | R0.25 | 0.5 | 4 | 0.4 | 3 | 45 | 0.45 |
| GMH32904 | R0.25 | 0.5 | 4 | 0.4 | 4 | 45 | 0.45 |
| GMH32006 | R0.3 | 0.6 | 4 | 0.5 | 2 | 45 | 0.55 |
| GMH32905 | R0.3 | 0.6 | 4 | 0.5 | 3 | 45 | 0.55 |
| GMH32906 | R0.3 | 0.6 | 4 | 0.5 | 4 | 45 | 0.55 |
| GMH32907 | R0.3 | 0.6 | 4 | 0.5 | 6 | 45 | 0.55 |
| GMH32008 | R0.4 | 0.8 | 4 | 0.6 | 4 | 45 | 0.75 |
| GMH32908 | R0.4 | 0.8 | 4 | 0.6 | 6 | 45 | 0.75 |
| GMH32010 | R0.5 | 1.0 | 4 | 0.8 | 4 | 45 | 0.95 |
| GMH32909 | R0.5 | 1.0 | 4 | 0.8 | 6 | 45 | 0.95 |
| GMH32910 | R0.5 | 1.0 | 4 | 0.8 | 8 | 45 | 0.95 |
| GMH32911 | R0.5 | 1.0 | 4 | 0.8 | 10 | 45 | 0.95 |
| GMH32912 | R0.5 | 1.0 | 4 | 0.8 | 12 | 45 | 0.95 |
| GMH32913 | R0.5 | 1.0 | 4 | 0.8 | 16 | 50 | 0.95 |
| GMH32015 | R0.75 | 1.5 | 4 | 1.2 | 6 | 45 | 1.45 |
| GMH32914 | R0.75 | 1.5 | 4 | 1.2 | 8 | 45 | 1.45 |
| GMH32915 | R0.75 | 1.5 | 4 | 1.2 | 10 | 45 | 1.45 |
| GMH32916 | R0.75 | 1.5 | 4 | 1.2 | 12 | 45 | 1.45 |
| GMH32917 | R0.75 | 1.5 | 4 | 1.2 | 16 | 50 | 1.45 |

▶ NEXT PAGE 下页

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.02 | h5 |

◎ : Excellent (优秀) ○ : Good (良好)

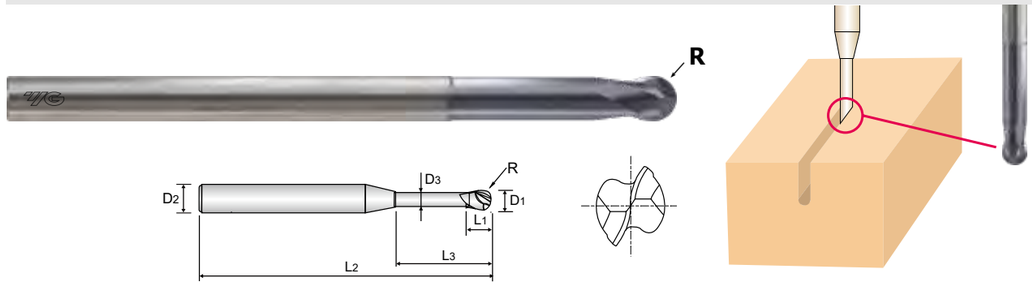
| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ○ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |

# X-POWER PRO END MILLS

PLAIN SHANK **GMH32** SERIES

## CARBIDE, 2 FLUTE BALL NOSE for RIB PROCESSING
## 硬质合金，2刃 球头 深腔加工




CARBIDE | 2 | 30° | R ±0.01 | PLAIN

p.C338-339

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| ◎ | HYDRAULIC CHUCK | D15 - 46 |
| ◎ | SHRINK FIT HOLDER | D47 - 72 |
| | POWER MILLING CHUCK | D161 - 176 |
| ○ | ER COLLET CHUCK | D73 - 115 |
| | SK SLIM CHUCK | D183 - 201 |

Unit(单位) : mm

| EDP No. | Radius of Ball Nose<br>圆弧角<br>R(±0.01) | Mill Diameter<br>直径<br>D1 | Shank Diameter<br>柄径<br>D2 | Length of Cut<br>刃长<br>L1 | Length Below Shank<br>颈长<br>L3 | Overall Length<br>全长<br>L2 | Neck Diameter<br>颈径<br>D3 |
|---|---|---|---|---|---|---|---|
| GMH32020 | R1.0 | 2.0 | 4 | 1.6 | 6 | 45 | 1.95 |
| GMH32918 | R1.0 | 2.0 | 4 | 1.6 | 8 | 45 | 1.95 |
| GMH32919 | R1.0 | 2.0 | 4 | 1.6 | 10 | 45 | 1.95 |
| GMH32920 | R1.0 | 2.0 | 4 | 1.6 | 12 | 50 | 1.95 |
| GMH32921 | R1.0 | 2.0 | 4 | 1.6 | 16 | 50 | 1.95 |
| GMH32922 | R1.0 | 2.0 | 4 | 1.6 | 20 | 55 | 1.95 |
| GMH32923 | R1.0 | 2.0 | 4 | 1.6 | 26 | 70 | 1.95 |
| GMH32924 | R1.0 | 2.0 | 4 | 1.6 | 30 | 70 | 1.95 |
| GMH32030 | R1.5 | 3.0 | 6 | 2.4 | 10 | 50 | 2.85 |
| GMH32925 | R1.5 | 3.0 | 6 | 2.4 | 12 | 50 | 2.85 |
| GMH32926 | R1.5 | 3.0 | 6 | 2.4 | 16 | 55 | 2.85 |
| GMH32927 | R1.5 | 3.0 | 6 | 2.4 | 20 | 60 | 2.85 |
| GMH32928 | R1.5 | 3.0 | 6 | 2.4 | 26 | 70 | 2.85 |
| GMH32040 | R2.0 | 4.0 | 6 | 3.2 | 16 | 60 | 3.85 |
| GMH32929 | R2.0 | 4.0 | 6 | 3.2 | 20 | 65 | 3.85 |
| GMH32930 | R2.0 | 4.0 | 6 | 3.2 | 26 | 70 | 3.85 |
| GMH32060 | R3.0 | 6.0 | 6 | 4.8 | 20 | 80 | 5.85 |
| GMH32931 | R3.0 | 6.0 | 6 | 4.8 | 30 | 90 | 5.85 |
| GMH32932 | R3.0 | 6.0 | 6 | 4.8 | 40 | 100 | 5.85 |

| Mill Dia.Tolerance (mm)<br>直径公差 | Shank Dia.Tolerance<br>柄径公差 |
|---|---|
| 0 ~ - 0.02 | h5 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ○ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |



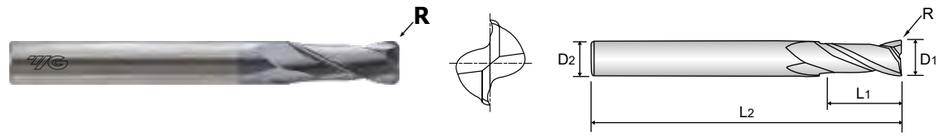
# X-POWER PRO END MILLS

PLAIN SHANK **GMH37** SERIES

## CARBIDE, 2 FLUTE LONG LENGTH CORNER RADIUS
## 硬质合金，2刃 长刃 圆鼻

- ▶ Designed to machine tool steels, alloy steels, mold steels and other hardened materials.
- ▶ Superior workpiece finishes.
- ▶ Increased feed rates.

- ▶ 使用于刀具钢,合金钢，模具钢和其他高硬材料
- ▶ 卓越工件表面粗糙度
- ▶ 可增加进给量




CARBIDE | 2 | 30° | PLAIN

p.C340

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| ◎ | HYDRAULIC CHUCK | D15 - 46 |
| ◎ | SHRINK FIT HOLDER | D47 - 72 |
| | POWER MILLING CHUCK | D161 - 176 |
| ○ | ER COLLET CHUCK | D73 - 115 |
| | SK SLIM CHUCK | D183 - 201 |

Unit(单位) : mm

| EDP No. | Corner Radius<br>圆弧角<br>R | Mill Diameter<br>直径<br>D1 | Shank Diameter<br>柄径<br>D2 | Length of Cut<br>刃长<br>L1 | Overall Length<br>全长<br>L2 |
|---|---|---|---|---|---|
| GMH37030 | R0.5 | 3.0 | 6 | 10 | 70 |
| GMH37040 | R0.5 | 4.0 | 6 | 12 | 70 |
| GMH37050 | R0.5 | 5.0 | 6 | 15 | 80 |
| GMH37060 | R0.5 | 6.0 | 6 | 15 | 90 |
| GMH37901 | R1.0 | 6.0 | 6 | 15 | 90 |
| GMH37080 | R0.5 | 8.0 | 8 | 20 | 100 |
| GMH37902 | R1.0 | 8.0 | 8 | 20 | 100 |
| GMH37100 | R0.5 | 10.0 | 10 | 25 | 100 |
| GMH37903 | R1.0 | 10.0 | 10 | 25 | 100 |
| GMH37120 | R1.0 | 12.0 | 12 | 30 | 110 |

| Mill Dia.Tolerance (mm)<br>直径公差 | Shank Dia.Tolerance<br>柄径公差 |
|---|---|
| 0 ~ - 0.03 | h5 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ○ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |

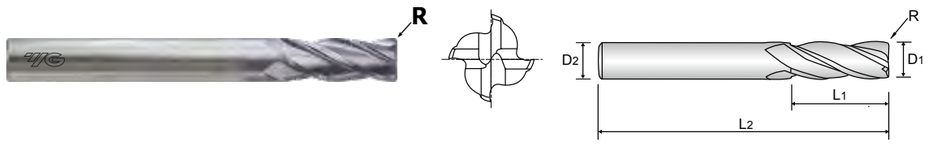
# X-POWER PRO END MILLS

PLAIN SHANK **GMH38** SERIES

## CARBIDE, 4 FLUTE LONG LENGTH CORNER RADIUS
## 硬质合金，4刃 长刃 圆鼻

- ▶ Designed to machine tool steels, alloy steels, mold steels and other hardened materials.
- ▶ 4 flute allows for better workpiece finishes.
- ▶ Increased production.

- ▶ 使用于刀具钢,合金钢，模具钢和其他高硬材料
- ▶ 4槽设计提高工件表面粗糙度
- ▶ 提高生产率




CARBIDE | 4 | 30° | PLAIN

p.C341

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| HYDRAULIC CHUCK | D15 - 46 |
| SHRINK FIT HOLDER | D47 - 72 |
| POWER MILLING CHUCK | D161 - 176 |
| ER COLLET CHUCK | D73 - 115 |
| SK SLIM CHUCK | D183 - 201 |

Unit(单位) : mm

| EDP No. | Corner Radius 圆弧角 R | Mill Diameter 直径 $D_1$ | Shank Diameter 柄径 $D_2$ | Length of Cut 刃长 $L_1$ | Overall Length 全长 $L_2$ |
|---|---|---|---|---|---|
| **GMH38030** | R0.2 | **3.0** | 6 | 10 | 70 |
| **GMH38901** | R0.5 | **3.0** | 6 | 10 | 70 |
| **GMH38040** | R0.3 | **4.0** | 6 | 12 | 70 |
| **GMH38902** | R0.5 | **4.0** | 6 | 12 | 70 |
| **GMH38050** | R0.5 | **5.0** | 6 | 15 | 80 |
| **GMH38060** | R0.2 | **6.0** | 6 | 15 | 90 |
| **GMH38903** | R0.5 | **6.0** | 6 | 15 | 90 |
| **GMH38904** | R1.0 | **6.0** | 6 | 15 | 90 |
| **GMH38080** | R0.5 | **8.0** | 8 | 20 | 100 |
| **GMH38905** | R1.0 | **8.0** | 8 | 20 | 100 |
| **GMH38906** | R2.0 | **8.0** | 8 | 20 | 100 |
| **GMH38100** | R0.5 | **10.0** | 10 | 25 | 100 |
| **GMH38907** | R1.0 | **10.0** | 10 | 25 | 100 |
| **GMH38908** | R2.0 | **10.0** | 10 | 25 | 100 |
| **GMH38120** | R0.5 | **12.0** | 12 | 30 | 110 |
| **GMH38909** | R1.0 | **12.0** | 12 | 30 | 110 |
| **GMH38910** | R2.0 | **12.0** | 12 | 30 | 110 |

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.03 | h5 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ○ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |



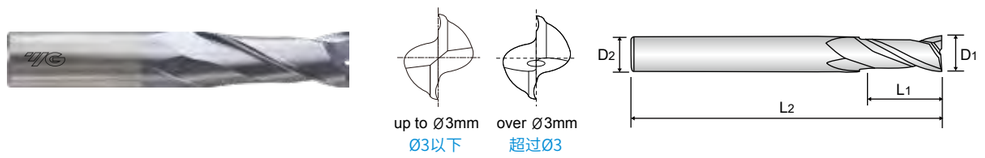
# X-POWER PRO END MILLS

PLAIN SHANK **GMH33** SERIES

## CARBIDE, 2 FLUTE SHORT LENGTH
## 硬质合金，2刃 短刃

- ▶ Designed to machine tool steels, alloy steels, mold steels and other hardened materials.
- ▶ Superior workpiece finishes.
- ▶ Increased feed rates.

- ▶ 使用于刀具钢,合金钢，模具钢和其他高硬材料
- ▶ 卓越工件表面粗糙度
- ▶ 可增加进给量




CARBIDE | 2 | 30° | PLAIN

p.C344

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| HYDRAULIC CHUCK | D15 - 46 |
| SHRINK FIT HOLDER | D47 - 72 |
| POWER MILLING CHUCK | D161 - 176 |
| ER COLLET CHUCK | D73 - 115 |
| SK SLIM CHUCK | D183 - 201 |

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 $D_1$ | Shank Diameter 柄径 $D_2$ | Length of Cut 刃长 $L_1$ | Overall Length 全长 $L_2$ |
|---|---|---|---|---|
| **GMH33010** | **1.0** | 4 | 3 | 50 |
| **GMH33015** | **1.5** | 4 | 4 | 50 |
| **GMH33020** | **2.0** | 4 | 6 | 50 |
| **GMH33025** | **2.5** | 4 | 8 | 50 |
| **GMH33030** | **3.0** | 4 | 8 | 50 |
| **GMH33901** | **3.0** | 6 | 8 | 50 |
| **GMH33040** | **4.0** | 4 | 11 | 50 |
| **GMH33902** | **4.0** | 6 | 11 | 50 |
| **GMH33050** | **5.0** | 6 | 13 | 50 |
| **GMH33060** | **6.0** | 6 | 16 | 50 |
| **GMH33080** | **8.0** | 8 | 20 | 60 |
| **GMH33100** | **10.0** | 10 | 25 | 75 |
| **GMH33120** | **12.0** | 12 | 32 | 75 |
| **GMH33160** | **16.0** | 16 | 40 | 100 |
| **GMH33200** | **20.0** | 20 | 45 | 100 |

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.03 | h5 |

◎ : Excellent (优秀) ○ : Good (良好)

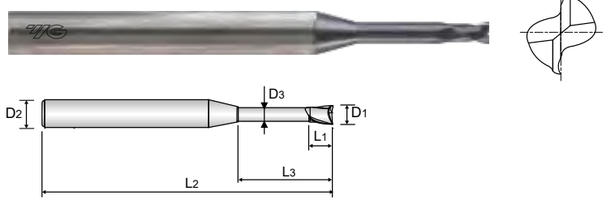
| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ○ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

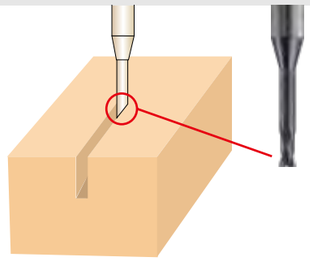
| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |

# X-POWER PRO END MILLS

PLAIN SHANK **GMH34** SERIES

## CARBIDE, 2 FLUTE for RIB PROCESSING
## 硬质合金，2刃 深腔加工



CARBIDE | 2 | 30° | PLAIN | p.C342-343

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| HYDRAULIC CHUCK | D15 - 46 |
| SHRINK FIT HOLDER | D47 - 72 |
| POWER MILLING CHUCK | D161 - 176 |
| ER COLLET CHUCK | D73 - 115 |
| SK SLIM CHUCK | D183 - 201 |

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Length Below Shank 颈长 L3 | Overall Length 全长 L2 | Neck Diameter 颈径 D3 |
|---|---|---|---|---|---|---|
| GMH34004 | 0.4 | 4 | 0.6 | 2 | 45 | 0.37 |
| GMH34005 | 0.5 | 4 | 0.7 | 2 | 45 | 0.45 |
| GMH34901 | 0.5 | 4 | 0.7 | 4 | 45 | 0.45 |
| GMH34006 | 0.6 | 4 | 0.9 | 2 | 45 | 0.55 |
| GMH34007 | 0.7 | 4 | 1 | 2 | 45 | 0.65 |
| GMH34008 | 0.8 | 4 | 1.2 | 4 | 45 | 0.75 |
| GMH34902 | 0.8 | 4 | 1.2 | 6 | 45 | 0.75 |
| GMH34010 | 1.0 | 4 | 1.5 | 4 | 45 | 0.95 |
| GMH34903 | 1.0 | 4 | 1.5 | 6 | 45 | 0.95 |
| GMH34904 | 1.0 | 4 | 1.5 | 8 | 45 | 0.95 |
| GMH34905 | 1.0 | 4 | 1.5 | 10 | 45 | 0.95 |
| GMH34906 | 1.0 | 4 | 1.5 | 12 | 45 | 0.95 |
| GMH34907 | 1.0 | 4 | 1.5 | 16 | 50 | 0.95 |
| GMH34012 | 1.2 | 4 | 1.8 | 4 | 45 | 1.15 |
| GMH34908 | 1.2 | 4 | 1.8 | 6 | 45 | 1.15 |
| GMH34015 | 1.5 | 4 | 2.3 | 6 | 45 | 1.45 |
| GMH34909 | 1.5 | 4 | 2.3 | 8 | 45 | 1.45 |
| GMH34910 | 1.5 | 4 | 2.3 | 10 | 45 | 1.45 |
| GMH34911 | 1.5 | 4 | 2.3 | 12 | 45 | 1.45 |
| GMH34912 | 1.5 | 4 | 2.3 | 16 | 50 | 1.45 |
| GMH34913 | 1.5 | 4 | 2.3 | 20 | 55 | 1.45 |

▶ NEXT PAGE 下页

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ -0.015 | h5 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ○ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |

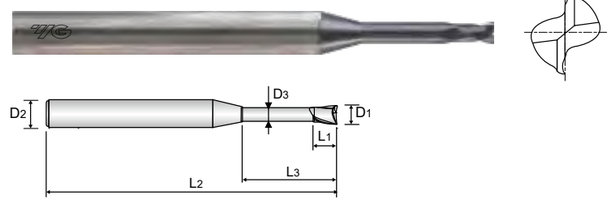


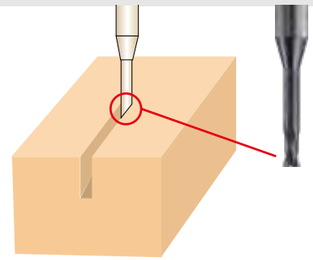
CARBIDE
HSS
CBN END MILLS
i-Xmill END MILLS
i-SMART MODULAR END MILLS
X5070 END MILLS
4G MILL END MILLS
X-POWER PRO END MILLS
TitaNox-POWER END MILLS
SUS-CUT END MILLS
V7 PLUS END MILLS
ALU-POWER HPC END MILLS
ALU-CUT END MILLS
G-CUT
CRX S END MILLS
K-2 END MILLS
GENERAL CARBIDE END MILLS
ONLY ONE COATED PM60 END MILLS
TANK-POWER END MILLS
GENERAL HSS END MILLS
MILLING CUTTERS
TECHNICAL DATA

# X-POWER PRO END MILLS

PLAIN SHANK **GMH34** SERIES

## CARBIDE, 2 FLUTE for RIB PROCESSING
## 硬质合金，2刃 深腔加工



CARBIDE | 2 | 30° | PLAIN | p.C342-343

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| HYDRAULIC CHUCK | D15 - 46 |
| SHRINK FIT HOLDER | D47 - 72 |
| POWER MILLING CHUCK | D161 - 176 |
| ER COLLET CHUCK | D73 - 115 |
| SK SLIM CHUCK | D183 - 201 |

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Length Below Shank 颈长 L3 | Overall Length 全长 L2 | Neck Diameter 颈径 D3 |
|---|---|---|---|---|---|---|
| GMH34020 | 2.0 | 4 | 3 | 6 | 45 | 1.95 |
| GMH34914 | 2.0 | 4 | 3 | 8 | 45 | 1.95 |
| GMH34915 | 2.0 | 4 | 3 | 10 | 45 | 1.95 |
| GMH34916 | 2.0 | 4 | 3 | 12 | 45 | 1.95 |
| GMH34917 | 2.0 | 4 | 3 | 14 | 50 | 1.95 |
| GMH34918 | 2.0 | 4 | 3 | 16 | 50 | 1.95 |
| GMH34919 | 2.0 | 4 | 3 | 20 | 55 | 1.95 |
| GMH34920 | 2.0 | 4 | 3 | 26 | 60 | 1.95 |
| GMH34921 | 2.0 | 4 | 3 | 30 | 70 | 1.95 |
| GMH34030 | 3.0 | 6 | 4.5 | 12 | 50 | 2.85 |
| GMH34922 | 3.0 | 6 | 4.5 | 16 | 55 | 2.85 |
| GMH34923 | 3.0 | 6 | 4.5 | 26 | 70 | 2.85 |
| GMH34040 | 4.0 | 6 | 6 | 16 | 60 | 3.85 |
| GMH34924 | 4.0 | 6 | 6 | 26 | 70 | 3.85 |

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ -0.015 | h5 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ○ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |

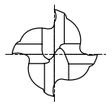
# X-POWER PRO END MILLS

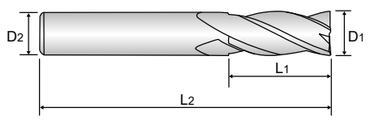
PLAIN SHANK **GMH35** SERIES

## CARBIDE, 4 FLUTE SHORT LENGTH
## 硬质合金，4刃 短刃

- ▶ Designed to machine tool steels, alloy steels, mold steels and other hardened materials.
- ▶ 4 flute allows for better workpiece finishes.
- ▶ Increased production.

- ▶ 使用于刀具钢,合金钢，模具钢和其他高硬材料
- ▶ 4槽设计提高工件表面粗糙度
- ▶ 提高生产率






CARBIDE | 4 | 30° | PLAIN | p.C345

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| ◎ | HYDRAULIC CHUCK | D15 - 46 |
| ◎ | SHRINK FIT HOLDER | D47 - 72 |
| | POWER MILLING CHUCK | D161 - 176 |
| ○ | ER COLLET CHUCK | D73 - 115 |
| | SK SLIM CHUCK | D183 - 201 |

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Overall Length 全长 L2 |
|---|---|---|---|---|
| GMH35010 | 1.0 | 4 | 3 | 50 |
| GMH35015 | 1.5 | 4 | 4 | 50 |
| GMH35020 | 2.0 | 4 | 6 | 50 |
| GMH35025 | 2.5 | 4 | 8 | 50 |
| GMH35030 | 3.0 | 4 | 8 | 50 |
| GMH35901 | 3.0 | 6 | 8 | 50 |
| GMH35040 | 4.0 | 4 | 11 | 50 |
| GMH35902 | 4.0 | 6 | 11 | 50 |
| GMH35050 | 5.0 | 6 | 13 | 50 |
| GMH35060 | 6.0 | 6 | 16 | 50 |
| GMH35080 | 8.0 | 8 | 20 | 60 |
| GMH35100 | 10.0 | 10 | 25 | 75 |
| GMH35120 | 12.0 | 12 | 32 | 75 |
| GMH35160 | 16.0 | 16 | 40 | 100 |
| GMH35200 | 20.0 | 20 | 45 | 100 |

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.03 | h5 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ○ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |



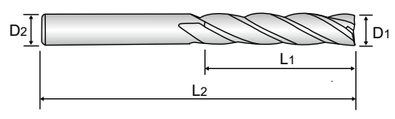
# X-POWER PRO END MILLS

PLAIN SHANK **GMH36** SERIES

## CARBIDE, 4 FLUTE LONG LENGTH
## 硬质合金，4刃 长刃

- ▶ Designed to machine tool steels, alloy steels, mold steels and other hardened materials.
- ▶ 4 flute allows for better workpiece finishes.
- ▶ Increased production.

- ▶ 使用于刀具钢,合金钢，模具钢和其他高硬材料
- ▶ 4槽设计提高工件表面粗糙度
- ▶ 提高生产率




CARBIDE | 4 | 30° | PLAIN | p.C346

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| ◎ | HYDRAULIC CHUCK | D15 - 46 |
| ◎ | SHRINK FIT HOLDER | D47 - 72 |
| | POWER MILLING CHUCK | D161 - 176 |
| ○ | ER COLLET CHUCK | D73 - 115 |
| | SK SLIM CHUCK | D183 - 201 |

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Overall Length 全长 L2 |
|---|---|---|---|---|
| GMH36020 | 2.0 | 4 | 10 | 50 |
| GMH36030 | 3.0 | 4 | 15 | 60 |
| GMH36901 | 3.0 | 6 | 15 | 60 |
| GMH36040 | 4.0 | 4 | 20 | 60 |
| GMH36902 | 4.0 | 6 | 20 | 60 |
| GMH36050 | 5.0 | 6 | 25 | 75 |
| GMH36060 | 6.0 | 6 | 30 | 75 |
| GMH36080 | 8.0 | 8 | 35 | 100 |
| GMH36100 | 10.0 | 10 | 45 | 100 |
| GMH36120 | 12.0 | 12 | 45 | 100 |
| GMH36160 | 16.0 | 16 | 70 | 150 |
| GMH36200 | 20.0 | 20 | 75 | 150 |

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.03 | h5 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ○ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |

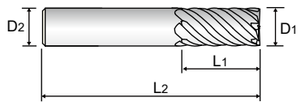
# X-POWER PRO END MILLS

PLAIN SHANK **GMH39** SERIES

## CARBIDE, 6 FLUTE 45° HELIX LONG LENGTH
## 硬质合金，6刃 45度螺旋 长刃

- ▶ Designed to machine hardened materials.
- ▶ High speed cutting and finish milling with high feed rates.
- ▶ Superior workpiece finishes.
- ▶ Superior wear resistant.
- ▶ Suitable for dry and wet milling.

- ▶ 用于加工高硬度材料
- ▶ 高速加工和精铣削
- ▶ 卓越工件表面粗糙度
- ▶ 卓越耐磨性
- ▶ 可用在干切削和湿切削




CARBIDE | 6 | 45° | PLAIN | p.C347

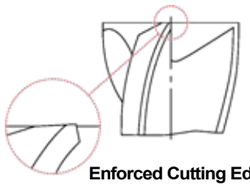
Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| ◎ | HYDRAULIC CHUCK | D15 - 46 |
| ◎ | SHRINK FIT HOLDER | D47 - 72 |
| | POWER MILLING CHUCK | D161 - 176 |
| ○ | ER COLLET CHUCK | D73 - 115 |
| | SK SLIM CHUCK | D183 - 201 |

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Overall Length 全长 L2 |
|---|---|---|---|---|
| GMH39060 | 6.0 | 6 | 16 | 50 |
| GMH39080 | 8.0 | 8 | 19 | 60 |
| GMH39100 | 10.0 | 10 | 22 | 75 |
| GMH39120 | 12.0 | 12 | 26 | 75 |
| GMH39160 | 16.0 | 16 | 32 | 100 |

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ -0.03 | h5 |



**Enforced Cutting Edge**
刃线保护处理

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ○ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |





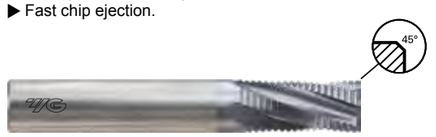
# X-POWER PRO END MILLS

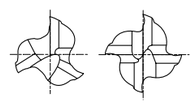
PLAIN SHANK **GM814** SERIES

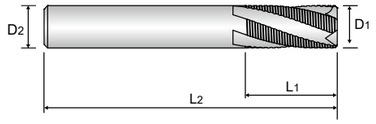
## CARBIDE, 3&4 FLUTE 20° HELIX LONG LENGTH ROUGHING - FINE
## 硬质合金，3&4刃 20度螺旋 长刃 粗加工 - 细牙

- ▶ Designed to machine tool steels, alloy steels, mold steels and other hardened materials.
- ▶ High velocity milling of hardened steels.
- ▶ For dry and wet milling.
- ▶ Fast chip ejection.

- ▶ 用于工具钢，合金钢，模具钢和其他高硬度材料
- ▶ 高硬钢上高进给铣削
- ▶ 可用在干切削和湿切削
- ▶ 快速排屑






CARBIDE | HR | 3&4 | 20° | PLAIN | C x 45° | p.C348

Recommended ToolHolder

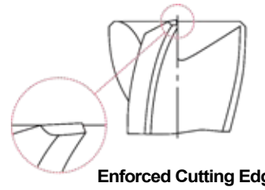
| | Plain Shank | Page |
|---|---|---|
| ◎ | HYDRAULIC CHUCK | D15 - 46 |
| ◎ | SHRINK FIT HOLDER | D47 - 72 |
| | POWER MILLING CHUCK | D161 - 176 |
| ○ | ER COLLET CHUCK | D73 - 115 |
| | SK SLIM CHUCK | D183 - 201 |

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Overall Length 全长 L2 | No. of Flute 槽数 | Chamfer 导向 |
|---|---|---|---|---|---|---|
| GM814060 | 6.0 | 6 | 16 | 57 | 3 | 0.38 |
| GM814080 | 8.0 | 8 | 16 | 63 | 3 | 0.38 |
| GM814100 | 10.0 | 10 | 22 | 72 | 4 | 0.60 |
| GM814120 | 12.0 | 12 | 26 | 83 | 4 | 0.60 |
| GM814160 | 16.0 | 16 | 32 | 92 | 4 | 0.60 |
| GM814200 | 20.0 | 20 | 38 | 104 | 4 | 0.60 |

**Tolerances according to DIN 7160 & 7161**
按DIN7160&7161的标准公差

| Tolerance range in μm / 公差单位为 | | | |
|---|---|---|---|
| Nominal-Diameter in mm / 直径单位为 | | | |
| | over 6 to 10 6~10 | over 10 to 18 10~18 | over 18 to 30 18~30 |
| h10 | 0 | 0 | 0 |
| | - 58 | - 70 | - 84 |
| h5 | 0 | 0 | 0 |
| | - 6 | - 8 | - 9 |



**Enforced Cutting Edge**
刃线保护处理

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ○ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |

# X-POWER PRO END MILLS

# RECOMMENDED CUTTING CONDITIONS
# 推荐加工参数

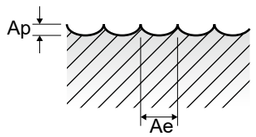
## GMH31 SERIES 2 FLUTE BALL NOSE 2刃 球头

### NORMAL SPEED 普通速度

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)
Ap (切削深度) = (mm)

| ISO | VDI 3323 | Material Description 工件材料 | Ae(mm) 切削宽度 | Parameter 参数 | Diameter (Ø) 直径 1.0 | 1.5 | 2.0 | 2.5 | 3.0 | 4.0 | 5.0 | 6.0 | 8.0 | 10.0 | 12.0 | 16.0 | 20.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1-4 | Non-alloy steel | 0.2D | Vc | 55 | 85 | 100 | 125 | 140 | 150 | 160 | 180 | 200 | 225 | 245 | 270 | 290 |
| | | | | fz | 0.008 | 0.011 | 0.026 | 0.026 | 0.026 | 0.035 | 0.045 | 0.06 | 0.09 | 0.12 | 0.15 | 0.18 | 0.2 |
| | | | | RPM | 17507 | 18038 | 15915 | 15915 | 14854 | 11937 | 10186 | 9549 | 7958 | 7162 | 6499 | 5371 | 4615 |
| | | | | FEED | 280 | 397 | 828 | 828 | 772 | 836 | 917 | 1146 | 1432 | 1719 | 1950 | 1934 | 1846 |
| | | | | Ap | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 |
| | 5 | | 0.2D | Vc | 45 | 65 | 75 | 95 | 105 | 120 | 130 | 145 | 160 | 180 | 195 | 215 | 230 |
| | | | | fz | 0.008 | 0.011 | 0.023 | 0.023 | 0.023 | 0.032 | 0.040 | 0.060 | 0.080 | 0.100 | 0.120 | 0.140 | 0.160 |
| | | | | RPM | 14324 | 13793 | 11937 | 12096 | 11141 | 9549 | 8276 | 7692 | 6366 | 5730 | 5173 | 4277 | 3661 |
| | | | | FEED | 229 | 303 | 549 | 556 | 512 | 611 | 662 | 923 | 1019 | 1146 | 1241 | 1198 | 1171 |
| | | | | Ap | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 |
| | 6-7 | Low alloy steel | 0.2D | Vc | 55 | 85 | 100 | 125 | 140 | 150 | 160 | 180 | 200 | 225 | 245 | 270 | 290 |
| | | | | fz | 0.008 | 0.011 | 0.026 | 0.026 | 0.026 | 0.035 | 0.045 | 0.06 | 0.09 | 0.12 | 0.15 | 0.18 | 0.2 |
| | | | | RPM | 17507 | 18038 | 15915 | 15915 | 14854 | 11937 | 10186 | 9549 | 7958 | 7162 | 6499 | 5371 | 4615 |
| | | | | FEED | 280 | 397 | 828 | 828 | 772 | 836 | 917 | 1146 | 1432 | 1719 | 1950 | 1934 | 1846 |
| | | | | Ap | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 |
| | 8-9 | | 0.2D | Vc | 45 | 65 | 75 | 95 | 105 | 120 | 130 | 145 | 160 | 180 | 195 | 215 | 230 |
| | | | | fz | 0.008 | 0.011 | 0.023 | 0.023 | 0.023 | 0.032 | 0.040 | 0.060 | 0.080 | 0.100 | 0.120 | 0.140 | 0.160 |
| | | | | RPM | 14324 | 13793 | 11937 | 12096 | 11141 | 9549 | 8276 | 7692 | 6366 | 5730 | 5173 | 4277 | 3661 |
| | | | | FEED | 229 | 303 | 549 | 556 | 512 | 611 | 662 | 923 | 1019 | 1146 | 1241 | 1198 | 1171 |
| | | | | Ap | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 |
| | 10 | High alloyed steel, and tool steel | 0.2D | Vc | 55 | 85 | 100 | 125 | 140 | 150 | 160 | 180 | 200 | 225 | 245 | 270 | 290 |
| | | | | fz | 0.008 | 0.011 | 0.026 | 0.026 | 0.026 | 0.035 | 0.045 | 0.06 | 0.09 | 0.12 | 0.15 | 0.18 | 0.2 |
| | | | | RPM | 17507 | 18038 | 15915 | 15915 | 14854 | 11937 | 10186 | 9549 | 7958 | 7162 | 6499 | 5371 | 4615 |
| | | | | FEED | 280 | 397 | 828 | 828 | 772 | 836 | 917 | 1146 | 1432 | 1719 | 1950 | 1934 | 1846 |
| | | | | Ap | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 |
| | 11.1 - 11.2 | | 0.2D | Vc | 45 | 65 | 75 | 95 | 105 | 120 | 130 | 145 | 160 | 180 | 195 | 215 | 230 |
| | | | | fz | 0.008 | 0.011 | 0.023 | 0.023 | 0.023 | 0.032 | 0.040 | 0.060 | 0.080 | 0.100 | 0.120 | 0.140 | 0.160 |
| | | | | RPM | 14324 | 13793 | 11937 | 12096 | 11141 | 9549 | 8276 | 7692 | 6366 | 5730 | 5173 | 4277 | 3661 |
| | | | | FEED | 229 | 303 | 549 | 556 | 512 | 611 | 662 | 923 | 1019 | 1146 | 1241 | 1198 | 1171 |
| | | | | Ap | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 |
| K | 15-20 | Grey cast iron Nodular cast iron Malleable cast iron | 0.2D | Vc | 55 | 80 | 100 | 125 | 135 | 145 | 160 | 180 | 200 | 220 | 245 | 265 | 290 |
| | | | | fz | 0.008 | 0.011 | 0.026 | 0.026 | 0.026 | 0.035 | 0.045 | 0.06 | 0.09 | 0.12 | 0.15 | 0.181 | 0.201 |
| | | | | RPM | 17507 | 16977 | 15915 | 15915 | 14324 | 11539 | 10186 | 9549 | 7958 | 7003 | 6499 | 5272 | 4615 |
| | | | | FEED | 280 | 373 | 828 | 828 | 745 | 808 | 917 | 1146 | 1432 | 1681 | 1950 | 1908 | 1855 |
| | | | | Ap | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 |
| H | 38.1 - 38.2 | Hardened steel | 0.1D | Vc | 20 | 30 | 35 | 40 | 50 | 60 | 65 | 65 | 70 | 70 | 75 | 75 | 80 |
| | | | | fz | 0.008 | 0.011 | 0.016 | 0.016 | 0.017 | 0.021 | 0.024 | 0.030 | 0.044 | 0.055 | 0.070 | 0.091 | 0.113 |
| | | | | RPM | 6366 | 6366 | 5570 | 5093 | 5305 | 4775 | 4138 | 3448 | 2785 | 2228 | 1989 | 1492 | 1273 |
| | | | | FEED | 102 | 140 | 178 | 163 | 180 | 201 | 199 | 207 | 245 | 245 | 279 | 272 | 288 |
| | | | | Ap | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 |
| | 40 | Chilled Cast Iron | 0.2D | Vc | 45 | 65 | 75 | 95 | 105 | 120 | 130 | 145 | 160 | 180 | 195 | 215 | 230 |
| | | | | fz | 0.008 | 0.011 | 0.023 | 0.023 | 0.023 | 0.032 | 0.040 | 0.060 | 0.080 | 0.100 | 0.120 | 0.140 | 0.160 |
| | | | | RPM | 14324 | 13793 | 11937 | 12096 | 11141 | 9549 | 8276 | 7692 | 6366 | 5730 | 5173 | 4277 | 3661 |
| | | | | FEED | 229 | 303 | 549 | 556 | 512 | 611 | 662 | 923 | 1019 | 1146 | 1241 | 1198 | 1171 |
| | | | | Ap | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 |
| | 41 | Hardened Cast Iron | 0.1D | Vc | 20 | 30 | 35 | 40 | 50 | 60 | 65 | 65 | 70 | 70 | 75 | 75 | 80 |
| | | | | fz | 0.008 | 0.011 | 0.016 | 0.016 | 0.017 | 0.021 | 0.024 | 0.030 | 0.044 | 0.055 | 0.070 | 0.091 | 0.113 |
| | | | | RPM | 6366 | 6366 | 5570 | 5093 | 5305 | 4775 | 4138 | 3448 | 2785 | 2228 | 1989 | 1492 | 1273 |
| | | | | FEED | 102 | 140 | 178 | 163 | 180 | 201 | 199 | 207 | 245 | 245 | 279 | 272 | 288 |
| | | | | Ap | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 |

▶ NEXT PAGE 下页





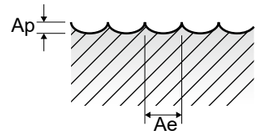

X-POWER PRO END MILLS
RECOMMENDED CUTTING CONDITIONS
推荐加工参数

## GMH31 SERIES 2 FLUTE BALL NOSE 2刃 球头

### HIGH SPEED 高速度

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)
Ap (切削深度) = (mm)

| ISO | VDI 3323 | Material Description 工件材料 | Ae(mm) 切削宽度 | Parameter 参数 | Diameter (Ø) 直径 1.0 | 1.5 | 2.0 | 2.5 | 3.0 | 4.0 | 5.0 | 6.0 | 8.0 | 10.0 | 12.0 | 16.0 | 20.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1-5 | Non-alloy steel | 0.05D | Vc | 90 | 120 | 150 | 185 | 220 | 295 | 370 | 445 | 470 | 495 | 515 | 540 | 560 |
| | | | | fz | 0.026 | 0.030 | 0.035 | 0.042 | 0.048 | 0.070 | 0.086 | 0.095 | 0.120 | 0.139 | 0.160 | 0.181 | 0.200 |
| | | | | RPM | 28648 | 25465 | 23873 | 23555 | 23343 | 23475 | 23555 | 23608 | 18701 | 15756 | 13661 | 10743 | 8913 |
| | | | | FEED | 1490 | 1528 | 1671 | 1979 | 2241 | 3287 | 4051 | 4486 | 4488 | 4380 | 4371 | 3889 | 3565 |
| | | | | Ap | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 |
| | 6-9 | Low alloy steel | 0.05D | Vc | 90 | 120 | 150 | 185 | 220 | 295 | 370 | 445 | 470 | 495 | 515 | 540 | 560 |
| | | | | fz | 0.026 | 0.030 | 0.035 | 0.042 | 0.048 | 0.070 | 0.086 | 0.095 | 0.120 | 0.139 | 0.160 | 0.181 | 0.200 |
| | | | | RPM | 28648 | 25465 | 23873 | 23555 | 23343 | 23475 | 23555 | 23608 | 18701 | 15756 | 13661 | 10743 | 8913 |
| | | | | FEED | 1490 | 1528 | 1671 | 1979 | 2241 | 3287 | 4051 | 4486 | 4488 | 4380 | 4371 | 3889 | 3565 |
| | | | | Ap | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 |
| | 10 - 11.2 | High alloyed steel, and tool steel | 0.05D | Vc | 90 | 120 | 150 | 185 | 220 | 295 | 370 | 445 | 470 | 495 | 515 | 540 | 560 |
| | | | | fz | 0.026 | 0.030 | 0.035 | 0.042 | 0.048 | 0.070 | 0.086 | 0.095 | 0.120 | 0.139 | 0.160 | 0.181 | 0.200 |
| | | | | RPM | 28648 | 25465 | 23873 | 23555 | 23343 | 23475 | 23555 | 23608 | 18701 | 15756 | 13661 | 10743 | 8913 |
| | | | | FEED | 1490 | 1528 | 1671 | 1979 | 2241 | 3287 | 4051 | 4486 | 4488 | 4380 | 4371 | 3889 | 3565 |
| | | | | Ap | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 |
| K | 15-20 | Grey cast iron Nodular cast iron Malleable cast iron | 0.05D | Vc | 90 | 120 | 150 | 185 | 220 | 295 | 370 | 445 | 470 | 495 | 515 | 540 | 560 |
| | | | | fz | 0.026 | 0.030 | 0.035 | 0.042 | 0.048 | 0.070 | 0.086 | 0.095 | 0.120 | 0.139 | 0.160 | 0.181 | 0.200 |
| | | | | RPM | 28648 | 25465 | 23873 | 23555 | 23343 | 23475 | 23555 | 23608 | 18701 | 15756 | 13661 | 10743 | 8913 |
| | | | | FEED | 1490 | 1528 | 1671 | 1979 | 2241 | 3287 | 4051 | 4486 | 4488 | 4380 | 4371 | 3889 | 3565 |
| | | | | Ap | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 |
| H | 38.1 - 38.2 | Hardened steel | 0.05D | Vc | 90 | 120 | 150 | 165 | 180 | 190 | 210 | 220 | 235 | 245 | 255 | 270 | 280 |
| | | | | fz | 0.016 | 0.019 | 0.022 | 0.026 | 0.031 | 0.042 | 0.050 | 0.060 | 0.075 | 0.086 | 0.095 | 0.105 | 0.115 |
| | | | | RPM | 28648 | 25465 | 23873 | 21008 | 19099 | 15120 | 13369 | 11671 | 9350 | 7799 | 6764 | 5371 | 4456 |
| | | | | FEED | 917 | 968 | 1050 | 1092 | 1184 | 1270 | 1337 | 1401 | 1403 | 1341 | 1285 | 1128 | 1025 |
| | | | | Ap | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 |
| | 40 | Chilled Cast Iron | 0.05D | Vc | 90 | 120 | 150 | 185 | 220 | 295 | 370 | 445 | 470 | 495 | 515 | 540 | 560 |
| | | | | fz | 0.026 | 0.030 | 0.035 | 0.042 | 0.048 | 0.070 | 0.086 | 0.095 | 0.120 | 0.139 | 0.160 | 0.181 | 0.200 |
| | | | | RPM | 28648 | 25465 | 23873 | 23555 | 23343 | 23475 | 23555 | 23608 | 18701 | 15756 | 13661 | 10743 | 8913 |
| | | | | FEED | 1490 | 1528 | 1671 | 1979 | 2241 | 3287 | 4051 | 4486 | 4488 | 4380 | 4371 | 3889 | 3565 |
| | | | | Ap | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 |
| | 41 | Hardened Cast Iron | 0.05D | Vc | 90 | 120 | 150 | 165 | 180 | 190 | 210 | 220 | 235 | 245 | 255 | 270 | 280 |
| | | | | fz | 0.016 | 0.019 | 0.022 | 0.026 | 0.031 | 0.042 | 0.050 | 0.060 | 0.075 | 0.086 | 0.095 | 0.105 | 0.115 |
| | | | | RPM | 28648 | 25465 | 23873 | 21008 | 19099 | 15120 | 13369 | 11671 | 9350 | 7799 | 6764 | 5371 | 4456 |
| | | | | FEED | 917 | 968 | 1050 | 1092 | 1184 | 1270 | 1337 | 1401 | 1403 | 1341 | 1285 | 1128 | 1025 |
| | | | | Ap | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 |



# X-POWER PRO END MILLS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

### GMH32 SERIES — 2 FLUTE BALL NOSE - RIB PROCESSING
### 2刃 球头 - 深腔加工

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)
Ap (切削深度) = (mm)

| ISO | VDI 3323 | Material Description 工件材料 | Parameter 参数 | Diameter (Ø) 直径 0.4 | 0.5 | 0.6 | 0.8 |
|---|---|---|---|---|---|---|---|
| P | 1-4 | Non-alloy steel | Vc | 41~53 | 49~63 | 58~75 | 78~101 |
| | | | fz | 0.003~0.006 | 0.003~0.006 | 0.004~0.008 | 0.004~0.008 |
| | | | RPM | 32550~42000 | 32550~42000 | 32550~42000 | 32550~42000 |
| | | | FEED | 185~515 | 185~515 | 235~660 | 235~660 |
| | | | Ap | 0.019~0.035 | 0.023~0.045 | 0.027~0.054 | 0.036~0.072 |
| | 5 | | Vc | 30~38 | 35~45 | 42~54 | 57~72 |
| | | | fz | 0.002~0.005 | 0.002~0.005 | 0.002~0.006 | 0.002~0.006 |
| | | | RPM | 23630~29930 | 23630~29930 | 23630~29930 | 23630~29930 |
| | | | FEED | 90~285 | 90~285 | 115~370 | 115~370 |
| | | | Ap | 0.019~0.036 | 0.023~0.045 | 0.027~0.054 | 0.036~0.072 |
| | 6-7 | Low alloy steel | Vc | 41~53 | 49~63 | 58~75 | 78~101 |
| | | | fz | 0.003~0.006 | 0.003~0.006 | 0.004~0.008 | 0.004~0.008 |
| | | | RPM | 32550~42000 | 32550~42000 | 32550~42000 | 32550~42000 |
| | | | FEED | 185~515 | 185~515 | 235~660 | 235~660 |
| | | | Ap | 0.019~0.035 | 0.023~0.045 | 0.027~0.054 | 0.036~0.072 |
| | 8-9 | | Vc | 30~38 | 35~45 | 42~54 | 57~72 |
| | | | fz | 0.002~0.005 | 0.002~0.005 | 0.002~0.006 | 0.002~0.006 |
| | | | RPM | 23630~29930 | 23630~29930 | 23630~29930 | 23630~29930 |
| | | | FEED | 90~285 | 90~285 | 115~370 | 115~370 |
| | | | Ap | 0.019~0.036 | 0.023~0.045 | 0.027~0.054 | 0.036~0.072 |
| | 10 | High alloyed steel, and tool steel | Vc | 41~53 | 49~63 | 58~75 | 78~101 |
| | | | fz | 0.003~0.006 | 0.003~0.006 | 0.004~0.008 | 0.004~0.008 |
| | | | RPM | 32550~42000 | 32550~42000 | 32550~42000 | 32550~42000 |
| | | | FEED | 185~515 | 185~515 | 235~660 | 235~660 |
| | | | Ap | 0.019~0.035 | 0.023~0.045 | 0.027~0.054 | 0.036~0.072 |
| | 11.1 - 11.2 | | Vc | 30~38 | 35~45 | 42~54 | 57~72 |
| | | | fz | 0.002~0.005 | 0.002~0.005 | 0.002~0.006 | 0.002~0.006 |
| | | | RPM | 23630~29930 | 23630~29930 | 23630~29930 | 23630~29930 |
| | | | FEED | 90~285 | 90~285 | 115~370 | 115~370 |
| | | | Ap | 0.019~0.036 | 0.023~0.045 | 0.027~0.054 | 0.036~0.072 |
| K | 15-20 | Grey cast iron Nodular cast iron Malleable cast iron | Vc | 41~53 | 49~63 | 58~75 | 78~101 |
| | | | fz | 0.003~0.006 | 0.003~0.006 | 0.004~0.008 | 0.004~0.008 |
| | | | RPM | 32550~42000 | 32550~42000 | 32550~42000 | 32550~42000 |
| | | | FEED | 185~515 | 185~515 | 235~660 | 235~660 |
| | | | Ap | 0.019~0.035 | 0.023~0.045 | 0.027~0.054 | 0.036~0.072 |
| H | 38.1 - 38.2 | Hardened steel | Vc | 19~24 | 22~28 | 27~34 | 36~45 |
| | | | fz | 0.003~0.005 | 0.003~0.005 | 0.004~0.006 | 0.004~0.006 |
| | | | RPM | 15020~18900 | 15020~18900 | 15020~18900 | 15020~18900 |
| | | | FEED | 90~185 | 90~185 | 115~235 | 115~235 |
| | | | Ap | 0.005~0.009 | 0.005~0.009 | 0.005~0.011 | 0.007~0.014 |
| | 40 | Chilled Cast Iron | Vc | 30~38 | 35~45 | 42~54 | 57~72 |
| | | | fz | 0.002~0.005 | 0.002~0.005 | 0.002~0.006 | 0.002~0.006 |
| | | | RPM | 23630~29930 | 23630~29930 | 23630~29930 | 23630~29930 |
| | | | FEED | 90~285 | 90~285 | 115~370 | 115~370 |
| | | | Ap | 0.019~0.036 | 0.023~0.045 | 0.027~0.054 | 0.036~0.072 |
| | 41 | Hardened Cast Iron | Vc | 19~24 | 22~28 | 27~34 | 36~45 |
| | | | fz | 0.003~0.005 | 0.003~0.005 | 0.004~0.006 | 0.004~0.006 |
| | | | RPM | 15020~18900 | 15020~18900 | 15020~18900 | 15020~18900 |
| | | | FEED | 90~185 | 90~185 | 115~235 | 115~235 |
| | | | Ap | 0.005~0.009 | 0.005~0.009 | 0.005~0.011 | 0.007~0.014 |

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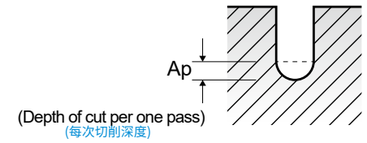
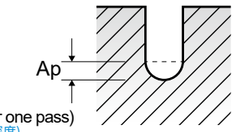





X-POWER PRO END MILLS
RECOMMENDED CUTTING CONDITIONS
推荐加工参数
GMH32 SERIES — 2 FLUTE BALL NOSE - RIB PROCESSING
2刃 球头 - 深腔加工
Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)
Ap (切削深度) = (mm)

| VDI 3323 | Parameter 参数 | Diameter (Ø) 直径 1.0 | 1.5 | 2.0 | 3.0 | 4.0 | 6.0 |
|---|---|---|---|---|---|---|---|
| 1-4 | Vc | 91~115 | 90~113 | 97~119 | 99~123 | 107~138 | 107~138 |
| | fz | 0.004~0.010 | 0.007~0.016 | 0.008~0.021 | 0.012~0.030 | 0.015~0.035 | 0.022~0.053 |
| | RPM | 30450~38330 | 19950~25200 | 16280~19950 | 11030~13650 | 8930~11550 | 5990~7670 |
| | FEED | 265~735 | 265~820 | 265~820 | 265~820 | 265~820 | 265~820 |
| | Ap | 0.045~0.090 | 0.070~0.135 | 0.090~0.180 | 0.135~0.270 | 0.180~0.360 | 0.270~0.540 |
| 5 | Vc | 64~82 | 64~82 | 69~85 | 66~85 | 73~98 | 74~98 |
| | fz | 0.003~0.008 | 0.005~0.011 | 0.006~0.014 | 0.009~0.022 | 0.011~0.025 | 0.016~0.038 |
| | RPM | 21530~27300 | 14180~18380 | 11550~14180 | 7350~9450 | 6090~8190 | 4100~5460 |
| | FEED | 130~410 | 130~410 | 130~410 | 130~410 | 130~410 | 130~410 |
| | Ap | 0.045~0.090 | 0.070~0.135 | 0.090~0.180 | 0.135~0.270 | 0.180~0.360 | 0.270~0.540 |
| 6-7 | Vc | 91~115 | 90~113 | 97~119 | 99~123 | 107~138 | 107~138 |
| | fz | 0.004~0.010 | 0.007~0.016 | 0.008~0.021 | 0.012~0.030 | 0.015~0.035 | 0.022~0.053 |
| | RPM | 30450~38330 | 19950~25200 | 16280~19950 | 11030~13650 | 8930~11550 | 5990~7670 |
| | FEED | 265~735 | 265~820 | 265~820 | 265~820 | 265~820 | 265~820 |
| | Ap | 0.045~0.090 | 0.070~0.135 | 0.090~0.180 | 0.135~0.270 | 0.180~0.360 | 0.270~0.540 |
| 8-9 | Vc | 64~82 | 64~82 | 69~85 | 66~85 | 73~98 | 74~98 |
| | fz | 0.003~0.008 | 0.005~0.011 | 0.006~0.014 | 0.009~0.022 | 0.011~0.025 | 0.016~0.038 |
| | RPM | 21530~27300 | 14180~18380 | 11550~14180 | 7350~9450 | 6090~8190 | 4100~5460 |
| | FEED | 130~410 | 130~410 | 130~410 | 130~410 | 130~410 | 130~410 |
| | Ap | 0.045~0.090 | 0.070~0.135 | 0.090~0.180 | 0.135~0.270 | 0.180~0.360 | 0.270~0.540 |
| 10 | Vc | 91~115 | 90~113 | 97~119 | 99~123 | 107~138 | 107~138 |
| | fz | 0.004~0.010 | 0.007~0.016 | 0.008~0.021 | 0.012~0.030 | 0.015~0.035 | 0.022~0.053 |
| | RPM | 30450~38330 | 19950~25200 | 16280~19950 | 11030~13650 | 8930~11550 | 5990~7670 |
| | FEED | 265~735 | 265~820 | 265~820 | 265~820 | 265~820 | 265~820 |
| | Ap | 0.045~0.090 | 0.070~0.135 | 0.090~0.180 | 0.135~0.270 | 0.180~0.360 | 0.270~0.540 |
| 11.1 - 11.2 | Vc | 64~82 | 64~82 | 69~85 | 66~85 | 73~98 | 74~98 |
| | fz | 0.003~0.008 | 0.005~0.011 | 0.006~0.014 | 0.009~0.022 | 0.011~0.025 | 0.016~0.038 |
| | RPM | 21530~27300 | 14180~18380 | 11550~14180 | 7350~9450 | 6090~8190 | 4100~5460 |
| | FEED | 130~410 | 130~410 | 130~410 | 130~410 | 130~410 | 130~410 |
| | Ap | 0.045~0.090 | 0.070~0.135 | 0.090~0.180 | 0.135~0.270 | 0.180~0.360 | 0.270~0.540 |
| 15 - 20 | Vc | 91~115 | 90~113 | 97~119 | 99~123 | 107~138 | 107~138 |
| | fz | 0.004~0.010 | 0.007~0.016 | 0.008~0.021 | 0.012~0.030 | 0.015~0.035 | 0.022~0.053 |
| | RPM | 30450~38330 | 19950~25200 | 16280~19950 | 11030~13650 | 8930~11550 | 5990~7670 |
| | FEED | 265~735 | 265~820 | 265~820 | 265~820 | 265~820 | 265~820 |
| | Ap | 0.045~0.090 | 0.070~0.135 | 0.090~0.180 | 0.135~0.270 | 0.180~0.360 | 0.270~0.540 |
| 38.1 - 38.2 | Vc | 41~51 | 41~50 | 43~54 | 43~54 | 49~62 | 49~62 |
| | fz | 0.005~0.008 | 0.007~0.012 | 0.009~0.015 | 0.014~0.022 | 0.016~0.026 | 0.024~0.038 |
| | RPM | 13650~17120 | 9140~11240 | 7250~9030 | 4830~5990 | 4100~5150 | 2730~3470 |
| | FEED | 130~265 | 130~265 | 130~265 | 130~265 | 130~265 | 130~265 |
| | Ap | 0.009~0.018 | 0.014~0.028 | 0.018~0.035 | 0.028~0.055 | 0.035~0.070 | 0.053~0.105 |
| 40 | Vc | 64~82 | 64~82 | 69~85 | 66~85 | 73~98 | 74~98 |
| | fz | 0.003~0.008 | 0.005~0.011 | 0.006~0.014 | 0.009~0.022 | 0.011~0.025 | 0.016~0.038 |
| | RPM | 21530~27300 | 14180~18380 | 11550~14180 | 7350~9450 | 6090~8190 | 4100~5460 |
| | FEED | 130~410 | 130~410 | 130~410 | 130~410 | 130~410 | 130~410 |
| | Ap | 0.045~0.090 | 0.070~0.135 | 0.090~0.180 | 0.135~0.270 | 0.180~0.360 | 0.270~0.540 |
| 41 | Vc | 41~51 | 41~50 | 43~54 | 43~54 | 49~62 | 49~62 |
| | fz | 0.005~0.008 | 0.007~0.012 | 0.009~0.015 | 0.014~0.022 | 0.016~0.026 | 0.024~0.038 |
| | RPM | 13650~17120 | 9140~11240 | 7250~9030 | 4830~5990 | 4100~5150 | 2730~3470 |
| | FEED | 130~265 | 130~265 | 130~265 | 130~265 | 130~265 | 130~265 |
| | Ap | 0.009~0.018 | 0.014~0.028 | 0.018~0.035 | 0.028~0.055 | 0.035~0.070 | 0.053~0.105 |



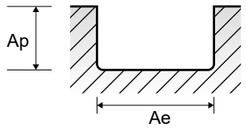
# X-POWER PRO END MILLS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

### GMH37 SERIES — 2 FLUTE CORNER RADIUS - SLOTTING
### 2刃 圆鼻- 槽铣削

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description 工件材料 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 3.0 | 4.0 | 5.0 | 6.0 | 8.0 | 10.0 | 12.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1-4 | Non-alloy steel | 1.0D | 0.3D | Vc | 75 | 75 | 80 | 80 | 85 | 85 | 85 |
| | | | | | fz | 0.010 | 0.016 | 0.023 | 0.032 | 0.045 | 0.053 | 0.051 |
| | | | | | RPM | 7955 | 5968 | 5093 | 4244 | 3382 | 2706 | 2255 |
| | | | | | FEED | 160 | 191 | 234 | 272 | 304 | 287 | 230 |
| | 5 | | 1.0D | 0.3D | Vc | 45 | 45 | 50 | 50 | 55 | 55 | 60 |
| | | | | | fz | 0.008 | 0.013 | 0.017 | 0.025 | 0.033 | 0.039 | 0.041 |
| | | | | | RPM | 4775 | 3581 | 3183 | 2653 | 2188 | 1751 | 1592 |
| | | | | | FEED | 80 | 93 | 108 | 133 | 144 | 137 | 131 |
| | 6-7 | Low alloy steel | 1.0D | 0.3D | Vc | 75 | 75 | 80 | 80 | 85 | 85 | 85 |
| | | | | | fz | 0.010 | 0.016 | 0.023 | 0.032 | 0.045 | 0.053 | 0.051 |
| | | | | | RPM | 7955 | 5968 | 5093 | 4244 | 3382 | 2706 | 2255 |
| | | | | | FEED | 160 | 191 | 234 | 272 | 304 | 287 | 230 |
| | 8-9 | | 1.0D | 0.3D | Vc | 45 | 45 | 50 | 50 | 55 | 55 | 60 |
| | | | | | fz | 0.008 | 0.013 | 0.017 | 0.025 | 0.033 | 0.039 | 0.041 |
| | | | | | RPM | 4775 | 3581 | 3183 | 2653 | 2188 | 1751 | 1592 |
| | | | | | FEED | 80 | 93 | 108 | 133 | 144 | 137 | 131 |
| | 10 | High alloyed steel, and tool steel | 1.0D | 0.3D | Vc | 75 | 75 | 80 | 80 | 85 | 85 | 85 |
| | | | | | fz | 0.010 | 0.016 | 0.023 | 0.032 | 0.045 | 0.053 | 0.051 |
| | | | | | RPM | 7955 | 5968 | 5093 | 4244 | 3382 | 2706 | 2255 |
| | | | | | FEED | 160 | 191 | 234 | 272 | 304 | 287 | 230 |
| | 11.1 - 11.2 | | 1.0D | 0.3D | Vc | 45 | 45 | 50 | 50 | 55 | 55 | 60 |
| | | | | | fz | 0.008 | 0.013 | 0.017 | 0.025 | 0.033 | 0.039 | 0.041 |
| | | | | | RPM | 4775 | 3581 | 3183 | 2653 | 2188 | 1751 | 1592 |
| | | | | | FEED | 80 | 93 | 108 | 133 | 144 | 137 | 131 |
| K | 15-20 | Grey cast iron Nodular cast iron Malleable cast iron | 1.0D | 0.3D | Vc | 75 | 75 | 80 | 80 | 85 | 85 | 85 |
| | | | | | fz | 0.011 | 0.016 | 0.023 | 0.032 | 0.045 | 0.053 | 0.051 |
| | | | | | RPM | 7430 | 5968 | 5093 | 4244 | 3382 | 2706 | 2255 |
| | | | | | FEED | 165 | 191 | 234 | 272 | 304 | 287 | 230 |
| H | 38.1 - 38.2 | Hardened steel | 1.0D | 0.3D | Vc | 30 | 30 | 35 | 35 | 35 | 35 | 35 |
| | | | | | fz | 0.005 | 0.006 | 0.008 | 0.010 | 0.013 | 0.016 | 0.019 |
| | | | | | RPM | 3180 | 2387 | 2228 | 1857 | 1393 | 1114 | 928 |
| | | | | | FEED | 30 | 29 | 36 | 37 | 36 | 36 | 35 |
| | 40 | Chilled Cast Iron | 1.0D | 0.3D | Vc | 45 | 45 | 50 | 50 | 55 | 55 | 60 |
| | | | | | fz | 0.008 | 0.013 | 0.017 | 0.025 | 0.033 | 0.039 | 0.041 |
| | | | | | RPM | 4775 | 3581 | 3183 | 2653 | 2188 | 1751 | 1592 |
| | | | | | FEED | 80 | 93 | 108 | 133 | 144 | 137 | 131 |
| | 41 | Hardened Cast Iron | 1.0D | 0.3D | Vc | 30 | 30 | 35 | 35 | 35 | 35 | 35 |
| | | | | | fz | 0.005 | 0.006 | 0.008 | 0.01 | 0.013 | 0.016 | 0.019 |
| | | | | | RPM | 3180 | 2387 | 2228 | 1857 | 1393 | 1114 | 928 |
| | | | | | FEED | 30 | 29 | 36 | 37 | 36 | 36 | 35 |



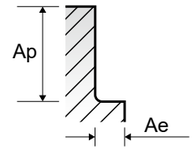



X-POWER PRO END MILLS
RECOMMENDED CUTTING CONDITIONS
推荐加工参数

### GMH38 SERIES — 4 FLUTE CORNER RADIUS - SIDE CUTTING
### 4刃 圆鼻- 侧铣削

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description 工件材料 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 3.0 | 4.0 | 6.0 | 8.0 | 10.0 | 12.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1-4 | Non-alloy steel | 0.05D | 1.0D | Vc | 110 | 125 | 140 | 140 | 135 | 135 |
| | | | | | fz | 0.009 | 0.019 | 0.03 | 0.042 | 0.047 | 0.048 |
| | | | | | RPM | 11671 | 9947 | 7427 | 5570 | 4297 | 3581 |
| | | | | | FEED | 420 | 756 | 891 | 936 | 808 | 688 |
| | 5 | | 0.05D | 1.0D | Vc | 70 | 75 | 85 | 85 | 85 | 85 |
| | | | | | fz | 0.009 | 0.019 | 0.030 | 0.038 | 0.037 | 0.037 |
| | | | | | RPM | 7427 | 5968 | 4509 | 3382 | 2706 | 2255 |
| | | | | | FEED | 267 | 454 | 541 | 514 | 400 | 334 |
| | 6-7 | Low alloy steel | 0.05D | 1.0D | Vc | 110 | 125 | 140 | 140 | 135 | 135 |
| | | | | | fz | 0.009 | 0.019 | 0.03 | 0.042 | 0.047 | 0.048 |
| | | | | | RPM | 11671 | 9947 | 7427 | 5570 | 4297 | 3581 |
| | | | | | FEED | 420 | 756 | 891 | 936 | 808 | 688 |
| | 8-9 | | 0.05D | 1.0D | Vc | 70 | 75 | 85 | 85 | 85 | 85 |
| | | | | | fz | 0.009 | 0.019 | 0.030 | 0.038 | 0.037 | 0.037 |
| | | | | | RPM | 7427 | 5968 | 4509 | 3382 | 2706 | 2255 |
| | | | | | FEED | 267 | 454 | 541 | 514 | 400 | 334 |
| | 10 | High alloyed steel, and tool steel | 0.05D | 1.0D | Vc | 110 | 125 | 140 | 140 | 135 | 135 |
| | | | | | fz | 0.009 | 0.019 | 0.03 | 0.042 | 0.047 | 0.048 |
| | | | | | RPM | 11671 | 9947 | 7427 | 5570 | 4297 | 3581 |
| | | | | | FEED | 420 | 756 | 891 | 936 | 808 | 688 |
| | 11.1 - 11.2 | | 0.05D | 1.0D | Vc | 70 | 75 | 85 | 85 | 85 | 85 |
| | | | | | fz | 0.009 | 0.019 | 0.030 | 0.038 | 0.037 | 0.037 |
| | | | | | RPM | 7427 | 5968 | 4509 | 3382 | 2706 | 2255 |
| | | | | | FEED | 267 | 454 | 541 | 514 | 400 | 334 |
| K | 15-20 | Grey cast iron Nodular cast iron Malleable cast iron | 0.05D | 1.0D | Vc | 110 | 125 | 140 | 140 | 135 | 135 |
| | | | | | fz | 0.009 | 0.019 | 0.03 | 0.042 | 0.047 | 0.048 |
| | | | | | RPM | 11671 | 9947 | 7427 | 5570 | 4297 | 3581 |
| | | | | | FEED | 420 | 756 | 891 | 936 | 808 | 688 |
| H | 38.1 - 38.2 | Hardened steel | 0.05D | 1.0D | Vc | 40 | 50 | 50 | 55 | 55 | 60 |
| | | | | | fz | 0.004 | 0.005 | 0.010 | 0.016 | 0.017 | 0.017 |
| | | | | | RPM | 4244 | 3979 | 2653 | 2188 | 1751 | 1592 |
| | | | | | FEED | 68 | 80 | 106 | 140 | 119 | 108 |
| | 40 | Chilled Cast Iron | 0.05D | 1.0D | Vc | 70 | 75 | 85 | 85 | 85 | 85 |
| | | | | | fz | 0.009 | 0.019 | 0.030 | 0.038 | 0.037 | 0.037 |
| | | | | | RPM | 7427 | 5968 | 4509 | 3382 | 2706 | 2255 |
| | | | | | FEED | 267 | 454 | 541 | 514 | 400 | 334 |
| | 41 | Hardened Cast Iron | 0.05D | 1.0D | Vc | 40 | 50 | 50 | 55 | 55 | 60 |
| | | | | | fz | 0.004 | 0.005 | 0.010 | 0.016 | 0.017 | 0.017 |
| | | | | | RPM | 4244 | 3979 | 2653 | 2188 | 1751 | 1592 |
| | | | | | FEED | 68 | 80 | 106 | 140 | 119 | 108 |



# X-POWER PRO END MILLS

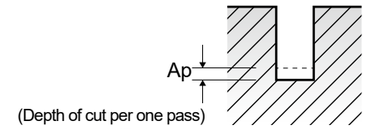
# RECOMMENDED CUTTING CONDITIONS
# 推荐加工参数

## GMH34 SERIES
## 2 FLUTE - RIB PROCESSING
## 2刃 - 深腔加工

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)
Ap (切削深度) = (mm)

| ISO | VDI 3323 | Material Description 工件材料 | Parameter 参数 | Diameter (Ø) 直径 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 0.4 | 0.5 | 0.6 | 0.7 | 0.8 | 0.9 | 1.0 |
| P | 1-4 | Non-alloy steel | Vc | 39~50 | 49~63 | 58~75 | 68~88 | 68~88 | 71~89 | 71~88 |
| | | | fz | 0.003~0.006 | 0.003~0.006 | 0.004~0.007 | 0.004~0.007 | 0.005~0.009 | 0.006~0.011 | 0.006~0.014 |
| | | | RPM | 32550~42000 | 32550~42000 | 32550~42000 | 32550~42000 | 28350~36750 | 26250~33080 | 23630~29400 |
| | | | FEED | 210~460 | 210~460 | 265~600 | 265~600 | 295~660 | 295~755 | 295~850 |
| | | | Ap | 0.007~0.018 | 0.009~0.022 | 0.011~0.026 | 0.012~0.031 | 0.014~0.035 | 0.030~0.060 | 0.045~0.090 |
| | 5 | | Vc | 28~35 | 35~44 | 42~53 | 49~62 | 49~62 | 49~64 | 49~63 |
| | | | fz | 0.002~0.006 | 0.002~0.006 | 0.002~0.008 | 0.002~0.008 | 0.003~0.010 | 0.005~0.012 | 0.006~0.015 |
| | | | RPM | 23630~29400 | 23630~29400 | 23630~29400 | 23630~29400 | 20480~25730 | 18380~23630 | 16490~21000 |
| | | | FEED | 90~355 | 90~355 | 115~450 | 115~450 | 125~505 | 170~565 | 200~630 |
| | | | Ap | 0.007~0.018 | 0.009~0.022 | 0.011~0.026 | 0.012~0.031 | 0.014~0.035 | 0.030~0.060 | 0.045~0.090 |
| | 6-7 | Low alloy steel | Vc | 39~50 | 49~63 | 58~75 | 68~88 | 68~88 | 71~89 | 71~88 |
| | | | fz | 0.003~0.006 | 0.003~0.006 | 0.004~0.007 | 0.004~0.007 | 0.005~0.009 | 0.006~0.011 | 0.006~0.014 |
| | | | RPM | 32550~42000 | 32550~42000 | 32550~42000 | 32550~42000 | 28350~36750 | 26250~33080 | 23630~29400 |
| | | | FEED | 210~460 | 210~460 | 265~600 | 265~600 | 295~660 | 295~755 | 295~850 |
| | | | Ap | 0.007~0.018 | 0.009~0.022 | 0.011~0.026 | 0.012~0.031 | 0.014~0.035 | 0.030~0.060 | 0.045~0.090 |
| | 8-9 | | Vc | 28~35 | 35~44 | 42~53 | 49~62 | 49~62 | 49~64 | 49~63 |
| | | | fz | 0.002~0.006 | 0.002~0.006 | 0.002~0.008 | 0.002~0.008 | 0.003~0.010 | 0.005~0.012 | 0.006~0.015 |
| | | | RPM | 23630~29400 | 23630~29400 | 23630~29400 | 23630~29400 | 20480~25730 | 18380~23630 | 16490~21000 |
| | | | FEED | 90~355 | 90~355 | 115~450 | 115~450 | 125~505 | 170~565 | 200~630 |
| | | | Ap | 0.007~0.018 | 0.009~0.022 | 0.011~0.026 | 0.012~0.031 | 0.014~0.035 | 0.030~0.060 | 0.045~0.090 |
| | 10 | High alloyed steel, and tool steel | Vc | 39~50 | 49~63 | 58~75 | 68~88 | 68~88 | 71~89 | 71~88 |
| | | | fz | 0.003~0.006 | 0.003~0.006 | 0.004~0.007 | 0.004~0.007 | 0.005~0.009 | 0.006~0.011 | 0.006~0.014 |
| | | | RPM | 32550~42000 | 32550~42000 | 32550~42000 | 32550~42000 | 28350~36750 | 26250~33080 | 23630~29400 |
| | | | FEED | 210~460 | 210~460 | 265~600 | 265~600 | 295~660 | 295~755 | 295~850 |
| | | | Ap | 0.007~0.018 | 0.009~0.022 | 0.011~0.026 | 0.012~0.031 | 0.014~0.035 | 0.030~0.060 | 0.045~0.090 |
| | 11.1 - 11.2 | | Vc | 28~35 | 35~44 | 42~53 | 49~62 | 49~62 | 49~64 | 49~63 |
| | | | fz | 0.002~0.006 | 0.002~0.006 | 0.002~0.008 | 0.002~0.008 | 0.003~0.010 | 0.005~0.012 | 0.006~0.015 |
| | | | RPM | 23630~29400 | 23630~29400 | 23630~29400 | 23630~29400 | 20480~25730 | 18380~23630 | 16490~21000 |
| | | | FEED | 90~355 | 90~355 | 115~450 | 115~450 | 125~505 | 170~565 | 200~630 |
| | | | Ap | 0.007~0.018 | 0.009~0.022 | 0.011~0.026 | 0.012~0.031 | 0.014~0.035 | 0.030~0.060 | 0.045~0.090 |
| K | 15-20 | Grey cast iron Nodular cast iron Malleable cast iron | Vc | 39~50 | 49~63 | 58~75 | 68~88 | 68~88 | 71~89 | 71~88 |
| | | | fz | 0.003~0.006 | 0.003~0.006 | 0.004~0.007 | 0.004~0.007 | 0.005~0.009 | 0.006~0.011 | 0.006~0.014 |
| | | | RPM | 32550~42000 | 32550~42000 | 32550~42000 | 32550~42000 | 28350~36750 | 26250~33080 | 23630~29400 |
| | | | FEED | 210~460 | 210~460 | 265~600 | 265~600 | 295~660 | 295~755 | 295~850 |
| | | | Ap | 0.007~0.018 | 0.009~0.022 | 0.011~0.026 | 0.012~0.031 | 0.014~0.035 | 0.030~0.060 | 0.045~0.090 |
| H | 38.1 - 38.2 | Hardened steel | Vc | 18~21 | 22~27 | 27~32 | 31~37 | 31~37 | 31~35 | 31~39 |
| | | | fz | 0.001~0.003 | 0.001~0.003 | 0.001~0.003 | 0.001~0.003 | 0.002~0.004 | 0.003~0.005 | 0.003~0.005 |
| | | | RPM | 15020~17850 | 15020~17850 | 15020~17850 | 15020~17850 | 13130~15540 | 11550~13130 | 10500~13130 |
| | | | FEED | 30~95 | 30~95 | 40~115 | 40~115 | 45~130 | 60~135 | 70~135 |
| | | | Ap | 0.004~0.008 | 0.004~0.009 | 0.005~0.011 | 0.006~0.013 | 0.007~0.015 | 0.008~0.016 | 0.009~0.018 |
| | 40 | Chilled Cast Iron | Vc | 28~35 | 35~44 | 42~53 | 49~62 | 49~62 | 49~64 | 49~63 |
| | | | fz | 0.002~0.006 | 0.002~0.006 | 0.002~0.008 | 0.002~0.008 | 0.003~0.010 | 0.005~0.012 | 0.006~0.015 |
| | | | RPM | 23630~29400 | 23630~29400 | 23630~29400 | 23630~29400 | 20480~25730 | 18380~23630 | 16490~21000 |
| | | | FEED | 90~355 | 90~355 | 115~450 | 115~450 | 125~505 | 170~565 | 200~630 |
| | | | Ap | 0.007~0.018 | 0.009~0.022 | 0.011~0.026 | 0.012~0.031 | 0.014~0.035 | 0.030~0.060 | 0.045~0.090 |
| | 41 | Hardened Cast Iron | Vc | 18~21 | 22~27 | 27~32 | 31~37 | 31~37 | 31~35 | 31~39 |
| | | | fz | 0.001~0.003 | 0.001~0.003 | 0.001~0.003 | 0.001~0.003 | 0.002~0.004 | 0.003~0.005 | 0.003~0.005 |
| | | | RPM | 15020~17850 | 15020~17850 | 15020~17850 | 15020~17850 | 13130~15540 | 11550~13130 | 10500~13130 |
| | | | FEED | 30~95 | 30~95 | 40~115 | 40~115 | 45~130 | 60~135 | 70~135 |
| | | | Ap | 0.004~0.008 | 0.004~0.009 | 0.005~0.011 | 0.006~0.013 | 0.007~0.015 | 0.008~0.016 | 0.009~0.018 |

▶ NEXT PAGE 下页

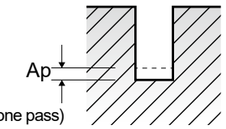



(Depth of cut per one pass)
(每次切削深度)



X-POWER PRO END MILLS
RECOMMENDED CUTTING CONDITIONS
推荐加工参数
GMH34 SERIES
2 FLUTE - RIB PROCESSING
2刃 - 深腔加工
Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)
Ap (切削深度) = (mm)

| VDI 3323 | Parameter 参数 | Diameter (Ø) 直径 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 1.2 | 1.4 | 1.5 | 1.6 | 1.8 | 2.0 | 2.5 | 3.0 | 4.0 |
| 1-4 | Vc | 70~85 | 70~88 | 68~87 | 70~90 | 74~93 | 75~91 | 75~94 | 75~94 | 75~94 |
| | fz | 0.008~0.020 | 0.009~0.023 | 0.010~0.024 | 0.010~0.025 | 0.011~0.027 | 0.012~0.031 | 0.015~0.038 | 0.018~0.045 | 0.023~0.060 |
| | RPM | 19430~23630 | 16800~21000 | 15230~19430 | 14700~18900 | 13650~17330 | 12600~15230 | 9980~12600 | 8400~10500 | 6300~7880 |
| | FEED | 295~945 | 295~945 | 295~945 | 295~945 | 295~945 | 295~945 | 295~945 | 295~945 | 295~945 |
| | Ap | 0.055~0.100 | 0.062~0.125 | 0.070~0.135 | 0.075~0.145 | 0.080~0.160 | 0.090~0.180 | 0.112~0.235 | 0.135~0.270 | 0.180~0.360 |
| 5 | Vc | 49~62 | 51~62 | 49~64 | 51~64 | 52~65 | 52~66 | 53~67 | 52~66 | 52~67 |
| | fz | 0.007~0.018 | 0.008~0.021 | 0.009~0.022 | 0.009~0.023 | 0.010~0.026 | 0.011~0.029 | 0.014~0.035 | 0.017~0.043 | 0.023~0.057 |
| | RPM | 13650~17330 | 12080~14700 | 11030~14180 | 10710~13440 | 9660~12080 | 8720~11030 | 7040~8930 | 5780~7350 | 4310~5570 |
| | FEED | 200~630 | 200~630 | 200~630 | 200~630 | 200~630 | 200~630 | 200~630 | 200~630 | 200~630 |
| | Ap | 0.055~0.100 | 0.062~0.125 | 0.070~0.135 | 0.075~0.145 | 0.080~0.160 | 0.090~0.180 | 0.112~0.235 | 0.135~0.270 | 0.180~0.360 |
| 6-7 | Vc | 70~85 | 70~88 | 68~87 | 70~90 | 74~93 | 75~91 | 75~94 | 75~94 | 75~94 |
| | fz | 0.008~0.020 | 0.009~0.023 | 0.010~0.024 | 0.010~0.025 | 0.011~0.027 | 0.012~0.031 | 0.015~0.038 | 0.018~0.045 | 0.023~0.060 |
| | RPM | 19430~23630 | 16800~21000 | 15230~19430 | 14700~18900 | 13650~17330 | 12600~15230 | 9980~12600 | 8400~10500 | 6300~7880 |
| | FEED | 295~945 | 295~945 | 295~945 | 295~945 | 295~945 | 295~945 | 295~945 | 295~945 | 295~945 |
| | Ap | 0.055~0.100 | 0.062~0.125 | 0.070~0.135 | 0.075~0.145 | 0.080~0.160 | 0.090~0.180 | 0.112~0.235 | 0.135~0.270 | 0.180~0.360 |
| 8-9 | Vc | 49~62 | 51~62 | 49~64 | 51~64 | 52~65 | 52~66 | 53~67 | 52~66 | 52~67 |
| | fz | 0.007~0.018 | 0.008~0.021 | 0.009~0.022 | 0.009~0.023 | 0.010~0.026 | 0.011~0.029 | 0.014~0.035 | 0.017~0.043 | 0.023~0.057 |
| | RPM | 13650~17330 | 12080~14700 | 11030~14180 | 10710~13440 | 9660~12080 | 8720~11030 | 7040~8930 | 5780~7350 | 4310~5570 |
| | FEED | 200~630 | 200~630 | 200~630 | 200~630 | 200~630 | 200~630 | 200~630 | 200~630 | 200~630 |
| | Ap | 0.055~0.100 | 0.062~0.125 | 0.070~0.135 | 0.075~0.145 | 0.080~0.160 | 0.090~0.180 | 0.112~0.235 | 0.135~0.270 | 0.180~0.360 |
| 10 | Vc | 70~85 | 70~88 | 68~87 | 70~90 | 74~93 | 75~91 | 75~94 | 75~94 | 75~94 |
| | fz | 0.008~0.020 | 0.009~0.023 | 0.010~0.024 | 0.010~0.025 | 0.011~0.027 | 0.012~0.031 | 0.015~0.038 | 0.018~0.045 | 0.023~0.060 |
| | RPM | 19430~23630 | 16800~21000 | 15230~19430 | 14700~18900 | 13650~17330 | 12600~15230 | 9980~12600 | 8400~10500 | 6300~7880 |
| | FEED | 295~945 | 295~945 | 295~945 | 295~945 | 295~945 | 295~945 | 295~945 | 295~945 | 295~945 |
| | Ap | 0.055~0.100 | 0.062~0.125 | 0.070~0.135 | 0.075~0.145 | 0.080~0.160 | 0.090~0.180 | 0.112~0.235 | 0.135~0.270 | 0.180~0.360 |
| 11.1 - 11.2 | Vc | 49~62 | 51~62 | 49~64 | 51~64 | 52~65 | 52~66 | 53~67 | 52~66 | 52~67 |
| | fz | 0.007~0.018 | 0.008~0.021 | 0.009~0.022 | 0.009~0.023 | 0.010~0.026 | 0.011~0.029 | 0.014~0.035 | 0.017~0.043 | 0.023~0.057 |
| | RPM | 13650~17330 | 12080~14700 | 11030~14180 | 10710~13440 | 9660~12080 | 8720~11030 | 7040~8930 | 5780~7350 | 4310~5570 |
| | FEED | 200~630 | 200~630 | 200~630 | 200~630 | 200~630 | 200~630 | 200~630 | 200~630 | 200~630 |
| | Ap | 0.055~0.100 | 0.062~0.125 | 0.070~0.135 | 0.075~0.145 | 0.080~0.160 | 0.090~0.180 | 0.112~0.235 | 0.135~0.270 | 0.180~0.360 |
| 15 - 20 | Vc | 70~85 | 70~88 | 68~87 | 70~90 | 74~93 | 75~91 | 75~94 | 75~94 | 75~94 |
| | fz | 0.008~0.020 | 0.009~0.023 | 0.010~0.024 | 0.010~0.025 | 0.011~0.027 | 0.012~0.031 | 0.015~0.038 | 0.018~0.045 | 0.023~0.060 |
| | RPM | 19430~23630 | 16800~21000 | 15230~19430 | 14700~18900 | 13650~17330 | 12600~15230 | 9980~12600 | 8400~10500 | 6300~7880 |
| | FEED | 295~945 | 295~945 | 295~945 | 295~945 | 295~945 | 295~945 | 295~945 | 295~945 | 295~945 |
| | Ap | 0.055~0.100 | 0.062~0.125 | 0.070~0.135 | 0.075~0.145 | 0.080~0.160 | 0.090~0.180 | 0.112~0.235 | 0.135~0.270 | 0.180~0.360 |
| 38.1 - 38.2 | Vc | 31~40 | 32~40 | 32~39 | 32~40 | 32~41 | 33~41 | 34~42 | 33~41 | 33~41 |
| | fz | 0.004~0.006 | 0.005~0.007 | 0.005~0.008 | 0.005~0.008 | 0.006~0.009 | 0.006~0.010 | 0.008~0.012 | 0.009~0.015 | 0.013~0.020 |
| | RPM | 8720~11030 | 7560~9450 | 7040~8610 | 6720~8400 | 5990~7560 | 5570~6930 | 4520~5570 | 3680~4620 | 2730~3470 |
| | FEED | 70~135 | 70~135 | 70~135 | 70~135 | 70~135 | 70~135 | 70~135 | 70~135 | 70~135 |
| | Ap | 0.010~0.022 | 0.012~0.025 | 0.014~0.028 | 0.015~0.030 | 0.016~0.032 | 0.018~0.035 | 0.022~0.045 | 0.028~0.055 | 0.036~0.072 |
| 40 | Vc | 49~62 | 51~62 | 49~64 | 51~64 | 52~65 | 52~66 | 53~67 | 52~66 | 52~67 |
| | fz | 0.007~0.018 | 0.008~0.021 | 0.009~0.022 | 0.009~0.023 | 0.010~0.026 | 0.011~0.029 | 0.014~0.035 | 0.017~0.043 | 0.023~0.057 |
| | RPM | 13650~17330 | 12080~14700 | 11030~14180 | 10710~13440 | 9660~12080 | 8720~11030 | 7040~8930 | 5780~7350 | 4310~5570 |
| | FEED | 200~630 | 200~630 | 200~630 | 200~630 | 200~630 | 200~630 | 200~630 | 200~630 | 200~630 |
| | Ap | 0.055~0.100 | 0.062~0.125 | 0.070~0.135 | 0.075~0.145 | 0.080~0.160 | 0.090~0.180 | 0.112~0.235 | 0.135~0.270 | 0.180~0.360 |
| 41 | Vc | 31~40 | 32~40 | 32~39 | 32~40 | 32~41 | 33~41 | 34~42 | 33~41 | 33~41 |
| | fz | 0.004~0.006 | 0.005~0.007 | 0.005~0.008 | 0.005~0.008 | 0.006~0.009 | 0.006~0.010 | 0.008~0.012 | 0.009~0.015 | 0.013~0.020 |
| | RPM | 8720~11030 | 7560~9450 | 7040~8610 | 6720~8400 | 5990~7560 | 5570~6930 | 4520~5570 | 3680~4620 | 2730~3470 |
| | FEED | 70~135 | 70~135 | 70~135 | 70~135 | 70~135 | 70~135 | 70~135 | 70~135 | 70~135 |
| | Ap | 0.010~0.022 | 0.012~0.025 | 0.014~0.028 | 0.015~0.030 | 0.016~0.032 | 0.018~0.035 | 0.022~0.045 | 0.028~0.055 | 0.036~0.072 |



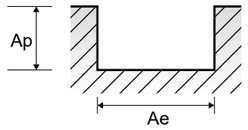

(Depth of cut per one pass)
(每次切削深度)

# X-POWER PRO END MILLS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

### GMH33 SERIES — 2 FLUTE - SLOTTING / 2刃 - 槽铣削

| ISO | VDI 3323 | Material Description 工件材料 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 1.0 | 1.5 |
|---|---|---|---|---|---|---|---|
| P | 5 | Non-alloy steel | 1.0D | D<1:0.15D D≥1:0.25D | Vc | 70 | 60 |
| | | | | | fz | 0.004 | 0.006 |
| | | | | | RPM | 22282 | 12732 |
| | | | | | FEED | 178 | 153 |
| | 8-9 | Low alloy steel | 1.0D | D<1:0.15D D≥1:0.25D | Vc | 70 | 60 |
| | | | | | fz | 0.004 | 0.006 |
| | | | | | RPM | 22282 | 12732 |
| | | | | | FEED | 178 | 153 |
| | 11.1 - 11.2 | High alloyed steel, and tool steel | 1.0D | D<1:0.15D D≥1:0.25D | Vc | 70 | 60 |
| | | | | | fz | 0.004 | 0.006 |
| | | | | | RPM | 22282 | 12732 |
| | | | | | FEED | 178 | 153 |
| H | 38.1 - 38.2 | Hardened steel | 1.0D | D<1:0.02D D≥1:0.05D | Vc | 50 | 45 |
| | | | | | fz | 0.003 | 0.004 |
| | | | | | RPM | 15915 | 9549 |
| | | | | | FEED | 95 | 76 |
| | 40 | Chilled Cast Iron | 1.0D | D<1:0.15D D≥1:0.25D | Vc | 70 | 60 |
| | | | | | fz | 0.004 | 0.006 |
| | | | | | RPM | 22282 | 12732 |
| | | | | | FEED | 178 | 153 |
| | 41 | Hardened Cast Iron | 1.0D | D<1:0.02D D≥1:0.05D | Vc | 50 | 45 |
| | | | | | fz | 0.003 | 0.004 |
| | | | | | RPM | 15915 | 9549 |
| | | | | | FEED | 95 | 76 |




Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description 工件材料 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 2.0 | 3.0 | 4.0 | 5.0 | 6.0 | 8.0 | 10.0 | 12.0 | 16.0 | 20.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1-4 | Non-alloy steel | 1.0D | D≤3:0.2D D>3:0.5D | Vc | 65 | 75 | 85 | 90 | 95 | 95 | 90 | 95 | 100 | 95 |
| | | | | | fz | 0.010 | 0.015 | 0.025 | 0.032 | 0.039 | 0.057 | 0.064 | 0.064 | 0.062 | 0.063 |
| | | | | | RPM | 10345 | 7958 | 6764 | 5730 | 5040 | 3780 | 2865 | 2520 | 1989 | 1512 |
| | | | | | FEED | 207 | 239 | 338 | 367 | 393 | 431 | 367 | 323 | 247 | 191 |
| | 5 | | 1.0D | D≤3:0.2D D>3:0.5D | Vc | 45 | 45 | 50 | 55 | 55 | 55 | 55 | 55 | 60 | 60 |
| | | | | | fz | 0.010 | 0.016 | 0.024 | 0.032 | 0.041 | 0.050 | 0.050 | 0.048 | 0.051 | 0.047 |
| | | | | | RPM | 7162 | 4775 | 3979 | 3501 | 2918 | 2188 | 1751 | 1459 | 1194 | 955 |
| | | | | | FEED | 143 | 153 | 191 | 224 | 239 | 219 | 175 | 140 | 122 | 90 |
| | 6-7 | Low alloy steel | 1.0D | D≤3:0.2D D>3:0.5D | Vc | 65 | 75 | 85 | 90 | 95 | 95 | 90 | 95 | 100 | 95 |
| | | | | | fz | 0.010 | 0.015 | 0.025 | 0.032 | 0.039 | 0.057 | 0.064 | 0.064 | 0.062 | 0.063 |
| | | | | | RPM | 10345 | 7958 | 6764 | 5730 | 5040 | 3780 | 2865 | 2520 | 1989 | 1512 |
| | | | | | FEED | 207 | 239 | 338 | 367 | 393 | 431 | 367 | 323 | 247 | 191 |
| | 8-9 | | 1.0D | D≤3:0.2D D>3:0.5D | Vc | 45 | 45 | 50 | 55 | 55 | 55 | 55 | 55 | 60 | 60 |
| | | | | | fz | 0.010 | 0.016 | 0.024 | 0.032 | 0.041 | 0.050 | 0.050 | 0.048 | 0.051 | 0.047 |
| | | | | | RPM | 7162 | 4775 | 3979 | 3501 | 2918 | 2188 | 1751 | 1459 | 1194 | 955 |
| | | | | | FEED | 143 | 153 | 191 | 224 | 239 | 219 | 175 | 140 | 122 | 90 |
| | 10 | High alloyed steel, and tool steel | 1.0D | D≤3:0.2D D>3:0.5D | Vc | 65 | 75 | 85 | 90 | 95 | 95 | 90 | 95 | 100 | 95 |
| | | | | | fz | 0.010 | 0.015 | 0.025 | 0.032 | 0.039 | 0.057 | 0.064 | 0.064 | 0.062 | 0.063 |
| | | | | | RPM | 10345 | 7958 | 6764 | 5730 | 5040 | 3780 | 2865 | 2520 | 1989 | 1512 |
| | | | | | FEED | 207 | 239 | 338 | 367 | 393 | 431 | 367 | 323 | 247 | 191 |
| | 11.1 - 11.2 | | 1.0D | D≤3:0.2D D>3:0.5D | Vc | 45 | 45 | 50 | 55 | 55 | 55 | 55 | 55 | 60 | 60 |
| | | | | | fz | 0.010 | 0.016 | 0.024 | 0.032 | 0.041 | 0.050 | 0.050 | 0.048 | 0.051 | 0.047 |
| | | | | | RPM | 7162 | 4775 | 3979 | 3501 | 2918 | 2188 | 1751 | 1459 | 1194 | 955 |
| | | | | | FEED | 143 | 153 | 191 | 224 | 239 | 219 | 175 | 140 | 122 | 90 |
| M | 14.1 | Stainless steel | 1.0D | D≤3:0.2D D>3:0.5D | Vc | 35 | 40 | 45 | 45 | 50 | 45 | 45 | 45 | 50 | 45 |
| | | | | | fz | 0.009 | 0.016 | 0.024 | 0.032 | 0.039 | 0.053 | 0.06 | 0.059 | 0.066 | 0.060 |
| | | | | | RPM | 5570 | 4244 | 3581 | 2865 | 2653 | 1790 | 1432 | 1194 | 995 | 716 |
| | | | | | FEED | 100 | 136 | 172 | 183 | 207 | 190 | 172 | 141 | 131 | 86 |
| K | 15-20 | Grey cast iron Nodular cast iron Malleable cast iron | 1.0D | D≤3:0.2D D>3:0.5D | Vc | 65 | 75 | 85 | 90 | 95 | 95 | 90 | 95 | 100 | 95 |
| | | | | | fz | 0.01 | 0.015 | 0.025 | 0.032 | 0.039 | 0.057 | 0.064 | 0.064 | 0.062 | 0.063 |
| | | | | | RPM | 10345 | 7958 | 6764 | 5730 | 5040 | 3780 | 2865 | 2520 | 1989 | 1512 |
| | | | | | FEED | 207 | 239 | 338 | 367 | 393 | 431 | 367 | 323 | 247 | 191 |
| H | 38.1 - 38.2 | Hardened steel | 1.0D | 0.05D | Vc | 30 | 30 | 35 | 35 | 35 | 40 | 40 | 40 | 40 | 40 |
| | | | | | fz | 0.004 | 0.007 | 0.009 | 0.013 | 0.017 | 0.028 | 0.027 | 0.029 | 0.028 | 0.028 |
| | | | | | RPM | 4775 | 3183 | 2785 | 2228 | 1857 | 1592 | 1273 | 1061 | 796 | 637 |
| | | | | | FEED | 38 | 45 | 50 | 58 | 63 | 89 | 69 | 62 | 45 | 36 |
| | 40 | Chilled Cast Iron | 1.0D | D≤3:0.2D D>3:0.5D | Vc | 45 | 45 | 50 | 55 | 55 | 55 | 55 | 55 | 60 | 60 |
| | | | | | fz | 0.010 | 0.016 | 0.024 | 0.032 | 0.041 | 0.05 | 0.05 | 0.048 | 0.051 | 0.047 |
| | | | | | RPM | 7162 | 4775 | 3979 | 3501 | 2918 | 2188 | 1751 | 1459 | 1194 | 955 |
| | | | | | FEED | 143 | 153 | 191 | 224 | 239 | 219 | 175 | 140 | 122 | 90 |
| | 41 | Hardened Cast Iron | 1.0D | 0.05D | Vc | 30 | 30 | 35 | 35 | 35 | 40 | 40 | 40 | 40 | 40 |
| | | | | | fz | 0.004 | 0.007 | 0.009 | 0.013 | 0.017 | 0.028 | 0.027 | 0.029 | 0.028 | 0.028 |
| | | | | | RPM | 4775 | 3183 | 2785 | 2228 | 1857 | 1592 | 1273 | 1061 | 796 | 637 |
| | | | | | FEED | 38 | 45 | 50 | 58 | 63 | 89 | 69 | 62 | 45 | 36 |

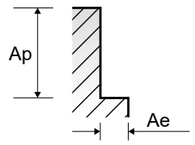


X-POWER PRO END MILLS
RECOMMENDED CUTTING CONDITIONS
推荐加工参数

### GMH35 SERIES — 4 FLUTE - SIDE CUTTING / 4刃 - 侧铣削

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description 工件材料 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 1.0 | 1.5 | 2.0 | 3.0 | 4.0 | 5.0 | 6.0 | 8.0 | 10.0 | 12.0 | 16.0 | 20.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1-4 | Non-alloy steel | 0.05D | 1.0D | Vc | 70 | 75 | 80 | 95 | 105 | 110 | 115 | 120 | 115 | 115 | 125 | 120 |
| | | | | | fz | 0.003 | 0.004 | 0.006 | 0.009 | 0.019 | 0.024 | 0.03 | 0.042 | 0.047 | 0.047 | 0.047 | 0.048 |
| | | | | | RPM | 22280 | 15950 | 12732 | 10080 | 8356 | 7003 | 6101 | 4775 | 3661 | 3050 | 2487 | 1910 |
| | | | | | FEED | 240 | 280 | 306 | 363 | 635 | 672 | 732 | 802 | 688 | 573 | 468 | 367 |
| | 5 | | 0.05D | 1.0D | Vc | 50 | 55 | 55 | 60 | 65 | 65 | 70 | 70 | 70 | 70 | 75 | 75 |
| | | | | | fz | 0.003 | 0.004 | 0.006 | 0.009 | 0.019 | 0.024 | 0.031 | 0.038 | 0.037 | 0.037 | 0.037 | 0.038 |
| | | | | | RPM | 15920 | 10610 | 8754 | 6366 | 5173 | 4138 | 3714 | 2785 | 2228 | 1857 | 1492 | 1194 |
| | | | | | FEED | 160 | 175 | 210 | 229 | 393 | 397 | 460 | 423 | 330 | 275 | 221 | 181 |
| | 6-7 | Low alloy steel | 0.05D | 1.0D | Vc | 70 | 75 | 80 | 95 | 105 | 110 | 115 | 120 | 115 | 115 | 125 | 120 |
| | | | | | fz | 0.003 | 0.004 | 0.006 | 0.009 | 0.019 | 0.024 | 0.03 | 0.042 | 0.047 | 0.047 | 0.047 | 0.048 |
| | | | | | RPM | 22280 | 15950 | 12732 | 10080 | 8356 | 7003 | 6101 | 4775 | 3661 | 3050 | 2487 | 1910 |
| | | | | | FEED | 240 | 280 | 306 | 363 | 635 | 672 | 732 | 802 | 688 | 573 | 468 | 367 |
| | 8-9 | | 0.05D | 1.0D | Vc | 50 | 55 | 55 | 60 | 65 | 65 | 70 | 70 | 70 | 70 | 75 | 75 |
| | | | | | fz | 0.003 | 0.004 | 0.006 | 0.009 | 0.019 | 0.024 | 0.031 | 0.038 | 0.037 | 0.037 | 0.037 | 0.038 |
| | | | | | RPM | 15920 | 10610 | 8754 | 6366 | 5173 | 4138 | 3714 | 2785 | 2228 | 1857 | 1492 | 1194 |
| | | | | | FEED | 160 | 175 | 210 | 229 | 393 | 397 | 460 | 423 | 330 | 275 | 221 | 181 |
| | 10 | High alloyed steel, and tool steel | 0.05D | 1.0D | Vc | 70 | 75 | 80 | 95 | 105 | 110 | 115 | 120 | 115 | 115 | 125 | 120 |
| | | | | | fz | 0.003 | 0.004 | 0.006 | 0.009 | 0.019 | 0.024 | 0.03 | 0.042 | 0.047 | 0.047 | 0.047 | 0.048 |
| | | | | | RPM | 22280 | 15950 | 12732 | 10080 | 8356 | 7003 | 6101 | 4775 | 3661 | 3050 | 2487 | 1910 |
| | | | | | FEED | 240 | 280 | 306 | 363 | 635 | 672 | 732 | 802 | 688 | 573 | 468 | 367 |
| | 11.1 - 11.2 | | 0.05D | 1.0D | Vc | 50 | 55 | 55 | 60 | 65 | 65 | 70 | 70 | 70 | 70 | 75 | 75 |
| | | | | | fz | 0.003 | 0.004 | 0.006 | 0.009 | 0.019 | 0.024 | 0.031 | 0.038 | 0.037 | 0.037 | 0.037 | 0.038 |
| | | | | | RPM | 15920 | 10610 | 8754 | 6366 | 5173 | 4138 | 3714 | 2785 | 2228 | 1857 | 1492 | 1194 |
| | | | | | FEED | 160 | 175 | 210 | 229 | 393 | 397 | 460 | 423 | 330 | 275 | 221 | 181 |
| M | 14.1 | Stainless steel | 0.05D | 1.0D | Vc | 40 | 40 | 45 | 50 | 55 | 55 | 60 | 60 | 60 | 55 | 60 | 60 |
| | | | | | fz | 0.003 | 0.004 | 0.005 | 0.009 | 0.018 | 0.024 | 0.029 | 0.041 | 0.045 | 0.044 | 0.046 | 0.045 |
| | | | | | RPM | 12740 | 8485 | 7162 | 5305 | 4377 | 3501 | 3183 | 2387 | 1910 | 1459 | 1194 | 955 |
| | | | | | FEED | 130 | 140 | 143 | 191 | 315 | 336 | 369 | 392 | 344 | 257 | 220 | 172 |
| K | 15-20 | Grey cast iron Nodular cast iron Malleable cast iron | 0.05D | 1.0D | Vc | 70 | 75 | 80 | 95 | 105 | 110 | 115 | 120 | 115 | 115 | 125 | 120 |
| | | | | | fz | 0.003 | 0.005 | 0.006 | 0.009 | 0.019 | 0.024 | 0.03 | 0.042 | 0.047 | 0.047 | 0.047 | 0.048 |
| | | | | | RPM | 22290 | 15920 | 12732 | 10080 | 8356 | 7003 | 6101 | 4775 | 3661 | 3050 | 2487 | 1910 |
| | | | | | FEED | 270 | 295 | 306 | 363 | 635 | 672 | 732 | 802 | 688 | 573 | 468 | 367 |
| H | 38.1 - 38.2 | Hardened steel | 0.05D | 1.0D | Vc | 30 | 30 | 35 | 35 | 40 | 40 | 40 | 45 | 50 | 50 | 50 | 50 |
| | | | | | fz | 0.002 | 0.002 | 0.002 | 0.004 | 0.005 | 0.008 | 0.010 | 0.017 | 0.016 | 0.017 | 0.016 | 0.015 |
| | | | | | RPM | 9550 | 6370 | 5570 | 3714 | 3183 | 2546 | 2122 | 1790 | 1592 | 1326 | 995 | 796 |
| | | | | | FEED | 55 | 55 | 45 | 59 | 64 | 81 | 85 | 122 | 102 | 90 | 64 | 48 |
| | 40 | Chilled Cast Iron | 0.05D | 1.0D | Vc | 50 | 55 | 55 | 60 | 65 | 65 | 70 | 70 | 70 | 70 | 75 | 75 |
| | | | | | fz | 0.003 | 0.004 | 0.006 | 0.009 | 0.019 | 0.024 | 0.031 | 0.038 | 0.037 | 0.037 | 0.037 | 0.038 |
| | | | | | RPM | 15920 | 10610 | 8754 | 6366 | 5173 | 4138 | 3714 | 2785 | 2228 | 1857 | 1492 | 1194 |
| | | | | | FEED | 160 | 175 | 210 | 229 | 393 | 397 | 460 | 423 | 330 | 275 | 221 | 181 |
| | 41 | Hardened Cast Iron | 0.05D | 1.0D | Vc | 30 | 30 | 35 | 35 | 40 | 40 | 40 | 45 | 50 | 50 | 50 | 50 |
| | | | | | fz | 0.002 | 0.002 | 0.002 | 0.004 | 0.005 | 0.008 | 0.010 | 0.017 | 0.016 | 0.017 | 0.016 | 0.015 |
| | | | | | RPM | 9550 | 6370 | 5570 | 3714 | 3183 | 2546 | 2122 | 1790 | 1592 | 1326 | 995 | 796 |
| | | | | | FEED | 55 | 55 | 45 | 59 | 64 | 81 | 85 | 122 | 102 | 90 | 64 | 48 |



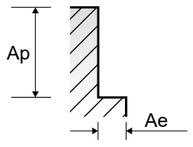
# X-POWER PRO END MILLS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

### GMH36 SERIES — 4 FLUTE - SIDE CUTTING / 4刃 - 侧铣削

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

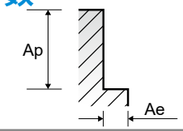
| ISO | VDI 3323 | Material Description 工件材料 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 2.0 | 3.0 | 4.0 | 5.0 | 6.0 | 8.0 | 10.0 | 12.0 | 16.0 | 20.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1-4 | Non-alloy steel | 0.05D | 2.5D | Vc | 60 | 65 | 70 | 75 | 80 | 80 | 85 | 80 | 90 | 85 |
| | | | | | fz | 0.006 | 0.009 | 0.014 | 0.021 | 0.029 | 0.041 | 0.049 | 0.047 | 0.05 | 0.049 |
| | | | | | RPM | 9549 | 6897 | 5570 | 4775 | 4244 | 3183 | 2706 | 2122 | 1790 | 1353 |
| | | | | | FEED | 229 | 248 | 312 | 401 | 492 | 522 | 530 | 399 | 358 | 265 |
| | 5 | | 0.05D | 2.5D | Vc | 35 | 40 | 40 | 45 | 45 | 45 | 50 | 50 | 50 | 50 |
| | | | | | fz | 0.004 | 0.007 | 0.010 | 0.014 | 0.021 | 0.028 | 0.033 | 0.035 | 0.035 | 0.033 |
| | | | | | RPM | 5570 | 4244 | 3183 | 2865 | 2387 | 1790 | 1592 | 1326 | 995 | 796 |
| | | | | | FEED | 89 | 119 | 127 | 160 | 201 | 201 | 210 | 186 | 139 | 105 |
| | 6-7 | Low alloy steel | 0.05D | 2.5D | Vc | 60 | 65 | 70 | 75 | 80 | 80 | 85 | 80 | 90 | 85 |
| | | | | | fz | 0.006 | 0.009 | 0.014 | 0.021 | 0.029 | 0.041 | 0.049 | 0.047 | 0.05 | 0.049 |
| | | | | | RPM | 9549 | 6897 | 5570 | 4775 | 4244 | 3183 | 2706 | 2122 | 1790 | 1353 |
| | | | | | FEED | 229 | 248 | 312 | 401 | 492 | 522 | 530 | 399 | 358 | 265 |
| | 8-9 | | 0.05D | 2.5D | Vc | 35 | 40 | 40 | 45 | 45 | 45 | 50 | 50 | 50 | 50 |
| | | | | | fz | 0.004 | 0.007 | 0.010 | 0.014 | 0.021 | 0.028 | 0.033 | 0.035 | 0.035 | 0.033 |
| | | | | | RPM | 5570 | 4244 | 3183 | 2865 | 2387 | 1790 | 1592 | 1326 | 995 | 796 |
| | | | | | FEED | 89 | 119 | 127 | 160 | 201 | 201 | 210 | 186 | 139 | 105 |
| | 10 | High alloyed steel, and tool steel | 0.05D | 2.5D | Vc | 60 | 65 | 70 | 75 | 80 | 80 | 85 | 80 | 90 | 85 |
| | | | | | fz | 0.006 | 0.009 | 0.014 | 0.021 | 0.029 | 0.041 | 0.049 | 0.047 | 0.05 | 0.049 |
| | | | | | RPM | 9549 | 6897 | 5570 | 4775 | 4244 | 3183 | 2706 | 2122 | 1790 | 1353 |
| | | | | | FEED | 229 | 248 | 312 | 401 | 492 | 522 | 530 | 399 | 358 | 265 |
| | 11.1 - 11.2 | | 0.05D | 2.5D | Vc | 35 | 40 | 40 | 45 | 45 | 45 | 50 | 50 | 50 | 50 |
| | | | | | fz | 0.004 | 0.007 | 0.010 | 0.014 | 0.021 | 0.028 | 0.033 | 0.035 | 0.035 | 0.033 |
| | | | | | RPM | 5570 | 4244 | 3183 | 2865 | 2387 | 1790 | 1592 | 1326 | 995 | 796 |
| | | | | | FEED | 89 | 119 | 127 | 160 | 201 | 201 | 210 | 186 | 139 | 105 |
| K | 15-20 | Grey cast iron Nodular cast iron Malleable cast iron | 0.05D | 2.5D | Vc | 60 | 65 | 70 | 75 | 80 | 80 | 85 | 80 | 90 | 85 |
| | | | | | fz | 0.006 | 0.009 | 0.014 | 0.021 | 0.029 | 0.041 | 0.049 | 0.047 | 0.05 | 0.049 |
| | | | | | RPM | 9549 | 6897 | 5570 | 4775 | 4244 | 3183 | 2706 | 2122 | 1790 | 1353 |
| | | | | | FEED | 229 | 248 | 312 | 401 | 492 | 522 | 530 | 399 | 358 | 265 |
| H | 38.1 - 38.2 | Hardened steel | 0.02D | 2.0D | Vc | 20 | 25 | 25 | 30 | 30 | 30 | 30 | 30 | 30 | 30 |
| | | | | | fz | 0.004 | 0.006 | 0.008 | 0.011 | 0.016 | 0.021 | 0.027 | 0.026 | 0.026 | 0.027 |
| | | | | | RPM | 3183 | 2653 | 1989 | 1910 | 1592 | 1194 | 955 | 796 | 597 | 477 |
| | | | | | FEED | 51 | 64 | 64 | 84 | 102 | 100 | 103 | 83 | 62 | 52 |
| | 40 | Chilled Cast Iron | 0.05D | 2.5D | Vc | 35 | 40 | 40 | 45 | 45 | 45 | 50 | 50 | 50 | 50 |
| | | | | | fz | 0.004 | 0.007 | 0.010 | 0.014 | 0.021 | 0.028 | 0.033 | 0.035 | 0.035 | 0.033 |
| | | | | | RPM | 5570 | 4244 | 3183 | 2865 | 2387 | 1790 | 1592 | 1326 | 995 | 796 |
| | | | | | FEED | 89 | 119 | 127 | 160 | 201 | 201 | 210 | 186 | 139 | 105 |
| | 41 | Hardened Cast Iron | 0.02D | 2.0D | Vc | 20 | 25 | 25 | 30 | 30 | 30 | 30 | 30 | 30 | 30 |
| | | | | | fz | 0.004 | 0.006 | 0.008 | 0.011 | 0.016 | 0.021 | 0.027 | 0.026 | 0.026 | 0.027 |
| | | | | | RPM | 3183 | 2653 | 1989 | 1910 | 1592 | 1194 | 955 | 796 | 597 | 477 |
| | | | | | FEED | 51 | 64 | 64 | 84 | 102 | 100 | 103 | 83 | 62 | 52 |






X-POWER PRO END MILLS
RECOMMENDED CUTTING CONDITIONS
推荐加工参数

### GMH39 SERIES — 6 FLUTE 45° HELIX - SIDE CUTTING / 6刃 45度螺旋 - 侧铣削




Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

#### NORMAL SPEED 普通速度

| ISO | VDI 3323 | Material Description 工件材料 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 6.0 | 8.0 | 10.0 | 12.0 | 16.0 |
|---|---|---|---|---|---|---|---|---|---|---|
| P | 1-4 | Non-alloy steel | 0.1D | 1.5D | Vc | 105 | 110 | 110 | 110 | 110 |
| | | | | | fz | 0.06 | 0.079 | 0.099 | 0.099 | 0.1 |
| | | | | | RPM | 5570 | 4377 | 3501 | 2918 | 2188 |
| | | | | | FEED | 2005 | 2075 | 2080 | 1733 | 1313 |
| | 5 | | 0.05D | 1.5D | Vc | 75 | 75 | 75 | 75 | 75 |
| | | | | | fz | 0.059 | 0.078 | 0.098 | 0.097 | 0.099 |
| | | | | | RPM | 3979 | 2984 | 2387 | 1989 | 1492 |
| | | | | | FEED | 1409 | 1397 | 1404 | 1158 | 886 |
| | 6-7 | Low alloy steel | 0.1D | 1.5D | Vc | 105 | 110 | 110 | 110 | 110 |
| | | | | | fz | 0.06 | 0.079 | 0.099 | 0.099 | 0.1 |
| | | | | | RPM | 5570 | 4377 | 3501 | 2918 | 2188 |
| | | | | | FEED | 2005 | 2075 | 2080 | 1733 | 1313 |
| | 8-9 | | 0.05D | 1.5D | Vc | 75 | 75 | 75 | 75 | 75 |
| | | | | | fz | 0.059 | 0.078 | 0.098 | 0.097 | 0.099 |
| | | | | | RPM | 3979 | 2984 | 2387 | 1989 | 1492 |
| | | | | | FEED | 1409 | 1397 | 1404 | 1158 | 886 |
| | 10 | High alloyed steel, and tool steel | 0.1D | 1.5D | Vc | 105 | 110 | 110 | 110 | 110 |
| | | | | | fz | 0.06 | 0.079 | 0.099 | 0.099 | 0.1 |
| | | | | | RPM | 5570 | 4377 | 3501 | 2918 | 2188 |
| | | | | | FEED | 2005 | 2075 | 2080 | 1733 | 1313 |
| | 11.1 - 11.2 | | 0.05D | 1.5D | Vc | 75 | 75 | 75 | 75 | 75 |
| | | | | | fz | 0.059 | 0.078 | 0.098 | 0.097 | 0.099 |
| | | | | | RPM | 3979 | 2984 | 2387 | 1989 | 1492 |
| | | | | | FEED | 1409 | 1397 | 1404 | 1158 | 886 |
| H | 38.1 | Hardened steel | 0.05D | 1.5D | Vc | 75 | 75 | 75 | 75 | 75 |
| | | | | | fz | 0.059 | 0.078 | 0.098 | 0.097 | 0.099 |
| | | | | | RPM | 3979 | 2984 | 2387 | 1989 | 1492 |
| | | | | | FEED | 1409 | 1397 | 1404 | 1158 | 886 |
| | 38.2 | | 0.05D | 1.0D | Vc | 30 | 30 | 30 | 30 | 35 |
| | | | | | fz | 0.022 | 0.030 | 0.035 | 0.036 | 0.035 |
| | | | | | RPM | 1592 | 1194 | 955 | 796 | 696 |
| | | | | | FEED | 210 | 215 | 201 | 172 | 146 |
| | 40 | Chilled Cast Iron | 0.05D | 1.5D | Vc | 75 | 75 | 75 | 75 | 75 |
| | | | | | fz | 0.059 | 0.078 | 0.098 | 0.097 | 0.099 |
| | | | | | RPM | 3979 | 2984 | 2387 | 1989 | 1492 |
| | | | | | FEED | 1409 | 1397 | 1404 | 1158 | 886 |
| | 41 | Hardened Cast Iron | 0.05D | 1.0D | Vc | 30 | 30 | 30 | 30 | 35 |
| | | | | | fz | 0.022 | 0.030 | 0.035 | 0.036 | 0.035 |
| | | | | | RPM | 1592 | 1194 | 955 | 796 | 696 |
| | | | | | FEED | 210 | 215 | 201 | 172 | 146 |

#### HIGH SPEED 高速度

| ISO | VDI 3323 | Material Description 工件材料 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 6.0 | 8.0 | 10.0 | 12.0 | 16.0 |
|---|---|---|---|---|---|---|---|---|---|---|
| P | 1-5 | Non-alloy steel | 0.05D | 1.5D | Vc | 325 | 325 | 320 | 325 | 325 |
| | | | | | fz | 0.06 | 0.081 | 0.1 | 0.1 | 0.1 |
| | | | | | RPM | 17242 | 12931 | 10186 | 8621 | 6466 |
| | | | | | FEED | 6207 | 6285 | 6112 | 5173 | 3879 |
| | 6-9 | Low alloy steel | 0.05D | 1.5D | Vc | 325 | 325 | 320 | 325 | 325 |
| | | | | | fz | 0.06 | 0.081 | 0.1 | 0.1 | 0.1 |
| | | | | | RPM | 17242 | 12931 | 10186 | 8621 | 6466 |
| | | | | | FEED | 6207 | 6285 | 6112 | 5173 | 3879 |
| | 10 - 11.2 | High alloyed steel, and tool steel | 0.05D | 1.5D | Vc | 325 | 325 | 320 | 325 | 325 |
| | | | | | fz | 0.06 | 0.081 | 0.1 | 0.1 | 0.1 |
| | | | | | RPM | 17242 | 12931 | 10186 | 8621 | 6466 |
| | | | | | FEED | 6207 | 6285 | 6112 | 5173 | 3879 |
| H | 38.1 | Hardened steel | 0.05D | 1.5D | Vc | 325 | 325 | 320 | 325 | 325 |
| | | | | | fz | 0.060 | 0.081 | 0.100 | 0.100 | 0.100 |
| | | | | | RPM | 17242 | 12931 | 10186 | 8621 | 6466 |
| | | | | | FEED | 6207 | 6285 | 6112 | 5173 | 3879 |
| | 38.2 | | 0.05D | 1.0D | Vc | 160 | 160 | 160 | 160 | 160 |
| | | | | | fz | 0.060 | 0.081 | 0.101 | 0.100 | 0.100 |
| | | | | | RPM | 8488 | 6366 | 5093 | 4244 | 3183 |
| | | | | | FEED | 3056 | 3094 | 3086 | 2546 | 1910 |
| | 40 | Chilled Cast Iron | 0.05D | 1.5D | Vc | 325 | 325 | 320 | 325 | 325 |
| | | | | | fz | 0.060 | 0.081 | 0.100 | 0.100 | 0.100 |
| | | | | | RPM | 17242 | 12931 | 10186 | 8621 | 6466 |
| | | | | | FEED | 6207 | 6285 | 6112 | 5173 | 3879 |
| | 41 | Hardened Cast Iron | 0.05D | 1.0D | Vc | 160 | 160 | 160 | 160 | 160 |
| | | | | | fz | 0.060 | 0.081 | 0.101 | 0.100 | 0.100 |
| | | | | | RPM | 8488 | 6366 | 5093 | 4244 | 3183 |
| | | | | | FEED | 3056 | 3094 | 3086 | 2546 | 1910 |

# X-POWER PRO END MILLS

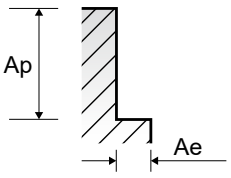
# RECOMMENDED CUTTING CONDITIONS
# 推荐加工参数

## GM814 SERIES

### 3&4 FLUTE ROUGHING - SIDE CUTTING
### 3&4刃 粗加工 - 侧铣削

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description 工件材料 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 6.0 | 8.0 | 10.0 | 12.0 | 16.0 | 20.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1-4 | Non-alloy steel | 0.3D | 1.5D | Vc | 310 | 305 | 305 | 315 | 315 | 315 |
| | | | | | fz | 0.05 | 0.067 | 0.063 | 0.075 | 0.1 | 0.113 |
| | | | | | RPM | 16446 | 12136 | 9708 | 8356 | 6267 | 5013 |
| | | | | | FEED | 2467 | 2439 | 2447 | 2507 | 2507 | 2266 |
| | 5 | | 0.3D | 1.5D | Vc | 245 | 245 | 250 | 240 | 255 | 240 |
| | | | | | fz | 0.023 | 0.030 | 0.028 | 0.033 | 0.040 | 0.039 |
| | | | | | RPM | 12998 | 9748 | 7958 | 6366 | 5073 | 3820 |
| | | | | | FEED | 897 | 877 | 891 | 840 | 812 | 596 |
| | 6-7 | Low alloy steel | 0.3D | 1.5D | Vc | 310 | 305 | 305 | 315 | 315 | 315 |
| | | | | | fz | 0.05 | 0.067 | 0.063 | 0.075 | 0.1 | 0.113 |
| | | | | | RPM | 16446 | 12136 | 9708 | 8356 | 6267 | 5013 |
| | | | | | FEED | 2467 | 2439 | 2447 | 2507 | 2507 | 2266 |
| | 8-9 | | 0.3D | 1.5D | Vc | 245 | 245 | 250 | 240 | 255 | 240 |
| | | | | | fz | 0.023 | 0.030 | 0.028 | 0.033 | 0.040 | 0.039 |
| | | | | | RPM | 12998 | 9748 | 7958 | 6366 | 5073 | 3820 |
| | | | | | FEED | 897 | 877 | 891 | 840 | 812 | 596 |
| | 10 | High alloyed steel, and tool steel | 0.3D | 1.5D | Vc | 310 | 305 | 305 | 315 | 315 | 315 |
| | | | | | fz | 0.05 | 0.067 | 0.063 | 0.075 | 0.1 | 0.113 |
| | | | | | RPM | 16446 | 12136 | 9708 | 8356 | 6267 | 5013 |
| | | | | | FEED | 2467 | 2439 | 2447 | 2507 | 2507 | 2266 |
| | 11.1 - 11.2 | | 0.3D | 1.5D | Vc | 245 | 245 | 250 | 240 | 255 | 240 |
| | | | | | fz | 0.023 | 0.030 | 0.028 | 0.033 | 0.040 | 0.039 |
| | | | | | RPM | 12998 | 9748 | 7958 | 6366 | 5073 | 3820 |
| | | | | | FEED | 897 | 877 | 891 | 840 | 812 | 596 |
| M | 14.1 | Stainless steel | 0.3D | 1.5D | Vc | 165 | 165 | 170 | 165 | 175 | 160 |
| | | | | | fz | 0.023 | 0.03 | 0.028 | 0.034 | 0.039 | 0.038 |
| | | | | | RPM | 8754 | 6565 | 5411 | 4377 | 3482 | 2546 |
| | | | | | FEED | 604 | 591 | 606 | 595 | 543 | 387 |
| K | 15-20 | Grey cast iron Nodular cast iron Malleable cast iron | 0.3D | 1.5D | Vc | 310 | 305 | 305 | 315 | 315 | 315 |
| | | | | | fz | 0.05 | 0.067 | 0.063 | 0.075 | 0.1 | 0.113 |
| | | | | | RPM | 16446 | 12136 | 9708 | 8356 | 6267 | 5013 |
| | | | | | FEED | 2467 | 2439 | 2447 | 2507 | 2507 | 2266 |
| H | 38.1 - 38.2 | Hardened steel | 0.05D | 1.0D | Vc | 65 | 65 | 65 | 65 | 65 | 65 |
| | | | | | fz | 0.026 | 0.033 | 0.036 | 0.039 | 0.034 | 0.038 |
| | | | | | RPM | 3448 | 2586 | 2069 | 1724 | 1293 | 1035 |
| | | | | | FEED | 269 | 256 | 298 | 269 | 176 | 157 |
| | 40 | Chilled Cast Iron | 0.3D | 1.5D | Vc | 245 | 245 | 250 | 240 | 255 | 240 |
| | | | | | fz | 0.023 | 0.030 | 0.028 | 0.033 | 0.040 | 0.039 |
| | | | | | RPM | 12998 | 9748 | 7958 | 6366 | 5073 | 3820 |
| | | | | | FEED | 897 | 877 | 891 | 840 | 812 | 596 |
| | 41 | Hardened Cast Iron | 0.05D | 1.0D | Vc | 65 | 65 | 65 | 65 | 65 | 65 |
| | | | | | fz | 0.026 | 0.033 | 0.036 | 0.039 | 0.034 | 0.038 |
| | | | | | RPM | 3448 | 2586 | 2069 | 1724 | 1293 | 1035 |
| | | | | | FEED | 269 | 256 | 298 | 269 | 176 | 157 |



YG

Leading Through Innovation

# SOLID CARBIDE

# TitaNox-POWER END MILLS

- High Speed Machining for Exotic Materials: Titanium, Inconel and Stainless Steels

- 适用于高速加工耐高温材料：钛合金，铬镍铁合金和不锈钢

# SELECTION GUIDE
## 选用指南

YG MILLING TOOLS

## SOLID CARBIDE
# TitaNox-POWER END MILLS

High Speed Machining for Exotic Materials:
Titanium, Inconel and Stainless Steels
实现难切材料的高速加工 钛, 铬镍铁合金和不锈钢

Please visit globalyg1.com/mat for material search

◎ : Excellent (优秀) ○ : Good (良好)

Recommended cutting conditions (推荐加工参数) : p.C360

| SERIES 系列 | GMG40 GMG41 | GMG28 GMG29 | GMG30 GMG31 | GMG24 GMG25 | GMG26 GMG27 | EHE54 EHE55 |
|---|---|---|---|---|---|---|
| FLUTE 槽数 | 4 | 5 | 5 | 5 | 5 | 5 |
| HELIX ANGLE 螺旋角度 | 43°/45° | 43°/44°/45° | 43°/44°/45° | 43°/44°/45° | 43°/44°/45° | 40° |
| CUTTING EDGE SHAPE 类型 | CORNER RADIUS | CORNER RADIUS | CORNER RADIUS | SQUARE | SQUARE | ROUGHING CORNER RADIUS |
| SIZE MIN 最小尺寸 | D6.0 | D6.0 | D6.0 | D6.0 | D6.0 | D6.0 |
| SIZE MAX 最大尺寸 | D25.0 | D25.0 | D25.0 | D25.0 | D25.0 | D25.0 |
| PAGE 页数 | C352-353 | C354 | C355-356 | C357 | C358 | C359 |
| | LONG LENGTH DOUBLE CORE | SHORT LENGTH | LONG LENGTH | SHORT LENGTH | LONG LENGTH | - |
| | Y-Coating | Y-Coating | Y-Coating | Y-Coating | Y-Coating | TiAlN |

| ISO | VDI 3323 | Material Description 材料描述 | Composition / Structure / Heat Treatment 成分 / 组织 / 热处理 | | HB | HRc | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | About 0.15% C | Annealed | 125 | | ○ | ○ | ○ | ○ | ○ | |
| | 2 | | About 0.45% C | Annealed | 190 | 13 | ○ | ○ | ○ | ○ | ○ | |
| | 3 | | About 0.45% C | Quenched & Tempered | 250 | 25 | ○ | ○ | ○ | ○ | ○ | |
| | 4 | | About 0.75% C | Annealed | 270 | 28 | ○ | ○ | ○ | ○ | ○ | |
| | 5 | | About 0.75% C | Quenched & Tempered | 300 | 32 | ○ | ○ | ○ | ○ | ○ | |
| | 6 | Low alloy steel | | Annealed | 180 | 10 | ○ | ○ | ○ | ○ | ○ | |
| | 7 | | | Quenched & Tempered | 275 | 29 | ○ | ○ | ○ | ○ | ○ | |
| | 8 | | | Quenched & Tempered | 300 | 32 | ○ | ○ | ○ | ○ | ○ | |
| | 9 | | | Quenched & Tempered | 350 | 38 | ○ | ○ | ○ | ○ | ○ | |
| | 10 | High alloyed steel, and tool steel | | Annealed | 200 | 15 | ○ | ○ | ○ | ○ | ○ | |
| | 11 | | | Quenched & Tempered | 325 | 35 | ○ | ○ | ○ | ○ | ○ | |
| M | 12 | Stainless steel | Ferritic / Martensitic | Annealed | 200 | 15 | ◎ | ◎ | ◎ | ◎ | ○ | |
| | 13 | | Martensitic | Quenched & Tempered | 240 | 23 | ◎ | ◎ | ◎ | ◎ | ○ | |
| | 14 | | Austenitic | | 180 | 10 | ◎ | ◎ | ◎ | ◎ | ○ | |
| K | 15 | Grey cast iron | Pearlitic / ferritic | | 180 | 10 | ○ | ○ | ○ | ○ | | |
| | 16 | | Pearlitic (Martensitic) | | 260 | 26 | ○ | ○ | ○ | ○ | | |
| | 17 | Nodular cast iron | Ferritic | | 160 | 3 | ○ | ○ | ○ | ○ | | |
| | 18 | | Pearlitic | | 250 | 25 | ○ | ○ | ○ | ○ | | |
| | 19 | Malleable cast iron | Ferritic | | 130 | | ○ | ○ | ○ | ○ | | |
| | 20 | | Pearlitic | | 230 | 21 | ○ | ○ | ○ | ○ | | |
| N | 21 | Aluminum-wrought alloy | Not Curable | | 60 | | | | | | | |
| | 22 | | Curable | Hardened | 100 | | | | | | | |
| | 23 | Aluminum-cast, alloyed | ≤ 12% Si, Not Curable | | 75 | | | | | | | |
| | 24 | | ≤ 12% Si, Curable | Hardened | 90 | | | | | | | |
| | 25 | | > 12% Si, Not Curable | | 130 | | | | | | | |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | Cutting Alloys, PB>1% | | 110 | | | | | | | |
| | 27 | | CuZn, CuSnZn (Brass) | | 90 | | | | | | | |
| | 28 | | CuSn, lead-free copper and electrolytic copper | | 100 | | | | | | | |
| | 29 | Non Metallic Materials | Duroplastic, Fiber Reinforced Plastic | | | | | | | | | |
| | 30 | | Rubber, Wood, etc. | | | | | | | | | |
| S | 31 | Heat Resistant Super Alloys | Fe Based | Annealed | 200 | 15 | ○ | ○ | ○ | ○ | ○ | ○ |
| | 32 | | | Cured | 280 | 30 | ○ | ○ | ○ | ○ | ○ | ○ |
| | 33 | | Ni or Co Based | Annealed | 250 | 25 | ○ | ○ | ○ | ○ | ○ | ○ |
| | 34 | | | Cured | 350 | 38 | ○ | ○ | ○ | ○ | ○ | ○ |
| | 35 | | | Cast | 320 | 34 | ○ | ○ | ○ | ○ | ○ | ○ |
| | 36 | Titanium Alloys | Pure Titanium | | 400 Rm | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 37 | | Alpha + Beta Alloys | Hardened | 1050 Rm | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| H | 38 | Hardened steel | | Hardened | 550 | 55 | | | | | | |
| | 39 | | | Hardened | 630 | 60 | | | | | | |
| | 40 | Chilled Cast Iron | | Cast | 400 | 42 | | | | | | |
| | 41 | Hardened Cast Iron | | Hardened | 550 | 55 | | | | | | |

BALL NOSE = 球头 CORNER RADIUS = 圆鼻 SQUARE = 平头 ROUGHING = 粗加工
SHORT LENGTH = 短刃 LONG LENGTH = 长刃 DOUBLE CORE = 双芯厚

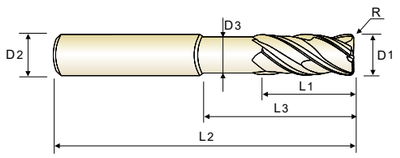
# TitaNox-POWER END MILLS

PLAIN SHANK **GMG40** SERIES
FLAT SHANK **GMG41** SERIES

## CARBIDE, 4 FLUTE CORNER RADIUS with DOUBLE CORE
## 硬质合金，4刃 圆鼻 双芯厚

▶Double core end mill has a unique flute design for excellent chip evacuation and higher rigidity.
▶The double core adds stability and aids chip flow, reducing tool deflection, improving dimensional stability and workpiece accuracy.

▶双芯厚铣刀具有独特沟槽设计，实现出色排屑性能与优秀刚性
▶双芯厚实现稳定性和排屑性能，减少刀具偏斜，提高尺寸稳定性和工件精度




CARBIDE | 4 | 43°/45° | PLAIN | FLAT | p.C360-361

Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| ◎ END MILL HOLDER | D118 - 137 | POWER MILLING CHUCK | D161 - 176 |
| ◎ - | - | HYDRAULIC CHUCK | D15 - 46 |
| | | SHRINK FIT HOLDER | D47 - 72 |
| ○ - | - | ER COLLET CHUCK | D73 - 115 |

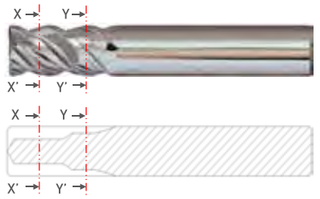
Unit(单位) : mm

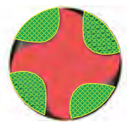
| EDP No. PLAIN | EDP No. FLAT | Corner Radius 圆弧角 R | Mill Diameter 直径 $D_1$ | Shank Diameter 柄径 $D_2$ | Length of Cut 刃长 $L_1$ | Length Below Shank 颈长 $L_3$ | Overall Length 全长 $L_2$ | Neck Diameter 颈径 $D_3$ |
|---|---|---|---|---|---|---|---|---|
| GMG40060 | GMG41060 | R0.5 | 6.0 | 6 | 13 | 20 | 57 | 5.5 |
| GMG40901 | GMG41901 | R1.0 | 6.0 | 6 | 13 | 20 | 57 | 5.5 |
| GMG40080 | GMG41080 | R0.5 | 8.0 | 8 | 19 | 25 | 63 | 7.5 |
| GMG40902 | GMG41902 | R1.0 | 8.0 | 8 | 19 | 25 | 63 | 7.5 |
| GMG40903 | GMG41903 | R1.5 | 8.0 | 8 | 19 | 25 | 63 | 7.5 |
| GMG40904 | GMG41904 | R2.0 | 8.0 | 8 | 19 | 25 | 63 | 7.5 |
| GMG40100 | GMG41100 | R0.5 | 10.0 | 10 | 22 | 30 | 72 | 9.2 |
| GMG40905 | GMG41905 | R1.0 | 10.0 | 10 | 22 | 30 | 72 | 9.2 |
| GMG40906 | GMG41906 | R1.5 | 10.0 | 10 | 22 | 30 | 72 | 9.2 |
| GMG40907 | GMG41907 | R2.0 | 10.0 | 10 | 22 | 30 | 72 | 9.2 |
| GMG40120 | GMG41120 | R0.5 | 12.0 | 12 | 26 | 35 | 83 | 11.0 |
| GMG40908 | GMG41908 | R1.0 | 12.0 | 12 | 26 | 35 | 83 | 11.0 |
| GMG40909 | GMG41909 | R1.5 | 12.0 | 12 | 26 | 35 | 83 | 11.0 |
| GMG40910 | GMG41910 | R2.0 | 12.0 | 12 | 26 | 35 | 83 | 11.0 |
| GMG40911 | GMG41911 | R3.0 | 12.0 | 12 | 26 | 35 | 83 | 11.0 |
| GMG40140 | GMG41140 | R1.0 | 14.0 | 14 | 26 | 35 | 83 | 13.0 |
| GMG40912 | GMG41912 | R2.0 | 14.0 | 14 | 26 | 35 | 83 | 13.0 |
| GMG40160 | GMG41160 | R1.0 | 16.0 | 16 | 35 | 43 | 92 | 15.0 |

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.03 | h5 * Shank Dia.≥Ø12 : h6 |

▶ NEXT PAGE 下页

◆ 2 STEP CORE
双芯厚



<SECTION X-X'>
EXCELLENT CHIP EVACUATION
<X-X' 区间>
卓越排屑性能

<SECTION Y-Y'>
HIGHER RIGIDITY
<Y-Y' 区间>
高刚性

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | M | | | | | K | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | | | | | | | | | | | | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | | | | | | | | | | | |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 | | | | | | | | | | | |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 | | | | | | | | | | | |
| Recommend | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | |
| ISO | N | | | | | | | | | | S | | | | | | | | | | H | | | | | | | | | | |
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | | | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron | | | | | | | | |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | | | | | | | | | | |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 | | | | | | | | | | |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 | | | | | | | | | | |
| Recommend | | | | | | | | | | | ○ | ○ | ○ | ○ | ○ | ◎ | ◎ | | | | | | | | | | | | | | |



CARBIDE
HSS
CBN END MILLS
i-Xmill END MILLS
i-SMART MODULAR END MILLS
X5070 END MILLS
4G MILL END MILLS
X-POWER PRO END MILLS
TitaNox-POWER END MILLS
SUS-CUT END MILLS
V7 PLUS END MILLS
ALU-POWER HPC END MILLS
ALU-CUT END MILLS
G-CUT
CRX S END MILLS
K-2 END MILLS
GENERAL CARBIDE END MILLS
ONLY ONE COATED PM60 END MILLS
TANK-POWER END MILLS
GENERAL HSS END MILLS
MILLING CUTTERS
TECHNICAL DATA

# TitaNox-POWER END MILLS

PLAIN SHANK **GMG40** SERIES
FLAT SHANK **GMG41** SERIES

## CARBIDE, 4 FLUTE CORNER RADIUS with DOUBLE CORE
## 硬质合金，4刃 圆鼻 双芯厚

▶Double core end mill has a unique flute design for excellent chip evacuation and higher rigidity.
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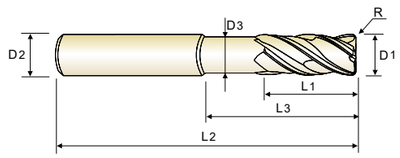



CARBIDE | 4 | 43°/45° | PLAIN | FLAT | p.C360-361

Recommended ToolHolder

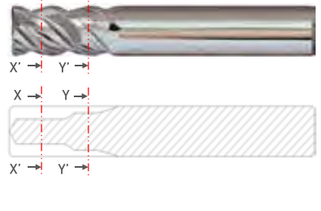
| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| ◎ END MILL HOLDER | D118 - 137 | POWER MILLING CHUCK | D161 - 176 |
| ◎ - | - | HYDRAULIC CHUCK | D15 - 46 |
| | | SHRINK FIT HOLDER | D47 - 72 |
| ○ - | - | ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. PLAIN | EDP No. FLAT | Corner Radius 圆弧角 R | Mill Diameter 直径 $D_1$ | Shank Diameter 柄径 $D_2$ | Length of Cut 刃长 $L_1$ | Length Below Shank 颈长 $L_3$ | Overall Length 全长 $L_2$ | Neck Diameter 颈径 $D_3$ |
|---|---|---|---|---|---|---|---|---|
| GMG40913 | GMG41913 | R1.5 | 16.0 | 16 | 35 | 43 | 92 | 15.0 |
| GMG40914 | GMG41914 | R2.0 | 16.0 | 16 | 35 | 43 | 92 | 15.0 |
| GMG40915 | GMG41915 | R3.0 | 16.0 | 16 | 35 | 43 | 92 | 15.0 |
| GMG40916 | GMG41916 | R4.0 | 16.0 | 16 | 35 | 43 | 92 | 15.0 |
| GMG40200 | GMG41200 | R1.0 | 20.0 | 20 | 44 | 56 | 110 | 19.0 |
| GMG40917 | GMG41917 | R1.5 | 20.0 | 20 | 44 | 56 | 110 | 19.0 |
| GMG40918 | GMG41918 | R2.0 | 20.0 | 20 | 44 | 56 | 110 | 19.0 |
| GMG40919 | GMG41919 | R3.0 | 20.0 | 20 | 44 | 56 | 110 | 19.0 |
| GMG40920 | GMG41920 | R3.5 | 20.0 | 20 | 44 | 56 | 110 | 19.0 |
| GMG40921 | GMG41921 | R4.0 | 20.0 | 20 | 44 | 56 | 110 | 19.0 |
| GMG40250 | GMG41250 | R1.0 | 25.0 | 25 | 55 | 70 | 130 | 24.0 |
| GMG40922 | GMG41922 | R1.5 | 25.0 | 25 | 55 | 70 | 130 | 24.0 |
| GMG40923 | GMG41923 | R2.0 | 25.0 | 25 | 55 | 70 | 130 | 24.0 |
| GMG40924 | GMG41924 | R3.0 | 25.0 | 25 | 55 | 70 | 130 | 24.0 |
| GMG40925 | GMG41925 | R4.0 | 25.0 | 25 | 55 | 70 | 130 | 24.0 |

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.03 | h5 * Shank Dia.≥Ø12 : h6 |

◆ 2 STEP CORE
双芯厚



<SECTION X-X'>
EXCELLENT CHIP EVACUATION
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卓越排屑性能

<SECTION Y-Y'>
HIGHER RIGIDITY
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◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | M | | | | | K | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | | | | | | | | | | | | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | | | | | | | | | | | |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 | | | | | | | | | | | |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 | | | | | | | | | | | |
| Recommend | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | |
| ISO | N | | | | | | | | | | S | | | | | | | | | | H | | | | | | | | | | |
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | | | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron | | | | | | | | |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | | | | | | | | | | |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 | | | | | | | | | | |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 | | | | | | | | | | |
| Recommend | | | | | | | | | | | ○ | ○ | ○ | ○ | ○ | ◎ | ◎ | | | | | | | | | | | | | | |

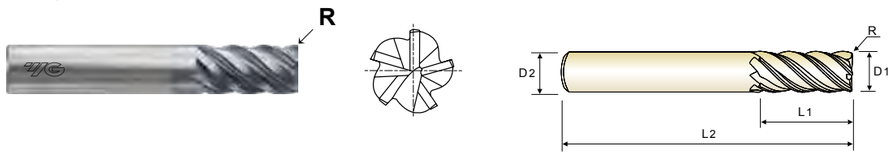
# TitaNox-POWER END MILLS

PLAIN SHANK **GMG28** SERIES
FLAT SHANK **GMG29** SERIES

## CARBIDE, 5 FLUTE CORNER RADIUS SHORT LENGTH
## 硬质合金，5刃 圆鼻 短刃

▶ Excellent performance results and long tool life when machining Titanium and other tough materials.
▶ This tool has high rigidity of flute so that is possible to use for heavy profile and high speed milling.
▶ For protecting corner chipping of end teeth, corner radius & chamfer are adopted.

▶加工钛或难切材料实现出色的性能，优秀的寿命
▶高刚性的沟槽可适用于重型仿形铣削及高速铣削
▶为了防止崩刃，可提供圆鼻和倒角铣刀




CARBIDE | 5 | 43°/44°/45° | PLAIN | FLAT | p.C362

Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| ◎ END MILL HOLDER | D118 - 137 | POWER MILLING CHUCK | D161 - 176 |
| ◎ - - | | HYDRAULIC CHUCK | D15 - 46 |
| | | SHRINK FIT HOLDER | D47 - 72 |
| ○ - - | | ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. | | Corner Radius 圆弧角 | Mill Diameter 直径 | Shank Diameter 柄径 | Length of Cut 刃长 | Overall Length 全长 |
|---|---|---|---|---|---|---|
| PLAIN | FLAT | R | $D_1$ | $D_2$ | $L_1$ | $L_2$ |
| **GMG28060** | **GMG29060** | R0.5 | **6.0** | 6 | 10 | 54 |
| **GMG28080** | **GMG29080** | R0.5 | **8.0** | 8 | 12 | 58 |
| **GMG28100** | **GMG29100** | R0.5 | **10.0** | 10 | 14 | 66 |
| **GMG28120** | **GMG29120** | R0.5 | **12.0** | 12 | 16 | 73 |
| **GMG28160** | **GMG29160** | R1.0 | **16.0** | 16 | 22 | 82 |
| **GMG28200** | **GMG29200** | R1.0 | **20.0** | 20 | 26 | 92 |
| **GMG28250** | **GMG29250** | R1.0 | **25.0** | 25 | 29 | 100 |

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.03 | h5<br>* Shank Dia.≥Ø12 : h6 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | ○ | ○ | ○ | ○ | ○ | ◎ | ◎ | | | | |



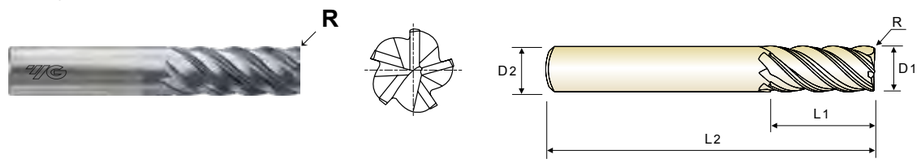
# TitaNox-POWER END MILLS

PLAIN SHANK **GMG30** SERIES
FLAT SHANK **GMG31** SERIES

## CARBIDE, 5 FLUTE CORNER RADIUS LONG LENGTH
## 硬质合金，5刃 圆鼻 长刃

▶ Excellent performance results and long tool life when machining Titanium and other tough materials.
▶ This tool has high rigidity of flute so that is possible to use for heavy profile and high speed milling.
▶ For protecting corner chipping of end teeth, corner radius & chamfer are adopted.

▶加工钛或难切材料实现出色的性能，优秀的寿命
▶高刚性的沟槽可适用于重型仿形铣削及高速铣削
▶为了防止崩刃，可提供圆鼻和倒角铣刀




CARBIDE | 5 | 43°/44°/45° | PLAIN | FLAT | p.C362

Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| ◎ END MILL HOLDER | D118 - 137 | POWER MILLING CHUCK | D161 - 176 |
| ◎ - - | | HYDRAULIC CHUCK | D15 - 46 |
| | | SHRINK FIT HOLDER | D47 - 72 |
| ○ - - | | ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. | | Corner Radius 圆弧角 | Mill Diameter 直径 | Shank Diameter 柄径 | Length of Cut 刃长 | Overall Length 全长 |
|---|---|---|---|---|---|---|
| PLAIN | FLAT | R | $D_1$ | $D_2$ | $L_1$ | $L_2$ |
| **GMG30060** | **GMG31060** | R0.3 | **6.0** | 6 | 13 | 57 |
| **GMG30901** | **GMG31901** | R0.5 | **6.0** | 6 | 13 | 57 |
| **GMG30902** | **GMG31902** | R1.0 | **6.0** | 6 | 13 | 57 |
| **GMG30080** | **GMG31080** | R0.5 | **8.0** | 8 | 19 | 63 |
| **GMG30903** | **GMG31903** | R1.0 | **8.0** | 8 | 19 | 63 |
| **GMG30904** | **GMG31904** | R1.5 | **8.0** | 8 | 19 | 63 |
| **GMG30905** | **GMG31905** | R2.0 | **8.0** | 8 | 19 | 63 |
| **GMG30100** | **GMG31100** | R0.5 | **10.0** | 10 | 22 | 72 |
| **GMG30906** | **GMG31906** | R1.0 | **10.0** | 10 | 22 | 72 |
| **GMG30907** | **GMG31907** | R1.5 | **10.0** | 10 | 22 | 72 |
| **GMG30908** | **GMG31908** | R2.0 | **10.0** | 10 | 22 | 72 |
| **GMG30120** | **GMG31120** | R0.5 | **12.0** | 12 | 26 | 83 |
| **GMG30909** | **GMG31909** | R1.0 | **12.0** | 12 | 26 | 83 |
| **GMG30910** | **GMG31910** | R1.5 | **12.0** | 12 | 26 | 83 |
| **GMG30911** | **GMG31911** | R2.0 | **12.0** | 12 | 26 | 83 |
| **GMG30912** | **GMG31912** | R2.5 | **12.0** | 12 | 26 | 83 |
| **GMG30913** | **GMG31913** | R3.0 | **12.0** | 12 | 26 | 83 |
| **GMG30160** | **GMG31160** | R1.0 | **16.0** | 16 | 36 | 92 |
| **GMG30914** | **GMG31914** | R1.5 | **16.0** | 16 | 36 | 92 |
| **GMG30915** | **GMG31915** | R2.0 | **16.0** | 16 | 36 | 92 |
| **GMG30916** | **GMG31916** | R2.5 | **16.0** | 16 | 36 | 92 |
| **GMG30917** | **GMG31917** | R3.0 | **16.0** | 16 | 36 | 92 |

▶ NEXT PAGE 下页

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.03 | h5<br>* Shank Dia.≥Ø12 : h6 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | ○ | ○ | ○ | ○ | ○ | ◎ | ◎ | | | | |

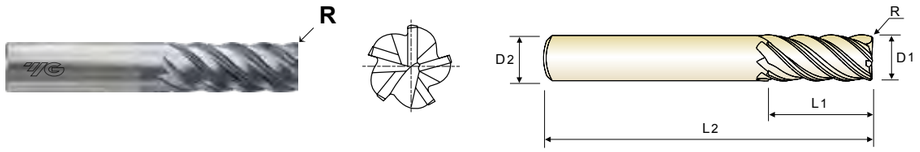
# TitaNox-POWER END MILLS

PLAIN SHANK **GMG30** SERIES
FLAT SHANK **GMG31** SERIES

## CARBIDE, 5 FLUTE CORNER RADIUS LONG LENGTH
## 硬质合金，5刃 圆鼻 长刃

▶ Excellent performance results and long tool life when machining Titanium and other tough materials.
▶ This tool has high rigidity of flute so that is possible to use for heavy profile and high speed milling.
▶ For protecting corner chipping of end teeth, corner radius & chamfer are adopted.

▶加工钛或难切材料实现出色的性能，优秀的寿命
▶高刚性的沟槽可适用于重型仿形铣削及高速铣削
▶为了防止崩刃，可提供圆鼻和倒角铣刀




CARBIDE | 5 | 43°/44°/45° | PLAIN | FLAT

p.C362

Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| ◎ END MILL HOLDER | D118 - 137 | POWER MILLING CHUCK | D161 - 176 |
| ◎ - | - | HYDRAULIC CHUCK | D15 - 46 |
| | | SHRINK FIT HOLDER | D47 - 72 |
| ○ - | - | ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. PLAIN | EDP No. FLAT | Corner Radius 圆弧角 R | Mill Diameter 直径 $D_1$ | Shank Diameter 柄径 $D_2$ | Length of Cut 刃长 $L_1$ | Overall Length 全长 $L_2$ |
|---|---|---|---|---|---|---|
| GMG30918 | GMG31918 | R4.0 | **16.0** | 16 | 36 | 92 |
| GMG30200 | GMG31200 | R1.0 | **20.0** | 20 | 44 | 104 |
| GMG30919 | GMG31919 | R1.5 | **20.0** | 20 | 44 | 104 |
| GMG30920 | GMG31920 | R2.0 | **20.0** | 20 | 44 | 104 |
| GMG30921 | GMG31921 | R2.5 | **20.0** | 20 | 44 | 104 |
| GMG30922 | GMG31922 | R3.0 | **20.0** | 20 | 44 | 104 |
| GMG30923 | GMG31923 | R4.0 | **20.0** | 20 | 44 | 104 |
| GMG30924 | GMG31924 | R5.0 | **20.0** | 20 | 44 | 104 |
| GMG30250 | GMG31250 | R1.0 | **25.0** | 25 | 54 | 121 |
| GMG30925 | GMG31925 | R1.5 | **25.0** | 25 | 54 | 121 |
| GMG30926 | GMG31926 | R2.0 | **25.0** | 25 | 54 | 121 |
| GMG30927 | GMG31927 | R2.5 | **25.0** | 25 | 54 | 121 |
| GMG30928 | GMG31928 | R3.0 | **25.0** | 25 | 54 | 121 |
| GMG30929 | GMG31929 | R4.0 | **25.0** | 25 | 54 | 121 |
| GMG30930 | GMG31930 | R5.0 | **25.0** | 25 | 54 | 121 |

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.03 | h5<br>* Shank Dia.≥Ø12 : h6 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | ○ | ○ | ○ | ○ | ○ | ◎ | ◎ | | | | |



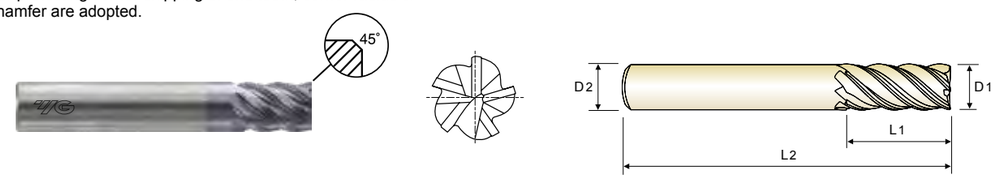
# TitaNox-POWER END MILLS

PLAIN SHANK **GMG24** SERIES
FLAT SHANK **GMG25** SERIES

## CARBIDE, 5 FLUTE SHORT LENGTH
## 硬质合金，5刃 短刃

▶ Excellent performance results and long tool life when machining Titanium and other tough materials.
▶ This tool has high rigidity of flute so that is possible to use for heavy profile and high speed milling.
▶ For protecting corner chipping of end teeth, corner radius & chamfer are adopted.

▶加工钛或难切材料实现出色的性能，优秀的寿命
▶高刚性的沟槽可适用于重型仿形铣削及高速铣削
▶为了防止崩刃，可提供圆鼻和倒角铣刀




CARBIDE | 5 | 43°/44°/45° | PLAIN | FLAT | C x 45°

p.C363

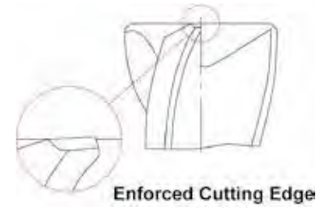
Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| ◎ END MILL HOLDER | D118 - 137 | POWER MILLING CHUCK | D161 - 176 |
| ◎ - | - | HYDRAULIC CHUCK | D15 - 46 |
| | | SHRINK FIT HOLDER | D47 - 72 |
| ○ - | - | ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. PLAIN | EDP No. FLAT | Mill Diameter 直径 $D_1$ | Shank Diameter 柄径 $D_2$ | Length of Cut 刃长 $L_1$ | Overall Length 全长 $L_2$ | Chamfer 导向 |
|---|---|---|---|---|---|---|
| GMG24060 | GMG25060 | **6.0** | 6 | 10 | 54 | 0.20 |
| GMG24080 | GMG25080 | **8.0** | 8 | 12 | 58 | 0.20 |
| GMG24100 | GMG25100 | **10.0** | 10 | 14 | 66 | 0.30 |
| GMG24120 | GMG25120 | **12.0** | 12 | 16 | 73 | 0.35 |
| GMG24160 | GMG25160 | **16.0** | 16 | 22 | 82 | 0.40 |
| GMG24200 | GMG25200 | **20.0** | 20 | 26 | 92 | 0.50 |
| GMG24250 | GMG25250 | **25.0** | 25 | 29 | 100 | 0.50 |

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.03 | h5<br>* Shank Dia.≥Ø12 : h6 |



**Enforced Cutting Edge**
刃线保护处理

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | ○ | ○ | ○ | ○ | ○ | ◎ | ◎ | | | | |

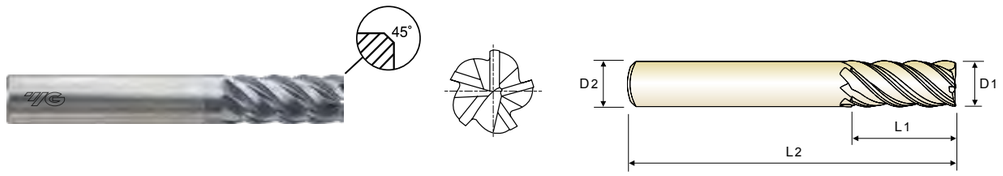
# TitaNox-POWER END MILLS

PLAIN SHANK **GMG26** SERIES
FLAT SHANK **GMG27** SERIES

## CARBIDE, 5 FLUTE LONG LENGTH
## 硬质合金，5刃 长刃

▶ Suitable for Titanium, Titanium Alloys, Inconel and Stainless Steels.
▶ Optimized flute design for chip evacuation and rigidity when machining difficult-to-cut materials.
▶ Special roughing profile for machining Titanium and Titanium Alloys.
▶Longer tool life with special coating.

▶适用于加工钛，钛合金及不锈钢
▶最佳沟槽设计在加工难切材料时实现优秀排屑及高刚性
▶粗加工用特殊设计为加工钛和钛合金
▶独特涂层实现高寿命




CARBIDE | 5 | 43°/44°/45° | PLAIN | FLAT | C x 45° | p.C363

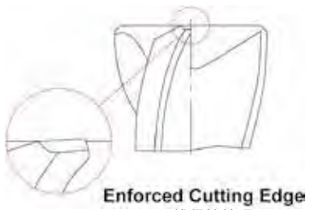
Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| ◎ END MILL HOLDER | D118 - 137 | POWER MILLING CHUCK | D161 - 176 |
| ◎ - | - | HYDRAULIC CHUCK | D15 - 46 |
| | | SHRINK FIT HOLDER | D47 - 72 |
| ○ - | - | ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. PLAIN | EDP No. FLAT | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Overall Length 全长 L2 | Chamfer 导向 |
|---|---|---|---|---|---|---|
| GMG26060 | GMG27060 | 6.0 | 6 | 13 | 57 | 0.20 |
| GMG26080 | GMG27080 | 8.0 | 8 | 19 | 63 | 0.20 |
| GMG26100 | GMG27100 | 10.0 | 10 | 22 | 72 | 0.30 |
| GMG26120 | GMG27120 | 12.0 | 12 | 26 | 83 | 0.35 |
| GMG26160 | GMG27160 | 16.0 | 16 | 36 | 92 | 0.40 |
| GMG26200 | GMG27200 | 20.0 | 20 | 44 | 104 | 0.50 |
| GMG26250 | GMG27250 | 25.0 | 25 | 54 | 121 | 0.50 |

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.03 | h5 * Shank Dia.≥Ø12 : h6 |




◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | M | | | K | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | | | | | | | | | Stainless steel | | | Grey cast iron | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | | | | | | | |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 | | | | | | | |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 | | | | | | | |
| Recommend | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | ○ | ○ | ○ | ○ | ○ | ◎ | ◎ | | | | |



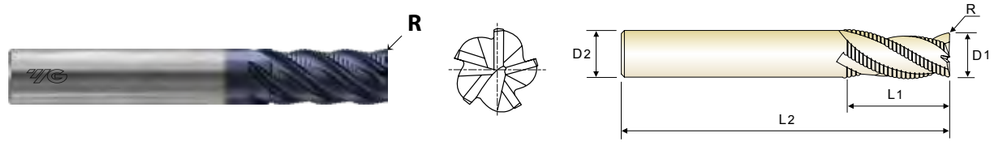
# TitaNox-POWER END MILLS

PLAIN SHANK **EHE54** SERIES
FLAT SHANK **EHE55** SERIES

## CARBIDE, 5 FLUTE 40° HELIX CORNER RADIUS ROUGHING - FINE
## 硬质合金，5刃 40度螺旋 圆鼻 粗加工-细牙

▶ Excellent performance results and long tool life when machining Titanium and other tough materials.
▶ This tool has high rigidity of flute so that is possible to use for heavy profile and high speed milling.
▶ For protecting corner chipping of end teeth, corner radius & chamfer are adopted.

▶加工钛或难切材料实现出色的性能，优秀的寿命
▶高刚性的沟槽可适用于重型仿形铣削及高速铣削
▶为了防止崩刃，可提供圆鼻和倒角铣刀




CARBIDE | 5 | 40° | HR | PLAIN | FLAT | p.C363

Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| ◎ END MILL HOLDER | D118 - 137 | POWER MILLING CHUCK | D161 - 176 |
| ◎ - | - | HYDRAULIC CHUCK | D15 - 46 |
| | | SHRINK FIT HOLDER | D47 - 72 |
| ○ - | - | ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. PLAIN | EDP No. FLAT | Corner Radius 圆弧角 R | Mill Diameter 直径 D1 (h10) | Shank Diameter 柄径 D2 (h5) | Length of Cut 刃长 L1 | Overall Length 全长 L2 |
|---|---|---|---|---|---|---|
| EHE54060 | EHE55060 | R0.2 | 6.0 | 6 | 16 | 57 |
| EHE54080 | EHE55080 | R0.2 | 8.0 | 8 | 16 | 63 |
| EHE54100 | EHE55100 | R0.3 | 10.0 | 10 | 22 | 72 |
| EHE54120 | EHE55120 | R0.3 | 12.0 | 12 | 26 | 83 |
| EHE54140 | EHE55140 | R0.3 | 14.0 | 14 | 26 | 83 |
| EHE54160 | EHE55160 | R0.3 | 16.0 | 16 | 32 | 92 |
| EHE54200 | EHE55200 | R0.3 | 20.0 | 20 | 38 | 104 |
| EHE54250 | EHE55250 | R0.3 | 25.0 | 25 | 45 | 121 |

**Tolerances according to (精度依照) DIN 7160 & 7161**
按DIN7160&7161的标准公差

| Tolerance range in μm / 公差单位为 Nominal-Diameter in mm / 直径单位为 | from 1 to 3 | over 3 to 6 | over 6 to 10 | over 10 to 18 | over 18 to 30 |
|---|---|---|---|---|---|
| h10 | 0 - 40 | 0 - 48 | 0 - 58 | 0 - 70 | 0 - 84 |
| h5 | 0 - 4 | 0 - 5 | 0 - 6 | 0 - 8 | 0 - 9 |

* Shank Dia.≥Ø12 : h6

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | M | | | K | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | | | | | | | | | Stainless steel | | | Grey cast iron | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | | | | | | | |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 | | | | | | | |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 | | | | | | | |
| Recommend | | | | | | | | | | | | ○ | ○ | ○ | | | | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | ○ | ○ | ○ | ○ | ○ | ◎ | ◎ | | | | |

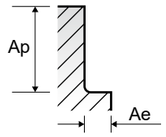
# TitaNox-POWER END MILLS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

### GMG40, GMG41 SERIES — 4 FLUTES CORNER RADIUS - SIDE CUTTING
### 4刃 圆鼻- 侧铣削

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description 材料描述 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 6.0 | 8.0 | 10.0 | 12.0 | 14.0 | 16.0 | 20.0 | 25.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1-4 | Non-alloy steel | 0.4D | 1.0D | Vc | 160 | 160 | 160 | 160 | 160 | 160 | 160 | 160 |
| | | | | | fz | 0.027 | 0.035 | 0.042 | 0.053 | 0.058 | 0.063 | 0.077 | 0.084 |
| | | | | | RPM | 8488 | 6366 | 5093 | 4244 | 3638 | 3183 | 2546 | 2037 |
| | | | | | FEED | 917 | 891 | 856 | 900 | 844 | 802 | 784 | 684 |
| | 5 | | 0.4D | 1.0D | Vc | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 |
| | | | | | fz | 0.025 | 0.035 | 0.042 | 0.049 | 0.056 | 0.063 | 0.070 | 0.084 |
| | | | | | RPM | 7958 | 5968 | 4775 | 3979 | 3410 | 2984 | 2387 | 1910 |
| | | | | | FEED | 796 | 836 | 802 | 780 | 764 | 752 | 668 | 642 |
| | 6-7 | Low alloy steel | 0.4D | 1.0D | Vc | 160 | 160 | 160 | 160 | 160 | 160 | 160 | 160 |
| | | | | | fz | 0.027 | 0.035 | 0.042 | 0.053 | 0.058 | 0.063 | 0.077 | 0.084 |
| | | | | | RPM | 8488 | 6366 | 5093 | 4244 | 3638 | 3183 | 2546 | 2037 |
| | | | | | FEED | 917 | 891 | 856 | 900 | 844 | 802 | 784 | 684 |
| | 8 | | 0.4D | 1.0D | Vc | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 |
| | | | | | fz | 0.025 | 0.035 | 0.042 | 0.049 | 0.056 | 0.063 | 0.070 | 0.084 |
| | | | | | RPM | 7958 | 5968 | 4775 | 3979 | 3410 | 2984 | 2387 | 1910 |
| | | | | | FEED | 796 | 836 | 802 | 780 | 764 | 752 | 668 | 642 |
| | 9 | | 0.4D | 1.0D | Vc | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 |
| | | | | | fz | 0.027 | 0.035 | 0.046 | 0.053 | 0.060 | 0.067 | 0.077 | 0.084 |
| | | | | | RPM | 7958 | 5968 | 4775 | 3979 | 3410 | 2984 | 2387 | 1910 |
| | | | | | FEED | 859 | 836 | 879 | 844 | 819 | 800 | 735 | 642 |
| | 10-11.1 | High alloyed steel, and tool steel | 0.4D | 1.0D | Vc | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 |
| | | | | | fz | 0.027 | 0.035 | 0.046 | 0.053 | 0.060 | 0.067 | 0.077 | 0.084 |
| | | | | | RPM | 7958 | 5968 | 4775 | 3979 | 3410 | 2984 | 2387 | 1910 |
| | | | | | FEED | 859 | 836 | 879 | 844 | 819 | 800 | 735 | 642 |
| | 12-13 | | 0.4D | 1.0D | Vc | 155 | 155 | 155 | 155 | 155 | 155 | 155 | 155 |
| | | | | | fz | 0.034 | 0.046 | 0.057 | 0.067 | 0.076 | 0.086 | 0.095 | 0.114 |
| | | | | | RPM | 8223 | 6167 | 4934 | 4112 | 3524 | 3084 | 2467 | 1974 |
| | | | | | FEED | 1118 | 1135 | 1125 | 1102 | 1071 | 1061 | 937 | 900 |
| M | 14.1 | Stainless steel | 0.4D | 1.0D | Vc | 105 | 105 | 105 | 105 | 105 | 105 | 105 | 105 |
| | | | | | fz | 0.025 | 0.034 | 0.042 | 0.048 | 0.055 | 0.062 | 0.071 | 0.081 |
| | | | | | RPM | 5570 | 4178 | 3342 | 2785 | 2387 | 2089 | 1671 | 1337 |
| | | | | | FEED | 557 | 568 | 561 | 535 | 525 | 518 | 475 | 433 |
| | 14.2 | | 0.4D | 0.6D | Vc | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 |
| | | | | | fz | 0.016 | 0.021 | 0.027 | 0.032 | 0.036 | 0.040 | 0.046 | 0.052 |
| | | | | | RPM | 2334 | 1751 | 1401 | 1167 | 1000 | 875 | 700 | 560 |
| | | | | | FEED | 149 | 147 | 151 | 149 | 144 | 140 | 129 | 117 |
| K | 15-20 | Grey cast iron | 0.4D | 1.0D | Vc | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 175 |
| | | | | | fz | 0.021 | 0.028 | 0.035 | 0.042 | 0.048 | 0.053 | 0.060 | 0.070 |
| | | | | | RPM | 9284 | 6963 | 5570 | 4642 | 3979 | 3482 | 2785 | 2228 |
| | | | | | FEED | 780 | 780 | 780 | 780 | 764 | 738 | 668 | 624 |
| S | 31-35 | Heat Resistant Super Alloys | 0.3D | 0.6D | Vc | 32 | 32 | 32 | 32 | 32 | 32 | 32 | 32 |
| | | | | | fz | 0.020 | 0.026 | 0.032 | 0.038 | 0.044 | 0.048 | 0.055 | 0.065 |
| | | | | | RPM | 1698 | 1273 | 1019 | 849 | 728 | 637 | 509 | 407 |
| | | | | | FEED | 136 | 132 | 130 | 129 | 128 | 122 | 112 | 106 |
| | 36-37 | Titanium Alloys | 0.4D | 1.0D | Vc | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 |
| | | | | | fz | 0.034 | 0.048 | 0.057 | 0.067 | 0.076 | 0.086 | 0.095 | 0.114 |
| | | | | | RPM | 3714 | 2785 | 2228 | 1857 | 1592 | 1393 | 1114 | 891 |
| | | | | | FEED | 505 | 535 | 508 | 498 | 484 | 479 | 423 | 406 |





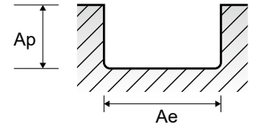

TitaNox-POWER END MILLS

RECOMMENDED CUTTING CONDITIONS
推荐加工参数

### GMG40, GMG41 SERIES — 4 FLUTES CORNER RADIUS - SLOTTING
### 4刃 圆鼻- 槽铣削

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description 材料描述 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 6.0 | 8.0 | 10.0 | 12.0 | 14.0 | 16.0 | 20.0 | 25.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1-4 | Non-alloy steel | 1.0D | 1.0D | Vc | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 |
| | | | | | fz | 0.025 | 0.034 | 0.042 | 0.049 | 0.056 | 0.063 | 0.070 | 0.084 |
| | | | | | RPM | 6631 | 4974 | 3979 | 3316 | 2842 | 2487 | 1989 | 1592 |
| | | | | | FEED | 663 | 676 | 668 | 650 | 637 | 627 | 557 | 535 |
| | 5 | | 1.0D | 1.0D | Vc | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 |
| | | | | | fz | 0.025 | 0.034 | 0.042 | 0.049 | 0.056 | 0.063 | 0.070 | 0.077 |
| | | | | | RPM | 6366 | 4775 | 3820 | 3183 | 2728 | 2387 | 1910 | 1528 |
| | | | | | FEED | 637 | 649 | 642 | 624 | 611 | 602 | 535 | 471 |
| | 6-7 | Low alloy steel | 1.0D | 1.0D | Vc | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 |
| | | | | | fz | 0.025 | 0.034 | 0.042 | 0.049 | 0.056 | 0.063 | 0.070 | 0.084 |
| | | | | | RPM | 6631 | 4974 | 3979 | 3316 | 2842 | 2487 | 1989 | 1592 |
| | | | | | FEED | 663 | 676 | 668 | 650 | 637 | 627 | 557 | 535 |
| | 8-9 | | 1.0D | 1.0D | Vc | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 |
| | | | | | fz | 0.025 | 0.034 | 0.042 | 0.049 | 0.056 | 0.063 | 0.070 | 0.077 |
| | | | | | RPM | 6366 | 4775 | 3820 | 3183 | 2728 | 2387 | 1910 | 1528 |
| | | | | | FEED | 637 | 649 | 642 | 624 | 611 | 602 | 535 | 471 |
| | 10-11.1 | High alloyed steel, and tool steel | 1.0D | 1.0D | Vc | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 |
| | | | | | fz | 0.027 | 0.035 | 0.042 | 0.053 | 0.058 | 0.063 | 0.077 | 0.084 |
| | | | | | RPM | 6366 | 4775 | 3820 | 3183 | 2728 | 2387 | 1910 | 1528 |
| | | | | | FEED | 688 | 668 | 642 | 675 | 633 | 602 | 588 | 513 |
| M | 12-13 | Stainless steel | 1.0D | 1.0D | Vc | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 |
| | | | | | fz | 0.034 | 0.046 | 0.057 | 0.067 | 0.074 | 0.081 | 0.095 | 0.105 |
| | | | | | RPM | 6631 | 4974 | 3979 | 3316 | 2842 | 2487 | 1989 | 1592 |
| | | | | | FEED | 902 | 915 | 907 | 889 | 841 | 806 | 756 | 668 |
| | 14.1 | | 1.0D | 1.0D | Vc | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 85 |
| | | | | | fz | 0.025 | 0.034 | 0.042 | 0.048 | 0.055 | 0.062 | 0.071 | 0.081 |
| | | | | | RPM | 4509 | 3382 | 2706 | 2255 | 1933 | 1691 | 1353 | 1082 |
| | | | | | FEED | 451 | 460 | 455 | 433 | 425 | 419 | 384 | 351 |
| | 14.2 | | 1.0D | 0.5D | Vc | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 |
| | | | | | fz | 0.016 | 0.021 | 0.027 | 0.032 | 0.036 | 0.040 | 0.046 | 0.052 |
| | | | | | RPM | 1910 | 1432 | 1146 | 955 | 819 | 716 | 573 | 458 |
| | | | | | FEED | 122 | 120 | 124 | 122 | 118 | 115 | 105 | 95 |
| K | 15-20 | Grey cast iron | 1.0D | 1.0D | Vc | 140 | 140 | 140 | 140 | 140 | 140 | 140 | 140 |
| | | | | | fz | 0.021 | 0.028 | 0.035 | 0.042 | 0.048 | 0.053 | 0.060 | 0.067 |
| | | | | | RPM | 7427 | 5570 | 4456 | 3714 | 3183 | 2785 | 2228 | 1783 |
| | | | | | FEED | 624 | 624 | 624 | 624 | 611 | 590 | 535 | 478 |
| S | 31-35 | Heat Resistant Super Alloys | 1.0D | 0.4D | Vc | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 |
| | | | | | fz | 0.018 | 0.024 | 0.030 | 0.036 | 0.040 | 0.044 | 0.050 | 0.055 |
| | | | | | RPM | 1326 | 995 | 796 | 663 | 568 | 497 | 398 | 318 |
| | | | | | FEED | 95 | 95 | 95 | 95 | 91 | 88 | 80 | 70 |
| | 36-37 | Titanium Alloys | 1.0D | 1.0D | Vc | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 |
| | | | | | fz | 0.034 | 0.046 | 0.057 | 0.067 | 0.076 | 0.086 | 0.095 | 0.105 |
| | | | | | RPM | 2918 | 2188 | 1751 | 1459 | 1251 | 1094 | 875 | 700 |
| | | | | | FEED | 397 | 403 | 399 | 391 | 380 | 376 | 333 | 294 |



# TitaNox-POWER END MILLS

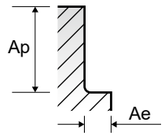
## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

**GMG28 GMG29 GMG30 GMG31** — **5 FLUTES CORNER RADIUS - SIDE CUTTING**
**5刃 圆鼻- 侧铣削**

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description 材料描述 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 (Ø) 6.0 | 8.0 | 10.0 | 12.0 | 14.0 | 16.0 | 18.0 | 20.0 | 25.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1-4 | Non-alloy steel | 0.3D | 1.5D(*) | Vc | 144 | 144 | 144 | 144 | 144 | 144 | 144 | 144 | 144 |
| | | | | | fz | 0.034 | 0.038 | 0.050 | 0.063 | 0.069 | 0.076 | 0.083 | 0.089 | 0.101 |
| | | | | | RPM | 7639 | 5730 | 4584 | 3820 | 3274 | 2865 | 2546 | 2292 | 1833 |
| | | | | | FEED | 1299 | 1089 | 1146 | 1203 | 1130 | 1089 | 1057 | 1020 | 926 |
| | 5 | | 0.3D | 1.5D(*) | Vc | 101 | 101 | 101 | 101 | 101 | 101 | 101 | 101 | 101 |
| | | | | | fz | 0.034 | 0.038 | 0.050 | 0.063 | 0.069 | 0.076 | 0.083 | 0.089 | 0.101 |
| | | | | | RPM | 5358 | 4019 | 3215 | 2679 | 2296 | 2009 | 1786 | 1607 | 1286 |
| | | | | | FEED | 911 | 764 | 804 | 844 | 792 | 764 | 741 | 715 | 649 |
| | 6-7 | Low alloy steel | 0.3D | 1.5D(*) | Vc | 144 | 144 | 144 | 144 | 144 | 144 | 144 | 144 | 144 |
| | | | | | fz | 0.034 | 0.038 | 0.050 | 0.063 | 0.069 | 0.076 | 0.083 | 0.089 | 0.101 |
| | | | | | RPM | 7639 | 5730 | 4584 | 3820 | 3274 | 2865 | 2546 | 2292 | 1833 |
| | | | | | FEED | 1299 | 1089 | 1146 | 1203 | 1130 | 1089 | 1057 | 1020 | 926 |
| | 8-9 | | 0.3D | 1.5D(*) | Vc | 101 | 101 | 101 | 101 | 101 | 101 | 101 | 101 | 101 |
| | | | | | fz | 0.034 | 0.038 | 0.050 | 0.063 | 0.069 | 0.076 | 0.083 | 0.089 | 0.101 |
| | | | | | RPM | 5358 | 4019 | 3215 | 2679 | 2296 | 2009 | 1786 | 1607 | 1286 |
| | | | | | FEED | 911 | 764 | 804 | 844 | 792 | 764 | 741 | 715 | 649 |
| | 10-11.1 | High alloyed steel, and tool steel | 0.3D | 1.5D(*) | Vc | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 |
| | | | | | fz | 0.024 | 0.027 | 0.035 | 0.044 | 0.049 | 0.054 | 0.058 | 0.062 | 0.071 |
| | | | | | RPM | 3183 | 2387 | 1910 | 1592 | 1364 | 1194 | 1061 | 955 | 764 |
| | | | | | FEED | 382 | 322 | 334 | 350 | 334 | 322 | 308 | 296 | 271 |
| M | 12-13 | Stainless steel | 0.3D | 1.5D(*) | Vc | 117 | 117 | 117 | 117 | 117 | 117 | 117 | 117 | 117 |
| | | | | | fz | 0.024 | 0.025 | 0.030 | 0.046 | 0.051 | 0.054 | 0.057 | 0.061 | 0.071 |
| | | | | | RPM | 6207 | 4655 | 3724 | 3104 | 2660 | 2328 | 2069 | 1862 | 1490 |
| | | | | | FEED | 745 | 582 | 559 | 714 | 678 | 628 | 590 | 568 | 529 |
| | 14.1 | | 0.3D | 1.5D(*) | Vc | 82 | 82 | 82 | 82 | 82 | 82 | 82 | 82 | 82 |
| | | | | | fz | 0.030 | 0.032 | 0.038 | 0.063 | 0.065 | 0.069 | 0.070 | 0.076 | 0.088 |
| | | | | | RPM | 4350 | 3263 | 2610 | 2175 | 1864 | 1631 | 1450 | 1305 | 1044 |
| | | | | | FEED | 653 | 522 | 496 | 685 | 606 | 563 | 508 | 496 | 459 |
| | 14.2 | | 0.3D | 1.5D(*) | Vc | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 |
| | | | | | fz | 0.030 | 0.032 | 0.038 | 0.063 | 0.065 | 0.069 | 0.070 | 0.076 | 0.088 |
| | | | | | RPM | 3130 | 2348 | 1878 | 1565 | 1341 | 1174 | 1043 | 939 | 751 |
| | | | | | FEED | 470 | 376 | 357 | 493 | 436 | 405 | 365 | 357 | 331 |
| K | 15-20 | Grey cast iron | 0.3D | 1.5D(*) | Vc | 106 | 106 | 106 | 106 | 106 | 106 | 106 | 106 | 106 |
| | | | | | fz | 0.043 | 0.048 | 0.063 | 0.079 | 0.087 | 0.096 | 0.103 | 0.111 | 0.126 |
| | | | | | RPM | 5623 | 4218 | 3374 | 2812 | 2410 | 2109 | 1874 | 1687 | 1350 |
| | | | | | FEED | 1209 | 1012 | 1063 | 1111 | 1048 | 1012 | 965 | 936 | 850 |
| S | 31-35 | Heat Resistant Super Alloys | 0.1D | 1.5D | Vc | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 31 |
| | | | | | fz | 0.021 | 0.022 | 0.027 | 0.044 | 0.046 | 0.048 | 0.049 | 0.053 | 0.062 |
| | | | | | RPM | 1645 | 1233 | 987 | 822 | 705 | 617 | 548 | 493 | 395 |
| | | | | | FEED | 173 | 136 | 133 | 181 | 162 | 148 | 134 | 131 | 122 |
| | 36-37 | Titanium Alloys | 0.3D | 1.5D(*) | Vc | 69 | 69 | 69 | 69 | 69 | 69 | 69 | 69 | 69 |
| | | | | | fz | 0.027 | 0.029 | 0.034 | 0.057 | 0.059 | 0.062 | 0.063 | 0.069 | 0.079 |
| | | | | | RPM | 3661 | 2745 | 2196 | 1830 | 1569 | 1373 | 1220 | 1098 | 879 |
| | | | | | FEED | 494 | 398 | 373 | 522 | 463 | 426 | 384 | 379 | 347 |

* Maximum recommended depth shown.
* Finish cuts typically require reduced feed rates and/or higher spindle speed, with radial width of 2% x D1 or less.
* Reduce speed and feed recommendations for materials harder than listed.
* Above recommendations are based on ideal conditions.
  Adjust parameters accordingly for smaller taper machining centers or less rigid conditions.




* 显示最大建议深度
* 精加工通常需要降低进给和/或提高转速，径向切深为2%x D1或更小
* 加工比目录上的工件硬度更高时,降低切削速度和进给
* 以上推荐参数是基于理想的工况 相应地调整参数以适应更小的加工中心或更少的刚性条件
* 具有加工铬镍铁合金工况的特殊形状设计



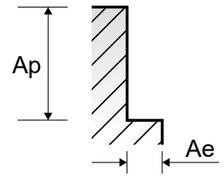
TitaNox-POWER END MILLS
RECOMMENDED CUTTING CONDITIONS
推荐加工参数

**GMG24 GMG25 GMG26 GMG27** — **5 FLUTES - SIDE CUTTING**
**5刃 - 侧铣削**

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description 材料描述 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 6.0 | 8.0 | 10.0 | 12.0 | 14.0 | 16.0 | 18.0 | 20.0 | 25.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1-4 | Non-alloy steel | 0.3D | 1.5D(*) | Vc | 144 | 144 | 144 | 144 | 144 | 144 | 144 | 144 | 144 |
| | | | | | fz | 0.034 | 0.038 | 0.050 | 0.063 | 0.069 | 0.076 | 0.083 | 0.089 | 0.101 |
| | | | | | RPM | 7639 | 5730 | 4584 | 3820 | 3274 | 2865 | 2546 | 2292 | 1833 |
| | | | | | FEED | 1299 | 1089 | 1146 | 1203 | 1130 | 1089 | 1057 | 1020 | 926 |
| | 5 | | 0.3D | 1.5D(*) | Vc | 101 | 101 | 101 | 101 | 101 | 101 | 101 | 101 | 101 |
| | | | | | fz | 0.034 | 0.038 | 0.050 | 0.063 | 0.069 | 0.076 | 0.083 | 0.089 | 0.101 |
| | | | | | RPM | 5358 | 4019 | 3215 | 2679 | 2296 | 2009 | 1786 | 1607 | 1286 |
| | | | | | FEED | 911 | 764 | 804 | 844 | 792 | 764 | 741 | 715 | 649 |
| | 6-7 | Low alloy steel | 0.3D | 1.5D(*) | Vc | 144 | 144 | 144 | 144 | 144 | 144 | 144 | 144 | 144 |
| | | | | | fz | 0.034 | 0.038 | 0.050 | 0.063 | 0.069 | 0.076 | 0.083 | 0.089 | 0.101 |
| | | | | | RPM | 7639 | 5730 | 4584 | 3820 | 3274 | 2865 | 2546 | 2292 | 1833 |
| | | | | | FEED | 1299 | 1089 | 1146 | 1203 | 1130 | 1089 | 1057 | 1020 | 926 |
| | 8-9 | | 0.3D | 1.5D(*) | Vc | 101 | 101 | 101 | 101 | 101 | 101 | 101 | 101 | 101 |
| | | | | | fz | 0.034 | 0.038 | 0.050 | 0.063 | 0.069 | 0.076 | 0.083 | 0.089 | 0.101 |
| | | | | | RPM | 5358 | 4019 | 3215 | 2679 | 2296 | 2009 | 1786 | 1607 | 1286 |
| | | | | | FEED | 911 | 764 | 804 | 844 | 792 | 764 | 741 | 715 | 649 |
| | 10-11.1 | High alloyed steel, and tool steel | 0.3D | 1.5D(*) | Vc | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 |
| | | | | | fz | 0.024 | 0.027 | 0.035 | 0.044 | 0.049 | 0.054 | 0.058 | 0.062 | 0.071 |
| | | | | | RPM | 3183 | 2387 | 1910 | 1592 | 1364 | 1194 | 1061 | 955 | 764 |
| | | | | | FEED | 382 | 322 | 334 | 350 | 334 | 322 | 308 | 296 | 271 |
| M | 12-13 | Stainless steel | 0.3D | 1.5D(*) | Vc | 117 | 117 | 117 | 117 | 117 | 117 | 117 | 117 | 117 |
| | | | | | fz | 0.024 | 0.025 | 0.030 | 0.046 | 0.051 | 0.054 | 0.057 | 0.061 | 0.071 |
| | | | | | RPM | 6207 | 4655 | 3724 | 3104 | 2660 | 2328 | 2069 | 1862 | 1490 |
| | | | | | FEED | 745 | 582 | 559 | 714 | 678 | 628 | 590 | 568 | 529 |
| | 14.1 | | 0.3D | 1.5D(*) | Vc | 82 | 82 | 82 | 82 | 82 | 82 | 82 | 82 | 82 |
| | | | | | fz | 0.030 | 0.032 | 0.038 | 0.063 | 0.065 | 0.069 | 0.070 | 0.076 | 0.088 |
| | | | | | RPM | 4350 | 3263 | 2610 | 2175 | 1864 | 1631 | 1450 | 1305 | 1044 |
| | | | | | FEED | 653 | 522 | 496 | 685 | 606 | 563 | 508 | 496 | 459 |
| | 14.2 | | 0.3D | 1.5D(*) | Vc | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 |
| | | | | | fz | 0.030 | 0.032 | 0.038 | 0.063 | 0.065 | 0.069 | 0.070 | 0.076 | 0.088 |
| | | | | | RPM | 3130 | 2348 | 1878 | 1565 | 1341 | 1174 | 1043 | 939 | 751 |
| | | | | | FEED | 470 | 376 | 357 | 493 | 436 | 405 | 365 | 357 | 331 |
| K | 15-20 | Grey cast iron | 0.3D | 1.5D(*) | Vc | 106 | 106 | 106 | 106 | 106 | 106 | 106 | 106 | 106 |
| | | | | | fz | 0.043 | 0.048 | 0.063 | 0.079 | 0.087 | 0.096 | 0.103 | 0.111 | 0.126 |
| | | | | | RPM | 5623 | 4218 | 3374 | 2812 | 2410 | 2109 | 1874 | 1687 | 1350 |
| | | | | | FEED | 1209 | 1012 | 1063 | 1111 | 1048 | 1012 | 965 | 936 | 850 |
| S | 31-35 | Heat Resistant Super Alloys | 0.1D | 1.5D | Vc | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 31 |
| | | | | | fz | 0.021 | 0.022 | 0.027 | 0.044 | 0.046 | 0.048 | 0.049 | 0.053 | 0.062 |
| | | | | | RPM | 1645 | 1233 | 987 | 822 | 705 | 617 | 548 | 493 | 395 |
| | | | | | FEED | 173 | 136 | 133 | 181 | 162 | 148 | 134 | 131 | 122 |
| | 36-37 | Titanium Alloys | 0.3D | 1.5D(*) | Vc | 69 | 69 | 69 | 69 | 69 | 69 | 69 | 69 | 69 |
| | | | | | fz | 0.027 | 0.029 | 0.034 | 0.057 | 0.059 | 0.062 | 0.063 | 0.069 | 0.079 |
| | | | | | RPM | 3661 | 2745 | 2196 | 1830 | 1569 | 1373 | 1220 | 1098 | 879 |
| | | | | | FEED | 494 | 398 | 373 | 522 | 463 | 426 | 384 | 379 | 347 |

* Maximum recommended depth shown.
* Finish cuts typically require reduced feed rates and/or higher spindle speed, with radial width of 2% x D1 or less.
* Reduce speed and feed recommendations for materials harder than listed.
* Above recommendations are based on ideal conditions.
  Adjust parameters accordingly for smaller taper machining centers or less rigid conditions.

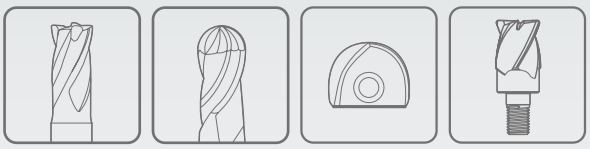



* 显示最大建议深度
* 精加工通常需要降低进给和/或提高转速，径向切深为2%x D1或更小
* 加工比目录上的工件硬度更高时,降低切削速度和进给
* 以上推荐参数是基于理想的工况 相应地调整参数以适应更小的加工中心或更少的刚性条件
* 具有加工铬镍铁合金工况的特殊形状设计

## EHE54, EHE55 SERIES — 5 FLUTES ROUGHING - SIDE CUTTING
**5刃 粗加工 - 侧铣削**

| ISO | VDI 3323 | Material Description 材料描述 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 6.0 | 8.0 | 10.0 | 12.0 | 14.0 | 16.0 | 20.0 | 25.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| M | 12-13 | Stainless steel | ~Ø10/0.15D ~Ø16/0.10D ~Ø25/0.05D | 1.5D | Vc | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 |
| | | | | | fz | 0.025 | 0.034 | 0.041 | 0.051 | 0.057 | 0.063 | 0.081 | 0.091 |
| | | | | | RPM | 4244 | 3183 | 2546 | 2122 | 1819 | 1592 | 1273 | 1019 |
| | | | | | FEED | 531 | 541 | 522 | 541 | 518 | 501 | 516 | 463 |
| S | 31-35 | Heat Resistant Super Alloys | 0.05D | 1.0D | Vc | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 |
| | | | | | fz | 0.020 | 0.025 | 0.037 | 0.040 | 0.046 | 0.052 | 0.061 | 0.068 |
| | | | | | RPM | 2122 | 1592 | 1273 | 1061 | 909 | 796 | 637 | 509 |
| | | | | | FEED | 212 | 199 | 236 | 212 | 209 | 207 | 194 | 173 |
| | 36-37 | Titanium Alloys | ~Ø10/0.15D ~Ø16/0.10D ~Ø25/0.05D | 1.5D | Vc | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 |
| | | | | | fz | 0.022 | 0.031 | 0.038 | 0.046 | 0.052 | 0.058 | 0.074 | 0.084 |
| | | | | | RPM | 3448 | 2586 | 2069 | 1724 | 1478 | 1293 | 1035 | 828 |
| | | | | | FEED | 379 | 401 | 393 | 397 | 384 | 375 | 383 | 348 |

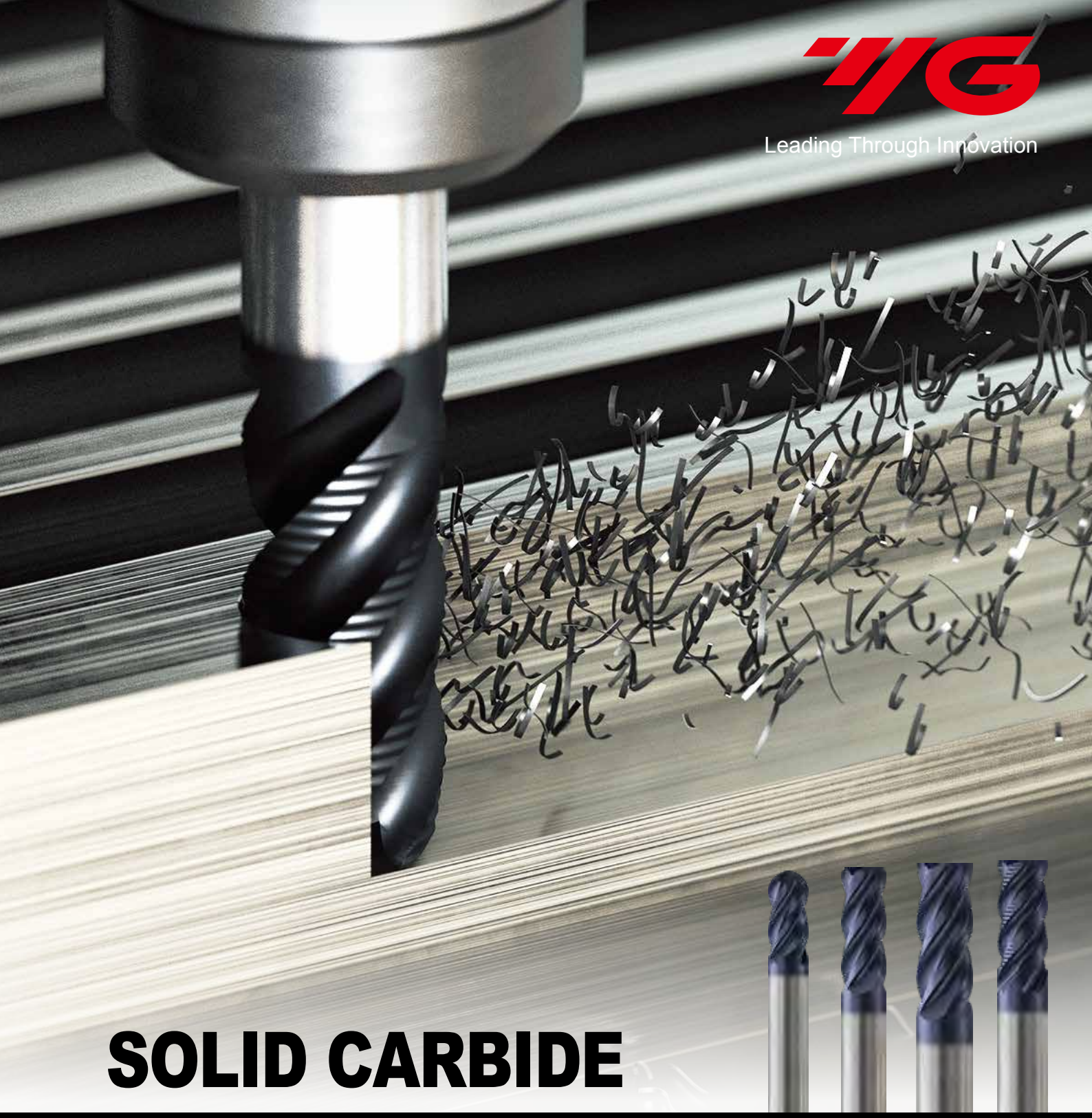
Global Cutting Tool Leader **YG-1**



# MILLING

YG

Leading Through Innovation



# SOLID CARBIDE

# SUS-CUT END MILLS

- High Speed Machining for Exotic Materials: Titanium, Inconel and Stainless Steels
- 适用于高速加工耐高温材料：钛合金，铬镍铁合金和不锈钢

# SELECTION GUIDE
## 选用指南

MILLING TOOLS

## SOLID CARBIDE
# SUS-CUT END MILLS

Exotic materials like Stainless Steels
Nickel alloys and Titanium
加工不锈钢，镍合金和钛合金

Please visit globalyg1.com/mat for material search

◎ : Excellent (优秀) ○ : Good (良好)

Recommended cutting conditions (推荐加工参数) : p.C375

| ISO | VDI 3323 | Material Description 工件材料 | Composition / Structure / Heat Treatment 成分 / 结构 / 热处理 | | HB | HRc | EMD88 | EMD83 | EHD84 | EMD82 | EMD92 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | SERIES 系列 | | | | | EMD88 | EMD83 | EHD84 | EMD82 | EMD92 |
| | | FLUTE 槽数 | | | | | 4 | 4 | 3 | 4 | 3-5 |
| | | HELIX ANGLE 螺旋角度 | | | | | 36°~39.75° (SINUSOIDAL) | 36°~39.75° (SINUSOIDAL) | 45° | 36°~39.75° (SINUSOIDAL) | 45° (MULTIPLE HELIX) |
| | | CUTTING EDGE SHAPE 类型 | | | | | BALL NOSE | CORNER RADIUS | SQUARE | SQUARE | ROUGHING CORNER RADIUS |
| | | SIZE MIN 最小尺寸 | | | | | R1.5 | D1.0 | D1.0 | D1.0 | D3.0 |
| | | SIZE MAX 最大尺寸 | | | | | R10.0 | D20.0 | D20.0 | D20.0 | D20.0 |
| | | PAGE 页数 | | | | | C367 | C368-369 | C370 | C371-372 | C373-374 |
| | | | | | | | - | - | - | - | Type A/B |
| | | | | | | | Y-Coating | Y-Coating | Y-Coating | Y-Coating | Y-Coating |
| P | 1 | Non-alloy steel | About 0.15% C | Annealed | 125 | | ◎ | ◎ | ◎ | ◎ | ○ |
| | 2 | | About 0.45% C | Annealed | 190 | 13 | ◎ | ◎ | ◎ | ◎ | ○ |
| | 3 | | About 0.45% C | Quenched & Tempered | 250 | 25 | ◎ | ◎ | ◎ | ◎ | ○ |
| | 4 | | About 0.75% C | Annealed | 270 | 28 | ◎ | ◎ | ◎ | ◎ | ○ |
| | 5 | | About 0.75% C | Quenched & Tempered | 300 | 32 | ○ | ○ | ○ | ○ | ○ |
| | 6 | Low alloy steel | | Annealed | 180 | 10 | ◎ | ◎ | ◎ | ◎ | ○ |
| | 7 | | | Quenched & Tempered | 275 | 29 | ◎ | ◎ | ◎ | ◎ | ○ |
| | 8 | | | Quenched & Tempered | 300 | 32 | ○ | ○ | ○ | ○ | ○ |
| | 9 | | | Quenched & Tempered | 350 | 38 | ○ | ○ | ○ | ○ | ○ |
| | 10 | High alloyed steel, and tool steel | | Annealed | 200 | 15 | ◎ | ◎ | ◎ | ◎ | ○ |
| | 11 | | | Quenched & Tempered | 325 | 35 | ○ | ○ | ○ | ○ | ○ |
| M | 12 | Stainless steel | Ferritic / Martensitic | Annealed | 200 | 15 | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 13 | | Martensitic | Quenched & Tempered | 240 | 23 | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 14 | | Austenitic | | 180 | 10 | ◎ | ◎ | ◎ | ◎ | ◎ |
| K | 15 | Grey cast iron | Pearlitic / ferritic | | 180 | 10 | ○ | ○ | ○ | ○ | ○ |
| | 16 | | Pearlitic (Martensitic) | | 260 | 26 | ○ | ○ | ○ | ○ | ○ |
| | 17 | Nodular cast iron | Ferritic | | 160 | 3 | ○ | ○ | ○ | ○ | ○ |
| | 18 | | Pearlitic | | 250 | 25 | ○ | ○ | ○ | ○ | ○ |
| | 19 | Malleable cast iron | Ferritic | | 130 | | ○ | ○ | ○ | ○ | ○ |
| | 20 | | Pearlitic | | 230 | 21 | ○ | ○ | ○ | ○ | ○ |
| N | 21 | Aluminum-wrought alloy | Not Curable | | 60 | | | | | | |
| | 22 | | Curable | Hardened | 100 | | | | | | |
| | 23 | Aluminum-cast, alloyed | ≤ 12% Si, Not Curable | | 75 | | | | | | |
| | 24 | | ≤ 12% Si, Curable | Hardened | 90 | | | | | | |
| | 25 | | > 12% Si, Not Curable | | 130 | | | | | | |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | Cutting Alloys, PB>1% | | 110 | | | | ○ | | |
| | 27 | | CuZn, CuSnZn (Brass) | | 90 | | | | ○ | | |
| | 28 | | CuSn, lead-free copper and electrolytic copper | | 100 | | | | ○ | | |
| | 29 | Non Metallic Materials | Duroplastic, Fiber Reinforced Plastic | | | | | | | | |
| | 30 | | Rubber, Wood, etc. | | | | | | | | |
| S | 31 | Heat Resistant Super Alloys | Fe Based | Annealed | 200 | 15 | ○ | ○ | ○ | ○ | ○ |
| | 32 | | | Cured | 280 | 30 | ○ | ○ | ○ | ○ | ○ |
| | 33 | | Ni or Co Based | Annealed | 250 | 25 | ○ | ○ | ○ | ○ | ○ |
| | 34 | | | Cured | 350 | 38 | ○ | ○ | ○ | ○ | ○ |
| | 35 | | | Cast | 320 | 34 | ○ | ○ | ○ | ○ | ○ |
| | 36 | Titanium Alloys | Pure Titanium | | 400 Rm | | ○ | ○ | ○ | ○ | ○ |
| | 37 | | Alpha + Beta Alloys | Hardened | 1050 Rm | | ○ | ○ | ○ | ○ | ○ |
| H | 38 | Hardened steel | | Hardened | 550 | 55 | | | | | |
| | 39 | | | Hardened | 630 | 60 | | | | | |
| | 40 | Chilled Cast Iron | | Cast | 400 | 42 | | | | | |
| | 41 | Hardened Cast Iron | | Hardened | 550 | 55 | | | | | |

BALL NOSE = 球头　CORNER RADIUS = 圆鼻　SQUARE = 平头
ROUGHING = 粗加工　MULTIPLE HELIX = 不等螺旋





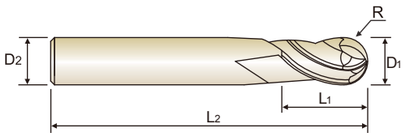
# SUS-CUT END MILLS

PLAIN SHANK **EMD88 SERIES**

## CARBIDE, 4 FLUTE BALL NOSE
## 硬质合金，4刃 球头

- ▶ Suitable for heavy cutting and good wear resistance due to new coating and new configuration of tool
- ▶ Suitable for cutting stainless steels and sticky materials up to HRc40
- ▶ Reduction of vibration at cutting and suitable for rough and semifinish cutting due to special flute design and wave helix flutes

- ▶ 采用新涂层及新形状，强力切削及耐磨性优秀。
- ▶ 不锈钢和粘着材料 专用加工工具，可以到HRc 40以下使用。
- ▶ 适用于非标 Flute 设计及可变螺旋设计，加工时可减少震动，实现中/粗加工。




CARBIDE | 4 | Sinusoidal | R ±0.010 | PLAIN | p.C375

Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| ◎ END MILL HOLDER | D118 - 137 | POWER MILLING CHUCK | D161 - 176 |
| ◎ - | - | HYDRAULIC CHUCK | D15 - 46 |
| | | SHRINK FIT HOLDER | D47 - 72 |
| ○ - | - | ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. | Radius of Ball Nose 圆弧角 R(±0.010) | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Overall Length 全长 L2 |
|---|---|---|---|---|---|
| EMD88030 | R1.5 | 3.0 | 6 | 8 | 60 |
| EMD88040 | R2.0 | 4.0 | 6 | 8 | 70 |
| EMD88050 | R2.5 | 5.0 | 6 | 12 | 80 |
| EMD88060 | R3.0 | 6.0 | 6 | 12 | 90 |
| EMD88080 | R4.0 | 8.0 | 8 | 16 | 100 |
| EMD88100 | R5.0 | 10.0 | 10 | 20 | 100 |
| EMD88120 | R6.0 | 12.0 | 12 | 25 | 100 |
| EMD88160 | R8.0 | 16.0 | 16 | 30 | 100 |
| EMD88200 | R10.0 | 20.0 | 20 | 38 | 100 |

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.03 | h5 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ○ | ○ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | |

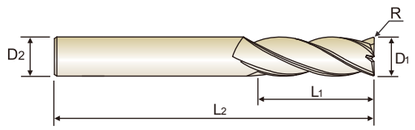
# SUS-CUT END MILLS

PLAIN SHANK **EMD83** SERIES

## CARBIDE, 4 FLUTE CORNER RADIUS
## 硬质合金，4刃 圆鼻

- ▶ Suitable for heavy cutting and good wear resistance due to new coating and new configuration of tool
- ▶ Suitable for cutting difficult to cut materials like alloy steels, stainless steels, Titanium, Inconel etc.
- ▶ Available heavy cut, high speed cut and high feed cut due to wave helix flute design
- ▶ Applying corner radius for protecting chipping when heavy cutting

- ▶ 采用新涂层及新形状，强力切削及耐磨性优秀。
- ▶ 适用于合金钢，不锈钢系列，钛 镍，合金工具钢等工件加工。
- ▶ 侧面采用签名派，可强力切削高速，高移送加工。
- ▶ 强力切削时为最大程度地减少崩刃，采用角部保护




CARBIDE | 4 | Sinusoidal | 35° | PLAIN | p.C376

D ≥ Ø3 D < Ø3

| Recommended ToolHolder | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | END MILL HOLDER | D118 - 137 | POWER MILLING CHUCK | D161 - 176 |
| ◎ | - | - | HYDRAULIC CHUCK | D15 - 46 |
| | | | SHRINK FIT HOLDER | D47 - 72 |
| ○ | - | - | ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. | Corner Radius 圆弧角 R | Mill Diameter 直径 $D_1$ | Shank Diameter 柄径 $D_2$ | Length of Cut 刃长 $L_1$ | Overall Length 全长 $L_2$ |
|---|---|---|---|---|---|
| **EMD83010** | R0.1 | **1.0** | 6 | 2.5 | 50 |
| **EMD8301002** | R0.2 | **1.0** | 6 | 2.5 | 50 |
| **EMD83012** | R0.1 | **1.2** | 6 | 3 | 50 |
| **EMD83015** | R0.1 | **1.5** | 6 | 4 | 50 |
| **EMD8301502** | R0.2 | **1.5** | 6 | 4 | 50 |
| **EMD83020** | R0.1 | **2.0** | 6 | 6 | 50 |
| **EMD8302002** | R0.2 | **2.0** | 6 | 6 | 50 |
| **EMD83025** | R0.2 | **2.5** | 6 | 7 | 50 |
| **EMD83030** | R0.2 | **3.0** | 6 | 8 | 55 |
| **EMD8303003** | R0.3 | **3.0** | 6 | 8 | 55 |
| **EMD8303005** | R0.5 | **3.0** | 6 | 8 | 55 |
| **EMD83040** | R0.2 | **4.0** | 6 | 10 | 55 |
| **EMD8304003** | R0.3 | **4.0** | 6 | 10 | 55 |
| **EMD8304005** | R0.5 | **4.0** | 6 | 10 | 55 |
| **EMD83050** | R0.2 | **5.0** | 6 | 15 | 55 |
| **EMD8305003** | R0.3 | **5.0** | 6 | 15 | 55 |
| **EMD8305005** | R0.5 | **5.0** | 6 | 15 | 55 |
| **EMD83060** | R0.3 | **6.0** | 6 | 15 | 60 |
| **EMD8306005** | R0.5 | **6.0** | 6 | 15 | 60 |
| **EMD8306010** | R1.0 | **6.0** | 6 | 15 | 60 |

▶ NEXT PAGE 下页

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.03 | h5 |

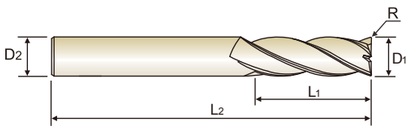
◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ○ | ○ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | |



SUS-CUT END MILLS
PLAIN SHANK EMD83 SERIES
CARBIDE, 4 FLUTE CORNER RADIUS
硬质合金，4刃 圆鼻
▶ Suitable for heavy cutting and good wear resistance due to new coating and new configuration of tool
▶ Suitable for cutting difficult to cut materials like alloy steels, stainless steels, Titanium, Inconel etc.
▶ Available heavy cut, high speed cut and high feed cut due to wave helix flute design
▶ Applying corner radius for protecting chipping when heavy cutting
▶ 采用新涂层及新形状，强力切削及耐磨性优秀。
▶ 适用于合金钢，不锈钢系列，钛 镍，合金工具钢等工件加工。
▶ 侧面采用签名派，可强力切削高速，高移送加工。
▶ 强力切削时为最大程度地减少崩刃，采用角部保护




CARBIDE | 4 | Sinusoidal | 35° | PLAIN | p.C376
D ≥ Ø3 D < Ø3

| Recommended ToolHolder | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | END MILL HOLDER | D118 - 137 | POWER MILLING CHUCK | D161 - 176 |
| ◎ | - | - | HYDRAULIC CHUCK | D15 - 46 |
| | | | SHRINK FIT HOLDER | D47 - 72 |
| ○ | - | - | ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. | Corner Radius 圆弧角 R | Mill Diameter 直径 $D_1$ | Shank Diameter 柄径 $D_2$ | Length of Cut 刃长 $L_1$ | Overall Length 全长 $L_2$ |
|---|---|---|---|---|---|
| **EMD83080** | R0.3 | **8.0** | 8 | 20 | 70 |
| **EMD8308005** | R0.5 | **8.0** | 8 | 20 | 70 |
| **EMD8308010** | R1.0 | **8.0** | 8 | 20 | 70 |
| **EMD83100** | R0.3 | **10.0** | 10 | 25 | 75 |
| **EMD8310005** | R0.5 | **10.0** | 10 | 25 | 75 |
| **EMD8310010** | R1.0 | **10.0** | 10 | 25 | 75 |
| **EMD8310015** | R1.5 | **10.0** | 10 | 25 | 75 |
| **EMD8310020** | R2.0 | **10.0** | 10 | 25 | 75 |
| **EMD8310030** | R3.0 | **10.0** | 10 | 25 | 75 |
| **EMD83120** | R0.5 | **12.0** | 12 | 30 | 80 |
| **EMD8312010** | R1.0 | **12.0** | 12 | 30 | 80 |
| **EMD8312015** | R1.5 | **12.0** | 12 | 30 | 80 |
| **EMD8312020** | R2.0 | **12.0** | 12 | 30 | 80 |
| **EMD8312030** | R3.0 | **12.0** | 12 | 30 | 80 |
| **EMD8312040** | R4.0 | **12.0** | 12 | 30 | 80 |
| **EMD83140** | R0.5 | **14.0** | 16 | 35 | 90 |
| **EMD8314010** | R1.0 | **14.0** | 16 | 35 | 90 |
| **EMD83160** | R0.5 | **16.0** | 16 | 42 | 100 |
| **EMD8316010** | R1.0 | **16.0** | 16 | 42 | 100 |
| **EMD83180** | R0.5 | **18.0** | 16 | 45 | 100 |
| **EMD83200** | R0.5 | **20.0** | 20 | 48 | 100 |
| **EMD8320010** | R1.0 | **20.0** | 20 | 48 | 100 |

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.03 | h5 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ○ | ○ | ○ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | |

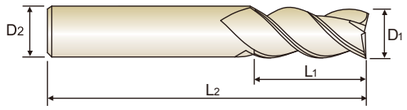
# SUS-CUT END MILLS

PLAIN SHANK **EHD84** SERIES

## CARBIDE, 3 FLUTE 45° HELIX
## 硬质合金，3刃 45度螺旋

- ▶ Suitable for heavy cutting and good wear resistance due to new coating and new configuration of tool
- ▶ Suitable for cutting difficult to cut materials like alloy steels, stainless steels, Titanium, Inconel etc.
- ▶ Excellent chip evacuation and outstanding surface roughness of workpieces due to 3 flutes
- ▶ Applying corner radius for protecting chipping when heavy cutting

- ▶ 采用新涂层及新形状，强力切削及耐磨性优秀。
- ▶ 适用于合金钢，不锈钢系列，钛 镍，合金工具钢等工件加工。
- ▶ 使用3刃，容易排除屑，优秀工件和表面图。
- ▶ 强力切削时为最大程度地减少崩刃，采用角部保护




CARBIDE | 3 | 45° | PLAIN

p.C377-378

Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| END MILL HOLDER | D118 - 137 | POWER MILLING CHUCK | D161 - 176 |
| - | - | HYDRAULIC CHUCK | D15 - 46 |
| - | - | SHRINK FIT HOLDER | D47 - 72 |
| - | - | ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 $D_1$ | Shank Diameter 柄径 $D_2$ | Length of Cut 刃长 $L_1$ | Overall Length 全长 $L_2$ |
|---|---|---|---|---|
| EHD84010 | 1.0 | 6 | 2.5 | 50 |
| EHD84012 | 1.2 | 6 | 3 | 50 |
| EHD84015 | 1.5 | 6 | 4 | 50 |
| EHD84020 | 2.0 | 6 | 6 | 50 |
| EHD84025 | 2.5 | 6 | 7 | 50 |
| EHD84030 | 3.0 | 6 | 8 | 55 |
| EHD8403010 | 3.0 | 6 | 10 | 60 |
| EHD84040 | 4.0 | 6 | 10 | 55 |
| EHD8404012 | 4.0 | 6 | 12 | 60 |
| EHD84050 | 5.0 | 6 | 13 | 55 |
| EHD84060 | 6.0 | 6 | 15 | 60 |
| EHD8406020 | 6.0 | 6 | 20 | 65 |
| EHD84080 | 8.0 | 8 | 20 | 70 |
| EHD8408030 | 8.0 | 8 | 30 | 80 |
| EHD84100 | 10.0 | 10 | 25 | 75 |
| EHD8410035 | 10.0 | 10 | 35 | 85 |
| EHD84120 | 12.0 | 12 | 30 | 80 |
| EHD8412040 | 12.0 | 12 | 40 | 90 |
| EHD84140 | 14.0 | 16 | 35 | 90 |
| EHD84160 | 16.0 | 16 | 42 | 100 |
| EHD84180 | 18.0 | 16 | 45 | 100 |
| EHD84200 | 20.0 | 20 | 48 | 100 |

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.02 | h5 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ○ | ○ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | ○ | ○ | ○ | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | |



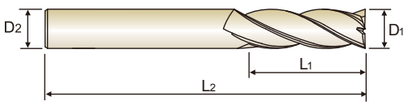
# SUS-CUT END MILLS

PLAIN SHANK **EMD82** SERIES

## CARBIDE, 4 FLUTE
## 硬质合金，4刃

- ▶ Suitable for heavy cutting and good wear resistance due to new coating and new configuration of tool
- ▶ Suitable for cutting difficult to cut materials like alloy steels, stainless steels, Titanium, Inconel etc.
- ▶ Available heavy cut, high speed cut and high feed cut due to wave helix flute design
- ▶ Applying corner radius for protecting chipping when heavy cutting

- ▶ 采用新涂层及新形状，强力切削及耐磨性优秀。
- ▶ 适用于合金钢，不锈钢系列，钛 镍，合金工具钢等工件加工。
- ▶ 侧面采用签名派，可强力切削高速，高移送加工。
- ▶ 强力切削时为最大程度地减少崩刃，采用角部保护




CARBIDE | 4 | Sinusoidal | 35° | PLAIN

D ≥ Ø3 D < Ø3

p.C379

Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| END MILL HOLDER | D118 - 137 | POWER MILLING CHUCK | D161 - 176 |
| - | - | HYDRAULIC CHUCK | D15 - 46 |
| - | - | SHRINK FIT HOLDER | D47 - 72 |
| - | - | ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 $D_1$ | Shank Diameter 柄径 $D_2$ | Length of Cut 刃长 $L_1$ | Overall Length 全长 $L_2$ |
|---|---|---|---|---|
| EMD82010 | 1.0 | 6 | 2.5 | 50 |
| EMD82012 | 1.2 | 6 | 3 | 50 |
| EMD82015 | 1.5 | 6 | 4 | 50 |
| EMD82020 | 2.0 | 6 | 6 | 50 |
| EMD82025 | 2.5 | 6 | 7 | 50 |
| EMD82030 | 3.0 | 6 | 8 | 55 |
| EMD8203010 | 3.0 | 6 | 10 | 60 |
| EMD82035 | 3.5 | 6 | 10 | 55 |
| EMD82040 | 4.0 | 6 | 10 | 55 |
| EMD8204012 | 4.0 | 6 | 12 | 60 |
| EMD82045 | 4.5 | 6 | 12 | 55 |
| EMD82050 | 5.0 | 6 | 15 | 55 |
| EMD82055 | 5.5 | 6 | 15 | 60 |
| EMD82060 | 6.0 | 6 | 15 | 60 |
| EMD8206020 | 6.0 | 6 | 20 | 65 |
| EMD82065 | 6.5 | 8 | 15 | 60 |
| EMD82070 | 7.0 | 8 | 20 | 80 |
| EMD82080 | 8.0 | 8 | 20 | 70 |
| EMD8208025 | 8.0 | 8 | 25 | 70 |
| EMD8208030 | 8.0 | 8 | 30 | 80 |
| EMD82085 | 8.5 | 10 | 20 | 70 |
| EMD82090 | 9.0 | 10 | 25 | 80 |

▶ NEXT PAGE 下页

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.03 | h5 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ○ | ○ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | |

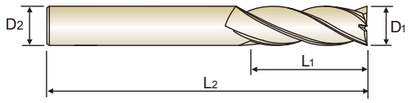
# SUS-CUT END MILLS

PLAIN SHANK **EMD82** SERIES

## CARBIDE, 4 FLUTE
## 硬质合金，4刃

- ▶ Suitable for heavy cutting and good wear resistance due to new coating and new configuration of tool
- ▶ Suitable for cutting difficult to cut materials like alloy steels, stainless steels, Titanium, Inconel etc.
- ▶ Available heavy cut, high speed cut and high feed cut due to wave helix flute design
- ▶ Applying corner radius for protecting chipping when heavy cutting

- ▶ 采用新涂层及新形状，强力切削及耐磨性优秀。
- ▶ 适用于合金钢，不锈钢系列，钛 镍，合金工具钢等工件加工。
- ▶ 侧面采用签名派，可强力切削高速，高移送加工。
- ▶ 强力切削时为最大程度地减少崩刃，采用角部保护




CARBIDE | 4 | Sinusoidal | 35° | PLAIN

D ≥ Ø3 D < Ø3

p.C379

Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| ◎ END MILL HOLDER | D118 - 137 | POWER MILLING CHUCK | D161 - 176 |
| ◎ - | - | HYDRAULIC CHUCK | D15 - 46 |
| | | SHRINK FIT HOLDER | D47 - 72 |
| ○ - | - | ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Overall Length 全长 L2 |
|---|---|---|---|---|
| EMD82100 | 10.0 | 10 | 25 | 75 |
| EMD8210035 | 10.0 | 10 | 35 | 85 |
| EMD82120 | 12.0 | 12 | 30 | 80 |
| EMD8212040 | 12.0 | 12 | 40 | 90 |
| EMD82140 | 14.0 | 16 | 35 | 90 |
| EMD82160 | 16.0 | 16 | 42 | 100 |
| EMD82180 | 18.0 | 16 | 45 | 100 |
| EMD82200 | 20.0 | 20 | 48 | 100 |

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.03 | h5 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ○ | ○ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | |



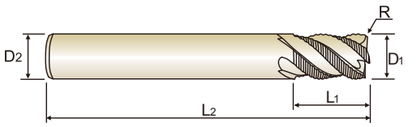
# SUS-CUT END MILLS

PLAIN SHANK **EMD92** SERIES

## CARBIDE, 3-5 FLUTE MULTIPLE HELIX CORNER RADIUS ROUGHING (A Type)
## 硬质合金，3-5刃 不等螺旋 圆鼻 粗加工 (A型)

- ▶ Suitable for heavy cutting and good wear resistance due to new coating and new configuration of tool
- ▶ Suitable for cutting alloy steels, stainless steels, difficult to cut materials etc,
- ▶ Available high speed cutting and high feed cutting due to special flute design minimizing vibration
- ▶ Applying corner radius for protecting chipping when heavy cutting

- ▶ 采用新涂层及新形状，强力切削及耐磨性优秀。
- ▶ 适用于合金钢，不锈钢系列，钛 镍，合金工具钢等工件加工。
- ▶ 侧面采用签名派，可强力切削高速，高移送加工。
- ▶ 采用减少震动的 Flute设计，可实现高速高移送加工。
- ▶ 强力切削时为最大程度地减少崩刃，采用角部保护




CARBIDE | 3-5 | 45° | MULTIPLE HELIX | PLAIN

D<6 D≥6

p.C380

Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| ◎ END MILL HOLDER | D118 - 137 | POWER MILLING CHUCK | D161 - 176 |
| ◎ - | - | HYDRAULIC CHUCK | D15 - 46 |
| | | SHRINK FIT HOLDER | D47 - 72 |
| ○ - | - | ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. | Corner Radius 圆弧角 R | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Overall Length 全长 L2 | No. of Flute 刃数 |
|---|---|---|---|---|---|---|
| EMD92030 | R0.2 | 3.0 | 6 | 8 | 50 | 3 |
| EMD92040 | R0.2 | 4.0 | 6 | 10 | 50 | 3 |
| EMD92050 | R0.2 | 5.0 | 6 | 13 | 50 | 4 |
| EMD92060 | R0.2 | 6.0 | 6 | 13 | 60 | 4 |
| EMD9206005 | R0.5 | 6.0 | 6 | 13 | 60 | 4 |
| EMD92070 | R0.2 | 7.0 | 8 | 18 | 70 | 4 |
| EMD92080 | R0.2 | 8.0 | 8 | 19 | 70 | 4 |
| EMD9208010 | R1.0 | 8.0 | 8 | 19 | 70 | 4 |
| EMD92090 | R0.3 | 9.0 | 10 | 20 | 70 | 4 |
| EMD92100 | R0.3 | 10.0 | 10 | 22 | 75 | 4 |
| EMD9210010 | R1.0 | 10.0 | 10 | 22 | 75 | 4 |
| EMD92110 | R0.3 | 11.0 | 12 | 25 | 80 | 4 |
| EMD92120 | R0.3 | 12.0 | 12 | 26 | 80 | 4 |
| EMD9212010 | R1.0 | 12.0 | 12 | 26 | 80 | 4 |
| EMD92140 | R0.5 | 14.0 | 16 | 28 | 90 | 5 |
| EMD92160 | R0.5 | 16.0 | 16 | 32 | 100 | 5 |
| EMD92160C | R0.5 | 16.0 | 16 | 42 | 100 | 5 |
| EMD9216015 | R1.5 | 16.0 | 16 | 32 | 100 | 5 |
| EMD9216015C | R1.5 | 16.0 | 16 | 42 | 100 | 5 |
| EMD92200 | R0.5 | 20.0 | 20 | 38 | 100 | 5 |
| EMD92200C | R0.5 | 20.0 | 20 | 45 | 100 | 5 |
| EMD9220020 | R2.0 | 20.0 | 20 | 38 | 100 | 5 |
| EMD9220020C | R2.0 | 20.0 | 20 | 45 | 100 | 5 |

▶ NEXT PAGE 下页

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.05 | h5 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | |

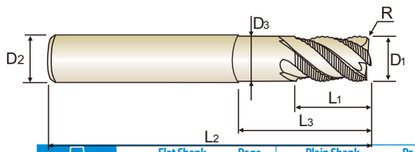
# SUS-CUT END MILLS

PLAIN SHANK **EMD92** SERIES

## CARBIDE, 4 FLUTE MULTIPLE HELIX CORNER RADIUS ROUGHING (B Type)
## 硬质合金，4刃 不等螺旋 圆鼻 粗加工 (B型)

- ▶ Suitable for heavy cutting and good wear resistance due to new coating and new configuration of tool
- ▶ Suitable for cutting alloy steels, stainless steels, difficult to cut materials etc,
- ▶ Available high speed cutting and high feed cutting due to special flute design minimizing vibration
- ▶ Applying corner radius for protecting chipping when heavy cutting

- ▶ 采用新涂层及新形状，强力切削及耐磨性优秀。
- ▶ 适用于合金钢，不锈钢系列，钛 镍，合金工具钢等工件加工。
- ▶ 侧面采用签名派，可强力切削高速，高移送加工。
- ▶ 采用减少震动的 Flute设计，可实现高速高移送加工。
- ▶ 强力切削时为最大程度地减少崩刃，采用角部保护




CARBIDE | 4 | MULTIPLE HELIX | PLAIN | p.C380

Recommended ToolHolder

| Flat Shank | | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | END MILL HOLDER | D118 - 137 | POWER MILLING CHUCK | D161 - 176 |
| ◎ | - | - | HYDRAULIC CHUCK | D15 - 46 |
| ◎ | - | - | SHRINK FIT HOLDER | D47 - 72 |
| ○ | - | - | ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. | Corner Radius 圆弧角 R | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Length Below Shank 颈长 L3 | Overall Length 全长 L2 | Neck Diameter 颈径 D3 | No. of Flute 刃数 |
|---|---|---|---|---|---|---|---|---|
| EMD9206020 | R0.2 | **6.0** | 6 | 10 | 20 | 60 | 5.5 | 4 |
| EMD9208025 | R0.2 | **8.0** | 8 | 12 | 25 | 70 | 7.5 | 4 |
| EMD9210030 | R0.3 | **10.0** | 10 | 15 | 30 | 75 | 9.5 | 4 |
| EMD9212035 | R0.3 | **12.0** | 12 | 20 | 35 | 80 | 11.5 | 4 |

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.05 | h5 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | | | | | | | | | | | | | | ○ | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | | | | |





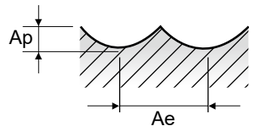
# SUS-CUT END MILLS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

**EMD88** SERIES — 4 FLUTE BALL NOSE / 4刃 球头

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description 材料描述 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 3.0 | 4.0 | 5.0 | 6.0 | 8.0 | 10.0 | 12.0 | 16.0 | 20.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1-2 | Non-alloy steel | 0.5D | 1.0D | Vc | 127 | 127 | 127 | 127 | 127 | 127 | 127 | 127 | 128 |
| | | | | | fz | 0.005 | 0.009 | 0.013 | 0.018 | 0.031 | 0.048 | 0.056 | 0.069 | 0.084 |
| | | | | | RPM | 13500 | 10100 | 8090 | 6750 | 5050 | 4050 | 3370 | 2530 | 2030 |
| | | | | | FEED | 275 | 370 | 410 | 480 | 620 | 780 | 750 | 700 | 680 |
| | 6 | Low alloy steel | 0.5D | 1.0D | Vc | 127 | 127 | 127 | 127 | 127 | 127 | 127 | 127 | 128 |
| | | | | | fz | 0.005 | 0.009 | 0.013 | 0.018 | 0.031 | 0.048 | 0.056 | 0.069 | 0.084 |
| | | | | | RPM | 13500 | 10100 | 8090 | 6750 | 5050 | 4050 | 3370 | 2530 | 2030 |
| | | | | | FEED | 275 | 370 | 410 | 480 | 620 | 780 | 750 | 700 | 680 |
| | 10 | High alloyed steel, and tool steel | 0.5D | 1.0D | Vc | 127 | 127 | 127 | 127 | 127 | 127 | 127 | 127 | 128 |
| | | | | | fz | 0.005 | 0.009 | 0.013 | 0.018 | 0.031 | 0.048 | 0.056 | 0.069 | 0.084 |
| | | | | | RPM | 13500 | 10100 | 8090 | 6750 | 5050 | 4050 | 3370 | 2530 | 2030 |
| | | | | | FEED | 275 | 370 | 410 | 480 | 620 | 780 | 750 | 700 | 680 |
| M | 12-13 | Stainless steel | 0.5D | 1.0D | Vc | 88 | 88 | 88 | 89 | 88 | 88 | 89 | 88 | 88 |
| | | | | | fz | 0.004 | 0.007 | 0.010 | 0.014 | 0.024 | 0.038 | 0.046 | 0.056 | 0.066 |
| | | | | | RPM | 9350 | 7000 | 5600 | 4700 | 3500 | 2800 | 2350 | 1750 | 1400 |
| | | | | | FEED | 145 | 185 | 230 | 265 | 340 | 430 | 435 | 395 | 370 |
| | 14.1 | | 0.5D | 1.0D | Vc | 63 | 63 | 64 | 63 | 63 | 64 | 63 | 63 | 63 |
| | | | | | fz | 0.004 | 0.007 | 0.010 | 0.014 | 0.025 | 0.039 | 0.046 | 0.060 | 0.073 |
| | | | | | RPM | 6690 | 5050 | 4050 | 3350 | 2500 | 2050 | 1680 | 1250 | 1000 |
| | | | | | FEED | 105 | 135 | 165 | 190 | 250 | 320 | 310 | 300 | 290 |
| K | 15 | Grey cast iron | 0.5D | 1.0D | Vc | 127 | 127 | 127 | 127 | 127 | 127 | 127 | 127 | 128 |
| | | | | | fz | 0.005 | 0.009 | 0.013 | 0.018 | 0.031 | 0.048 | 0.056 | 0.069 | 0.084 |
| | | | | | RPM | 13500 | 10100 | 8090 | 6750 | 5050 | 4050 | 3370 | 2530 | 2030 |
| | | | | | FEED | 275 | 370 | 410 | 480 | 620 | 780 | 750 | 700 | 680 |
| | 17 | Nodular cast iron | 0.5D | 1.0D | Vc | 127 | 127 | 127 | 127 | 127 | 127 | 127 | 127 | 128 |
| | | | | | fz | 0.005 | 0.009 | 0.013 | 0.018 | 0.031 | 0.048 | 0.056 | 0.069 | 0.084 |
| | | | | | RPM | 13500 | 10100 | 8090 | 6750 | 5050 | 4050 | 3370 | 2530 | 2030 |
| | | | | | FEED | 275 | 370 | 410 | 480 | 620 | 780 | 750 | 700 | 680 |
| | 19-20 | Malleable cast iron | 0.5D | 1.0D | Vc | 127 | 127 | 127 | 127 | 127 | 127 | 127 | 127 | 128 |
| | | | | | fz | 0.005 | 0.009 | 0.013 | 0.018 | 0.031 | 0.048 | 0.056 | 0.069 | 0.084 |
| | | | | | RPM | 13500 | 10100 | 8090 | 6750 | 5050 | 4050 | 3370 | 2530 | 2030 |
| | | | | | FEED | 275 | 370 | 410 | 480 | 620 | 780 | 750 | 700 | 680 |
| S | 36 | Titanium Alloys | 0.5D | 1.0D | Vc | 63 | 63 | 64 | 63 | 63 | 64 | 63 | 63 | 63 |
| | | | | | fz | 0.004 | 0.007 | 0.010 | 0.014 | 0.025 | 0.039 | 0.046 | 0.060 | 0.073 |
| | | | | | RPM | 6690 | 5050 | 4050 | 3350 | 2500 | 2050 | 1680 | 1250 | 1000 |
| | | | | | FEED | 105 | 135 | 165 | 190 | 250 | 320 | 310 | 300 | 290 |



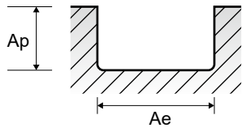
# SUS-CUT END MILLS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

### EMD83 SERIES — 4 FLUTE CORNER RADIUS - SLOTTING
### 4刃 圆鼻 - 槽铣削

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description 材料描述 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 1.0 | 1.5 | 2.0 | 2.5 | 3.0 | 4.0 | 5.0 | 6.0 | 8.0 | 10.0 | 12.0 | 14.0 | 16.0 | 18.0 | 20.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1-2 | Non-alloy steel | 1.0D | 1.0D | Vc | 127 | 127 | 128 | 127 | 127 | 127 | 127 | 127 | 127 | 127 | 127 | 127 | 126 | 127 | 126 |
| | | | | | fz | 0.002 | 0.003 | 0.004 | 0.005 | 0.005 | 0.009 | 0.013 | 0.018 | 0.031 | 0.048 | 0.056 | 0.058 | 0.063 | 0.070 | 0.078 |
| | | | | | RPM | 40500 | 27000 | 20300 | 16200 | 13500 | 10100 | 8090 | 6750 | 5050 | 4050 | 3370 | 2890 | 2500 | 2250 | 2000 |
| | | | | | FEED | 300 | 300 | 300 | 300 | 275 | 370 | 410 | 480 | 620 | 780 | 750 | 670 | 630 | 630 | 620 |
| | 6 | Low alloy steel | 1.0D | 1.0D | Vc | 127 | 127 | 128 | 127 | 127 | 127 | 127 | 127 | 127 | 127 | 127 | 127 | 126 | 127 | 126 |
| | | | | | fz | 0.002 | 0.003 | 0.004 | 0.005 | 0.005 | 0.009 | 0.013 | 0.018 | 0.031 | 0.048 | 0.056 | 0.058 | 0.063 | 0.070 | 0.078 |
| | | | | | RPM | 40500 | 27000 | 20300 | 16200 | 13500 | 10100 | 8090 | 6750 | 5050 | 4050 | 3370 | 2890 | 2500 | 2250 | 2000 |
| | | | | | FEED | 300 | 300 | 300 | 300 | 275 | 370 | 410 | 480 | 620 | 780 | 750 | 670 | 630 | 630 | 620 |
| | 10 | High alloyed steel, and tool steel | 1.0D | 1.0D | Vc | 127 | 127 | 128 | 127 | 127 | 127 | 127 | 127 | 127 | 127 | 127 | 127 | 126 | 127 | 126 |
| | | | | | fz | 0.002 | 0.003 | 0.004 | 0.005 | 0.005 | 0.009 | 0.013 | 0.018 | 0.031 | 0.048 | 0.056 | 0.058 | 0.063 | 0.070 | 0.078 |
| | | | | | RPM | 40500 | 27000 | 20300 | 16200 | 13500 | 10100 | 8090 | 6750 | 5050 | 4050 | 3370 | 2890 | 2500 | 2250 | 2000 |
| | | | | | FEED | 300 | 300 | 300 | 300 | 275 | 370 | 410 | 480 | 620 | 780 | 750 | 670 | 630 | 630 | 620 |
| M | 12-13 | Stainless steel | 1.0D | 1.0D | Vc | 88 | 87 | 88 | 86 | 88 | 88 | 88 | 89 | 88 | 88 | 89 | 88 | 88 | 88 | 88 |
| | | | | | fz | 0.001 | 0.002 | 0.003 | 0.004 | 0.004 | 0.007 | 0.010 | 0.014 | 0.024 | 0.038 | 0.046 | 0.051 | 0.053 | 0.059 | 0.065 |
| | | | | | RPM | 28000 | 18500 | 14000 | 11000 | 9350 | 7000 | 5600 | 4700 | 3500 | 2800 | 2350 | 2000 | 1750 | 1550 | 1400 |
| | | | | | FEED | 160 | 160 | 160 | 165 | 145 | 185 | 230 | 265 | 340 | 430 | 435 | 405 | 370 | 365 | 365 |
| | 14.1 | | 1.0D | 1.0D | Vc | 63 | 61 | 63 | 63 | 63 | 63 | 64 | 63 | 63 | 64 | 63 | 62 | 63 | 62 | 63 |
| | | | | | fz | 0.003 | 0.003 | 0.004 | 0.004 | 0.004 | 0.007 | 0.010 | 0.014 | 0.025 | 0.039 | 0.046 | 0.050 | 0.053 | 0.059 | 0.065 |
| | | | | | RPM | 20000 | 13000 | 10000 | 8000 | 6690 | 5050 | 4050 | 3350 | 2500 | 2050 | 1680 | 1400 | 1250 | 1100 | 1000 |
| | | | | | FEED | 250 | 180 | 150 | 120 | 105 | 135 | 165 | 190 | 250 | 320 | 310 | 280 | 265 | 260 | 260 |
| K | 15 | Grey cast iron | 1.0D | 1.0D | Vc | 127 | 127 | 128 | 127 | 127 | 127 | 127 | 127 | 127 | 127 | 127 | 127 | 126 | 127 | 126 |
| | | | | | fz | 0.002 | 0.003 | 0.004 | 0.005 | 0.005 | 0.009 | 0.013 | 0.018 | 0.031 | 0.048 | 0.056 | 0.058 | 0.063 | 0.070 | 0.078 |
| | | | | | RPM | 40500 | 27000 | 20300 | 16200 | 13500 | 10100 | 8090 | 6750 | 5050 | 4050 | 3370 | 2890 | 2500 | 2250 | 2000 |
| | | | | | FEED | 300 | 300 | 300 | 300 | 275 | 370 | 410 | 480 | 620 | 780 | 750 | 670 | 630 | 630 | 620 |
| | 17 | Nodular cast iron | 1.0D | 1.0D | Vc | 127 | 127 | 128 | 127 | 127 | 127 | 127 | 127 | 127 | 127 | 127 | 127 | 126 | 127 | 126 |
| | | | | | fz | 0.002 | 0.003 | 0.004 | 0.005 | 0.005 | 0.009 | 0.013 | 0.018 | 0.031 | 0.048 | 0.056 | 0.058 | 0.063 | 0.070 | 0.078 |
| | | | | | RPM | 40500 | 27000 | 20300 | 16200 | 13500 | 10100 | 8090 | 6750 | 5050 | 4050 | 3370 | 2890 | 2500 | 2250 | 2000 |
| | | | | | FEED | 300 | 300 | 300 | 300 | 275 | 370 | 410 | 480 | 620 | 780 | 750 | 670 | 630 | 630 | 620 |
| | 19-20 | Malleable cast iron | 1.0D | 1.0D | Vc | 127 | 127 | 128 | 127 | 127 | 127 | 127 | 127 | 127 | 127 | 127 | 127 | 126 | 127 | 126 |
| | | | | | fz | 0.002 | 0.003 | 0.004 | 0.005 | 0.005 | 0.009 | 0.013 | 0.018 | 0.031 | 0.048 | 0.056 | 0.058 | 0.063 | 0.070 | 0.078 |
| | | | | | RPM | 40500 | 27000 | 20300 | 16200 | 13500 | 10100 | 8090 | 6750 | 5050 | 4050 | 3370 | 2890 | 2500 | 2250 | 2000 |
| | | | | | FEED | 300 | 300 | 300 | 300 | 275 | 370 | 410 | 480 | 620 | 780 | 750 | 670 | 630 | 630 | 620 |
| S | 37 | Titanium Alloys | 1.0D | 1.0D | Vc | 63 | 61 | 63 | 63 | 63 | 63 | 64 | 63 | 63 | 64 | 63 | 62 | 63 | 62 | 63 |
| | | | | | fz | 0.003 | 0.003 | 0.004 | 0.004 | 0.004 | 0.007 | 0.010 | 0.014 | 0.025 | 0.039 | 0.046 | 0.050 | 0.053 | 0.059 | 0.065 |
| | | | | | RPM | 20000 | 13000 | 10000 | 8000 | 6690 | 5050 | 4050 | 3350 | 2500 | 2050 | 1680 | 1400 | 1250 | 1100 | 1000 |
| | | | | | FEED | 250 | 180 | 150 | 120 | 105 | 135 | 165 | 190 | 250 | 320 | 310 | 280 | 265 | 260 | 260 |







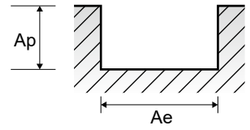

SUS-CUT END MILLS

RECOMMENDED CUTTING CONDITIONS
推荐加工参数

### EHD84 SERIES — 3 FLUTE - SLOTTING
### 3刃 - 槽铣削

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description 材料描述 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 1.0 | 1.5 | 2.0 | 2.5 | 3.0 | 4.0 | 5.0 | 6.0 | 8.0 | 10.0 | 12.0 | 14.0 | 16.0 | 18.0 | 20.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1-2 | Non-alloy steel | 1.0D | 0.5D | Vc | 94 | 94 | 94 | 94 | 95 | 95 | 94 | 95 | 94 | 96 | 94 | 95 | 93 | 93 | 94 |
| | | | | | fz | 0.011 | 0.017 | 0.022 | 0.028 | 0.031 | 0.062 | 0.083 | 0.109 | 0.151 | 0.180 | 0.200 | 0.240 | 0.288 | 0.333 | 0.378 |
| | | | | | RPM | 30000 | 20000 | 15000 | 12000 | 10080 | 7550 | 6000 | 5050 | 3750 | 3050 | 2500 | 2150 | 1850 | 1650 | 1500 |
| | | | | | FEED | 1000 | 1000 | 1000 | 1000 | 950 | 1400 | 1500 | 1650 | 1700 | 1650 | 1500 | 1550 | 1600 | 1650 | 1700 |
| | 3-4 | | 1.0D | 0.5D | Vc | 72 | 73 | 72 | 74 | 73 | 74 | 74 | 73 | 74 | 72 | 75 | 75 | 73 | 74 | 72 |
| | | | | | fz | 0.012 | 0.017 | 0.023 | 0.028 | 0.032 | 0.063 | 0.085 | 0.108 | 0.150 | 0.181 | 0.200 | 0.235 | 0.287 | 0.333 | 0.391 |
| | | | | | RPM | 23000 | 15500 | 11500 | 9400 | 7750 | 5850 | 4700 | 3850 | 2950 | 2300 | 2000 | 1700 | 1450 | 1300 | 1150 |
| | | | | | FEED | 800 | 800 | 800 | 800 | 740 | 1100 | 1200 | 1250 | 1330 | 1250 | 1200 | 1200 | 1250 | 1300 | 1350 |
| | 5 | | 1.0D | 0.5D | Vc | 52 | 52 | 52 | 59 | 52 | 53 | 52 | 53 | 53 | 52 | 51 | 53 | 50 | 52 | 53 |
| | | | | | fz | 0.009 | 0.014 | 0.018 | 0.020 | 0.024 | 0.047 | 0.066 | 0.083 | 0.113 | 0.134 | 0.149 | 0.168 | 0.217 | 0.254 | 0.298 |
| | | | | | RPM | 16500 | 11000 | 8200 | 7500 | 5550 | 4200 | 3300 | 2800 | 2100 | 1650 | 1350 | 1200 | 1000 | 920 | 840 |
| | | | | | FEED | 450 | 450 | 450 | 450 | 395 | 595 | 650 | 700 | 710 | 665 | 605 | 605 | 650 | 700 | 750 |
| | 6 | Low alloy steel | 1.0D | 0.5D | Vc | 94 | 94 | 94 | 94 | 95 | 95 | 94 | 95 | 94 | 96 | 94 | 95 | 93 | 93 | 94 |
| | | | | | fz | 0.011 | 0.017 | 0.022 | 0.028 | 0.031 | 0.062 | 0.083 | 0.109 | 0.151 | 0.180 | 0.200 | 0.240 | 0.288 | 0.333 | 0.378 |
| | | | | | RPM | 30000 | 20000 | 15000 | 12000 | 10080 | 7550 | 6000 | 5050 | 3750 | 3050 | 2500 | 2150 | 1850 | 1650 | 1500 |
| | | | | | FEED | 1000 | 1000 | 1000 | 1000 | 950 | 1400 | 1500 | 1650 | 1700 | 1650 | 1500 | 1550 | 1600 | 1650 | 1700 |
| | 7 | | 1.0D | 0.5D | Vc | 72 | 73 | 72 | 74 | 73 | 74 | 74 | 73 | 74 | 72 | 75 | 75 | 73 | 74 | 72 |
| | | | | | fz | 0.012 | 0.017 | 0.023 | 0.028 | 0.032 | 0.063 | 0.085 | 0.108 | 0.150 | 0.181 | 0.200 | 0.235 | 0.287 | 0.333 | 0.391 |
| | | | | | RPM | 23000 | 15500 | 11500 | 9400 | 7750 | 5850 | 4700 | 3850 | 2950 | 2300 | 2000 | 1700 | 1450 | 1300 | 1150 |
| | | | | | FEED | 800 | 800 | 800 | 800 | 740 | 1100 | 1200 | 1250 | 1330 | 1250 | 1200 | 1200 | 1250 | 1300 | 1350 |
| | 8-9 | | 1.0D | 0.5D | Vc | 52 | 52 | 52 | 59 | 52 | 53 | 52 | 53 | 53 | 52 | 51 | 53 | 50 | 52 | 53 |
| | | | | | fz | 0.009 | 0.014 | 0.018 | 0.020 | 0.024 | 0.047 | 0.066 | 0.083 | 0.113 | 0.134 | 0.149 | 0.168 | 0.217 | 0.254 | 0.298 |
| | | | | | RPM | 16500 | 11000 | 8200 | 7500 | 5550 | 4200 | 3300 | 2800 | 2100 | 1650 | 1350 | 1200 | 1000 | 920 | 840 |
| | | | | | FEED | 450 | 450 | 450 | 450 | 395 | 595 | 650 | 700 | 710 | 665 | 605 | 605 | 650 | 700 | 750 |
| | 10 | High alloyed steel, and tool steel | 1.0D | 0.5D | Vc | 94 | 94 | 94 | 94 | 95 | 95 | 94 | 95 | 94 | 96 | 94 | 95 | 93 | 93 | 94 |
| | | | | | fz | 0.011 | 0.017 | 0.022 | 0.028 | 0.031 | 0.062 | 0.083 | 0.109 | 0.151 | 0.180 | 0.200 | 0.240 | 0.288 | 0.333 | 0.378 |
| | | | | | RPM | 30000 | 20000 | 15000 | 12000 | 10080 | 7550 | 6000 | 5050 | 3750 | 3050 | 2500 | 2150 | 1850 | 1650 | 1500 |
| | | | | | FEED | 1000 | 1000 | 1000 | 1000 | 950 | 1400 | 1500 | 1650 | 1700 | 1650 | 1500 | 1550 | 1600 | 1650 | 1700 |
| | 11.1 - 112 | | 1.0D | 0.5D | Vc | 52 | 52 | 52 | 59 | 52 | 53 | 52 | 53 | 53 | 52 | 51 | 53 | 50 | 52 | 53 |
| | | | | | fz | 0.009 | 0.014 | 0.018 | 0.020 | 0.024 | 0.047 | 0.066 | 0.083 | 0.113 | 0.134 | 0.149 | 0.168 | 0.217 | 0.254 | 0.298 |
| | | | | | RPM | 16500 | 11000 | 8200 | 7500 | 5550 | 4200 | 3300 | 2800 | 2100 | 1650 | 1350 | 1200 | 1000 | 920 | 840 |
| | | | | | FEED | 450 | 450 | 450 | 450 | 395 | 595 | 650 | 700 | 710 | 665 | 605 | 605 | 650 | 700 | 750 |
| M | 14.1 | Stainless steel | 1.0D | 0.5D | Vc | 52 | 52 | 53 | 51 | 52 | 53 | 52 | 53 | 53 | 52 | 51 | 53 | 50 | 51 | 50 |
| | | | | | fz | 0.007 | 0.011 | 0.014 | 0.018 | 0.021 | 0.025 | 0.035 | 0.044 | 0.060 | 0.072 | 0.079 | 0.069 | 0.067 | 0.056 | 0.042 |
| | | | | | RPM | 16500 | 11000 | 8400 | 6500 | 5550 | 4200 | 3300 | 2800 | 2100 | 1650 | 1350 | 1200 | 1000 | 900 | 800 |
| | | | | | FEED | 350 | 350 | 350 | 350 | 350 | 320 | 350 | 370 | 375 | 355 | 320 | 250 | 200 | 150 | 100 |
| K | 15-20 | Grey cast iron | 1.0D | 0.5D | Vc | 63 | 61 | 63 | 63 | 63 | 63 | 63 | 63 | 62 | 64 | 63 | 62 | 63 | 62 | 63 |
| | | | | | fz | 0.008 | 0.013 | 0.017 | 0.021 | 0.026 | 0.036 | 0.050 | 0.066 | 0.089 | 0.105 | 0.115 | 0.133 | 0.160 | 0.188 | 0.213 |
| | | | | | RPM | 20000 | 13000 | 10000 | 8000 | 6700 | 5050 | 4000 | 3350 | 2500 | 2000 | 1650 | 1450 | 1250 | 1100 | 1000 |
| | | | | | FEED | 500 | 500 | 500 | 500 | 520 | 550 | 600 | 660 | 665 | 630 | 570 | 580 | 600 | 620 | 640 |
| N | 21~25 | Copper and Copper Alloys (Bronze / Brass) | 1.0D | 0.5D | Vc | 79 | 78 | 79 | 79 | 78 | 78 | 79 | 77 | 78 | 79 | 75 | 75 | 75 | 74 | 75 |
| | | | | | fz | 0.005 | 0.007 | 0.010 | 0.012 | 0.014 | 0.022 | 0.028 | 0.036 | 0.054 | 0.071 | 0.092 | 0.118 | 0.144 | 0.179 | 0.208 |
| | | | | | RPM | 25000 | 16500 | 12500 | 10000 | 8300 | 6200 | 5000 | 4100 | 3100 | 2500 | 2000 | 1700 | 1500 | 1300 | 1200 |
| | | | | | FEED | 360 | 360 | 360 | 360 | 360 | 400 | 420 | 440 | 500 | 530 | 550 | 600 | 650 | 700 | 750 |
| S | 33 | Heat Resistant Super Alloys | 1.0D | 0.2D | Vc | 20 | 21 | 22 | 20 | 21 | 21 | 22 | 22 | 21 | 20 | 21 | 22 | 20 | 20 | 20 |
| | | | | | fz | 0.005 | 0.007 | 0.010 | 0.013 | 0.015 | 0.021 | 0.029 | 0.038 | 0.047 | 0.062 | 0.066 | 0.073 | 0.096 | 0.114 | 0.130 |
| | | | | | RPM | 6500 | 4500 | 3500 | 2600 | 2200 | 1650 | 1400 | 1150 | 850 | 650 | 555 | 500 | 400 | 350 | 320 |
| | | | | | FEED | 100 | 100 | 100 | 100 | 100 | 105 | 120 | 130 | 120 | 120 | 110 | 110 | 115 | 120 | 125 |
| | 37 | Titanium Alloys | 1.0D | 0.2D | Vc | 52 | 52 | 52 | 51 | 52 | 53 | 52 | 53 | 53 | 52 | 51 | 53 | 50 | 51 | 50 |
| | | | | | fz | 0.008 | 0.012 | 0.015 | 0.019 | 0.024 | 0.047 | 0.061 | 0.083 | 0.113 | 0.134 | 0.149 | 0.168 | 0.203 | 0.228 | 0.258 |
| | | | | | RPM | 16500 | 11000 | 8200 | 6500 | 5550 | 4200 | 3300 | 2800 | 2100 | 1650 | 1350 | 1200 | 1000 | 900 | 800 |
| | | | | | FEED | 380 | 380 | 380 | 380 | 395 | 595 | 600 | 700 | 710 | 665 | 605 | 605 | 610 | 615 | 620 |



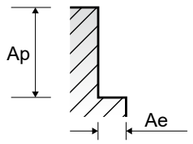
# SUS-CUT END MILLS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

### EHD84 SERIES — 3 FLUTE - SIDE CUTTING / 3刃 - 侧铣削

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

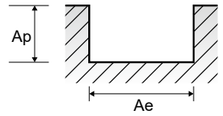
| ISO | VDI 3323 | Material Description 材料描述 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 1.0 | 1.5 | 2.0 | 2.5 | 3.0 | 4.0 | 5.0 | 6.0 | 8.0 | 10.0 | 12.0 | 14.0 | 16.0 | 18.0 | 20.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1-2 | Non-alloy steel | 0.1D | 1.5D | Vc | 94 | 94 | 94 | 94 | 95 | 95 | 94 | 95 | 94 | 96 | 94 | 95 | 93 | 93 | 94 |
| | | | | | fz | 0.013 | 0.019 | 0.025 | 0.031 | 0.036 | 0.072 | 0.094 | 0.126 | 0.173 | 0.207 | 0.227 | 0.271 | 0.325 | 0.377 | 0.427 |
| | | | | | RPM | 30000 | 20000 | 15000 | 12000 | 10080 | 7550 | 6000 | 5050 | 3750 | 3050 | 2500 | 2150 | 1850 | 1650 | 1500 |
| | | | | | FEED | 1130 | 1130 | 1130 | 1130 | 1080 | 1630 | 1695 | 1910 | 1950 | 1890 | 1700 | 1750 | 1805 | 1865 | 1920 |
| | 3-4 | | 0.1D | 1.5D | Vc | 72 | 73 | 72 | 74 | 73 | 74 | 74 | 73 | 74 | 72 | 75 | 75 | 73 | 74 | 72 |
| | | | | | fz | 0.013 | 0.019 | 0.026 | 0.032 | 0.037 | 0.072 | 0.096 | 0.127 | 0.169 | 0.203 | 0.223 | 0.266 | 0.324 | 0.377 | 0.442 |
| | | | | | RPM | 23000 | 15500 | 11500 | 9400 | 7750 | 5850 | 4700 | 3850 | 2950 | 2300 | 2000 | 1700 | 1450 | 1300 | 1150 |
| | | | | | FEED | 904 | 904 | 904 | 904 | 850 | 1260 | 1355 | 1470 | 1500 | 1400 | 1340 | 1355 | 1410 | 1470 | 1525 |
| | 5 | | 0.1D | 1.5D | Vc | 52 | 52 | 52 | 59 | 52 | 53 | 52 | 53 | 53 | 52 | 51 | 53 | 50 | 52 | 53 |
| | | | | | fz | 0.010 | 0.015 | 0.021 | 0.023 | 0.027 | 0.054 | 0.074 | 0.096 | 0.129 | 0.157 | 0.173 | 0.190 | 0.245 | 0.286 | 0.335 |
| | | | | | RPM | 16500 | 11000 | 8200 | 7500 | 5550 | 4200 | 3300 | 2800 | 2100 | 1650 | 1350 | 1200 | 1000 | 920 | 840 |
| | | | | | FEED | 510 | 510 | 510 | 510 | 450 | 680 | 735 | 810 | 810 | 775 | 700 | 685 | 735 | 790 | 845 |
| | 6 | Low alloy steel | 0.1D | 1.5D | Vc | 94 | 94 | 94 | 94 | 95 | 95 | 94 | 95 | 94 | 96 | 94 | 95 | 93 | 93 | 94 |
| | | | | | fz | 0.013 | 0.019 | 0.025 | 0.031 | 0.036 | 0.072 | 0.094 | 0.126 | 0.173 | 0.207 | 0.227 | 0.271 | 0.325 | 0.377 | 0.427 |
| | | | | | RPM | 30000 | 20000 | 15000 | 12000 | 10080 | 7550 | 6000 | 5050 | 3750 | 3050 | 2500 | 2150 | 1850 | 1650 | 1500 |
| | | | | | FEED | 1130 | 1130 | 1130 | 1130 | 1080 | 1630 | 1695 | 1910 | 1950 | 1890 | 1700 | 1750 | 1805 | 1865 | 1920 |
| | 7 | | 0.1D | 1.5D | Vc | 72 | 73 | 72 | 74 | 73 | 74 | 74 | 73 | 74 | 72 | 75 | 75 | 73 | 74 | 72 |
| | | | | | fz | 0.013 | 0.019 | 0.026 | 0.032 | 0.037 | 0.072 | 0.096 | 0.127 | 0.169 | 0.203 | 0.223 | 0.266 | 0.324 | 0.377 | 0.442 |
| | | | | | RPM | 23000 | 15500 | 11500 | 9400 | 7750 | 5850 | 4700 | 3850 | 2950 | 2300 | 2000 | 1700 | 1450 | 1300 | 1150 |
| | | | | | FEED | 904 | 904 | 904 | 904 | 850 | 1260 | 1355 | 1470 | 1500 | 1400 | 1340 | 1355 | 1410 | 1470 | 1525 |
| | 8-9 | | 0.1D | 1.5D | Vc | 52 | 52 | 52 | 59 | 52 | 53 | 52 | 53 | 53 | 52 | 51 | 53 | 50 | 52 | 53 |
| | | | | | fz | 0.010 | 0.015 | 0.021 | 0.023 | 0.027 | 0.054 | 0.074 | 0.096 | 0.129 | 0.157 | 0.173 | 0.190 | 0.245 | 0.286 | 0.335 |
| | | | | | RPM | 16500 | 11000 | 8200 | 7500 | 5550 | 4200 | 3300 | 2800 | 2100 | 1650 | 1350 | 1200 | 1000 | 920 | 840 |
| | | | | | FEED | 510 | 510 | 510 | 510 | 450 | 680 | 735 | 810 | 810 | 775 | 700 | 685 | 735 | 790 | 845 |
| | 10 | High alloyed steel, and tool steel | 0.1D | 1.5D | Vc | 94 | 94 | 94 | 94 | 95 | 95 | 94 | 95 | 94 | 96 | 94 | 95 | 93 | 93 | 94 |
| | | | | | fz | 0.013 | 0.019 | 0.025 | 0.031 | 0.036 | 0.072 | 0.094 | 0.126 | 0.173 | 0.207 | 0.227 | 0.271 | 0.325 | 0.377 | 0.427 |
| | | | | | RPM | 30000 | 20000 | 15000 | 12000 | 10080 | 7550 | 6000 | 5050 | 3750 | 3050 | 2500 | 2150 | 1850 | 1650 | 1500 |
| | | | | | FEED | 1130 | 1130 | 1130 | 1130 | 1080 | 1630 | 1695 | 1910 | 1950 | 1890 | 1700 | 1750 | 1805 | 1865 | 1920 |
| | 11.1 - 11.2 | | 0.1D | 1.5D | Vc | 52 | 52 | 52 | 59 | 52 | 53 | 52 | 53 | 53 | 52 | 51 | 53 | 50 | 52 | 53 |
| | | | | | fz | 0.010 | 0.015 | 0.021 | 0.023 | 0.027 | 0.054 | 0.074 | 0.096 | 0.129 | 0.157 | 0.173 | 0.190 | 0.245 | 0.286 | 0.335 |
| | | | | | RPM | 16500 | 11000 | 8200 | 7500 | 5550 | 4200 | 3300 | 2800 | 2100 | 1650 | 1350 | 1200 | 1000 | 920 | 840 |
| | | | | | FEED | 510 | 510 | 510 | 510 | 450 | 680 | 735 | 810 | 810 | 775 | 700 | 685 | 735 | 790 | 845 |
| M | 14.1 | Stainless steel | 0.1D | 1.5D | Vc | 52 | 52 | 53 | 51 | 52 | 53 | 52 | 53 | 53 | 52 | 51 | 53 | 50 | 51 | 50 |
| | | | | | fz | 0.008 | 0.012 | 0.016 | 0.020 | 0.022 | 0.029 | 0.040 | 0.051 | 0.068 | 0.084 | 0.090 | 0.078 | 0.075 | 0.063 | 0.048 |
| | | | | | RPM | 16500 | 11000 | 8400 | 6500 | 5550 | 4200 | 3300 | 2800 | 2100 | 1650 | 1350 | 1200 | 1000 | 900 | 800 |
| | | | | | FEED | 395 | 395 | 395 | 395 | 365 | 365 | 395 | 430 | 430 | 415 | 365 | 280 | 225 | 170 | 115 |
| K | 15-20 | Grey cast iron | 0.1D | 1.5D | Vc | 63 | 61 | 63 | 63 | 63 | 63 | 63 | 63 | 63 | 63 | 62 | 64 | 63 | 62 | 63 |
| | | | | | fz | 0.009 | 0.014 | 0.019 | 0.024 | 0.030 | 0.042 | 0.057 | 0.075 | 0.103 | 0.120 | 0.134 | 0.151 | 0.181 | 0.212 | 0.242 |
| | | | | | RPM | 20000 | 13000 | 10000 | 8000 | 6700 | 5050 | 4000 | 3350 | 2500 | 2000 | 1650 | 1450 | 1250 | 1100 | 1000 |
| | | | | | FEED | 565 | 565 | 565 | 565 | 605 | 630 | 680 | 755 | 770 | 720 | 665 | 655 | 680 | 700 | 725 |
| N | 21~25 | Copper and Copper Alloys (Bronze / Brass) | 0.1D | 1.5D | Vc | 79 | 78 | 79 | 79 | 78 | 78 | 79 | 77 | 78 | 79 | 75 | 75 | 75 | 74 | 75 |
| | | | | | fz | 0.005 | 0.008 | 0.011 | 0.014 | 0.016 | 0.024 | 0.032 | 0.040 | 0.059 | 0.076 | 0.103 | 0.133 | 0.163 | 0.203 | 0.236 |
| | | | | | RPM | 25000 | 16500 | 12500 | 10000 | 8300 | 6200 | 5000 | 4100 | 3100 | 2500 | 2000 | 1700 | 1500 | 1300 | 1200 |
| | | | | | FEED | 405 | 405 | 405 | 405 | 390 | 440 | 475 | 490 | 550 | 570 | 620 | 680 | 735 | 790 | 850 |
| S | 33 | Heat Resistant Super Alloys | 0.05D | 1.5D | Vc | 20 | 21 | 22 | 20 | 21 | 21 | 22 | 22 | 21 | 20 | 21 | 22 | 20 | 20 | 20 |
| | | | | | fz | 0.006 | 0.009 | 0.011 | 0.015 | 0.017 | 0.025 | 0.032 | 0.043 | 0.055 | 0.072 | 0.075 | 0.083 | 0.108 | 0.129 | 0.146 |
| | | | | | RPM | 6500 | 4500 | 3500 | 2600 | 2200 | 1650 | 1400 | 1150 | 850 | 650 | 555 | 500 | 400 | 350 | 320 |
| | | | | | FEED | 115 | 115 | 115 | 115 | 110 | 125 | 135 | 150 | 140 | 140 | 125 | 125 | 130 | 135 | 140 |
| | 37 | Titanium Alloys | 0.05D | 1.5D | Vc | 52 | 52 | 52 | 51 | 52 | 53 | 52 | 53 | 53 | 52 | 51 | 53 | 50 | 51 | 50 |
| | | | | | fz | 0.009 | 0.013 | 0.017 | 0.022 | 0.027 | 0.054 | 0.069 | 0.096 | 0.129 | 0.157 | 0.173 | 0.190 | 0.230 | 0.257 | 0.292 |
| | | | | | RPM | 16500 | 11000 | 8200 | 6500 | 5550 | 4200 | 3300 | 2800 | 2100 | 1650 | 1350 | 1200 | 1000 | 900 | 800 |
| | | | | | FEED | 430 | 430 | 430 | 430 | 450 | 680 | 680 | 810 | 810 | 775 | 700 | 685 | 690 | 695 | 700 |






SUS-CUT END MILLS
RECOMMENDED CUTTING CONDITIONS
推荐加工参数

### EMD82 SERIES — 4 FLUTE - SLOTTING / 4刃 - 槽铣削




Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description 材料描述 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 1.0 | 1.5 | 2.0 | 2.5 | 3.0 | 3.5 | 4.0 | 4.5 | 5.0 | 5.5 | 6.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1-2 | Non-alloy steel | 1.0D | 1.0D | Vc | 127 | 127 | 128 | 127 | 127 | 126 | 127 | 127 | 127 | 128 | 127 |
| | | | | | fz | 0.002 | 0.003 | 0.004 | 0.005 | 0.005 | 0.007 | 0.009 | 0.011 | 0.013 | 0.015 | 0.018 |
| | | | | | RPM | 40500 | 27000 | 20300 | 16200 | 13500 | 11500 | 10100 | 9000 | 8090 | 7400 | 6750 |
| | | | | | FEED | 300 | 300 | 300 | 300 | 275 | 300 | 370 | 400 | 410 | 450 | 480 |
| | 6 | Low alloy steel | 1.0D | 1.0D | Vc | 127 | 127 | 128 | 127 | 127 | 126 | 127 | 127 | 127 | 128 | 127 |
| | | | | | fz | 0.002 | 0.003 | 0.004 | 0.005 | 0.005 | 0.007 | 0.009 | 0.011 | 0.013 | 0.015 | 0.018 |
| | | | | | RPM | 40500 | 27000 | 20300 | 16200 | 13500 | 11500 | 10100 | 9000 | 8090 | 7400 | 6750 |
| | | | | | FEED | 300 | 300 | 300 | 300 | 275 | 300 | 370 | 400 | 410 | 450 | 480 |
| | 10 | High alloyed steel, and tool steel | 1.0D | 1.0D | Vc | 127 | 127 | 128 | 127 | 127 | 126 | 127 | 127 | 127 | 128 | 127 |
| | | | | | fz | 0.002 | 0.003 | 0.004 | 0.005 | 0.005 | 0.007 | 0.009 | 0.011 | 0.013 | 0.015 | 0.018 |
| | | | | | RPM | 40500 | 27000 | 20300 | 16200 | 13500 | 11500 | 10100 | 9000 | 8090 | 7400 | 6750 |
| | | | | | FEED | 300 | 300 | 300 | 300 | 275 | 300 | 370 | 400 | 410 | 450 | 480 |
| M | 12-13 | Stainless steel | 1.0D | 1.0D | Vc | 88 | 87 | 88 | 86 | 88 | 88 | 88 | 88 | 88 | 86 | 89 |
| | | | | | fz | 0.001 | 0.002 | 0.003 | 0.004 | 0.004 | 0.005 | 0.007 | 0.008 | 0.010 | 0.011 | 0.014 |
| | | | | | RPM | 28000 | 18500 | 14000 | 11000 | 9350 | 8000 | 7000 | 6200 | 5600 | 5000 | 4700 |
| | | | | | FEED | 160 | 160 | 160 | 165 | 145 | 170 | 185 | 200 | 230 | 220 | 265 |
| | 14.1 | | 1.0D | 1.0D | Vc | 63 | 61 | 63 | 63 | 63 | 63 | 63 | 64 | 64 | 62 | 63 |
| | | | | | fz | 0.003 | 0.003 | 0.004 | 0.004 | 0.004 | 0.004 | 0.007 | 0.008 | 0.010 | 0.012 | 0.014 |
| | | | | | RPM | 20000 | 13000 | 10000 | 8000 | 6690 | 5700 | 5050 | 4500 | 4050 | 3600 | 3350 |
| | | | | | FEED | 250 | 180 | 150 | 120 | 105 | 100 | 135 | 135 | 165 | 170 | 190 |
| K | 15 | Grey cast iron | 1.0D | 1.0D | Vc | 127 | 127 | 128 | 127 | 127 | 126 | 127 | 127 | 127 | 128 | 127 |
| | | | | | fz | 0.002 | 0.003 | 0.004 | 0.005 | 0.005 | 0.007 | 0.009 | 0.011 | 0.013 | 0.015 | 0.018 |
| | | | | | RPM | 40500 | 27000 | 20300 | 16200 | 13500 | 11500 | 10100 | 9000 | 8090 | 7400 | 6750 |
| | | | | | FEED | 300 | 300 | 300 | 300 | 275 | 300 | 370 | 400 | 410 | 450 | 480 |
| | 17 | Nodular cast iron | 1.0D | 1.0D | Vc | 127 | 127 | 128 | 127 | 127 | 126 | 127 | 127 | 127 | 128 | 127 |
| | | | | | fz | 0.002 | 0.003 | 0.004 | 0.005 | 0.005 | 0.007 | 0.009 | 0.011 | 0.013 | 0.015 | 0.018 |
| | | | | | RPM | 40500 | 27000 | 20300 | 16200 | 13500 | 11500 | 10100 | 9000 | 8090 | 7400 | 6750 |
| | | | | | FEED | 300 | 300 | 300 | 300 | 275 | 300 | 370 | 400 | 410 | 450 | 480 |
| | 19-20 | Malleable cast iron | 1.0D | 1.0D | Vc | 127 | 127 | 128 | 127 | 127 | 126 | 127 | 127 | 127 | 128 | 127 |
| | | | | | fz | 0.002 | 0.003 | 0.004 | 0.005 | 0.005 | 0.007 | 0.009 | 0.011 | 0.013 | 0.015 | 0.018 |
| | | | | | RPM | 40500 | 27000 | 20300 | 16200 | 13500 | 11500 | 10100 | 9000 | 8090 | 7400 | 6750 |
| | | | | | FEED | 300 | 300 | 300 | 300 | 275 | 300 | 370 | 400 | 410 | 450 | 480 |
| S | 37 | Titanium Alloys | 1.0D | 1.0D | Vc | 63 | 61 | 63 | 63 | 63 | 63 | 63 | 64 | 64 | 62 | 63 |
| | | | | | fz | 0.003 | 0.003 | 0.004 | 0.004 | 0.004 | 0.004 | 0.007 | 0.008 | 0.010 | 0.012 | 0.014 |
| | | | | | RPM | 20000 | 13000 | 10000 | 8000 | 6690 | 5700 | 5050 | 4500 | 4050 | 3600 | 3350 |
| | | | | | FEED | 250 | 180 | 150 | 120 | 105 | 100 | 135 | 135 | 165 | 170 | 190 |

| ISO | VDI 3323 | Material Description 材料描述 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 6.5 | 7.0 | 8.0 | 8.5 | 9.0 | 10.0 | 12.0 | 14.0 | 16.0 | 18.0 | 20.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1-2 | Non-alloy steel | 1.0D | 1.0D | Vc | 127 | 128 | 127 | 128 | 127 | 127 | 127 | 127 | 126 | 127 | 126 |
| | | | | | fz | 0.020 | 0.024 | 0.031 | 0.034 | 0.039 | 0.048 | 0.056 | 0.058 | 0.063 | 0.070 | 0.078 |
| | | | | | RPM | 6200 | 5800 | 5050 | 4800 | 4500 | 4050 | 3370 | 2890 | 2500 | 2250 | 2000 |
| | | | | | FEED | 500 | 550 | 620 | 660 | 700 | 780 | 750 | 670 | 630 | 630 | 620 |
| | 6 | Low alloy steel | 1.0D | 1.0D | Vc | 127 | 128 | 127 | 128 | 127 | 127 | 127 | 127 | 126 | 127 | 126 |
| | | | | | fz | 0.020 | 0.024 | 0.031 | 0.034 | 0.039 | 0.048 | 0.056 | 0.058 | 0.063 | 0.070 | 0.078 |
| | | | | | RPM | 6200 | 5800 | 5050 | 4800 | 4500 | 4050 | 3370 | 2890 | 2500 | 2250 | 2000 |
| | | | | | FEED | 500 | 550 | 620 | 660 | 700 | 780 | 750 | 670 | 630 | 630 | 620 |
| | 10 | High alloyed steel, and tool steel | 1.0D | 1.0D | Vc | 127 | 128 | 127 | 128 | 127 | 127 | 127 | 127 | 126 | 127 | 126 |
| | | | | | fz | 0.020 | 0.024 | 0.031 | 0.034 | 0.039 | 0.048 | 0.056 | 0.058 | 0.063 | 0.070 | 0.078 |
| | | | | | RPM | 6200 | 5800 | 5050 | 4800 | 4500 | 4050 | 3370 | 2890 | 2500 | 2250 | 2000 |
| | | | | | FEED | 500 | 550 | 620 | 660 | 700 | 780 | 750 | 670 | 630 | 630 | 620 |
| M | 12-13 | Stainless steel | 1.0D | 1.0D | Vc | 88 | 88 | 88 | 88 | 88 | 88 | 89 | 88 | 88 | 88 | 88 |
| | | | | | fz | 0.016 | 0.018 | 0.024 | 0.026 | 0.031 | 0.038 | 0.046 | 0.051 | 0.053 | 0.059 | 0.065 |
| | | | | | RPM | 4300 | 4000 | 3500 | 3300 | 3100 | 2800 | 2350 | 2000 | 1750 | 1550 | 1400 |
| | | | | | FEED | 275 | 280 | 340 | 340 | 390 | 430 | 435 | 405 | 370 | 365 | 365 |
| | 14.1 | | 1.0D | 1.0D | Vc | 61 | 62 | 63 | 61 | 62 | 64 | 63 | 62 | 63 | 62 | 63 |
| | | | | | fz | 0.017 | 0.018 | 0.025 | 0.028 | 0.032 | 0.039 | 0.046 | 0.050 | 0.053 | 0.059 | 0.065 |
| | | | | | RPM | 3000 | 2800 | 2500 | 2300 | 2200 | 2050 | 1680 | 1400 | 1250 | 1100 | 1000 |
| | | | | | FEED | 200 | 200 | 250 | 260 | 280 | 320 | 310 | 280 | 265 | 260 | 260 |
| K | 15 | Grey cast iron | 1.0D | 1.0D | Vc | 127 | 128 | 127 | 128 | 127 | 127 | 127 | 127 | 126 | 127 | 126 |
| | | | | | fz | 0.020 | 0.024 | 0.031 | 0.034 | 0.039 | 0.048 | 0.056 | 0.058 | 0.063 | 0.070 | 0.078 |
| | | | | | RPM | 6200 | 5800 | 5050 | 4800 | 4500 | 4050 | 3370 | 2890 | 2500 | 2250 | 2000 |
| | | | | | FEED | 500 | 550 | 620 | 660 | 700 | 780 | 750 | 670 | 630 | 630 | 620 |
| | 17 | Nodular cast iron | 1.0D | 1.0D | Vc | 127 | 128 | 127 | 128 | 127 | 127 | 127 | 127 | 126 | 127 | 126 |
| | | | | | fz | 0.020 | 0.024 | 0.031 | 0.034 | 0.039 | 0.048 | 0.056 | 0.058 | 0.063 | 0.070 | 0.078 |
| | | | | | RPM | 6200 | 5800 | 5050 | 4800 | 4500 | 4050 | 3370 | 2890 | 2500 | 2250 | 2000 |
| | | | | | FEED | 500 | 550 | 620 | 660 | 700 | 780 | 750 | 670 | 630 | 630 | 620 |
| | 19-20 | Malleable cast iron | 1.0D | 1.0D | Vc | 127 | 128 | 127 | 128 | 127 | 127 | 127 | 127 | 126 | 127 | 126 |
| | | | | | fz | 0.020 | 0.024 | 0.031 | 0.034 | 0.039 | 0.048 | 0.056 | 0.058 | 0.063 | 0.070 | 0.078 |
| | | | | | RPM | 6200 | 5800 | 5050 | 4800 | 4500 | 4050 | 3370 | 2890 | 2500 | 2250 | 2000 |
| | | | | | FEED | 500 | 550 | 620 | 660 | 700 | 780 | 750 | 670 | 630 | 630 | 620 |
| S | 37 | Titanium Alloys | 1.0D | 1.0D | Vc | 61 | 62 | 63 | 61 | 62 | 64 | 63 | 62 | 63 | 62 | 63 |
| | | | | | fz | 0.017 | 0.018 | 0.025 | 0.028 | 0.032 | 0.039 | 0.046 | 0.050 | 0.053 | 0.059 | 0.065 |
| | | | | | RPM | 3000 | 2800 | 2500 | 2300 | 2200 | 2050 | 1680 | 1400 | 1250 | 1100 | 1000 |
| | | | | | FEED | 200 | 200 | 250 | 260 | 280 | 320 | 310 | 280 | 265 | 260 | 260 |

# SUS-CUT END MILLS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

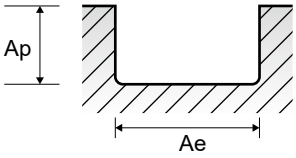
**EMD92 SERIES**

### 3-5 FLUTE ROUGHING - SLOTTING
### 3-5刃 粗加工 - 槽铣削

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description 材料描述 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 |
|---|---|---|---|---|
| M | 14.1 | Stainless steel | 1.0D | Ø6~Ø10=0.25xD<br>Ø12~Ø16=0.15xD<br>Ø18~Ø20=0.10xD |

| Parameter 参数 | Diameter (Ø) 直径 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 6.0 | 7.0 | 8.0 | 9.0 | 10.0 | 12.0 | 14.0 | 16.0 | 20.0 |
| Vc | 83 | 83 | 83 | 83 | 84 | 83 | 86 | 87 | 79 |
| fz | 0.019 | 0.022 | 0.025 | 0.028 | 0.031 | 0.037 | 0.032 | 0.034 | 0.033 |
| RPM | 4410 | 3780 | 3310 | 2950 | 2680 | 2205 | 1950 | 1730 | 1260 |
| FEED | 335 | 335 | 335 | 335 | 330 | 330 | 315 | 295 | 210 |



Leading Through Innovation

# SOLID CARBIDE

# V7 PLUS END MILLS

- High Performance Carbide End Mills for Steels, Cast Iron and Stainless Steels

- 高性能 硬质合金 立铣刀 适用于钢件,铸铁和不锈钢

# SELECTION GUIDE
## 选用指南

YG MILLING TOOLS

## SOLID CARBIDE
# V7 PLUS END MILLS

High performance carbide end mills
for Steels, Cast Iron and Stainless Steels

高性能 硬质合金 立铣刀
适用于钢件,铸铁和不锈钢

Please visit globalyg1.com/mat for material search

◎ : Excellent (优秀) ○ : Good (良好)

Recommended cutting conditions (推荐加工参数) : p.C394

| SERIES 系列 | GMH66 | GMH65 |
|---|---|---|
| FLUTE 槽数 | 4 | 4 |
| HELIX ANGLE 螺旋角度 | 35°/37° (MULTIPLE HELIX) | 35°/37° (MULTIPLE HELIX) |
| CUTTING EDGE SHAPE 类型 | BALL NOSE | CORNER RADIUS |
| SIZE MIN 最小尺寸 | R1.5 | D1.0 |
| SIZE MAX 最大尺寸 | R12.5 | D25.0 |
| PAGE 页数 | C384 | C385-386 |
| | LONG LENGTH | LONG LENGTH |
| | Y-Coating | Y-Coating |

| ISO | VDI 3323 | Material Description 材料描述 | Composition / Structure / Heat Treatment 成分 / 组织 / 热处理 | | HB | HRc | GMH66 | GMH65 | |
|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | About 0.15% C | Annealed | 125 | | ◎ | ◎ | 1 |
| | 2 | | About 0.45% C | Annealed | 190 | 13 | ◎ | ◎ | 2 |
| | 3 | | About 0.45% C | Quenched & Tempered | 250 | 25 | ◎ | ◎ | 3 |
| | 4 | | About 0.75% C | Annealed | 270 | 28 | ◎ | ◎ | 4 |
| | 5 | | About 0.75% C | Quenched & Tempered | 300 | 32 | ◎ | ◎ | 5 |
| | 6 | Low alloy steel | | Annealed | 180 | 10 | ◎ | ◎ | 6 |
| | 7 | | | Quenched & Tempered | 275 | 29 | ◎ | ◎ | 7 |
| | 8 | | | Quenched & Tempered | 300 | 32 | ◎ | ◎ | 8 |
| | 9 | | | Quenched & Tempered | 350 | 38 | ◎ | ◎ | 9 |
| | 10 | High alloyed steel, and tool steel | | Annealed | 200 | 15 | ◎ | ◎ | 10 |
| | 11 | | | Quenched & Tempered | 325 | 35 | ◎ | ◎ | 11 |
| M | 12 | Stainless steel | Ferritic / Martensitic | Annealed | 200 | 15 | ◎ | ◎ | 12 |
| | 13 | | Martensitic | Quenched & Tempered | 240 | 23 | ◎ | ◎ | 13 |
| | 14 | | Austenitic | | 180 | 10 | ◎ | ◎ | 14 |
| K | 15 | Grey cast iron | Pearlitic / ferritic | | 180 | 10 | ◎ | ◎ | 15 |
| | 16 | | Pearlitic (Martensitic) | | 260 | 26 | ◎ | ◎ | 16 |
| | 17 | Nodular cast iron | Ferritic | | 160 | 3 | ◎ | ◎ | 17 |
| | 18 | | Pearlitic | | 250 | 25 | ◎ | ◎ | 18 |
| | 19 | Malleable cast iron | Ferritic | | 130 | | ◎ | ◎ | 19 |
| | 20 | | Pearlitic | | 230 | 21 | ◎ | ◎ | 20 |
| N | 21 | Aluminum-wrought alloy | Not Curable | | 60 | | | | 21 |
| | 22 | | Curable | Hardened | 100 | | | | 22 |
| | 23 | Aluminum-cast, alloyed | ≤ 12% Si, Not Curable | | 75 | | | | 23 |
| | 24 | | ≤ 12% Si, Curable | Hardened | 90 | | | | 24 |
| | 25 | | > 12% Si, Not Curable | | 130 | | | | 25 |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | Cutting Alloys, PB>1% | | 110 | | | | 26 |
| | 27 | | CuZn, CuSnZn (Brass) | | 90 | | | | 27 |
| | 28 | | CuSn, lead-free copper and electrolytic copper | | 100 | | | | 28 |
| | 29 | Non Metallic Materials | Duroplastic, Fiber Reinforced Plastic | | | | | | 29 |
| | 30 | | Rubber, Wood, etc. | | | | | | 30 |
| S | 31 | Heat Resistant Super Alloys | Fe Based | Annealed | 200 | 15 | ○ | ○ | 31 |
| | 32 | | | Cured | 280 | 30 | ○ | ○ | 32 |
| | 33 | | Ni or Co Based | Annealed | 250 | 25 | ○ | ○ | 33 |
| | 34 | | | Cured | 350 | 38 | ○ | ○ | 34 |
| | 35 | | | Cast | 320 | 34 | ○ | ○ | 35 |
| | 36 | Titanium Alloys | Pure Titanium | | 400 Rm | | ○ | ○ | 36 |
| | 37 | | Alpha + Beta Alloys | Hardened | 1050 Rm | | ○ | ○ | 37 |
| H | 38 | Hardened steel | | Hardened | 550 | 55 | | | 38 |
| | 39 | | | Hardened | 630 | 60 | | | 39 |
| | 40 | Chilled Cast Iron | | Cast | 400 | 42 | | | 40 |
| | 41 | Hardened Cast Iron | | Hardened | 550 | 55 | | | 41 |

| GMF66 | GMH67 | GMH68 | GMH69 | GMH71 | GMH70 | EMB72 EMB73 |
|---|---|---|---|---|---|---|
| 4 | 4 | 4 | 6 | 6 | 6 | 5 |
| 35°/37° (MULTIPLE HELIX) | 35°/37° (MULTIPLE HELIX) | 35°/37° (MULTIPLE HELIX) | 45° | 45° | 45° | 41°~45° |
| SQUARE | SQUARE | SQUARE | CORNER RADIUS | SQUARE | SQUARE | SQUARE |
| D3.0 | D1.0 | D1.0 | D6.0 | D6.0 | D6.0 | D6.0 |
| D20.0 | D20.0 | D20.0 | D25.0 | D25.0 | D25.0 | D25.0 |
| C387 | C388 | C389 | C390 | C391 | C392 | C393 |
| SHORT LENGTH | LONG LENGTH | LONG LENGTH | - | - | LONG LENGTH | LONG LENGTH |
| Y-Coating | Y-Coating | Y-Coating | Y-Coating | Y-Coating | Y-Coating | AlTiN |

| GMF66 | GMH67 | GMH68 | GMH69 | GMH71 | GMH70 | EMB72 EMB73 | |
|---|---|---|---|---|---|---|---|
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 1 |
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| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | 3 |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | 4 |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | 5 |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 6 P |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | 7 |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | 8 |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | 9 |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 10 |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | 11 |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 12 |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 13 M |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 14 |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | 15 |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | 16 |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | 17 |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | 18 K |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | 19 |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | 20 |
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| ○ | ○ | ○ | ○ | ○ | ○ | ○ | 31 |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | 32 |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | 33 |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | 34 S |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | 35 |
| ○ | ○ | ○ | ○ | ○ | ○ | ◎ | 36 |
| ○ | ○ | ○ | ○ | ○ | ○ | ◎ | 37 |
| | | | | | | | 38 |
| | | | | | | | 39 |
| | | | | | | | 40 H |
| | | | | | | | 41 |

BALL NOSE = 球头　CORNER RADIUS = 圆鼻　SQUARE = 平头　ROUGHING = 粗加工
MULTIPLE HELIX = 不等螺旋　SHORT LENGTH = 短刃　LONG LENGTH = 长刃

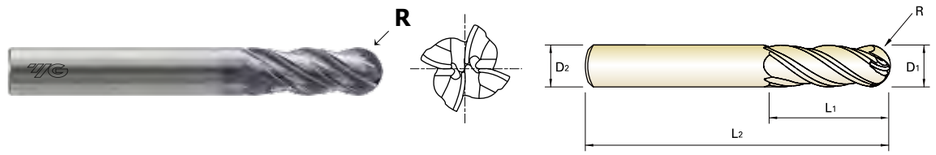
# V7 PLUS END MILLS

PLAIN SHANK **GMH66** SERIES

## CARBIDE, 4 FLUTE BALL NOSE LONG LENGTH
## 硬质合金，4刃 球头 长刃

▶Special flute geometry and multiple helix eliminate vibrations
▶Excellent performance for Stainless Steels, Mild Steels, Cast Iron, Low/Medium hardness materials under HRc40

▶ 特殊沟槽设计和不等螺旋减少振动
▶ 卓越性能在不锈钢，软钢，铸铁，低/中硬度材料(~HRc 40)




CARBIDE | 4 | 35°/37° | R ±0.02 | PLAIN | p.C394

Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| END MILL HOLDER | D118 - 137 | POWER MILLING CHUCK | D161 - 176 |
| - | - | SHRINK FIT HOLDER | D47 - 72 |
| - | - | HYDRAULIC CHUCK | D15 - 46 |
| | | ER COLLET CHUCK | D73 - 115 |
| | | SK SLIM CHUCK | D183 - 201 |

Unit(单位) : mm

| EDP No. | Radius of Ball Nose 圆弧角 R | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Overall Length 全长 L2 |
|---|---|---|---|---|---|
| GMH66030 | R1.5 | **3.0** | 6 | 8 | 50 |
| GMH66040 | R2.0 | **4.0** | 6 | 10 | 50 |
| GMH66050 | R2.5 | **5.0** | 6 | 15 | 60 |
| GMH66060 | R3.0 | **6.0** | 6 | 15 | 60 |
| GMH66080 | R4.0 | **8.0** | 8 | 20 | 70 |
| GMH66100 | R5.0 | **10.0** | 10 | 25 | 75 |
| GMH66120 | R6.0 | **12.0** | 12 | 30 | 80 |
| GMH66160 | R8.0 | **16.0** | 16 | 40 | 100 |
| GMH66200 | R10.0 | **20.0** | 20 | 45 | 100 |
| GMH66250 | R12.5 | **25.0** | 25 | 50 | 120 |

| Size 尺寸 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|
| up to Ø12 Ø12以下 | 0 ~ - 0.02 | h5 |
| over Ø12 超过Ø12 | 0 ~ - 0.03 | * Shank Dia.≥Ø12 : h6 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | |



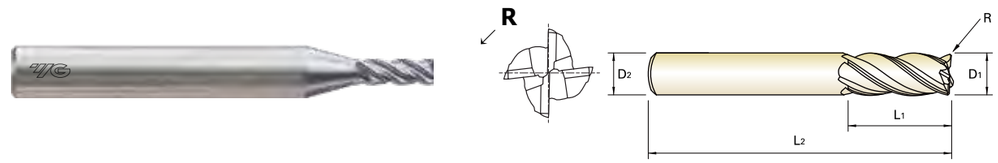
# V7 PLUS END MILLS

PLAIN SHANK **GMH65** SERIES

## CARBIDE, 4 FLUTE CORNER RADIUS LONG LENGTH
## 硬质合金，4刃 圆鼻 长刃

▶Special flute geometry and multiple helix eliminate vibrations
▶Excellent performance for Stainless Steels, Mild Steels, Cast Iron, Low/Medium hardness materials under HRc40

▶ 特殊沟槽设计和不等螺旋减少振动
▶ 卓越性能在不锈钢，软钢，铸铁，低/中硬度材料(~HRc 40)




CARBIDE | 4 | 37° (D < Ø3) | 35°/37° (D ≥ Ø3) | PLAIN | p.C395

Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| END MILL HOLDER | D118 - 137 | POWER MILLING CHUCK | D161 - 176 |
| - | - | SHRINK FIT HOLDER | D47 - 72 |
| - | - | HYDRAULIC CHUCK | D15 - 46 |
| | | ER COLLET CHUCK | D73 - 115 |
| | | SK SLIM CHUCK | D183 - 201 |

Unit(单位) : mm

| EDP No. | Corner Radius 圆弧角 R | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Overall Length 全长 L2 |
|---|---|---|---|---|---|
| GMH65010 | R0.1 | **1.0** | 6 | 2.5 | 50 |
| GMH65015 | R0.1 | **1.5** | 6 | 4 | 50 |
| GMH65020 | R0.1 | **2.0** | 6 | 6 | 50 |
| GMH65030 | R0.2 | **3.0** | 6 | 8 | 50 |
| GMH6503003 | R0.3 | **3.0** | 6 | 8 | 50 |
| GMH6503005 | R0.5 | **3.0** | 6 | 8 | 50 |
| GMH65040 | R0.2 | **4.0** | 6 | 10 | 50 |
| GMH6504003 | R0.3 | **4.0** | 6 | 10 | 50 |
| GMH6504005 | R0.5 | **4.0** | 6 | 10 | 50 |
| GMH65050 | R0.2 | **5.0** | 6 | 15 | 60 |
| GMH6505003 | R0.3 | **5.0** | 6 | 15 | 60 |
| GMH6505005 | R0.5 | **5.0** | 6 | 15 | 60 |
| GMH65060 | R0.3 | **6.0** | 6 | 15 | 60 |
| GMH6506005 | R0.5 | **6.0** | 6 | 15 | 60 |
| GMH6506010 | R1.0 | **6.0** | 6 | 15 | 60 |
| GMH65080 | R0.3 | **8.0** | 8 | 20 | 70 |
| GMH6508005 | R0.5 | **8.0** | 8 | 20 | 70 |
| GMH6508010 | R1.0 | **8.0** | 8 | 20 | 70 |
| GMH65100 | R0.3 | **10.0** | 10 | 25 | 75 |
| GMH6510005 | R0.5 | **10.0** | 10 | 25 | 75 |
| GMH6510010 | R1.0 | **10.0** | 10 | 25 | 75 |
| GMH65120 | R0.5 | **12.0** | 12 | 30 | 80 |
| GMH6512010 | R1.0 | **12.0** | 12 | 30 | 80 |
| GMH6512020 | R2.0 | **12.0** | 12 | 30 | 80 |

▶ NEXT PAGE 下页

| Size 尺寸 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|
| up to Ø12 Ø12以下 | 0 ~ - 0.02 | h5 |
| over Ø12 超过Ø12 | 0 ~ - 0.03 | * Shank Dia.≥Ø12 : h6 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | |

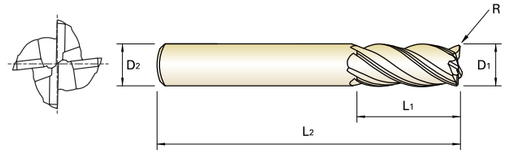
# V7 PLUS END MILLS

PLAIN SHANK **GMH65** SERIES

## CARBIDE, 4 FLUTE CORNER RADIUS LONG LENGTH
## 硬质合金，4刃 圆鼻 长刃

▶Special flute geometry and multiple helix eliminate vibrations
▶Excellent performance for Stainless Steels, Mild Steels, Cast Iron, Low/Medium hardness materials under HRc40

▶ 特殊沟槽设计和不等螺旋减少振动
▶ 卓越性能在不锈钢，软钢，铸铁，低/中硬度材料(~HRc 40)




CARBIDE | 4 | 37° | 35°/37° | PLAIN | p.C395

D < Ø3 D ≥ Ø3

| Recommended ToolHolder | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| | END MILL HOLDER | D118 - 137 | POWER MILLING CHUCK | D161 - 176 |
| | - | - | SHRINK FIT HOLDER | D47 - 72 |
| | - | - | HYDRAULIC CHUCK | D15 - 46 |
| | | | ER COLLET CHUCK | D73 - 115 |
| | | | SK SLIM CHUCK | D183 - 201 |

Unit(单位) : mm

| EDP No. | Corner Radius 圆弧角 R | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Overall Length 全长 L2 |
|---|---|---|---|---|---|
| GMH65160 | R0.5 | **16.0** | 16 | 40 | 100 |
| GMH6516010 | R1.0 | **16.0** | 16 | 40 | 100 |
| GMH6516020 | R2.0 | **16.0** | 16 | 40 | 100 |
| GMH6516030 | R3.0 | **16.0** | 16 | 40 | 100 |
| GMH65200 | R0.5 | **20.0** | 20 | 45 | 100 |
| GMH6520010 | R1.0 | **20.0** | 20 | 45 | 100 |
| GMH6520020 | R2.0 | **20.0** | 20 | 45 | 100 |
| GMH6520030 | R3.0 | **20.0** | 20 | 45 | 100 |
| GMH6525010 | R1.0 | **25.0** | 20 | 50 | 120 |

| Size 尺寸 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|
| up to Ø12 Ø12以下 | 0 ~ - 0.02 | h5 |
| over Ø12 超过Ø12 | 0 ~ - 0.03 | * Shank Dia.≥Ø12 : h6 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | |



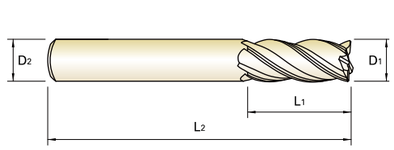
# V7 PLUS END MILLS

PLAIN SHANK **GMF66** SERIES

## CARBIDE, 4 FLUTE SHORT LENGTH
## 硬质合金，4刃 短刃

▶Special flute geometry and multiple helix eliminate vibrations
▶Excellent performance for Stainless Steels, Mild Steels, Cast Iron, Low/Medium hardness materials under HRc40

▶ 特殊沟槽设计和不等螺旋减少振动
▶ 卓越性能在不锈钢，软钢，铸铁，低/中硬度材料(~HRc 40)



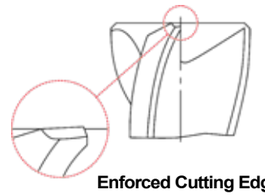

CARBIDE | 4 | 35°/37° | PLAIN | C x 45° | p.C395

| Recommended ToolHolder | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| | END MILL HOLDER | D118 - 137 | POWER MILLING CHUCK | D161 - 176 |
| | - | - | SHRINK FIT HOLDER | D47 - 72 |
| | - | - | HYDRAULIC CHUCK | D15 - 46 |
| | | | ER COLLET CHUCK | D73 - 115 |
| | | | SK SLIM CHUCK | D183 - 201 |

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Overall Length 全长 L2 | Chamfer 导向 |
|---|---|---|---|---|---|
| GMF66030 | **3.0** | 6 | 6 | 50 | 0.10 |
| GMF66901 | **3.0** | 4 | 6 | 50 | 0.10 |
| GMF66040 | **4.0** | 6 | 8 | 50 | 0.15 |
| GMF66902 | **4.0** | 4 | 8 | 50 | 0.15 |
| GMF66050 | **5.0** | 6 | 10 | 50 | 0.15 |
| GMF66060 | **6.0** | 6 | 12 | 50 | 0.20 |
| GMF66080 | **8.0** | 8 | 16 | 60 | 0.20 |
| GMF66100 | **10.0** | 10 | 20 | 75 | 0.30 |
| GMF66120 | **12.0** | 12 | 24 | 75 | 0.35 |
| GMF66160 | **16.0** | 16 | 32 | 100 | 0.40 |
| GMF66200 | **20.0** | 20 | 40 | 100 | 0.50 |

| Size 尺寸 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|
| up to Ø12 Ø12以下 | 0 ~ - 0.02 | h5 |
| over Ø12 超过Ø12 | 0 ~ - 0.03 | * Shank Dia.≥Ø12 : h6 |



**Enforced Cutting Edge**

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | |

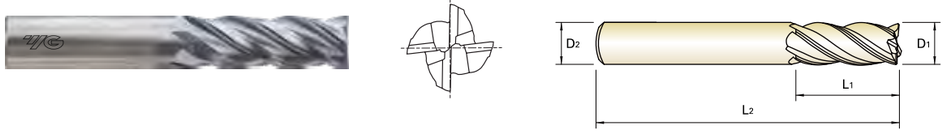
# V7 PLUS END MILLS

PLAIN SHANK **GMH67** SERIES

## CARBIDE, 4 FLUTE LONG LENGTH
## 硬质合金，4刃 长刃

▶Special flute geometry and multiple helix eliminate vibrations
▶Excellent performance for Stainless Steels, Mild Steels, Cast Iron, Low/Medium hardness materials under HRc40

▶特殊沟槽设计和不等螺旋减少振动
▶卓越性能在不锈钢，软钢，铸铁，低/中硬度材料(~HRc 40)




CARBIDE | 4 | 37° | 35°/37° | PLAIN

D < Ø3 D ≥ Ø3

p.C395

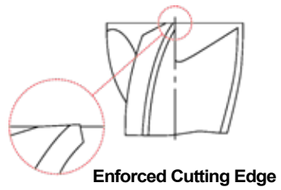
Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| END MILL HOLDER | D118 - 137 | POWER MILLING CHUCK | D161 - 176 |
| - | - | SHRINK FIT HOLDER | D47 - 72 |
| - | - | HYDRAULIC CHUCK | D15 - 46 |
| | | ER COLLET CHUCK | D73 - 115 |
| | | SK SLIM CHUCK | D183 - 201 |

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Overall Length 全长 L2 |
|---|---|---|---|---|
| GMH67010 | 1.0 | 6 | 2.5 | 50 |
| GMH67015 | 1.5 | 6 | 4 | 50 |
| GMH67020 | 2.0 | 6 | 6 | 50 |
| GMH67030 | 3.0 | 6 | 8 | 50 |
| GMH67040 | 4.0 | 6 | 10 | 50 |
| GMH67050 | 5.0 | 6 | 15 | 60 |
| GMH67060 | 6.0 | 6 | 15 | 60 |
| GMH67080 | 8.0 | 8 | 20 | 70 |
| GMH67100 | 10.0 | 10 | 25 | 75 |
| GMH67120 | 12.0 | 12 | 30 | 80 |
| GMH67160 | 16.0 | 16 | 40 | 100 |
| GMH67200 | 20.0 | 20 | 45 | 100 |

| Size 尺寸 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|
| up to Ø12 Ø12以下 | 0 ~ - 0.02 | h5 |
| over Ø12 超过Ø12 | 0 ~ - 0.03 | * Shank Dia.≥Ø12 : h6 |



Enforced Cutting Edge

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | |



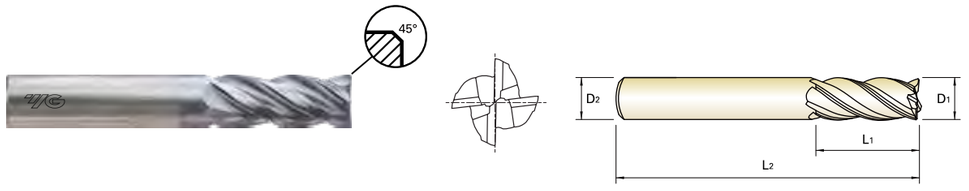
# V7 PLUS END MILLS

PLAIN SHANK **GMH68** SERIES

## CARBIDE, 4 FLUTE LONG LENGTH
## 硬质合金，4刃 长刃

▶Special flute geometry and multiple helix eliminate vibrations
▶Excellent performance for Stainless Steels, Mild Steels, Cast Iron, Low/Medium hardness materials under HRc40

▶特殊沟槽设计和不等螺旋减少振动
▶卓越性能在不锈钢，软钢，铸铁，低/中硬度材料(~HRc 40)




CARBIDE | 4 | 37° | 35°/37° | PLAIN | C x 45°

D < Ø3 D ≥ Ø3

p.C395

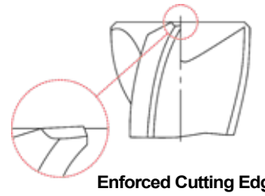
Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| END MILL HOLDER | D118 - 137 | POWER MILLING CHUCK | D161 - 176 |
| - | - | SHRINK FIT HOLDER | D47 - 72 |
| - | - | HYDRAULIC CHUCK | D15 - 46 |
| | | ER COLLET CHUCK | D73 - 115 |
| | | SK SLIM CHUCK | D183 - 201 |

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Overall Length 全长 L2 | Chamfer 导向 |
|---|---|---|---|---|---|
| GMH68010 | 1.0 | 6 | 2.5 | 50 | 0.03 |
| GMH68015 | 1.5 | 6 | 4 | 50 | 0.05 |
| GMH68020 | 2.0 | 6 | 6 | 50 | 0.075 |
| GMH68030 | 3.0 | 6 | 8 | 50 | 0.1 |
| GMH68040 | 4.0 | 6 | 10 | 50 | 0.15 |
| GMH68050 | 5.0 | 6 | 15 | 60 | 0.15 |
| GMH68060 | 6.0 | 6 | 15 | 60 | 0.2 |
| GMH68080 | 8.0 | 8 | 20 | 70 | 0.2 |
| GMH68100 | 10.0 | 10 | 25 | 75 | 0.3 |
| GMH68120 | 12.0 | 12 | 30 | 80 | 0.35 |
| GMH68140 | 14.0 | 16 | 35 | 100 | 0.4 |
| GMH68160 | 16.0 | 16 | 40 | 100 | 0.4 |
| GMH68180 | 18.0 | 16 | 45 | 100 | 0.5 |
| GMH68200 | 20.0 | 20 | 45 | 100 | 0.5 |

| Size 尺寸 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|
| up to Ø12 Ø12以下 | 0 ~ - 0.02 | h5 |
| over Ø12 超过Ø12 | 0 ~ - 0.03 | * Shank Dia.≥Ø12 : h6 |



Enforced Cutting Edge

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | |

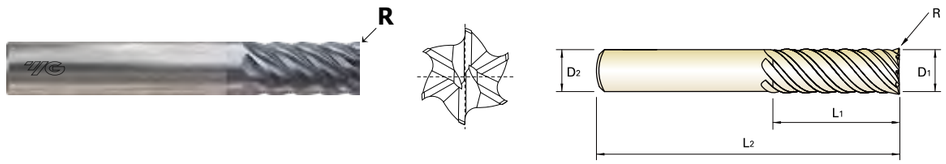
# V7 PLUS END MILLS

PLAIN SHANK **GMH69** SERIES

## CARBIDE, 6 FLUTE CORNER RADIUS
## 硬质合金，6刃 圆鼻

▶The unique geometry of the variable pitch provides the best chatter free tool for high speed and trochoidal milling
▶Excellent performance for Stainless Steels, Mild Steels, Cast Iron, Low/Medium hardness materials under HRc40

▶特的可变间距设计在高速和摆线铣削工况上，提供最好无振动刀具
▶卓越性能在不锈钢，软钢，铸铁，低/中硬度材料(~HRc 40)




CARBIDE | 6 | 45° | PLAIN | p.C396

Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| END MILL HOLDER | D118 - 137 | POWER MILLING CHUCK | D161 - 176 |
| - | - | SHRINK FIT HOLDER | D47 - 72 |
| - | - | HYDRAULIC CHUCK | D15 - 46 |
| | | ER COLLET CHUCK | D73 - 115 |
| | | SK SLIM CHUCK | D183 - 201 |

Unit(单位) : mm

| EDP No. | Corner Radius 圆弧角 R | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Overall Length 全长 L2 |
|---|---|---|---|---|---|
| GMH6906005 | R0.5 | 6.0 | 6 | 15 | 60 |
| GMH6906010 | R1.0 | 6.0 | 6 | 15 | 60 |
| GMH6908005 | R0.5 | 8.0 | 8 | 20 | 70 |
| GMH6908010 | R1.0 | 8.0 | 8 | 20 | 70 |
| GMH6910005 | R0.5 | 10.0 | 10 | 25 | 75 |
| GMH6910010 | R1.0 | 10.0 | 10 | 25 | 75 |
| GMH6910015 | R1.5 | 10.0 | 10 | 25 | 75 |
| GMH6910020 | R2.0 | 10.0 | 10 | 25 | 75 |
| GMH6912005 | R0.5 | 12.0 | 12 | 25 | 75 |
| GMH6912010 | R1.0 | 12.0 | 12 | 30 | 80 |
| GMH6912015 | R1.5 | 12.0 | 12 | 30 | 80 |
| GMH6912020 | R2.0 | 12.0 | 12 | 30 | 80 |
| GMH6912030 | R3.0 | 12.0 | 12 | 30 | 80 |
| GMH6916010 | R1.0 | 16.0 | 16 | 40 | 100 |
| GMH6916015 | R1.5 | 16.0 | 16 | 40 | 100 |
| GMH6916020 | R2.0 | 16.0 | 16 | 40 | 100 |
| GMH6916030 | R3.0 | 16.0 | 16 | 40 | 100 |
| GMH6920010 | R1.0 | 20.0 | 20 | 45 | 100 |
| GMH6920015 | R1.5 | 20.0 | 20 | 45 | 100 |
| GMH6920020 | R2.0 | 20.0 | 20 | 45 | 100 |
| GMH6920030 | R3.0 | 20.0 | 20 | 45 | 100 |
| GMH6925010 | R1.0 | 25.0 | 25 | 50 | 120 |
| GMH6925015 | R1.5 | 25.0 | 25 | 50 | 120 |
| GMH6925020 | R2.0 | 25.0 | 25 | 50 | 120 |
| GMH6925030 | R3.0 | 25.0 | 25 | 50 | 120 |

| Size 尺寸 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|
| up to Ø12 Ø12以下 | 0 ~ - 0.02 | h5 |
| over Ø12 超过Ø12 | 0 ~ - 0.03 | * Shank Dia.≥Ø12 : h6 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | |



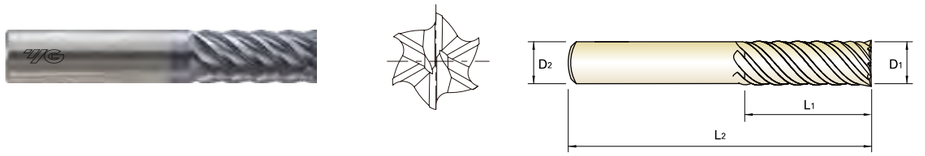
# V7 PLUS END MILLS

PLAIN SHANK **GMH71** SERIES

## CARBIDE, 6 FLUTE
## 硬质合金，6刃

▶The unique geometry of the variable pitch provides the best chatter free tool for high speed and trochoidal milling
▶Excellent performance for Stainless Steels, Mild Steels, Cast Iron, Low/Medium hardness materials under HRc40

▶特的可变间距设计在高速和摆线铣削工况上，提供最好无振动刀具
▶卓越性能在不锈钢，软钢，铸铁，低/中硬度材料(~HRc 40)




CARBIDE | 6 | 45° | PLAIN | p.C396

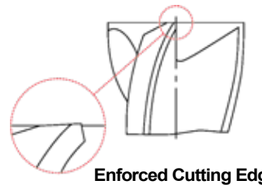
Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| END MILL HOLDER | D118 - 137 | POWER MILLING CHUCK | D161 - 176 |
| - | - | SHRINK FIT HOLDER | D47 - 72 |
| - | - | HYDRAULIC CHUCK | D15 - 46 |
| | | ER COLLET CHUCK | D73 - 115 |
| | | SK SLIM CHUCK | D183 - 201 |

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Overall Length 全长 L2 |
|---|---|---|---|---|
| GMH71060 | 6.0 | 6 | 15 | 60 |
| GMH71080 | 8.0 | 8 | 20 | 70 |
| GMH71100 | 10.0 | 10 | 25 | 75 |
| GMH71120 | 12.0 | 12 | 30 | 80 |
| GMH71160 | 16.0 | 16 | 40 | 100 |
| GMH71200 | 20.0 | 20 | 45 | 100 |
| GMH71250 | 25.0 | 25 | 50 | 120 |

| Size 尺寸 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|
| up to Ø12 Ø12以下 | 0 ~ - 0.02 | h5 |
| over Ø12 超过Ø12 | 0 ~ - 0.03 | * Shank Dia.≥Ø12 : h6 |




◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | |

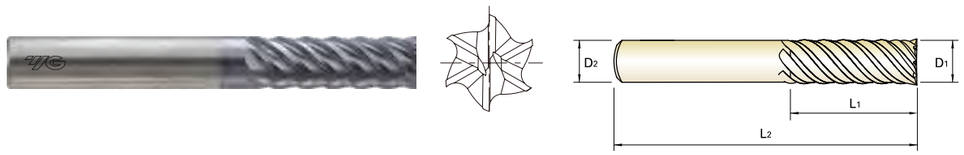
# V7 PLUS END MILLS

PLAIN SHANK **GMH70 SERIES**

## CARBIDE, 6 FLUTE LONG LENGTH
## 硬质合金，6刃 长刃

▶The unique geometry of the variable pitch provides the best chatter free tool for high speed and trochoidal milling
▶Excellent performance for Stainless Steels, Mild Steels, Cast Iron, Low/Medium hardness materials under HRc40

▶特的可变间距设计在高速和摆线铣削工况上，提供最好无振动刀具
▶卓越性能在不锈钢，软钢，铸铁，低/中硬度材料(~HRc 40)




CARBIDE | 6 | 45° | PLAIN | p.C396

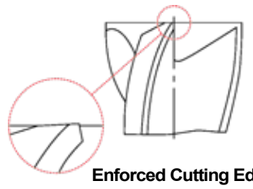
Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| END MILL HOLDER | D118 - 137 | POWER MILLING CHUCK | D161 - 176 |
| - | - | SHRINK FIT HOLDER | D47 - 72 |
| - | - | HYDRAULIC CHUCK | D15 - 46 |
| | | ER COLLET CHUCK | D73 - 115 |
| | | SK SLIM CHUCK | D183 - 201 |

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Overall Length 全长 L2 |
|---|---|---|---|---|
| GMH70060 | 6.0 | 6 | 24 | 75 |
| GMH70080 | 8.0 | 8 | 32 | 75 |
| GMH70100 | 10.0 | 10 | 40 | 100 |
| GMH70120 | 12.0 | 12 | 48 | 120 |
| GMH70160 | 16.0 | 16 | 64 | 140 |
| GMH70200 | 20.0 | 20 | 80 | 150 |
| GMH70250 | 25.0 | 25 | 100 | 170 |

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.03 | h5<br>* Shank Dia.≥Ø12 : h6 |



Enforced Cutting Edge

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | |





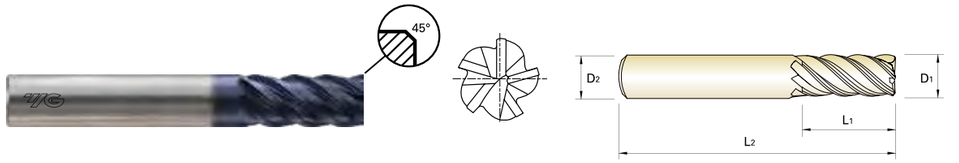
# V7 INOX END MILLS

PLAIN SHANK **EMB72 SERIES**
FLAT SHANK **EMB73 SERIES**

## CARBIDE, 5 FLUTE LONG LENGTH
## 硬质合金，5刃 长刃

▶Special flute geometry eliminates vibrations
▶Designed for mild steels, stainless steels, cast iron, tool steels, titanium alloys, prehardened steels and low hardness materials under HRc40
▶Excellent finished work piece
▶Higher speeds, deeper cuts and excellent metal removal rates

▶独特沟槽设计减少振动
▶设计于软钢,不锈钢,铸铁,刀具钢,钛合金,预硬钢和低硬度工件材料(~HRc40)
▶卓越工件表面粗糙度
▶更高切速，更深切深和优秀切削率




CARBIDE | 5 | Sinusoidal | PLAIN | FLAT | C x 45° | p.C397

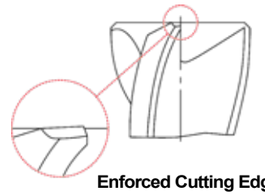
Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| END MILL HOLDER | D118 - 137 | POWER MILLING CHUCK | D161 - 176 |
| - | - | SHRINK FIT HOLDER | D47 - 72 |
| - | - | HYDRAULIC CHUCK | D15 - 46 |
| | | ER COLLET CHUCK | D73 - 115 |
| | | SK SLIM CHUCK | D183 - 201 |

Unit(单位) : mm

| EDP No. PLAIN | EDP No. FLAT | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Overall Length 全长 L2 | Chamfer 导向 |
|---|---|---|---|---|---|---|
| EMB72060 | EMB73060 | 6.0 | 6 | 13 | 57 | 0.1 |
| EMB72080 | EMB73080 | 8.0 | 8 | 19 | 63 | 0.1 |
| EMB72100 | EMB73100 | 10.0 | 10 | 22 | 72 | 0.1 |
| EMB72120 | EMB73120 | 12.0 | 12 | 26 | 83 | 0.1 |
| EMB72140 | EMB73140 | 14.0 | 14 | 26 | 83 | 0.2 |
| EMB72160 | EMB73160 | 16.0 | 16 | 32 | 92 | 0.2 |
| EMB72180 | EMB73180 | 18.0 | 18 | 32 | 92 | 0.2 |
| EMB72200 | EMB73200 | 20.0 | 20 | 38 | 104 | 0.2 |
| EMB72250 | EMB73250 | 25.0 | 25 | 38 | 104 | 0.2 |

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.03 | h5<br>* Shank Dia.≥Ø12 : h6 |



Enforced Cutting Edge

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ◎ | ◎ | ○ | ○ | ○ | ◎ | ○ | ○ | ○ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | ○ | ○ | ○ | ○ | ○ | ◎ | ◎ | | | | |

# V7 PLUS END MILLS

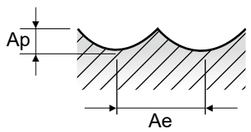
## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

### GMH66 SERIES

**4 FLUTE BALL NOSE**
**4刃 球头**

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description 工件材料 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 3.0 | 4.0 | 5.0 | 6.0 | 8.0 | 10.0 | 12.0 | 16.0 | 18.0 | 20.0 | 25.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1-4 | Non-alloy steel | 0.5D | 1.0D | Vc | 162 | 162 | 162 | 162 | 162 | 162 | 162 | 162 | 162 | 162 | 162 |
| | | | | | fz | 0.025 | 0.027 | 0.03 | 0.04 | 0.06 | 0.065 | 0.07 | 0.075 | 0.08 | 0.09 | 0.099 |
| | | | | | RPM | 17189 | 12892 | 10313 | 8594 | 6446 | 5157 | 4297 | 3223 | 2865 | 2578 | 2063 |
| | | | | | FEED | 1719 | 1392 | 1238 | 1375 | 1547 | 1341 | 1203 | 967 | 917 | 928 | 817 |
| | 5 | | 0.5D | 1.0D | Vc | 113 | 113 | 113 | 113 | 113 | 113 | 113 | 113 | 113 | 113 | 113 |
| | | | | | fz | 0.025 | 0.027 | 0.03 | 0.04 | 0.06 | 0.065 | 0.07 | 0.074 | 0.079 | 0.09 | 0.099 |
| | | | | | RPM | 11990 | 8992 | 7194 | 5995 | 4496 | 3597 | 2997 | 2248 | 1998 | 1798 | 1439 |
| | | | | | FEED | 1199 | 971 | 863 | 959 | 1079 | 935 | 839 | 665 | 631 | 647 | 570 |
| | 6-7 | Low alloy steel | 0.5D | 1.0D | Vc | 162 | 162 | 162 | 162 | 162 | 162 | 162 | 162 | 162 | 162 | 162 |
| | | | | | fz | 0.025 | 0.027 | 0.03 | 0.04 | 0.06 | 0.065 | 0.07 | 0.075 | 0.08 | 0.09 | 0.099 |
| | | | | | RPM | 17189 | 12892 | 10313 | 8594 | 6446 | 5157 | 4297 | 3223 | 2865 | 2578 | 2063 |
| | | | | | FEED | 1719 | 1392 | 1238 | 1375 | 1547 | 1341 | 1203 | 967 | 917 | 928 | 817 |
| | 8-9 | | 0.5D | 1.0D | Vc | 113 | 113 | 113 | 113 | 113 | 113 | 113 | 113 | 113 | 113 | 113 |
| | | | | | fz | 0.025 | 0.027 | 0.03 | 0.04 | 0.06 | 0.065 | 0.07 | 0.074 | 0.079 | 0.09 | 0.099 |
| | | | | | RPM | 11990 | 8992 | 7194 | 5995 | 4496 | 3597 | 2997 | 2248 | 1998 | 1798 | 1439 |
| | | | | | FEED | 1199 | 971 | 863 | 959 | 1079 | 935 | 839 | 665 | 631 | 647 | 570 |
| | 10-11.1 | High alloyed steel, and tool steel | 0.5D | 1.0D | Vc | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 |
| | | | | | fz | 0.017 | 0.019 | 0.021 | 0.028 | 0.042 | 0.045 | 0.049 | 0.052 | 0.056 | 0.063 | 0.07 |
| | | | | | RPM | 7215 | 5411 | 4329 | 3608 | 2706 | 2165 | 1804 | 1353 | 1203 | 1082 | 866 |
| | | | | | FEED | 491 | 411 | 364 | 404 | 455 | 390 | 354 | 281 | 269 | 273 | 242 |
| M | 12-13 | Stainless steel | 0.5D | 1.0D | Vc | 77 | 77 | 77 | 77 | 77 | 77 | 77 | 77 | 77 | 77 | 77 |
| | | | | | fz | 0.015 | 0.015 | 0.025 | 0.03 | 0.04 | 0.045 | 0.05 | 0.054 | 0.059 | 0.058 | 0.059 |
| | | | | | RPM | 8170 | 6127 | 4902 | 4085 | 3064 | 2451 | 2042 | 1532 | 1362 | 1225 | 980 |
| | | | | | FEED | 490 | 368 | 490 | 490 | 490 | 441 | 408 | 331 | 321 | 284 | 231 |
| | 14.1 | | 0.5D | 1.0D | Vc | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 85 |
| | | | | | fz | 0.02 | 0.02 | 0.025 | 0.041 | 0.045 | 0.05 | 0.055 | 0.06 | 0.064 | 0.065 | 0.068 |
| | | | | | RPM | 9019 | 6764 | 5411 | 4509 | 3382 | 2706 | 2255 | 1691 | 1503 | 1353 | 1082 |
| | | | | | FEED | 722 | 541 | 541 | 740 | 609 | 541 | 496 | 406 | 385 | 352 | 294 |
| | 14.2 | | 0.5D | 1.0D | Vc | 77 | 77 | 77 | 77 | 77 | 77 | 77 | 77 | 77 | 77 | 77 |
| | | | | | fz | 0.02 | 0.02 | 0.025 | 0.041 | 0.045 | 0.05 | 0.055 | 0.06 | 0.064 | 0.065 | 0.068 |
| | | | | | RPM | 8170 | 6127 | 4902 | 4085 | 3064 | 2451 | 2042 | 1532 | 1362 | 1225 | 980 |
| | | | | | FEED | 654 | 490 | 490 | 670 | 551 | 490 | 449 | 368 | 349 | 319 | 267 |
| K | 15-20 | Grey cast iron | 0.5D | 1.0D | Vc | 119 | 119 | 119 | 119 | 119 | 119 | 119 | 119 | 119 | 119 | 119 |
| | | | | | fz | 0.031 | 0.033 | 0.037 | 0.05 | 0.074 | 0.081 | 0.087 | 0.093 | 0.099 | 0.112 | 0.124 |
| | | | | | RPM | 12626 | 9470 | 7576 | 6313 | 4735 | 3788 | 3157 | 2367 | 2104 | 1894 | 1515 |
| | | | | | FEED | 1566 | 1250 | 1121 | 1263 | 1402 | 1227 | 1098 | 881 | 833 | 848 | 752 |
| S | 31-35 | Heat Resistant Super Alloys | 0.2D | 0.3D | Vc | 21 | 21 | 21 | 21 | 21 | 21 | 21 | 21 | 21 | 21 | 21 |
| | | | | | fz | 0.014 | 0.014 | 0.017 | 0.028 | 0.031 | 0.035 | 0.038 | 0.042 | 0.045 | 0.045 | 0.048 |
| | | | | | RPM | 2228 | 1671 | 1337 | 1114 | 836 | 668 | 557 | 418 | 371 | 334 | 267 |
| | | | | | FEED | 125 | 94 | 91 | 125 | 104 | 94 | 85 | 70 | 67 | 60 | 51 |
| | 36-37 | Titanium Alloys | 0.5D | 0.3D | Vc | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 |
| | | | | | fz | 0.018 | 0.018 | 0.022 | 0.037 | 0.04 | 0.045 | 0.049 | 0.054 | 0.058 | 0.058 | 0.061 |
| | | | | | RPM | 4987 | 3740 | 2992 | 2493 | 1870 | 1496 | 1247 | 935 | 831 | 748 | 598 |
| | | | | | FEED | 359 | 269 | 263 | 369 | 299 | 269 | 244 | 202 | 193 | 174 | 146 |






V7 PLUS END MILLS
RECOMMENDED CUTTING CONDITIONS
推荐加工参数

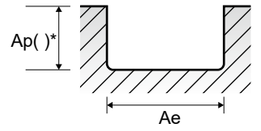
### GMH65, GMF66, GMH67, GMH68

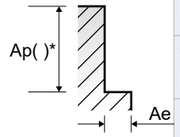
**4 FLUTE - SIDE CUTTING / SLOTTING**
**4刃 - 侧铣削 / 槽铣削**

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description 工件材料 | Ae(切削宽度) Side 侧铣 | Ae(切削宽度) Slotting 槽铣 | Ap(切削深度) Side 侧铣 | Ap(切削深度) Slotting 槽铣 | Parameter 参数 | Diameter (Ø) 直径 3.0 | 4.0 | 5.0 | 6.0 | 8.0 | 10.0 | 12.0 | 14.0 | 16.0 | 18.0 | 20.0 | 25.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1-4 | Non-alloy steel | 0.5D | 1.0D | 1.5D (1.2D) | 1.0D (0.8D) | Vc | 152 | 152 | 152 | 152 | 152 | 168 | 168 | 168 | 168 | 168 | 168 | 168 |
| | | | | | | | fz | 0.005 | 0.008 | 0.011 | 0.016 | 0.027 | 0.038 | 0.047 | 0.049 | 0.053 | 0.059 | 0.065 | 0.064 |
| | | | | | | | RPM | 16128 | 12096 | 9677 | 8064 | 6048 | 5348 | 4456 | 3820 | 3342 | 2971 | 2674 | 2139 |
| | | | | | | | FEED | 323 | 387 | 426 | 516 | 653 | 813 | 838 | 749 | 709 | 701 | 695 | 548 |
| | 5 | | 0.5D | 1.0D | 1.5D (1.2D) | 1.0D (0.8D) | Vc | 107 | 107 | 107 | 107 | 107 | 117 | 117 | 117 | 117 | 117 | 117 | 117 |
| | | | | | | | fz | 0.005 | 0.008 | 0.011 | 0.016 | 0.027 | 0.038 | 0.047 | 0.049 | 0.053 | 0.059 | 0.065 | 0.064 |
| | | | | | | | RPM | 11353 | 8515 | 6812 | 5677 | 4257 | 3724 | 3104 | 2660 | 2328 | 2069 | 1862 | 1490 |
| | | | | | | | FEED | 227 | 272 | 300 | 363 | 460 | 566 | 583 | 521 | 493 | 488 | 484 | 381 |
| | 6-7 | Low alloy steel | 0.5D | 1.0D | 1.5D (1.2D) | 1.0D (0.8D) | Vc | 152 | 152 | 152 | 152 | 152 | 168 | 168 | 168 | 168 | 168 | 168 | 168 |
| | | | | | | | fz | 0.005 | 0.008 | 0.011 | 0.016 | 0.027 | 0.038 | 0.047 | 0.049 | 0.053 | 0.059 | 0.065 | 0.064 |
| | | | | | | | RPM | 16128 | 12096 | 9677 | 8064 | 6048 | 5348 | 4456 | 3820 | 3342 | 2971 | 2674 | 2139 |
| | | | | | | | FEED | 323 | 387 | 426 | 516 | 653 | 813 | 838 | 749 | 709 | 701 | 695 | 548 |
| | 8-9 | | 0.5D | 1.0D | 1.5D (1.2D) | 1.0D (0.8D) | Vc | 107 | 107 | 107 | 107 | 107 | 117 | 117 | 117 | 117 | 117 | 117 | 117 |
| | | | | | | | fz | 0.005 | 0.008 | 0.011 | 0.016 | 0.027 | 0.038 | 0.047 | 0.049 | 0.053 | 0.059 | 0.065 | 0.064 |
| | | | | | | | RPM | 11353 | 8515 | 6812 | 5677 | 4257 | 3724 | 3104 | 2660 | 2328 | 2069 | 1862 | 1490 |
| | | | | | | | FEED | 227 | 272 | 300 | 363 | 460 | 566 | 583 | 521 | 493 | 488 | 484 | 381 |
| | 10-11.1 | High alloyed steel, and tool steel | 0.5D | 1.0D | 1.5D (1.2D) | 1.0D (0.8D) | Vc | 64 | 64 | 64 | 64 | 64 | 70 | 70 | 70 | 70 | 70 | 70 | 70 |
| | | | | | | | fz | 0.003 | 0.006 | 0.008 | 0.011 | 0.019 | 0.027 | 0.032 | 0.034 | 0.037 | 0.041 | 0.045 | 0.045 |
| | | | | | | | RPM | 6791 | 5093 | 4074 | 3395 | 2546 | 2228 | 1857 | 1592 | 1393 | 1238 | 1114 | 891 |
| | | | | | | | FEED | 81 | 122 | 130 | 149 | 194 | 241 | 238 | 216 | 206 | 203 | 201 | 160 |
| M | 12-13 | Stainless steel | 0.5D | 1.0D | 1.5D (1.2D) | 1.0D (0.8D) | Vc | 148 | 148 | 148 | 148 | 148 | 148 | 148 | 148 | 148 | 148 | 148 | 148 |
| | | | | | | | fz | 0.004 | 0.006 | 0.009 | 0.013 | 0.022 | 0.034 | 0.039 | 0.042 | 0.045 | 0.05 | 0.055 | 0.055 |
| | | | | | | | RPM | 15703 | 11777 | 9422 | 7852 | 5889 | 4711 | 3926 | 3365 | 2944 | 2617 | 2355 | 1884 |
| | | | | | | | FEED | 251 | 283 | 339 | 408 | 518 | 641 | 612 | 565 | 530 | 523 | 518 | 415 |
| | 14.1 | | 0.5D | 1.0D | 1.5D (1.2D) | 1.0D (0.8D) | Vc | 106 | 106 | 106 | 106 | 106 | 106 | 106 | 106 | 106 | 106 | 106 | 106 |
| | | | | | | | fz | 0.005 | 0.008 | 0.013 | 0.018 | 0.028 | 0.048 | 0.055 | 0.059 | 0.062 | 0.07 | 0.077 | 0.077 |
| | | | | | | | RPM | 11247 | 8435 | 6748 | 5623 | 4218 | 3374 | 2812 | 2410 | 2109 | 1874 | 1687 | 1350 |
| | | | | | | | FEED | 225 | 270 | 351 | 405 | 472 | 648 | 619 | 569 | 523 | 525 | 520 | 416 |
| | 14.2 | | 0.5D | 1.0D | 1.5D (1.2D) | 1.0D (0.8D) | Vc | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 |
| | | | | | | | fz | 0.005 | 0.008 | 0.013 | 0.018 | 0.028 | 0.048 | 0.055 | 0.059 | 0.062 | 0.069 | 0.076 | 0.076 |
| | | | | | | | RPM | 10080 | 7560 | 6048 | 5040 | 3780 | 3024 | 2520 | 2160 | 1890 | 1680 | 1512 | 1210 |
| | | | | | | | FEED | 202 | 242 | 314 | 363 | 423 | 581 | 554 | 510 | 469 | 464 | 460 | 368 |
| K | 15-20 | Grey cast iron | 0.5D | 1.0D | 1.5D (1.2D) | 1.0D (0.8D) | Vc | 112 | 112 | 112 | 112 | 112 | 123 | 123 | 123 | 123 | 123 | 123 | 123 |
| | | | | | | | fz | 0.006 | 0.01 | 0.014 | 0.02 | 0.034 | 0.048 | 0.058 | 0.061 | 0.065 | 0.073 | 0.081 | 0.079 |
| | | | | | | | RPM | 11884 | 8913 | 7130 | 5942 | 4456 | 3915 | 3263 | 2797 | 2447 | 2175 | 1958 | 1566 |
| | | | | | | | FEED | 285 | 357 | 399 | 475 | 606 | 752 | 757 | 682 | 636 | 635 | 634 | 495 |
| S | 31-35 | Heat Resistant Super Alloys | 0.25D | 1.0D | 1.0D | 0.5D | Vc | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 |
| | | | | | | | fz | 0.005 | 0.007 | 0.008 | 0.012 | 0.019 | 0.033 | 0.038 | 0.04 | 0.043 | 0.048 | 0.054 | 0.052 |
| | | | | | | | RPM | 2759 | 2069 | 1655 | 1379 | 1035 | 828 | 690 | 591 | 517 | 460 | 414 | 331 |
| | | | | | | | FEED | 55 | 58 | 53 | 66 | 79 | 109 | 105 | 95 | 89 | 88 | 89 | 69 |
| | 36-37 | Titanium Alloys | 0.4D | 1.0D | 1.0D | 0.5D | Vc | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 |
| | | | | | | | fz | 0.004 | 0.007 | 0.011 | 0.016 | 0.025 | 0.042 | 0.05 | 0.053 | 0.055 | 0.062 | 0.068 | 0.069 |
| | | | | | | | RPM | 6154 | 4615 | 3692 | 3077 | 2308 | 1846 | 1538 | 1319 | 1154 | 1026 | 923 | 738 |
| | | | | | | | FEED | 98 | 129 | 162 | 197 | 231 | 310 | 308 | 280 | 254 | 254 | 251 | 204 |

*( ) : Short length
*( ) : 短刃



# V7 PLUS END MILLS

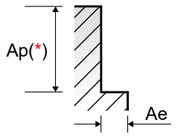
## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

### GMH69, GMH71, GMH70 SERIES

**6 FLUTE - SIDE CUTTING**
**6刃 - 侧铣削**

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description 工件材料 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 6.0 | 8.0 | 10.0 | 12.0 | 16.0 | 20.0 | 25.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1-4 | Non-alloy steel | 0.05D | 2.0D | Vc | 300 | 300 | 300 | 300 | 300 | 300 | 300 |
| | | | | | fz | 0.068 | 0.116 | 0.144 | 0.173 | 0.202 | 0.225 | 0.232 |
| | | | | | RPM | 15915 | 11937 | 9549 | 7958 | 5968 | 4775 | 3820 |
| | | | | | FEED | 6494 | 8308 | 8251 | 8260 | 7234 | 6446 | 5317 |
| | 5 | | 0.05D | 2.0D | Vc | 203 | 203 | 203 | 203 | 203 | 203 | 203 |
| | | | | | fz | 0.05 | 0.085 | 0.106 | 0.128 | 0.149 | 0.167 | 0.174 |
| | | | | | RPM | 10769 | 8077 | 6462 | 5385 | 4039 | 3231 | 2585 |
| | | | | | FEED | 3231 | 4119 | 4110 | 4135 | 3610 | 3237 | 2698 |
| | 6-7 | Low alloy steel | 0.05D | 2.0D | Vc | 300 | 300 | 300 | 300 | 300 | 300 | 300 |
| | | | | | fz | 0.068 | 0.116 | 0.144 | 0.173 | 0.202 | 0.225 | 0.232 |
| | | | | | RPM | 15915 | 11937 | 9549 | 7958 | 5968 | 4775 | 3820 |
| | | | | | FEED | 6494 | 8308 | 8251 | 8260 | 7234 | 6446 | 5317 |
| | 8-9 | | 0.05D | 2.0D | Vc | 203 | 203 | 203 | 203 | 203 | 203 | 203 |
| | | | | | fz | 0.05 | 0.085 | 0.106 | 0.128 | 0.149 | 0.167 | 0.174 |
| | | | | | RPM | 10769 | 8077 | 6462 | 5385 | 4039 | 3231 | 2585 |
| | | | | | FEED | 3231 | 4119 | 4110 | 4135 | 3610 | 3237 | 2698 |
| | 10-11.1 | High alloyed steel, and tool steel | 0.05D | 2.0D | Vc | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| | | | | | fz | 0.041 | 0.071 | 0.088 | 0.105 | 0.123 | 0.137 | 0.144 |
| | | | | | RPM | 5305 | 3979 | 3183 | 2653 | 1989 | 1592 | 1273 |
| | | | | | FEED | 1305 | 1695 | 1681 | 1671 | 1468 | 1308 | 1100 |
| M | 12-13 | Stainless steel | 0.05D | 2.0D | Vc | 213 | 213 | 213 | 213 | 213 | 213 | 213 |
| | | | | | fz | 0.049 | 0.084 | 0.104 | 0.125 | 0.146 | 0.162 | 0.168 |
| | | | | | RPM | 11300 | 8475 | 6780 | 5650 | 4238 | 3390 | 2712 |
| | | | | | FEED | 3322 | 4271 | 4231 | 4238 | 3712 | 3295 | 2734 |
| | 14.1 | | 0.05D | 2.0D | Vc | 147 | 147 | 147 | 147 | 147 | 147 | 147 |
| | | | | | fz | 0.041 | 0.071 | 0.088 | 0.105 | 0.123 | 0.137 | 0.143 |
| | | | | | RPM | 7799 | 5849 | 4679 | 3899 | 2924 | 2340 | 1872 |
| | | | | | FEED | 1918 | 2492 | 2471 | 2457 | 2158 | 1923 | 1606 |
| | 14.2 | | 0.05D | 2.0D | Vc | 134 | 134 | 134 | 134 | 134 | 134 | 134 |
| | | | | | fz | 0.041 | 0.071 | 0.088 | 0.105 | 0.123 | 0.137 | 0.142 |
| | | | | | RPM | 7109 | 5332 | 4265 | 3554 | 2666 | 2133 | 1706 |
| | | | | | FEED | 1749 | 2271 | 2252 | 2239 | 1967 | 1753 | 1454 |
| K | 15-20 | Grey cast iron | 0.05D | 2.0D | Vc | 225 | 225 | 225 | 225 | 225 | 225 | 225 |
| | | | | | fz | 0.082 | 0.139 | 0.173 | 0.208 | 0.242 | 0.270 | 0.278 |
| | | | | | RPM | 11937 | 8952 | 7162 | 5968 | 4476 | 3581 | 2865 |
| | | | | | FEED | 5844 | 7477 | 7426 | 7434 | 6510 | 5801 | 4786 |
| S | 31-35 | Heat Resistant Super Alloys | 0.05D | 2.0D | Vc | 33 | 33 | 33 | 33 | 33 | 33 | 33 |
| | | | | | fz | 0.033 | 0.055 | 0.07 | 0.082 | 0.097 | 0.112 | 0.115 |
| | | | | | RPM | 1751 | 1313 | 1050 | 875 | 657 | 525 | 420 |
| | | | | | FEED | 347 | 433 | 441 | 431 | 382 | 353 | 290 |
| | 36-37 | Titanium Alloys | 0.05D | 2.0D | Vc | 116 | 116 | 116 | 116 | 116 | 116 | 116 |
| | | | | | fz | 0.033 | 0.055 | 0.07 | 0.083 | 0.097 | 0.113 | 0.117 |
| | | | | | RPM | 6154 | 4615 | 3692 | 3077 | 2308 | 1846 | 1477 |
| | | | | | FEED | 1218 | 1523 | 1551 | 1532 | 1343 | 1252 | 1037 |




(*) : If product's Length of Cut(L.O.C) is below 2D, it must be applied L.O.C x 90%
(*) : 如果工件切深(L.O.C)是2D一下，AP应该做L.O.C X 90%



# V7 INOX END MILLS

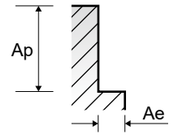
## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

### EMB72, EMB73 SERIES

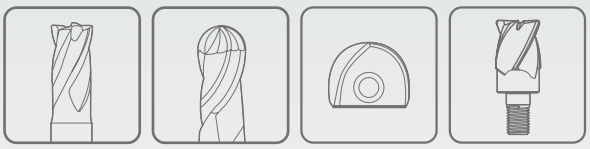
**5 FLUTE - SIDE CUTTING**
**5刃 - 侧铣削**

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description 工件材料 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 6.0 | 8.0 | 10.0 | 12.0 | 14.0 | 16.0 | 20.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1-2 | Non-alloy steel | 0.25D | 1.25D | Vc | 135 | 135 | 135 | 135 | 135 | 135 | 135 |
| | | | | | fz | 0.034 | 0.038 | 0.050 | 0.063 | 0.069 | 0.076 | 0.089 |
| | | | | | RPM | 7162 | 5371 | 4297 | 3581 | 3069 | 2686 | 2149 |
| | | | | | FEED | 1218 | 1021 | 1074 | 1128 | 1059 | 1021 | 956 |
| | 6 | Low alloy steel | 0.25D | 1.25D | Vc | 135 | 135 | 135 | 135 | 135 | 135 | 135 |
| | | | | | fz | 0.034 | 0.038 | 0.050 | 0.063 | 0.069 | 0.076 | 0.089 |
| | | | | | RPM | 7162 | 5371 | 4297 | 3581 | 3069 | 2686 | 2149 |
| | | | | | FEED | 1218 | 1021 | 1074 | 1128 | 1059 | 1021 | 956 |
| | 10 | High alloyed steel, and tool steel | 0.25D | 1.25D | Vc | 135 | 135 | 135 | 135 | 135 | 135 | 135 |
| | | | | | fz | 0.034 | 0.038 | 0.050 | 0.063 | 0.069 | 0.076 | 0.089 |
| | | | | | RPM | 7162 | 5371 | 4297 | 3581 | 3069 | 2686 | 2149 |
| | | | | | FEED | 1218 | 1021 | 1074 | 1128 | 1059 | 1021 | 956 |
| M | 12-13 | Stainless steel | 0.25D | 1.25D | Vc | 105 | 105 | 105 | 145 | 105 | 105 | 105 |
| | | | | | fz | 0.030 | 0.032 | 0.038 | 0.043 | 0.064 | 0.068 | 0.076 |
| | | | | | RPM | 5570 | 4178 | 3342 | 3846 | 2387 | 2089 | 1671 |
| | | | | | FEED | 836 | 668 | 635 | 827 | 764 | 710 | 635 |
| | 14.1 | | 0.25D | 1.25D | Vc | 115 | 115 | 115 | 115 | 115 | 115 | 115 |
| | | | | | fz | 0.030 | 0.032 | 0.038 | 0.063 | 0.065 | 0.069 | 0.076 |
| | | | | | RPM | 6101 | 4576 | 3661 | 3050 | 2615 | 2288 | 1830 |
| | | | | | FEED | 915 | 732 | 696 | 961 | 850 | 789 | 696 |
| K | 15-20 | Grey cast iron | 0.25D | 1.25D | Vc | 135 | 135 | 135 | 135 | 135 | 135 | 135 |
| | | | | | fz | 0.034 | 0.038 | 0.050 | 0.063 | 0.069 | 0.076 | 0.089 |
| | | | | | RPM | 7162 | 5371 | 4297 | 3581 | 3069 | 2686 | 2149 |
| | | | | | FEED | 1218 | 1021 | 1074 | 1128 | 1059 | 1021 | 956 |
| S | 31-35 | Heat Resistant Super Alloys | 0.25D | 1.0D | Vc | 25 | 25 | 25 | 25 | 25 | 25 | 25 |
| | | | | | fz | 0.017 | 0.020 | 0.025 | 0.036 | 0.045 | 0.048 | 0.060 |
| | | | | | RPM | 1326 | 995 | 796 | 663 | 568 | 497 | 398 |
| | | | | | FEED | 113 | 99 | 99 | 119 | 128 | 119 | 119 |
| | 36-37 | Titanium Alloys | 0.25D | 1.25D | Vc | 85 | 85 | 85 | 85 | 85 | 85 | 85 |
| | | | | | fz | 0.030 | 0.031 | 0.038 | 0.050 | 0.057 | 0.063 | 0.075 |
| | | | | | RPM | 4509 | 3382 | 2706 | 2255 | 1933 | 1691 | 1353 |
| | | | | | FEED | 676 | 524 | 514 | 564 | 551 | 533 | 507 |

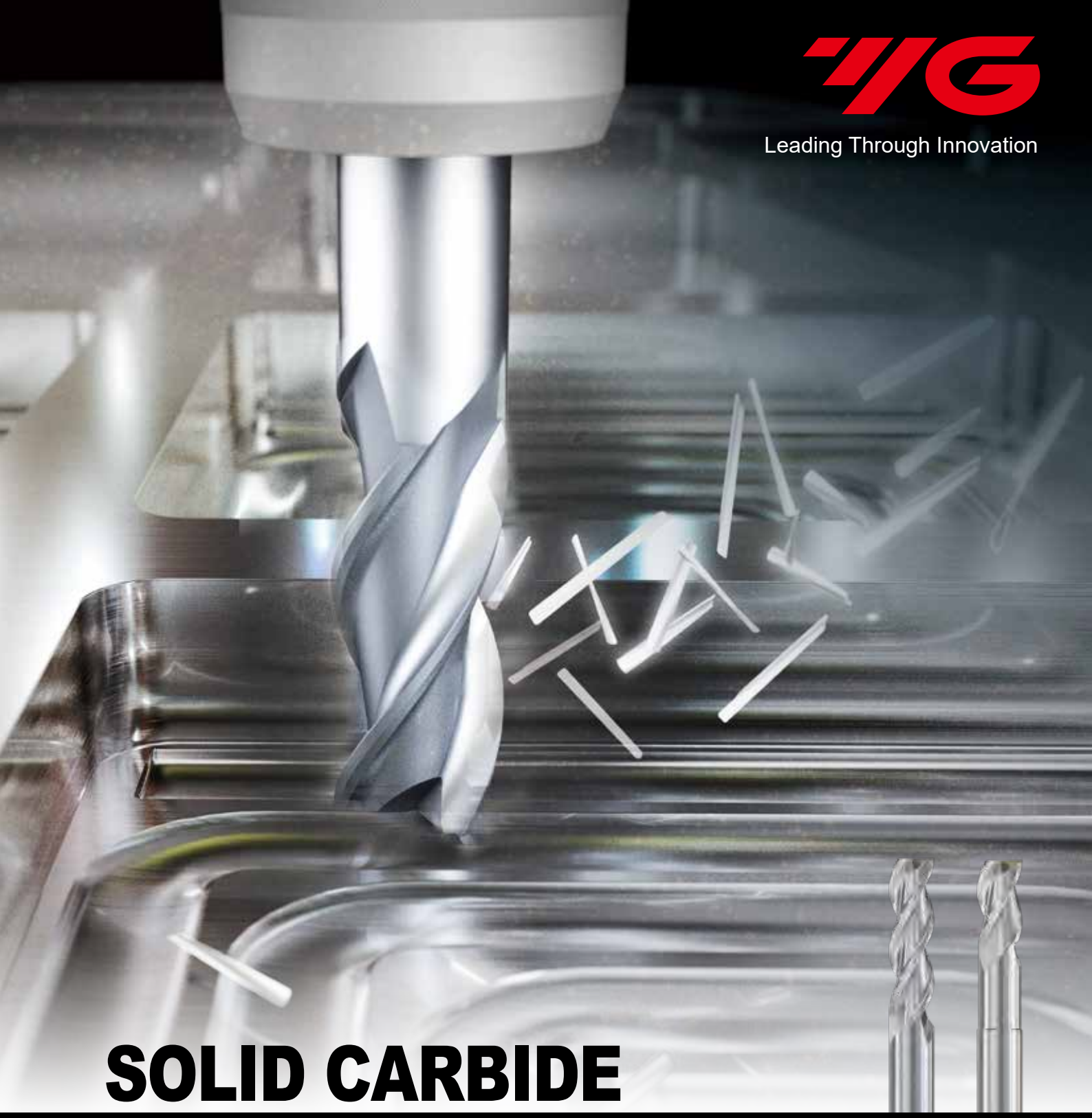


Global Cutting Tool Leader **YG-1**



# MILLING

Leading Through Innovation



# SOLID CARBIDE
# ALU-POWER HPC
# END MILLS

- For Aluminium, Aluminum Die Cast, Non-ferrous Alloys and Plastics

- 适用于加工铝，铝合金，非铁金属和塑料

# SELECTION GUIDE
## 选用指南

MILLING TOOLS

| SERIES 系列 | E5H24 JAH24 | E5H25 JAH25 | E5H22 JAH22 | E5H23 JAH23 |
|---|---|---|---|---|
| FLUTE 槽数 | 3 | 3 | 3 | 3 |
| HELIX ANGLE 螺旋角度 | 37° | 37° | 37° | 37° |
| CUTTING EDGE SHAPE 类型 | CORNER RADIUS | CORNER RADIUS | SQUARE | SQUARE |
| SIZE MIN 最小尺寸 | D6.0 | D6.0 | D3.0 | D6.0 |
| SIZE MAX 最大尺寸 | D20.0 | D20.0 | D25.0 | D20.0 |
| PAGE 页数 | C402-404 | C405-407 | C408 | C409 |
| | - | EXTENDED NECK | - | EXTENDED NECK |
| | Uncoated | Uncoated | Uncoated | Uncoated |
| | DLC | DLC | DLC | DLC |

## SOLID CARBIDE
# ALU-POWER HPC END MILLS

3-Flute, High-Performance,
For Aluminum, Aluminum Die Cast,
Non-Ferrous Alloys And Plastics
3刃，高性能，加工铝，铝合金，非铁金属和塑料

Please visit globalyg1.com/mat for material search

◎ : Excellent (优秀) ○ : Good (良好)

Recommended cutting conditions (推荐加工参数) : p.C410

| ISO | VDI 3323 | Material Description 材料描述 | Composition / Structure / Heat Treatment 成分 / 组织 / 热处理 | | HB | HRc | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | About 0.15% C | Annealed | 125 | | | | | |
| | 2 | | About 0.45% C | Annealed | 190 | 13 | | | | |
| | 3 | | About 0.45% C | Quenched & Tempered | 250 | 25 | | | | |
| | 4 | | About 0.75% C | Annealed | 270 | 28 | | | | |
| | 5 | | About 0.75% C | Quenched & Tempered | 300 | 32 | | | | |
| | 6 | Low alloy steel | | Annealed | 180 | 10 | | | | |
| | 7 | | | Quenched & Tempered | 275 | 29 | | | | |
| | 8 | | | Quenched & Tempered | 300 | 32 | | | | |
| | 9 | | | Quenched & Tempered | 350 | 38 | | | | |
| | 10 | High alloyed steel, and tool steel | | Annealed | 200 | 15 | | | | |
| | 11 | | | Quenched & Tempered | 325 | 35 | | | | |
| M | 12 | Stainless steel | Ferritic / Martensitic | Annealed | 200 | 15 | | | | |
| | 13 | | Martensitic | Quenched & Tempered | 240 | 23 | | | | |
| | 14 | | Austenitic | | 180 | 10 | | | | |
| K | 15 | Grey cast iron | Pearlitic / ferritic | | 180 | 10 | | | | |
| | 16 | | Pearlitic (Martensitic) | | 260 | 26 | | | | |
| | 17 | Nodular cast iron | Ferritic | | 160 | 3 | | | | |
| | 18 | | Pearlitic | | 250 | 25 | | | | |
| | 19 | Malleable cast iron | Ferritic | | 130 | | | | | |
| | 20 | | Pearlitic | | 230 | 21 | | | | |
| N | 21 | Aluminum-wrought alloy | Not Curable | | 60 | | ◎ | ◎ | ◎ | ◎ |
| | 22 | | Curable | Hardened | 100 | | ◎ | ◎ | ◎ | ◎ |
| | 23 | Aluminum-cast, alloyed | ≤ 12% Si, Not Curable | | 75 | | ◎ | ◎ | ◎ | ◎ |
| | 24 | | ≤ 12% Si, Curable | Hardened | 90 | | ◎ | ◎ | ◎ | ◎ |
| | 25 | | > 12% Si, Not Curable | | 130 | | ○ | ○ | ○ | ○ |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | Cutting Alloys, PB>1% | | 110 | | ○ | ○ | ○ | ○ |
| | 27 | | CuZn, CuSnZn (Brass) | | 90 | | ○ | ○ | ○ | ○ |
| | 28 | | CuSn, lead-free copper and electrolytic copper | | 100 | | ○ | ○ | ○ | ○ |
| | 29 | Non Metallic Materials | Duroplastic, Fiber Reinforced Plastic | | | | ○ | ○ | ○ | ○ |
| | 30 | | Rubber, Wood, etc. | | | | | | | |
| S | 31 | Heat Resistant Super Alloys | Fe Based | Annealed | 200 | 15 | | | | |
| | 32 | | | Cured | 280 | 30 | | | | |
| | 33 | | Ni or Co Based | Annealed | 250 | 25 | | | | |
| | 34 | | | Cured | 350 | 38 | | | | |
| | 35 | | | Cast | 320 | 34 | | | | |
| | 36 | Titanium Alloys | Pure Titanium | | 400 Rm | | | | | |
| | 37 | | Alpha + Beta Alloys | Hardened | 1050 Rm | | | | | |
| H | 38 | Hardened steel | | Hardened | 550 | 55 | | | | |
| | 39 | | | Hardened | 630 | 60 | | | | |
| | 40 | Chilled Cast Iron | | Cast | 400 | 42 | | | | |
| | 41 | Hardened Cast Iron | | Hardened | 550 | 55 | | | | |

CORNER RADIUS = 圆鼻　SQUARE = 平头　EXTENDED NECK = 颈部加长　Uncoated = 非涂层



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AEROSPACE SOLUTIONS &
COMPOSITE METERIALS

CARBIDE
HSS
CBN END MILLS
i-Xmill END MILLS
i-SMART MODULAR END MILLS
X5070 END MILLS
4G MILL END MILLS
X-POWER PRO END MILLS
TitaNox-POWER END MILLS
SUS-CUT END MILLS
V7 PLUS END MILLS
ALU-POWER HPC END MILLS
ALU-CUT END MILLS
G-CUT END MILLS
CRX S END MILLS
K-2 END MILLS
GENERAL CARBIDE END MILLS
ONLY ONE COATED PM60 END MILLS
TANK-POWER END MILLS
GENERAL HSS END MILLS
MILLING CUTTERS
TECHNICAL DATA

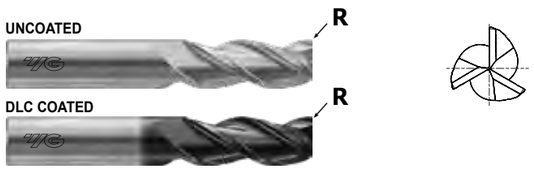
# ALU-POWER HPC END MILLS

UNCOATED **E5H24** SERIES
DLC COATED **JAH24** SERIES
PLAIN SHANK

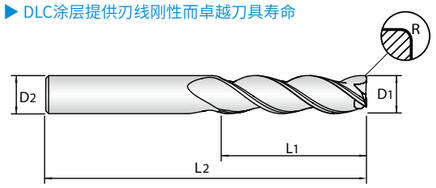
## CARBIDE, 3 FLUTE 37° HELIX CORNER RADIUS
## 硬质合金，3刃 37度螺旋 圆鼻

- Balanced cutting with less vibration
- Ability to run at higher speeds with less heat in aluminum
- More efficient chip evacuation
- Ability to counteract extreme radial forces
- DLC Coating provides edge strength and unsurpassed tool life

- 减少振动及稳定加工
- 可用高速加工减少加工铝时发热
- 提高排屑性能
- 减少切削阻力
- DLC涂层提供刃线刚性而卓越刀具寿命






CARBIDE | 3 | 37° | PLAIN

p.C410

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| HYDRAULIC CHUCK | D15 - 46 |
| SHRINK FIT HOLDER | D47 - 72 |
| POWER MILLING CHUCK | D161 - 176 |
| ER COLLET CHUCK | D73 - 115 |
| SK SLIM CHUCK | D183 - 201 |

Unit(单位) : mm

| EDP No. | | Corner Radius | Mill Diameter | Shank Diameter | Length of Cut | Overall Length |
|---|---|---|---|---|---|---|
| | | 圆弧角 | 直径 | 柄径 | 刃长 | 全长 |
| Uncoated | DLC | R | D1 | D2 | L1 | L2 |
| **E5H24060** | **JAH24060** | R0.5 | **6.0** | 6 | 13 | 57 |
| **E5H24901** | **JAH24901** | R1.0 | **6.0** | 6 | 13 | 57 |
| **E5H24902** | **JAH24902** | R1.5 | **6.0** | 6 | 13 | 57 |
| **E5H24903** | **JAH24903** | R0.8 | **6.0** | 6 | 13 | 72 |
| **E5H24904** | **JAH24904** | R1.2 | **6.0** | 6 | 13 | 72 |
| **E5H24905** | **JAH24905** | R0.5 | **6.0** | 6 | 24 | 75 |
| **E5H24906** | **JAH24906** | R1.0 | **6.0** | 6 | 24 | 75 |
| **E5H24080** | **JAH24080** | R0.3 | **8.0** | 8 | 19 | 63 |
| **E5H24907** | **JAH24907** | R0.5 | **8.0** | 8 | 19 | 63 |
| **E5H24908** | **JAH24908** | R1.0 | **8.0** | 8 | 19 | 63 |
| **E5H24909** | **JAH24909** | R1.5 | **8.0** | 8 | 19 | 63 |
| **E5H24910** | **JAH24910** | R0.5 | **8.0** | 8 | 32 | 75 |
| **E5H24911** | **JAH24911** | R1.0 | **8.0** | 8 | 32 | 75 |
| **E5H24912** | **JAH24912** | R1.5 | **8.0** | 8 | 32 | 75 |
| **E5H24913** | **JAH24913** | R2.0 | **8.0** | 8 | 32 | 75 |
| **E5H24100** | **JAH24100** | R0.3 | **10.0** | 10 | 22 | 72 |
| **E5H24914** | **JAH24914** | R0.5 | **10.0** | 10 | 22 | 72 |
| **E5H24915** | **JAH24915** | R1.0 | **10.0** | 10 | 22 | 72 |
| **E5H24916** | **JAH24916** | R1.5 | **10.0** | 10 | 22 | 72 |
| **E5H24917** | **JAH24917** | R0.5 | **10.0** | 10 | 40 | 100 |

▶ NEXT PAGE 下页

| Mill Diameter Tolerences (mm) 直径公差 | | Shank Diameter Tolerance 柄径公差 |
|---|---|---|
| Diameter (直径) | Tolerance (公差) | |
| Up to 3 | +0/-0.006 | h5 |
| Over 3 ~ up to 6 | +0/-0.008 | |
| Over 6 ~ up to 10 | +0/-0.009 | |
| Over 10 ~ up to 18 | +0/-0.011 | |
| Over 18 ~ up to 25 | +0/-0.013 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | | | | | | | | | | | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | |



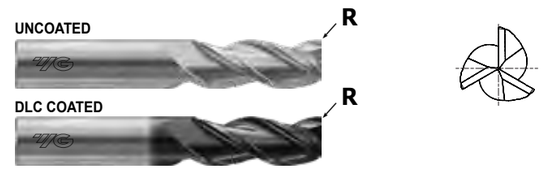
ALU-POWER HPC END MILLS

UNCOATED E5H24 SERIES
DLC COATED JAH24 SERIES
PLAIN SHANK

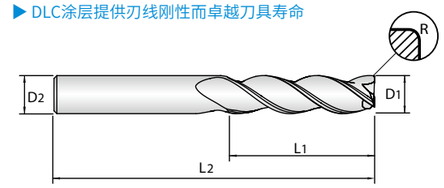
CARBIDE, 3 FLUTE 37° HELIX CORNER RADIUS
硬质合金，3刃 37度螺旋 圆鼻

- Balanced cutting with less vibration
- Ability to run at higher speeds with less heat in aluminum
- More efficient chip evacuation
- Ability to counteract extreme radial forces
- DLC Coating provides edge strength and unsurpassed tool life

- 减少振动及稳定加工
- 可用高速加工减少加工铝时发热
- 提高排屑性能
- 减少切削阻力
- DLC涂层提供刃线刚性而卓越刀具寿命






CARBIDE | 3 | 37° | PLAIN

p.C410

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| HYDRAULIC CHUCK | D15 - 46 |
| SHRINK FIT HOLDER | D47 - 72 |
| POWER MILLING CHUCK | D161 - 176 |
| ER COLLET CHUCK | D73 - 115 |
| SK SLIM CHUCK | D183 - 201 |

Unit(单位) : mm

| EDP No. | | Corner Radius | Mill Diameter | Shank Diameter | Length of Cut | Overall Length |
|---|---|---|---|---|---|---|
| | | 圆弧角 | 直径 | 柄径 | 刃长 | 全长 |
| Uncoated | DLC | R | D1 | D2 | L1 | L2 |
| **E5H24918** | **JAH24918** | R1.0 | **10.0** | 10 | 40 | 100 |
| **E5H24919** | **JAH24919** | R1.5 | **10.0** | 10 | 40 | 100 |
| **E5H24920** | **JAH24920** | R2.0 | **10.0** | 10 | 40 | 100 |
| **E5H24120** | **JAH24120** | R1.5 | **12.0** | 12 | 26 | 83 |
| **E5H24921** | **JAH24921** | R2.0 | **12.0** | 12 | 26 | 83 |
| **E5H24922** | **JAH24922** | R2.5 | **12.0** | 12 | 26 | 83 |
| **E5H24923** | **JAH24923** | R3.0 | **12.0** | 12 | 26 | 83 |
| **E5H24924** | **JAH24924** | R0.5 | **12.0** | 12 | 48 | 100 |
| **E5H24925** | **JAH24925** | R1.0 | **12.0** | 12 | 48 | 100 |
| **E5H24926** | **JAH24926** | R1.5 | **12.0** | 12 | 48 | 100 |
| **E5H24927** | **JAH24927** | R2.0 | **12.0** | 12 | 48 | 100 |
| **E5H24928** | **JAH24928** | R2.5 | **12.0** | 12 | 48 | 100 |
| **E5H24929** | **JAH24929** | R3.0 | **12.0** | 12 | 48 | 100 |
| **E5H24140** | **JAH24140** | R1.0 | **14.0** | 14 | 30 | 89 |
| **E5H24930** | **JAH24930** | R2.0 | **14.0** | 14 | 30 | 89 |
| **E5H24931** | **JAH24931** | R3.0 | **14.0** | 14 | 30 | 89 |
| **E5H24160** | **JAH24160** | R1.5 | **16.0** | 16 | 32 | 92 |
| **E5H24932** | **JAH24932** | R2.0 | **16.0** | 16 | 32 | 92 |
| **E5H24933** | **JAH24933** | R2.5 | **16.0** | 16 | 32 | 92 |
| **E5H24934** | **JAH24934** | R3.0 | **16.0** | 16 | 32 | 92 |

▶ NEXT PAGE 下页

| Mill Diameter Tolerences (mm) 直径公差 | | Shank Diameter Tolerance 柄径公差 |
|---|---|---|
| Diameter (直径) | Tolerance (公差) | |
| Up to 3 | +0/-0.006 | h5 |
| Over 3 ~ up to 6 | +0/-0.008 | |
| Over 6 ~ up to 10 | +0/-0.009 | |
| Over 10 ~ up to 18 | +0/-0.011 | |
| Over 18 ~ up to 25 | +0/-0.013 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | | | | | | | | | | | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | |

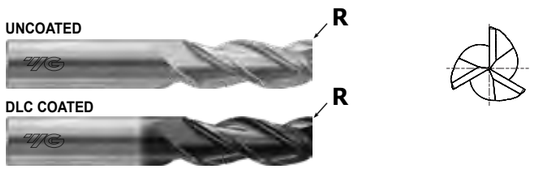
# ALU-POWER HPC END MILLS

UNCOATED **E5H24** SERIES
DLC COATED **JAH24** SERIES
PLAIN SHANK

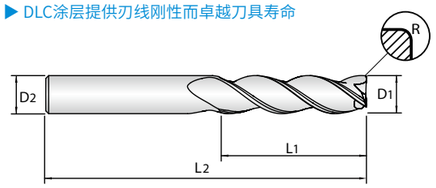
## CARBIDE, 3 FLUTE 37° HELIX CORNER RADIUS
## 硬质合金，3刃 37度螺旋 圆鼻

- Balanced cutting with less vibration
- Ability to run at higher speeds with less heat in aluminum
- More efficient chip evacuation
- Ability to counteract extreme radial forces
- DLC Coating provides edge strength and unsurpassed tool life

- 减少振动及稳定加工
- 可用高速加工减少加工铝时发热
- 提高排屑性能
- 减少切削阻力
- DLC涂层提供刃线刚性而卓越刀具寿命






CARBIDE | 3 | 37° | PLAIN

p.C410

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| ◎ | HYDRAULIC CHUCK | D15 - 46 |
| ◎ | SHRINK FIT HOLDER | D47 - 72 |
| | POWER MILLING CHUCK | D161 - 176 |
| ○ | ER COLLET CHUCK | D73 - 115 |
| ○ | SK SLIM CHUCK | D183 - 201 |

Unit(单位) : mm

| EDP No. | | Corner Radius | Mill Diameter | Shank Diameter | Length of Cut | Overall Length |
|---|---|---|---|---|---|---|
| | | 圆弧角 | 直径 | 柄径 | 刃长 | 全长 |
| Uncoated | DLC | R | D1 | D2 | L1 | L2 |
| **E5H24935** | **JAH24935** | R4.0 | **16.0** | 16 | 32 | 92 |
| **E5H24936** | **JAH24936** | R0.5 | **16.0** | 16 | 64 | 125 |
| **E5H24937** | **JAH24937** | R1.0 | **16.0** | 16 | 64 | 125 |
| **E5H24938** | **JAH24938** | R1.5 | **16.0** | 16 | 64 | 125 |
| **E5H24939** | **JAH24939** | R2.0 | **16.0** | 16 | 64 | 125 |
| **E5H24940** | **JAH24940** | R2.5 | **16.0** | 16 | 64 | 125 |
| **E5H24941** | **JAH24941** | R3.0 | **16.0** | 16 | 64 | 125 |
| **E5H24942** | **JAH24942** | R4.0 | **16.0** | 16 | 64 | 125 |
| **E5H24200** | **JAH24200** | R2.0 | **20.0** | 20 | 38 | 104 |
| **E5H24943** | **JAH24943** | R2.5 | **20.0** | 20 | 38 | 104 |
| **E5H24944** | **JAH24944** | R3.0 | **20.0** | 20 | 38 | 104 |
| **E5H24945** | **JAH24945** | R4.0 | **20.0** | 20 | 38 | 104 |
| **E5H24946** | **JAH24946** | R0.5 | **20.0** | 20 | 80 | 150 |
| **E5H24947** | **JAH24947** | R1.0 | **20.0** | 20 | 80 | 150 |
| **E5H24948** | **JAH24948** | R1.5 | **20.0** | 20 | 80 | 150 |
| **E5H24949** | **JAH24949** | R2.0 | **20.0** | 20 | 80 | 150 |
| **E5H24950** | **JAH24950** | R2.5 | **20.0** | 20 | 80 | 150 |
| **E5H24951** | **JAH24951** | R3.0 | **20.0** | 20 | 80 | 150 |
| **E5H24952** | **JAH24952** | R4.0 | **20.0** | 20 | 80 | 150 |

| Mill Diameter Tolerences (mm) 直径公差 | | Shank Diameter Tolerance 柄径公差 |
|---|---|---|
| Diameter (直径) | Tolerance (公差) | |
| Up to 3 | +0/-0.006 | h5 |
| Over 3 ~ up to 6 | +0/-0.008 | |
| Over 6 ~ up to 10 | +0/-0.009 | |
| Over 10 ~ up to 18 | +0/-0.011 | |
| Over 18 ~ up to 25 | +0/-0.013 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | | | | | | | | | | | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | |



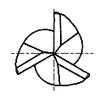
# ALU-POWER HPC END MILLS

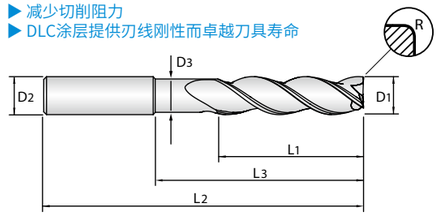
UNCOATED **E5H25** SERIES
DLC COATED **JAH25** SERIES
PLAIN SHANK

## CARBIDE, 3 FLUTE 37° HELIX CORNER RADIUS with EXTENDED NECK
## 硬质合金，3刃 37度螺旋 圆鼻 颈部加长

- Balanced cutting with less vibration
- Ability to run at higher speeds with less heat in aluminum
- More efficient chip evacuation
- Ability to counteract extreme radial forces
- DLC Coating provides edge strength and unsurpassed tool life

- 减少振动及稳定加工
- 可用高速加工减少加工铝时发热
- 提高排屑性能
- 减少切削阻力
- DLC涂层提供刃线刚性而卓越刀具寿命






CARBIDE | 3 | 37° | PLAIN

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Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| ◎ | HYDRAULIC CHUCK | D15 - 46 |
| ◎ | SHRINK FIT HOLDER | D47 - 72 |
| | POWER MILLING CHUCK | D161 - 176 |
| ○ | ER COLLET CHUCK | D73 - 115 |
| ○ | SK SLIM CHUCK | D183 - 201 |

Unit(单位) : mm

| EDP No. | | Corner Radius | Mill Diameter | Shank Diameter | Length of Cut | Length Below Shank | Overall Length | Neck Diameter |
|---|---|---|---|---|---|---|---|---|
| | | 圆弧角 | 直径 | 柄径 | 刃长 | 颈长 | 全长 | 颈径 |
| Uncoated | DLC | R | D1 | D2 | L1 | L3 | L2 | D3 |
| **E5H25060** | **JAH25060** | R0.5 | **6.0** | 6 | 10 | 20 | 63 | 5.7 |
| **E5H25901** | **JAH25901** | R1.0 | **6.0** | 6 | 10 | 20 | 63 | 5.7 |
| **E5H25902** | **JAH25902** | R0.5 | **6.0** | 6 | 13 | 30 | 72 | 5.7 |
| **E5H25903** | **JAH25903** | R1.0 | **6.0** | 6 | 13 | 30 | 72 | 5.7 |
| **E5H25080** | **JAH25080** | R0.3 | **8.0** | 8 | 12 | 25 | 75 | 7.4 |
| **E5H25904** | **JAH25904** | R0.5 | **8.0** | 8 | 12 | 25 | 75 | 7.4 |
| **E5H25905** | **JAH25905** | R0.8 | **8.0** | 8 | 12 | 25 | 75 | 7.4 |
| **E5H25906** | **JAH25906** | R1.0 | **8.0** | 8 | 12 | 25 | 75 | 7.4 |
| **E5H25907** | **JAH25907** | R1.2 | **8.0** | 8 | 12 | 25 | 75 | 7.4 |
| **E5H25908** | **JAH25908** | R1.5 | **8.0** | 8 | 12 | 25 | 75 | 7.4 |
| **E5H25909** | **JAH25909** | R1.6 | **8.0** | 8 | 12 | 25 | 75 | 7.4 |
| **E5H25100** | **JAH25100** | R0.3 | **10.0** | 10 | 14 | 35 | 100 | 9.2 |
| **E5H25910** | **JAH25910** | R0.5 | **10.0** | 10 | 14 | 35 | 100 | 9.2 |
| **E5H25911** | **JAH25911** | R0.8 | **10.0** | 10 | 14 | 35 | 100 | 9.2 |
| **E5H25912** | **JAH25912** | R1.0 | **10.0** | 10 | 14 | 35 | 100 | 9.2 |
| **E5H25913** | **JAH25913** | R1.2 | **10.0** | 10 | 14 | 35 | 100 | 9.2 |
| **E5H25914** | **JAH25914** | R1.5 | **10.0** | 10 | 14 | 35 | 100 | 9.2 |
| **E5H25915** | **JAH25915** | R1.6 | **10.0** | 10 | 14 | 35 | 100 | 9.2 |

▶ NEXT PAGE 下页

| Mill Diameter Tolerences (mm) 直径公差 | | Shank Diameter Tolerance 柄径公差 |
|---|---|---|
| Diameter (直径) | Tolerance (公差) | |
| Up to 3 | +0/-0.006 | h5 |
| Over 3 ~ up to 6 | +0/-0.008 | |
| Over 6 ~ up to 10 | +0/-0.009 | |
| Over 10 ~ up to 18 | +0/-0.011 | |
| Over 18 ~ up to 25 | +0/-0.013 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | | | | | | | | | | | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | |

# ALU-POWER HPC END MILLS

UNCOATED **E5H25** SERIES
DLC COATED **JAH25** SERIES
PLAIN SHANK

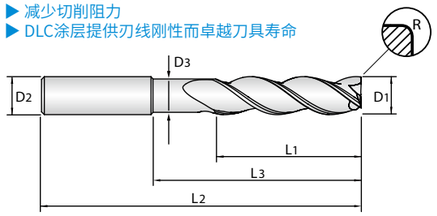
## CARBIDE, 3 FLUTE 37° HELIX CORNER RADIUS with EXTENDED NECK
## 硬质合金，3刃 37度螺旋 圆鼻 颈部加长

- Balanced cutting with less vibration
- Ability to run at higher speeds with less heat in aluminum
- More efficient chip evacuation
- Ability to counteract extreme radial forces
- DLC Coating provides edge strength and unsurpassed tool life

- 减少振动及稳定加工
- 可用高速加工减少加工铝时发热
- 提高排屑性能
- 减少切削阻力
- DLC涂层提供刃线刚性而卓越刀具寿命

UNCOATED

DLC COATED




CARBIDE | 3 | 37° | PLAIN

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Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| HYDRAULIC CHUCK | D15 - 46 |
| SHRINK FIT HOLDER | D47 - 72 |
| POWER MILLING CHUCK | D161 - 176 |
| ER COLLET CHUCK | D73 - 115 |
| SK SLIM CHUCK | D183 - 201 |

Unit(单位) : mm

| EDP No. | | Corner Radius | Mill Diameter | Shank Diameter | Length of Cut | Length Below Shank | Overall Length | Neck Diameter |
|---|---|---|---|---|---|---|---|---|
| | | 圆弧角 | 直径 | 柄径 | 刃长 | 颈长 | 全长 | 颈径 |
| Uncoated | DLC | R | $D_1$ | $D_2$ | $L_1$ | $L_3$ | L2 | $D_3$ |
| **E5H25916** | **JAH25916** | R2.4 | **10.0** | 10 | 14 | 35 | 100 | 9.2 |
| **E5H25120** | **JAH25120** | R0.5 | **12.0** | 12 | 16 | 40 | 100 | 11.0 |
| **E5H25917** | **JAH25917** | R0.8 | **12.0** | 12 | 16 | 40 | 100 | 11.0 |
| **E5H25918** | **JAH25918** | R1.0 | **12.0** | 12 | 16 | 40 | 100 | 11.0 |
| **E5H25919** | **JAH25919** | R1.2 | **12.0** | 12 | 16 | 40 | 100 | 11.0 |
| **E5H25920** | **JAH25920** | R1.5 | **12.0** | 12 | 16 | 40 | 100 | 11.0 |
| **E5H25921** | **JAH25921** | R1.6 | **12.0** | 12 | 16 | 40 | 100 | 11.0 |
| **E5H25922** | **JAH25922** | R2.0 | **12.0** | 12 | 16 | 40 | 100 | 11.0 |
| **E5H25923** | **JAH25923** | R2.4 | **12.0** | 12 | 16 | 40 | 100 | 11.0 |
| **E5H25924** | **JAH25924** | R2.5 | **12.0** | 12 | 16 | 40 | 100 | 11.0 |
| **E5H25925** | **JAH25925** | R3.0 | **12.0** | 12 | 16 | 40 | 100 | 11.0 |
| **E5H25926** | **JAH25926** | R4.0 | **12.0** | 12 | 16 | 40 | 100 | 11.0 |
| **E5H25140** | **JAH25140** | R1.0 | **14.0** | 14 | 18 | 45 | 125 | 13.0 |
| **E5H25927** | **JAH25927** | R2.0 | **14.0** | 14 | 18 | 45 | 125 | 13.0 |
| **E5H25928** | **JAH25928** | R3.0 | **14.0** | 14 | 18 | 45 | 125 | 13.0 |
| **E5H25929** | **JAH25929** | R4.0 | **14.0** | 14 | 18 | 45 | 125 | 13.0 |
| **E5H25160** | **JAH25160** | R0.8 | **16.0** | 16 | 20 | 50 | 125 | 15.0 |
| **E5H25930** | **JAH25930** | R1.2 | **16.0** | 16 | 20 | 50 | 125 | 15.0 |

▶ NEXT PAGE 下页

| Mill Diameter Tolerences (mm) 直径公差 | | Shank Diameter Tolerance 柄径公差 |
|---|---|---|
| Diameter (直径) | Tolerance (公差) | |
| Up to 3 | +0/-0.006 | h5 |
| Over 3 ~ up to 6 | +0/-0.008 | |
| Over 6 ~ up to 10 | +0/-0.009 | |
| Over 10 ~ up to 18 | +0/-0.011 | |
| Over 18 ~ up to 25 | +0/-0.013 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | | | | | | | | | | | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | |



CARBIDE
HSS
CBN END MILLS
i-Xmill END MILLS
i-SMART MODULAR END MILLS
X5070 END MILLS
4G MILL END MILLS
X-POWER PRO END MILLS
TitaNox-POWER END MILLS
SUS-CUT END MILLS
V7 PLUS END MILLS
ALU-POWER HPC END MILLS
ALU-CUT END MILLS
G-CUT END MILLS
CRX S END MILLS
K-2 END MILLS
GENERAL CARBIDE END MILLS
ONLY ONE COATED PM60 END MILLS
TANK-POWER END MILLS
GENERAL HSS END MILLS
MILLING CUTTERS
TECHNICAL DATA

# ALU-POWER HPC END MILLS

UNCOATED **E5H25** SERIES
DLC COATED **JAH25** SERIES
PLAIN SHANK

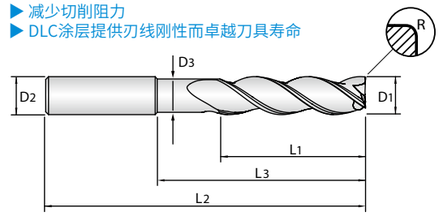
## CARBIDE, 3 FLUTE 37° HELIX CORNER RADIUS with EXTENDED NECK
## 硬质合金，3刃 37度螺旋 圆鼻 颈部加长

- Balanced cutting with less vibration
- Ability to run at higher speeds with less heat in aluminum
- More efficient chip evacuation
- Ability to counteract extreme radial forces
- DLC Coating provides edge strength and unsurpassed tool life

- 减少振动及稳定加工
- 可用高速加工减少加工铝时发热
- 提高排屑性能
- 减少切削阻力
- DLC涂层提供刃线刚性而卓越刀具寿命

UNCOATED

DLC COATED




CARBIDE | 3 | 37° | PLAIN

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Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| HYDRAULIC CHUCK | D15 - 46 |
| SHRINK FIT HOLDER | D47 - 72 |
| POWER MILLING CHUCK | D161 - 176 |
| ER COLLET CHUCK | D73 - 115 |
| SK SLIM CHUCK | D183 - 201 |

Unit(单位) : mm

| EDP No. | | Corner Radius | Mill Diameter | Shank Diameter | Length of Cut | Length Below Shank | Overall Length | Neck Diameter |
|---|---|---|---|---|---|---|---|---|
| | | 圆弧角 | 直径 | 柄径 | 刃长 | 颈长 | 全长 | 颈径 |
| Uncoated | DLC | R | $D_1$ | $D_2$ | $L_1$ | $L_3$ | L2 | $D_3$ |
| **E5H25931** | **JAH25931** | R1.6 | **16.0** | 16 | 20 | 50 | 125 | 15.0 |
| **E5H25932** | **JAH25932** | R2.0 | **16.0** | 16 | 20 | 50 | 125 | 15.0 |
| **E5H25933** | **JAH25933** | R2.4 | **16.0** | 16 | 20 | 50 | 125 | 15.0 |
| **E5H25934** | **JAH25934** | R2.5 | **16.0** | 16 | 20 | 50 | 125 | 15.0 |
| **E5H25935** | **JAH25935** | R3.0 | **16.0** | 16 | 20 | 50 | 125 | 15.0 |
| **E5H25936** | **JAH25936** | R3.2 | **16.0** | 16 | 20 | 50 | 125 | 15.0 |
| **E5H25937** | **JAH25937** | R4.0 | **16.0** | 16 | 20 | 50 | 125 | 15.0 |
| **E5H25200** | **JAH25200** | R0.8 | **20.0** | 20 | 25 | 65 | 150 | 19.0 |
| **E5H25938** | **JAH25938** | R1.2 | **20.0** | 20 | 25 | 65 | 150 | 19.0 |
| **E5H25939** | **JAH25939** | R1.6 | **20.0** | 20 | 25 | 65 | 150 | 19.0 |
| **E5H25940** | **JAH25940** | R2.0 | **20.0** | 20 | 25 | 65 | 150 | 19.0 |
| **E5H25941** | **JAH25941** | R2.4 | **20.0** | 20 | 25 | 65 | 150 | 19.0 |
| **E5H25942** | **JAH25942** | R2.5 | **20.0** | 20 | 25 | 65 | 150 | 19.0 |
| **E5H25943** | **JAH25943** | R3.0 | **20.0** | 20 | 25 | 65 | 150 | 19.0 |
| **E5H25944** | **JAH25944** | R3.2 | **20.0** | 20 | 25 | 65 | 150 | 19.0 |
| **E5H25945** | **JAH25945** | R4.0 | **20.0** | 20 | 25 | 65 | 150 | 19.0 |

| Mill Diameter Tolerences (mm) 直径公差 | | Shank Diameter Tolerance 柄径公差 |
|---|---|---|
| Diameter (直径) | Tolerance (公差) | |
| Up to 3 | +0/-0.006 | h5 |
| Over 3 ~ up to 6 | +0/-0.008 | |
| Over 6 ~ up to 10 | +0/-0.009 | |
| Over 10 ~ up to 18 | +0/-0.011 | |
| Over 18 ~ up to 25 | +0/-0.013 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | | | | | | | | | | | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | |

# ALU-POWER HPC END MILLS

UNCOATED **E5H22** SERIES
DLC COATED **JAH22** SERIES
PLAIN SHANK

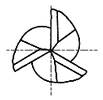
## CARBIDE, 3 FLUTE 37° HELIX
## 硬质合金，3刃 37度螺旋

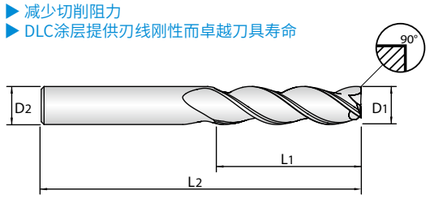
- Balanced cutting with less vibration
- Ability to run at higher speeds with less heat in aluminum
- More efficient chip evacuation
- Ability to counteract extreme radial forces
- DLC Coating provides edge strength and unsurpassed tool life

- 减少振动及稳定加工
- 可用高速加工减少加工铝时发热
- 提高排屑性能
- 减少切削阻力
- DLC涂层提供刃线刚性而卓越刀具寿命

UNCOATED

DLC COATED






CARBIDE | 3 | 37° | PLAIN

p.C411

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| HYDRAULIC CHUCK | D15 - 46 |
| SHRINK FIT HOLDER | D47 - 72 |
| POWER MILLING CHUCK | D161 - 176 |
| ER COLLET CHUCK | D73 - 115 |
| SK SLIM CHUCK | D183 - 201 |

Unit(单位) : mm

| EDP No. | | Mill Diameter 直径 | Shank Diameter 柄径 | Length of Cut 刃长 | Overall Length 全长 |
|---|---|---|---|---|---|
| Uncoated | DLC | $D_1$ | $D_2$ | $L_1$ | $L_2$ |
| E5H22030 | JAH22030 | 3.0 | 6 | 8 | 52 |
| E5H22040 | JAH22040 | 4.0 | 6 | 11 | 55 |
| E5H22050 | JAH22050 | 5.0 | 6 | 13 | 57 |
| E5H22060 | JAH22060 | 6.0 | 6 | 13 | 57 |
| E5H22901 | JAH22901 | 6.0 | 6 | 13 | 72 |
| E5H22902 | JAH22902 | 6.0 | 6 | 24 | 75 |
| E5H22080 | JAH22080 | 8.0 | 8 | 19 | 63 |
| E5H22903 | JAH22903 | 8.0 | 8 | 32 | 75 |
| E5H22100 | JAH22100 | 10.0 | 10 | 22 | 72 |
| E5H22904 | JAH22904 | 10.0 | 10 | 40 | 100 |
| E5H22120 | JAH22120 | 12.0 | 12 | 26 | 83 |
| E5H22905 | JAH22905 | 12.0 | 12 | 48 | 100 |
| E5H22140 | JAH22140 | 14.0 | 14 | 30 | 89 |
| E5H22160 | JAH22160 | 16.0 | 16 | 32 | 92 |
| E5H22906 | JAH22906 | 16.0 | 16 | 64 | 125 |
| E5H22200 | JAH22200 | 20.0 | 20 | 38 | 104 |
| E5H22907 | JAH22907 | 20.0 | 20 | 80 | 150 |
| E5H22250 | JAH22250 | 25.0 | 25 | 50 | 125 |

| Mill Diameter Tolerences (mm) 直径公差 | | Shank Diameter Tolerance 柄径公差 |
|---|---|---|
| Diameter (直径) | Tolerance (公差) | |
| Up to 3 | +0/-0.006 | h5 |
| Over 3 ~ up to 6 | +0/-0.008 | |
| Over 6 ~ up to 10 | +0/-0.009 | |
| Over 10 ~ up to 18 | +0/-0.011 | |
| Over 18 ~ up to 25 | +0/-0.013 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | | | | | | | | | | | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | |



# ALU-POWER HPC END MILLS

UNCOATED **E5H23** SERIES
DLC COATED **JAH23** SERIES
PLAIN SHANK

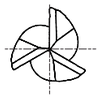
## CARBIDE, 3 FLUTE 37° HELIX with EXTENDED NECK
## 硬质合金，3刃 37度螺旋 颈部加长

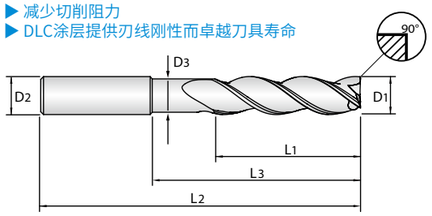
- Balanced cutting with less vibration
- Ability to run at higher speeds with less heat in aluminum
- More efficient chip evacuation
- Ability to counteract extreme radial forces
- DLC Coating provides edge strength and unsurpassed tool life

- 减少振动及稳定加工
- 可用高速加工减少加工铝时发热
- 提高排屑性能
- 减少切削阻力
- DLC涂层提供刃线刚性而卓越刀具寿命

UNCOATED

DLC COATED






CARBIDE | 3 | 37° | PLAIN

p.C411

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| HYDRAULIC CHUCK | D15 - 46 |
| SHRINK FIT HOLDER | D47 - 72 |
| POWER MILLING CHUCK | D161 - 176 |
| ER COLLET CHUCK | D73 - 115 |
| SK SLIM CHUCK | D183 - 201 |

Unit(单位) : mm

| EDP No. | | Mill Diameter 直径 | Shank Diameter 柄径 | Length of Cut 刃长 | Length Below Shank 颈长 | Overall Length 全长 | Neck Diameter 颈径 |
|---|---|---|---|---|---|---|---|
| Uncoated | DLC | $D_1$ | $D_2$ | $L_1$ | $L_3$ | L2 | D3 |
| E5H23060 | JAH23060 | 6.0 | 6 | 10 | 20 | 75 | 5.7 |
| E5H23080 | JAH23080 | 8.0 | 8 | 12 | 25 | 75 | 7.4 |
| E5H23100 | JAH23100 | 10.0 | 10 | 14 | 35 | 100 | 9.2 |
| E5H23120 | JAH23120 | 12.0 | 12 | 16 | 40 | 100 | 11.0 |
| E5H23140 | JAH23140 | 14.0 | 14 | 18 | 45 | 125 | 13.0 |
| E5H23160 | JAH23160 | 16.0 | 16 | 20 | 50 | 125 | 15.0 |
| E5H23200 | JAH23200 | 20.0 | 20 | 25 | 65 | 150 | 19.0 |

| Mill Diameter Tolerences (mm) 直径公差 | | Shank Diameter Tolerance 柄径公差 |
|---|---|---|
| Diameter (直径) | Tolerance (公差) | |
| Up to 3 | +0/-0.006 | h5 |
| Over 3 ~ up to 6 | +0/-0.008 | |
| Over 6 ~ up to 10 | +0/-0.009 | |
| Over 10 ~ up to 18 | +0/-0.011 | |
| Over 18 ~ up to 25 | +0/-0.013 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | | | | | | | | | | | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | |

# ALU-POWER HPC END MILLS

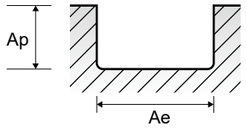
## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

## E5H24, JAH24, E5H25, JAH25 SERIES

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

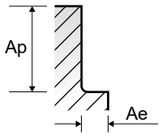
### 3 FLUTE CORNER RADIUS - SLOTTING (3刃 圆鼻- 槽铣削)

| ISO | VDI 3323 | Material Description | Ae | Ap | Parameter | 6.0 | 10.0 | 12.0 | 16.0 | 20.0 |
|---|---|---|---|---|---|---|---|---|---|---|
| N | 21~22 | Aluminum-wrought alloy | 1.0D | 1.0D | Vc | 488 | 488 | 488 | 488 | 488 |
| | | | | | fz | 0.076 | 0.114 | 0.152 | 0.168 | 0.191 |
| | | | | | RPM | 25889 | 15533 | 12945 | 9708 | 7767 |
| | | | | | FEED | 5918 | 5326 | 5918 | 4883 | 4439 |
| | 23~25 | Aluminum-cast, alloyed | 1.0D | 1.0D | Vc | 183 | 183 | 183 | 183 | 183 |
| | | | | | fz | 0.076 | 0.114 | 0.152 | 0.168 | 0.191 |
| | | | | | RPM | 9708 | 5825 | 4854 | 3641 | 2913 |
| | | | | | FEED | 2219 | 1997 | 2219 | 1831 | 1665 |
| | 26-28 | Copper and Copper Alloys (Bronze / Brass) | 1.0D | 1.0D | Vc | 268 | 268 | 268 | 268 | 268 |
| | | | | | fz | 0.051 | 0.102 | 0.127 | 0.140 | 0.152 |
| | | | | | RPM | 14218 | 8531 | 7109 | 5332 | 4265 |
| | | | | | FEED | 2167 | 2600 | 2708 | 2235 | 1950 |
| | 29.1 | Non Metallic Materials | 1.0D | 1.0D | Vc | 503 | 503 | 503 | 503 | 503 |
| | | | | | fz | 0.102 | 0.191 | 0.254 | 0.279 | 0.305 |
| | | | | | RPM | 26685 | 16011 | 13342 | 10007 | 8005 |
| | | | | | FEED | 8134 | 9150 | 10167 | 8388 | 7320 |



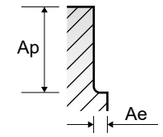

### 3 FLUTE CORNER RADIUS - SIDE CUTTING (3刃 圆鼻- 侧铣削)

| ISO | VDI 3323 | Material Description | Ae | Ap | Parameter | 6.0 | 10.0 | 12.0 | 16.0 | 20.0 |
|---|---|---|---|---|---|---|---|---|---|---|
| N | 21~22 | Aluminum-wrought alloy | 0.5D | 1.5D | Vc | 610 | 610 | 610 | 610 | 610 |
| | | | | | fz | 0.076 | 0.114 | 0.152 | 0.168 | 0.191 |
| | | | | | RPM | 32361 | 19417 | 16181 | 12136 | 9708 |
| | | | | | FEED | 7398 | 6658 | 7398 | 6103 | 5548 |
| | 23~25 | Aluminum-cast, alloyed | 0.5D | 1.5D | Vc | 244 | 244 | 244 | 244 | 244 |
| | | | | | fz | 0.076 | 0.114 | 0.152 | 0.168 | 0.191 |
| | | | | | RPM | 12945 | 7767 | 6472 | 4854 | 3883 |
| | | | | | FEED | 2959 | 2663 | 2959 | 2441 | 2219 |
| | 26-28 | Copper and Copper Alloys (Bronze / Brass) | 0.5D | 1.5D | Vc | 351 | 351 | 351 | 351 | 351 |
| | | | | | fz | 0.051 | 0.102 | 0.127 | 0.140 | 0.152 |
| | | | | | RPM | 18621 | 11173 | 9311 | 6983 | 5586 |
| | | | | | FEED | 2838 | 3405 | 3547 | 2927 | 2554 |
| | 29.1 | Non Metallic Materials | 0.5D | 1.5D | Vc | 625 | 625 | 625 | 625 | 625 |
| | | | | | fz | 0.102 | 0.191 | 0.254 | 0.279 | 0.305 |
| | | | | | RPM | 33157 | 19894 | 16579 | 12434 | 9947 |
| | | | | | FEED | 10106 | 11370 | 12633 | 10422 | 9096 |




### 3 FLUTE CORNER RADIUS - SIDE CUTTING HSM (Light) (3刃 圆鼻- 侧铣削 HSM (Light))

| ISO | VDI 3323 | Material Description | Ae | Ap | Parameter | 6.0 | 10.0 | 12.0 | 16.0 | 20.0 |
|---|---|---|---|---|---|---|---|---|---|---|
| N | 21~22 | Aluminum-wrought alloy | 0.05D | 2.0D | Vc | 1006 | 1006 | 1006 | 1006 | 1006 |
| | | | | | fz | 0.140 | 0.267 | 0.356 | 0.381 | 0.419 |
| | | | | | RPM | 53370 | 32022 | 26685 | 20014 | 16011 |
| | | | | | FEED | 22367 | 25621 | 28467 | 22876 | 20131 |
| | 23~25 | Aluminum-cast, alloyed | 0.05D | 2.0D | Vc | 366 | 366 | 366 | 366 | 366 |
| | | | | | fz | 0.140 | 0.267 | 0.356 | 0.381 | 0.419 |
| | | | | | RPM | 19417 | 11650 | 9708 | 7281 | 5825 |
| | | | | | FEED | 8138 | 9321 | 10357 | 8323 | 7324 |
| | 26-28 | Copper and Copper Alloys (Bronze / Brass) | 0.05D | 2.0D | Vc | 564 | 564 | 564 | 564 | 564 |
| | | | | | fz | 0.114 | 0.216 | 0.292 | 0.330 | 0.356 |
| | | | | | RPM | 29921 | 17953 | 14961 | 11220 | 8976 |
| | | | | | FEED | 10260 | 11628 | 13110 | 11115 | 9576 |
| | 29.1 | Non Metallic Materials | 0.05D | 2.0D | Vc | 1021 | 1021 | 1021 | 1021 | 1021 |
| | | | | | fz | 0.229 | 0.432 | 0.584 | 0.635 | 0.699 |
| | | | | | RPM | 54166 | 32499 | 27083 | 20312 | 16250 |
| | | | | | FEED | 37147 | 42100 | 47465 | 38695 | 34051 |







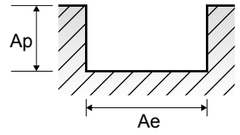

# ALU-POWER HPC END MILLS

## E5H22, JAH22, E5H23, JAH23 SERIES

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

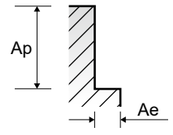
### 3 FLUTE - SLOTTING (3刃 - 槽铣削)

| ISO | VDI 3323 | Material Description | Ae | Ap | Parameter | Mill Diameter (Ø) 3.0 | 6.0 | 10.0 | 12.0 | 16.0 | 20.0 | 25.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N | 21~22 | Aluminum-wrought alloy | 1.0D | 1.0D | Vc | 488 | 488 | 488 | 488 | 488 | 488 | 488 |
| | | | | | fz | 0.025 | 0.076 | 0.114 | 0.152 | 0.168 | 0.191 | 0.254 |
| | | | | | RPM | 51778 | 25889 | 15533 | 12945 | 9708 | 7767 | 6213 |
| | | | | | FEED | 3946 | 5918 | 5326 | 5918 | 4883 | 4439 | 4735 |
| | 23~25 | Aluminum-cast, alloyed | 1.0D | 1.0D | Vc | 183 | 183 | 183 | 183 | 183 | 183 | 183 |
| | | | | | fz | 0.025 | 0.076 | 0.114 | 0.152 | 0.168 | 0.191 | 0.254 |
| | | | | | RPM | 19417 | 9708 | 5825 | 4854 | 3641 | 2913 | 2330 |
| | | | | | FEED | 1480 | 2219 | 1997 | 2219 | 1831 | 1665 | 1775 |
| | 26-28 | Copper and Copper Alloys (Bronze / Brass) | 1.0D | 1.0D | Vc | 268 | 268 | 268 | 268 | 268 | 268 | 268 |
| | | | | | fz | 0.020 | 0.051 | 0.102 | 0.127 | 0.140 | 0.152 | 0.178 |
| | | | | | RPM | 28436 | 14218 | 8531 | 7109 | 5332 | 4265 | 3412 |
| | | | | | FEED | 1733 | 2167 | 2600 | 2708 | 2235 | 1950 | 1820 |
| | 29.1 | Non Metallic Materials | 1.0D | 1.0D | Vc | 503 | 503 | 503 | 503 | 503 | 503 | 503 |
| | | | | | fz | 0.038 | 0.102 | 0.191 | 0.254 | 0.279 | 0.305 | 0.356 |
| | | | | | RPM | 53370 | 26685 | 16011 | 13342 | 10007 | 8005 | 6404 |
| | | | | | FEED | 6100 | 8134 | 9150 | 10167 | 8388 | 7320 | 6832 |



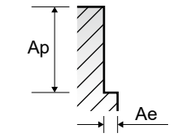

### 3 FLUTE - SIDE CUTTING (3刃 - 侧铣削)

| ISO | VDI 3323 | Material Description | Ae | Ap | Parameter | Mill Diameter (Ø) 3.0 | 6.0 | 10.0 | 12.0 | 16.0 | 20.0 | 25.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N | 21~22 | Aluminum-wrought alloy | 0.5D | 1.5D | Vc | 610 | 610 | 610 | 610 | 610 | 610 | 610 |
| | | | | | fz | 0.025 | 0.076 | 0.114 | 0.152 | 0.168 | 0.191 | 0.254 |
| | | | | | RPM | 64723 | 32361 | 19417 | 16181 | 12136 | 9708 | 7767 |
| | | | | | FEED | 4932 | 7398 | 6658 | 7398 | 6103 | 5548 | 5918 |
| | 23~25 | Aluminum-cast, alloyed | 0.5D | 1.5D | Vc | 244 | 244 | 244 | 244 | 244 | 244 | 244 |
| | | | | | fz | 0.025 | 0.076 | 0.114 | 0.152 | 0.168 | 0.191 | 0.254 |
| | | | | | RPM | 25889 | 12945 | 7767 | 6472 | 4854 | 3883 | 3107 |
| | | | | | FEED | 1973 | 2959 | 2663 | 2959 | 2441 | 2219 | 2367 |
| | 26-28 | Copper and Copper Alloys (Bronze / Brass) | 0.5D | 1.5D | Vc | 351 | 351 | 351 | 351 | 351 | 351 | 351 |
| | | | | | fz | 0.020 | 0.051 | 0.102 | 0.127 | 0.140 | 0.152 | 0.178 |
| | | | | | RPM | 37242 | 18621 | 11173 | 9311 | 6983 | 5586 | 4469 |
| | | | | | FEED | 2270 | 2838 | 3405 | 3547 | 2927 | 2554 | 2384 |
| | 29.1 | Non Metallic Materials | 0.5D | 1.5D | Vc | 625 | 625 | 625 | 625 | 625 | 625 | 625 |
| | | | | | fz | 0.038 | 0.102 | 0.191 | 0.254 | 0.279 | 0.305 | 0.356 |
| | | | | | RPM | 66314 | 33157 | 19894 | 16579 | 12434 | 9947 | 7958 |
| | | | | | FEED | 7580 | 10106 | 11370 | 12633 | 10422 | 9096 | 8489 |

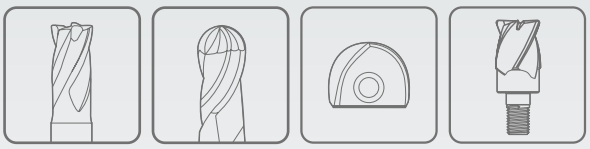



### 3 FLUTE - SIDE CUTTING HSM (Light) (3刃 - 侧铣削 HSM (Light))

| ISO | VDI 3323 | Material Description | Ae | Ap | Parameter | Mill Diameter (Ø) 3.0 | 6.0 | 10.0 | 12.0 | 16.0 | 20.0 | 25.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N | 21~22 | Aluminum-wrought alloy | 0.05D | 2.0D | Vc | 1006 | 1006 | 1006 | 1006 | 1006 | 1006 | 1006 |
| | | | | | fz | 0.053 | 0.140 | 0.267 | 0.356 | 0.381 | 0.419 | 0.495 |
| | | | | | RPM | 106740 | 53370 | 32022 | 26685 | 20014 | 16011 | 12809 |
| | | | | | FEED | 17080 | 22367 | 25621 | 28467 | 22876 | 20131 | 19033 |
| | 23~25 | Aluminum-cast, alloyed | 0.05D | 2.0D | Vc | 366 | 366 | 366 | 366 | 366 | 366 | 366 |
| | | | | | fz | 0.053 | 0.140 | 0.267 | 0.356 | 0.381 | 0.419 | 0.495 |
| | | | | | RPM | 38834 | 19417 | 11650 | 9708 | 7281 | 5825 | 4660 |
| | | | | | FEED | 6214 | 8138 | 9321 | 10357 | 8323 | 7324 | 6924 |
| | 26-28 | Copper and Copper Alloys (Bronze / Brass) | 0.05D | 2.0D | Vc | 564 | 564 | 564 | 564 | 564 | 564 | 564 |
| | | | | | fz | 0.043 | 0.114 | 0.216 | 0.292 | 0.330 | 0.356 | 0.406 |
| | | | | | RPM | 59842 | 29921 | 17953 | 14961 | 11220 | 8976 | 7181 |
| | | | | | FEED | 7752 | 10260 | 11628 | 13110 | 11115 | 9576 | 8755 |
| | 29.1 | Non Metallic Materials | 0.05D | 2.0D | Vc | 1021 | 1021 | 1021 | 1021 | 1021 | 1021 | 1021 |
| | | | | | fz | 0.086 | 0.229 | 0.432 | 0.584 | 0.635 | 0.699 | 0.813 |
| | | | | | RPM | 108331 | 54166 | 32499 | 27083 | 20312 | 16250 | 13000 |
| | | | | | FEED | 28066 | 37147 | 42100 | 47465 | 38695 | 34051 | 31699 |



Global Cutting Tool Leader **YG-1**



# MILLING

YG

Leading Through Innovation

# SOLID CARBIDE

# ALU-CUT END MILLS

- Aluminium Alloys and Silent Cutting

- 适用于加工铝合金而无声切削

# SELECTION GUIDE
## 选用指南

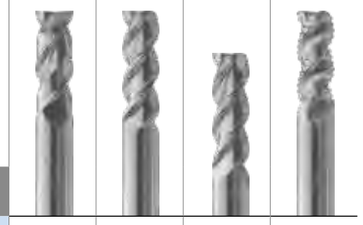
MILLING TOOLS

| SERIES 系列 | E5D71 | E5C72 | E5D70 | E5D73 |
|---|---|---|---|---|
| FLUTE 槽数 | 2 | 3 | 3 | 3 |
| HELIX ANGLE 螺旋角度 | 45° | 45° | 45° | 45° |
| CUTTING EDGE SHAPE 类型 | SQUARE | SQUARE | SQUARE | ROUGHING |
| SIZE MIN 最小尺寸 | D1.0 | D1.0 | D1.0 | D4.0 |
| SIZE MAX 最大尺寸 | D20.0 | D20.0 | D20.0 | D20.0 |
| PAGE 页数 | C415-416 | C417 | C418-423 | C424-425 |
| | - | SHORT LENGTH | - | Type A/B |
| | Uncoated | Uncoated | Uncoated | Uncoated |

SOLID CARBIDE

# ALU-CUT END MILLS

Aluminium Alloys and Silent Cutting
加工铝合金而无声切削




Please visit globalyg1.com/mat for material search

◎ : Excellent (优秀) ○ : Good (良好)

Recommended cutting conditions (推荐加工参数) : p.C426

| ISO | VDI 3323 | Material Description 材料描述 | Composition / Structure / Heat Treatment 成分 / 组织 / 热处理 | | HB | HRc | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | About 0.15% C | Annealed | 125 | | | | | |
| | 2 | | About 0.45% C | Annealed | 190 | 13 | | | | |
| | 3 | | About 0.45% C | Quenched & Tempered | 250 | 25 | | | | |
| | 4 | | About 0.75% C | Annealed | 270 | 28 | | | | |
| | 5 | | About 0.75% C | Quenched & Tempered | 300 | 32 | | | | |
| | 6 | Low alloy steel | | Annealed | 180 | 10 | | | | |
| | 7 | | | Quenched & Tempered | 275 | 29 | | | | |
| | 8 | | | Quenched & Tempered | 300 | 32 | | | | |
| | 9 | | | Quenched & Tempered | 350 | 38 | | | | |
| | 10 | High alloyed steel, and tool steel | | Annealed | 200 | 15 | | | | |
| | 11 | | | Quenched & Tempered | 325 | 35 | | | | |
| M | 12 | Stainless steel | Ferritic / Martensitic | Annealed | 200 | 15 | | | | |
| | 13 | | Martensitic | Quenched & Tempered | 240 | 23 | | | | |
| | 14 | | Austenitic | | 180 | 10 | | | | |
| K | 15 | Grey cast iron | Pearlitic / ferritic | | 180 | 10 | | | | |
| | 16 | | Pearlitic (Martensitic) | | 260 | 26 | | | | |
| | 17 | Nodular cast iron | Ferritic | | 160 | 3 | | | | |
| | 18 | | Pearlitic | | 250 | 25 | | | | |
| | 19 | Malleable cast iron | Ferritic | | 130 | | | | | |
| | 20 | | Pearlitic | | 230 | 21 | | | | |
| N | 21 | Aluminum-wrought alloy | Not Curable | | 60 | | ◎ | ◎ | ◎ | ◎ |
| | 22 | | Curable | Hardened | 100 | | ◎ | ◎ | ◎ | ◎ |
| | 23 | Aluminum-cast, alloyed | ≤ 12% Si, Not Curable | | 75 | | ◎ | ◎ | ◎ | ◎ |
| | 24 | | ≤ 12% Si, Curable | Hardened | 90 | | ◎ | ◎ | ◎ | ◎ |
| | 25 | | > 12% Si, Not Curable | | 130 | | ◎ | | ◎ | ◎ |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | Cutting Alloys, PB>1% | | 110 | | | | | |
| | 27 | | CuZn, CuSnZn (Brass) | | 90 | | | | | |
| | 28 | | CuSn, lead-free copper and electrolytic copper | | 100 | | | | | |
| | 29 | Non Metallic Materials | Duroplastic, Fiber Reinforced Plastic | | | | | | | |
| | 30 | | Rubber, Wood, etc. | | | | | | | |
| S | 31 | Heat Resistant Super Alloys | Fe Based | Annealed | 200 | 15 | | | | |
| | 32 | | | Cured | 280 | 30 | | | | |
| | 33 | | Ni or Co Based | Annealed | 250 | 25 | | | | |
| | 34 | | | Cured | 350 | 38 | | | | |
| | 35 | | | Cast | 320 | 34 | | | | |
| | 36 | Titanium Alloys | Pure Titanium | | 400 Rm | | | | | |
| | 37 | | Alpha + Beta Alloys | Hardened | 1050 Rm | | | | | |
| H | 38 | Hardened steel | | Hardened | 550 | 55 | | | | |
| | 39 | | | Hardened | 630 | 60 | | | | |
| | 40 | Chilled Cast Iron | | Cast | 400 | 42 | | | | |
| | 41 | Hardened Cast Iron | | Hardened | 550 | 55 | | | | |

SQUARE = 平头　ROUGHING = 粗加工　SHORT LENGTH = 短刀　Uncoated = 非涂层





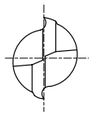
# ALU-CUT END MILLS

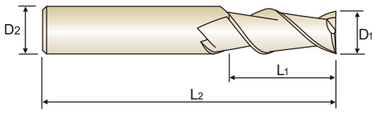
PLAIN SHANK **E5D71 SERIES**

## CARBIDE, 2 FLUTE 45° HELIX
## 硬质合金，2刃 45度螺旋

- ▶ Suitable for workpieces of nonferrous metals including Aluminum and Aluminum Alloys
- ▶ Improvement of surface roughness of workpieces and wearresistance due to Mirror grinding of cutting edges
- ▶ Special cutting edges for minimization of vibration
- ▶ Very small toelrance of cutting diameters
- ▶ Available regular and long cutting lengths

- ▶ 卓越性能在铝件，铝合金，非铁金属
- ▶ 镜面处理提高耐磨性，加工时表面粗糙度
- ▶ 特殊刃线设计减小震动
- ▶ 高精度直径公差
- ▶ 可选标准刃，长刃






CARBIDE | 2 | 45° | PLAIN

p.C427

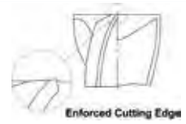
Recommended ToolHolder

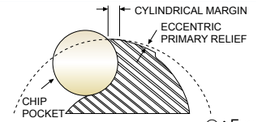
| Flat Shank | | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK | D15 - 46 |
| | | | SHRINK FIT HOLDER | D47 - 72 |
| | | | POWER MILLING CHUCK | D161 - 176 |
| ○ | - | - | ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Overall Length 全长 L2 |
|---|---|---|---|---|
| E5D71010 | 1.0 | 6 | 3 | 50 |
| E5D7101005 | 1.0 | 6 | 5 | 50 |
| E5D7101006 | 1.0 | 6 | 6 | 60 |
| E5D71012 | 1.2 | 6 | 4 | 50 |
| E5D71015 | 1.5 | 6 | 5 | 50 |
| E5D7101508 | 1.5 | 6 | 8 | 60 |
| E5D71020 | 2.0 | 6 | 6 | 50 |
| E5D7102008 | 2.0 | 6 | 8 | 50 |
| E5D7102010 | 2.0 | 6 | 10 | 60 |
| E5D71025 | 2.5 | 6 | 8 | 55 |
| E5D71030 | 3.0 | 6 | 11 | 55 |
| E5D7103015 | 3.0 | 6 | 15 | 65 |
| E5D71040 | 4.0 | 6 | 13 | 55 |
| E5D7104016 | 4.0 | 6 | 16 | 65 |
| E5D71050 | 5.0 | 6 | 17 | 55 |
| E5D7105022 | 5.0 | 6 | 22 | 60 |
| E5D71060 | 6.0 | 6 | 17 | 60 |
| E5D7106025 | 6.0 | 6 | 25 | 70 |
| E5D71070 | 7.0 | 8 | 22 | 65 |
| E5D71080 | 8.0 | 8 | 22 | 70 |
| E5D7108030 | 8.0 | 8 | 30 | 80 |
| E5D71100 | 10.0 | 10 | 27 | 75 |
| E5D7110035 | 10.0 | 10 | 35 | 90 |
| E5D71120 | 12.0 | 12 | 32 | 80 |

| Mill Dia.Tolerance (mm) 刃部公差 | Shank Dia.Tolerance 柄部公差 |
|---|---|
| 0 ~ - 0.015 | h5 |




▶ NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | | | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | | |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 | | |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 | | |
| Recommend | | | | | | | | | | | | | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | | 550 |
| Recommend | ◎ | ◎ | ◎ | ◎ | ◎ | | | | | | | | | | | | | | | | | |

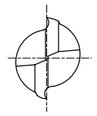
# ALU-CUT END MILLS

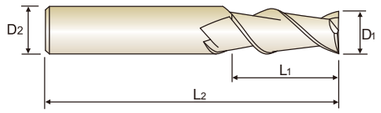
PLAIN SHANK **E5D71 SERIES**

## CARBIDE, 2 FLUTE 45° HELIX
## 硬质合金，2刃 45度螺旋

- ▶ Suitable for workpieces of nonferrous metals including Aluminum and Aluminum Alloys
- ▶ Improvement of surface roughness of workpieces and wearresistance due to Mirror grinding of cutting edges
- ▶ Special cutting edges for minimization of vibration
- ▶ Very small toelrance of cutting diameters
- ▶ Available regular and long cutting lengths

- ▶双芯厚铣刀具有独特沟槽设计，实现出色排屑性能与优秀刚性
- ▶双芯厚实现稳定性和排屑性能，减少刀具偏斜，提高尺寸稳定性和工件精度






CARBIDE | 2 | 45° | PLAIN | p.C427

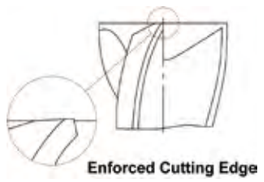
Recommended ToolHolder

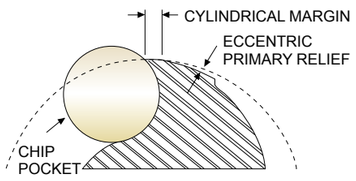
| Flat Shank | | Page | Plain Shank | Page |
|---|---|---|---|---|
| END MILL HOLDER | D118 - 137 | | HYDRAULIC CHUCK | D15 - 46 |
| - | - | | SHRINK FIT HOLDER | D47 - 72 |
| | | | POWER MILLING CHUCK | D161 - 176 |
| | | | ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Overall Length 全长 L2 |
|---|---|---|---|---|
| E5D7112040 | 12.0 | 12 | 40 | 95 |
| E5D71140 | 14.0 | 14 | 37 | 90 |
| E5D7114016S | 14.0 | 16 | 37 | 90 |
| E5D71160 | 16.0 | 16 | 42 | 100 |
| E5D7116052 | 16.0 | 16 | 52 | 110 |
| E5D71180 | 18.0 | 16 | 48 | 100 |
| E5D71200 | 20.0 | 20 | 48 | 100 |
| E5D7120055 | 20.0 | 20 | 55 | 110 |

| Mill Dia.Tolerance (mm) 刃部公差 | Shank Dia.Tolerance 柄部公差 |
|---|---|
| 0 ~ - 0.015 | h5 |




◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 | |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 | |
| Recommend | | | | | | | | | | | | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | ◎ | ◎ | ◎ | ◎ | ◎ | | | | | | | | | | | | | | | | |



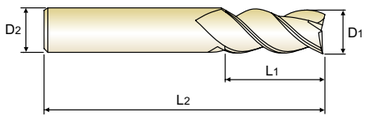
# K-2 Plus ALU END MILLS

PLAIN SHANK **E5C72 SERIES**

## CARBIDE, 3 FLUTE 45° HELIX SHORT LENGTH
## 硬质合金，3刃 45度螺旋 短刃

- ▶ Applied for aluminum and aluminum alloys.
- ▶ Designed to minimize vibration.
- ▶ Excellent surface roughness caused by Mirror Face of cutting edges.
- ▶ Precise tolerance of cutting diameters.

- ▶使用铝及铝合金材质加工
- ▶其设计使振动最小化
- ▶镜面处理的切削刃可保证加工面的粗糙度
- ▶刃部直径公差高精密化




CARBIDE | 3 | 45° | PLAIN | C x 45° | p.C606-607

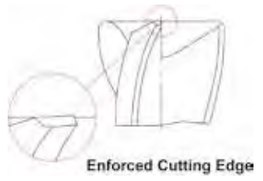
Recommended ToolHolder

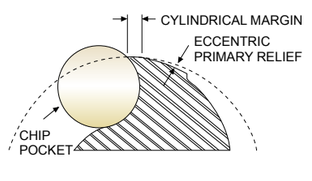
| Flat Shank | | Page | Plain Shank | Page |
|---|---|---|---|---|
| END MILL HOLDER | D118 - 137 | | HYDRAULIC CHUCK | D15 - 46 |
| - | - | | SHRINK FIT HOLDER | D47 - 72 |
| | | | POWER MILLING CHUCK | D161 - 176 |
| | | | ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Overall Length 全长 L2 |
|---|---|---|---|---|
| E5C72010 | 1.0 | 6 | 3 | 50 |
| E5C72015 | 1.5 | 6 | 5 | 50 |
| E5C72020 | 2.0 | 6 | 6 | 50 |
| E5C72025 | 2.5 | 6 | 8 | 50 |
| E5C72030 | 3.0 | 6 | 11 | 50 |
| E5C72040 | 4.0 | 6 | 13 | 50 |
| E5C72050 | 5.0 | 6 | 17 | 55 |
| E5C72060 | 6.0 | 6 | 17 | 55 |
| E5C72070 | 7.0 | 8 | 22 | 65 |
| E5C72080 | 8.0 | 8 | 22 | 65 |
| E5C72090 | 9.0 | 10 | 27 | 70 |
| E5C72100 | 10.0 | 10 | 27 | 70 |
| E5C72120 | 12.0 | 12 | 32 | 80 |
| E5C72140 | 14.0 | 14 | 37 | 85 |
| E5C72160 | 16.0 | 16 | 42 | 100 |
| E5C72180 | 18.0 | 16 | 48 | 110 |
| E5C72200 | 20.0 | 20 | 48 | 110 |

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.02 | h5 |




◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 | |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 | |
| Recommend | | | | | | | | | | | | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | ◎ | ◎ | ◎ | ◎ | | | | | | | | | | | | | | | | | |

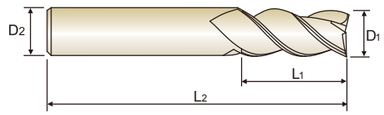
# ALU-CUT END MILLS

PLAIN SHANK **E5D70 SERIES**

## CARBIDE, 3 FLUTE 45° HELIX
## 硬质合金，3刃 45度螺旋

- ▶ Suitable for workpieces of nonferrous metals including Aluminum and Aluminum Alloys
- ▶ Improvement of surface roughness of workpieces and wearresistance due to Mirror grinding of cutting edges
- ▶ Special cutting edges for minimization of vibration
- ▶ Very small toelrance of cutting diameters
- ▶ Available various cutting length tools

- ▶ 卓越性能在铝件，铝合金，非铁金属
- ▶ 镜面处理提高耐磨性，加工时表面粗糙度
- ▶ 特殊刃线设计减小震动
- ▶ 高精度直径公差
- ▶ 多种刃长设计




CARBIDE | 3 | 45° | PLAIN

p.C427

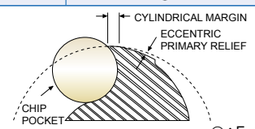
Recommended ToolHolder

| Flat Shank | | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK | D15 - 46 |
| | | | SHRINK FIT HOLDER | D47 - 72 |
| | | | POWER MILLING CHUCK | D161 - 176 |
| ○ | - | - | ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 $D_1$ | Shank Diameter 柄径 $D_2$ | Length of Cut 刃长 $L_1$ | Overall Length 全长 $L_2$ |
|---|---|---|---|---|
| E5D7001002 | 1.0 | 6 | 2 | 40 |
| E5D70010025 | 1.0 | 6 | 2.5 | 40 |
| E5D70010 | 1.0 | 6 | 3 | 50 |
| E5D7001004 | 1.0 | 6 | 4 | 60 |
| E5D7001005 | 1.0 | 6 | 5 | 60 |
| E5D7001006 | 1.0 | 6 | 6 | 60 |
| E5D70012 | 1.2 | 6 | 4 | 50 |
| E5D7001503 | 1.5 | 6 | 3 | 40 |
| E5D7001504 | 1.5 | 6 | 4 | 40 |
| E5D70015 | 1.5 | 6 | 5 | 50 |
| E5D7001506 | 1.5 | 6 | 6 | 60 |
| E5D7001508 | 1.5 | 6 | 8 | 60 |
| E5D7001510 | 1.5 | 6 | 10 | 60 |
| E5D7001512 | 1.5 | 6 | 12 | 60 |
| E5D7002003 | 2.0 | 6 | 3 | 40 |
| E5D7002005 | 2.0 | 6 | 5 | 50 |
| E5D7002007 | 2.0 | 6 | 7 | 50 |
| E5D70020 | 2.0 | 6 | 6 | 50 |
| E5D7002008 | 2.0 | 6 | 8 | 60 |
| E5D7002010 | 2.0 | 6 | 10 | 60 |
| E5D7002012 | 2.0 | 6 | 12 | 60 |
| E5D7002014 | 2.0 | 6 | 14 | 60 |
| E5D7002016 | 2.0 | 6 | 16 | 60 |
| E5D7002508 | 2.5 | 6 | 8 | 40 |

| Mill Dia.Tolerance (mm) 刃部公差 | Shank Dia.Tolerance 柄部公差 |
|---|---|
| 0 ~ - 0.015 | h5 |




▶ NEXT PAGE 下页

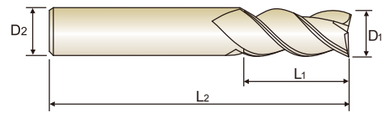
◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | | | | | | | | | | | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | Copper and Copper Alloys (Bronze / Brass) | | Non Metallic Materials | | | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | ◎ | ◎ | ◎ | ◎ | ◎ | | | | | | | | | | | | | | | | |



ALU-CUT END MILLS
PLAIN SHANK E5D70 SERIES
CARBIDE, 3 FLUTE 45° HELIX
硬质合金，3刃 45度螺旋
▶ Suitable for workpieces of nonferrous metals including Aluminum and Aluminum Alloys
▶ Improvement of surface roughness of workpieces and wearresistance due to Mirror grinding of cutting edges
▶ Special cutting edges for minimization of vibration
▶ Very small toelrance of cutting diameters
▶ Available various cutting length tools
▶ 卓越性能在铝件，铝合金，非铁金属
▶ 镜面处理提高耐磨性，加工时表面粗糙度
▶ 特殊刃线设计减小震动
▶ 高精度直径公差
▶ 多种刃长设计




CARBIDE | 3 | 45° | PLAIN

p.C427

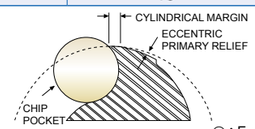
Recommended ToolHolder

| Flat Shank | | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK | D15 - 46 |
| | | | SHRINK FIT HOLDER | D47 - 72 |
| | | | POWER MILLING CHUCK | D161 - 176 |
| ○ | - | - | ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 $D_1$ | Shank Diameter 柄径 $D_2$ | Length of Cut 刃长 $L_1$ | Overall Length 全长 $L_2$ |
|---|---|---|---|---|
| E5D70025 | 2.5 | 6 | 10 | 55 |
| E5D7002504 | 2.5 | 6 | 4 | 40 |
| E5D7002512 | 2.5 | 6 | 12 | 60 |
| E5D7002515 | 2.5 | 6 | 15 | 60 |
| E5D7003004 | 3.0 | 6 | 4 | 45 |
| E5D7003008 | 3.0 | 6 | 8 | 45 |
| E5D7003012 | 3.0 | 6 | 12 | 60 |
| E5D70030 | 3.0 | 6 | 11 | 55 |
| E5D7003015 | 3.0 | 6 | 15 | 65 |
| E5D7003020 | 3.0 | 6 | 20 | 70 |
| E5D7003025 | 3.0 | 6 | 25 | 75 |
| E5D7003030 | 3.0 | 6 | 30 | 80 |
| E5D70035 | 3.5 | 6 | 12 | 55 |
| E5D7003506 | 3.5 | 6 | 6 | 50 |
| E5D7004005 | 4.0 | 6 | 5 | 45 |
| E5D7004006 | 4.0 | 6 | 6 | 45 |
| E5D7004008 | 4.0 | 6 | 8 | 45 |
| E5D7004011 | 4.0 | 6 | 11 | 45 |
| E5D70040 | 4.0 | 6 | 13 | 55 |
| E5D7004016 | 4.0 | 6 | 16 | 65 |
| E5D7004020 | 4.0 | 6 | 20 | 70 |
| E5D7004026 | 4.0 | 6 | 26 | 75 |
| E5D7004030 | 4.0 | 6 | 30 | 80 |
| E5D70045 | 4.5 | 6 | 15 | 55 |

| Mill Dia.Tolerance (mm) 刃部公差 | Shank Dia.Tolerance 柄部公差 |
|---|---|
| 0 ~ - 0.015 | h5 |




▶ NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | | | | | | | | | | | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | Copper and Copper Alloys (Bronze / Brass) | | Non Metallic Materials | | | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | ◎ | ◎ | ◎ | ◎ | ◎ | | | | | | | | | | | | | | | | |

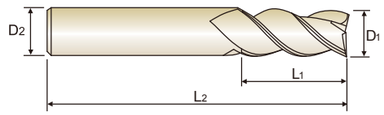
# ALU-CUT END MILLS

PLAIN SHANK **E5D70 SERIES**

## CARBIDE, 3 FLUTE 45° HELIX
## 硬质合金，3刃 45度螺旋

- ▶ Suitable for workpieces of nonferrous metals including Aluminum and Aluminum Alloys
- ▶ Improvement of surface roughness of workpieces and wearresistance due to Mirror grinding of cutting edges
- ▶ Special cutting edges for minimization of vibration
- ▶ Very small toelrance of cutting diameters
- ▶ Available various cutting length tools

- ▶ 卓越性能在铝件，铝合金，非铁金属
- ▶ 镜面处理提高耐磨性，加工时表面粗糙度
- ▶ 特殊刃线设计减小震动
- ▶ 高精度直径公差
- ▶ 多种刃长设计




CARBIDE | 3 | 45° | PLAIN

p.C427

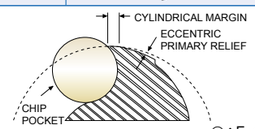
Recommended ToolHolder

| Flat Shank | | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK | D15 - 46 |
| | | | SHRINK FIT HOLDER | D47 - 72 |
| | | | POWER MILLING CHUCK | D161 - 176 |
| ○ | - | - | ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 $D_1$ | Shank Diameter 柄径 $D_2$ | Length of Cut 刃长 $L_1$ | Overall Length 全长 $L_2$ |
|---|---|---|---|---|
| E5D7004512 | 4.5 | 6 | 12 | 50 |
| E5D7004518 | 4.5 | 6 | 18 | 55 |
| E5D7005006 | 5.0 | 6 | 6 | 45 |
| E5D7005013 | 5.0 | 6 | 13 | 50 |
| E5D7005020 | 5.0 | 6 | 20 | 55 |
| E5D70050 | 5.0 | 6 | 17 | 55 |
| E5D7005022 | 5.0 | 6 | 22 | 60 |
| E5D7005025 | 5.0 | 6 | 25 | 70 |
| E5D7005030 | 5.0 | 6 | 30 | 75 |
| E5D7005035 | 5.0 | 6 | 35 | 80 |
| E5D7005040 | 5.0 | 6 | 40 | 85 |
| E5D7005045 | 5.0 | 6 | 45 | 90 |
| E5D70055 | 5.5 | 6 | 17 | 55 |
| E5D7006007 | 6.0 | 6 | 7 | 50 |
| E5D7006013 | 6.0 | 6 | 13 | 50 |
| E5D70060 | 6.0 | 6 | 17 | 60 |
| E5D7006022 | 6.0 | 6 | 22 | 60 |
| E5D7006025 | 6.0 | 6 | 25 | 70 |
| E5D7006030 | 6.0 | 6 | 30 | 75 |
| E5D7006035 | 6.0 | 6 | 35 | 80 |
| E5D7006042 | 6.0 | 6 | 42 | 90 |
| E5D7006050 | 6.0 | 6 | 50 | 100 |
| E5D70070 | 7.0 | 8 | 22 | 65 |
| E5D7008009 | 8.0 | 8 | 9 | 60 |

| Mill Dia.Tolerance (mm) 刃部公差 | Shank Dia.Tolerance 柄部公差 |
|---|---|
| 0 ~ - 0.015 | h5 |




▶ NEXT PAGE 下页

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | | | | | | | | | | | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | ◎ | ◎ | ◎ | ◎ | ◎ | | | | | | | | | | | | | | | | |



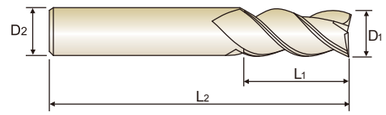
ALU-CUT END MILLS

PLAIN SHANK E5D70 SERIES

CARBIDE, 3 FLUTE 45° HELIX
硬质合金，3刃 45度螺旋

▶ Suitable for workpieces of nonferrous metals including Aluminum and Aluminum Alloys
▶ Improvement of surface roughness of workpieces and wearresistance due to Mirror grinding of cutting edges
▶ Special cutting edges for minimization of vibration
▶ Very small toelrance of cutting diameters
▶ Available various cutting length tools

▶ 卓越性能在铝件，铝合金，非铁金属
▶ 镜面处理提高耐磨性，加工时表面粗糙度
▶ 特殊刃线设计减小震动
▶ 高精度直径公差
▶ 多种刃长设计




CARBIDE | 3 | 45° | PLAIN

p.C427

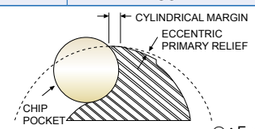
Recommended ToolHolder

| Flat Shank | | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK | D15 - 46 |
| | | | SHRINK FIT HOLDER | D47 - 72 |
| | | | POWER MILLING CHUCK | D161 - 176 |
| ○ | - | - | ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 $D_1$ | Shank Diameter 柄径 $D_2$ | Length of Cut 刃长 $L_1$ | Overall Length 全长 $L_2$ |
|---|---|---|---|---|
| E5D7008012 | 8.0 | 8 | 12 | 60 |
| E5D7008019 | 8.0 | 8 | 19 | 60 |
| E5D70080 | 8.0 | 8 | 22 | 70 |
| E5D7008028 | 8.0 | 8 | 28 | 80 |
| E5D7008030 | 8.0 | 8 | 30 | 80 |
| E5D7008035 | 8.0 | 8 | 35 | 85 |
| E5D7008040 | 8.0 | 8 | 40 | 90 |
| E5D7008045 | 8.0 | 8 | 45 | 95 |
| E5D7008050 | 8.0 | 8 | 50 | 100 |
| E5D7008055 | 8.0 | 8 | 55 | 105 |
| E5D7008060 | 8.0 | 8 | 60 | 110 |
| E5D7008065 | 8.0 | 8 | 65 | 110 |
| E5D70090 | 9.0 | 10 | 27 | 70 |
| E5D7010011 | 10.0 | 10 | 11 | 65 |
| E5D7010015 | 10.0 | 10 | 15 | 65 |
| E5D7010022 | 10.0 | 10 | 22 | 65 |
| E5D70100 | 10.0 | 10 | 27 | 75 |
| E5D7010032 | 10.0 | 10 | 32 | 90 |
| E5D7010035 | 10.0 | 10 | 35 | 90 |
| E5D7010040 | 10.0 | 10 | 40 | 90 |
| E5D7010045 | 10.0 | 10 | 45 | 100 |
| E5D7010050 | 10.0 | 10 | 50 | 100 |
| E5D7010055 | 10.0 | 10 | 55 | 110 |
| E5D7010060 | 10.0 | 10 | 60 | 110 |

| Mill Dia.Tolerance (mm) 刃部公差 | Shank Dia.Tolerance 柄部公差 |
|---|---|
| 0 ~ - 0.015 | h5 |

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◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | | | | | | | | | | | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | ◎ | ◎ | ◎ | ◎ | ◎ | | | | | | | | | | | | | | | | |

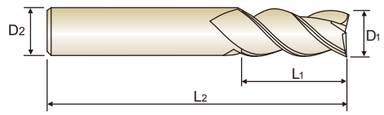
# ALU-CUT END MILLS

PLAIN SHANK **E5D70 SERIES**

## CARBIDE, 3 FLUTE 45° HELIX
## 硬质合金，3刃 45度螺旋

- ▶ Suitable for workpieces of nonferrous metals including Aluminum and Aluminum Alloys
- ▶ Improvement of surface roughness of workpieces and wearresistance due to Mirror grinding of cutting edges
- ▶ Special cutting edges for minimization of vibration
- ▶ Very small toelrance of cutting diameters
- ▶ Available various cutting length tools

- ▶ 卓越性能在铝件，铝合金，非铁金属
- ▶ 镜面处理提高耐磨性，加工时表面粗糙度
- ▶ 特殊刃线设计减小震动
- ▶ 高精度直径公差
- ▶ 多种刃长设计




CARBIDE | 3 | 45° | PLAIN

p.C427

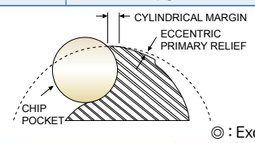
Recommended ToolHolder

| Flat Shank | | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK | D15 - 46 |
| | | | SHRINK FIT HOLDER | D47 - 72 |
| | | | POWER MILLING CHUCK | D161 - 176 |
| ○ | - | - | ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Overall Length 全长 L2 |
|---|---|---|---|---|
| E5D7010065 | 10.0 | 10 | 65 | 120 |
| E5D7012013 | 12.0 | 12 | 13 | 70 |
| E5D7012026 | 12.0 | 12 | 26 | 70 |
| E5D7012035 | 12.0 | 12 | 35 | 80 |
| E5D70120 | 12.0 | 12 | 32 | 80 |
| E5D7012040 | 12.0 | 12 | 40 | 95 |
| E5D7012045 | 12.0 | 12 | 45 | 100 |
| E5D7012050 | 12.0 | 12 | 50 | 100 |
| E5D7012055 | 12.0 | 12 | 55 | 110 |
| E5D7012060 | 12.0 | 12 | 60 | 110 |
| E5D7012065 | 12.0 | 12 | 65 | 120 |
| E5D7012070 | 12.0 | 12 | 70 | 120 |
| E5D7012075 | 12.0 | 12 | 75 | 135 |
| E5D7012080 | 12.0 | 12 | 80 | 140 |
| E5D70140 | 14.0 | 14 | 37 | 90 |
| E5D7014016S | 14.0 | 16 | 37 | 90 |
| E5D7014045 | 14.0 | 14 | 45 | 110 |
| E5D7016018 | 16.0 | 16 | 18 | 90 |
| E5D7016032 | 16.0 | 16 | 32 | 90 |
| E5D70160 | 16.0 | 16 | 42 | 100 |
| E5D7016052 | 16.0 | 16 | 52 | 105 |
| E5D7016055 | 16.0 | 16 | 55 | 110 |
| E5D7016065 | 16.0 | 16 | 65 | 130 |
| E5D7016075 | 16.0 | 16 | 75 | 150 |

| Mill Dia.Tolerance (mm) 刃部公差 | Shank Dia.Tolerance 柄部公差 |
|---|---|
| 0 ~ - 0.015 | h5 |

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◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | | | | | | | | | | | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | ◎ | ◎ | ◎ | ◎ | ◎ | | | | | | | | | | | | | | | | |



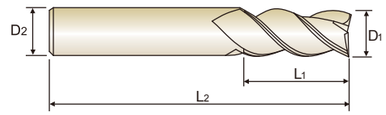
ALU-CUT END MILLS

PLAIN SHANK E5D70 SERIES

CARBIDE, 3 FLUTE 45° HELIX
硬质合金，3刃 45度螺旋

▶ Suitable for workpieces of nonferrous metals including Aluminum and Aluminum Alloys
▶ Improvement of surface roughness of workpieces and wearresistance due to Mirror grinding of cutting edges
▶ Special cutting edges for minimization of vibration
▶ Very small toelrance of cutting diameters
▶ Available various cutting length tools

▶ 卓越性能在铝件，铝合金，非铁金属
▶ 镜面处理提高耐磨性，加工时表面粗糙度
▶ 特殊刃线设计减小震动
▶ 高精度直径公差
▶ 多种刃长设计




CARBIDE | 3 | 45° | PLAIN

p.C427

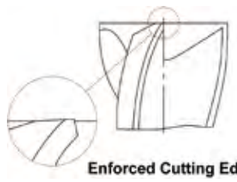
Recommended ToolHolder

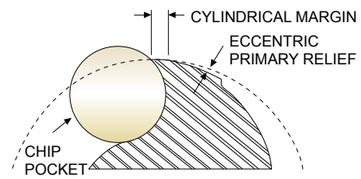
| Flat Shank | | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK | D15 - 46 |
| | | | SHRINK FIT HOLDER | D47 - 72 |
| | | | POWER MILLING CHUCK | D161 - 176 |
| ○ | - | - | ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Overall Length 全长 L2 |
|---|---|---|---|---|
| E5D7016085 | 16.0 | 16 | 85 | 160 |
| E5D7016095 | 16.0 | 16 | 95 | 180 |
| E5D70160105 | 16.0 | 16 | 105 | 190 |
| E5D70160115 | 16.0 | 16 | 115 | 200 |
| E5D70180 | 18.0 | 16 | 48 | 100 |
| E5D7020022 | 20.0 | 20 | 22 | 90 |
| E5D7020038 | 20.0 | 20 | 38 | 90 |
| E5D70200 | 20.0 | 20 | 48 | 100 |
| E5D7020055 | 20.0 | 20 | 55 | 110 |
| E5D7020065 | 20.0 | 20 | 65 | 130 |
| E5D7020075 | 20.0 | 20 | 75 | 150 |
| E5D7020085 | 20.0 | 20 | 85 | 160 |
| E5D7020095 | 20.0 | 20 | 95 | 180 |
| E5D70200105 | 20.0 | 20 | 105 | 190 |
| E5D70200115 | 20.0 | 20 | 115 | 200 |
| E5D70200125 | 20.0 | 20 | 125 | 220 |

| Mill Dia.Tolerance (mm) 刃部公差 | Shank Dia.Tolerance 柄部公差 |
|---|---|
| 0 ~ - 0.015 | h5 |




◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | | | | | | | | | | | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | ◎ | ◎ | ◎ | ◎ | ◎ | | | | | | | | | | | | | | | | |

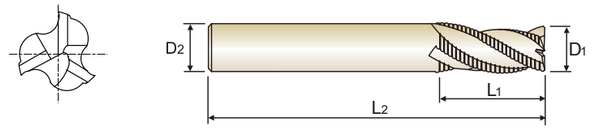
YG ALU-CUT END MILLS

PLAIN SHANK **E5D73 SERIES**

## CARBIDE, 3 FLUTE 45° HELIX ROUGHING (Type A)
## 硬质合金，3刃 45度螺旋 粗加工 (A型)

- ▶ Suitable for heavy cutting and good wear resistance due to new coating and new configuration of tool
- ▶ Suitable for cutting difficult to cut materials like alloy steels, stainless steels, Titanium, Inconel etc.
- ▶ Excellent surface roughness when side cutting due to high helix and 6 flutes

- ▶ 卓越性能在铝件，铝合金，非铁材质
- ▶ 镜面处理提高加工时表面粗糙度
- ▶ 最佳刃线设计提高排屑性能




CARBIDE | WR | 3 | 45° | PLAIN | C x 45° | p.C427

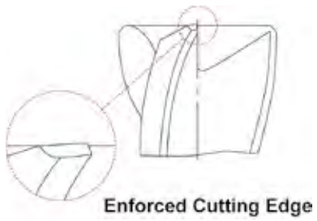
Recommended ToolHolder

| Flat Shank | | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ END MILL HOLDER | D118 - 137 | | HYDRAULIC CHUCK | D15 - 46 |
| | | | SHRINK FIT HOLDER | D47 - 72 |
| | | | POWER MILLING CHUCK | D161 - 176 |
| ○ - | - | | ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Overall Length 全长 L2 | Chamfer 导向 |
|---|---|---|---|---|---|
| E5D73040 | 4.0 | 6 | 10 | 55 | 0.15 |
| E5D73050 | 5.0 | 6 | 15 | 55 | 0.2 |
| E5D73060 | 6.0 | 6 | 15 | 60 | 0.2 |
| E5D73060C | 6.0 | 6 | 25 | 80 | 0.2 |
| E5D73080 | 8.0 | 8 | 20 | 65 | 0.2 |
| E5D73080C | 8.0 | 8 | 30 | 90 | 0.2 |
| E5D73100 | 10.0 | 10 | 25 | 70 | 0.2 |
| E5D73100C | 10.0 | 10 | 40 | 100 | 0.2 |
| E5D73120 | 12.0 | 12 | 30 | 80 | 0.3 |
| E5D73120C | 12.0 | 12 | 50 | 110 | 0.3 |
| E5D73140 | 14.0 | 16 | 35 | 90 | 0.41 |
| E5D73160 | 16.0 | 16 | 42 | 100 | 0.41 |
| E5D73160C | 16.0 | 16 | 52 | 150 | 0.41 |
| E5D73180 | 18.0 | 20 | 45 | 100 | 0.41 |
| E5D73200 | 20.0 | 20 | 48 | 100 | 0.41 |
| E5D73200C | 20.0 | 20 | 55 | 160 | 0.41 |

| Mill Dia.Tolerance (mm) 刃部公差 | | | | Shank Dia.Tolerance 柄部公差 |
|---|---|---|---|---|
| up to Ø6 | over 6 to 10 | over 10 to 18 | over 18 to 30 | h5 |
| 0 ~ - 0.048 | 0 ~ - 0.058 | 0 ~ - 0.070 | 0 ~ - 0.084 | |




◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | | | | | | | | | | | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | ◎ | ◎ | ◎ | ◎ | ◎ | | | | | | | | | | | | | | | | |





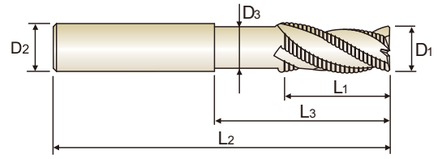
YG ALU-CUT END MILLS

PLAIN SHANK **E5D73 SERIES**

## CARBIDE, 3 FLUTE 45° HELIX ROUGHING (Type B)
## 硬质合金，3刃 45度螺旋 粗加工 (B型)

- ▶ Suitable for heavy cutting and good wear resistance due to new coating and new configuration of tool
- ▶ Suitable for cutting difficult to cut materials like alloy steels, stainless steels, Titanium, Inconel etc.
- ▶ Excellent surface roughness when side cutting due to high helix and 6 flutes

- ▶ 卓越性能在铝件，铝合金，非铁材质
- ▶ 镜面处理提高加工时表面粗糙度
- ▶ 最佳刃线设计提高排屑性能




CARBIDE | WR | 3 | 45° | PLAIN | C x 45° | p.C427

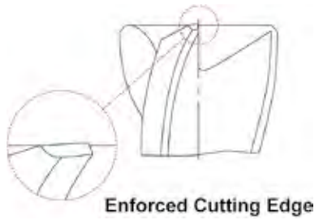
Recommended ToolHolder

| Flat Shank | | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ END MILL HOLDER | D118 - 137 | | HYDRAULIC CHUCK | D15 - 46 |
| | | | SHRINK FIT HOLDER | D47 - 72 |
| | | | POWER MILLING CHUCK | D161 - 176 |
| ○ - | - | | ER COLLET CHUCK | D73 - 115 |

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Length Below Shank 颈长 L3 | Overall Length 全长 L2 | Neck Diameter 颈径 D3 | Chamfer 导向 |
|---|---|---|---|---|---|---|---|
| E5D73040B | 4.0 | 6 | 6 | 12 | 60 | 3.4 | 0.15 |
| E5D73050B | 5.0 | 6 | 7 | 20 | 60 | 4.4 | 0.2 |
| E5D73060B | 6.0 | 6 | 8 | 20 | 70 | 5.4 | 0.2 |
| E5D73080B | 8.0 | 8 | 10 | 26 | 80 | 7.4 | 0.2 |
| E5D73100B | 10.0 | 10 | 12 | 32 | 90 | 9.4 | 0.2 |
| E5D73120B | 12.0 | 12 | 14 | 36 | 100 | 11.2 | 0.3 |
| E5D73160B | 16.0 | 16 | 18 | 46 | 120 | 15.0 | 0.41 |
| E5D73200B | 20.0 | 20 | 22 | 52 | 120 | 19.0 | 0.41 |

| Mill Dia.Tolerance (mm) 刃部公差 | | | | Shank Dia.Tolerance 柄部公差 |
|---|---|---|---|---|
| up to Ø6 | over 6 to 10 | over 10 to 18 | over 18 to 30 | h5 |
| 0 ~ - 0.048 | 0 ~ - 0.058 | 0 ~ - 0.070 | 0 ~ - 0.084 | |




◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | | | | | | | | | | | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | ◎ | ◎ | ◎ | ◎ | ◎ | | | | | | | | | | | | | | | | |

# ALU-CUT END MILLS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

### E5D70 SERIES — 3 FLUTE 3刃

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

### SLOTTING (槽铣削)

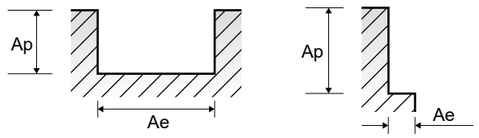
| ISO | VDI 3323 | Material Description 材料描述 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 1.0 | 1.2 | 1.5 | 2.0 | 2.5 | 3.0 | 3.5 | 4.0 | 4.5 | 5.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N | 21-22 | Aluminum-wrought alloy | 0.15D | 2.5D | Vc | 53 | 60 | 61 | 63 | 63 | 66 | 77 | 88 | 99 | 110 |
| | | | | | fz | 0.011 | 0.011 | 0.013 | 0.013 | 0.016 | 0.017 | 0.017 | 0.021 | 0.024 | 0.024 |
| | | | | | RPM | 17000 | 16000 | 13000 | 10000 | 8000 | 7000 | 7000 | 7000 | 7000 | 7000 |
| | | | | | FEED | 550 | 550 | 500 | 400 | 380 | 350 | 350 | 441 | 500 | 504 |
| | 23-25 | Aluminum-cast, alloyed | 0.15D | 2.5D | Vc | 53 | 60 | 61 | 63 | 63 | 66 | 77 | 88 | 99 | 110 |
| | | | | | fz | 0.011 | 0.011 | 0.013 | 0.013 | 0.016 | 0.017 | 0.017 | 0.021 | 0.024 | 0.024 |
| | | | | | RPM | 17000 | 16000 | 13000 | 10000 | 8000 | 7000 | 7000 | 7000 | 7000 | 7000 |
| | | | | | FEED | 550 | 550 | 500 | 400 | 380 | 350 | 350 | 441 | 500 | 504 |

| ISO | VDI 3323 | Material Description 材料描述 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 5.5 | 6.0 | 7.0 | 8.0 | 9.0 | 10.0 | 12.0 | 14.0 | 16.0 | 18.0 | 20.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N | 21-22 | Aluminum-wrought alloy | 0.15D | 2.5D | Vc | 121 | 132 | 132 | 141 | 158 | 176 | 211 | 185 | 211 | 158 | 176 |
| | | | | | fz | 0.029 | 0.029 | 0.039 | 0.042 | 0.048 | 0.051 | 0.063 | 0.072 | 0.075 | 0.083 | 0.096 |
| | | | | | RPM | 7000 | 7000 | 6000 | 5600 | 5600 | 5600 | 5600 | 4200 | 4200 | 2800 | 2800 |
| | | | | | FEED | 605 | 606 | 700 | 700 | 800 | 854 | 1050 | 903 | 945 | 700 | 805 |
| | 23-25 | Aluminum-cast, alloyed | 0.15D | 2.5D | Vc | 121 | 132 | 132 | 141 | 158 | 176 | 211 | 185 | 211 | 158 | 176 |
| | | | | | fz | 0.029 | 0.029 | 0.039 | 0.042 | 0.048 | 0.051 | 0.063 | 0.072 | 0.075 | 0.083 | 0.096 |
| | | | | | RPM | 7000 | 7000 | 6000 | 5600 | 5600 | 5600 | 5600 | 4200 | 4200 | 2800 | 2800 |
| | | | | | FEED | 605 | 606 | 700 | 700 | 800 | 854 | 1050 | 903 | 945 | 700 | 805 |

### SIDE CUTTING (侧铣削)

| ISO | VDI 3323 | Material Description 材料描述 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 1.0 | 1.2 | 1.5 | 2.0 | 2.5 | 3.0 | 3.5 | 4.0 | 4.5 | 5.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N | 21-22 | Aluminum-wrought alloy | 0.15D | 2.5D | Vc | 53 | 60 | 61 | 63 | 63 | 66 | 77 | 88 | 99 | 110 |
| | | | | | fz | 0.018 | 0.018 | 0.022 | 0.021 | 0.022 | 0.022 | 0.026 | 0.026 | 0.029 | 0.031 |
| | | | | | RPM | 17000 | 16000 | 13000 | 10000 | 8000 | 7000 | 7000 | 7000 | 7000 | 7000 |
| | | | | | FEED | 900 | 850 | 850 | 640 | 520 | 455 | 550 | 546 | 600 | 651 |
| | 23-25 | Aluminum-cast, alloyed | 0.15D | 2.5D | Vc | 53 | 60 | 61 | 63 | 63 | 66 | 77 | 88 | 99 | 110 |
| | | | | | fz | 0.018 | 0.018 | 0.022 | 0.021 | 0.022 | 0.022 | 0.026 | 0.026 | 0.029 | 0.031 |
| | | | | | RPM | 17000 | 16000 | 13000 | 10000 | 8000 | 7000 | 7000 | 7000 | 7000 | 7000 |
| | | | | | FEED | 900 | 850 | 850 | 640 | 520 | 455 | 550 | 546 | 600 | 651 |

| ISO | VDI 3323 | Material Description 材料描述 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 5.5 | 6.0 | 7.0 | 8.0 | 9.0 | 10.0 | 12.0 | 14.0 | 16.0 | 18.0 | 20.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N | 21-22 | Aluminum-wrought alloy | 0.15D | 2.5D | Vc | 121 | 132 | 132 | 141 | 158 | 176 | 211 | 185 | 211 | 158 | 176 |
| | | | | | fz | 0.033 | 0.036 | 0.046 | 0.051 | 0.054 | 0.063 | 0.053 | 0.088 | 0.096 | 0.108 | 0.114 |
| | | | | | RPM | 7000 | 7000 | 6000 | 5600 | 5600 | 5600 | 5600 | 4200 | 4200 | 2800 | 2800 |
| | | | | | FEED | 700 | 756 | 820 | 861 | 900 | 1050 | 882 | 1106 | 1211 | 910 | 956 |
| | 23-25 | Aluminum-cast, alloyed | 0.15D | 2.5D | Vc | 121 | 132 | 132 | 141 | 158 | 176 | 211 | 185 | 211 | 158 | 176 |
| | | | | | fz | 0.033 | 0.036 | 0.046 | 0.051 | 0.054 | 0.063 | 0.053 | 0.088 | 0.096 | 0.108 | 0.114 |
| | | | | | RPM | 7000 | 7000 | 6000 | 5600 | 5600 | 5600 | 5600 | 4200 | 4200 | 2800 | 2800 |
| | | | | | FEED | 700 | 756 | 820 | 861 | 900 | 1050 | 882 | 1106 | 1211 | 910 | 956 |






ALU-CUT END MILLS
RECOMMENDED CUTTING CONDITIONS
推荐加工参数

### E5D71 SERIES — 2 FLUTE 2刃

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

### SLOTTING (槽铣削)

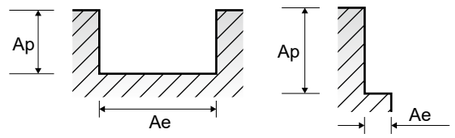
| ISO | VDI 3323 | Material Description 材料描述 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 1.0 | 1.2 | 1.5 | 2.0 | 2.5 | 3.0 | 4.0 | 5.0 | 6.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N | 21-22 | Aluminum-wrought alloy | 1.0D | 0.5D | Vc | 53 | 62 | 62 | 71 | 83 | 94 | 126 | 157 | 188 |
| | | | | | fz | 0.015 | 0.016 | 0.02 | 0.025 | 0.03 | 0.035 | 0.045 | 0.05 | 0.06 |
| | | | | | RPM | 16870 | 16450 | 13150 | 11300 | 10565 | 10000 | 10000 | 10000 | 10000 |
| | | | | | FEED | 505 | 510 | 525 | 565 | 635 | 700 | 900 | 1000 | 1200 |
| | 23-25 | Aluminum-cast, alloyed | 1.0D | 0.5D | Vc | 53 | 62 | 62 | 71 | 83 | 94 | 126 | 157 | 188 |
| | | | | | fz | 0.015 | 0.016 | 0.02 | 0.025 | 0.03 | 0.035 | 0.045 | 0.05 | 0.06 |
| | | | | | RPM | 16870 | 16450 | 13150 | 11300 | 10565 | 10000 | 10000 | 10000 | 10000 |
| | | | | | FEED | 505 | 510 | 525 | 565 | 635 | 700 | 900 | 1000 | 1200 |

| ISO | VDI 3323 | Material Description 材料描述 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 7.0 | 8.0 | 10.0 | 12.0 | 14.0 | 16.0 | 18.0 | 20.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N | 21-22 | Aluminum-wrought alloy | 1.0D | 0.5D | Vc | 195 | 201 | 251 | 302 | 264 | 302 | 226 | 251 |
| | | | | | fz | 0.07 | 0.088 | 0.106 | 0.131 | 0.15 | 0.158 | 0.175 | 0.2 |
| | | | | | RPM | 8850 | 8000 | 8000 | 8000 | 6000 | 6000 | 4000 | 4000 |
| | | | | | FEED | 1240 | 1400 | 1700 | 2100 | 1800 | 1900 | 1400 | 1600 |
| | 23-25 | Aluminum-cast, alloyed | 1.0D | 0.5D | Vc | 195 | 201 | 251 | 302 | 264 | 302 | 226 | 251 |
| | | | | | fz | 0.07 | 0.088 | 0.106 | 0.131 | 0.15 | 0.158 | 0.175 | 0.2 |
| | | | | | RPM | 8850 | 8000 | 8000 | 8000 | 6000 | 6000 | 4000 | 4000 |
| | | | | | FEED | 1240 | 1400 | 1700 | 2100 | 1800 | 1900 | 1400 | 1600 |

### SIDE CUTTING (侧铣削)

| ISO | VDI 3323 | Material Description 材料描述 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 1.0 | 1.2 | 1.5 | 2.0 | 2.5 | 3.0 | 4.0 | 5.0 | 6.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N | 21-22 | Aluminum-wrought alloy | Ø1~Ø10=0.25D<br>Ø12~Ø20=0.5D | 1.0D | Vc | 53 | 62 | 62 | 71 | 83 | 94 | 126 | 157 | 188 |
| | | | | | fz | 0.025 | 0.026 | 0.03 | 0.035 | 0.04 | 0.045 | 0.055 | 0.065 | 0.075 |
| | | | | | RPM | 16870 | 16450 | 13150 | 11300 | 10565 | 10000 | 10000 | 10000 | 10000 |
| | | | | | FEED | 845 | 850 | 790 | 790 | 845 | 900 | 1100 | 1300 | 1500 |
| | 23-25 | Aluminum-cast, alloyed | Ø1~Ø10=0.25D<br>Ø12~Ø20=0.5D | 1.0D | Vc | 53 | 62 | 62 | 71 | 83 | 94 | 126 | 157 | 188 |
| | | | | | fz | 0.025 | 0.026 | 0.03 | 0.035 | 0.04 | 0.045 | 0.055 | 0.065 | 0.075 |
| | | | | | RPM | 16870 | 16450 | 13150 | 11300 | 10565 | 10000 | 10000 | 10000 | 10000 |
| | | | | | FEED | 845 | 850 | 790 | 790 | 845 | 900 | 1100 | 1300 | 1500 |

| ISO | VDI 3323 | Material Description 材料描述 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 7.0 | 8.0 | 10.0 | 12.0 | 14.0 | 16.0 | 18.0 | 20.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N | 21-22 | Aluminum-wrought alloy | Ø1~Ø10=0.25D<br>Ø12~Ø20=0.5D | 1.0D | Vc | 195 | 201 | 251 | 302 | 264 | 302 | 226 | 251 |
| | | | | | fz | 0.085 | 0.113 | 0.131 | 0.163 | 0.183 | 0.2 | 0.225 | 0.238 |
| | | | | | RPM | 8850 | 8000 | 8000 | 8000 | 6000 | 6000 | 4000 | 4000 |
| | | | | | FEED | 1505 | 1800 | 2100 | 2600 | 2200 | 2400 | 1800 | 1900 |
| | 23-25 | Aluminum-cast, alloyed | Ø1~Ø10=0.25D<br>Ø12~Ø20=0.5D | 1.0D | Vc | 195 | 201 | 251 | 302 | 264 | 302 | 226 | 251 |
| | | | | | fz | 0.085 | 0.113 | 0.131 | 0.163 | 0.183 | 0.2 | 0.225 | 0.238 |
| | | | | | RPM | 8850 | 8000 | 8000 | 8000 | 6000 | 6000 | 4000 | 4000 |
| | | | | | FEED | 1505 | 1800 | 2100 | 2600 | 2200 | 2400 | 1800 | 1900 |



# ALU-CUT END MILLS

# RECOMMENDED CUTTING CONDITIONS
# 推荐加工参数

## E5C72 SERIES

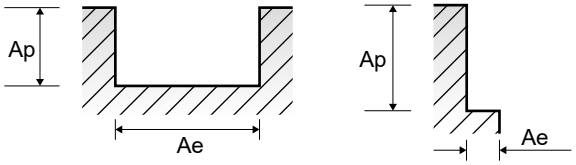
### 3 FLUTE - SLOTTING
### 3刃 - 槽铣削

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description 材料描述 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 3.0 | 4.0 | 5.0 | 6.0 | 8.0 | 10.0 | 12.0 | 14.0 | 16.0 | 20.0 |
| N | 21~22 | Aluminum-wrought alloy | 1.0D | 0.2D | Vc | 85 | 113 | 141 | 170 | 181 | 226 | 271 | 238 | 271 | 204 | 226 |
| | | | | | fz | 0.017 | 0.021 | 0.024 | 0.029 | 0.042 | 0.051 | 0.063 | 0.072 | 0.075 | 0.083 | 0.096 |
| | | | | | RPM | 9000 | 9000 | 9000 | 9000 | 7200 | 7200 | 7200 | 5400 | 5400 | 3600 | 3600 |
| | | | | | FEED | 450 | 570 | 650 | 780 | 900 | 1100 | 1350 | 1160 | 1215 | 900 | 1035 |
| | 23~24 | Aluminum-cast, alloyed | 1.0D | 0.2D | Vc | 85 | 113 | 141 | 170 | 181 | 226 | 271 | 238 | 271 | 204 | 226 |
| | | | | | fz | 0.017 | 0.021 | 0.024 | 0.029 | 0.042 | 0.051 | 0.063 | 0.072 | 0.075 | 0.083 | 0.096 |
| | | | | | RPM | 9000 | 9000 | 9000 | 9000 | 7200 | 7200 | 7200 | 5400 | 5400 | 3600 | 3600 |
| | | | | | FEED | 450 | 570 | 650 | 780 | 900 | 1100 | 1350 | 1160 | 1215 | 900 | 1035 |

### SIDE CUTTING (侧铣削)

| ISO | VDI 3323 | Material Description 材料描述 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 3.0 | 4.0 | 5.0 | 6.0 | 8.0 | 10.0 | 12.0 | 14.0 | 16.0 | 20.0 |
| N | 21~22 | Aluminum-wrought alloy | 0.15D | 2.5D | Vc | 85 | 113 | 141 | 170 | 181 | 226 | 271 | 238 | 271 | 204 | 226 |
| | | | | | fz | 0.022 | 0.026 | 0.031 | 0.036 | 0.051 | 0.063 | 0.052 | 0.088 | 0.096 | 0.108 | 0.114 |
| | | | | | RPM | 9000 | 9000 | 9000 | 9000 | 7200 | 7200 | 7200 | 5400 | 5400 | 3600 | 3600 |
| | | | | | FEED | 585 | 700 | 840 | 970 | 1110 | 1350 | 1130 | 1420 | 1560 | 1170 | 1230 |
| | 23~24 | Aluminum-cast, alloyed | 0.15D | 2.5D | Vc | 85 | 113 | 141 | 170 | 181 | 226 | 271 | 238 | 271 | 204 | 226 |
| | | | | | fz | 0.022 | 0.026 | 0.031 | 0.036 | 0.051 | 0.063 | 0.052 | 0.088 | 0.096 | 0.108 | 0.114 |
| | | | | | RPM | 9000 | 9000 | 9000 | 9000 | 7200 | 7200 | 7200 | 5400 | 5400 | 3600 | 3600 |
| | | | | | FEED | 585 | 700 | 840 | 970 | 1110 | 1350 | 1130 | 1420 | 1560 | 1170 | 1230 |




## E5D73 SERIES

### 3 FLUTE
### 3刃

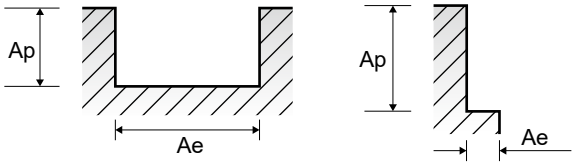
Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

### SLOTTING (槽铣削)

| ISO | VDI 3323 | Material Description 材料描述 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 4.0 | 5.0 | 6.0 | 8.0 | 10.0 | 12.0 | 14.0 | 16.0 | 18.0 | 20.0 |
| N | 21-22 | Aluminum-wrought alloy | 1.0D | 1.5D | Vc | 188 | 188 | 198 | 201 | 204 | 198 | 198 | 201 | 201 | 201 |
| | | | | | fz | 0.156 | 0.167 | 0.168 | 0.167 | 0.179 | 0.159 | 0.163 | 0.167 | 0.166 | 0.167 |
| | | | | | RPM | 15000 | 12000 | 10500 | 8000 | 6500 | 5250 | 4500 | 4000 | 3550 | 3200 |
| | | | | | FEED | 7000 | 6000 | 5300 | 4000 | 3500 | 2500 | 2200 | 2000 | 1770 | 1600 |
| | 23-25 | Aluminum-cast, alloyed | 1.0D | 1.5D | Vc | 188 | 188 | 198 | 201 | 204 | 198 | 198 | 201 | 201 | 201 |
| | | | | | fz | 0.156 | 0.167 | 0.168 | 0.167 | 0.179 | 0.159 | 0.163 | 0.167 | 0.166 | 0.167 |
| | | | | | RPM | 15000 | 12000 | 10500 | 8000 | 6500 | 5250 | 4500 | 4000 | 3550 | 3200 |
| | | | | | FEED | 7000 | 6000 | 5300 | 4000 | 3500 | 2500 | 2200 | 2000 | 1770 | 1600 |

### SIDE CUTTING (侧铣削)

| ISO | VDI 3323 | Material Description 材料描述 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 4.0 | 5.0 | 6.0 | 8.0 | 10.0 | 12.0 | 14.0 | 16.0 | 18.0 | 20.0 |
| N | 21-22 | Aluminum-wrought alloy | 0.5D | 1.5D | Vc | 251 | 251 | 254 | 264 | 267 | 256 | 255 | 261 | 266 | 264 |
| | | | | | fz | 0.15 | 0.167 | 0.168 | 0.168 | 0.169 | 0.167 | 0.167 | 0.167 | 0.167 | 0.167 |
| | | | | | RPM | 20000 | 16000 | 13500 | 10500 | 8500 | 6800 | 5800 | 5200 | 4700 | 4200 |
| | | | | | FEED | 9000 | 8000 | 6800 | 5300 | 4300 | 3400 | 2900 | 2600 | 2350 | 2100 |
| | 23-25 | Aluminum-cast, alloyed | 0.5D | 1.5D | Vc | 251 | 251 | 254 | 264 | 267 | 256 | 255 | 261 | 266 | 264 |
| | | | | | fz | 0.15 | 0.167 | 0.168 | 0.168 | 0.169 | 0.167 | 0.167 | 0.167 | 0.167 | 0.167 |
| | | | | | RPM | 20000 | 16000 | 13500 | 10500 | 8500 | 6800 | 5800 | 5200 | 4700 | 4200 |
| | | | | | FEED | 9000 | 8000 | 6800 | 5300 | 4300 | 3400 | 2900 | 2600 | 2350 | 2100 |



Leading Through Innovation

# SOLID CARBIDE

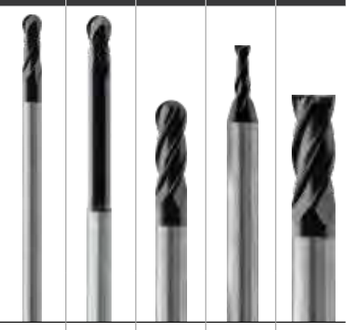
# G-CUT END MILLS

- High performance on graphite
- 高性能加工石墨

# SELECTION GUIDE
## 选用指南

MILLING TOOLS

| SERIES 系列 | EIE21 | EIE23 | EIE22 | EIE25 | EIE26 |
|---|---|---|---|---|---|
| FLUTE 槽数 | 2 | 2 | 4 | 2 | 4 |
| HELIX ANGLE 螺旋角度 | 30° | 30° | 30° | 30° | 30° |
| CUTTING EDGE SHAPE 类型 | BALL NOSE | BALL NOSE | BALL NOSE | SQUARE | SQUARE |
| SIZE MIN 最小尺寸 | R0.05 | R0.5 | R0.5 | D0.1 | D2.0 |
| SIZE MAX 最大尺寸 | R10.0 | R6.0 | R10.0 | D12.0 | D20.0 |
| PAGE 页数 | C431-435 | C436-437 | C438-440 | C441-442 | C443-444 |
| | - | LONG NECK | - | - | - |
| | Diamond | Diamond | Diamond | Diamond | Diamond |



## SOLID CARBIDE
# G-CUT END MILLS
High performance on graphite
高性能加工石墨

Please visit globalyg1.com/mat for material search

◎ : Excellent (优秀) ○ : Good (良好)

Recommended cutting conditions (推荐加工参数) : p.C445

| ISO | VDI 3323 | Material Description 材料描述 | Composition / Structure / Heat Treatment 成分 / 组织 / 热处理 | | HB | HRc | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | About 0.15% C | Annealed | 125 | | | | | | |
| | 2 | | About 0.45% C | Annealed | 190 | 13 | | | | | |
| | 3 | | About 0.45% C | Quenched & Tempered | 250 | 25 | | | | | |
| | 4 | | About 0.75% C | Annealed | 270 | 28 | | | | | |
| | 5 | | About 0.75% C | Quenched & Tempered | 300 | 32 | | | | | |
| | 6 | Low alloy steel | | Annealed | 180 | 10 | | | | | |
| | 7 | | | Quenched & Tempered | 275 | 29 | | | | | |
| | 8 | | | Quenched & Tempered | 300 | 32 | | | | | |
| | 9 | | | Quenched & Tempered | 350 | 38 | | | | | |
| | 10 | High alloyed steel, and tool steel | | Annealed | 200 | 15 | | | | | |
| | 11 | | | Quenched & Tempered | 325 | 35 | | | | | |
| M | 12 | Stainless steel | Ferritic / Martensitic | Annealed | 200 | 15 | | | | | |
| | 13 | | Martensitic | Quenched & Tempered | 240 | 23 | | | | | |
| | 14 | | Austenitic | | 180 | 10 | | | | | |
| K | 15 | Grey cast iron | Pearlitic / ferritic | | 180 | 10 | | | | | |
| | 16 | | Pearlitic (Martensitic) | | 260 | 26 | | | | | |
| | 17 | Nodular cast iron | Ferritic | | 160 | 3 | | | | | |
| | 18 | | Pearlitic | | 250 | 25 | | | | | |
| | 19 | Malleable cast iron | Ferritic | | 130 | | | | | | |
| | 20 | | Pearlitic | | 230 | 21 | | | | | |
| N | 21 | Aluminum-wrought alloy | Not Curable | | 60 | | | | | | |
| | 22 | | Curable | Hardened | 100 | | | | | | |
| | 23 | Aluminum-cast, alloyed | ≤ 12% Si, Not Curable | | 75 | | | | | | |
| | 24 | | ≤ 12% Si, Curable | Hardened | 90 | | | | | | |
| | 25 | | > 12% Si, Not Curable | | 130 | | | | | | |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | Cutting Alloys, PB>1% | | 110 | | | | | | |
| | 27 | | CuZn, CuSnZn (Brass) | | 90 | | | | | | |
| | 28 | | CuSn, lead-free copper and electrolytic copper | | 100 | | | | | | |
| | 29 | Non Metallic Materials | Duroplastic, Fiber Reinforced Plastic | | | | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 30 | | Rubber, Wood, etc. | | | | | | | | |
| S | 31 | Heat Resistant Super Alloys | Fe Based | Annealed | 200 | 15 | | | | | |
| | 32 | | | Cured | 280 | 30 | | | | | |
| | 33 | | Ni or Co Based | Annealed | 250 | 25 | | | | | |
| | 34 | | | Cured | 350 | 38 | | | | | |
| | 35 | | | Cast | 320 | 34 | | | | | |
| | 36 | Titanium Alloys | Pure Titanium | | 400 Rm | | | | | | |
| | 37 | | Alpha + Beta Alloys | Hardened | 1050 Rm | | | | | | |
| H | 38 | Hardened steel | | Hardened | 550 | 55 | | | | | |
| | 39 | | | Hardened | 630 | 60 | | | | | |
| | 40 | Chilled Cast Iron | | Cast | 400 | 42 | | | | | |
| | 41 | Hardened Cast Iron | | Hardened | 550 | 55 | | | | | |

BALL NOSE = 球头　　SQUARE = 平头　　LONG NECK= 长颈





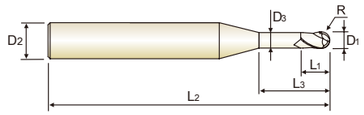
# G-CUT END MILLS

PLAIN SHANK **EIE21** SERIES

## CARBIDE, 2 FLUTE BALL NOSE
## 硬质合金，2刃 球头

- ▶ High quality coating due to YG-1 tailored diamond coating
- ▶ Suitable for Graphite, Reinforced plastics, nonferrous metal etc.
- ▶ Maximized thickness of coating for improvement of wearresistance
- ▶ Available various length below shank and overall lengths for various application

- ▶ 适应高质量的纯金刚石涂层提高涂层的稳定性
- ▶ 可以加工石墨，增强塑料，有色金属等
- ▶ 适应最厚的涂层，以提高耐磨性
- ▶ 各种有效长度和全长会适用于各种尺寸的工件




CARBIDE | 2 | 30° | R ±0.01 | PLAIN

p.C445

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| HYDRAULIC CHUCK SHRINK FIT HOLDER | D15 - 46 D47 - 72 |
| POWER MILLING CHUCK | D161 - 176 |
| ER COLLET CHUCK SK SLIM CHUCK | D73 - 115 D183 - 201 |

Unit(单位) : mm

| EDP No. | Radius of Ball Nose 圆弧角 R(±0.01) | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Length Below Shank 颈长 L3 | Overall Length 全长 L2 | Neck Diameter 颈径 D3 |
|---|---|---|---|---|---|---|---|
| EIE21001 | R0.05 | **0.1** | 4 | 0.2 | - | 45 | - |
| EIE21001003 | R0.05 | **0.1** | 4 | 0.2 | 0.3 | 45 | 0.07 |
| EIE21001005 | R0.05 | **0.1** | 4 | 0.2 | 0.5 | 45 | 0.07 |
| EIE21002 | R0.1 | **0.2** | 4 | 0.6 | - | 45 | - |
| EIE2100201 | R0.1 | **0.2** | 4 | 0.6 | 1.0 | 45 | 0.17 |
| EIE21002015 | R0.1 | **0.2** | 4 | 0.6 | 1.5 | 45 | 0.17 |
| EIE21003 | R0.15 | **0.3** | 4 | 1 | - | 45 | - |
| EIE21003015 | R0.15 | **0.3** | 4 | 1 | 1.5 | 45 | 0.27 |
| EIE2100302 | R0.15 | **0.3** | 4 | 1 | 2.0 | 45 | 0.27 |
| EIE21004 | R0.2 | **0.4** | 4 | 1.2 | - | 45 | - |
| EIE2100402 | R0.2 | **0.4** | 4 | 1.2 | 2.0 | 45 | 0.37 |
| EIE2100403 | R0.2 | **0.4** | 4 | 1.2 | 3.0 | 45 | 0.37 |
| EIE2100404 | R0.2 | **0.4** | 4 | 1.2 | 4.0 | 45 | 0.37 |
| EIE21005 | R0.25 | **0.5** | 4 | 1.5 | - | 45 | - |
| EIE2100503 | R0.25 | **0.5** | 4 | 1.5 | 3.0 | 45 | 0.45 |
| EIE2100504 | R0.25 | **0.5** | 4 | 1.5 | 4.0 | 45 | 0.45 |
| EIE2100505 | R0.25 | **0.5** | 4 | 1.5 | 5.0 | 45 | 0.45 |
| EIE2100506 | R0.25 | **0.5** | 4 | 1.5 | 6.0 | 45 | 0.45 |
| EIE2100508 | R0.25 | **0.5** | 4 | 1.5 | 8.0 | 45 | 0.45 |
| EIE21006 | R0.3 | **0.6** | 4 | 2 | - | 45 | - |
| EIE2100604 | R0.3 | **0.6** | 4 | 2 | 4.0 | 45 | 0.55 |
| EIE2100605 | R0.3 | **0.6** | 4 | 2 | 5.0 | 45 | 0.55 |
| EIE2100606 | R0.3 | **0.6** | 4 | 2 | 6.0 | 45 | 0.55 |
| EIE2100608 | R0.3 | **0.6** | 4 | 2 | 8.0 | 45 | 0.55 |

▶ NEXT PAGE 下页

| Size 尺寸 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|
| up to Ø12 Ø12以下 | 0 ~ - 0.02 | h5 |
| over Ø12 超过Ø12 | 0 ~ - 0.03 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | | | | | | | | | | | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | ◎ | | | | | | | | | | | | |

# G-CUT END MILLS

PLAIN SHANK **EIE21 SERIES**

## CARBIDE, 2 FLUTE BALL NOSE
## 硬质合金，2刃 球头

- ▶ High quality coating due to YG-1 tailored diamond coating
- ▶ Suitable for Graphite, Reinforced plastics, nonferrous metal etc.
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- ▶ Available various length below shank and overall lengths for various application

- ▶ 适应高质量的纯金刚石涂层提高涂层的稳定性
- ▶ 可以加工石墨，增强塑料，有色金属等
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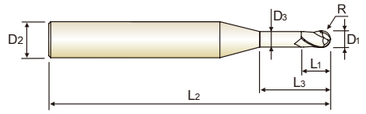
- ▶ 各种有效长度和全长会适用于各种尺寸的工件




CARBIDE | 2 | 30° | R ±0.01 | PLAIN

p.C445

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| HYDRAULIC CHUCK SHRINK FIT HOLDER | D15 - 46 D47 - 72 |
| POWER MILLING CHUCK | D161 - 176 |
| ER COLLET CHUCK SK SLIM CHUCK | D73 - 115 D183 - 201 |

Unit(单位) : mm

| EDP No. | Radius of Ball Nose 圆弧角 | Mill Diameter 直径 | Shank Diameter 柄径 | Length of Cut 刃长 | Length Below Shank 颈长 | Overall Length 全长 | Neck Diameter 颈径 |
|---|---|---|---|---|---|---|---|
| | R(±0.01) | D1 | D2 | L1 | L3 | L2 | D3 |
| EIE2100610 | R0.3 | 0.6 | 4 | 2 | 10.0 | 45 | 0.55 |
| EIE21008 | R0.4 | 0.8 | 4 | 2.5 | - | 45 | - |
| EIE2100804 | R0.4 | 0.8 | 4 | 2.5 | 4.0 | 45 | 0.75 |
| EIE2100805 | R0.4 | 0.8 | 4 | 2.5 | 5.0 | 45 | 0.75 |
| EIE2100806 | R0.4 | 0.8 | 4 | 2.5 | 6.0 | 45 | 0.75 |
| EIE2100808 | R0.4 | 0.8 | 4 | 2.5 | 8.0 | 45 | 0.75 |
| EIE2100810 | R0.4 | 0.8 | 4 | 2.5 | 10.0 | 45 | 0.75 |
| EIE21010 | R0.5 | 1.0 | 4 | 3 | - | 60 | - |
| EIE2101010 | R0.5 | 1.0 | 4 | 3 | 10.0 | 60 | 0.95 |
| EIE2101012 | R0.5 | 1.0 | 4 | 3 | 12.0 | 60 | 0.95 |
| EIE2101015 | R0.5 | 1.0 | 4 | 3 | 15.0 | 60 | 0.95 |
| EIE2101020 | R0.5 | 1.0 | 4 | 3 | 20.0 | 60 | 0.95 |
| EIE2101025 | R0.5 | 1.0 | 4 | 3 | 25.0 | 80 | 0.95 |
| EIE2101030 | R0.5 | 1.0 | 4 | 3 | 30.0 | 80 | 0.95 |
| EIE2101035 | R0.5 | 1.0 | 4 | 3 | 35.0 | 80 | 0.95 |
| EIE2101040 | R0.5 | 1.0 | 4 | 3 | 40.0 | 100 | 0.95 |
| EIE2101050 | R0.5 | 1.0 | 4 | 3 | 50.0 | 100 | 0.95 |
| EIE21015 | R0.75 | 1.5 | 4 | 4 | - | 60 | - |
| EIE2101510 | R0.75 | 1.5 | 4 | 4 | 10.0 | 80 | 1.45 |
| EIE2101515 | R0.75 | 1.5 | 4 | 4 | 15.0 | 80 | 1.45 |
| EIE2101520 | R0.75 | 1.5 | 4 | 4 | 20.0 | 80 | 1.45 |
| EIE2101525 | R0.75 | 1.5 | 4 | 4 | 25.0 | 80 | 1.45 |
| EIE2101530 | R0.75 | 1.5 | 4 | 4 | 30.0 | 80 | 1.45 |
| EIE2101535 | R0.75 | 1.5 | 4 | 4 | 35.0 | 80 | 1.45 |

▶ NEXT PAGE 下页

| Size 尺寸 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
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| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | | | | | | | | | | | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | ◎ | | | | | | | | | | | | |



G-CUT END MILLS

PLAIN SHANK EIE21 SERIES

CARBIDE, 2 FLUTE BALL NOSE
硬质合金，2刃 球头

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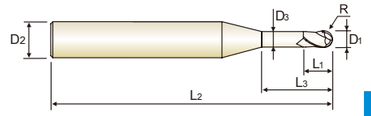


CARBIDE | 2 | 30° | R ±0.01 | PLAIN

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Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| HYDRAULIC CHUCK SHRINK FIT HOLDER | D15 - 46 D47 - 72 |
| POWER MILLING CHUCK | D161 - 176 |
| ER COLLET CHUCK SK SLIM CHUCK | D73 - 115 D183 - 201 |

Unit(单位) : mm

| EDP No. | Radius of Ball Nose 圆弧角 | Mill Diameter 直径 | Shank Diameter 柄径 | Length of Cut 刃长 | Length Below Shank 颈长 | Overall Length 全长 | Neck Diameter 颈径 |
|---|---|---|---|---|---|---|---|
| | R(±0.01) | D1 | D2 | L1 | L3 | L2 | D3 |
| EIE2101540 | R0.75 | 1.5 | 4 | 4 | 40.0 | 100 | 1.45 |
| EIE2101550 | R0.75 | 1.5 | 4 | 4 | 50.0 | 100 | 1.45 |
| EIE2101560 | R0.75 | 1.5 | 4 | 4 | 60.0 | 110 | 1.45 |
| EIE21020 | R1.0 | 2.0 | 4 | 6 | - | 60 | - |
| EIE2102010 | R1.0 | 2.0 | 4 | 6 | 10.0 | 80 | 1.95 |
| EIE2102015 | R1.0 | 2.0 | 4 | 6 | 15.0 | 80 | 1.95 |
| EIE2102020 | R1.0 | 2.0 | 4 | 6 | 20.0 | 80 | 1.95 |
| EIE2102025 | R1.0 | 2.0 | 4 | 6 | 25.0 | 80 | 1.95 |
| EIE2102030 | R1.0 | 2.0 | 4 | 6 | 30.0 | 80 | 1.95 |
| EIE2102035 | R1.0 | 2.0 | 4 | 6 | 35.0 | 80 | 1.95 |
| EIE2102040 | R1.0 | 2.0 | 4 | 6 | 40.0 | 100 | 1.95 |
| EIE2102050 | R1.0 | 2.0 | 4 | 6 | 50.0 | 100 | 1.95 |
| EIE2102060 | R1.0 | 2.0 | 4 | 6 | 60.0 | 110 | 1.95 |
| EIE210303S | R1.5 | 3.0 | 3 | 15 | - | 100 | - |
| EIE21030 | R1.5 | 3.0 | 4 | 9 | - | 60 | - |
| EIE2103015 | R1.5 | 3.0 | 4 | 9 | 15.0 | 100 | 2.89 |
| EIE2103020 | R1.5 | 3.0 | 4 | 9 | 20.0 | 100 | 2.89 |
| EIE2103025 | R1.5 | 3.0 | 4 | 9 | 25.0 | 100 | 2.89 |
| EIE2103030 | R1.5 | 3.0 | 4 | 9 | 30.0 | 100 | 2.89 |
| EIE2103035 | R1.5 | 3.0 | 4 | 9 | 35.0 | 100 | 2.89 |
| EIE2103040 | R1.5 | 3.0 | 4 | 9 | 40.0 | 100 | 2.89 |
| EIE2103050 | R1.5 | 3.0 | 4 | 9 | 50.0 | 100 | 2.89 |
| EIE2103060 | R1.5 | 3.0 | 4 | 9 | 60.0 | 110 | 2.89 |
| EIE21040060 | R2.0 | 4.0 | 4 | 12 | - | 60 | - |

▶ NEXT PAGE 下页

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| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | | | | | | | | | | | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | ◎ | | | | | | | | | | | | |

# G-CUT END MILLS

PLAIN SHANK **EIE21 SERIES**

## CARBIDE, 2 FLUTE BALL NOSE
## 硬质合金，2刃 球头

- ▶ High quality coating due to YG-1 tailored diamond coating
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CARBIDE | 2 | 30° | R ±0.01 | PLAIN | p.C445

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| HYDRAULIC CHUCK SHRINK FIT HOLDER | D15 - 46 D47 - 72 |
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Unit(单位) : mm

| EDP No. | Radius of Ball Nose 圆弧角 R(±0.01) | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Length Below Shank 颈长 L3 | Overall Length 全长 L2 | Neck Diameter 颈径 D3 |
|---|---|---|---|---|---|---|---|
| EIE21040080 | R2.0 | **4.0** | 4 | 12 | - | 80 | - |
| EIE21040110 | R2.0 | **4.0** | 4 | 12 | - | 110 | - |
| EIE21040130 | R2.0 | **4.0** | 4 | 12 | - | 130 | - |
| EIE21040150 | R2.0 | **4.0** | 4 | 12 | - | 150 | - |
| EIE21050080 | R2.5 | **5.0** | 6 | 15 | 30.0 | 80 | 4.90 |
| EIE21050100 | R2.5 | **5.0** | 6 | 15 | 30.0 | 100 | 4.90 |
| EIE21060090 | R3.0 | **6.0** | 6 | 20 | - | 90 | - |
| EIE21060110 | R3.0 | **6.0** | 6 | 20 | - | 110 | - |
| EIE21060130 | R3.0 | **6.0** | 6 | 20 | - | 130 | - |
| EIE21060150 | R3.0 | **6.0** | 6 | 20 | - | 150 | - |
| EIE21060180 | R3.0 | **6.0** | 6 | 20 | - | 180 | - |
| EIE21080080 | R4.0 | **8.0** | 8 | 25 | - | 80 | - |
| EIE21080110 | R4.0 | **8.0** | 8 | 25 | - | 110 | - |
| EIE21080130 | R4.0 | **8.0** | 8 | 25 | - | 130 | - |
| EIE21080150 | R4.0 | **8.0** | 8 | 25 | - | 150 | - |
| EIE21080200 | R4.0 | **8.0** | 8 | 25 | - | 200 | - |
| EIE21100080 | R5.0 | **10.0** | 10 | 30 | - | 80 | - |
| EIE21100110 | R5.0 | **10.0** | 10 | 30 | - | 110 | - |
| EIE21100130 | R5.0 | **10.0** | 10 | 30 | - | 130 | - |
| EIE21100150 | R5.0 | **10.0** | 10 | 30 | - | 150 | - |
| EIE21100180 | R5.0 | **10.0** | 10 | 30 | - | 180 | - |
| EIE21100200 | R5.0 | **10.0** | 10 | 30 | - | 200 | - |
| EIE21120110 | R6.0 | **12.0** | 12 | 35 | - | 110 | - |
| EIE21120130 | R6.0 | **12.0** | 12 | 35 | - | 130 | - |

▶ NEXT PAGE 下页

| Size 尺寸 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|
| up to Ø12 Ø12以下 | 0 ~ - 0.02 | h5 |
| over Ø12 超过Ø12 | 0 ~ - 0.03 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | | | | | | | | | | | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | ◎ | | | | | | | | | | | | |



G-CUT END MILLS

PLAIN SHANK EIE21 SERIES

CARBIDE, 2 FLUTE BALL NOSE
硬质合金，2刃 球头

▶ High quality coating due to YG-1 tailored diamond coating
▶ Suitable for Graphite, Reinforced plastics, nonferrous metal etc.
▶ Maximized thickness of coating for improvement of wearresistance
▶ Available various length below shank and overall lengths for various application

▶ 适应高质量的纯金刚石涂层提高涂层的稳定性
▶ 可以加工石墨，增强塑料，有色金属等
▶ 适应最厚的涂层，以提高耐磨性
▶ 各种有效长度和全长会适用于各种尺寸的工件

CARBIDE | 2 | 30° | R ±0.01 | PLAIN | p.C445

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| HYDRAULIC CHUCK SHRINK FIT HOLDER | D15 - 46 D47 - 72 |
| POWER MILLING CHUCK | D161 - 176 |
| ER COLLET CHUCK SK SLIM CHUCK | D73 - 115 D183 - 201 |

Unit(单位) : mm

| EDP No. | Radius of Ball Nose 圆弧角 R(±0.01) | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Length Below Shank 颈长 L3 | Overall Length 全长 L2 | Neck Diameter 颈径 D3 |
|---|---|---|---|---|---|---|---|
| EIE21120150 | R6.0 | **12.0** | 12 | 35 | - | 150 | - |
| EIE21120180 | R6.0 | **12.0** | 12 | 35 | - | 180 | - |
| EIE21120200 | R6.0 | **12.0** | 12 | 35 | - | 200 | - |
| EIE21160150 | R8.0 | **16.0** | 16 | 50 | - | 150 | - |
| EIE21160200 | R8.0 | **16.0** | 16 | 50 | - | 200 | - |
| EIE21200150 | R10.0 | **20.0** | 20 | 60 | - | 150 | - |
| EIE21200200 | R10.0 | **20.0** | 20 | 60 | - | 200 | - |

| Size 尺寸 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|
| up to Ø12 Ø12以下 | 0 ~ - 0.02 | h5 |
| over Ø12 超过Ø12 | 0 ~ - 0.03 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | | | | | | | | | | | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | ◎ | | | | | | | | | | | | |

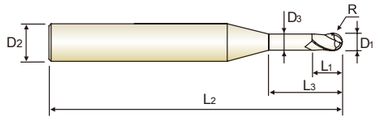
# G-CUT END MILLS

PLAIN SHANK **EIE23 SERIES**

## CARBIDE, 2F BALL NOSE LONG NECK
## 硬质合金，2刃 球头 长颈

- ▶ High quality coating due to YG-1 tailored diamond coating
- ▶ Suitable for Graphite, Reinforced plastics, nonferrous metal etc.
- ▶ Maximized thickness of coating for improvement of wearresistance
- ▶ Available various length below shank and overall lengths for various application

- ▶ 适应高质量的纯金刚石涂层提高涂层的稳定性
- ▶ 可以加工石墨，增强塑料，有色金属等
- ▶ 适应最厚的涂层，以提高耐磨性
- ▶ 各种有效长度和全长会适用于各种尺寸的工件




CARBIDE | 2 | 30° | R ±0.01 | PLAIN | p.C445

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| HYDRAULIC CHUCK SHRINK FIT HOLDER | D15 - 46 D47 - 72 |
| POWER MILLING CHUCK | D161 - 176 |
| ER COLLET CHUCK SK SLIM CHUCK | D73 - 115 D183 - 201 |

Unit(单位) : mm

| EDP No. | Radius of Ball Nose 圆弧角 | Mill Diameter 直径 | Shank Diameter 柄径 | Length of Cut 刃长 | Length Below Shank 颈长 | Overall Length 全长 | Neck Diameter 颈径 |
|---|---|---|---|---|---|---|---|
| | R(±0.01) | D1 | D2 | L1 | L3 | L2 | D3 |
| EIE2301004 | R0.5 | 1.0 | 4 | 2 | 4 | 50 | 0.95 |
| EIE2301005 | R0.5 | 1.0 | 4 | 2 | 5 | 50 | 0.95 |
| EIE2301006 | R0.5 | 1.0 | 4 | 2 | 6 | 50 | 0.95 |
| EIE2301008 | R0.5 | 1.0 | 4 | 2 | 8 | 50 | 0.95 |
| EIE2301010 | R0.5 | 1.0 | 4 | 2 | 10 | 50 | 0.95 |
| EIE2301012 | R0.5 | 1.0 | 4 | 2 | 12 | 50 | 0.95 |
| EIE2301016 | R0.5 | 1.0 | 4 | 2 | 16 | 50 | 0.95 |
| EIE2301018 | R0.5 | 1.0 | 4 | 2 | 18 | 50 | 0.95 |
| EIE2301020 | R0.5 | 1.0 | 4 | 2 | 20 | 50 | 0.95 |
| EIE2301504 | R0.75 | 1.5 | 4 | 3 | 4 | 50 | 1.40 |
| EIE2301506 | R0.75 | 1.5 | 4 | 3 | 6 | 50 | 1.40 |
| EIE2301508 | R0.75 | 1.5 | 4 | 3 | 8 | 50 | 1.40 |
| EIE2301510 | R0.75 | 1.5 | 4 | 3 | 10 | 50 | 1.40 |
| EIE2301512 | R0.75 | 1.5 | 4 | 3 | 12 | 50 | 1.40 |
| EIE2301516 | R0.75 | 1.5 | 4 | 3 | 16 | 50 | 1.40 |
| EIE2301520 | R0.75 | 1.5 | 4 | 3 | 20 | 50 | 1.40 |
| EIE2301525 | R0.75 | 1.5 | 4 | 3 | 25 | 60 | 1.40 |
| EIE2302006 | R1.0 | 2.0 | 4 | 4 | 6 | 50 | 1.90 |
| EIE2302008 | R1.0 | 2.0 | 4 | 4 | 8 | 50 | 1.90 |
| EIE2302010 | R1.0 | 2.0 | 4 | 4 | 10 | 50 | 1.90 |
| EIE2302012 | R1.0 | 2.0 | 4 | 4 | 12 | 50 | 1.90 |
| EIE2302016 | R1.0 | 2.0 | 4 | 4 | 16 | 50 | 1.90 |
| EIE2302018 | R1.0 | 2.0 | 4 | 4 | 18 | 50 | 1.90 |
| EIE2302020 | R1.0 | 2.0 | 4 | 4 | 20 | 50 | 1.90 |

▶ NEXT PAGE 下页

| Size 尺寸 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|
| up to Ø12 Ø12以下 | 0 ~ - 0.02 | h5 |
| over Ø12 超过Ø12 | 0 ~ - 0.03 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | | | | | | | | | | | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | ◎ | | | | | | | | | | | | |



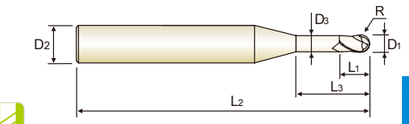
G-CUT END MILLS

PLAIN SHANK EIE23 SERIES

CARBIDE, 2F BALL NOSE LONG NECK
硬质合金，2刃 球头 长颈

▶ High quality coating due to YG-1 tailored diamond coating
▶ Suitable for Graphite, Reinforced plastics, nonferrous metal etc.
▶ Maximized thickness of coating for improvement of wearresistance
▶ Available various length below shank and overall lengths for various application

▶ 适应高质量的纯金刚石涂层提高涂层的稳定性
▶ 可以加工石墨，增强塑料，有色金属等
▶ 适应最厚的涂层，以提高耐磨性
▶ 各种有效长度和全长会适用于各种尺寸的工件




CARBIDE | 2 | 30° | R ±0.01 | PLAIN | p.C445

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| HYDRAULIC CHUCK SHRINK FIT HOLDER | D15 - 46 D47 - 72 |
| POWER MILLING CHUCK | D161 - 176 |
| ER COLLET CHUCK SK SLIM CHUCK | D73 - 115 D183 - 201 |

Unit(单位) : mm

| EDP No. | Radius of Ball Nose 圆弧角 | Mill Diameter 直径 | Shank Diameter 柄径 | Length of Cut 刃长 | Length Below Shank 颈长 | Overall Length 全长 | Neck Diameter 颈径 |
|---|---|---|---|---|---|---|---|
| | R(±0.01) | D1 | D2 | L1 | L3 | L2 | D3 |
| EIE2302025 | R1.0 | 2.0 | 4 | 4 | 25 | 60 | 1.90 |
| EIE2302030 | R1.0 | 2.0 | 4 | 4 | 30 | 70 | 1.90 |
| EIE2303008 | R1.5 | 3.0 | 6 | 6 | 8 | 50 | 2.90 |
| EIE2303010 | R1.5 | 3.0 | 6 | 6 | 10 | 50 | 2.90 |
| EIE2303012 | R1.5 | 3.0 | 6 | 6 | 12 | 50 | 2.90 |
| EIE2303016 | R1.5 | 3.0 | 6 | 6 | 16 | 60 | 2.90 |
| EIE2303020 | R1.5 | 3.0 | 6 | 6 | 20 | 60 | 2.90 |
| EIE2303025 | R1.5 | 3.0 | 6 | 6 | 25 | 65 | 2.90 |
| EIE2303030 | R1.5 | 3.0 | 6 | 6 | 30 | 70 | 2.90 |
| EIE2303040 | R1.5 | 3.0 | 6 | 6 | 40 | 80 | 2.90 |
| EIE2304010 | R2.0 | 4.0 | 6 | 8 | 10 | 50 | 3.90 |
| EIE2304012 | R2.0 | 4.0 | 6 | 8 | 12 | 50 | 3.90 |
| EIE2304016 | R2.0 | 4.0 | 6 | 8 | 16 | 60 | 3.90 |
| EIE2304020 | R2.0 | 4.0 | 6 | 8 | 20 | 60 | 3.90 |
| EIE2304025 | R2.0 | 4.0 | 6 | 8 | 25 | 65 | 3.90 |
| EIE2304030 | R2.0 | 4.0 | 6 | 8 | 30 | 70 | 3.90 |
| EIE2304040 | R2.0 | 4.0 | 6 | 8 | 40 | 80 | 3.90 |
| EIE2304050 | R2.0 | 4.0 | 6 | 8 | 50 | 100 | 3.90 |
| EIE2306030 | R3.0 | 6.0 | 6 | 12 | 30 | 90 | 5.60 |
| EIE2306050 | R3.0 | 6.0 | 6 | 12 | 50 | 90 | 5.60 |
| EIE2308040 | R4.0 | 8.0 | 8 | 16 | 40 | 100 | 7.40 |
| EIE2308055 | R4.0 | 8.0 | 8 | 16 | 55 | 100 | 7.40 |
| EIE2310050 | R5.0 | 10.0 | 10 | 20 | 50 | 110 | 9.40 |
| EIE2312060 | R6.0 | 12.0 | 12 | 24 | 60 | 110 | 11.40 |

| Size 尺寸 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|
| up to Ø12 Ø12以下 | 0 ~ - 0.02 | h5 |
| over Ø12 超过Ø12 | 0 ~ - 0.03 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | | | | | | | | | | | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | ◎ | | | | | | | | | | | | |

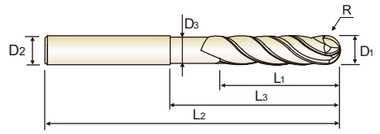
# G-CUT END MILLS

PLAIN SHANK **EIE22 SERIES**

## CARBIDE, 4 FLUTE BALL NOSE
## 硬质合金，4刃 球头

- ▶ High quality coating due to YG-1 tailored diamond coating
- ▶ Suitable for Graphite, Reinforced plastics, nonferrous metal etc.
- ▶ Available high feed cutting and improvement of productivity due to 4 flute ball end mills
- ▶ Center match type to improve surface roughness

- ▶ 适应高质量的纯金刚石涂层提高涂层的稳定性
- ▶ 可以加工石墨，增强塑料，有色金属等
- ▶ 适应4刃球头可实现高进给切削并提高生产率
- ▶ 适应中心匹配类型可改善表面糙度




CARBIDE | 2 | 30° | R ±0.01 | PLAIN | p.C445

Recommended ToolHolder

| | Plain Shank | Page |
|---|---|---|
| HYDRAULIC CHUCK SHRINK FIT HOLDER | | D15 - 46 D47 - 72 |
| POWER MILLING CHUCK | | D161 - 176 |
| ER COLLET CHUCK SK SLIM CHUCK | | D73 - 115 D183 - 201 |

Unit(单位) : mm

| EDP No. | Radius of Ball Nose 圆弧角 R(±0.01) | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Length Below Shank 颈长 L3 | Overall Length 全长 L2 | Neck Diameter 颈径 D3 |
|---|---|---|---|---|---|---|---|
| **EIE22010** | R0.5 | **1.0** | 4 | 3 | - | 60 | - |
| **EIE2201010** | R0.5 | **1.0** | 4 | 3 | 10 | 60 | 0.95 |
| **EIE2201015** | R0.5 | **1.0** | 4 | 3 | 15 | 60 | 0.95 |
| **EIE2201020** | R0.5 | **1.0** | 4 | 3 | 20 | 60 | 0.95 |
| **EIE2201025** | R0.5 | **1.0** | 4 | 3 | 25 | 80 | 0.95 |
| **EIE2201030** | R0.5 | **1.0** | 4 | 3 | 30 | 80 | 0.95 |
| **EIE22015** | R0.75 | **1.5** | 4 | 4 | - | 60 | - |
| **EIE2201510** | R0.75 | **1.5** | 4 | 4 | 10 | 80 | 1.45 |
| **EIE2201515** | R0.75 | **1.5** | 4 | 4 | 15 | 80 | 1.45 |
| **EIE2201520** | R0.75 | **1.5** | 4 | 4 | 20 | 80 | 1.45 |
| **EIE2201525** | R0.75 | **1.5** | 4 | 4 | 25 | 80 | 1.45 |
| **EIE2201530** | R0.75 | **1.5** | 4 | 4 | 30 | 80 | 1.45 |
| **EIE22020** | R1.0 | **2.0** | 4 | 6 | - | 60 | - |
| **EIE2202010** | R1.0 | **2.0** | 4 | 6 | 10 | 80 | 1.95 |
| **EIE2202015** | R1.0 | **2.0** | 4 | 6 | 15 | 80 | 1.95 |
| **EIE2202020** | R1.0 | **2.0** | 4 | 6 | 20 | 80 | 1.95 |
| **EIE2202025** | R1.0 | **2.0** | 4 | 6 | 25 | 80 | 1.95 |
| **EIE2202030** | R1.0 | **2.0** | 4 | 6 | 30 | 80 | 1.95 |
| **EIE2202040** | R1.0 | **2.0** | 4 | 6 | 40 | 100 | 1.95 |
| **EIE22030** | R1.5 | **3.0** | 4 | 9 | - | 60 | - |
| **EIE2203015** | R1.5 | **3.0** | 4 | 9 | 15 | 100 | 2.85 |
| **EIE2203020** | R1.5 | **3.0** | 4 | 9 | 20 | 100 | 2.85 |
| **EIE2203025** | R1.5 | **3.0** | 4 | 9 | 25 | 100 | 2.85 |
| **EIE2203030** | R1.5 | **3.0** | 4 | 9 | 30 | 100 | 2.85 |

▶ NEXT PAGE 下页

| Size 尺寸 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|
| up to Ø12 Ø12以下 | 0 ~ - 0.02 | h5 |
| over Ø12 超过Ø12 | 0 ~ - 0.03 | |

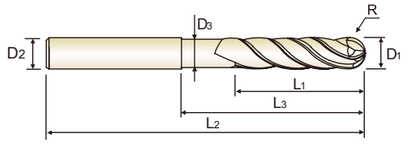
◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | | | | | | | | | | | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | ◎ | | | | | | | | | | | | |



G-CUT END MILLS
PLAIN SHANK EIE22 SERIES
CARBIDE, 4 FLUTE BALL NOSE
硬质合金，4刃 球头
▶ High quality coating due to YG-1 tailored diamond coating
▶ Suitable for Graphite, Reinforced plastics, nonferrous metal etc.
▶ Available high feed cutting and improvement of productivity due to 4 flute ball end mills
▶ Center match type to improve surface roughness
▶ 适应高质量的纯金刚石涂层提高涂层的稳定性
▶ 可以加工石墨，增强塑料，有色金属等
▶ 适应4刃球头可实现高进给切削并提高生产率
▶ 适应中心匹配类型可改善表面糙度




CARBIDE | 2 | 30° | R ±0.01 | PLAIN | p.C445
Recommended ToolHolder
Plain Shank Page
HYDRAULIC CHUCK SHRINK FIT HOLDER D15 - 46 D47 - 72
POWER MILLING CHUCK D161 - 176
ER COLLET CHUCK SK SLIM CHUCK D73 - 115 D183 - 201
Unit(单位) : mm

| EDP No. | Radius of Ball Nose 圆弧角 R(±0.01) | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Length Below Shank 颈长 L3 | Overall Length 全长 L2 | Neck Diameter 颈径 D3 |
|---|---|---|---|---|---|---|---|
| **EIE2203040** | R1.5 | **3.0** | 4 | 9 | 40 | 100 | 2.85 |
| **EIE2203050** | R1.5 | **3.0** | 4 | 9 | 50 | 100 | 2.85 |
| **EIE22040060** | R2.0 | **4.0** | 4 | 12 | - | 60 | - |
| **EIE22040080** | R2.0 | **4.0** | 4 | 12 | - | 80 | - |
| **EIE22040110** | R2.0 | **4.0** | 4 | 12 | - | 110 | - |
| **EIE22040130** | R2.0 | **4.0** | 4 | 12 | - | 130 | - |
| **EIE22040150** | R2.0 | **4.0** | 4 | 12 | - | 150 | - |
| **EIE22050080** | R2.5 | **5.0** | 6 | 15 | - | 80 | - |
| **EIE22050110** | R2.5 | **5.0** | 6 | 15 | - | 110 | - |
| **EIE22050130** | R2.5 | **5.0** | 6 | 15 | - | 130 | - |
| **EIE22050150** | R2.5 | **5.0** | 6 | 15 | - | 150 | - |
| **EIE22060090** | R3.0 | **6.0** | 6 | 20 | - | 90 | - |
| **EIE22060110** | R3.0 | **6.0** | 6 | 20 | - | 110 | - |
| **EIE22060130** | R3.0 | **6.0** | 6 | 20 | - | 130 | - |
| **EIE22060150** | R3.0 | **6.0** | 6 | 20 | - | 150 | - |
| **EIE22060180** | R3.0 | **6.0** | 6 | 20 | - | 180 | - |
| **EIE22080110** | R4.0 | **8.0** | 8 | 25 | - | 110 | - |
| **EIE22080130** | R4.0 | **8.0** | 8 | 25 | - | 130 | - |
| **EIE22080150** | R4.0 | **8.0** | 8 | 25 | - | 150 | - |
| **EIE22080200** | R4.0 | **8.0** | 8 | 25 | - | 200 | - |
| **EIE22100110** | R5.0 | **10.0** | 10 | 30 | - | 110 | - |
| **EIE22100130** | R5.0 | **10.0** | 10 | 30 | - | 130 | - |
| **EIE22100150** | R5.0 | **10.0** | 10 | 30 | - | 150 | - |
| **EIE22100180** | R5.0 | **10.0** | 10 | 30 | - | 180 | - |

▶ NEXT PAGE 下页

| Size 尺寸 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|
| up to Ø12 Ø12以下 | 0 ~ - 0.02 | h5 |
| over Ø12 超过Ø12 | 0 ~ - 0.03 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | | | | | | | | | | | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | ◎ | | | | | | | | | | | | |

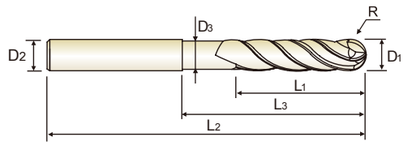
# G-CUT END MILLS

PLAIN SHANK **EIE22 SERIES**

## CARBIDE, 4 FLUTE BALL NOSE
## 硬质合金，4刃 球头

- ▶ High quality coating due to YG-1 tailored diamond coating
- ▶ Suitable for Graphite, Reinforced plastics, nonferrous metal etc.
- ▶ Available high feed cutting and improvement of productivity due to 4 flute ball end mills
- ▶ Center match type to improve surface roughness

- ▶ 适应高质量的纯金刚石涂层提高涂层的稳定性
- ▶ 可以加工石墨，增强塑料，有色金属等
- ▶ 适应4刃球头可实现高进给切削并提高生产率
- ▶ 适应中心匹配类型可改善表面糙度




CARBIDE | 2 | 30° | R ±0.01 | PLAIN p.C445

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| HYDRAULIC CHUCK SHRINK FIT HOLDER | D15 - 46 D47 - 72 |
| POWER MILLING CHUCK | D161 - 176 |
| ER COLLET CHUCK SK SLIM CHUCK | D73 - 115 D183 - 201 |

Unit(单位) : mm

| EDP No. | Radius of Ball Nose 圆弧角 R(±0.01) | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Length Below Shank 颈长 L3 | Overall Length 全长 L2 | Neck Diameter 颈径 D3 |
|---|---|---|---|---|---|---|---|
| EIE22100200 | R5.0 | **10.0** | 10 | 30 | - | 200 | - |
| EIE22120110 | R6.0 | **12.0** | 12 | 35 | - | 110 | - |
| EIE22120130 | R6.0 | **12.0** | 12 | 35 | - | 130 | - |
| EIE22120150 | R6.0 | **12.0** | 12 | 35 | - | 150 | - |
| EIE22120180 | R6.0 | **12.0** | 12 | 35 | - | 180 | - |
| EIE22120200 | R6.0 | **12.0** | 12 | 35 | - | 200 | - |
| EIE22160150 | R8.0 | **16.0** | 16 | 50 | - | 150 | - |
| EIE22160200 | R8.0 | **16.0** | 16 | 50 | - | 200 | - |
| EIE22200150 | R10.0 | **20.0** | 20 | 60 | - | 150 | - |
| EIE22200200 | R10.0 | **20.0** | 20 | 60 | - | 200 | - |

| Size 尺寸 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|
| up to Ø12 Ø12以下 | 0 ~ - 0.02 | h5 |
| over Ø12 超过Ø12 | 0 ~ - 0.03 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | | | | | | | | | | | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | ◎ | | | | | | | | | | | | |



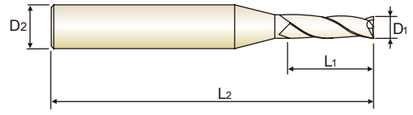
# G-CUT END MILLS

PLAIN SHANK **EIE25 SERIES**

## CARBIDE, 2 FLUTE
## 硬质合金，2刃

- ▶ High quality coating due to YG-1 tailored diamond coating
- ▶ Suitable for Graphite, Reinforced plastics, nonferrous metal etc.
- ▶ Available various cutting lengths and overall lengths

- ▶ 适应高质量的纯金刚石涂层提高涂层的稳定性
- ▶ 可以加工石墨，增强塑料，有色金属等
- ▶ 采用各种刃长度和总长




CARBIDE | 2 | 30° | PLAIN p.C445

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| HYDRAULIC CHUCK SHRINK FIT HOLDER | D15 - 46 D47 - 72 |
| POWER MILLING CHUCK | D161 - 176 |
| ER COLLET CHUCK SK SLIM CHUCK | D73 - 115 D183 - 201 |

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Overall Length 全长 L2 |
|---|---|---|---|---|
| EIE25001 | **0.1** | 4 | 0.2 | 40 |
| EIE25002 | **0.2** | 4 | 0.4 | 40 |
| EIE25003 | **0.3** | 4 | 0.6 | 40 |
| EIE25004 | **0.4** | 4 | 0.8 | 40 |
| EIE25005 | **0.5** | 4 | 1 | 40 |
| EIE25006 | **0.6** | 4 | 1.2 | 40 |
| EIE25007 | **0.7** | 4 | 1.4 | 40 |
| EIE25008 | **0.8** | 4 | 1.6 | 40 |
| EIE25009 | **0.9** | 4 | 1.8 | 40 |
| EIE25010 | **1.0** | 4 | 2.5 | 50 |
| EIE2501004 | **1.0** | 4 | 4 | 50 |
| EIE2501006 | **1.0** | 4 | 6 | 50 |
| EIE25012 | **1.2** | 4 | 3 | 50 |
| EIE2501206 | **1.2** | 4 | 6 | 50 |
| EIE25015 | **1.5** | 4 | 4 | 50 |
| EIE2501506 | **1.5** | 4 | 6 | 50 |
| EIE2501508 | **1.5** | 4 | 8 | 50 |
| EIE25020 | **2.0** | 4 | 6 | 50 |
| EIE2502008 | **2.0** | 4 | 8 | 50 |
| EIE2502010 | **2.0** | 4 | 10 | 50 |
| EIE25025 | **2.5** | 4 | 8 | 50 |
| EIE25030 | **3.0** | 6 | 8 | 50 |
| EIE2503010 | **3.0** | 6 | 10 | 50 |
| EIE2503012 | **3.0** | 6 | 12 | 50 |

▶ NEXT PAGE 下页

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.03 | h5 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | | | | | | | | | | | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | ◎ | | | | | | | | | | | | |

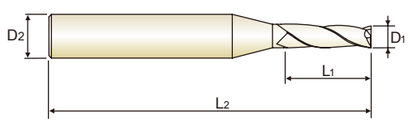
# G-CUT END MILLS

PLAIN SHANK **EIE25 SERIES**

## CARBIDE, 2 FLUTE
## 硬质合金，2刃

- ▶ High quality coating due to YG-1 tailored diamond coating
- ▶ Suitable for Graphite, Reinforced plastics, nonferrous metal etc.
- ▶ Available various cutting lengths and overall lengths

- ▶ 适应高质量的纯金刚石涂层提高涂层的稳定性
- ▶ 可以加工石墨，增强塑料，有色金属等
- ▶ 采用各种刃长度和总长




CARBIDE | 2 | 30° | PLAIN | p.C445

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| HYDRAULIC CHUCK SHRINK FIT HOLDER | D15 - 46 D47 - 72 |
| POWER MILLING CHUCK | D161 - 176 |
| ER COLLET CHUCK SK SLIM CHUCK | D73 - 115 D183 - 201 |

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Overall Length 全长 L2 |
|---|---|---|---|---|
| EIE2503016 | 3.0 | 6 | 16 | 60 |
| EIE2503020 | 3.0 | 6 | 20 | 60 |
| EIE250404S | 4.0 | 4 | 10 | 80 |
| EIE25040 | 4.0 | 6 | 10 | 50 |
| EIE2504012 | 4.0 | 6 | 12 | 50 |
| EIE2504016 | 4.0 | 6 | 16 | 60 |
| EIE2504020 | 4.0 | 6 | 20 | 60 |
| EIE2504025 | 4.0 | 6 | 25 | 60 |
| EIE25050 | 5.0 | 6 | 15 | 60 |
| EIE25060 | 6.0 | 6 | 15 | 60 |
| EIE2506020 | 6.0 | 6 | 20 | 60 |
| EIE2506025 | 6.0 | 6 | 25 | 65 |
| EIE25080 | 8.0 | 8 | 20 | 70 |
| EIE2508025 | 8.0 | 8 | 25 | 75 |
| EIE2508030 | 8.0 | 8 | 30 | 80 |
| EIE25100 | 10.0 | 10 | 25 | 75 |
| EIE2510030 | 10.0 | 10 | 30 | 80 |
| EIE2510035 | 10.0 | 10 | 35 | 85 |
| EIE25120 | 12.0 | 12 | 30 | 80 |
| EIE2512035 | 12.0 | 12 | 35 | 85 |
| EIE2512040 | 12.0 | 12 | 40 | 90 |
| EIE2512045 | 12.0 | 12 | 45 | 100 |

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.03 | h5 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 | |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 | |
| Recommend | | | | | | | | | | | | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | ◎ | | | | | | | | | | | | |



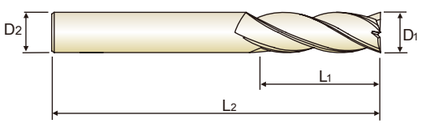
# G-CUT END MILLS

PLAIN SHANK **EIE26 SERIES**

## CARBIDE, 4 FLUTE
## 硬质合金，4刃

- ▶ High quality coating due to YG-1 tailored diamond coating
- ▶ Suitable for Graphite, Reinforced plastics, nonferrous metal etc.
- ▶ The biggest length of cut and overall elngth for setting a datum

- ▶适应高质量的纯金刚石涂层提高涂层的稳定性
- ▶可以加工石墨，增强塑料，有色金属等
- ▶采用各种刃长度和总长加工阶段




CARBIDE | 4 | 30° | PLAIN | p.C445

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| HYDRAULIC CHUCK SHRINK FIT HOLDER | D15 - 46 D47 - 72 |
| POWER MILLING CHUCK | D161 - 176 |
| ER COLLET CHUCK SK SLIM CHUCK | D73 - 115 D183 - 201 |

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Overall Length 全长 L2 |
|---|---|---|---|---|
| EIE26020 | 2.0 | 4 | 6 | 50 |
| EIE2602008 | 2.0 | 4 | 8 | 50 |
| EIE2602010 | 2.0 | 4 | 10 | 50 |
| EIE26025 | 2.5 | 4 | 8 | 50 |
| EIE26030 | 3.0 | 6 | 8 | 50 |
| EIE2603010 | 3.0 | 6 | 10 | 50 |
| EIE2603012 | 3.0 | 6 | 12 | 50 |
| EIE2603016 | 3.0 | 6 | 16 | 60 |
| EIE2603020 | 3.0 | 6 | 20 | 60 |
| EIE26040 | 4.0 | 6 | 10 | 50 |
| EIE2604012 | 4.0 | 6 | 12 | 50 |
| EIE2604016 | 4.0 | 6 | 16 | 60 |
| EIE2604020 | 4.0 | 6 | 20 | 60 |
| EIE2604025 | 4.0 | 6 | 25 | 60 |
| EIE26050 | 5.0 | 6 | 15 | 60 |
| EIE26060 | 6.0 | 6 | 15 | 60 |
| EIE2606020 | 6.0 | 6 | 20 | 110 |
| EIE2606030 | 6.0 | 6 | 30 | 150 |
| EIE26080 | 8.0 | 8 | 20 | 70 |
| EIE2608030 | 8.0 | 8 | 30 | 110 |
| EIE2608040 | 8.0 | 8 | 40 | 150 |
| EIE26100 | 10.0 | 10 | 25 | 75 |
| EIE2610040 | 10.0 | 10 | 40 | 110 |
| EIE2610050 | 10.0 | 10 | 50 | 150 |

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.03 | h5 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 | |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 | |
| Recommend | | | | | | | | | | | | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | ◎ | | | | | | | | | | | | |

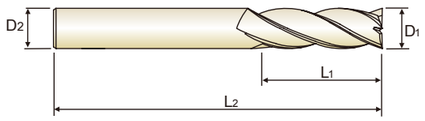
# G-CUT END MILLS

PLAIN SHANK **EIE26 SERIES**

## CARBIDE, 4 FLUTE
## 硬质合金，4刃

▶ High quality coating due to YG-1 tailored diamond coating
▶ Suitable for Graphite, Reinforced plastics, nonferrous metal etc.
▶ The biggest length of cut and overall elngth for setting a datum

▶适应高质量的纯金刚石涂层提高涂层的稳定性
▶可以加工石墨，增强塑料，有色金属等
▶采用各种刃长度和总长加工阶段




CARBIDE | 4 | 30° | PLAIN p.C445

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| HYDRAULIC CHUCK / SHRINK FIT HOLDER | D15 - 46 / D47 - 72 |
| POWER MILLING CHUCK | D161 - 176 |
| ER COLLET CHUCK / SK SLIM CHUCK | D73 - 115 / D183 - 201 |

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Overall Length 全长 L2 |
|---|---|---|---|---|
| EIE26120 | 12.0 | 12 | 30 | 80 |
| EIE2612050 | 12.0 | 12 | 50 | 120 |
| EIE2612060 | 12.0 | 12 | 60 | 160 |
| EIE26160 | 16.0 | 16 | 50 | 110 |
| EIE2616070 | 16.0 | 16 | 70 | 160 |
| EIE2616090 | 16.0 | 16 | 90 | 160 |
| EIE26160100 | 16.0 | 16 | 100 | 200 |
| EIE26160120 | 16.0 | 16 | 120 | 250 |
| EIE26200 | 20.0 | 20 | 70 | 160 |
| EIE2620090 | 20.0 | 20 | 90 | 160 |
| EIE26200100 | 20.0 | 20 | 100 | 200 |
| EIE26200120 | 20.0 | 20 | 120 | 250 |

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.03 | h5 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | | | | | | | | | | | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | ◎ | | | | | | | | | | | | |



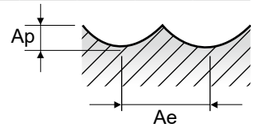
# G-CUT END MILLS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

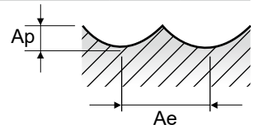
### EIE21 SERIES — 2 FLUTE BALL NOSE / 2刃 球头

| ISO | VDI 3323 | Material Description 材料描述 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 1.0 | 2.0 | 3.0 | 4.0 | 5.0 | 6.0 | 8.0 | 10.0 | 12.0 | 16.0 | 20.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N | 29.2 | GRAPHITE | 0.2D | 0.2D | Vc | 50 | 101 | 151 | 201 | 243 | 283 | 327 | 361 | 396 | 402 | 408 |
| | | | | | fz | 0.013 | 0.025 | 0.045 | 0.066 | 0.082 | 0.098 | 0.115 | 0.133 | 0.150 | 0.156 | 0.154 |
| | | | | | RPM | 16000 | 16000 | 16000 | 16000 | 15500 | 15000 | 13000 | 11500 | 10500 | 8000 | 6500 |
| | | | | | FEED | 400 | 800 | 1450 | 2100 | 2550 | 2950 | 3000 | 3050 | 3150 | 2500 | 2000 |



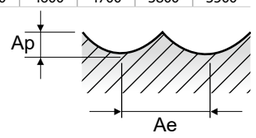

### EIE23 SERIES — 2 FLUTE BALL NOSE LONG NECK / 2刃 球头 长颈

| ISO | VDI 3323 | Material Description 材料描述 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 1.0 | 2.0 | 3.0 | 4.0 | 5.0 | 6.0 | 8.0 | 10.0 | 12.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N | 29.2 | GRAPHITE | 0.2D | 0.2D | Vc | 38 | 75 | 113 | 151 | 183 | 212 | 245 | 271 | 297 |
| | | | | | fz | 0.013 | 0.025 | 0.045 | 0.065 | 0.082 | 0.098 | 0.115 | 0.132 | 0.150 |
| | | | | | RPM | 12000 | 12000 | 12000 | 12000 | 11630 | 11250 | 9750 | 8630 | 7880 |
| | | | | | FEED | 300 | 600 | 1080 | 1570 | 1910 | 2210 | 2250 | 2280 | 2360 |



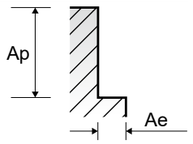

### EIE22 SERIES — 4 FLUTE BALL NOSE / 4刃 球头

| ISO | VDI 3323 | Material Description 材料描述 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 1.0 | 2.0 | 3.0 | 4.0 | 5.0 | 6.0 | 8.0 | 10.0 | 12.0 | 16.0 | 20.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N | 29.2 | GRAPHITE | 0.2D | 0.2D | Vc | 63 | 101 | 151 | 201 | 236 | 283 | 327 | 377 | 377 | 377 | 377 |
| | | | | | fz | 0.009 | 0.019 | 0.031 | 0.048 | 0.063 | 0.073 | 0.087 | 0.096 | 0.118 | 0.127 | 0.146 |
| | | | | | RPM | 20000 | 16000 | 16000 | 16000 | 15000 | 15000 | 13000 | 12000 | 10000 | 7500 | 6000 |
| | | | | | FEED | 700 | 1200 | 2000 | 3100 | 3800 | 4400 | 4500 | 4600 | 4700 | 3800 | 3500 |



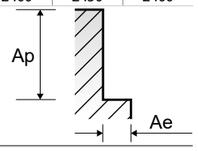

### EIE25 SERIES — 2 FLUTE - SIDE CUTTING / 2刃 - 侧铣削

| ISO | VDI 3323 | Material Description 材料描述 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 0.1 | 0.2 | 0.4 | 0.6 | 0.8 | 1.0 | 2.0 | 3.0 | 4.0 | 5.0 | 6.0 | 8.0 | 10.0 | 12.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N | 29.2 | GRAPHITE | 0.1D | 1.5D | Vc | 13 | 25 | 50 | 75 | 101 | 126 | 157 | 188 | 226 | 220 | 207 | 201 | 204 | 207 |
| | | | | | fz | 0.001 | 0.001 | 0.003 | 0.004 | 0.007 | 0.009 | 0.016 | 0.020 | 0.026 | 0.043 | 0.064 | 0.081 | 0.092 | 0.109 |
| | | | | | RPM | 40000 | 40000 | 40000 | 40000 | 40000 | 40000 | 25000 | 20000 | 18000 | 14000 | 11000 | 8000 | 6500 | 5500 |
| | | | | | FEED | 50 | 100 | 200 | 350 | 550 | 700 | 800 | 800 | 950 | 1200 | 1400 | 1300 | 1200 | 1200 |

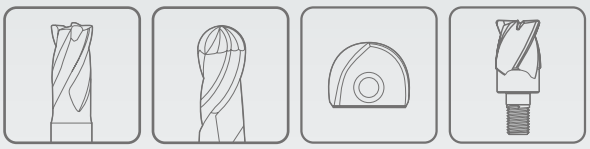



### EIE26 SERIES — 4 FLUTE - SIDE CUTTING / 4刃 - 侧铣削

| ISO | VDI 3323 | Material Description 材料描述 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 3.0 | 4.0 | 5.0 | 6.0 | 8.0 | 10.0 | 12.0 | 16.0 | 20.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N | 29.2 | GRAPHITE | 0.1D | 1.5D | Vc | 188 | 226 | 220 | 207 | 201 | 204 | 207 | 211 | 207 |
| | | | | | fz | 0.020 | 0.026 | 0.043 | 0.064 | 0.081 | 0.092 | 0.109 | 0.146 | 0.182 |
| | | | | | RPM | 20000 | 18000 | 14000 | 11000 | 8000 | 6500 | 5500 | 4200 | 3300 |
| | | | | | FEED | 1600 | 1900 | 2400 | 2800 | 2600 | 2400 | 2400 | 2450 | 2400 |



Global Cutting Tool Leader **YG-1**



# MILLING

Leading Through Innovation

# SOLID CARBIDE

# CRX S END MILLS

- DLC Coated Carbide End Mills for Copper

- 适用于加工铜的DLC涂层铣刀

# SELECTION GUIDE
## 选用指南

MILLING TOOLS

## SOLID CARBIDE
# CRX S
# END MILLS

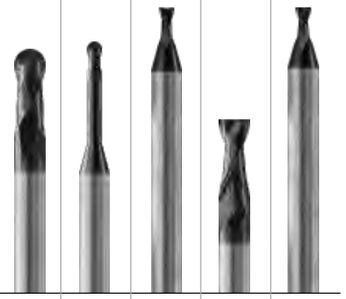
DLC Coated Carbide End Mills for Copper
加工铜的DLC涂层铣刀

Please visit globalyg1.com/mat for material search

◎ : Excellent (优秀) ○ : Good (良好)

Recommended cutting conditions (推荐加工参数) : p.C457

| SERIES 系列 | SGED28 | SGED27 | SGED29 | SGED31 | SGED30 |
|---|---|---|---|---|---|
| FLUTE 槽数 | 2 | 2 | 2 | 2 | 2 |
| HELIX ANGLE 螺旋角度 | 30° | 30° | 30° | 30° | 30° |
| CUTTING EDGE SHAPE 类型 | BALL NOSE | BALL NOSE | CORNER RADIUS | SQUARE | SQUARE |
| SIZE MIN 最小尺寸 | R0.5 | R0.25 | D1.0 | D1.0 | D0.5 |
| SIZE MAX 最大尺寸 | R6.0 | R6.0 | D12.0 | D12.0 | D12.0 |
| PAGE 页数 | C449 | C450-451 | C452-453 | C454 | C455-456 |
| | - | EXTENDED NECK | EXTENDED NECK | - | EXTENDED NECK |
| | DLC | DLC | DLC | DLC | DLC |



| ISO | VDI 3323 | Material Description 工件材料 | Composition / Structure / Heat Treatment 成分 / 结构 / 热处理 | | HB | HRc | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | About 0.15% C | Annealed | 125 | | | | | |
| | 2 | | About 0.45% C | Annealed | 190 | 13 | | | | |
| | 3 | | About 0.45% C | Quenched & Tempered | 250 | 25 | | | | |
| | 4 | | About 0.75% C | Annealed | 270 | 28 | | | | |
| | 5 | | About 0.75% C | Quenched & Tempered | 300 | 32 | | | | |
| | 6 | Low alloy steel | | Annealed | 180 | 10 | | | | |
| | 7 | | | Quenched & Tempered | 275 | 29 | | | | |
| | 8 | | | Quenched & Tempered | 300 | 32 | | | | |
| | 9 | | | Quenched & Tempered | 350 | 38 | | | | |
| | 10 | High alloyed steel, and tool steel | | Annealed | 200 | 15 | | | | |
| | 11 | | | Quenched & Tempered | 325 | 35 | | | | |
| M | 12 | Stainless steel | Ferritic / Martensitic | Annealed | 200 | 15 | | | | |
| | 13 | | Martensitic | Quenched & Tempered | 240 | 23 | | | | |
| | 14 | | Austenitic | | 180 | 10 | | | | |
| K | 15 | Grey cast iron | Pearlitic / ferritic | | 180 | 10 | | | | |
| | 16 | | Pearlitic (Martensitic) | | 260 | 26 | | | | |
| | 17 | Nodular cast iron | Ferritic | | 160 | 3 | | | | |
| | 18 | | Pearlitic | | 250 | 25 | | | | |
| | 19 | Malleable cast iron | Ferritic | | 130 | | | | | |
| | 20 | | Pearlitic | | 230 | 21 | | | | |
| N | 21 | Aluminum-wrought alloy | Not Curable | | 60 | | ○ | ○ | ○ | ○ | ○ |
| | 22 | | Curable | Hardened | 100 | | ○ | ○ | ○ | ○ | ○ |
| | 23 | Aluminum-cast, alloyed | ≤ 12% Si, Not Curable | | 75 | | | | | | |
| | 24 | | ≤ 12% Si, Curable | Hardened | 90 | | | | | | |
| | 25 | | > 12% Si, Not Curable | | 130 | | | | | | |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | Cutting Alloys, PB>1% | | 110 | | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 27 | | CuZn, CuSnZn (Brass) | | 90 | | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 28 | | CuSn, lead-free copper and electrolytic copper | | 100 | | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 29 | Non Metallic Materials | Duroplastic, Fiber Reinforced Plastic | | | | ○ | ○ | ○ | ○ | ○ |
| | 30 | | Rubber, Wood, etc. | | | | | | | | |
| S | 31 | Heat Resistant Super Alloys | Fe Based | Annealed | 200 | 15 | | | | |
| | 32 | | | Cured | 280 | 30 | | | | |
| | 33 | | Ni or Co Based | Annealed | 250 | 25 | | | | |
| | 34 | | | Cured | 350 | 38 | | | | |
| | 35 | | | Cast | 320 | 34 | | | | |
| | 36 | Titanium Alloys | Pure Titanium | | 400 Rm | | | | | |
| | 37 | | Alpha + Beta Alloys | Hardened | 1050 Rm | | | | | |
| H | 38 | Hardened steel | | Hardened | 550 | 55 | | | | |
| | 39 | | | Hardened | 630 | 60 | | | | |
| | 40 | Chilled Cast Iron | | Cast | 400 | 42 | | | | |
| | 41 | Hardened Cast Iron | | Hardened | 550 | 55 | | | | |

BALL NOSE = 球头　CORNER RADIUS = 圆鼻　SQUARE = 平头　EXTENDED NECK= 颈部加长





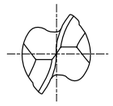
# CRX S END MILLS

PLAIN SHANK **SGED28** SERIES

## CARBIDE, 2 FLUTE BALL NOSE DLC COATING
## 硬质合金，2刃 球头 DLC涂层

- ▶ Designed for copper, copper alloys, soft graphite, reinforced plastics and materials affiliated with non-ferrous metals.
- ▶ Tight radius tolerance is applied (±0.005mm tolerance under R3).
- ▶ Excellent surface roughness from Mirror Face of cutting edges

- ▶ 加工铜，铜合金，软石墨，强化塑料等非铁金属用设计
- ▶ 紧密的圆弧角公差 (R3以下的公差是 +/-0.005mm)
- ▶ 刃线采用镜面处理实现卓越工件表面粗糙度



CARBIDE | 2 | 30° | R ±0.005 | PLAIN

p.C457

Recommended ToolHolder

| Plain Shank | | Page |
|---|---|---|
| HYDRAULIC CHUCK | | D15 - 46 |
| SHRINK FIT HOLDER | ◎ | D47 - 72 |
| POWER MILLING CHUCK | | D161 - 176 |
| ER COLLET CHUCK | ○ | D73 - 115 |
| SK SLIM CHUCK | | D183 - 201 |

Unit(单位) : mm

| EDP No. | Radius of Ball Nose 圆弧角 R | Mill Diameter 直径 | Shank Diameter 柄径 | Length of Cut 刃长 | Overall Length 全长 |
|---|---|---|---|---|---|
| SGED28010 | R0.5 | 1.0 | 6 | 2.5 | 50 |
| SGED28015 | R0.75 | 1.5 | 6 | 4 | 50 |
| SGED28020 | R1.0 | 2.0 | 6 | 5 | 50 |
| SGED28030 | R1.5 | 3.0 | 6 | 8 | 60 |
| SGED28040 | R2.0 | 4.0 | 6 | 8 | 70 |
| SGED28050 | R2.5 | 5.0 | 6 | 12 | 90 |
| SGED28060 | R3.0 | 6.0 | 6 | 12 | 90 |
| SGED28080 | R4.0 | 8.0 | 8 | 16 | 100 |
| SGED28100 | R5.0 | 10.0 | 10 | 20 | 100 |
| SGED28120 | R6.0 | 12.0 | 12 | 25 | 110 |

| Size 尺寸 | Radius Tolerance (mm) 圆弧角公差 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|---|
| up to R3 R3以下 | ± 0.005 | 0 ~ - 0.012 | h5 |
| over R3 超过R3 | ± 0.010 | 0 ~ - 0.015 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 | |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 | |
| Recommend | | | | | | | | | | | | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | H | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | ○ | ○ | | | | ◎ | ◎ | ◎ | ○ | | | | | | | | | | | | |

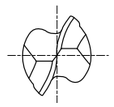
# CRX S END MILLS

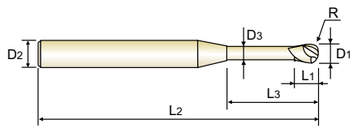
PLAIN SHANK **SGED27** SERIES

## CARBIDE, 2 FLUTE BALL NOSE DLC COATING with EXTENDED NECK
## 硬质合金，2刃 球头 DLC涂层 颈部加长

- ▶ Designed for copper, copper alloys soft graphite, reinforced plastics and the materials affiliated with non-ferrous metals.
- ▶ Tight radius tolerance is applied ( ± 0.005mm tolerance under R3).
- ▶ Excellent surface roughness thanks to Mirror Face of cutting edges
- ▶ High strength and minimized vibration are available due to two step taper neck(under R0.5).

- ▶ 加工铜，铜合金，软石墨，强化塑料等非铁金属用设计
- ▶ 紧密的圆弧角公差 (R3以下的公差是 +/-0.005mm)
- ▶ 刃线采用镜面处理实现卓越工件表面粗糙度
- ▶ R0.5以下产品采用双颈设计，提高刚性和减少振动






CARBIDE | 2 | 30° | R ±0.005 | R ±0.010 | PLAIN

R0.25~R3 R4~R6

p.C458

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| HYDRAULIC CHUCK | D15 - 46 |
| SHRINK FIT HOLDER | D47 - 72 |
| POWER MILLING CHUCK | D161 - 176 |
| ER COLLET CHUCK | D73 - 115 |
| SK SLIM CHUCK | D183 - 201 |

Unit(单位) : mm

| EDP No. | Radius of Ball Nose 圆弧角 R | Mill Diameter 直径 $D_1$ | Shank Diameter 柄径 $D_2$ | Length of Cut 刃长 $L_1$ | Length Below Shank 颈长 $L_3$ | Overall Length 全长 $L_2$ | Neck Diameter 颈径 $D_3$ |
|---|---|---|---|---|---|---|---|
| SGED2700502 | R0.25 | **0.5** | 4 | 0.5 | 2 | 45 | 0.45 |
| SGED2700504 | R0.25 | **0.5** | 4 | 0.5 | 4 | 45 | 0.45 |
| SGED2700506 | R0.25 | **0.5** | 4 | 0.5 | 6 | 45 | 0.45 |
| SGED2700508 | R0.25 | **0.5** | 4 | 0.5 | 8 | 45 | 0.45 |
| SGED2700510 | R0.25 | **0.5** | 4 | 0.5 | 10 | 45 | 0.45 |
| SGED2700602 | R0.3 | **0.6** | 4 | 0.6 | 2 | 45 | 0.55 |
| SGED2700604 | R0.3 | **0.6** | 4 | 0.6 | 4 | 45 | 0.55 |
| SGED2700606 | R0.3 | **0.6** | 4 | 0.6 | 6 | 45 | 0.55 |
| SGED2700608 | R0.3 | **0.6** | 4 | 0.6 | 8 | 45 | 0.55 |
| SGED2700610 | R0.3 | **0.6** | 4 | 0.6 | 10 | 45 | 0.55 |
| SGED2700804 | R0.4 | **0.8** | 4 | 0.8 | 4 | 45 | 0.75 |
| SGED2700806 | R0.4 | **0.8** | 4 | 0.8 | 6 | 45 | 0.75 |
| SGED2700808 | R0.4 | **0.8** | 4 | 0.8 | 8 | 45 | 0.75 |
| SGED2700810 | R0.4 | **0.8** | 4 | 0.8 | 10 | 45 | 0.75 |
| SGED2700812 | R0.4 | **0.8** | 4 | 0.8 | 12 | 45 | 0.75 |
| SGED2701004 | R0.5 | **1.0** | 4 | 1 | 4 | 45 | 0.95 |
| SGED2701006 | R0.5 | **1.0** | 4 | 1 | 6 | 45 | 0.95 |
| SGED2701008 | R0.5 | **1.0** | 4 | 1 | 8 | 45 | 0.95 |
| SGED2701010 | R0.5 | **1.0** | 4 | 1 | 10 | 45 | 0.95 |
| SGED2701012 | R0.5 | **1.0** | 4 | 1 | 12 | 45 | 0.95 |
| SGED2701506 | R0.75 | **1.5** | 4 | 1.5 | 6 | 45 | 1.45 |
| SGED2701508 | R0.75 | **1.5** | 4 | 1.5 | 8 | 45 | 1.45 |
| SGED2701510 | R0.75 | **1.5** | 4 | 1.5 | 10 | 45 | 1.45 |
| SGED2701512 | R0.75 | **1.5** | 4 | 1.5 | 12 | 45 | 1.45 |

▶ NEXT PAGE 下页

| Size 尺寸 | Radius Tolerance (mm) 圆弧角公差 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|---|
| up to R3 R3以下 | ± 0.005 | 0 ~ - 0.012 | h5 |
| over R3 超过R3 | ± 0.010 | 0 ~ - 0.015 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | | | | | | | | | | | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | ○ | ○ | | | | ◎ | ◎ | ◎ | ○ | | | | | | | | | | | | |



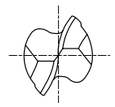
CRX S END MILLS

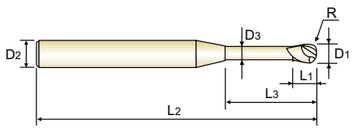
PLAIN SHANK SGED27 SERIES

CARBIDE, 2 FLUTE BALL NOSE DLC COATING with EXTENDED NECK
硬质合金，2刃 球头 DLC涂层

- ▶ Designed to copper, copper alloys soft graphite, reinforced plastics and the materials affiliated with non-ferrous metals.
- ▶ Tight radius tolerance is applied ( ± 0.005mm tolerance under R3).
- ▶ Excellent surface roughness thanks to Mirror Face of cutting edges
- ▶ High strength and minimized vibration are available due to two step taper neck(under R0.5).

- ▶ 加工铜，铜合金，软石墨，强化塑料等非铁金属用设计
- ▶ 紧密的圆弧角公差 (R3以下的公差是 +/-0.005mm)
- ▶ 刃线采用镜面处理实现卓越工件表面粗糙度
- ▶ R0.5以下产品采用双颈设计，提高刚性和减少振动






CARBIDE | 2 | 30° | R ±0.005 | R ±0.010 | PLAIN

R0.25~R3 R4~R6

p.C458

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| HYDRAULIC CHUCK | D15 - 46 |
| SHRINK FIT HOLDER | D47 - 72 |
| POWER MILLING CHUCK | D161 - 176 |
| ER COLLET CHUCK | D73 - 115 |
| SK SLIM CHUCK | D183 - 201 |

Unit(单位) : mm

| EDP No. | Radius of Ball Nose 圆弧角 R | Mill Diameter 直径 $D_1$ | Shank Diameter 柄径 $D_2$ | Length of Cut 刃长 $L_1$ | Length Below Shank 颈长 $L_3$ | Overall Length 全长 $L_2$ | Neck Diameter 颈径 $D_3$ |
|---|---|---|---|---|---|---|---|
| SGED2701516 | R0.75 | **1.5** | 4 | 1.5 | 16 | 50 | 1.45 |
| SGED2702006 | R1.0 | **2.0** | 4 | 3 | 6 | 45 | 1.95 |
| SGED2702008 | R1.0 | **2.0** | 4 | 3 | 8 | 45 | 1.95 |
| SGED2702010 | R1.0 | **2.0** | 4 | 3 | 10 | 45 | 1.95 |
| SGED2702012 | R1.0 | **2.0** | 4 | 3 | 12 | 45 | 1.95 |
| SGED2702016 | R1.0 | **2.0** | 4 | 3 | 16 | 50 | 1.95 |
| SGED2703010 | R1.5 | **3.0** | 6 | 4 | 10 | 50 | 2.85 |
| SGED2703012 | R1.5 | **3.0** | 6 | 4 | 12 | 50 | 2.85 |
| SGED2703016 | R1.5 | **3.0** | 6 | 4 | 16 | 60 | 2.85 |
| SGED2703020 | R1.5 | **3.0** | 6 | 4 | 20 | 60 | 2.85 |
| SGED2704010 | R2.0 | **4.0** | 6 | 5 | 10 | 50 | 3.85 |
| SGED2704012 | R2.0 | **4.0** | 6 | 5 | 12 | 50 | 3.85 |
| SGED2704016 | R2.0 | **4.0** | 6 | 5 | 16 | 60 | 3.85 |
| SGED2704020 | R2.0 | **4.0** | 6 | 5 | 20 | 60 | 3.85 |
| SGED2704025 | R2.0 | **4.0** | 6 | 5 | 25 | 60 | 3.85 |
| SGED2706020 | R3.0 | **6.0** | 6 | 8 | 20 | 60 | 5.85 |
| SGED2706030 | R3.0 | **6.0** | 6 | 8 | 30 | 90 | 5.85 |
| SGED2708020 | R4.0 | **8.0** | 8 | 10 | 20 | 70 | 7.70 |
| SGED2710025 | R5.0 | **10.0** | 10 | 12 | 25 | 80 | 9.70 |
| SGED2712025 | R6.0 | **12.0** | 12 | 14 | 25 | 80 | 11.70 |

| Size 尺寸 | Radius Tolerance (mm) 圆弧角公差 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|---|
| up to R3 R3以下 | ± 0.005 | 0 ~ - 0.012 | h5 |
| over R3 超过R3 | ± 0.010 | 0 ~ - 0.015 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | | | | | | | | | | | | | | | | | | | | |

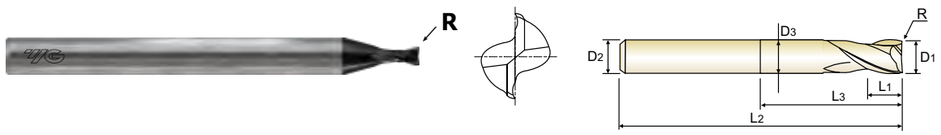
| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | ○ | ○ | | | | ◎ | ◎ | ◎ | ○ | | | | | | | | | | | | |

# CRX S END MILLS

PLAIN SHANK **SGED29** SERIES

## CARBIDE, 2 FLUTE CORNER RADIUS DLC COATING with EXTENDED NECK
## 硬质合金，2刃 圆鼻 DLC涂层 颈部加长

- ▶ Designed for copper, copper alloys, soft graphite, reinforced plastics and materials affiliated with non-ferrous metals.
- ▶ Excellent surface roughness from Mirror Face of cutting edges
- ▶加工铜，铜合金，软石墨，强化塑料等非铁金属用设计
- ▶刃线采用镜面处理实现卓越工件表面粗糙度




CARBIDE | 2 | 30° | R ±0.010 | R ±0.015 | PLAIN | p.C457

Ø1~Ø6 Ø8~Ø12

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| HYDRAULIC CHUCK | D15 - 46 |
| SHRINK FIT HOLDER | D47 - 72 |
| POWER MILLING CHUCK | D161 - 176 |
| ER COLLET CHUCK | D73 - 115 |
| SK SLIM CHUCK | D183 - 201 |

Unit(单位) : mm

| EDP No. | Corner Radius 圆弧角 R | Mill Diameter 直径 $D_1$ | Shank Diameter 柄径 $D_2$ | Length of Cut 刃长 $L_1$ | Length Below Shank 颈长 $L_3$ | Overall Length 全长 $L_2$ | Neck Diameter 颈径 $D_3$ |
|---|---|---|---|---|---|---|---|
| SGED290100104 | R0.1 | **1.0** | 4 | 1.5 | 4 | 45 | 0.95 |
| SGED290100106 | R0.1 | **1.0** | 4 | 1.5 | 6 | 45 | 0.95 |
| SGED290100108 | R0.1 | **1.0** | 4 | 1.5 | 8 | 45 | 0.95 |
| SGED290100204 | R0.2 | **1.0** | 4 | 1.5 | 4 | 45 | 0.95 |
| SGED290100206 | R0.2 | **1.0** | 4 | 1.5 | 6 | 45 | 0.95 |
| SGED290100208 | R0.2 | **1.0** | 4 | 1.5 | 8 | 45 | 0.95 |
| SGED290150106 | R0.1 | **1.5** | 4 | 2.3 | 6 | 45 | 1.45 |
| SGED290150108 | R0.1 | **1.5** | 4 | 2.3 | 8 | 45 | 1.45 |
| SGED290150110 | R0.1 | **1.5** | 4 | 2.3 | 10 | 45 | 1.45 |
| SGED290150206 | R0.2 | **1.5** | 4 | 2.3 | 6 | 45 | 1.45 |
| SGED290150208 | R0.2 | **1.5** | 4 | 2.3 | 8 | 45 | 1.45 |
| SGED290150210 | R0.2 | **1.5** | 4 | 2.3 | 10 | 45 | 1.45 |
| SGED290200208 | R0.2 | **2.0** | 4 | 3 | 8 | 45 | 1.95 |
| SGED290200210 | R0.2 | **2.0** | 4 | 3 | 10 | 45 | 1.95 |
| SGED290200212 | R0.2 | **2.0** | 4 | 3 | 12 | 45 | 1.95 |
| SGED290200508 | R0.5 | **2.0** | 4 | 3 | 8 | 45 | 1.95 |
| SGED290200510 | R0.5 | **2.0** | 4 | 3 | 10 | 45 | 1.95 |
| SGED290200512 | R0.5 | **2.0** | 4 | 3 | 12 | 45 | 1.95 |
| SGED290300210 | R0.2 | **3.0** | 6 | 4.5 | 10 | 50 | 2.85 |
| SGED290300212 | R0.2 | **3.0** | 6 | 4.5 | 12 | 50 | 2.85 |
| SGED290300216 | R0.2 | **3.0** | 6 | 4.5 | 16 | 60 | 2.85 |
| SGED290300310 | R0.3 | **3.0** | 6 | 4.5 | 10 | 50 | 2.85 |
| SGED290300312 | R0.3 | **3.0** | 6 | 4.5 | 12 | 50 | 2.85 |
| SGED290300316 | R0.3 | **3.0** | 6 | 4.5 | 16 | 60 | 2.85 |

▶ NEXT PAGE 下页

| Size 尺寸 | Radius Tolerance (mm) 圆弧角公差 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|---|
| up to R6 R6以下 | ±0.010 | 0 ~ - 0.012 | h5 |
| over R6 超过R6 | ±0.015 | 0 ~ - 0.015 | |

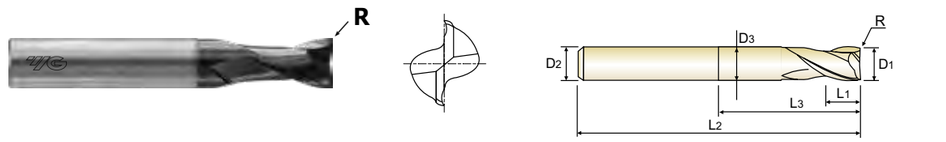
◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | | | | | | | | | | | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | ○ | ○ | | | | ◎ | ◎ | ◎ | ○ | | | | | | | | | | | | |



CRX S END MILLS
PLAIN SHANK SGED29 SERIES
CARBIDE, 2 FLUTE CORNER RADIUS DLC COATING with EXTENDED NECK
硬质合金，2刃 圆鼻 DLC涂层 颈部加长
▶ Designed for copper, copper alloys, soft graphite, reinforced plastics and materials affiliated with non-ferrous metals.
▶ Excellent surface roughness from Mirror Face of cutting edges
▶加工铜，铜合金，软石墨，强化塑料等非铁金属用设计
▶刃线采用镜面处理实现卓越工件表面粗糙度




CARBIDE | 2 | 30° | R ±0.010 | R ±0.015 | PLAIN | p.C457
Ø1~Ø6 Ø8~Ø12
Recommended ToolHolder
Plain Shank / Page
HYDRAULIC CHUCK D15 - 46
SHRINK FIT HOLDER D47 - 72
POWER MILLING CHUCK D161 - 176
ER COLLET CHUCK D73 - 115
SK SLIM CHUCK D183 - 201
Unit(单位) : mm

| EDP No. | Corner Radius 圆弧角 R | Mill Diameter 直径 $D_1$ | Shank Diameter 柄径 $D_2$ | Length of Cut 刃长 $L_1$ | Length Below Shank 颈长 $L_3$ | Overall Length 全长 $L_2$ | Neck Diameter 颈径 $D_3$ |
|---|---|---|---|---|---|---|---|
| SGED290400212 | R0.2 | **4.0** | 6 | 6 | 12 | 50 | 3.85 |
| SGED290400216 | R0.2 | **4.0** | 6 | 6 | 16 | 60 | 3.85 |
| SGED290400220 | R0.2 | **4.0** | 6 | 6 | 20 | 60 | 3.85 |
| SGED290400512 | R0.5 | **4.0** | 6 | 6 | 12 | 50 | 3.85 |
| SGED290400516 | R0.5 | **4.0** | 6 | 6 | 16 | 60 | 3.85 |
| SGED290400520 | R0.5 | **4.0** | 6 | 6 | 20 | 60 | 3.85 |
| SGED290600320 | R0.3 | **6.0** | 6 | 9 | 20 | 60 | 5.85 |
| SGED290600520 | R0.5 | **6.0** | 6 | 9 | 20 | 60 | 5.85 |
| SGED290601020 | R1.0 | **6.0** | 6 | 9 | 20 | 60 | 5.85 |
| SGED290800325 | R0.3 | **8.0** | 8 | 12 | 25 | 65 | 7.70 |
| SGED290800525 | R0.5 | **8.0** | 8 | 12 | 25 | 65 | 7.70 |
| SGED290801025 | R1.0 | **8.0** | 8 | 12 | 25 | 65 | 7.70 |
| SGED291000530 | R0.5 | **10.0** | 10 | 15 | 30 | 70 | 9.70 |
| SGED291001030 | R1.0 | **10.0** | 10 | 15 | 30 | 70 | 9.70 |
| SGED291200532 | R0.5 | **12.0** | 12 | 18 | 32 | 80 | 11.70 |
| SGED291201032 | R1.0 | **12.0** | 12 | 18 | 32 | 80 | 11.70 |

| Size 尺寸 | Radius Tolerance (mm) 圆弧角公差 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|---|
| up to R6 R6以下 | ±0.010 | 0 ~ - 0.012 | h5 |
| over R6 超过R6 | ±0.015 | 0 ~ - 0.015 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | | | | | | | | | | | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | ○ | ○ | | | | ◎ | ◎ | ◎ | ○ | | | | | | | | | | | | |

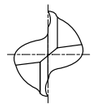
# CRX S END MILLS

PLAIN SHANK **SGED31** SERIES

## CARBIDE, 2 FLUTE DLC COATING
## 硬质合金，2刃 DLC涂层

- ▶ Designed for copper, copper alloys, soft graphite, reinforced plastics and materials affiliated with non-ferrous metals.
- ▶ Excellent surface roughness from special flute geometry for removing burrs

- ▶ 加工铜，铜合金，软石墨，强化塑料等非铁金属用设计
- ▶ 采用提高排屑性能的特殊设计实现卓越工件表面粗糙度



CARBIDE | 2 | 30° | PLAIN | p.C458

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| HYDRAULIC CHUCK | D15 - 46 |
| SHRINK FIT HOLDER | D47 - 72 |
| POWER MILLING CHUCK | D161 - 176 |
| ER COLLET CHUCK | D73 - 115 |
| SK SLIM CHUCK | D183 - 201 |

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 | Shank Diameter 柄径 | Length of Cut 刃长 | Overall Length 全长 |
|---|---|---|---|---|
| SGED31010 | 1.0 | 6 | 2.5 | 50 |
| SGED31015 | 1.5 | 6 | 4 | 50 |
| SGED31020 | 2.0 | 6 | 6 | 50 |
| SGED31025 | 2.5 | 6 | 8 | 50 |
| SGED31030 | 3.0 | 6 | 10 | 50 |
| SGED31040 | 4.0 | 6 | 12 | 50 |
| SGED31050 | 5.0 | 6 | 15 | 60 |
| SGED31060 | 6.0 | 6 | 15 | 60 |
| SGED31080 | 8.0 | 8 | 20 | 65 |
| SGED31100 | 10.0 | 10 | 25 | 70 |
| SGED31120 | 12.0 | 12 | 30 | 80 |

| Size 尺寸 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|
| up to R6 R6以下 | 0 ~ - 0.012 | h5 |
| over R6 超过R6 | 0 ~ - 0.015 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | | | | | | | | | | | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | ○ | ○ | | | | ◎ | ◎ | ◎ | ○ | | | | | | | | | | | | |





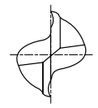
# CRX S END MILLS

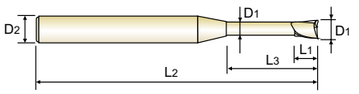
PLAIN SHANK **SGED30** SERIES

## CARBIDE, 2 FLUTE DLC COATING with EXTENDED NECK
## 硬质合金，2刃 DLC涂层 颈部加长

- ▶ Designed for copper, copper alloys, soft graphite, reinforced plastics and materials affiliated with non-ferrous metals.
- ▶ High toughness and minimized vibration applied from two step taper neck (under dia. 1.0mm)
- ▶ Excellent surface roughness from special flute geometry for removing burrs

- ▶ 加工铜，铜合金，软石墨，强化塑料等非铁金属用设计
- ▶ 1.0mm直径以下产品采用双颈设计，提高韧性和减少振动
- ▶ 采用提高排屑性能的特殊设计实现卓越工件表面粗糙度






CARBIDE | 2 | 30° | PLAIN | p.C458

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| HYDRAULIC CHUCK | D15 - 46 |
| SHRINK FIT HOLDER | D47 - 72 |
| POWER MILLING CHUCK | D161 - 176 |
| ER COLLET CHUCK | D73 - 115 |
| SK SLIM CHUCK | D183 - 201 |

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Length Below Shank 颈长 L3 | Overall Length 全长 L2 | Neck Diameter 颈径 D3 |
|---|---|---|---|---|---|---|
| SGED3000502 | 0.5 | 4 | 0.7 | 2 | 45 | 0.45 |
| SGED3000504 | 0.5 | 4 | 0.7 | 4 | 45 | 0.45 |
| SGED3000506 | 0.5 | 4 | 0.7 | 6 | 45 | 0.45 |
| SGED3000508 | 0.5 | 4 | 0.7 | 8 | 45 | 0.45 |
| SGED3000510 | 0.5 | 4 | 0.7 | 10 | 45 | 0.45 |
| SGED3000602 | 0.6 | 4 | 0.9 | 2 | 45 | 0.55 |
| SGED3000604 | 0.6 | 4 | 0.9 | 4 | 45 | 0.55 |
| SGED3000606 | 0.6 | 4 | 0.9 | 6 | 45 | 0.55 |
| SGED3000608 | 0.6 | 4 | 0.9 | 8 | 45 | 0.55 |
| SGED3000610 | 0.6 | 4 | 0.9 | 10 | 45 | 0.55 |
| SGED3000804 | 0.8 | 4 | 1.2 | 4 | 45 | 0.75 |
| SGED3000806 | 0.8 | 4 | 1.2 | 6 | 45 | 0.75 |
| SGED3000808 | 0.8 | 4 | 1.2 | 8 | 45 | 0.75 |
| SGED3000810 | 0.8 | 4 | 1.2 | 10 | 45 | 0.75 |
| SGED3000812 | 0.8 | 4 | 1.2 | 12 | 45 | 0.75 |
| SGED3001004 | 1.0 | 4 | 1.5 | 4 | 45 | 0.95 |
| SGED3001006 | 1.0 | 4 | 1.5 | 6 | 45 | 0.95 |
| SGED3001008 | 1.0 | 4 | 1.5 | 8 | 45 | 0.95 |
| SGED3001010 | 1.0 | 4 | 1.5 | 10 | 45 | 0.95 |
| SGED3001012 | 1.0 | 4 | 1.5 | 12 | 45 | 0.95 |
| SGED3001506 | 1.5 | 4 | 2.3 | 6 | 45 | 1.45 |
| SGED3001508 | 1.5 | 4 | 2.3 | 8 | 45 | 1.45 |
| SGED3001510 | 1.5 | 4 | 2.3 | 10 | 45 | 1.45 |
| SGED3001512 | 1.5 | 4 | 2.3 | 12 | 45 | 1.45 |

▶ NEXT PAGE 下页

| Size 尺寸 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|
| up to R6 R6以下 | 0 ~ - 0.012 | h5 |
| over R6 超过R6 | 0 ~ - 0.015 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | | | | | | | | | | | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | ○ | ○ | | | | ◎ | ◎ | ◎ | ○ | | | | | | | | | | | | |

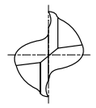
# CRX S END MILLS

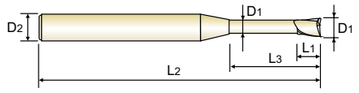
PLAIN SHANK **SGED30** SERIES

## CARBIDE, 2 FLUTE DLC COATING with EXTENDED NECK
## 硬质合金，2刃 DLC涂层 颈部加长

- ▶ Designed for copper, copper alloys, soft graphite, reinforced plastics and materials affiliated with non-ferrous metals.
- ▶ High toughness and minimized vibration applied from two step taper neck (under dia. 1.0mm)
- ▶ Excellent surface roughness from special flute geometry for removing burrs

- ▶ 加工铜，铜合金，软石墨，强化塑料等非铁金属用设计
- ▶ 1.0mm直径以下产品采用双颈设计，提高韧性和减少振动
- ▶ 采用提高排屑性能的特殊设计实现卓越工件表面粗糙度






CARBIDE | 2 | 30° | PLAIN | p.C458

Recommended ToolHolder

| Plain Shank | Page |
|---|---|
| HYDRAULIC CHUCK | D15 - 46 |
| SHRINK FIT HOLDER | D47 - 72 |
| POWER MILLING CHUCK | D161 - 176 |
| ER COLLET CHUCK | D73 - 115 |
| SK SLIM CHUCK | D183 - 201 |

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Length Below Shank 颈长 L3 | Overall Length 全长 L2 | Neck Diameter 颈径 D3 |
|---|---|---|---|---|---|---|
| SGED3001516 | 1.5 | 4 | 2.3 | 16 | 50 | 1.45 |
| SGED3002008 | 2.0 | 4 | 3 | 8 | 45 | 1.95 |
| SGED3002010 | 2.0 | 4 | 3 | 10 | 45 | 1.95 |
| SGED3002012 | 2.0 | 4 | 3 | 12 | 45 | 1.95 |
| SGED3002016 | 2.0 | 4 | 3 | 16 | 50 | 1.95 |
| SGED3003008 | 3.0 | 6 | 4.5 | 8 | 50 | 2.85 |
| SGED3003010 | 3.0 | 6 | 4.5 | 10 | 50 | 2.85 |
| SGED3003012 | 3.0 | 6 | 4.5 | 12 | 50 | 2.85 |
| SGED3003016 | 3.0 | 6 | 4.5 | 16 | 60 | 2.85 |
| SGED3003020 | 3.0 | 6 | 4.5 | 20 | 60 | 2.85 |
| SGED3004010 | 4.0 | 6 | 6 | 10 | 50 | 3.85 |
| SGED3004012 | 4.0 | 6 | 6 | 12 | 50 | 3.85 |
| SGED3004016 | 4.0 | 6 | 6 | 16 | 60 | 3.85 |
| SGED3004020 | 4.0 | 6 | 6 | 20 | 60 | 3.85 |
| SGED3004025 | 4.0 | 6 | 6 | 25 | 60 | 3.85 |
| SGED3006020 | 6.0 | 6 | 8 | 20 | 60 | 5.85 |
| SGED3006030 | 6.0 | 6 | 8 | 30 | 90 | 5.85 |
| SGED3008020 | 8.0 | 8 | 12 | 20 | 70 | 7.70 |
| SGED3010025 | 10.0 | 10 | 15 | 25 | 80 | 9.70 |
| SGED3012025 | 12.0 | 12 | 18 | 25 | 80 | 11.70 |

| Size 尺寸 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|
| up to R6 R6以下 | 0 ~ - 0.012 | h5 |
| over R6 超过R6 | 0 ~ - 0.015 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | | | | | | | | | | | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | ○ | ○ | | | | ◎ | ◎ | ◎ | ○ | | | | | | | | | | | | |



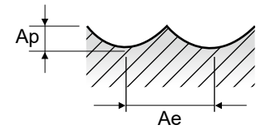


# RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

## SGED28 SERIES
### 2 FLUTE BALL NOSE
### 2刃 球头

| ISO | VDI 3323 | Material Description 工件材料 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter | Diameter (Ø) 直径 1.0 | 2.0 | 3.0 | 4.0 | 5.0 | 6.0 | 8.0 | 10.0 | 12.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N | 21-22 | Aluminum-wrought alloy | 0.05D | 0.02D | Vc | 155 | 300 | 295 | 285 | 290 | 295 | 300 | 300 | 300 |
| | | | | | fz | 0.01 | 0.022 | 0.031 | 0.042 | 0.052 | 0.061 | 0.079 | 0.101 | 0.12 |
| | | | | | RPM | 49338 | 47746 | 31300 | 22680 | 18462 | 15650 | 11937 | 9549 | 7958 |
| | | | | | FEED | 987 | 2101 | 1941 | 1905 | 1920 | 1909 | 1886 | 1929 | 1910 |
| | 26-28 | Copper and Copper Alloys (Bronze / Brass) | 0.05D | 0.02D | Vc | 130 | 150 | 150 | 145 | 145 | 145 | 150 | 150 | 150 |
| | | | | | fz | 0.011 | 0.02 | 0.028 | 0.038 | 0.047 | 0.055 | 0.072 | 0.092 | 0.109 |
| | | | | | RPM | 41380 | 23873 | 15915 | 11539 | 9231 | 7692 | 5968 | 4775 | 3979 |
| | | | | | FEED | 910 | 955 | 891 | 877 | 868 | 846 | 859 | 879 | 867 |
| | 29.1 | Duroplastic | 0.05D | 0.02D | Vc | 155 | 315 | 445 | 435 | 440 | 445 | 450 | 455 | 450 |
| | | | | | fz | 0.008 | 0.015 | 0.019 | 0.026 | 0.033 | 0.038 | 0.05 | 0.063 | 0.076 |
| | | | | | RPM | 49338 | 50134 | 47216 | 34616 | 28011 | 23608 | 17905 | 14483 | 11937 |
| | | | | | FEED | 789 | 1504 | 1794 | 1800 | 1849 | 1794 | 1790 | 1825 | 1814 |

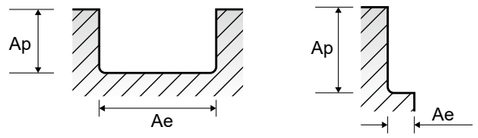



## SGED29 SERIES
### 2 FLUTE CORNER RADIUS - SLOTTING
### 2刃 圆鼻- 槽铣削

| ISO | VDI 3323 | Material Description 工件材料 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 1.0 | 2.0 | 3.0 | 4.0 | 5.0 | 6.0 | 8.0 | 10.0 | 12.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N | 21-22 | Aluminum-wrought alloy | 1.0D | 0.5D | Vc | 155 | 315 | 470 | 630 | 785 | 840 | 840 | 840 | 835 |
| | | | | | fz | 0.01 | 0.018 | 0.026 | 0.037 | 0.043 | 0.052 | 0.068 | 0.089 | 0.105 |
| | | | | | RPM | 49338 | 50134 | 49869 | 50134 | 49975 | 44563 | 33423 | 26738 | 22149 |
| | | | | | FEED | 987 | 1805 | 2593 | 3710 | 4298 | 4635 | 4545 | 4759 | 4651 |
| | 26-28 | Copper and Copper Alloys (Bronze / Brass) | 1.0D | 0.5D | Vc | 155 | 315 | 420 | 420 | 425 | 420 | 420 | 420 | 420 |
| | | | | | fz | 0.01 | 0.017 | 0.026 | 0.031 | 0.039 | 0.047 | 0.063 | 0.079 | 0.095 |
| | | | | | RPM | 49338 | 50134 | 44563 | 33423 | 27056 | 22282 | 16711 | 13369 | 11141 |
| | | | | | FEED | 987 | 1705 | 2317 | 2072 | 2110 | 2094 | 2106 | 2112 | 2117 |
| | 29.1 | Duroplastic | 1.0D | 0.5D | Vc | 155 | 315 | 470 | 630 | 785 | 940 | 1255 | 1255 | 1265 |
| | | | | | fz | 0.007 | 0.014 | 0.021 | 0.026 | 0.034 | 0.042 | 0.057 | 0.069 | 0.084 |
| | | | | | RPM | 49338 | 50134 | 49869 | 50134 | 49975 | 49869 | 49935 | 39948 | 33555 |
| | | | | | FEED | 691 | 1404 | 2094 | 2607 | 3398 | 4189 | 5693 | 5513 | 5637 |

### 2 FLUTE CORNER RADIUS - SIDE CUTTING
### 2刃 圆鼻- 侧铣削

| ISO | VDI 3323 | Material Description 工件材料 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 1.0 | 2.0 | 3.0 | 4.0 | 5.0 | 6.0 | 8.0 | 10.0 | 12.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N | 21-22 | Aluminum-wrought alloy | 0.5D | 1.0D | Vc | 155 | 315 | 470 | 630 | 785 | 940 | 940 | 940 | 940 |
| | | | | | fz | 0.014 | 0.028 | 0.042 | 0.053 | 0.065 | 0.079 | 0.105 | 0.131 | 0.157 |
| | | | | | RPM | 49338 | 50134 | 49869 | 50134 | 49975 | 49869 | 37401 | 29921 | 24934 |
| | | | | | FEED | 1381 | 2807 | 4189 | 5314 | 6497 | 7879 | 7854 | 7839 | 7829 |
| | 26-28 | Copper and Copper Alloys (Bronze / Brass) | 0.5D | 1.0D | Vc | 155 | 315 | 470 | 630 | 630 | 630 | 630 | 630 | 630 |
| | | | | | fz | 0.012 | 0.025 | 0.037 | 0.047 | 0.06 | 0.073 | 0.094 | 0.12 | 0.141 |
| | | | | | RPM | 49338 | 50134 | 49869 | 50134 | 40107 | 33423 | 25067 | 20054 | 16711 |
| | | | | | FEED | 1184 | 2507 | 3690 | 4713 | 4813 | 4880 | 4713 | 4813 | 4713 |
| | 29.1 | Duroplastic | 0.5D | 1.0D | Vc | 155 | 315 | 470 | 630 | 785 | 940 | 1255 | 1255 | 1265 |
| | | | | | fz | 0.012 | 0.025 | 0.037 | 0.05 | 0.065 | 0.075 | 0.084 | 0.105 | 0.125 |
| | | | | | RPM | 49338 | 50134 | 49869 | 50134 | 49975 | 49869 | 49935 | 39948 | 33555 |
| | | | | | FEED | 1184 | 2507 | 3690 | 5013 | 6497 | 7480 | 8389 | 8389 | 8389 |



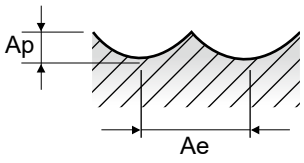
# CRX S END MILLS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

## SGED27 SERIES — 2 FLUTE BALL NOSE / 2刃 球头

| ISO | VDI 3323 | Material Description 工件材料 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 0.5 | 0.6 | 0.8 | 1.0 | 2.0 | 3.0 | 4.0 | 5.0 | 6.0 | 8.0 | 10.0 | 12.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N | 21 | Aluminum-wrought alloy | 0.05D | 0.02D | Vc | 80 | 95 | 125 | 155 | 250 | 245 | 240 | 240 | 245 | 250 | 250 | 250 |
| | | | | | fz | 0.005 | 0.007 | 0.009 | 0.01 | 0.022 | 0.03 | 0.042 | 0.052 | 0.061 | 0.079 | 0.1 | 0.122 |
| | | | | | RPM | 50930 | 50399 | 49736 | 49338 | 39789 | 25995 | 19099 | 15279 | 12998 | 9947 | 7958 | 6631 |
| | | | | | FEED | 509 | 706 | 895 | 987 | 1751 | 1560 | 1604 | 1589 | 1586 | 1572 | 1592 | 1618 |
| | 26-28 | Copper and Copper Alloys (Bronze / Brass) | 0.05D | 0.02D | Vc | 80 | 95 | 110 | 110 | 125 | 125 | 120 | 120 | 125 | 125 | 125 | 125 |
| | | | | | fz | 0.005 | 0.007 | 0.009 | 0.011 | 0.02 | 0.028 | 0.038 | 0.047 | 0.055 | 0.072 | 0.091 | 0.111 |
| | | | | | RPM | 50930 | 50399 | 43768 | 35014 | 19894 | 13263 | 9549 | 7639 | 6631 | 4974 | 3979 | 3316 |
| | | | | | FEED | 509 | 706 | 788 | 770 | 796 | 743 | 726 | 718 | 729 | 716 | 724 | 736 |
| | 29.1 | Duroplastic | 0.05D | 0.02D | Vc | 80 | 95 | 125 | 155 | 315 | 370 | 360 | 365 | 370 | 375 | 375 | 375 |
| | | | | | fz | 0.004 | 0.005 | 0.006 | 0.006 | 0.013 | 0.019 | 0.027 | 0.033 | 0.039 | 0.05 | 0.064 | 0.077 |
| | | | | | RPM | 50930 | 50399 | 49736 | 49338 | 50134 | 39258 | 28648 | 23237 | 19629 | 14921 | 11937 | 9947 |
| | | | | | FEED | 407 | 504 | 597 | 592 | 1303 | 1492 | 1547 | 1534 | 1531 | 1492 | 1528 | 1532 |



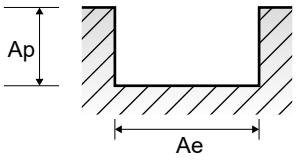

## SGED30, SGED31 SERIES

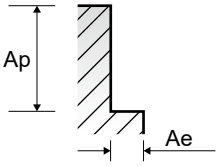
### 2 FLUTE - SLOTTING
### 2刃 - 槽铣削

| ISO | VDI 3323 | Material Description 工件材料 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 0.5 | 0.6 | 0.8 | 1.0 | 2.0 | 3.0 | 4.0 | 6.0 | 8.0 | 10.0 | 12.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N | 21-22 | Aluminum-wrought alloy | 1.0D | 0.5D | Vc | 80 | 95 | 125 | 155 | 315 | 330 | 325 | 325 | 330 | 325 | 330 |
| | | | | | fz | 0.005 | 0.006 | 0.008 | 0.01 | 0.01 | 0.023 | 0.032 | 0.048 | 0.064 | 0.081 | 0.097 |
| | | | | | RPM | 50930 | 50399 | 49736 | 49338 | 50134 | 35014 | 25863 | 17242 | 13130 | 10345 | 8754 |
| | | | | | FEED | 509 | 605 | 796 | 987 | 1003 | 1611 | 1655 | 1655 | 1681 | 1676 | 1698 |
| | 26-28 | Copper and Copper Alloys (Bronze / Brass) | 1.0D | 0.5D | Vc | 80 | 95 | 105 | 110 | 160 | 165 | 160 | 165 | 165 | 160 | 165 |
| | | | | | fz | 0.005 | 0.006 | 0.008 | 0.01 | 0.01 | 0.023 | 0.032 | 0.048 | 0.064 | 0.081 | 0.097 |
| | | | | | RPM | 50930 | 50399 | 41778 | 35014 | 25465 | 17507 | 12732 | 8754 | 6565 | 5093 | 4377 |
| | | | | | FEED | 509 | 605 | 668 | 700 | 509 | 805 | 815 | 840 | 840 | 825 | 849 |
| | 29.1 | Duroplastic | 1.0D | 0.5D | Vc | 80 | 95 | 125 | 155 | 315 | 470 | 490 | 490 | 500 | 490 | 495 |
| | | | | | fz | 0.001 | 0.002 | 0.002 | 0.003 | 0.004 | 0.007 | 0.009 | 0.014 | 0.018 | 0.023 | 0.028 |
| | | | | | RPM | 50930 | 50399 | 49736 | 49338 | 50134 | 49869 | 38993 | 25995 | 19894 | 15597 | 13130 |
| | | | | | FEED | 102 | 202 | 199 | 296 | 401 | 698 | 702 | 728 | 716 | 717 | 735 |

### 2 FLUTE - SIDE CUTTING
### 2刃 - 侧铣削

| ISO | VDI 3323 | Material Description 工件材料 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 0.5 | 0.6 | 0.8 | 1.0 | 2.0 | 3.0 | 4.0 | 6.0 | 8.0 | 10.0 | 12.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N | 21-22 | Aluminum-wrought alloy | 0.5D | 1.0D | Vc | 80 | 95 | 125 | 130 | 260 | 260 | 265 | 270 | 265 | 265 | 270 |
| | | | | | fz | 0.005 | 0.006 | 0.008 | 0.01 | 0.011 | 0.025 | 0.034 | 0.053 | 0.069 | 0.086 | 0.107 |
| | | | | | RPM | 50930 | 50399 | 49736 | 41380 | 41380 | 27587 | 21088 | 14324 | 10544 | 8435 | 7162 |
| | | | | | FEED | 509 | 605 | 796 | 828 | 910 | 1379 | 1434 | 1518 | 1455 | 1451 | 1533 |
| | 26-28 | Copper and Copper Alloys (Bronze / Brass) | 0.5D | 1.0D | Vc | 80 | 85 | 85 | 85 | 170 | 175 | 175 | 180 | 175 | 175 | 180 |
| | | | | | fz | 0.005 | 0.006 | 0.008 | 0.01 | 0.01 | 0.023 | 0.032 | 0.05 | 0.064 | 0.08 | 0.1 |
| | | | | | RPM | 50930 | 45094 | 33820 | 27056 | 27056 | 18568 | 13926 | 9549 | 6963 | 5570 | 4775 |
| | | | | | FEED | 509 | 541 | 541 | 541 | 541 | 854 | 891 | 955 | 891 | 891 | 955 |
| | 29.1 | Duroplastic | 0.5D | 1.0D | Vc | 80 | 95 | 125 | 155 | 315 | 350 | 350 | 360 | 350 | 350 | 360 |
| | | | | | fz | 0.004 | 0.005 | 0.006 | 0.008 | 0.009 | 0.018 | 0.026 | 0.04 | 0.051 | 0.064 | 0.08 |
| | | | | | RPM | 50930 | 50399 | 49736 | 49338 | 50134 | 37136 | 27852 | 19099 | 13926 | 11141 | 9549 |
| | | | | | FEED | 407 | 504 | 597 | 789 | 902 | 1337 | 1448 | 1528 | 1420 | 1426 | 1528 |



YG

Leading Through Innovation

# SOLID CARBIDE

# K-2 END MILLS

- General Purpose / Conventional or High Speed Milling / Wet & Dry Cutting
- 适用于普通加工 / 普通或高速铣削 / 湿切&干切削

# SELECTION GUIDE
## 选用指南

YG MILLING TOOLS

## SOLID CARBIDE
# K-2
# END MILLS

General Purpose
Conventional or High Speed Milling, Wet & Dry Cutting
普通用途
普通或高速铣削 / 湿切&干切削

Please visit globalyg1.com/mat for material search

◎ : Excellent (优秀) ○ : Good (良好)

Recommended cutting conditions (推荐加工参数) : p.C491

| ISO | VDI 3323 | Material Description | Composition / Structure / Heat Treatment | | HB | HRc | K-2 Plus EMC56 | EMC60 | EMC61 | EMC62 |
|---|---|---|---|---|---|---|---|---|---|---|
| | | SERIES 系列 | | | | | EMC56 | EMC60 | EMC61 | EMC62 |
| | | FLUTE 槽数 | | | | | 4 | 2 | 2 | 4 |
| | | HELIX ANGLE 螺旋角度 | | | | | 30° | 30° | 30° | 30° |
| | | CUTTING EDGE SHAPE 类型 | | | | | BALL NOSE | BALL NOSE | CORNER RADIUS | CORNER RADIUS |
| | | SIZE MIN 最小尺寸 | | | | | R0.1 | R0.2 | D3.0 | D3.0 |
| | | SIZE MAX 最大尺寸 | | | | | R10.0 | R3.0 | D12.0 | D12.0 |
| | | PAGE 页数 | | | | | C463 | C464-468 | C469-470 | C471-472 |
| | | | | | | | SHORT LENGTH | LONG NECK | - | - |
| | | | | | | | TiAlN | TiAlN | TiAlN | TiAlN |
| P | 1 | Non-alloy steel | About 0.15% C | Annealed | 125 | | ◎ | ◎ | ◎ | ◎ |
| | 2 | | About 0.45% C | Annealed | 190 | 13 | ◎ | ◎ | ◎ | ◎ |
| | 3 | | About 0.45% C | Quenched & Tempered | 250 | 25 | ◎ | ◎ | ◎ | ◎ |
| | 4 | | About 0.75% C | Annealed | 270 | 28 | ◎ | ◎ | ◎ | ◎ |
| | 5 | | About 0.75% C | Quenched & Tempered | 300 | 32 | ◎ | ◎ | ◎ | ◎ |
| | 6 | Low alloy steel | | Annealed | 180 | 10 | ◎ | ◎ | ◎ | ◎ |
| | 7 | | | Quenched & Tempered | 275 | 29 | ◎ | ◎ | ◎ | ◎ |
| | 8 | | | Quenched & Tempered | 300 | 32 | ◎ | ◎ | ◎ | ◎ |
| | 9 | | | Quenched & Tempered | 350 | 38 | ◎ | ◎ | ◎ | ◎ |
| | 10 | High alloyed steel, and tool steel | | Annealed | 200 | 15 | ◎ | ◎ | ◎ | ◎ |
| | 11 | | | Quenched & Tempered | 325 | 35 | ◎ | ◎ | ◎ | ◎ |
| M | 12 | Stainless steel | Ferritic / Martensitic | Annealed | 200 | 15 | ○ | | | |
| | 13 | | Martensitic | Quenched & Tempered | 240 | 23 | ○ | | | |
| | 14 | | Austenitic | | 180 | 10 | ○ | | ○ | ○ |
| K | 15 | Grey cast iron | Pearlitic / ferritic | | 180 | 10 | ○ | ○ | ○ | ○ |
| | 16 | | Pearlitic (Martensitic) | | 260 | 26 | ○ | ○ | ○ | ○ |
| | 17 | Nodular cast iron | Ferritic | | 160 | 3 | ○ | ○ | ○ | ○ |
| | 18 | | Pearlitic | | 250 | 25 | ○ | ○ | ○ | ○ |
| | 19 | Malleable cast iron | Ferritic | | 130 | | ○ | ○ | ○ | ○ |
| | 20 | | Pearlitic | | 230 | 21 | ○ | ○ | ○ | ○ |
| N | 21 | Aluminum-wrought alloy | Not Curable | | 60 | | ○ | | | |
| | 22 | | Curable | Hardened | 100 | | ○ | | | |
| | 23 | Aluminum-cast, alloyed | ≤ 12% Si, Not Curable | | 75 | | ○ | | | |
| | 24 | | ≤ 12% Si, Curable | Hardened | 90 | | ○ | | | |
| | 25 | | > 12% Si, Not Curable | | 130 | | ○ | | | |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | Cutting Alloys, PB>1% | | 110 | | ○ | | | |
| | 27 | | CuZn, CuSnZn (Brass) | | 90 | | ○ | | | |
| | 28 | | CuSn, lead-free copper and electrolytic copper | | 100 | | ○ | | | |
| | 29 | Non Metallic Materials | Duroplastic, Fiber Reinforced Plastic | | | | | | | |
| | 30 | | Rubber, Wood, etc. | | | | | | | |
| S | 31 | Heat Resistant Super Alloys | Fe Based | Annealed | 200 | 15 | | | | |
| | 32 | | | Cured | 280 | 30 | | | | |
| | 33 | | Ni or Co Based | Annealed | 250 | 25 | | | | |
| | 34 | | | Cured | 350 | 38 | | | | |
| | 35 | | | Cast | 320 | 34 | | | | |
| | 36 | Titanium Alloys | Pure Titanium | | 400 Rm | | | | | |
| | 37 | | Alpha + Beta Alloys | Hardened | 1050 Rm | | | | | |
| H | 38 | Hardened steel | | Hardened | 550 | 55 | ○ | ○ | ○ | ○ |
| | 39 | | | Hardened | 630 | 60 | | | | |
| | 40 | Chilled Cast Iron | | Cast | 400 | 42 | ○ | ○ | ○ | ○ |
| | 41 | Hardened Cast Iron | | Hardened | 550 | 55 | | | | |



| | K-2 Plus | | | | | | | | K-2 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | EMC59 | EMC52 | EMC53 | EMC54 | EMC55 | EMC57 | EMC58 | EMC69 | G9A25 | G9B52 |
| | 2 | 2 | 2 | 4 | 4 | 4&6 | 6 | 4-6 | 2 | 2 |
| | 30° | 35° | 35° | 35° | 35° | 45° | 45° | 45° | 30° | 30° |
| | SQUARE | SQUARE | SQUARE | SQUARE | SQUARE | SQUARE | SQUARE | ROUGHING | BALL NOSE | BALL NOSE |
| | D0.4 | D1.0 | D2.0 | D1.0 | D2.0 | D1.0 | D6.0 | D6.0 | R0.5 | R0.5 |
| | D6.0 | D20.0 | D20.0 | D20.0 | D20.0 | D20.0 | D20.0 | D20.0 | R10.0 | R10.0 |
| | C473-478 | C479 | C480 | C481 | C482 | C483 | | C484 | C485 | C486 |
| | LONG NECK | SHORT LENGTH | LONG LENGTH | SHORT LENGTH | LONG LENGTH | SHORT LENGTH | LONG LENGTH | FINE | REGULAR LENGTH | LONG LENGTH |
| | TiAlN | TiAlN | TiAlN | TiAlN | TiAlN | TiAlN | TiAlN | X-Coating | TiAlN | TiAlN |
| | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ◎ | ◎ |
| | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ◎ | ◎ |
| | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ◎ | ◎ | ◎ |
| | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ◎ | ◎ | ◎ |
| | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ◎ | ◎ |
| | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ◎ | ◎ | ◎ |
| | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ◎ | ◎ |
| | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | | ○ | ○ | ○ | ○ | | | | ○ | ○ |
| | | ○ | ○ | ○ | ○ | | | | ○ | ○ |
| | | ○ | ○ | ○ | ○ | | | ◎ | ○ | ○ |
| | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | ○ | ○ |
| | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | ○ | ○ |
| | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | ○ | ○ |
| | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | ○ | ○ |
| | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | ○ | ○ |
| | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | ○ | ○ |
| | | ○ | ○ | ○ | ○ | | | | ○ | ○ |
| | | ○ | ○ | ○ | ○ | | | | ○ | ○ |
| | | ○ | ○ | ○ | ○ | | | | ○ | ○ |
| | | ○ | ○ | ○ | ○ | | | | ○ | ○ |
| | | ○ | ○ | ○ | ○ | | | | ○ | ○ |
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| | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| | | | | | | | | | | |
| | ○ | ○ | ○ | ○ | ○ | ◎ | ◎ | ◎ | ○ | ○ |
| | | | | | | ○ | ○ | | | |

BALL NOSE = 球头 CORNER RADIUS = 圆鼻 SQUARE = 平头 ROUGHING = 粗加工
SHORT LENGTH= 短刃 REGULAR LENGTH = 普通刃长 LONG LENGTH = 长刃 LONG NECK = 颈部加长 FINE= 细牙

# SELECTION GUIDE
## 选用指南

MILLING TOOLS

# SOLID CARBIDE K-2 END MILLS

General Purpose with Coating
Conventional or High Speed Milling, Wet or Dry Cutting
普通用途
普通或高速铣削 / 湿切&干切削

Please visit globalyg1.com/mat for material search

◎ : Excellent (优秀) ○ : Good (良好)

Recommended cutting conditions (推荐加工参数) : p.491

| | | | | | | K-2 | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | SERIES 系列 | | G9A23 | G9B50 | G9A24 | G9B51 |
| | | | | FLUTE 槽数 | | 2 | 2 | 4 | 4 |
| | | | | HELIX ANGLE 螺旋角度 | | 30° | 30° | 30° | 30° |
| | | | | CUTTING EDGE SHAPE 类型 | | SQUARE | SQUARE | SQUARE | SQUARE |
| | | | | SIZE MIN 最小尺寸 | | D1.0 | D1.0 | D1.0 | D1.0 |
| | | | | SIZE MAX 最大尺寸 | | D20.0 | D20.0 | D20.0 | D20.0 |
| | | | | PAGE 页数 | | C487 | C488 | C489 | C490 |
| | | | | | | REGULAR LENGTH | LONG LENGTH | REGULAR LENGTH | LONG LENGTH |
| | | | | | | TiAlN | TiAlN | TiAlN | TiAlN |
| ISO | VDI 3323 | Material Description | Composition / Structure / Heat Treatment | | HB | HRc | | | | |
| P | 1 | Non-alloy steel | About 0.15% C | Annealed | 125 | | ◎ | ◎ | ◎ | ◎ |
| | 2 | | About 0.45% C | Annealed | 190 | 13 | ◎ | ◎ | ◎ | ◎ |
| | 3 | | About 0.45% C | Quenched & Tempered | 250 | 25 | ◎ | ◎ | ◎ | ◎ |
| | 4 | | About 0.75% C | Annealed | 270 | 28 | ◎ | ◎ | ◎ | ◎ |
| | 5 | | About 0.75% C | Quenched & Tempered | 300 | 32 | ◎ | ◎ | ◎ | ◎ |
| | 6 | Low alloy steel | | Annealed | 180 | 10 | ◎ | ◎ | ◎ | ◎ |
| | 7 | | | Quenched & Tempered | 275 | 29 | ◎ | ◎ | ◎ | ◎ |
| | 8 | | | Quenched & Tempered | 300 | 32 | ◎ | ◎ | ◎ | ◎ |
| | 9 | | | Quenched & Tempered | 350 | 38 | ◎ | ◎ | ◎ | ◎ |
| | 10 | High alloyed steel, and tool steel | | Annealed | 200 | 15 | ◎ | ◎ | ◎ | ◎ |
| | 11 | | | Quenched & Tempered | 325 | 35 | ◎ | ◎ | ◎ | ◎ |
| M | 12 | Stainless steel | Ferritic / Martensitic | Annealed | 200 | 15 | ○ | ○ | ○ | ○ |
| | 13 | | Martensitic | Quenched & Tempered | 240 | 23 | ○ | ○ | ○ | ○ |
| | 14 | | Austenitic | | 180 | 10 | ○ | ○ | ○ | ○ |
| K | 15 | Grey cast iron | Pearlitic / ferritic | | 180 | 10 | ○ | ○ | ○ | ○ |
| | 16 | | Pearlitic (Martensitic) | | 260 | 26 | ○ | ○ | ○ | ○ |
| | 17 | Nodular cast iron | Ferritic | | 160 | 3 | ○ | ○ | ○ | ○ |
| | 18 | | Pearlitic | | 250 | 25 | ○ | ○ | ○ | ○ |
| | 19 | Malleable cast iron | Ferritic | | 130 | | ○ | ○ | ○ | ○ |
| | 20 | | Pearlitic | | 230 | 21 | ○ | ○ | ○ | ○ |
| N | 21 | Aluminum-wrought alloy | Not Curable | | 60 | | ○ | ○ | ○ | ○ |
| | 22 | | Curable | Hardened | 100 | | ○ | ○ | ○ | ○ |
| | 23 | Aluminum-cast, alloyed | ≤ 12% Si, Not Curable | | 75 | | ○ | ○ | ○ | ○ |
| | 24 | | ≤ 12% Si, Curable | Hardened | 90 | | ○ | ○ | ○ | ○ |
| | 25 | | > 12% Si, Not Curable | | 130 | | ○ | ○ | ○ | ○ |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | Cutting Alloys, PB>1% | | 110 | | ○ | ○ | ○ | ○ |
| | 27 | | CuZn, CuSnZn (Brass) | | 90 | | ○ | ○ | ○ | ○ |
| | 28 | | CuSn, lead-free copper and electrolytic copper | | 100 | | ○ | ○ | ○ | ○ |
| | 29 | Non Metallic Materials | Duroplastic, Fiber Reinforced Plastic | | | | | | | |
| | 30 | | Rubber, Wood, etc. | | | | | | | |
| S | 31 | Heat Resistant Super Alloys | Fe Based | Annealed | 200 | 15 | | | | |
| | 32 | | | Cured | 280 | 30 | | | | |
| | 33 | | Ni or Co Based | Annealed | 250 | 25 | | | | |
| | 34 | | | Cured | 350 | 38 | | | | |
| | 35 | | | Cast | 320 | 34 | | | | |
| | 36 | Titanium Alloys | Pure Titanium | | 400 Rm | | | | | |
| | 37 | | Alpha + Beta Alloys | Hardened | 1050 Rm | | | | | |
| H | 38 | Hardened steel | | Hardened | 550 | 55 | | | | |
| | 39 | | | Hardened | 630 | 60 | | | | |
| | 40 | Chilled Cast Iron | | Cast | 400 | 42 | ○ | ○ | ○ | ○ |
| | 41 | Hardened Cast Iron | | Hardened | 550 | 55 | | | | |

BALL NOSE = 球头　CORNER RADIUS = 圆鼻　SQUARE = 平头　ROUGHING = 粗加工
SHORT LENGTH= 短刃　REGULAR LENGTH = 普通刃长　LONG LENGTH = 长刃　LONG NECK = 颈部加长　FINE= 细牙





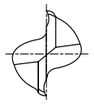
# K-2 Plus END MILLS

PLAIN SHANK **EMC56 SERIES**

## CARBIDE, 2 FLUTE SHORT LENGTH BALL NOSE
## 硬质合金，2刃 短刃 球头

- ▶ Designed for general purposes to carbon steels, tool steels, alloy steels and stainless steels.
- ▶ Suitable for high speed machining in wet or dry condition.
- ▶ Designed for milling of radius bottom slots, fillets and special contours.
- ▶ Application in high speed machining, wet and dry cutting conditions.

- ▶ 设计用于加工碳钢，工具钢，合金钢，不锈钢等多种用途的钢
- ▶ 高耐磨性
- ▶ 设计用于铣削圆型底部的槽，带和特殊轮廓
- ▶ 适应于高速加工，湿式和干式切削条件



CARBIDE | 2 | 30° | R ±0.01 | R ±0.02 | PLAIN

p.C491

R1.0 - R3　R3.5 - R10

Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK<br>POWER MILLING CHUCK | D15 - 46<br>D161 - 176 |
| ◎ | - | - | SHRINK FIT HOLDER | D47 - 72 |
| ○ | - | - | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Radius of Ball Nose 圆弧角 R | Mill Diameter 直径 | Shank Diameter 柄径 | Length of Cut 刃长 | Overall Length 全长 |
|---|---|---|---|---|---|
| EMC56002 | R0.1 | 0.2 | 4 | 0.4 | 50 |
| EMC56003 | R0.15 | 0.3 | 4 | 0.6 | 50 |
| EMC56004 | R0.2 | 0.4 | 4 | 0.8 | 50 |
| EMC56005 | R0.25 | 0.5 | 4 | 1.0 | 50 |
| EMC56006 | R0.3 | 0.6 | 4 | 1.2 | 50 |
| EMC56008 | R0.4 | 0.8 | 4 | 1.6 | 50 |
| EMC56010 | R0.5 | 1.0 | 4 | 2.0 | 50 |
| EMC56015 | R0.75 | 1.5 | 4 | 4.0 | 50 |
| EMC56020 | R1.0 | 2.0 | 4 | 5.0 | 50 |
| EMC56025 | R1.25 | 2.5 | 4 | 6.0 | 50 |
| EMC56030 | R1.5 | 3.0 | 4 | 6.0 | 50 |
| EMC56901 | R1.5 | 3.0 | 6 | 6.0 | 50 |
| EMC56040 | R2.0 | 4.0 | 4 | 8.0 | 50 |
| EMC56902 | R2.0 | 4.0 | 6 | 8.0 | 50 |
| EMC56050 | R2.5 | 5.0 | 6 | 10.0 | 50 |
| EMC56060 | R3.0 | 6.0 | 6 | 12.0 | 50 |
| EMC56070 | R3.5 | 7.0 | 8 | 14.0 | 60 |
| EMC56080 | R4.0 | 8.0 | 8 | 14.0 | 60 |
| EMC56090 | R4.5 | 9.0 | 10 | 18.0 | 75 |
| EMC56100 | R5.0 | 10.0 | 10 | 20.0 | 75 |
| EMC56120 | R6.0 | 12.0 | 12 | 24.0 | 75 |
| EMC56160 | R8.0 | 16.0 | 16 | 32.0 | 100 |
| EMC56200 | R10.0 | 20.0 | 20 | 40.0 | 100 |

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.03 | h5 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | ○ | |

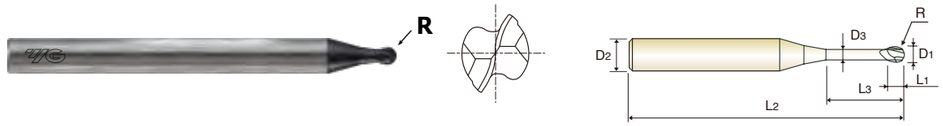
# K-2 Plus END MILLS

PLAIN SHANK **EMC60 SERIES**

## CARBIDE, 2 FLUTE BALL NOSE LONG NECK
## 硬质合金，2刃 球头 颈部加长

- ▶ Designed for general purposes to carbon steels, tool steels, alloy steels and stainless steels.
- ▶ Deep slotting is possible by reduced neck.
- ▶ Suitable for high speed machining in wet or dry condition.

- ▶ 设计用于加工碳钢，工具钢，合金钢，不锈钢等多种用途的钢
- ▶ 由于颈部稍细能够加工深槽
- ▶ 高耐磨性




CARBIDE | 2 | 30° | R ±0.01 | PLAIN

p.C497-498

Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK<br>POWER MILLING CHUCK | D15 - 46<br>D161 - 176 |
| - | - | SHRINK FIT HOLDER | D47 - 72 |
| - | - | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Radius of Ball Nose<br>圆弧角<br>R (±0.01) | Mill Diameter<br>直径<br>D1 | Shank Diameter<br>柄径<br>D2 | Length of Cut<br>刃长<br>L1 | Length Below Shank<br>颈长<br>L3 | Overall Length<br>全长<br>L2 | Neck Diameter<br>颈径<br>D3 |
|---|---|---|---|---|---|---|---|
| EMC60004005 | R0.2 | **0.4** | 4 | 0.4 | 0.5 | 45 | 0.37 |
| EMC60004010 | R0.2 | **0.4** | 4 | 0.4 | 1 | 45 | 0.37 |
| EMC60004015 | R0.2 | **0.4** | 4 | 0.4 | 1.5 | 45 | 0.37 |
| EMC60004020 | R0.2 | **0.4** | 4 | 0.4 | 2 | 45 | 0.37 |
| EMC60004030 | R0.2 | **0.4** | 4 | 0.4 | 3 | 45 | 0.37 |
| EMC60004040 | R0.2 | **0.4** | 4 | 0.4 | 4 | 45 | 0.37 |
| EMC60004050 | R0.2 | **0.4** | 4 | 0.4 | 5 | 45 | 0.37 |
| EMC60005010 | R0.25 | **0.5** | 4 | 0.5 | 1 | 45 | 0.45 |
| EMC60005020 | R0.25 | **0.5** | 4 | 0.5 | 2 | 45 | 0.45 |
| EMC60005030 | R0.25 | **0.5** | 4 | 0.5 | 3 | 45 | 0.45 |
| EMC60005040 | R0.25 | **0.5** | 4 | 0.5 | 4 | 45 | 0.45 |
| EMC60005050 | R0.25 | **0.5** | 4 | 0.5 | 5 | 45 | 0.45 |
| EMC60005060 | R0.25 | **0.5** | 4 | 0.5 | 6 | 45 | 0.45 |
| EMC60005080 | R0.25 | **0.5** | 4 | 0.5 | 8 | 45 | 0.45 |
| EMC60006010 | R0.3 | **0.6** | 4 | 0.6 | 1 | 45 | 0.55 |
| EMC60006020 | R0.3 | **0.6** | 4 | 0.6 | 2 | 45 | 0.55 |
| EMC60006030 | R0.3 | **0.6** | 4 | 0.6 | 3 | 45 | 0.55 |
| EMC60006040 | R0.3 | **0.6** | 4 | 0.6 | 4 | 45 | 0.55 |
| EMC60006050 | R0.3 | **0.6** | 4 | 0.6 | 5 | 45 | 0.55 |
| EMC60006060 | R0.3 | **0.6** | 4 | 0.6 | 6 | 45 | 0.55 |
| EMC60006080 | R0.3 | **0.6** | 4 | 0.6 | 8 | 45 | 0.55 |
| EMC60006100 | R0.3 | **0.6** | 4 | 0.6 | 10 | 45 | 0.55 |
| EMC60008020 | R0.4 | **0.8** | 4 | 0.8 | 2 | 45 | 0.75 |
| EMC60008040 | R0.4 | **0.8** | 4 | 0.8 | 4 | 45 | 0.75 |

▶ NEXT PAGE 下页

| Size<br>尺寸 | Mill Dia.Tolerance (mm)<br>直径公差 | Shank Dia.Tolerance<br>柄径公差 |
|---|---|---|
| up to Ø3 Ø3以下 | 0 ~ - 0.015 | h5 |
| over Ø3 超过Ø3 | 0 ~ - 0.020 | |

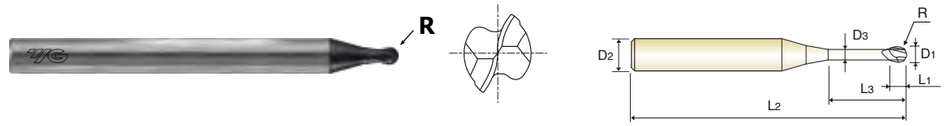
◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | | | ○ | |



K-2 Plus END MILLS
PLAIN SHANK EMC60 SERIES
CARBIDE, 2 FLUTE BALL NOSE LONG NECK
硬质合金，2刃 球头 颈部加长
▶ Designed for general purposes to carbon steels, tool steels, alloy steels and stainless steels.
▶ Deep slotting is possible by reduced neck.
▶ Suitable for high speed machining in wet or dry condition.
▶ 设计用于加工碳钢，工具钢，合金钢，不锈钢等多种用途的钢
▶ 由于颈部稍细能够加工深槽
▶ 高耐磨性




CARBIDE | 2 | 30° | R ±0.01 | PLAIN

p.C497-498

Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK<br>POWER MILLING CHUCK | D15 - 46<br>D161 - 176 |
| - | - | SHRINK FIT HOLDER | D47 - 72 |
| - | - | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Radius of Ball Nose<br>圆弧角<br>R (±0.01) | Mill Diameter<br>直径<br>D1 | Shank Diameter<br>柄径<br>D2 | Length of Cut<br>刃长<br>L1 | Length Below Shank<br>颈长<br>L3 | Overall Length<br>全长<br>L2 | Neck Diameter<br>颈径<br>D3 |
|---|---|---|---|---|---|---|---|
| EMC60008060 | R0.4 | **0.8** | 4 | 0.8 | 6 | 45 | 0.75 |
| EMC60008080 | R0.4 | **0.8** | 4 | 0.8 | 8 | 45 | 0.75 |
| EMC60008100 | R0.4 | **0.8** | 4 | 0.8 | 10 | 45 | 0.75 |
| EMC60010030 | R0.5 | **1.0** | 4 | 1.0 | 3 | 45 | 0.95 |
| EMC60010040 | R0.5 | **1.0** | 4 | 1.0 | 4 | 45 | 0.95 |
| EMC60010050 | R0.5 | **1.0** | 4 | 1.0 | 5 | 45 | 0.95 |
| EMC60010060 | R0.5 | **1.0** | 4 | 1.0 | 6 | 45 | 0.95 |
| EMC60010070 | R0.5 | **1.0** | 4 | 1.0 | 7 | 45 | 0.95 |
| EMC60010080 | R0.5 | **1.0** | 4 | 1.0 | 8 | 45 | 0.95 |
| EMC60010100 | R0.5 | **1.0** | 4 | 1.0 | 10 | 45 | 0.95 |
| EMC60010120 | R0.5 | **1.0** | 4 | 1.0 | 12 | 45 | 0.95 |
| EMC60010140 | R0.5 | **1.0** | 4 | 1.0 | 14 | 50 | 0.95 |
| EMC60010160 | R0.5 | **1.0** | 4 | 1.0 | 16 | 50 | 0.95 |
| EMC60010200 | R0.5 | **1.0** | 4 | 1.0 | 20 | 55 | 0.95 |
| EMC60012040 | R0.6 | **1.2** | 4 | 1.2 | 4 | 45 | 1.15 |
| EMC60012060 | R0.6 | **1.2** | 4 | 1.2 | 6 | 45 | 1.15 |
| EMC60012080 | R0.6 | **1.2** | 4 | 1.2 | 8 | 45 | 1.15 |
| EMC60012100 | R0.6 | **1.2** | 4 | 1.2 | 10 | 45 | 1.15 |
| EMC60012120 | R0.6 | **1.2** | 4 | 1.2 | 12 | 45 | 1.15 |
| EMC60014080 | R0.7 | **1.4** | 4 | 1.4 | 8 | 45 | 1.35 |
| EMC60014120 | R0.7 | **1.4** | 4 | 1.4 | 12 | 45 | 1.35 |
| EMC60014160 | R0.7 | **1.4** | 4 | 1.4 | 16 | 50 | 1.35 |
| EMC60015040 | R0.75 | **1.5** | 4 | 1.5 | 4 | 45 | 1.45 |
| EMC60015060 | R0.75 | **1.5** | 4 | 1.5 | 6 | 45 | 1.45 |

▶ NEXT PAGE 下页

| Size<br>尺寸 | Mill Dia.Tolerance (mm)<br>直径公差 | Shank Dia.Tolerance<br>柄径公差 |
|---|---|---|
| up to Ø3 Ø3以下 | 0 ~ - 0.015 | h5 |
| over Ø3 超过Ø3 | 0 ~ - 0.020 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 160 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | | | ○ | |

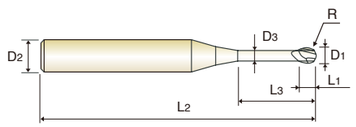
# K-2 Plus END MILLS

PLAIN SHANK **EMC60 SERIES**

## CARBIDE, 2 FLUTE BALL NOSE LONG NECK
## 硬质合金，2刃 球头 颈部加长

- ▶ Designed for general purposes to carbon steels, tool steels, alloy steels and stainless steels.
- ▶ Deep slotting is possible by reduced neck.
- ▶ Suitable for high speed machining in wet or dry condition.

- ▶ 设计用于加工碳钢，工具钢，合金钢，不锈钢等多种用途的钢
- ▶ 由于颈部稍细能够加工深槽
- ▶ 高耐磨性




CARBIDE | 2 | 30° | R ±0.01 | PLAIN

p.C497-498

Recommended ToolHolder

| Flat Shank | | Page | Plain Shank | Page |
|---|---|---|---|---|
| END MILL HOLDER | D118 - 137 | | HYDRAULIC CHUCK<br>POWER MILLING CHUCK | D15 - 46<br>D161 - 176 |
| - | - | | SHRINK FIT HOLDER | D47 - 72 |
| - | - | | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Radius of Ball Nose<br>圆弧角<br>R (±0.01) | Mill Diameter<br>直径<br>D1 | Shank Diameter<br>柄径<br>D2 | Length of Cut<br>刃长<br>L1 | Length Below Shank<br>颈长<br>L3 | Overall Length<br>全长<br>L2 | Neck Diameter<br>颈径<br>D3 |
|---|---|---|---|---|---|---|---|
| EMC60015080 | R0.75 | 1.5 | 4 | 1.5 | 8 | 45 | 1.45 |
| EMC60015100 | R0.75 | 1.5 | 4 | 1.5 | 10 | 45 | 1.45 |
| EMC60015120 | R0.75 | 1.5 | 4 | 1.5 | 12 | 45 | 1.45 |
| EMC60015140 | R0.75 | 1.5 | 4 | 1.5 | 14 | 50 | 1.45 |
| EMC60015160 | R0.75 | 1.5 | 4 | 1.5 | 16 | 50 | 1.45 |
| EMC60015200 | R0.75 | 1.5 | 4 | 1.5 | 20 | 55 | 1.45 |
| EMC60016080 | R0.8 | 1.6 | 4 | 1.6 | 8 | 45 | 1.55 |
| EMC60016120 | R0.8 | 1.6 | 4 | 1.6 | 12 | 45 | 1.55 |
| EMC60016160 | R0.8 | 1.6 | 4 | 1.6 | 16 | 50 | 1.55 |
| EMC60016200 | R0.8 | 1.6 | 4 | 1.6 | 20 | 55 | 1.55 |
| EMC60018080 | R0.9 | 1.8 | 4 | 1.8 | 8 | 45 | 1.75 |
| EMC60018120 | R0.9 | 1.8 | 4 | 1.8 | 12 | 45 | 1.75 |
| EMC60018160 | R0.9 | 1.8 | 4 | 1.8 | 16 | 50 | 1.75 |
| EMC60018200 | R0.9 | 1.8 | 4 | 1.8 | 20 | 55 | 1.75 |
| EMC60020040 | R1.0 | 2.0 | 4 | 2.0 | 4 | 45 | 1.95 |
| EMC60020060 | R1.0 | 2.0 | 4 | 2.0 | 6 | 45 | 1.95 |
| EMC60020080 | R1.0 | 2.0 | 4 | 2.0 | 8 | 45 | 1.95 |
| EMC60020100 | R1.0 | 2.0 | 4 | 2.0 | 10 | 45 | 1.95 |
| EMC60020120 | R1.0 | 2.0 | 4 | 2.0 | 12 | 50 | 1.95 |
| EMC60020140 | R1.0 | 2.0 | 4 | 2.0 | 14 | 50 | 1.95 |
| EMC60020160 | R1.0 | 2.0 | 4 | 2.0 | 16 | 50 | 1.95 |
| EMC60020180 | R1.0 | 2.0 | 4 | 2.0 | 18 | 55 | 1.95 |
| EMC60020200 | R1.0 | 2.0 | 4 | 2.0 | 20 | 55 | 1.95 |
| EMC60020220 | R1.0 | 2.0 | 4 | 2.0 | 22 | 60 | 1.95 |

▶ NEXT PAGE 下页

| Size<br>尺寸 | Mill Dia.Tolerance (mm)<br>直径公差 | Shank Dia.Tolerance<br>柄径公差 |
|---|---|---|
| up to Ø3 Ø3以下 | 0 ~ - 0.015 | h5 |
| over Ø3 超过Ø3 | 0 ~ - 0.020 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ○ | |



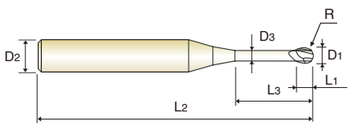
K-2 Plus END MILLS

PLAIN SHANK EMC60 SERIES

CARBIDE, 2 FLUTE BALL NOSE LONG NECK
硬质合金，2刃 球头 颈部加长

▶ Designed for general purposes to carbon steels, tool steels, alloy steels and stainless steels.
▶ Deep slotting is possible by reduced neck.
▶ Suitable for high speed machining in wet or dry condition.

▶ 设计用于加工碳钢，工具钢，合金钢，不锈钢等多种用途的钢
▶ 由于颈部稍细能够加工深槽
▶ 高耐磨性




CARBIDE | 2 | 30° | R ±0.01 | PLAIN

p.C497-498

Recommended ToolHolder

| Flat Shank | | Page | Plain Shank | Page |
|---|---|---|---|---|
| END MILL HOLDER | D118 - 137 | | HYDRAULIC CHUCK<br>POWER MILLING CHUCK | D15 - 46<br>D161 - 176 |
| - | - | | SHRINK FIT HOLDER | D47 - 72 |
| - | - | | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Radius of Ball Nose<br>圆弧角<br>R (±0.01) | Mill Diameter<br>直径<br>D1 | Shank Diameter<br>柄径<br>D2 | Length of Cut<br>刃长<br>L1 | Length Below Shank<br>颈长<br>L3 | Overall Length<br>全长<br>L2 | Neck Diameter<br>颈径<br>D3 |
|---|---|---|---|---|---|---|---|
| EMC60020260 | R1.0 | 2.0 | 4 | 2.0 | 26 | 70 | 1.95 |
| EMC60020300 | R1.0 | 2.0 | 4 | 2.0 | 30 | 70 | 1.95 |
| EMC60025080 | R1.25 | 2.5 | 6 | 2.5 | 8 | 50 | 2.4 |
| EMC60025100 | R1.25 | 2.5 | 6 | 2.5 | 10 | 50 | 2.4 |
| EMC60025160 | R1.25 | 2.5 | 6 | 2.5 | 16 | 55 | 2.4 |
| EMC60025200 | R1.25 | 2.5 | 6 | 2.5 | 20 | 60 | 2.4 |
| EMC60030080 | R1.5 | 3.0 | 6 | 3.0 | 8 | 50 | 2.85 |
| EMC60030100 | R1.5 | 3.0 | 6 | 3.0 | 10 | 50 | 2.85 |
| EMC60030120 | R1.5 | 3.0 | 6 | 3.0 | 12 | 50 | 2.85 |
| EMC60030140 | R1.5 | 3.0 | 6 | 3.0 | 14 | 55 | 2.85 |
| EMC60030160 | R1.5 | 3.0 | 6 | 3.0 | 16 | 55 | 2.85 |
| EMC60030180 | R1.5 | 3.0 | 6 | 3.0 | 18 | 60 | 2.85 |
| EMC60030200 | R1.5 | 3.0 | 6 | 3.0 | 20 | 60 | 2.85 |
| EMC60030260 | R1.5 | 3.0 | 6 | 3.0 | 26 | 70 | 2.85 |
| EMC60030300 | R1.5 | 3.0 | 6 | 3.0 | 30 | 70 | 2.85 |
| EMC60030360 | R1.5 | 3.0 | 6 | 3.0 | 36 | 80 | 2.85 |
| EMC60040100 | R2.0 | 4.0 | 6 | 4.0 | 10 | 60 | 3.85 |
| EMC60040120 | R2.0 | 4.0 | 6 | 4.0 | 12 | 60 | 3.85 |
| EMC60040160 | R2.0 | 4.0 | 6 | 4.0 | 16 | 60 | 3.85 |
| EMC60040200 | R2.0 | 4.0 | 6 | 4.0 | 20 | 65 | 3.85 |
| EMC60040260 | R2.0 | 4.0 | 6 | 4.0 | 26 | 70 | 3.85 |
| EMC60040300 | R2.0 | 4.0 | 6 | 4.0 | 30 | 70 | 3.85 |
| EMC60040360 | R2.0 | 4.0 | 6 | 4.0 | 36 | 80 | 3.85 |
| EMC60040400 | R2.0 | 4.0 | 6 | 4.0 | 40 | 90 | 3.85 |

▶ NEXT PAGE 下页

| Size<br>尺寸 | Mill Dia.Tolerance (mm)<br>直径公差 | Shank Dia.Tolerance<br>柄径公差 |
|---|---|---|
| up to Ø3 Ø3以下 | 0 ~ - 0.015 | h5 |
| over Ø3 超过Ø3 | 0 ~ - 0.020 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 160 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

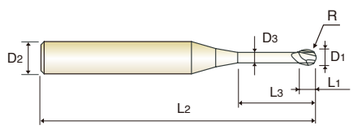
| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ○ | |

# K-2 Plus END MILLS

PLAIN SHANK **EMC60** SERIES

## CARBIDE, 2 FLUTE BALL NOSE LONG NECK
## 硬质合金，2刃 球头 颈部加长

- ▶ Designed for general purposes to carbon steels, tool steels, alloy steels and stainless steels.
- ▶ Deep slotting is possible by reduced neck.
- ▶ Suitable for high speed machining in wet or dry condition.
- ▶ 设计用于加工碳钢，工具钢，合金钢，不锈钢等多种用途的钢
- ▶ 由于颈部稍细能够加工深槽
- ▶ 高耐磨性




CARBIDE | 2 | 30° | R ±0.01 | PLAIN

p.C497-498

Recommended ToolHolder

| Flat Shank | | Page | Plain Shank | Page |
|---|---|---|---|---|
| END MILL HOLDER | D118 - 137 | | HYDRAULIC CHUCK<br>POWER MILLING CHUCK | D15 - 46<br>D161 - 176 |
| - | - | | SHRINK FIT HOLDER | D47 - 72 |
| - | - | | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Radius of Ball Nose 圆弧角 R (±0.01) | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Length Below Shank 颈长 L3 | Overall Length 全长 L2 | Neck Diameter 颈径 D3 |
|---|---|---|---|---|---|---|---|
| EMC60040460 | R2.0 | **4.0** | 6 | 4.0 | 46 | 90 | 3.85 |
| EMC60040500 | R2.0 | **4.0** | 6 | 4.0 | 50 | 100 | 3.85 |
| EMC60050160 | R2.5 | **5.0** | 6 | 5.0 | 16 | 60 | 4.85 |
| EMC60050200 | R2.5 | **5.0** | 6 | 5.0 | 20 | 60 | 4.85 |
| EMC60050260 | R2.5 | **5.0** | 6 | 5.0 | 26 | 70 | 4.85 |
| EMC60050300 | R2.5 | **5.0** | 6 | 5.0 | 30 | 80 | 4.85 |
| EMC60050360 | R2.5 | **5.0** | 6 | 5.0 | 36 | 80 | 4.85 |
| EMC60060200 | R3.0 | **6.0** | 6 | 6.0 | 20 | 80 | 5.85 |
| EMC60060300 | R3.0 | **6.0** | 6 | 6.0 | 30 | 90 | 5.85 |
| EMC60060400 | R3.0 | **6.0** | 6 | 6.0 | 40 | 100 | 5.85 |
| EMC60060500 | R3.0 | **6.0** | 6 | 6.0 | 50 | 110 | 5.85 |

| Size 尺寸 | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|
| up to Ø3 Ø3以下 | 0 ~ - 0.015 | h5 |
| over Ø3 超过Ø3 | 0 ~ - 0.020 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ○ | |

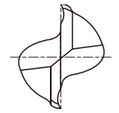


# K-2 Plus END MILLS

PLAIN SHANK **EMC61** SERIES

## CARBIDE, 2 FLUTE CORNER RADIUS
## 硬质合金，2刃 圆鼻

- ▶ Designed for general purposes to carbon steels, tool steels, alloy steels and stainless steels.
- ▶ Suitable for high speed machining in wet or dry condition.
- ▶ Corner radius against chipping in high speed machining.
- ▶ Application in high speed machining, wet and dry cutting conditions.
- ▶ 设计用于加工碳钢，工具钢，合金钢，不锈钢等多种用途的钢.
- ▶ 高耐磨性
- ▶ 弧形角可防止高速切削的崩刃
- ▶ 适应于高速加工，湿式和干式切削条件



CARBIDE | 2 | 30° | R ±0.02 | PLAIN

p.C602

Recommended ToolHolder

| Flat Shank | | Page | Plain Shank | Page |
|---|---|---|---|---|
| END MILL HOLDER | D118 - 137 | | HYDRAULIC CHUCK<br>POWER MILLING CHUCK | D15 - 46<br>D161 - 176 |
| - | - | | SHRINK FIT HOLDER | D47 - 72 |
| - | - | | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Radius of Ball Nose 圆弧角 R | Mill Diameter 直径 | Shank Diameter 柄径 | Length of Cut 刃长 | Overall Length 全长 |
|---|---|---|---|---|---|
| EMC6103002 | R0.2 | **3.0** | 6 | 10 | 70 |
| EMC6103003 | R0.3 | **3.0** | 6 | 10 | 70 |
| EMC6103005 | R0.5 | **3.0** | 6 | 10 | 70 |
| EMC6104002 | R0.2 | **4.0** | 6 | 12 | 70 |
| EMC6104003 | R0.3 | **4.0** | 6 | 12 | 70 |
| EMC6104005 | R0.5 | **4.0** | 6 | 12 | 70 |
| EMC6104010 | R1.0 | **4.0** | 6 | 12 | 70 |
| EMC6105002 | R0.2 | **5.0** | 6 | 15 | 80 |
| EMC6105003 | R0.3 | **5.0** | 6 | 15 | 80 |
| EMC6105005 | R0.5 | **5.0** | 6 | 15 | 80 |
| EMC6105010 | R1.0 | **5.0** | 6 | 15 | 80 |
| EMC6106002 | R0.2 | **6.0** | 6 | 15 | 90 |
| EMC6106003 | R0.3 | **6.0** | 6 | 15 | 90 |
| EMC6106005 | R0.5 | **6.0** | 6 | 15 | 90 |
| EMC6106010 | R1.0 | **6.0** | 6 | 15 | 90 |
| EMC6108003 | R0.3 | **8.0** | 8 | 20 | 100 |
| EMC6108005 | R0.5 | **8.0** | 8 | 20 | 100 |
| EMC6108010 | R1.0 | **8.0** | 8 | 20 | 100 |
| EMC6108015 | R1.5 | **8.0** | 8 | 20 | 100 |
| EMC6108020 | R2.0 | **8.0** | 8 | 20 | 100 |

▶ NEXT PAGE 下页

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.03 | h5 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ○ | |

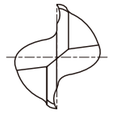
# K-2 Plus END MILLS

PLAIN SHANK **EMC61** SERIES

## CARBIDE, 2 FLUTE CORNER RADIUS
## 硬质合金，2刃 圆鼻

- ▶ Designed for general purposes to carbon steels, tool steels, alloy steels and stainless steels.
- ▶ Suitable for high speed machining in wet or dry condition.
- ▶ Corner radius against chipping in high speed machining.
- ▶ Application in high speed machining, wet and dry cutting conditions.

- ▶ 设计用于加工碳钢，工具钢，合金钢，不锈钢等多种用途的钢.
- ▶ 高耐磨性
- ▶ 弧形角可防止高速切削的崩刃
- ▶ 适应于高速加工，湿式和干式切削条件



CARBIDE | 2 | 30° | R ±0.02 | PLAIN

p.C494-495

| Recommended ToolHolder | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| | END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK<br>POWER MILLING CHUCK | D15 - 46<br>D161 - 176 |
| | - | - | SHRINK FIT HOLDER | D47 - 72 |
| | - | - | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Corner Radius 圆弧角 R | Mill Diameter 直径 | Shank Diameter 柄径 | Length of Cut 刃长 | Overall Length 全长 |
|---|---|---|---|---|---|
| **EMC6110003** | R0.3 | **10.0** | 10 | 25 | 100 |
| **EMC6110005** | R0.5 | **10.0** | 10 | 25 | 100 |
| **EMC6110010** | R1.0 | **10.0** | 10 | 25 | 100 |
| **EMC6110015** | R1.5 | **10.0** | 10 | 25 | 100 |
| **EMC6110020** | R2.0 | **10.0** | 10 | 25 | 100 |
| **EMC6110025** | R2.5 | **10.0** | 10 | 25 | 100 |
| **EMC6112003** | R0.3 | **12.0** | 12 | 30 | 110 |
| **EMC6112005** | R0.5 | **12.0** | 12 | 30 | 110 |
| **EMC6112010** | R1.0 | **12.0** | 12 | 30 | 110 |
| **EMC6112015** | R1.5 | **12.0** | 12 | 30 | 110 |
| **EMC6112020** | R2.0 | **12.0** | 12 | 30 | 110 |
| **EMC6112025** | R2.5 | **12.0** | 12 | 30 | 110 |
| **EMC6112030** | R3.0 | **12.0** | 12 | 30 | 110 |

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.03 | h5 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ○ | |



# K-2 Plus END MILLS

PLAIN SHANK **EMC62** SERIES

## CARBIDE, 4 FLUTE CORNER RADIUS
## 硬质合金，4刃 圆鼻

- ▶ Designed for general purposes to carbon steels, tool steels, alloy steels and stainless steels.
- ▶ Suitable for high speed machining in wet or dry condition.
- ▶ 4 flute allows for better work piece finishes.
- ▶ Corner radius against chipping in high speed machining.
- ▶ Application in high speed machining, wet and dry cutting conditions.

- ▶ 设计用于加工碳钢，工具钢，合金钢，不锈钢等多种用途的钢.
- ▶ 高耐磨性
- ▶ 4刃可得到较好的表面粗糙度
- ▶ 弧形角可防止高速切削的崩刃
- ▶ 适应于高速加工，湿式和干式切削条件

CARBIDE | 4 | 30° | R ±0.02 | PLAIN

p.C496

| Recommended ToolHolder | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| | END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK<br>POWER MILLING CHUCK | D15 - 46<br>D161 - 176 |
| | - | - | SHRINK FIT HOLDER | D47 - 72 |
| | - | - | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Corner Radius 圆弧角 R | Mill Diameter 直径 | Shank Diameter 柄径 | Length of Cut 刃长 | Overall Length 全长 |
|---|---|---|---|---|---|
| **EMC6203002** | R0.2 | **3.0** | 6 | 10 | 70 |
| **EMC6203003** | R0.3 | **3.0** | 6 | 10 | 70 |
| **EMC6203005** | R0.5 | **3.0** | 6 | 10 | 70 |
| **EMC6204002** | R0.2 | **4.0** | 6 | 12 | 70 |
| **EMC6204003** | R0.3 | **4.0** | 6 | 12 | 70 |
| **EMC6204005** | R0.5 | **4.0** | 6 | 12 | 70 |
| **EMC6204010** | R1.0 | **4.0** | 6 | 12 | 70 |
| **EMC6205002** | R0.2 | **5.0** | 6 | 15 | 80 |
| **EMC6205003** | R0.3 | **5.0** | 6 | 15 | 80 |
| **EMC6205005** | R0.5 | **5.0** | 6 | 15 | 80 |
| **EMC6205010** | R1.0 | **5.0** | 6 | 15 | 80 |
| **EMC6206002** | R0.2 | **6.0** | 6 | 15 | 90 |
| **EMC6206003** | R0.3 | **6.0** | 6 | 15 | 90 |
| **EMC6206005** | R0.5 | **6.0** | 6 | 15 | 90 |
| **EMC6206010** | R1.0 | **6.0** | 6 | 15 | 90 |
| **EMC6208003** | R0.3 | **8.0** | 8 | 20 | 100 |
| **EMC6208005** | R0.5 | **8.0** | 8 | 20 | 100 |
| **EMC6208010** | R1.0 | **8.0** | 8 | 20 | 100 |
| **EMC6208015** | R1.5 | **8.0** | 8 | 20 | 100 |
| **EMC6208020** | R2.0 | **8.0** | 8 | 20 | 100 |

▶ NEXT PAGE 下页

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.03 | h5 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ○ | |

# K-2 Plus END MILLS

PLAIN SHANK **EMC62** SERIES

## CARBIDE, 4 FLUTE CORNER RADIUS
## 硬质合金，4刃 圆鼻

- ▶ Designed for general purposes to carbon steels, tool steels, alloy steels and stainless steels.
- ▶ Suitable for high speed machining in wet or dry condition.
- ▶ 4 flute allows for better work piece finishes.
- ▶ Corner radius against chipping in high speed machining.
- ▶ Application in high speed machining, wet and dry cutting conditions.

- ▶ 设计用于加工碳钢，工具钢，合金钢，不锈钢等多种用途的钢.
- ▶ 高耐磨性
- ▶ 4刃可得到较好的表面粗糙度
- ▶ 弧形角可防止高速切削的崩刃
- ▶ 适应于高速加工，湿式和干式切削条件

CARBIDE | 4 | 30° | R ±0.02 | PLAIN

p.C602

Recommended ToolHolder

| Flat Shank | | Page | Plain Shank | Page |
|---|---|---|---|---|
| END MILL HOLDER | D118 - 137 | | HYDRAULIC CHUCK<br>POWER MILLING CHUCK | D15 - 46<br>D161 - 176 |
| - | - | | SHRINK FIT HOLDER | D47 - 72 |
| - | - | | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Corner Radius 圆弧角 R | Mill Diameter 直径 | Shank Diameter 柄径 | Length of Cut 刃长 | Overall Length 全长 |
|---|---|---|---|---|---|
| EMC6210003 | R0.3 | 10.0 | 10 | 25 | 100 |
| EMC6210005 | R0.5 | 10.0 | 10 | 25 | 100 |
| EMC6210010 | R1.0 | 10.0 | 10 | 25 | 100 |
| EMC6210015 | R1.5 | 10.0 | 10 | 25 | 100 |
| EMC6210020 | R2.0 | 10.0 | 10 | 25 | 100 |
| EMC6210025 | R2.5 | 10.0 | 10 | 25 | 100 |
| EMC6212005 | R0.5 | 12.0 | 12 | 30 | 110 |
| EMC6212010 | R1.0 | 12.0 | 12 | 30 | 110 |
| EMC6212015 | R1.5 | 12.0 | 12 | 30 | 110 |
| EMC6212020 | R2.0 | 12.0 | 12 | 30 | 110 |
| EMC6212025 | R2.5 | 12.0 | 12 | 30 | 110 |
| EMC6212030 | R3.0 | 12.0 | 12 | 30 | 110 |

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.03 | h5 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ○ | |





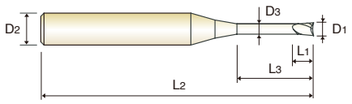
# K-2 Plus END MILLS

PLAIN SHANK **EMC59** SERIES

## CARBIDE, 2 FLUTE LONG NECK
## 硬质合金，2刃 颈部加长

- ▶ Designed for general purposes to carbon steels, tool steels, alloy steels and stainless steels.
- ▶ Deep slotting is possible by reduced neck.
- ▶ Suitable for high speed machining in wet or dry condition.

- ▶ 设计用于加工碳钢，工具钢，合金钢，不锈钢等多种用途的钢
- ▶ 由于颈部稍细能够加工深槽
- ▶ 高耐磨性




CARBIDE | 2 | 30° | PLAIN

p.C499-500

Recommended ToolHolder

| Flat Shank | | Page | Plain Shank | Page |
|---|---|---|---|---|
| END MILL HOLDER | D118 - 137 | | HYDRAULIC CHUCK<br>POWER MILLING CHUCK | D15 - 46<br>D161 - 176 |
| - | - | | SHRINK FIT HOLDER | D47 - 72 |
| - | - | | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Length Below Shank 颈长 L3 | Overall Length 全长 L2 | Neck Diameter 颈径 D3 |
|---|---|---|---|---|---|---|
| EMC59004010 | 0.4 | 4 | 0.6 | 1 | 45 | 0.37 |
| EMC59004020 | 0.4 | 4 | 0.6 | 2 | 45 | 0.37 |
| EMC59004030 | 0.4 | 4 | 0.6 | 3 | 45 | 0.37 |
| EMC59004040 | 0.4 | 4 | 0.6 | 4 | 45 | 0.37 |
| EMC59004050 | 0.4 | 4 | 0.6 | 5 | 45 | 0.37 |
| EMC59005020 | 0.5 | 4 | 0.7 | 2 | 45 | 0.45 |
| EMC59005030 | 0.5 | 4 | 0.7 | 3 | 45 | 0.45 |
| EMC59005040 | 0.5 | 4 | 0.7 | 4 | 45 | 0.45 |
| EMC59005060 | 0.5 | 4 | 0.7 | 6 | 45 | 0.45 |
| EMC59005080 | 0.5 | 4 | 0.7 | 8 | 45 | 0.45 |
| EMC59006020 | 0.6 | 4 | 0.9 | 2 | 45 | 0.55 |
| EMC59006030 | 0.6 | 4 | 0.9 | 3 | 45 | 0.55 |
| EMC59006040 | 0.6 | 4 | 0.9 | 4 | 45 | 0.55 |
| EMC59006060 | 0.6 | 4 | 0.9 | 6 | 45 | 0.55 |
| EMC59006080 | 0.6 | 4 | 0.9 | 8 | 45 | 0.55 |
| EMC59006100 | 0.6 | 4 | 0.9 | 10 | 45 | 0.55 |
| EMC59007020 | 0.7 | 4 | 1.0 | 2 | 45 | 0.65 |
| EMC59007040 | 0.7 | 4 | 1.0 | 4 | 45 | 0.65 |
| EMC59007060 | 0.7 | 4 | 1.0 | 6 | 45 | 0.65 |
| EMC59007080 | 0.7 | 4 | 1.0 | 8 | 45 | 0.65 |
| EMC59007100 | 0.7 | 4 | 1.0 | 10 | 45 | 0.65 |
| EMC59008020 | 0.8 | 4 | 1.2 | 2 | 45 | 0.75 |
| EMC59008040 | 0.8 | 4 | 1.2 | 4 | 45 | 0.75 |
| EMC59008060 | 0.8 | 4 | 1.2 | 6 | 45 | 0.75 |

▶ NEXT PAGE 下页

| Size | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|
| up to Ø3 | 0 ~ - 0.015 | h5 |
| over to Ø3 | 0 ~ - 0.020 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | | | ○ | |

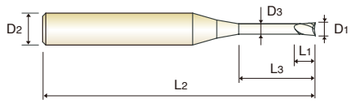
# K-2 Plus END MILLS

PLAIN SHANK **EMC59 SERIES**

## CARBIDE, 2 FLUTE LONG NECK
## 硬质合金，2刃 颈部加长

- ▶ Designed for general purposes to carbon steels, tool steels, alloy steels and stainless steels.
- ▶ Deep slotting is possible by reduced neck.
- ▶ Suitable for high speed machining in wet or dry condition.

- ▶ 设计用于加工碳钢，工具钢，合金钢，不锈钢等多种用途的钢
- ▶ 由于颈部稍细能够加工深槽
- ▶ 高耐磨性




CARBIDE | 2 | 30° | PLAIN

p.C499-500

Recommended ToolHolder

| Flat Shank | | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK<br>POWER MILLING CHUCK | D15 - 46<br>D161 - 176 |
| ◎ | - | - | SHRINK FIT HOLDER | D47 - 72 |
| ○ | - | - | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Length Below Shank 颈长 L3 | Overall Length 全长 L2 | Neck Diameter 颈径 D3 |
|---|---|---|---|---|---|---|
| EMC59008080 | 0.8 | 4 | 1.2 | 8 | 45 | 0.75 |
| EMC59008100 | 0.8 | 4 | 1.2 | 10 | 45 | 0.75 |
| EMC59008120 | 0.8 | 4 | 1.2 | 12 | 45 | 0.75 |
| EMC59009060 | 0.9 | 4 | 1.4 | 6 | 45 | 0.85 |
| EMC59009080 | 0.9 | 4 | 1.4 | 8 | 45 | 0.85 |
| EMC59009100 | 0.9 | 4 | 1.4 | 10 | 45 | 0.85 |
| EMC59009150 | 0.9 | 4 | 1.4 | 15 | 50 | 0.85 |
| EMC59010040 | 1.0 | 4 | 1.5 | 4 | 45 | 0.95 |
| EMC59010050 | 1.0 | 4 | 1.5 | 5 | 45 | 0.95 |
| EMC59010060 | 1.0 | 4 | 1.5 | 6 | 45 | 0.95 |
| EMC59010080 | 1.0 | 4 | 1.5 | 8 | 45 | 0.95 |
| EMC59010100 | 1.0 | 4 | 1.5 | 10 | 45 | 0.95 |
| EMC59010120 | 1.0 | 4 | 1.5 | 12 | 45 | 0.95 |
| EMC59010140 | 1.0 | 4 | 1.5 | 14 | 50 | 0.95 |
| EMC59010160 | 1.0 | 4 | 1.5 | 16 | 50 | 0.95 |
| EMC59010200 | 1.0 | 4 | 1.5 | 20 | 55 | 0.95 |
| EMC59012040 | 1.2 | 4 | 1.8 | 4 | 45 | 1.15 |
| EMC59012060 | 1.2 | 4 | 1.8 | 6 | 45 | 1.15 |
| EMC59012080 | 1.2 | 4 | 1.8 | 8 | 45 | 1.15 |
| EMC59012100 | 1.2 | 4 | 1.8 | 10 | 45 | 1.15 |
| EMC59012120 | 1.2 | 4 | 1.8 | 12 | 45 | 1.15 |
| EMC59012160 | 1.2 | 4 | 1.8 | 16 | 50 | 1.15 |
| EMC59014060 | 1.4 | 4 | 2.1 | 6 | 45 | 1.35 |
| EMC59014080 | 1.4 | 4 | 2.1 | 8 | 45 | 1.35 |

▶ NEXT PAGE 下页

| Size | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|
| up to Ø3 | 0 ~ - 0.015 | h5 |
| over to Ø3 | 0 ~ - 0.020 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | ○ | | ○ | |



CARBIDE
HSS
CBN END MILLS
i-Xmill END MILLS
i-SMART MODULAR END MILLS
X5070 END MILLS
4G MILL END MILLS
X-POWER PRO END MILLS
TitaNox-POWER END MILLS
SUS-CUT END MILLS
V7 PLUS END MILLS
ALU-POWER HPC END MILLS
ALU-CUT END MILLS
G-CUT
CRX S END MILLS
K-2 END MILLS
GENERAL CARBIDE END MILLS
ONLY ONE COATED PM60 END MILLS
TANK-POWER END MILLS
GENERAL HSS END MILLS
MILLING CUTTERS
TECHNICAL DATA

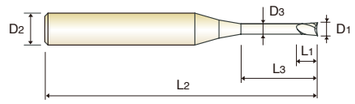
# K-2 Plus END MILLS

PLAIN SHANK **EMC59 SERIES**

## CARBIDE, 2 FLUTE LONG NECK
## 硬质合金，2刃 颈部加长

- ▶ Designed for general purposes to carbon steels, tool steels, alloy steels and stainless steels.
- ▶ Deep slotting is possible by reduced neck.
- ▶ Suitable for high speed machining in wet or dry condition.

- ▶ 设计用于加工碳钢，工具钢，合金钢，不锈钢等多种用途的钢
- ▶ 由于颈部稍细能够加工深槽
- ▶ 高耐磨性




CARBIDE | 2 | 30° | PLAIN

p.C499-500

Recommended ToolHolder

| Flat Shank | | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK<br>POWER MILLING CHUCK | D15 - 46<br>D161 - 176 |
| ◎ | - | - | SHRINK FIT HOLDER | D47 - 72 |
| ○ | - | - | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Length Below Shank 颈长 L3 | Overall Length 全长 L2 | Neck Diameter 颈径 D3 |
|---|---|---|---|---|---|---|
| EMC59014100 | 1.4 | 4 | 2.1 | 10 | 45 | 1.35 |
| EMC59014120 | 1.4 | 4 | 2.1 | 12 | 45 | 1.35 |
| EMC59014140 | 1.4 | 4 | 2.1 | 14 | 50 | 1.35 |
| EMC59014160 | 1.4 | 4 | 2.1 | 16 | 50 | 1.35 |
| EMC59014220 | 1.4 | 4 | 2.1 | 22 | 55 | 1.35 |
| EMC59015060 | 1.5 | 4 | 2.3 | 6 | 45 | 1.45 |
| EMC59015080 | 1.5 | 4 | 2.3 | 8 | 45 | 1.45 |
| EMC59015100 | 1.5 | 4 | 2.3 | 10 | 45 | 1.45 |
| EMC59015120 | 1.5 | 4 | 2.3 | 12 | 45 | 1.45 |
| EMC59015140 | 1.5 | 4 | 2.3 | 14 | 50 | 1.45 |
| EMC59015160 | 1.5 | 4 | 2.3 | 16 | 50 | 1.45 |
| EMC59015180 | 1.5 | 4 | 2.3 | 18 | 55 | 1.45 |
| EMC59015200 | 1.5 | 4 | 2.3 | 20 | 55 | 1.45 |
| EMC59016060 | 1.6 | 4 | 2.4 | 6 | 45 | 1.55 |
| EMC59016080 | 1.6 | 4 | 2.4 | 8 | 45 | 1.55 |
| EMC59016100 | 1.6 | 4 | 2.4 | 10 | 45 | 1.55 |
| EMC59016120 | 1.6 | 4 | 2.4 | 12 | 45 | 1.55 |
| EMC59016140 | 1.6 | 4 | 2.4 | 14 | 50 | 1.55 |
| EMC59016160 | 1.6 | 4 | 2.4 | 16 | 50 | 1.55 |
| EMC59016180 | 1.6 | 4 | 2.4 | 18 | 55 | 1.55 |
| EMC59016200 | 1.6 | 4 | 2.4 | 20 | 55 | 1.55 |
| EMC59016260 | 1.6 | 4 | 2.4 | 26 | 60 | 1.55 |
| EMC59018060 | 1.8 | 4 | 2.7 | 6 | 45 | 1.75 |
| EMC59018080 | 1.8 | 4 | 2.7 | 8 | 45 | 1.75 |

▶ NEXT PAGE 下页

| Size | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|
| up to Ø3 | 0 ~ - 0.015 | h5 |
| over to Ø3 | 0 ~ - 0.020 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | ○ | | ○ | |

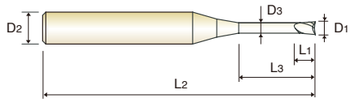
# K-2 Plus END MILLS

PLAIN SHANK **EMC59 SERIES**

## CARBIDE, 2 FLUTE LONG NECK
## 硬质合金，2刃 颈部加长

- ▶ Designed for general purposes to carbon steels, tool steels, alloy steels and stainless steels.
- ▶ Deep slotting is possible by reduced neck.
- ▶ Suitable for high speed machining in wet or dry condition.

- ▶ 设计用于加工碳钢，工具钢，合金钢，不锈钢等多种用途的钢
- ▶ 由于颈部稍细能够加工深槽
- ▶ 高耐磨性




CARBIDE 2 30° PLAIN

p.C499-500

Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK<br>POWER MILLING CHUCK | D15 - 46<br>D161 - 176 |
| ◎ | - | - | SHRINK FIT HOLDER | D47 - 72 |
| ○ | - | - | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Length Below Shank 颈长 L3 | Overall Length 全长 D3 | Neck Diameter 颈径 D3 |
|---|---|---|---|---|---|---|
| EMC59018100 | 1.8 | 4 | 2.7 | 10 | 45 | 1.75 |
| EMC59018120 | 1.8 | 4 | 2.7 | 12 | 45 | 1.75 |
| EMC59018140 | 1.8 | 4 | 2.7 | 14 | 50 | 1.75 |
| EMC59018160 | 1.8 | 4 | 2.7 | 16 | 50 | 1.75 |
| EMC59018180 | 1.8 | 4 | 2.7 | 18 | 55 | 1.75 |
| EMC59018200 | 1.8 | 4 | 2.7 | 20 | 55 | 1.75 |
| EMC59018260 | 1.8 | 4 | 2.7 | 26 | 65 | 1.75 |
| EMC59020060 | 2.0 | 4 | 3.0 | 6 | 45 | 1.95 |
| EMC59020080 | 2.0 | 4 | 3.0 | 8 | 45 | 1.95 |
| EMC59020100 | 2.0 | 4 | 3.0 | 10 | 45 | 1.95 |
| EMC59020120 | 2.0 | 4 | 3.0 | 12 | 45 | 1.95 |
| EMC59020140 | 2.0 | 4 | 3.0 | 14 | 50 | 1.95 |
| EMC59020160 | 2.0 | 4 | 3.0 | 16 | 50 | 1.95 |
| EMC59020180 | 2.0 | 4 | 3.0 | 18 | 55 | 1.95 |
| EMC59020200 | 2.0 | 4 | 3.0 | 20 | 55 | 1.95 |
| EMC59020220 | 2.0 | 4 | 3.0 | 22 | 60 | 1.95 |
| EMC59020260 | 2.0 | 4 | 3.0 | 26 | 60 | 1.95 |
| EMC59020300 | 2.0 | 4 | 3.0 | 30 | 70 | 1.95 |
| EMC59025080 | 2.5 | 4 | 3.7 | 8 | 45 | 2.4 |
| EMC59025100 | 2.5 | 4 | 3.7 | 10 | 45 | 2.4 |
| EMC59025120 | 2.5 | 4 | 3.7 | 12 | 45 | 2.4 |
| EMC59025140 | 2.5 | 4 | 3.7 | 14 | 50 | 2.4 |
| EMC59025160 | 2.5 | 4 | 3.7 | 16 | 55 | 2.4 |
| EMC59025180 | 2.5 | 4 | 3.7 | 18 | 55 | 2.4 |

▶ NEXT PAGE 下页

| Size | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|
| up to Ø3 | 0 ~ - 0.015 | h5 |
| over to Ø3 | 0 ~ - 0.020 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ○ | |



CARBIDE
HSS
CBN END MILLS
i-Xmill END MILLS
i-SMART MODULAR END MILLS
X5070 END MILLS
4G MILL END MILLS
X-POWER PRO END MILLS
TitaNox-POWER END MILLS
SUS-CUT END MILLS
V7 PLUS END MILLS
ALU-POWER HPC END MILLS
ALU-CUT END MILLS
G-CUT
CRX S END MILLS
K-2 END MILLS
GENERAL CARBIDE END MILLS
ONLY ONE COATED PM60 END MILLS
TANK-POWER END MILLS
GENERAL HSS END MILLS
MILLING CUTTERS
TECHNICAL DATA

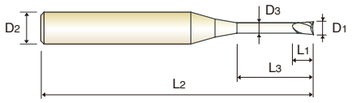
# K-2 Plus END MILLS

PLAIN SHANK **EMC59 SERIES**

## CARBIDE, 2 FLUTE LONG NECK
## 硬质合金，2刃 颈部加长

- ▶ Designed for general purposes to carbon steels, tool steels, alloy steels and stainless steels.
- ▶ Deep slotting is possible by reduced neck.
- ▶ Suitable for high speed machining in wet or dry condition.

- ▶ 设计用于加工碳钢，工具钢，合金钢，不锈钢等多种用途的钢
- ▶ 由于颈部稍细能够加工深槽
- ▶ 高耐磨性




CARBIDE 2 30° PLAIN

p.C499-500

Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK<br>POWER MILLING CHUCK | D15 - 46<br>D161 - 176 |
| ◎ | - | - | SHRINK FIT HOLDER | D47 - 72 |
| ○ | - | - | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Length Below Shank 颈长 L3 | Overall Length 全长 D3 | Neck Diameter 颈径 D3 |
|---|---|---|---|---|---|---|
| EMC59025200 | 2.5 | 4 | 3.7 | 20 | 60 | 2.4 |
| EMC59025260 | 2.5 | 4 | 3.7 | 26 | 70 | 2.4 |
| EMC59025300 | 2.5 | 4 | 3.7 | 30 | 80 | 2.4 |
| EMC59030080 | 3.0 | 6 | 4.5 | 8 | 45 | 2.85 |
| EMC59030100 | 3.0 | 6 | 4.5 | 10 | 45 | 2.85 |
| EMC59030120 | 3.0 | 6 | 4.5 | 12 | 50 | 2.85 |
| EMC59030140 | 3.0 | 6 | 4.5 | 14 | 50 | 2.85 |
| EMC59030160 | 3.0 | 6 | 4.5 | 16 | 55 | 2.85 |
| EMC59030180 | 3.0 | 6 | 4.5 | 18 | 55 | 2.85 |
| EMC59030200 | 3.0 | 6 | 4.5 | 20 | 60 | 2.85 |
| EMC59030260 | 3.0 | 6 | 4.5 | 26 | 70 | 2.85 |
| EMC59030300 | 3.0 | 6 | 4.5 | 30 | 70 | 2.85 |
| EMC59030360 | 3.0 | 6 | 4.5 | 36 | 80 | 2.85 |
| EMC59030400 | 3.0 | 6 | 4.5 | 40 | 90 | 2.85 |
| EMC59040100 | 4.0 | 6 | 6.0 | 10 | 50 | 3.85 |
| EMC59040120 | 4.0 | 6 | 6.0 | 12 | 50 | 3.85 |
| EMC59040160 | 4.0 | 6 | 6.0 | 16 | 60 | 3.85 |
| EMC59040200 | 4.0 | 6 | 6.0 | 20 | 60 | 3.85 |
| EMC59040260 | 4.0 | 6 | 6.0 | 26 | 70 | 3.85 |
| EMC59040300 | 4.0 | 6 | 6.0 | 30 | 70 | 3.85 |
| EMC59040360 | 4.0 | 6 | 6.0 | 36 | 80 | 3.85 |
| EMC59040400 | 4.0 | 6 | 6.0 | 40 | 90 | 3.85 |
| EMC59040460 | 4.0 | 6 | 6.0 | 46 | 90 | 3.85 |
| EMC59040500 | 4.0 | 6 | 6.0 | 50 | 100 | 3.85 |

▶ NEXT PAGE 下页

| Size | Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|---|
| up to Ø3 | 0 ~ - 0.015 | h5 |
| over to Ø3 | 0 ~ - 0.020 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ○ | |

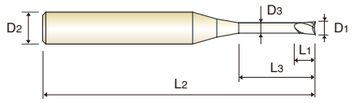
# K-2 Plus END MILLS

PLAIN SHANK **EMC59** SERIES

## CARBIDE, 2 FLUTE LONG NECK
## 硬质合金，2刃 颈部加长

- ▶ Designed for general purposes to carbon steels, tool steels, alloy steels and stainless steels.
- ▶ Deep slotting is possible by reduced neck.
- ▶ Suitable for high speed machining in wet or dry condition.

- ▶设计用于加工碳钢，工具钢，合金钢，不锈钢等多种用途的钢
- ▶由于颈部稍细能够加工深槽
- ▶高耐磨性




CARBIDE | 2 | 30° | PLAIN

p.C499-500

| Recommended ToolHolder | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK<br>POWER MILLING CHUCK | D15 - 46<br>D161 - 176 |
| ◎ | - | - | SHRINK FIT HOLDER | D47 - 72 |
| ○ | - | - | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Mill Diameter<br>直径<br>D1 | Shank Diameter<br>柄径<br>D2 | Length of Cut<br>刃长<br>L1 | Length Below Shank<br>颈长<br>L3 | Overall Length<br>全长<br>D3 | Neck Diameter<br>颈径<br>D3 |
|---|---|---|---|---|---|---|
| EMC59050160 | 5.0 | 6 | 7.5 | 16 | 60 | 4.85 |
| EMC59050200 | 5.0 | 6 | 7.5 | 20 | 60 | 4.85 |
| EMC59050260 | 5.0 | 6 | 7.5 | 26 | 70 | 4.85 |
| EMC59050300 | 5.0 | 6 | 7.5 | 30 | 80 | 4.85 |
| EMC59050360 | 5.0 | 6 | 7.5 | 36 | 80 | 4.85 |
| EMC59050400 | 5.0 | 6 | 7.5 | 40 | 80 | 4.85 |
| EMC59050500 | 5.0 | 6 | 7.5 | 50 | 110 | 4.85 |
| EMC59060200 | 6.0 | 6 | 9.0 | 20 | 80 | 5.85 |
| EMC59060300 | 6.0 | 6 | 9.0 | 30 | 90 | 5.85 |
| EMC59060400 | 6.0 | 6 | 9.0 | 40 | 100 | 5.85 |
| EMC59060500 | 6.0 | 6 | 9.0 | 50 | 110 | 5.85 |

| Size | Mill Dia.Tolerance (mm)<br>直径公差 | Shank Dia.Tolerance<br>柄径公差 |
|---|---|---|
| up to Ø3 | 0 ~ - 0.015 | h5 |
| over to Ø3 | 0 ~ - 0.020 | |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | M | | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ○ | |



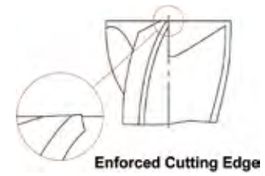
# K-2 Plus END MILLS

PLAIN SHANK **EMC52** SERIES

## CARBIDE, 2 FLUTE 35° HELIX SHORT LENGTH
## 硬质合金，2刃 35度螺旋 短刃

- ▶ Designed for general purposes to carbon steels, tool steels, alloy steels and stainless steels.
- ▶ Suitable for high speed machining in wet or dry condition.
- ▶ Application in high speed machining, wet and dry cutting conditions.

- ▶设计用于加工碳钢，工具钢，合金钢，不锈钢等多种用途的钢
- ▶高耐磨性
- ▶适应于高速加工，湿式和于式切削条件




CARBIDE | 2 | 35° | PLAIN

p.C501

| Recommended ToolHolder | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK<br>POWER MILLING CHUCK | D15 - 46<br>D161 - 176 |
| ◎ | - | - | SHRINK FIT HOLDER | D47 - 72 |
| ○ | - | - | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Mill Diameter<br>直径 | Shank Diameter<br>柄径 | Length of Cut<br>刃长 | Overall Length<br>全长 |
|---|---|---|---|---|
| EMC52010 | 1.0 | 4 | 3 | 50 |
| EMC52015 | 1.5 | 4 | 4 | 50 |
| EMC52020 | 2.0 | 4 | 6 | 50 |
| EMC52025 | 2.5 | 4 | 8 | 50 |
| EMC52030 | 3.0 | 4 | 8 | 50 |
| EMC52901 | 3.0 | 6 | 8 | 50 |
| EMC52035 | 3.5 | 4 | 10 | 50 |
| EMC52902 | 3.5 | 6 | 10 | 50 |
| EMC52040 | 4.0 | 4 | 11 | 50 |
| EMC52903 | 4.0 | 6 | 11 | 50 |
| EMC52045 | 4.5 | 6 | 11 | 50 |
| EMC52050 | 5.0 | 6 | 13 | 50 |
| EMC52055 | 5.5 | 6 | 13 | 50 |
| EMC52060 | 6.0 | 6 | 16 | 50 |
| EMC52065 | 6.5 | 8 | 16 | 60 |
| EMC52070 | 7.0 | 8 | 20 | 60 |
| EMC52075 | 7.5 | 8 | 20 | 60 |
| EMC52080 | 8.0 | 8 | 20 | 60 |
| EMC52085 | 8.5 | 10 | 20 | 75 |
| EMC52090 | 9.0 | 10 | 20 | 75 |
| EMC52095 | 9.5 | 10 | 22 | 75 |
| EMC52100 | 10.0 | 10 | 25 | 75 |
| EMC52110 | 11.0 | 12 | 30 | 75 |
| EMC52120 | 12.0 | 12 | 32 | 75 |
| EMC52140 | 14.0 | 16 | 40 | 100 |
| EMC52160 | 16.0 | 16 | 40 | 100 |
| EMC52180 | 18.0 | 20 | 40 | 100 |
| EMC52200 | 20.0 | 20 | 45 | 100 |

| Mill Dia.Tolerance (mm)<br>直径公差 | Shank Dia.Tolerance<br>柄径公差 |
|---|---|
| 0 ~ - 0.03 | h5 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | M | | | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | | ○ | | ○ | |

# K-2 Plus END MILLS

PLAIN SHANK **EMC53** SERIES

## CARBIDE, 2 FLUTE 35° HELIX LONG LENGTH
## 硬质合金，2刃 35度螺旋 长刃

- ▶ Designed for general purposes to carbon steels, tool steels, alloy steels and stainless steels.
- ▶ Suitable for high speed machining in wet or dry condition.
- ▶ Application in high speed machining, wet and dry cutting conditions.
- ▶ 设计用于加工碳钢，工具钢，合金钢，不锈钢等多种用途的钢
- ▶ 高耐磨性
- ▶ 适应于高速加工，湿式和于式切削条件

CARBIDE | 2 | 35° | PLAIN

p.C501

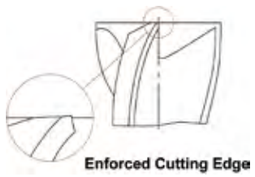
Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK<br>POWER MILLING CHUCK | D15 - 46<br>D161 - 176 |
| ◎ | - | - | SHRINK FIT HOLDER | D47 - 72 |
| ○ | - | - | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 | Shank Diameter 柄径 | Length of Cut 刃长 | Overall Length 全长 |
|---|---|---|---|---|
| EMC53020 | 2.0 | 4 | 10 | 50 |
| EMC53030 | 3.0 | 4 | 15 | 60 |
| EMC53901 | 3.0 | 6 | 15 | 60 |
| EMC53040 | 4.0 | 4 | 20 | 60 |
| EMC53902 | 4.0 | 6 | 20 | 60 |
| EMC53050 | 5.0 | 6 | 25 | 75 |
| EMC53060 | 6.0 | 6 | 30 | 75 |
| EMC53080 | 8.0 | 8 | 35 | 100 |
| EMC53100 | 10.0 | 10 | 45 | 100 |
| EMC53120 | 12.0 | 12 | 45 | 100 |
| EMC53140 | 14.0 | 14 | 70 | 150 |
| EMC53903 | 14.0 | 16 | 70 | 150 |
| EMC53160 | 16.0 | 16 | 70 | 150 |
| EMC53180 | 18.0 | 20 | 75 | 150 |
| EMC53200 | 20.0 | 20 | 75 | 150 |

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.03 | h5 |



Enforced Cutting Edge

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | | ○ | | ○ | |

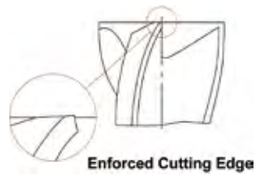


# K-2 Plus END MILLS

PLAIN SHANK **EMC54** SERIES

## CARBIDE, 4 FLUTE 35° HELIX SHORT LENGTH
## 硬质合金，4刃 35度螺旋 短刃

- ▶ Designed for general purposes to carbon steels, tool steels, alloy steels and stainless steels.
- ▶ Suitable for high speed machining in wet or dry condition.
- ▶ 4 flute allows for better work piece finishes.
- ▶ Application in high speed machining, wet and dry cutting conditions.
- ▶ 设计用于加工碳钢，工具钢，合金钢，不锈钢等多种用途的钢
- ▶ 高耐磨性
- ▶ 4刃可得到较好的表面粗糙度
- ▶ 适应于高速加工，湿式和干式切削条件



Enforced Cutting Edge

CARBIDE | 4 | 35° | PLAIN

p.C502

Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK<br>POWER MILLING CHUCK | D15 - 46<br>D161 - 176 |
| ◎ | - | - | SHRINK FIT HOLDER | D47 - 72 |
| ○ | - | - | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 | Shank Diameter 柄径 | Length of Cut 刃长 | Overall Length 全长 |
|---|---|---|---|---|
| EMC54010 | 1.0 | 4 | 3 | 50 |
| EMC54015 | 1.5 | 4 | 4 | 50 |
| EMC54020 | 2.0 | 4 | 6 | 50 |
| EMC54025 | 2.5 | 4 | 8 | 50 |
| EMC54030 | 3.0 | 4 | 8 | 50 |
| EMC54901 | 3.0 | 6 | 8 | 50 |
| EMC54035 | 3.5 | 4 | 10 | 50 |
| EMC54902 | 3.5 | 6 | 10 | 50 |
| EMC54040 | 4.0 | 4 | 11 | 50 |
| EMC54903 | 4.0 | 6 | 11 | 50 |
| EMC54045 | 4.5 | 6 | 11 | 50 |
| EMC54050 | 5.0 | 6 | 13 | 50 |
| EMC54055 | 5.5 | 6 | 13 | 50 |
| EMC54060 | 6.0 | 6 | 16 | 50 |
| EMC54065 | 6.5 | 8 | 16 | 60 |
| EMC54070 | 7.0 | 8 | 20 | 60 |
| EMC54075 | 7.5 | 8 | 20 | 60 |
| EMC54080 | 8.0 | 8 | 20 | 60 |
| EMC54085 | 8.5 | 10 | 20 | 75 |
| EMC54090 | 9.0 | 10 | 20 | 75 |
| EMC54095 | 9.5 | 10 | 22 | 75 |
| EMC54100 | 10.0 | 10 | 25 | 75 |
| EMC54110 | 11.0 | 12 | 30 | 75 |
| EMC54120 | 12.0 | 12 | 32 | 75 |
| EMC54140 | 14.0 | 16 | 40 | 100 |
| EMC54160 | 16.0 | 16 | 40 | 100 |
| EMC54180 | 18.0 | 20 | 40 | 100 |
| EMC54200 | 20.0 | 20 | 45 | 100 |

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.03 | h5 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | Copper and Copper Alloys (Bronze / Brass) | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | | ○ | | ○ | |

# K-2 Plus END MILLS

PLAIN SHANK **EMC55 SERIES**

## CARBIDE, 4 FLUTE 35° HELIX LONG LENGTH
## 硬质合金，4刃 35度螺旋 长刃

- ▶ Designed for general purposes to carbon steels, tool steels, alloy steels and stainless steels.
- ▶ Suitable for high speed machining in wet or dry condition.
- ▶ 4 flute allows for better work piece finishes.
- ▶ Application in high speed machining, wet and dry cutting conditions.

- ▶ 设计用于加工碳钢，工具钢，合金钢，不锈钢等多种用途的钢
- ▶ 高耐磨性
- ▶ 4刃可得到较好的表面粗糙度
- ▶ 适应于高速加工，湿式和干式切削条件

CARBIDE | 4 | 35° | PLAIN

p.C502

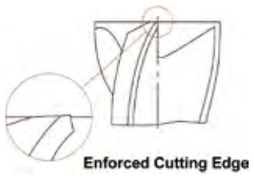
Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK<br>POWER MILLING CHUCK | D15 - 46<br>D161 - 176 |
| ◎ | - | - | SHRINK FIT HOLDER | D47 - 72 |
| ○ | - | - | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 | Shank Diameter 柄径 | Length of Cut 刃长 | Overall Length 全长 |
|---|---|---|---|---|
| EMC55020 | 2.0 | 4 | 10 | 50 |
| EMC55030 | 3.0 | 4 | 15 | 60 |
| EMC55901 | 3.0 | 6 | 15 | 60 |
| EMC55040 | 4.0 | 4 | 20 | 60 |
| EMC55902 | 4.0 | 6 | 20 | 60 |
| EMC55050 | 5.0 | 6 | 25 | 75 |
| EMC55060 | 6.0 | 6 | 30 | 75 |
| EMC55080 | 8.0 | 8 | 35 | 100 |
| EMC55100 | 10.0 | 10 | 45 | 100 |
| EMC55120 | 12.0 | 12 | 45 | 100 |
| EMC55140 | 14.0 | 14 | 70 | 150 |
| EMC55903 | 14.0 | 16 | 70 | 150 |
| EMC55160 | 16.0 | 16 | 70 | 150 |
| EMC55180 | 18.0 | 20 | 75 | 150 |
| EMC55200 | 20.0 | 20 | 75 | 150 |

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.03 | h5 |




◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | | ○ | | ○ | |





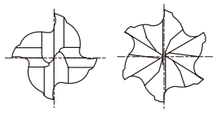
# K-2 Plus END MILLS

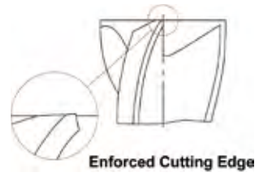
PLAIN SHANK SHORT LENGTH **EMC57 SERIES**
PLAIN SHANK LONG LENGTH **EMC58 SERIES**

## CARBIDE, 4&6 FLUTE 45° HELIX SHORT / LONG LENGTH
## 硬质合金，4&6刃 45度螺旋 短刃/长刃

- ▶ High speed cutting and finish milling with high feed rate.
- ▶ Excellent surface finishes.
- ▶ Application in high speed machining, wet and dry cutting condition.

- ▶ 高速切削和高进给量的精切削
- ▶ 卓越的工件表面粗糙度
- ▶ 适应于高速加工，湿式和干式切削条件






CARBIDE | 4&6 | 45° | PLAIN

p.C503

Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK<br>POWER MILLING CHUCK | D15 - 46<br>D161 - 176 |
| ◎ | - | - | SHRINK FIT HOLDER | D47 - 72 |
| ○ | - | - | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 118<br>D183 - 201 |

### ■ SHORT 短刃

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 | Shank Diameter 柄径 | Length of Cut 刃长 | Overall Length 全长 | No. of Flute 槽数 |
|---|---|---|---|---|---|
| EMC57010 | 1.0 | 4 | 3 | 45 | 4 |
| EMC57015 | 1.5 | 4 | 4 | 45 | 4 |
| EMC57020 | 2.0 | 4 | 6 | 45 | 4 |
| EMC57025 | 2.5 | 4 | 8 | 45 | 4 |
| EMC57030 | 3.0 | 4 | 8 | 50 | 4 |
| EMC57040 | 4.0 | 4 | 11 | 50 | 4 |
| EMC57050 | 5.0 | 6 | 13 | 50 | 6 |
| EMC57060 | 6.0 | 6 | 16 | 50 | 6 |
| EMC57080 | 8.0 | 8 | 19 | 60 | 6 |
| EMC57100 | 10.0 | 10 | 22 | 75 | 6 |
| EMC57120 | 12.0 | 12 | 26 | 75 | 6 |
| EMC57140 | 14.0 | 14 | 30 | 90 | 6 |
| EMC57160 | 16.0 | 16 | 32 | 100 | 6 |
| EMC57180 | 18.0 | 18 | 38 | 100 | 6 |
| EMC57200 | 20.0 | 20 | 38 | 100 | 6 |

### ■ LONG 长刃

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 | Shank Diameter 柄径 | Length of Cut 刃长 | Overall Length 全长 | No. of Flute 槽数 |
|---|---|---|---|---|---|
| EMC58060 | 6.0 | 6 | 25 | 80 | 6 |
| EMC58080 | 8.0 | 8 | 35 | 90 | 6 |
| EMC58100 | 10.0 | 10 | 45 | 100 | 6 |
| EMC58120 | 12.0 | 12 | 50 | 100 | 6 |
| EMC58160 | 16.0 | 16 | 65 | 150 | 6 |
| EMC58200 | 20.0 | 20 | 70 | 150 | 6 |

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.03 | h5 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ○ | ○ | ◎ | ○ | ○ | ◎ | ◎ | ○ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | | | | | | | | ○ | | ◎ | ○ |

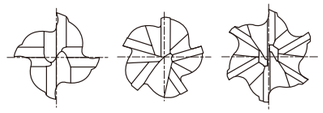
# K-2 Plus END MILLS

PLAIN SHANK **EMC69** SERIES

## CARBIDE, MULTI FLUTE 45° HELIX ROUGHING-FINE
## 硬质合金，多刃 45度螺旋 - 细牙

▶ Suitable for rough machining of stainless steels, Ti, Ni, Inconel etc.
▶ Fine pitch wave for high speed machining..

▶ 适用于不锈钢系列， Ti/Ni，INCONEL(铬镍铁合金）等的粗加工
▶ 采用细螺纹，适合高速加工



CARBIDE | HR | 4-6 | 45° | PLAIN | C x 45° p.C504

Recommended ToolHolder

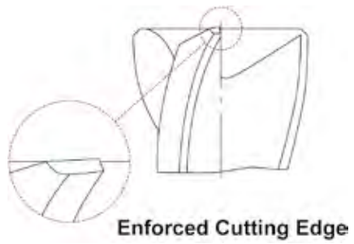
| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK<br>POWER MILLING CHUCK | D15 - 46<br>D161 - 176 |
| ◎ | - | - | SHRINK FIT HOLDER | D47 - 72 |
| ○ | - | - | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 h10 | Shank Diameter 柄径 h5 | Length of Cut 刃长 | Overall Length 全长 | No. of Flute 槽数 | Chamfer 导向 |
|---|---|---|---|---|---|---|
| EMC69060 | 6.0 | 6 | 13 | 60 | 4 | 0.15 |
| EMC69080 | 8.0 | 8 | 19 | 65 | 4 | 0.18 |
| EMC69090 | 9.0 | 10 | 20 | 70 | 4 | 0.18 |
| EMC69100 | 10.0 | 10 | 22 | 70 | 4 | 0.20 |
| EMC69120 | 12.0 | 12 | 26 | 80 | 4 | 0.20 |
| EMC69160 | 16.0 | 16 | 42 | 110 | 5 | 0.20 |
| EMC69200 | 20.0 | 20 | 48 | 110 | 6 | 0.20 |

**Tolerances according to DIN 7160 & 7161**
按DIN7160&7161的标准公差

| Tolerance range in μm / 公差单位为<br>Nominal-Diameter in mm / 直径单位为 | from 1 to 3 | over 3 to 6 | over 6 to 10 | over 10 to 18 | over 18 to 30 |
|---|---|---|---|---|---|
| h10 | 0<br>- 40 | 0<br>- 48 | 0<br>- 58 | 0<br>- 70 | 0<br>- 84 |
| h5 | 0<br>- 4 | 0<br>- 5 | 0<br>- 6 | 0<br>- 8 | 0<br>- 9 |




◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | | | ○ | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | | | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | ◎ | |



# K-2 END MILLS

PLAIN SHANK **G9A25** SERIES

## CARBIDE, 2 FLUTE REGULAR LENGTH BALL NOSE
## 硬质合金，2刃 普通刃长 球头

▶ Suitable for dry milling applications at high temperatures.
▶ Excellent high-performance end mills.
▶ Designed for milling of radius bottom slots, fillets and special contours.

▶ 适于高温干切削
▶ 卓越的高性能铣刀
▶ 设计用于加工圆底沟槽带和特殊轮廓

CARBIDE | 2 | 30° | R ±0.02 | PLAIN p.C491

Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK<br>POWER MILLING CHUCK | D15 - 46<br>D161 - 176 |
| ◎ | - | - | SHRINK FIT HOLDER | D47 - 72 |
| ○ | - | - | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Radius of Ball Nose 圆弧角 R (±0.02) | Mill Diameter 直径 | Shank Diameter 柄径 | Length of Cut 刃长 | Overall Length 全长 |
|---|---|---|---|---|---|
| ▲ G9A25010 | R0.5 | 1.0 | 4 | 2 | 50 |
| ▲ G9A25015 | R0.75 | 1.5 | 4 | 3 | 50 |
| ▲ G9A25020 | R1.0 | 2.0 | 4 | 4 | 50 |
| ▲ G9A25025 | R1.25 | 2.5 | 4 | 6 | 50 |
| ▲ G9A25030 | R1.5 | 3.0 | 4 | 6 | 50 |
| ▲ G9A25040 | R2.0 | 4.0 | 4 | 8 | 50 |
| ▲ G9A25050 | R2.5 | 5.0 | 6 | 10 | 50 |
| ▲ G9A25060 | R3.0 | 6.0 | 6 | 12 | 50 |
| ▲ G9A25080 | R4.0 | 8.0 | 8 | 14 | 60 |
| ▲ G9A25100 | R5.0 | 10.0 | 10 | 18 | 75 |
| ▲ G9A25120 | R6.0 | 12.0 | 12 | 22 | 75 |
| ▲ G9A25910 | R6.0 | 12.0 | 12 | 25 | 75 |
| ▲ G9A25911 | R7.0 | 14.0 | 16 | 25 | 100 |
| ▲ G9A25160 | R8.0 | 16.0 | 16 | 32 | 100 |
| ▲ G9A25912 | R8.0 | 16.0 | 16 | 30 | 100 |
| ▲ G9A25200 | R10.0 | 20.0 | 20 | 38 | 100 |

▲ : Only available till stock runs out 只提供到消耗现库存

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.03 | h5 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | ○ | |

# K-2 END MILLS

FLAT SHANK **G9B52** SERIES

## CARBIDE, 2 FLUTE LONG LENGTH BALL NOSE
## 硬质合金，2刃 长刃 球头

- ▶ Suitable for dry milling applications at high temperatures.
- ▶ Excellent high-performance end mills.
- ▶ Designed for milling of radius bottom slots, fillets and special contours.

- ▶适于高温干切削
- ▶卓越的高性能铣刀
- ▶设计用于加工圆底沟槽带和特殊轮廓

Only available till stock runs out

CARBIDE | 2 | 30° | R ±0.02 | PLAIN

p.C491

| Recommended ToolHolder | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| | END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK<br>POWER MILLING CHUCK | D15 - 46<br>D161 - 176 |
| | - | - | SHRINK FIT HOLDER | D47 - 72 |
| | - | - | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Radius of Ball Nose 圆弧角 R (±0.02) | Mill Diameter 直径 | Shank Diameter 柄径 | Length of Cut 刃长 | Overall Length 全长 |
|---|---|---|---|---|---|
| ▲ G9B52010 | R0.5 | 1.0 | 4 | 2 | 75 |
| ▲ G9B52901 | R0.5 | 1.0 | 6 | 2 | 75 |
| ▲ G9B52015 | R0.75 | 1.5 | 4 | 3 | 75 |
| ▲ G9B52902 | R0.75 | 1.5 | 6 | 3 | 75 |
| ▲ G9B52020 | R1.0 | 2.0 | 4 | 4 | 75 |
| ▲ G9B52903 | R1.0 | 2.0 | 6 | 4 | 75 |
| ▲ G9B52030 | R1.5 | 3.0 | 4 | 8 | 75 |
| ▲ G9B52904 | R1.5 | 3.0 | 6 | 8 | 75 |
| ▲ G9B52040 | R2.0 | 4.0 | 4 | 11 | 100 |
| ▲ G9B52905 | R2.0 | 4.0 | 6 | 11 | 100 |
| ▲ G9B52050 | R2.5 | 5.0 | 6 | 13 | 100 |
| ▲ G9B52060 | R3.0 | 6.0 | 6 | 13 | 150 |
| ▲ G9B52080 | R4.0 | 8.0 | 8 | 16 | 150 |
| ▲ G9B52100 | R5.0 | 10.0 | 10 | 16 | 75 |
| ▲ G9B52120 | R6.0 | 12.0 | 12 | 25 | 75 |
| ▲ G9B52160 | R8.0 | 16.0 | 16 | 30 | 75 |
| ▲ G9B52200 | R10.0 | 20.0 | 20 | 30 | 75 |

▲ : Only available till stock runs out 只提供到消耗现库存

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.03 | h5 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | ○ | |



# K-2 END MILLS

PLAIN SHANK **G9A23** SERIES

## CARBIDE, 2 FLUTE REGULAR LENGTH
## 硬质合金，2刃 普通刃长

- ▶ Suitable for dry milling applications at high temperatures.
- ▶ Excellent high-performance end mills.
- ▶ 2 flute design for slotting.

- ▶适于高温干切削
- ▶卓越的高性能铣刀
- ▶2刃为槽铣设计

Only available till stock runs out

CARBIDE | 2 | 30° | PLAIN

p.C492

| Recommended ToolHolder | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| | END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK<br>POWER MILLING CHUCK | D15 - 46<br>D161 - 176 |
| | - | - | SHRINK FIT HOLDER | D47 - 72 |
| | - | - | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 | Shank Diameter 柄径 | Length of Cut 刃长 | Overall Length 全长 |
|---|---|---|---|---|
| ▲ G9A23010 | 1.0 | 4 | 3 | 50 |
| ▲ G9A23015 | 1.5 | 4 | 4 | 100 |
| ▲ G9A23020 | 2.0 | 4 | 6 | 50 |
| ▲ G9A23030 | 3.0 | 4 | 9 | 50 |
| ▲ G9A23040 | 4.0 | 4 | 11 | 50 |
| ▲ G9A23050 | 5.0 | 6 | 13 | 50 |
| ▲ G9A23060 | 6.0 | 6 | 16 | 50 |
| ▲ G9A23070 | 7.0 | 8 | 16 | 50 |
| ▲ G9A23080 | 8.0 | 8 | 19 | 60 |
| ▲ G9A23090 | 9.0 | 10 | 19 | 60 |
| ▲ G9A23905 | 9.0 | 10 | 25 | 60 |
| ▲ G9A23100 | 10.0 | 10 | 25 | 75 |
| ▲ G9A23120 | 12.0 | 12 | 30 | 75 |
| ▲ G9A23140 | 14.0 | 14 | 32 | 75 |
| ▲ G9A23906 | 14.0 | 16 | 45 | 100 |
| ▲ G9A23160 | 16.0 | 16 | 32 | 100 |
| ▲ G9A23907 | 16.0 | 16 | 45 | 100 |
| ▲ G9A23180 | 18.0 | 18 | 32 | 75 |
| ▲ G9A23908 | 18.0 | 20 | 45 | 100 |
| ▲ G9A23200 | 20.0 | 20 | 38 | 100 |

▲ : Only available till stock runs out 只提供到消耗现库存

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.03 | h5 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | ○ | |

# K-2 END MILLS

PLAIN SHANK **G9B50** SERIES

## CARBIDE, 2 FLUTE LONG LENGTH
## 硬质合金，2刃 普通刃长

▶ Suitable for dry milling applications at high temperatures.
▶ Excellent high-performance end mills.
▶ 2 flute design for slotting.

▶适于高温干切削
▶卓越的高性能铣刀
▶2刃为槽铣设计

CARBIDE | 2 | 30° | PLAIN p.C492

Recommended ToolHolder

| Flat Shank | | Page | Plain Shank | Page |
|---|---|---|---|---|
| END MILL HOLDER | D118 - 137 | | HYDRAULIC CHUCK<br>POWER MILLING CHUCK | D15 - 46<br>D161 - 176 |
| - | - | | SHRINK FIT HOLDER | D47 - 72 |
| - | - | | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 | Shank Diameter 柄径 | Length of Cut 刃长 | Overall Length 全长 |
|---|---|---|---|---|
| ▲ G9B50010 | 1.0 | 4 | 5 | 75 |
| ▲ G9B50901 | 1.0 | 6 | 5 | 75 |
| ▲ G9B50015 | 1.5 | 4 | 6 | 75 |
| ▲ G9B50902 | 1.5 | 6 | 6 | 75 |
| ▲ G9B50020 | 2.0 | 4 | 9 | 75 |
| ▲ G9B50903 | 2.0 | 6 | 9 | 75 |
| ▲ G9B50025 | 2.5 | 4 | 12 | 75 |
| ▲ G9B50904 | 2.5 | 6 | 12 | 75 |
| ▲ G9B50030 | 3.0 | 4 | 12 | 75 |
| ▲ G9B50905 | 3.0 | 6 | 12 | 75 |
| ▲ G9B50040 | 4.0 | 4 | 16 | 75 |
| ▲ G9B50906 | 4.0 | 6 | 16 | 75 |
| ▲ G9B50060 | 6.0 | 6 | 20 | 75 |
| ▲ G9B50080 | 8.0 | 8 | 20 | 100 |
| ▲ G9B50100 | 10.0 | 10 | 25 | 100 |
| ▲ G9B50120 | 12.0 | 12 | 30 | 100 |
| ▲ G9B50140 | 14.0 | 16 | 75 | 150 |
| ▲ G9B50200 | 20.0 | 20 | 75 | 150 |

▲ : Only available till stock runs out 只提供到消耗现库存

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.03 | h5 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | ○ | |





# K-2 END MILLS

PLAIN SHANK **G9A24** SERIES

## CARBIDE, 4 FLUTE REGULAR LENGTH
## 硬质合金，4刃 普通刃长

▶ Suitable for dry milling applications at high temperatures.
▶ Excellent high-performance end mills.
▶ 4 flute allows for better work piece finishes.

▶适于高温干切削
▶卓越的高性能铣刀
▶4刃可得到好的表面质量

CARBIDE | 4 | 30° | PLAIN p.C493

Recommended ToolHolder

| Flat Shank | | Page | Plain Shank | Page |
|---|---|---|---|---|
| END MILL HOLDER | D118 - 137 | | HYDRAULIC CHUCK<br>POWER MILLING CHUCK | D15 - 46<br>D161 - 176 |
| - | - | | SHRINK FIT HOLDER | D47 - 72 |
| - | - | | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 | Shank Diameter 柄径 | Length of Cut 刃长 | Overall Length 全长 |
|---|---|---|---|---|
| ▲ G9A24010 | 1.0 | 4 | 3 | 50 |
| ▲ G9A24015 | 1.5 | 4 | 4 | 50 |
| ▲ G9A24020 | 2.0 | 4 | 6 | 50 |
| ▲ G9A24025 | 2.5 | 4 | 8 | 50 |
| ▲ G9A24030 | 3.0 | 4 | 9 | 50 |
| ▲ G9A24040 | 4.0 | 4 | 11 | 50 |
| ▲ G9A24050 | 5.0 | 6 | 13 | 50 |
| ▲ G9A24060 | 6.0 | 6 | 16 | 50 |
| ▲ G9A24080 | 8.0 | 8 | 19 | 60 |
| ▲ G9A24905 | 9.0 | 10 | 25 | 75 |
| ▲ G9A24100 | 10.0 | 10 | 25 | 75 |
| ▲ G9A24120 | 12.0 | 12 | 30 | 75 |
| ▲ G9A24140 | 14.0 | 14 | 32 | 75 |
| ▲ G9A24160 | 16.0 | 16 | 32 | 100 |
| ▲ G9A24907 | 16.0 | 16 | 45 | 100 |
| ▲ G9A24908 | 18.0 | 20 | 45 | 100 |
| ▲ G9A24200 | 20.0 | 20 | 38 | 100 |

▲ : Only available till stock runs out 只提供到消耗现库存

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.03 | h5 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | ○ | |

# K-2 END MILLS

PLAIN SHANK **G9B51 SERIES**

## CARBIDE, 4 FLUTE LONG LENGTH
## 硬质合金，4刃 长刃

- ▶ Suitable for dry milling applications at high temperatures.
- ▶ Excellent high-performance end mills.
- ▶ 4 flute allows for better work piece finishes.

- ▶适于高温干切削
- ▶卓越的高性能铣刀
- ▶4刃可得到好的表面质量

CARBIDE | 4 | 30° | PLAIN | p.C493

Recommended Toolholder

| Flat Shank | | Page | Plain Shank | Page |
|---|---|---|---|---|
| END MILL HOLDER | D118 - 137 | | HYDRAULIC CHUCK<br>POWER MILLING CHUCK | D15 - 46<br>D161 - 176 |
| - | - | | SHRINK FIT HOLDER | D47 - 72 |
| - | - | | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 | Shank Diameter 柄径 | Length of Cut 刃长 | Overall Length 全长 |
|---|---|---|---|---|
| ▲ G9B51010 | 1.0 | 4 | 5 | 75 |
| ▲ G9B51015 | 1.5 | 4 | 6 | 75 |
| ▲ G9B51902 | 1.5 | 6 | 6 | 75 |
| ▲ G9B51020 | 2.0 | 4 | 9 | 75 |
| ▲ G9B51903 | 2.0 | 6 | 9 | 75 |
| ▲ G9B51025 | 2.5 | 4 | 12 | 75 |
| ▲ G9B51904 | 2.5 | 6 | 12 | 75 |
| ▲ G9B51030 | 3.0 | 4 | 12 | 75 |
| ▲ G9B51905 | 3.0 | 6 | 12 | 75 |
| ▲ G9B51040 | 4.0 | 4 | 16 | 75 |
| ▲ G9B51906 | 4.0 | 6 | 16 | 75 |
| ▲ G9B51050 | 5.0 | 6 | 20 | 75 |
| ▲ G9B51060 | 6.0 | 6 | 20 | 75 |
| ▲ G9B51080 | 8.0 | 8 | 20 | 100 |
| ▲ G9B51100 | 10.0 | 10 | 25 | 100 |
| ▲ G9B51120 | 12.0 | 12 | 30 | 100 |
| ▲ G9B51140 | 14.0 | 16 | 75 | 150 |
| ▲ G9B51160 | 16.0 | 16 | 75 | 150 |
| ▲ G9B51200 | 20.0 | 20 | 75 | 150 |

**▲ : Only available till stock runs out** 只提供到消耗现库存

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.03 | h5 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | H | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | ○ | |



# K-2 plus & K-2 END MILLS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

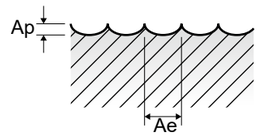
**G9A25, G9B52, EMC56 SERIES**

**2 FLUTE BALL NOSE**
**2刃 球头**

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description 材料描述 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 2.0 | 3.0 | 4.0 | 5.0 | 6.0 | 8.0 | 10.0 | 12.0 | 14.0 | 16.0 | 18.0 | 20.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1-4 | Non-alloy steel | - | 0.2D | Vc | 78 | 107 | 112 | 123 | 137 | 153 | 171 | 188 | 199 | 205 | 215 | 223 |
| | | | | | fz | 0.026 | 0.025 | 0.035 | 0.045 | 0.060 | 0.089 | 0.122 | 0.150 | 0.165 | 0.180 | 0.188 | 0.201 |
| | | | | | RPM | 12350 | 11400 | 8950 | 7800 | 7250 | 6100 | 5450 | 4990 | 4530 | 4085 | 3800 | 3550 |
| | | | | | FEED | 640 | 575 | 630 | 700 | 870 | 1090 | 1330 | 1500 | 1495 | 1470 | 1425 | 1425 |
| | | | | | Ae | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 |
| | 5 | | - | 0.2D | Vc | 57 | 83 | 90 | 97 | 111 | 123 | 137 | 149 | 158 | 161 | 170 | 176 |
| | | | | | fz | 0.023 | 0.022 | 0.031 | 0.040 | 0.060 | 0.080 | 0.100 | 0.120 | 0.128 | 0.141 | 0.148 | 0.158 |
| | | | | | RPM | 9150 | 8850 | 7150 | 6200 | 5900 | 4900 | 4350 | 3950 | 3600 | 3200 | 3000 | 2800 |
| | | | | | FEED | 415 | 390 | 450 | 490 | 705 | 785 | 870 | 950 | 925 | 905 | 890 | 885 |
| | | | | | Ae | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 |
| | 6-7 | Low alloy steel | - | 0.2D | Vc | 78 | 107 | 112 | 123 | 137 | 153 | 171 | 188 | 199 | 205 | 215 | 223 |
| | | | | | fz | 0.026 | 0.025 | 0.035 | 0.045 | 0.060 | 0.089 | 0.122 | 0.150 | 0.165 | 0.180 | 0.188 | 0.201 |
| | | | | | RPM | 12350 | 11400 | 8950 | 7800 | 7250 | 6100 | 5450 | 4990 | 4530 | 4085 | 3800 | 3550 |
| | | | | | FEED | 640 | 575 | 630 | 700 | 870 | 1090 | 1330 | 1500 | 1495 | 1470 | 1425 | 1425 |
| | | | | | Ae | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 |
| | 8-9 | | - | 0.2D | Vc | 57 | 83 | 90 | 97 | 111 | 123 | 137 | 149 | 158 | 161 | 170 | 176 |
| | | | | | fz | 0.023 | 0.022 | 0.031 | 0.040 | 0.060 | 0.080 | 0.100 | 0.120 | 0.128 | 0.141 | 0.148 | 0.158 |
| | | | | | RPM | 9150 | 8850 | 7150 | 6200 | 5900 | 4900 | 4350 | 3950 | 3600 | 3200 | 3000 | 2800 |
| | | | | | FEED | 415 | 390 | 450 | 490 | 705 | 785 | 870 | 950 | 925 | 905 | 890 | 885 |
| | | | | | Ae | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 |
| | 10 | High alloyed steel, and tool steel | - | 0.2D | Vc | 78 | 107 | 112 | 123 | 137 | 153 | 171 | 188 | 199 | 205 | 215 | 223 |
| | | | | | fz | 0.026 | 0.025 | 0.035 | 0.045 | 0.060 | 0.089 | 0.122 | 0.150 | 0.165 | 0.180 | 0.188 | 0.201 |
| | | | | | RPM | 12350 | 11400 | 8950 | 7800 | 7250 | 6100 | 5450 | 4990 | 4530 | 4085 | 3800 | 3550 |
| | | | | | FEED | 640 | 575 | 630 | 700 | 870 | 1090 | 1330 | 1500 | 1495 | 1470 | 1425 | 1425 |
| | | | | | Ae | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 |
| | 11.1 - 11.2 | | - | 0.2D | Vc | 57 | 83 | 90 | 97 | 111 | 123 | 137 | 149 | 158 | 161 | 170 | 176 |
| | | | | | fz | 0.023 | 0.022 | 0.031 | 0.040 | 0.060 | 0.080 | 0.100 | 0.120 | 0.128 | 0.141 | 0.148 | 0.158 |
| | | | | | RPM | 9150 | 8850 | 7150 | 6200 | 5900 | 4900 | 4350 | 3950 | 3600 | 3200 | 3000 | 2800 |
| | | | | | FEED | 415 | 390 | 450 | 490 | 705 | 785 | 870 | 950 | 925 | 905 | 890 | 885 |
| | | | | | Ae | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 |
| K | 15-20 | Grey cast iron Nodular cast iron Malleable cast iron | 0.7D | 0.3D | Vc | 66 | 66 | 65 | 65 | 64 | 63 | 64 | 66 | 62 | 65 | 62 | 66 |
| | | | | | fz | 0.010 | 0.016 | 0.028 | 0.040 | 0.053 | 0.092 | 0.112 | 0.131 | 0.164 | 0.177 | 0.209 | 0.200 |
| | | | | | RPM | 10500 | 7050 | 5150 | 4150 | 3400 | 2500 | 2050 | 1750 | 1400 | 1300 | 1100 | 1050 |
| | | | | | FEED | 220 | 230 | 285 | 330 | 360 | 460 | 460 | 460 | 460 | 460 | 460 | 420 |
| | | | | | Ae | - | - | - | - | - | - | - | - | - | - | - | - |
| N | 21~22 | Aluminum-wrought alloy | 0.7D | 0.3D | Vc | 194 | 193 | 194 | 190 | 194 | 199 | 193 | 194 | 189 | 194 | 192 | 185 |
| | | | | | fz | 0.006 | 0.010 | 0.013 | 0.019 | 0.023 | 0.034 | 0.044 | 0.061 | 0.073 | 0.070 | 0.079 | 0.092 |
| | | | | | RPM | 30800 | 20500 | 15400 | 12100 | 10300 | 7900 | 6150 | 5150 | 4300 | 3850 | 3400 | 2950 |
| | | | | | FEED | 395 | 395 | 395 | 470 | 470 | 540 | 540 | 630 | 630 | 540 | 540 | 540 |
| | | | | | Ae | - | - | - | - | - | - | - | - | - | - | - | - |
| | 23~25 | Aluminum-cast, alloyed | 0.7D | 0.3D | Vc | 194 | 193 | 194 | 190 | 194 | 199 | 193 | 194 | 189 | 194 | 192 | 185 |
| | | | | | fz | 0.006 | 0.010 | 0.013 | 0.019 | 0.023 | 0.034 | 0.044 | 0.061 | 0.073 | 0.070 | 0.079 | 0.092 |
| | | | | | RPM | 30800 | 20500 | 15400 | 12100 | 10300 | 7900 | 6150 | 5150 | 4300 | 3850 | 3400 | 2950 |
| | | | | | FEED | 395 | 395 | 395 | 470 | 470 | 540 | 540 | 630 | 630 | 540 | 540 | 540 |
| | | | | | Ae | | | | | | | | | | | | |
| H | 38.1 | Hardened steel | - | 0.2D | Vc | 25 | 36 | 45 | 49 | 51 | 52 | 55 | 57 | 57 | 58 | 59 | 60 |
| | | | | | fz | 0.016 | 0.016 | 0.021 | 0.024 | 0.030 | 0.046 | 0.054 | 0.070 | 0.081 | 0.091 | 0.100 | 0.111 |
| | | | | | RPM | 4000 | 3800 | 3600 | 3100 | 2700 | 2050 | 1750 | 1500 | 1300 | 1150 | 1050 | 950 |
| | | | | | FEED | 125 | 125 | 150 | 150 | 160 | 190 | 190 | 210 | 210 | 210 | 210 | 210 |
| | | | | | Ae | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 |
| | 40 | Chilled Cast Iron | - | 0.2D | Vc | 57 | 83 | 90 | 97 | 111 | 123 | 137 | 149 | 158 | 161 | 170 | 176 |
| | | | | | fz | 0.023 | 0.022 | 0.031 | 0.040 | 0.060 | 0.080 | 0.100 | 0.120 | 0.128 | 0.141 | 0.148 | 0.158 |
| | | | | | RPM | 9150 | 8850 | 7150 | 6200 | 5900 | 4900 | 4350 | 3950 | 3600 | 3200 | 3000 | 2800 |
| | | | | | FEED | 415 | 390 | 450 | 490 | 705 | 785 | 870 | 950 | 925 | 905 | 890 | 885 |
| | | | | | Ae | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 |

※ The FEED, in long & extra long types, should be reduced by around 50%
对于长型合超长型进给量应该减少约50%



# K-2 plus & K-2 END MILLS

# RECOMMENDED CUTTING CONDITIONS
# 推荐加工参数

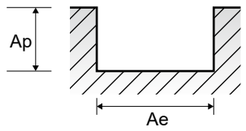
## G9A23, G9B50 SERIES

**2 FLUTE - SLOTTING**
**2刃 - 槽铣削**

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description 材料描述 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 1.0 | 1.5 | 2.0 | 3.0 | 4.0 | 5.0 | 6.0 | 8.0 | 10.0 | 12.0 | 14.0 | 16.0 | 20.0 |
| P | 1-4 | Non-alloy steel | 1.0D | 0.5D (Up to Ø3 : 0.2D) | Vc | 45 | 44 | 49 | 57 | 65 | 68 | 72 | 72 | 69 | 70 | 75 | 75 | 72 |
| | | | | | fz | 0.004 | 0.008 | 0.010 | 0.015 | 0.025 | 0.031 | 0.039 | 0.057 | 0.064 | 0.065 | 0.063 | 0.062 | 0.063 |
| | | | | | RPM | 14300 | 9350 | 7850 | 6100 | 5150 | 4300 | 3800 | 2850 | 2200 | 1850 | 1700 | 1500 | 1150 |
| | | | | | FEED | 105 | 150 | 160 | 180 | 255 | 270 | 300 | 325 | 280 | 240 | 215 | 185 | 145 |
| | 5 | | 1.0D | 0.5D (Up to Ø3 : 0.2D) | Vc | 27 | 26 | 32 | 36 | 40 | 40 | 43 | 43 | 42 | 43 | 46 | 48 | 44 |
| | | | | | fz | 0.004 | 0.008 | 0.010 | 0.016 | 0.025 | 0.031 | 0.041 | 0.050 | 0.050 | 0.048 | 0.048 | 0.050 | 0.050 |
| | | | | | RPM | 8500 | 5550 | 5150 | 3800 | 3150 | 2550 | 2300 | 1700 | 1350 | 1150 | 1050 | 950 | 700 |
| | | | | | FEED | 65 | 85 | 100 | 120 | 155 | 160 | 190 | 170 | 135 | 110 | 100 | 95 | 70 |
| | 6-7 | Low alloy steel | 1.0D | 0.5D (Up to Ø3 : 0.2D) | Vc | 45 | 44 | 49 | 57 | 65 | 68 | 72 | 72 | 69 | 70 | 75 | 75 | 72 |
| | | | | | fz | 0.004 | 0.008 | 0.010 | 0.015 | 0.025 | 0.031 | 0.039 | 0.057 | 0.064 | 0.065 | 0.063 | 0.062 | 0.063 |
| | | | | | RPM | 14300 | 9350 | 7850 | 6100 | 5150 | 4300 | 3800 | 2850 | 2200 | 1850 | 1700 | 1500 | 1150 |
| | | | | | FEED | 105 | 150 | 160 | 180 | 255 | 270 | 300 | 325 | 280 | 240 | 215 | 185 | 145 |
| | 8-9 | | 1.0D | 0.5D (Up to Ø3 : 0.2D) | Vc | 27 | 26 | 32 | 36 | 40 | 40 | 43 | 43 | 42 | 43 | 46 | 48 | 44 |
| | | | | | fz | 0.004 | 0.008 | 0.010 | 0.016 | 0.025 | 0.031 | 0.041 | 0.050 | 0.050 | 0.048 | 0.048 | 0.050 | 0.050 |
| | | | | | RPM | 8500 | 5550 | 5150 | 3800 | 3150 | 2550 | 2300 | 1700 | 1350 | 1150 | 1050 | 950 | 700 |
| | | | | | FEED | 65 | 85 | 100 | 120 | 155 | 160 | 190 | 170 | 135 | 110 | 100 | 95 | 70 |
| | 10 | High alloyed steel, and tool steel | 1.0D | 0.5D (Up to Ø3 : 0.2D) | Vc | 45 | 44 | 49 | 57 | 65 | 68 | 72 | 72 | 69 | 70 | 75 | 75 | 72 |
| | | | | | fz | 0.004 | 0.008 | 0.010 | 0.015 | 0.025 | 0.031 | 0.039 | 0.057 | 0.064 | 0.065 | 0.063 | 0.062 | 0.063 |
| | | | | | RPM | 14300 | 9350 | 7850 | 6100 | 5150 | 4300 | 3800 | 2850 | 2200 | 1850 | 1700 | 1500 | 1150 |
| | | | | | FEED | 105 | 150 | 160 | 180 | 255 | 270 | 300 | 325 | 280 | 240 | 215 | 185 | 145 |
| | 11.1 ~ 11.2 | | 1.0D | 0.5D (Up to Ø3 : 0.2D) | Vc | 27 | 26 | 32 | 36 | 40 | 40 | 43 | 43 | 42 | 43 | 46 | 48 | 44 |
| | | | | | fz | 0.004 | 0.008 | 0.010 | 0.016 | 0.025 | 0.031 | 0.041 | 0.050 | 0.050 | 0.048 | 0.048 | 0.050 | 0.050 |
| | | | | | RPM | 8500 | 5550 | 5150 | 3800 | 3150 | 2550 | 2300 | 1700 | 1350 | 1150 | 1050 | 950 | 700 |
| | | | | | FEED | 65 | 85 | 100 | 120 | 155 | 160 | 190 | 170 | 135 | 110 | 100 | 95 | 70 |
| M | 14.1 | Stainless steel | 1.0D | 0.5D (Up to Ø3 : 0.2D) | Vc | 22 | 26 | 27 | 30 | 33 | 34 | 37 | 36 | 36 | 36 | 37 | 35 | 35 |
| | | | | | fz | 0.003 | 0.007 | 0.009 | 0.016 | 0.025 | 0.031 | 0.04 | 0.053 | 0.059 | 0.058 | 0.059 | 0.068 | 0.064 |
| | | | | | RPM | 7150 | 5600 | 4300 | 3150 | 2650 | 2150 | 1950 | 1450 | 1150 | 950 | 850 | 700 | 550 |
| | | | | | FEED | 50 | 80 | 80 | 100 | 130 | 135 | 155 | 155 | 135 | 110 | 100 | 95 | 70 |
| K | 15-20 | Grey cast iron Nodular cast iron Malleable cast iron | 1.0D | 1.0D | Vc | 59 | 57 | 59 | 57 | 58 | 57 | 56 | 55 | 58 | 55 | 57 | 55 | 57 |
| | | | | | fz | 0.005 | 0.008 | 0.012 | 0.018 | 0.024 | 0.030 | 0.043 | 0.063 | 0.077 | 0.102 | 0.119 | 0.145 | 0.189 |
| | | | | | RPM | 18700 | 12100 | 9350 | 6050 | 4600 | 3650 | 2950 | 2200 | 1850 | 1450 | 1300 | 1100 | 900 |
| | | | | | FEED | 205 | 205 | 220 | 220 | 220 | 220 | 255 | 275 | 285 | 295 | 310 | 320 | 340 |
| N | 21~22 | Aluminum-wrought alloy | 1.0D | 1.0D | Vc | 138 | 130 | 138 | 145 | 138 | 144 | 143 | 143 | 145 | 141 | 145 | 143 | 138 |
| | | | | | fz | 0.004 | 0.007 | 0.010 | 0.015 | 0.021 | 0.025 | 0.032 | 0.043 | 0.053 | 0.065 | 0.073 | 0.085 | 0.110 |
| | | | | | RPM | 44000 | 27500 | 22000 | 15400 | 11000 | 9150 | 7600 | 5700 | 4600 | 3750 | 3300 | 2850 | 2200 |
| | | | | | FEED | 330 | 385 | 460 | 460 | 460 | 460 | 485 | 485 | 485 | 485 | 485 | 485 | 485 |
| | 23~25 | Aluminum-cast, alloyed | 1.0D | 1.0D | Vc | 138 | 130 | 138 | 145 | 138 | 144 | 143 | 143 | 145 | 141 | 145 | 143 | 138 |
| | | | | | fz | 0.004 | 0.007 | 0.010 | 0.015 | 0.021 | 0.025 | 0.032 | 0.043 | 0.053 | 0.065 | 0.073 | 0.085 | 0.110 |
| | | | | | RPM | 44000 | 27500 | 22000 | 15400 | 11000 | 9150 | 7600 | 5700 | 4600 | 3750 | 3300 | 2850 | 2200 |
| | | | | | FEED | 330 | 385 | 460 | 460 | 460 | 460 | 485 | 485 | 485 | 485 | 485 | 485 | 485 |
| | 26~28 | Copper and Copper Alloys (Bronze / Brass) | 1.0D | 1.0D | Vc | 78 | 96 | 104 | 104 | 111 | 107 | 107 | 111 | 107 | 107 | 106 | 111 | 107 |
| | | | | | fz | 0.004 | 0.007 | 0.010 | 0.015 | 0.019 | 0.025 | 0.033 | 0.043 | 0.055 | 0.066 | 0.078 | 0.085 | 0.110 |
| | | | | | RPM | 24700 | 20300 | 16500 | 11000 | 8800 | 6800 | 5700 | 4400 | 3400 | 2850 | 2400 | 2200 | 1700 |
| | | | | | FEED | 200 | 300 | 340 | 340 | 340 | 340 | 375 | 375 | 375 | 375 | 375 | 375 | 375 |
| H | 40 | Chilled Cast Iron | 1.0D | 0.5D (Up to Ø3 : 0.2D) | Vc | 27 | 26 | 32 | 36 | 40 | 40 | 43 | 43 | 42 | 43 | 46 | 48 | 44 |
| | | | | | fz | 0.004 | 0.008 | 0.010 | 0.016 | 0.025 | 0.031 | 0.041 | 0.050 | 0.050 | 0.048 | 0.048 | 0.050 | 0.050 |
| | | | | | RPM | 8500 | 5550 | 5150 | 3800 | 3150 | 2550 | 2300 | 1700 | 1350 | 1150 | 1050 | 950 | 700 |
| | | | | | FEED | 65 | 85 | 100 | 120 | 155 | 160 | 190 | 170 | 135 | 110 | 100 | 95 | 70 |

※ The FEED, in long & extra long types, should be reduced by around 50%
对于长型合超长型进给量应该减少约50%






K-2 plus & K-2 END MILLS
RECOMMENDED CUTTING CONDITIONS
推荐加工参数

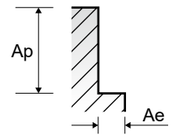
## G9A24, G9B51 SERIES

**4 FLUTE - SIDE CUTTING**
**4刃 - 侧铣削**

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description 材料描述 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 1.0 | 1.5 | 2.0 | 3.0 | 4.0 | 5.0 | 6.0 | 8.0 | 10.0 | 12.0 | 14.0 | 16.0 | 20.0 |
| P | 1-4 | Non-alloy steel | 0.1D | 1.0D | Vc | 55 | 56 | 62 | 72 | 81 | 84 | 90 | 89 | 86 | 89 | 92 | 93 | 91 |
| | | | | | fz | 0.004 | 0.009 | 0.012 | 0.018 | 0.038 | 0.048 | 0.059 | 0.085 | 0.095 | 0.094 | 0.094 | 0.095 | 0.093 |
| | | | | | RPM | 17600 | 11800 | 9850 | 7600 | 6450 | 5350 | 4750 | 3550 | 2750 | 2350 | 2100 | 1850 | 1450 |
| | | | | | FEED | 150 | 215 | 240 | 270 | 485 | 510 | 560 | 605 | 520 | 440 | 395 | 350 | 270 |
| | 5 | | 0.1D | 1.0D | Vc | 32 | 33 | 41 | 45 | 50 | 50 | 54 | 54 | 53 | 55 | 57 | 58 | 57 |
| | | | | | fz | 0.004 | 0.008 | 0.011 | 0.018 | 0.038 | 0.048 | 0.061 | 0.076 | 0.075 | 0.074 | 0.075 | 0.074 | 0.075 |
| | | | | | RPM | 10250 | 7050 | 6450 | 4750 | 3950 | 3200 | 2850 | 2150 | 1700 | 1450 | 1300 | 1150 | 900 |
| | | | | | FEED | 85 | 115 | 145 | 170 | 300 | 305 | 350 | 325 | 255 | 215 | 195 | 170 | 135 |
| | 6-7 | Low alloy steel | 0.1D | 1.0D | Vc | 55 | 56 | 62 | 72 | 81 | 84 | 90 | 89 | 86 | 89 | 92 | 93 | 91 |
| | | | | | fz | 0.004 | 0.009 | 0.012 | 0.018 | 0.038 | 0.048 | 0.059 | 0.085 | 0.095 | 0.094 | 0.094 | 0.095 | 0.093 |
| | | | | | RPM | 17600 | 11800 | 9850 | 7600 | 6450 | 5350 | 4750 | 3550 | 2750 | 2350 | 2100 | 1850 | 1450 |
| | | | | | FEED | 150 | 215 | 240 | 270 | 485 | 510 | 560 | 605 | 520 | 440 | 395 | 350 | 270 |
| | 8-9 | | 0.1D | 1.0D | Vc | 32 | 33 | 41 | 45 | 50 | 50 | 54 | 54 | 53 | 55 | 57 | 58 | 57 |
| | | | | | fz | 0.004 | 0.008 | 0.011 | 0.018 | 0.038 | 0.048 | 0.061 | 0.076 | 0.075 | 0.074 | 0.075 | 0.074 | 0.075 |
| | | | | | RPM | 10250 | 7050 | 6450 | 4750 | 3950 | 3200 | 2850 | 2150 | 1700 | 1450 | 1300 | 1150 | 900 |
| | | | | | FEED | 85 | 115 | 145 | 170 | 300 | 305 | 350 | 325 | 255 | 215 | 195 | 170 | 135 |
| | 10 | High alloyed steel, and tool steel | 0.1D | 1.0D | Vc | 55 | 56 | 62 | 72 | 81 | 84 | 90 | 89 | 86 | 89 | 92 | 93 | 91 |
| | | | | | fz | 0.004 | 0.009 | 0.012 | 0.018 | 0.038 | 0.048 | 0.059 | 0.085 | 0.095 | 0.094 | 0.094 | 0.095 | 0.093 |
| | | | | | RPM | 17600 | 11800 | 9850 | 7600 | 6450 | 5350 | 4750 | 3550 | 2750 | 2350 | 2100 | 1850 | 1450 |
| | | | | | FEED | 150 | 215 | 240 | 270 | 485 | 510 | 560 | 605 | 520 | 440 | 395 | 350 | 270 |
| | 11.1 ~ 11.2 | | 0.1D | 1.0D | Vc | 32 | 33 | 41 | 45 | 50 | 50 | 54 | 54 | 53 | 55 | 57 | 58 | 57 |
| | | | | | fz | 0.004 | 0.008 | 0.011 | 0.018 | 0.038 | 0.048 | 0.061 | 0.076 | 0.075 | 0.074 | 0.075 | 0.074 | 0.075 |
| | | | | | RPM | 10250 | 7050 | 6450 | 4750 | 3950 | 3200 | 2850 | 2150 | 1700 | 1450 | 1300 | 1150 | 900 |
| | | | | | FEED | 85 | 115 | 145 | 170 | 300 | 305 | 350 | 325 | 255 | 215 | 195 | 170 | 135 |
| M | 14.1 | Stainless steel | 0.1D | 1.0D | Vc | 27 | 33 | 34 | 37 | 41 | 42 | 45 | 45 | 46 | 43 | 46 | 48 | 44 |
| | | | | | fz | 0.004 | 0.009 | 0.011 | 0.018 | 0.036 | 0.047 | 0.058 | 0.083 | 0.088 | 0.089 | 0.090 | 0.089 | 0.093 |
| | | | | | RPM | 8650 | 7050 | 5350 | 3950 | 3300 | 2700 | 2400 | 1800 | 1450 | 1150 | 1050 | 950 | 700 |
| | | | | | FEED | 75 | 120 | 120 | 145 | 240 | 255 | 280 | 300 | 255 | 205 | 190 | 170 | 130 |
| K | 15-20 | Grey cast iron Nodular cast iron Malleable cast iron | 0.1D | 1.5D | Vc | 59 | 57 | 59 | 57 | 58 | 57 | 56 | 55 | 58 | 55 | 57 | 55 | 57 |
| | | | | | fz | 0.017 | 0.026 | 0.034 | 0.053 | 0.070 | 0.088 | 0.131 | 0.185 | 0.232 | 0.310 | 0.363 | 0.441 | 0.575 |
| | | | | | RPM | 18700 | 12100 | 9350 | 6050 | 4600 | 3650 | 2950 | 2200 | 1850 | 1450 | 1300 | 1100 | 900 |
| | | | | | FEED | 620 | 620 | 640 | 640 | 640 | 640 | 770 | 815 | 860 | 900 | 945 | 970 | 1035 |
| N | 21~22 | Aluminum-wrought alloy | 0.1D | 1.5D | Vc | 138 | 130 | 138 | 145 | 138 | 144 | 143 | 143 | 145 | 141 | 145 | 143 | 138 |
| | | | | | fz | 0.012 | 0.021 | 0.030 | 0.043 | 0.060 | 0.072 | 0.094 | 0.125 | 0.155 | 0.191 | 0.217 | 0.251 | 0.325 |
| | | | | | RPM | 44000 | 27500 | 22000 | 15400 | 11000 | 9150 | 7600 | 5700 | 4600 | 3750 | 3300 | 2850 | 2200 |
| | | | | | FEED | 1050 | 1160 | 1320 | 1320 | 1320 | 1320 | 1430 | 1430 | 1430 | 1430 | 1430 | 1430 | 1430 |
| | 23~25 | Aluminum-cast, alloyed | 0.1D | 1.5D | Vc | 138 | 130 | 138 | 145 | 138 | 144 | 143 | 143 | 145 | 141 | 145 | 143 | 138 |
| | | | | | fz | 0.012 | 0.021 | 0.030 | 0.043 | 0.060 | 0.072 | 0.094 | 0.125 | 0.155 | 0.191 | 0.217 | 0.251 | 0.325 |
| | | | | | RPM | 44000 | 27500 | 22000 | 15400 | 11000 | 9150 | 7600 | 5700 | 4600 | 3750 | 3300 | 2850 | 2200 |
| | | | | | FEED | 1050 | 1160 | 1320 | 1320 | 1320 | 1320 | 1430 | 1430 | 1430 | 1430 | 1430 | 1430 | 1430 |
| | 26~28 | Copper and Copper Alloys (Bronze / Brass) | 0.1D | 1.5D | Vc | 78 | 96 | 104 | 104 | 111 | 107 | 107 | 111 | 107 | 107 | 106 | 111 | 107 |
| | | | | | fz | 0.012 | 0.022 | 0.031 | 0.047 | 0.059 | 0.076 | 0.096 | 0.125 | 0.162 | 0.193 | 0.229 | 0.250 | 0.324 |
| | | | | | RPM | 24700 | 20300 | 16500 | 11000 | 8800 | 6800 | 5700 | 4400 | 3400 | 2850 | 2400 | 2200 | 1700 |
| | | | | | FEED | 605 | 910 | 1035 | 1035 | 1035 | 1035 | 1100 | 1100 | 1100 | 1100 | 1100 | 1100 | 1100 |
| H | 40 | Chilled Cast Iron | 0.1D | 1.0D | Vc | 32 | 33 | 41 | 45 | 50 | 50 | 54 | 54 | 53 | 55 | 57 | 58 | 57 |
| | | | | | fz | 0.004 | 0.008 | 0.011 | 0.018 | 0.038 | 0.048 | 0.061 | 0.076 | 0.075 | 0.074 | 0.075 | 0.074 | 0.075 |
| | | | | | RPM | 10250 | 7050 | 6450 | 4750 | 3950 | 3200 | 2850 | 2150 | 1700 | 1450 | 1300 | 1150 | 900 |
| | | | | | FEED | 85 | 115 | 145 | 170 | 300 | 305 | 350 | 325 | 255 | 215 | 195 | 170 | 135 |

※ The FEED, in long & extra long types, should be reduced by around 50%
对于长型合超长型进给量应该减少约50%



# K-2 plus & K-2 END MILLS

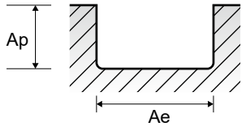
## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

### EMC61 SERIES — 2 FLUTE CORNER- SLOTTING
### 2刃 圆鼻 - 槽铣削

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description 材料描述 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 3.0 | 4.0 | 5.0 | 6.0 | 8.0 | 10.0 | 12.0 | 16.0 | 20.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1-4 | Non-alloy steel | 1.0D | 0.3D | Vc | 59 | 63 | 68 | 70 | 71 | 61 | 61 | 81 | 74 |
| | | | | | fz | 0.011 | 0.018 | 0.025 | 0.035 | 0.034 | 0.058 | 0.056 | 0.059 | 0.060 |
| | | | | | RPM | 6255 | 5040 | 4320 | 3735 | 2835 | 1935 | 1620 | 1620 | 1170 |
| | | | | | FEED | 140 | 180 | 220 | 260 | 190 | 225 | 180 | 190 | 140 |
| | 5 | | 1.0D | 0.3D | Vc | 38 | 41 | 43 | 45 | 45 | 48 | 51 | 50 | 48 |
| | | | | | fz | 0.009 | 0.014 | 0.018 | 0.027 | 0.036 | 0.042 | 0.044 | 0.045 | 0.039 |
| | | | | | RPM | 4050 | 3240 | 2745 | 2385 | 1800 | 1530 | 1350 | 990 | 770 |
| | | | | | FEED | 70 | 90 | 100 | 130 | 130 | 130 | 120 | 90 | 60 |
| | 6-7 | Low alloy steel | 1.0D | 0.3D | Vc | 59 | 63 | 68 | 70 | 71 | 61 | 61 | 81 | 74 |
| | | | | | fz | 0.011 | 0.018 | 0.025 | 0.035 | 0.034 | 0.058 | 0.056 | 0.059 | 0.060 |
| | | | | | RPM | 6255 | 5040 | 4320 | 3735 | 2835 | 1935 | 1620 | 1620 | 1170 |
| | | | | | FEED | 140 | 180 | 220 | 260 | 190 | 225 | 180 | 190 | 140 |
| | 8-9 | | 1.0D | 0.3D | Vc | 38 | 41 | 43 | 45 | 45 | 48 | 51 | 50 | 48 |
| | | | | | fz | 0.009 | 0.014 | 0.018 | 0.027 | 0.036 | 0.042 | 0.044 | 0.045 | 0.039 |
| | | | | | RPM | 4050 | 3240 | 2745 | 2385 | 1800 | 1530 | 1350 | 990 | 770 |
| | | | | | FEED | 70 | 90 | 100 | 130 | 130 | 130 | 120 | 90 | 60 |
| | 10 | High alloyed steel, and tool steel | 1.0D | 0.3D | Vc | 59 | 63 | 68 | 70 | 71 | 61 | 61 | 81 | 74 |
| | | | | | fz | 0.011 | 0.018 | 0.025 | 0.035 | 0.034 | 0.058 | 0.056 | 0.059 | 0.060 |
| | | | | | RPM | 6255 | 5040 | 4320 | 3735 | 2835 | 1935 | 1620 | 1620 | 1170 |
| | | | | | FEED | 140 | 180 | 220 | 260 | 190 | 225 | 180 | 190 | 140 |
| | 11.1 ~ 11.2 | | 1.0D | 0.3D | Vc | 38 | 41 | 43 | 45 | 45 | 48 | 51 | 50 | 48 |
| | | | | | fz | 0.009 | 0.014 | 0.018 | 0.027 | 0.036 | 0.042 | 0.044 | 0.045 | 0.039 |
| | | | | | RPM | 4050 | 3240 | 2745 | 2385 | 1800 | 1530 | 1350 | 990 | 770 |
| | | | | | FEED | 70 | 90 | 100 | 130 | 130 | 130 | 120 | 90 | 60 |
| H | 38.1 ~ 38.2 | Hardened steel | 1.0D | 0.3D | Vc | 28 | 31 | 33 | 35 | 36 | 35 | 36 | 34 | 35 |
| | | | | | fz | 0.008 | 0.010 | 0.017 | 0.022 | 0.028 | 0.036 | 0.037 | 0.037 | 0.036 |
| | | | | | RPM | 2970 | 2430 | 2115 | 1845 | 1440 | 1125 | 945 | 670 | 560 |
| | | | | | FEED | 50 | 50 | 70 | 80 | 80 | 80 | 70 | 50 | 40 |
| | 40 | Chilled Cast Iron | 1.0D | 0.3D | Vc | 38 | 41 | 43 | 45 | 45 | 48 | 51 | 50 | 48 |
| | | | | | fz | 0.009 | 0.014 | 0.018 | 0.027 | 0.036 | 0.042 | 0.044 | 0.045 | 0.039 |
| | | | | | RPM | 4050 | 3240 | 2745 | 2385 | 1800 | 1530 | 1350 | 990 | 770 |
| | | | | | FEED | 70 | 90 | 100 | 130 | 130 | 130 | 120 | 90 | 60 |
| | 41 | Hardened Cast Iron | 1.0D | 0.3D | Vc | 28 | 31 | 33 | 35 | 36 | 35 | 36 | 34 | 35 |
| | | | | | fz | 0.008 | 0.010 | 0.017 | 0.022 | 0.028 | 0.036 | 0.037 | 0.037 | 0.036 |
| | | | | | RPM | 2970 | 2430 | 2115 | 1845 | 1440 | 1125 | 945 | 670 | 560 |
| | | | | | FEED | 50 | 50 | 70 | 80 | 80 | 80 | 70 | 50 | 40 |

※ The FEED, in long & extra long types, should be reduced by around 50%
对于长型合超长型进给量应该减少约50%





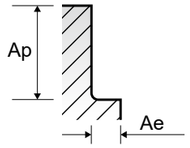

K-2 plus & K-2 END MILLS
RECOMMENDED CUTTING CONDITIONS
推荐加工参数

### EMC61 SERIES — 2 FLUTE CORNER- SIDE CUTTING
### 2刃 圆鼻 - 侧铣削

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description 材料描述 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 3.0 | 4.0 | 5.0 | 6.0 | 8.0 | 10.0 | 12.0 | 16.0 | 20.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1-4 | Non-alloy steel | 0.05D | 2.0D | Vc | 59 | 63 | 68 | 70 | 71 | 61 | 61 | 81 | 74 |
| | | | | | fz | 0.014 | 0.022 | 0.026 | 0.030 | 0.042 | 0.062 | 0.059 | 0.052 | 0.051 |
| | | | | | RPM | 6255 | 5040 | 4320 | 3735 | 2835 | 1935 | 1620 | 1620 | 1170 |
| | | | | | FEED | 180 | 220 | 225 | 225 | 240 | 240 | 190 | 170 | 120 |
| | 5 | | 0.05D | 2.0D | Vc | 38 | 41 | 43 | 45 | 45 | 48 | 51 | 50 | 48 |
| | | | | | fz | 0.017 | 0.023 | 0.035 | 0.040 | 0.053 | 0.062 | 0.063 | 0.063 | 0.062 |
| | | | | | RPM | 4050 | 3240 | 2745 | 2385 | 1800 | 1530 | 1350 | 990 | 770 |
| | | | | | FEED | 135 | 150 | 190 | 190 | 190 | 190 | 170 | 125 | 95 |
| | 6-7 | Low alloy steel | 0.05D | 2.0D | Vc | 59 | 63 | 68 | 70 | 71 | 61 | 61 | 81 | 74 |
| | | | | | fz | 0.014 | 0.022 | 0.026 | 0.030 | 0.042 | 0.062 | 0.059 | 0.052 | 0.051 |
| | | | | | RPM | 6255 | 5040 | 4320 | 3735 | 2835 | 1935 | 1620 | 1620 | 1170 |
| | | | | | FEED | 180 | 220 | 225 | 225 | 240 | 240 | 190 | 170 | 120 |
| | 8-9 | | 0.05D | 2.0D | Vc | 38 | 41 | 43 | 45 | 45 | 48 | 51 | 50 | 48 |
| | | | | | fz | 0.017 | 0.023 | 0.035 | 0.040 | 0.053 | 0.062 | 0.063 | 0.063 | 0.062 |
| | | | | | RPM | 4050 | 3240 | 2745 | 2385 | 1800 | 1530 | 1350 | 990 | 770 |
| | | | | | FEED | 135 | 150 | 190 | 190 | 190 | 190 | 170 | 125 | 95 |
| | 10 | High alloyed steel, and tool steel | 0.05D | 2.0D | Vc | 59 | 63 | 68 | 70 | 71 | 61 | 61 | 81 | 74 |
| | | | | | fz | 0.014 | 0.022 | 0.026 | 0.030 | 0.042 | 0.062 | 0.059 | 0.052 | 0.051 |
| | | | | | RPM | 6255 | 5040 | 4320 | 3735 | 2835 | 1935 | 1620 | 1620 | 1170 |
| | | | | | FEED | 180 | 220 | 225 | 225 | 240 | 240 | 190 | 170 | 120 |
| | 11.1 ~ 11.2 | | 0.05D | 2.0D | Vc | 38 | 41 | 43 | 45 | 45 | 48 | 51 | 50 | 48 |
| | | | | | fz | 0.017 | 0.023 | 0.035 | 0.040 | 0.053 | 0.062 | 0.063 | 0.063 | 0.062 |
| | | | | | RPM | 4050 | 3240 | 2745 | 2385 | 1800 | 1530 | 1350 | 990 | 770 |
| | | | | | FEED | 135 | 150 | 190 | 190 | 190 | 190 | 170 | 125 | 95 |
| H | 38.1 ~ 38.2 | Hardened steel | 0.02D | 2.0D | Vc | 28 | 31 | 33 | 35 | 36 | 35 | 36 | 38 | 35 |
| | | | | | fz | 0.015 | 0.020 | 0.026 | 0.030 | 0.038 | 0.049 | 0.050 | 0.053 | 0.054 |
| | | | | | RPM | 2970 | 2430 | 2115 | 1845 | 1440 | 1125 | 945 | 760 | 560 |
| | | | | | FEED | 90 | 95 | 110 | 110 | 110 | 110 | 95 | 80 | 60 |
| | 40 | Chilled Cast Iron | 0.05D | 2.0D | Vc | 38 | 41 | 43 | 45 | 45 | 48 | 51 | 50 | 48 |
| | | | | | fz | 0.017 | 0.023 | 0.035 | 0.040 | 0.053 | 0.062 | 0.063 | 0.063 | 0.062 |
| | | | | | RPM | 4050 | 3240 | 2745 | 2385 | 1800 | 1530 | 1350 | 990 | 770 |
| | | | | | FEED | 135 | 150 | 190 | 190 | 190 | 190 | 170 | 125 | 95 |
| | 41 | Hardened Cast Iron | 0.02D | 2.0D | Vc | 28 | 31 | 33 | 35 | 36 | 35 | 36 | 38 | 35 |
| | | | | | fz | 0.015 | 0.020 | 0.026 | 0.030 | 0.038 | 0.049 | 0.050 | 0.053 | 0.054 |
| | | | | | RPM | 2970 | 2430 | 2115 | 1845 | 1440 | 1125 | 945 | 760 | 560 |
| | | | | | FEED | 90 | 95 | 110 | 110 | 110 | 110 | 95 | 80 | 60 |

※ The FEED, in long & extra long types, should be reduced by around 50%
对于长型合超长型进给量应该减少约50%






CARBIDE
HSS
CBN END MILLS
i-Xmill END MILLS
i-SMART MODULAR END MILLS
X5070 END MILLS
4G MILL END MILLS
X-POWER PRO END MILLS
TitaNox-POWER END MILLS
SUS-CUT END MILLS
V7 PLUS END MILLS
ALU-POWER HPC END MILLS
ALU-CUT END MILLS
G-CUT END MILLS
CRX S END MILLS
K-2 END MILLS
GENERAL CARBIDE END MILLS
ONLY ONE COATED PM60 END MILLS
TANK-POWER END MILLS
GENERAL HSS END MILLS
MILLING CUTTERS
TECHNICAL DATA

# K-2 plus & K-2 END MILLS

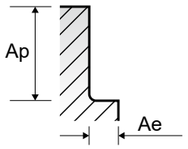
# RECOMMENDED CUTTING CONDITIONS
# 推荐加工参数

## EMC62 SERIES
**4 FLUTE CORNER- SIDE CUTTING**
**4刃 圆鼻 - 侧铣削**

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description 材料描述 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 3.0 | 4.0 | 5.0 | 6.0 | 8.0 | 10.0 | 12.0 | 16.0 | 20.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1-4 | Non-alloy steel | 0.05D | 2.0D | Vc | 59 | 63 | 68 | 70 | 71 | 61 | 61 | 81 | 74 |
| | | | | | fz | 0.007 | 0.011 | 0.013 | 0.015 | 0.021 | 0.031 | 0.029 | 0.026 | 0.026 |
| | | | | | RPM | 6255 | 5040 | 4320 | 3735 | 2835 | 1935 | 1620 | 1620 | 1170 |
| | | | | | FEED | 180 | 220 | 225 | 225 | 240 | 240 | 190 | 170 | 120 |
| | 5 | | 0.05D | 2.0D | Vc | 38 | 41 | 43 | 45 | 45 | 48 | 51 | 50 | 48 |
| | | | | | fz | 0.008 | 0.012 | 0.017 | 0.020 | 0.026 | 0.031 | 0.031 | 0.033 | 0.031 |
| | | | | | RPM | 4050 | 3240 | 2745 | 2385 | 1800 | 1530 | 1350 | 990 | 770 |
| | | | | | FEED | 135 | 150 | 190 | 190 | 190 | 190 | 170 | 130 | 95 |
| | 6-7 | Low alloy steel | 0.05D | 2.0D | Vc | 59 | 63 | 68 | 70 | 71 | 61 | 61 | 81 | 74 |
| | | | | | fz | 0.007 | 0.011 | 0.013 | 0.015 | 0.021 | 0.031 | 0.029 | 0.026 | 0.026 |
| | | | | | RPM | 6255 | 5040 | 4320 | 3735 | 2835 | 1935 | 1620 | 1620 | 1170 |
| | | | | | FEED | 180 | 220 | 225 | 225 | 240 | 240 | 190 | 170 | 120 |
| | 8-9 | | 0.05D | 2.0D | Vc | 38 | 41 | 43 | 45 | 45 | 48 | 51 | 50 | 48 |
| | | | | | fz | 0.008 | 0.012 | 0.017 | 0.020 | 0.026 | 0.031 | 0.031 | 0.033 | 0.031 |
| | | | | | RPM | 4050 | 3240 | 2745 | 2385 | 1800 | 1530 | 1350 | 990 | 770 |
| | | | | | FEED | 135 | 150 | 190 | 190 | 190 | 190 | 170 | 130 | 95 |
| | 10 | High alloyed steel, and tool steel | 0.05D | 2.0D | Vc | 59 | 63 | 68 | 70 | 71 | 61 | 61 | 81 | 74 |
| | | | | | fz | 0.007 | 0.011 | 0.013 | 0.015 | 0.021 | 0.031 | 0.029 | 0.026 | 0.026 |
| | | | | | RPM | 6255 | 5040 | 4320 | 3735 | 2835 | 1935 | 1620 | 1620 | 1170 |
| | | | | | FEED | 180 | 220 | 225 | 225 | 240 | 240 | 190 | 170 | 120 |
| | 11.1 - 11.2 | | 0.05D | 2.0D | Vc | 38 | 41 | 43 | 45 | 45 | 48 | 51 | 50 | 48 |
| | | | | | fz | 0.008 | 0.012 | 0.017 | 0.020 | 0.026 | 0.031 | 0.031 | 0.033 | 0.031 |
| | | | | | RPM | 4050 | 3240 | 2745 | 2385 | 1800 | 1530 | 1350 | 990 | 770 |
| | | | | | FEED | 135 | 150 | 190 | 190 | 190 | 190 | 170 | 130 | 95 |
| H | 38.1 - 38.2 | Hardened steel | 0.02D | 2.0D | Vc | 28 | 31 | 33 | 35 | 36 | 35 | 36 | 38 | 35 |
| | | | | | fz | 0.008 | 0.010 | 0.013 | 0.015 | 0.019 | 0.024 | 0.025 | 0.026 | 0.027 |
| | | | | | RPM | 2970 | 2430 | 2115 | 1845 | 1440 | 1125 | 945 | 760 | 560 |
| | | | | | FEED | 90 | 95 | 110 | 110 | 110 | 110 | 95 | 80 | 60 |
| | 40 | Chilled Cast Iron | 0.05D | 2.0D | Vc | 38 | 41 | 43 | 45 | 45 | 48 | 51 | 50 | 48 |
| | | | | | fz | 0.008 | 0.012 | 0.017 | 0.020 | 0.026 | 0.031 | 0.031 | 0.033 | 0.031 |
| | | | | | RPM | 4050 | 3240 | 2745 | 2385 | 1800 | 1530 | 1350 | 990 | 770 |
| | | | | | FEED | 135 | 150 | 190 | 190 | 190 | 190 | 170 | 130 | 95 |
| | 41 | Hardened Cast Iron | 0.02D | 2.0D | Vc | 28 | 31 | 33 | 35 | 36 | 35 | 36 | 38 | 35 |
| | | | | | fz | 0.008 | 0.010 | 0.013 | 0.015 | 0.019 | 0.024 | 0.025 | 0.026 | 0.027 |
| | | | | | RPM | 2970 | 2430 | 2115 | 1845 | 1440 | 1125 | 945 | 760 | 560 |
| | | | | | FEED | 90 | 95 | 110 | 110 | 110 | 110 | 95 | 80 | 60 |

※ The FEED, in long & extra long types, should be reduced by around 50%
对于长型合超长型进给量应该减少约50%






CARBIDE
HSS
CBN END MILLS
i-Xmill END MILLS
i-SMART MODULAR END MILLS
X5070 END MILLS
4G MILL END MILLS
X-POWER PRO END MILLS
TitaNox-POWER END MILLS
SUS-CUT END MILLS
V7 PLUS END MILLS
ALU-POWER HPC END MILLS
ALU-CUT END MILLS
G-CUT END MILLS
CRX S END MILLS
K-2 END MILLS
GENERAL CARBIDE END MILLS
ONLY ONE COATED PM60 END MILLS
TANK-POWER END MILLS
GENERAL HSS END MILLS
MILLING CUTTERS
TECHNICAL DATA

# K-2 plus & K-2 END MILLS

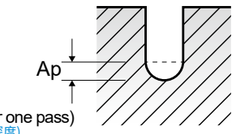
# RECOMMENDED CUTTING CONDITIONS
# 推荐加工参数

## EMC60 SERIES
**2 FLUTE BALL NOSE - RIB PROCESSING**
**2刃 球头 - 深腔加工**

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)
Ap (切削深度) = (mm)

| ISO | VDI 3323 | Material Description 材料描述 | Parameter 参数 | Diameter (Ø) 直径 0.4 | 0.5 | 0.6 | 0.8 | 1.0 | 1.2 | 1.4 |
|---|---|---|---|---|---|---|---|---|---|---|
| P | 1-4 | Non-alloy steel | Vc | 37~48 | 47~59 | 56~71 | 75~95 | 85~107 | 85~109 | 87~107 |
| | | | fz | 0.003~0.006 | 0.003~0.006 | 0.004~0.008 | 0.004~0.008 | 0.005~0.01 | 0.006~0.013 | 0.006~0.016 |
| | | | RPM | 29700~37800 | 29700~37800 | 29700~37800 | 29700~37800 | 27000~34200 | 22500~28800 | 19800~24300 |
| | | | FEED | 180~490 | 180~490 | 225~630 | 225~630 | 250~690 | 250~770 | 250~770 |
| | | | Ap | 0.018~0.036 | 0.023~0.045 | 0.027~0.054 | 0.036~0.072 | 0.045~0.09 | 0.055~0.100 | 0.062~0.125 |
| | 5 | | Vc | 27~34 | 34~42 | 41~51 | 54~68 | 62~76 | 61~78 | 63~75 |
| | | | fz | 0.002~0.005 | 0.002~0.005 | 0.003~0.006 | 0.003~0.006 | 0.003~0.008 | 0.004~0.009 | 0.005~0.011 |
| | | | RPM | 21600~27000 | 21600~27000 | 21600~27000 | 21600~27000 | 19800~24300 | 16200~20700 | 14400~17100 |
| | | | FEED | 90~270 | 90~270 | 110~350 | 110~350 | 130~390 | 130~390 | 130~390 |
| | | | Ap | 0.018~0.036 | 0.023~0.045 | 0.027~0.054 | 0.036~0.072 | 0.045~0.090 | 0.055~0.100 | 0.062~0.125 |
| | 6-7 | Low alloy steel | Vc | 37~48 | 47~59 | 56~71 | 75~95 | 85~107 | 85~109 | 87~107 |
| | | | fz | 0.003~0.006 | 0.003~0.006 | 0.004~0.008 | 0.004~0.008 | 0.005~0.01 | 0.006~0.013 | 0.006~0.016 |
| | | | RPM | 29700~37800 | 29700~37800 | 29700~37800 | 29700~37800 | 27000~34200 | 22500~28800 | 19800~24300 |
| | | | FEED | 180~490 | 180~490 | 225~630 | 225~630 | 250~690 | 250~770 | 250~770 |
| | | | Ap | 0.018~0.036 | 0.023~0.045 | 0.027~0.054 | 0.036~0.072 | 0.045~0.09 | 0.055~0.100 | 0.062~0.125 |
| | 8-9 | | Vc | 27~34 | 34~42 | 41~51 | 54~68 | 62~76 | 61~78 | 63~75 |
| | | | fz | 0.002~0.005 | 0.002~0.005 | 0.003~0.006 | 0.003~0.006 | 0.003~0.008 | 0.004~0.009 | 0.005~0.011 |
| | | | RPM | 21600~27000 | 21600~27000 | 21600~27000 | 21600~27000 | 19800~24300 | 16200~20700 | 14400~17100 |
| | | | FEED | 90~270 | 90~270 | 110~350 | 110~350 | 130~390 | 130~390 | 130~390 |
| | | | Ap | 0.018~0.036 | 0.023~0.045 | 0.027~0.054 | 0.036~0.072 | 0.045~0.090 | 0.055~0.100 | 0.062~0.125 |
| | 10 | High alloyed steel, and tool steel | Vc | 37~48 | 47~59 | 56~71 | 75~95 | 85~107 | 85~109 | 87~107 |
| | | | fz | 0.003~0.006 | 0.003~0.006 | 0.004~0.008 | 0.004~0.008 | 0.005~0.01 | 0.006~0.013 | 0.006~0.016 |
| | | | RPM | 29700~37800 | 29700~37800 | 29700~37800 | 29700~37800 | 27000~34200 | 22500~28800 | 19800~24300 |
| | | | FEED | 180~490 | 180~490 | 225~630 | 225~630 | 250~690 | 250~770 | 250~770 |
| | | | Ap | 0.018~0.036 | 0.023~0.045 | 0.027~0.054 | 0.036~0.072 | 0.045~0.09 | 0.055~0.100 | 0.062~0.125 |
| | 11.1 - 11.2 | | Vc | 27~34 | 34~42 | 41~51 | 54~68 | 62~76 | 61~78 | 63~75 |
| | | | fz | 0.002~0.005 | 0.002~0.005 | 0.003~0.006 | 0.003~0.006 | 0.003~0.008 | 0.004~0.009 | 0.005~0.011 |
| | | | RPM | 21600~27000 | 21600~27000 | 21600~27000 | 21600~27000 | 19800~24300 | 16200~20700 | 14400~17100 |
| | | | FEED | 90~270 | 90~270 | 110~350 | 110~350 | 130~390 | 130~390 | 130~390 |
| | | | Ap | 0.018~0.036 | 0.023~0.045 | 0.027~0.054 | 0.036~0.072 | 0.045~0.090 | 0.055~0.100 | 0.062~0.125 |
| H | 38.1 - 38.2 | Hardened steel | Vc | 17~21 | 21~27 | 25~32 | 34~43 | 38~49 | 39~49 | 40~49 |
| | | | fz | 0.003~0.005 | 0.003~0.005 | 0.004~0.007 | 0.004~0.007 | 0.005~0.008 | 0.006~0.010 | 0.007~0.011 |
| | | | RPM | 13500~17100 | 13500~17100 | 13500~17100 | 13500~17100 | 12150~15750 | 10350~13050 | 9000~11250 |
| | | | FEED | 90~180 | 90~180 | 110~225 | 110~225 | 130~250 | 130~250 | 130~250 |
| | | | Ap | 0.004~0.007 | 0.005~0.009 | 0.005~0.011 | 0.007~0.014 | 0.009~0.018 | 0.010~0.022 | 0.012~0.025 |
| | 40 | Chilled Cast Iron | Vc | 27~34 | 34~42 | 41~51 | 54~68 | 62~76 | 61~78 | 63~75 |
| | | | fz | 0.002~0.005 | 0.002~0.005 | 0.003~0.006 | 0.003~0.006 | 0.003~0.008 | 0.004~0.009 | 0.005~0.011 |
| | | | RPM | 21600~27000 | 21600~27000 | 21600~27000 | 21600~27000 | 19800~24300 | 16200~20700 | 14400~17100 |
| | | | FEED | 90~270 | 90~270 | 110~350 | 110~350 | 130~390 | 130~390 | 130~390 |
| | | | Ap | 0.018~0.036 | 0.023~0.045 | 0.027~0.054 | 0.036~0.072 | 0.045~0.090 | 0.055~0.100 | 0.062~0.125 |
| | 41 | Hardened Cast Iron | Vc | 17~21 | 21~27 | 25~32 | 34~43 | 38~49 | 39~49 | 40~49 |
| | | | fz | 0.003~0.005 | 0.003~0.005 | 0.004~0.007 | 0.004~0.007 | 0.005~0.008 | 0.006~0.010 | 0.007~0.011 |
| | | | RPM | 13500~17100 | 13500~17100 | 13500~17100 | 13500~17100 | 12150~15750 | 10350~13050 | 9000~11250 |
| | | | FEED | 90~180 | 90~180 | 110~225 | 110~225 | 130~250 | 130~250 | 130~250 |
| | | | Ap | 0.004~0.007 | 0.005~0.009 | 0.005~0.011 | 0.007~0.014 | 0.009~0.018 | 0.010~0.022 | 0.012~0.025 |

※ The FEED, in long & extra long types, should be reduced by around 50%
对于长型合超长型进给量应该减少约50%




(Depth of cut per one pass)
(每次切削深度)

# K-2 plus & K-2 END MILLS

# RECOMMENDED CUTTING CONDITIONS
# 推荐加工参数

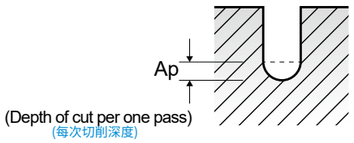
## EMC60 SERIES

**2 FLUTE BALL NOSE - RIB PROCESSING**
**2刃 球头 - 深腔加工**

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)
Ap (切削深度) = (mm)

| ISO | VDI 3323 | Material Description 材料描述 | Parameter 参数 | Diameter (Ø) 直径 | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 1.5 | 1.6 | 1.8 | 2.0 | 3.0 | 4.0 | 5.0 | 6.0 |
| P | 1-4 | Non-alloy steel | Vc | 85~106 | 86~113 | 92~117 | 90~113 | 93~119 | 102~136 | 99~127 | 102~136 |
| | | | fz | 0.007~0.017 | 0.007~0.017 | 0.008~0.019 | 0.009~0.021 | 0.013~0.031 | 0.015~0.036 | 0.020~0.048 | 0.023~0.053 |
| | | | RPM | 18000~22500 | 17100~22500 | 16200~20700 | 14400~18000 | 9900~12600 | 8100~10800 | 6300~8100 | 5400~7200 |
| | | | FEED | 250~770 | 250~770 | 250~770 | 250~770 | 250~770 | 250~770 | 250~770 | 250~770 |
| | | | Ap | 0.070~0.135 | 0.075~0.145 | 0.080~0.160 | 0.090~0.180 | 0.135~0.270 | 0.180~0.360 | 0.225~0.450 | 0.270~0.540 |
| | 5 | | Vc | 61~78 | 63~79 | 64~81 | 65~82 | 64~81 | 69~93 | 71~92 | 68~93 |
| | | | fz | 0.005~0.012 | 0.005~0.012 | 0.006~0.014 | 0.006~0.015 | 0.010~0.023 | 0.012~0.026 | 0.014~0.033 | 0.018~0.039 |
| | | | RPM | 13050~16650 | 12600~15750 | 11250~14400 | 10350~13050 | 6750~8550 | 5490~7380 | 4500~5850 | 3600~4950 |
| | | | FEED | 130~390 | 130~390 | 130~390 | 130~390 | 130~390 | 130~390 | 130~390 | 130~390 |
| | | | Ap | 0.070~0.135 | 0.075~0.145 | 0.080~0.160 | 0.090~0.180 | 0.135~0.270 | 0.180~0.360 | 0.225~0.450 | 0.270~0.540 |
| | 6-7 | Low alloy steel | Vc | 85~106 | 86~113 | 92~117 | 90~113 | 93~119 | 102~136 | 99~127 | 102~136 |
| | | | fz | 0.007~0.017 | 0.007~0.017 | 0.008~0.019 | 0.009~0.021 | 0.013~0.031 | 0.015~0.036 | 0.020~0.048 | 0.023~0.053 |
| | | | RPM | 18000~22500 | 17100~22500 | 16200~20700 | 14400~18000 | 9900~12600 | 8100~10800 | 6300~8100 | 5400~7200 |
| | | | FEED | 250~770 | 250~770 | 250~770 | 250~770 | 250~770 | 250~770 | 250~770 | 250~770 |
| | | | Ap | 0.070~0.135 | 0.075~0.145 | 0.080~0.160 | 0.090~0.180 | 0.135~0.270 | 0.180~0.360 | 0.225~0.450 | 0.270~0.540 |
| | 8-9 | | Vc | 61~78 | 63~79 | 64~81 | 65~82 | 64~81 | 69~93 | 71~92 | 68~93 |
| | | | fz | 0.005~0.012 | 0.005~0.012 | 0.006~0.014 | 0.006~0.015 | 0.010~0.023 | 0.012~0.026 | 0.014~0.033 | 0.018~0.039 |
| | | | RPM | 13050~16650 | 12600~15750 | 11250~14400 | 10350~13050 | 6750~8550 | 5490~7380 | 4500~5850 | 3600~4950 |
| | | | FEED | 130~390 | 130~390 | 130~390 | 130~390 | 130~390 | 130~390 | 130~390 | 130~390 |
| | | | Ap | 0.070~0.135 | 0.075~0.145 | 0.080~0.160 | 0.090~0.180 | 0.135~0.270 | 0.180~0.360 | 0.225~0.450 | 0.270~0.540 |
| | 10 | High alloyed steel, and tool steel | Vc | 85~106 | 86~113 | 92~117 | 90~113 | 93~119 | 102~136 | 99~127 | 102~136 |
| | | | fz | 0.007~0.017 | 0.007~0.017 | 0.008~0.019 | 0.009~0.021 | 0.013~0.031 | 0.015~0.036 | 0.020~0.048 | 0.023~0.053 |
| | | | RPM | 18000~22500 | 17100~22500 | 16200~20700 | 14400~18000 | 9900~12600 | 8100~10800 | 6300~8100 | 5400~7200 |
| | | | FEED | 250~770 | 250~770 | 250~770 | 250~770 | 250~770 | 250~770 | 250~770 | 250~770 |
| | | | Ap | 0.070~0.135 | 0.075~0.145 | 0.080~0.160 | 0.090~0.180 | 0.135~0.270 | 0.180~0.360 | 0.225~0.450 | 0.270~0.540 |
| | 11.1 11.2 | | Vc | 61~78 | 63~79 | 64~81 | 65~82 | 64~81 | 69~93 | 71~92 | 68~93 |
| | | | fz | 0.005~0.012 | 0.005~0.012 | 0.006~0.014 | 0.006~0.015 | 0.010~0.023 | 0.012~0.026 | 0.014~0.033 | 0.018~0.039 |
| | | | RPM | 13050~16650 | 12600~15750 | 11250~14400 | 10350~13050 | 6750~8550 | 5490~7380 | 4500~5850 | 3600~4950 |
| | | | FEED | 130~390 | 130~390 | 130~390 | 130~390 | 130~390 | 130~390 | 130~390 | 130~390 |
| | | | Ap | 0.070~0.135 | 0.075~0.145 | 0.080~0.160 | 0.090~0.180 | 0.135~0.270 | 0.180~0.360 | 0.225~0.450 | 0.270~0.540 |
| H | 38.1 - 38.2 | Hardened steel | Vc | 40~49 | 41~50 | 41~51 | 42~51 | 42~51 | 45~57 | 46~58 | 42~59 |
| | | | fz | 0.008~0.012 | 0.008~0.013 | 0.009~0.014 | 0.010~0.015 | 0.014~0.023 | 0.018~0.028 | 0.022~0.034 | 0.029~0.040 |
| | | | RPM | 8550~10350 | 8100~9900 | 7200~9000 | 6750~8100 | 4500~5400 | 3600~4500 | 2930~3690 | 2250~3150 |
| | | | FEED | 130~250 | 130~250 | 130~250 | 130~250 | 130~250 | 130~250 | 130~250 | 130~250 |
| | | | Ap | 0.014~0.028 | 0.015~0.030 | 0.016~0.032 | 0.018~0.035 | 0.028~0.055 | 0.035~0.070 | 0.044~0.088 | 0.053~0.105 |
| | 40 | Chilled Cast Iron | Vc | 61~78 | 63~79 | 64~81 | 65~82 | 64~81 | 69~93 | 71~92 | 68~93 |
| | | | fz | 0.005~0.012 | 0.005~0.012 | 0.006~0.014 | 0.006~0.015 | 0.010~0.023 | 0.012~0.026 | 0.014~0.033 | 0.018~0.039 |
| | | | RPM | 13050~16650 | 12600~15750 | 11250~14400 | 10350~13050 | 6750~8550 | 5490~7380 | 4500~5850 | 3600~4950 |
| | | | FEED | 130~390 | 130~390 | 130~390 | 130~390 | 130~390 | 130~390 | 130~390 | 130~390 |
| | | | Ap | 0.070~0.135 | 0.075~0.145 | 0.080~0.160 | 0.090~0.180 | 0.135~0.270 | 0.180~0.360 | 0.225~0.450 | 0.270~0.540 |
| | 41 | Hardened Cast Iron | Vc | 40~49 | 41~50 | 41~51 | 42~51 | 42~51 | 45~57 | 46~58 | 42~59 |
| | | | fz | 0.008~0.012 | 0.008~0.013 | 0.009~0.014 | 0.010~0.015 | 0.014~0.023 | 0.018~0.028 | 0.022~0.034 | 0.029~0.040 |
| | | | RPM | 8550~10350 | 8100~9900 | 7200~9000 | 6750~8100 | 4500~5400 | 3600~4500 | 2930~3690 | 2250~3150 |
| | | | FEED | 130~250 | 130~250 | 130~250 | 130~250 | 130~250 | 130~250 | 130~250 | 130~250 |
| | | | Ap | 0.014~0.028 | 0.015~0.030 | 0.016~0.032 | 0.018~0.035 | 0.028~0.055 | 0.035~0.070 | 0.044~0.088 | 0.053~0.105 |

※ The FEED, in long & extra long types, should be reduced by around 50%
对于长型合超长型进给量应该减少约50%








# K-2 plus & K-2 END MILLS

# RECOMMENDED CUTTING CONDITIONS
# 推荐加工参数

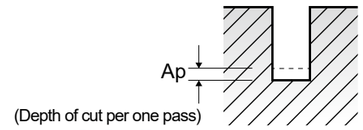
## EMC59 SERIES

**2 FLUTE - RIB PROCESSING**
**2刃 - 深腔加工**

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)
Ap (切削深度) = (mm)

| ISO | VDI 3323 | Material Description 材料描述 | Parameter 参数 | Diameter (Ø) 直径 | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 0.4 | 0.5 | 0.6 | 0.7 | 0.8 | 0.9 | 1.0 | 1.2 | 1.4 |
| P | 1-4 | Non-alloy steel | Vc | 37~48 | 47~59 | 56~71 | 65~83 | 64~84 | 66~84 | 68~85 | 66~81 | 67~83 |
| | | | fz | 0.003~0.006 | 0.003~0.006 | 0.004~0.008 | 0.004~0.008 | 0.005~0.009 | 0.006~0.012 | 0.006~0.015 | 0.008~0.021 | 0.009~0.024 |
| | | | RPM | 29700~37800 | 29700~37800 | 29700~37800 | 29700~37800 | 25650~33300 | 23400~29700 | 21600~27000 | 17550~21600 | 15300~18900 |
| | | | FEED | 200~440 | 200~440 | 250~570 | 250~570 | 280~630 | 280~720 | 280~810 | 280~890 | 280~890 |
| | | | Ap | 0.007~0.018 | 0.009~0.022 | 0.011~0.026 | 0.012~0.031 | 0.014~0.035 | 0.030~0.060 | 0.045~0.090 | 0.055~0.100 | 0.062~0.125 |
| | 5 | | Vc | 27~34 | 34~42 | 41~51 | 48~59 | 46~59 | 48~61 | 47~59 | 48~58 | 48~59 |
| | | | fz | 0.002~0.006 | 0.002~0.006 | 0.003~0.008 | 0.003~0.008 | 0.003~0.01 | 0.005~0.013 | 0.006~0.016 | 0.008~0.019 | 0.009~0.022 |
| | | | RPM | 21600~27000 | 21600~27000 | 21600~27000 | 21600~27000 | 18450~23400 | 17100~21600 | 14850~18900 | 12600~15300 | 10800~13500 |
| | | | FEED | 90~340 | 90~340 | 110~440 | 110~440 | 120~480 | 160~540 | 190~590 | 190~590 | 190~590 |
| | | | Ap | 0.007~0.018 | 0.009~0.022 | 0.011~0.026 | 0.012~0.031 | 0.014~0.035 | 0.030~0.060 | 0.045~0.090 | 0.055~0.100 | 0.062~0.125 |
| | 6-7 | Low alloy steel | Vc | 37~48 | 47~59 | 56~71 | 65~83 | 64~84 | 66~84 | 68~85 | 66~81 | 67~83 |
| | | | fz | 0.003~0.006 | 0.003~0.006 | 0.004~0.008 | 0.004~0.008 | 0.005~0.009 | 0.006~0.012 | 0.006~0.015 | 0.008~0.021 | 0.009~0.024 |
| | | | RPM | 29700~37800 | 29700~37800 | 29700~37800 | 29700~37800 | 25650~33300 | 23400~29700 | 21600~27000 | 17550~21600 | 15300~18900 |
| | | | FEED | 200~440 | 200~440 | 250~570 | 250~570 | 280~630 | 280~720 | 280~810 | 280~890 | 280~890 |
| | | | Ap | 0.007~0.018 | 0.009~0.022 | 0.011~0.026 | 0.012~0.031 | 0.014~0.035 | 0.030~0.060 | 0.045~0.090 | 0.055~0.100 | 0.062~0.125 |
| | 8-9 | | Vc | 27~34 | 34~42 | 41~51 | 48~59 | 46~59 | 48~61 | 47~59 | 48~58 | 48~59 |
| | | | fz | 0.002~0.006 | 0.002~0.006 | 0.003~0.008 | 0.003~0.008 | 0.003~0.010 | 0.005~0.013 | 0.006~0.016 | 0.008~0.019 | 0.009~0.022 |
| | | | RPM | 21600~27000 | 21600~27000 | 21600~27000 | 21600~27000 | 18450~23400 | 17100~21600 | 14850~18900 | 12600~15300 | 10800~13500 |
| | | | FEED | 90~340 | 90~340 | 110~440 | 110~440 | 120~480 | 160~540 | 190~590 | 190~590 | 190~590 |
| | | | Ap | 0.007~0.018 | 0.009~0.022 | 0.011~0.026 | 0.012~0.031 | 0.014~0.035 | 0.030~0.060 | 0.045~0.090 | 0.055~0.100 | 0.062~0.125 |
| | 10 | High alloyed steel, and tool steel | Vc | 37~48 | 47~59 | 56~71 | 65~83 | 64~84 | 66~84 | 68~85 | 66~81 | 67~83 |
| | | | fz | 0.003~0.006 | 0.003~0.006 | 0.004~0.008 | 0.004~0.008 | 0.005~0.009 | 0.006~0.012 | 0.006~0.015 | 0.008~0.021 | 0.009~0.024 |
| | | | RPM | 29700~37800 | 29700~37800 | 29700~37800 | 29700~37800 | 25650~33300 | 23400~29700 | 21600~27000 | 17550~21600 | 15300~18900 |
| | | | FEED | 200~440 | 200~440 | 250~570 | 250~570 | 280~630 | 280~720 | 280~810 | 280~890 | 280~890 |
| | | | Ap | 0.007~0.018 | 0.009~0.022 | 0.011~0.026 | 0.012~0.031 | 0.014~0.035 | 0.030~0.060 | 0.045~0.090 | 0.055~0.100 | 0.062~0.125 |
| | 11.1 11.2 | | Vc | 27~34 | 34~42 | 41~51 | 48~59 | 46~59 | 48~61 | 47~59 | 48~58 | 48~59 |
| | | | fz | 0.002~0.006 | 0.002~0.006 | 0.003~0.008 | 0.003~0.008 | 0.003~0.010 | 0.005~0.013 | 0.006~0.016 | 0.008~0.019 | 0.009~0.022 |
| | | | RPM | 21600~27000 | 21600~27000 | 21600~27000 | 21600~27000 | 18450~23400 | 17100~21600 | 14850~18900 | 12600~15300 | 10800~13500 |
| | | | FEED | 90~340 | 90~340 | 110~440 | 110~440 | 120~480 | 160~540 | 190~590 | 190~590 | 190~590 |
| | | | Ap | 0.007~0.018 | 0.009~0.022 | 0.011~0.026 | 0.012~0.031 | 0.014~0.035 | 0.030~0.060 | 0.045~0.090 | 0.055~0.100 | 0.062~0.125 |
| H | 38.1 - 38.2 | Hardened steel | Vc | 17~20 | 21~25 | 25~31 | 30~36 | 29~35 | 29~34 | 30~38 | 31~37 | 30~38 |
| | | | fz | 0.001~0.003 | 0.001~0.003 | 0.001~0.003 | 0.001~0.003 | 0.002~0.005 | 0.002~0.005 | 0.004~0.005 | 0.004~0.007 | 0.005~0.008 |
| | | | RPM | 13500~16200 | 13500~16200 | 13500~16200 | 13500~16200 | 11700~13950 | 10350~12150 | 9450~12150 | 8100~9900 | 6750~8550 |
| | | | FEED | 30~90 | 30~90 | 40~110 | 40~110 | 45~130 | 50~130 | 70~130 | 70~130 | 70~130 |
| | | | Ap | 0.004~0.008 | 0.004~0.009 | 0.005~0.011 | 0.006~0.013 | 0.007~0.015 | 0.008~0.016 | 0.009~0.018 | 0.010~0.022 | 0.012~0.025 |
| | 40 | Chilled Cast Iron | Vc | 27~34 | 34~42 | 41~51 | 48~59 | 46~59 | 48~61 | 47~59 | 48~58 | 48~59 |
| | | | fz | 0.002~0.006 | 0.002~0.006 | 0.003~0.008 | 0.003~0.008 | 0.003~0.010 | 0.005~0.013 | 0.006~0.016 | 0.008~0.019 | 0.009~0.022 |
| | | | RPM | 21600~27000 | 21600~27000 | 21600~27000 | 21600~27000 | 18450~23400 | 17100~21600 | 14850~18900 | 12600~15300 | 10800~13500 |
| | | | FEED | 90~340 | 90~340 | 110~440 | 110~440 | 120~480 | 160~540 | 190~590 | 190~590 | 190~590 |
| | | | Ap | 0.007~0.018 | 0.009~0.022 | 0.011~0.026 | 0.012~0.031 | 0.014~0.035 | 0.030~0.060 | 0.045~0.090 | 0.055~0.100 | 0.062~0.125 |
| | 41 | Hardened Cast Iron | Vc | 17~20 | 21~25 | 25~31 | 30~36 | 29~35 | 29~34 | 30~38 | 31~37 | 30~38 |
| | | | fz | 0.001~0.003 | 0.001~0.003 | 0.001~0.003 | 0.001~0.003 | 0.002~0.005 | 0.002~0.005 | 0.004~0.005 | 0.004~0.007 | 0.005~0.008 |
| | | | RPM | 13500~16200 | 13500~16200 | 13500~16200 | 13500~16200 | 11700~13950 | 10350~12150 | 9450~12150 | 8100~9900 | 6750~8550 |
| | | | FEED | 30~90 | 30~90 | 40~110 | 40~110 | 45~130 | 50~130 | 70~130 | 70~130 | 70~130 |
| | | | Ap | 0.004~0.008 | 0.004~0.009 | 0.005~0.011 | 0.006~0.013 | 0.007~0.015 | 0.008~0.016 | 0.009~0.018 | 0.010~0.022 | 0.012~0.025 |

※ The FEED, in long & extra long types, should be reduced by around 50%
对于长型合超长型进给量应该减少约50%



# K-2 plus & K-2 END MILLS

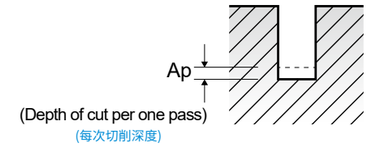
# RECOMMENDED CUTTING CONDITIONS
# 推荐加工参数

## EMC59 SERIES
**2 FLUTE - RIB PROCESSING**
**2刃 - 深腔加工**

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)
Ap (切削深度) = (mm)

| ISO | VDI 3323 | Material Description 材料描述 | Parameter 参数 | Diameter (Ø) 直径 | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 1.5 | 1.6 | 1.8 | 2.0 | 2.5 | 3.0 | 4.0 | 5.0 | 6.0 |
| P | 1-4 | Non-alloy steel | Vc | 66~85 | 68~86 | 71~92 | 71~88 | 71~92 | 72~89 | 74~90 | 71~92 | 85~93 |
| | | | fz | 0.010~0.025 | 0.010~0.026 | 0.011~0.027 | 0.012~0.032 | 0.016~0.038 | 0.018~0.047 | 0.024~0.062 | 0.031~0.076 | 0.031~0.090 |
| | | | RPM | 13950~18000 | 13500~17100 | 12600~16200 | 11250~13950 | 9000~11700 | 7650~9450 | 5850~7200 | 4500~5850 | 4500~4950 |
| | | | FEED | 280~890 | 280~890 | 280~890 | 280~890 | 280~890 | 280~890 | 280~890 | 280~890 | 280~890 |
| | | | Ap | 0.070~0.135 | 0.075~0.145 | 0.080~0.160 | 0.090~0.180 | 0.112~0.235 | 0.135~0.270 | 0.180~0.360 | 0.225~0.450 | 0.270~0.540 |
| | 5 | | Vc | 47~61 | 50~61 | 51~61 | 51~62 | 49~64 | 51~64 | 51~62 | 49~64 | 51~68 |
| | | | fz | 0.010~0.023 | 0.010~0.024 | 0.011~0.027 | 0.012~0.030 | 0.015~0.036 | 0.018~0.044 | 0.023~0.060 | 0.030~0.073 | 0.035~0.082 |
| | | | RPM | 9900~13050 | 9900~12150 | 9000~10800 | 8100~9900 | 6300~8100 | 5400~6750 | 4050~4950 | 3150~4050 | 2700~3600 |
| | | | FEED | 190~590 | 190~590 | 190~590 | 190~590 | 190~590 | 190~590 | 190~590 | 190~590 | 190~590 |
| | | | Ap | 0.070~0.135 | 0.075~0.145 | 0.080~0.160 | 0.090~0.180 | 0.112~0.235 | 0.135~0.270 | 0.180~0.360 | 0.225~0.450 | 0.270~0.540 |
| | 6-7 | Low alloy steel | Vc | 66~85 | 68~86 | 71~92 | 71~88 | 71~92 | 72~89 | 74~90 | 71~92 | 85~93 |
| | | | fz | 0.010~0.025 | 0.010~0.026 | 0.011~0.027 | 0.012~0.032 | 0.016~0.038 | 0.018~0.047 | 0.024~0.062 | 0.031~0.076 | 0.031~0.090 |
| | | | RPM | 13950~18000 | 13500~17100 | 12600~16200 | 11250~13950 | 9000~11700 | 7650~9450 | 5850~7200 | 4500~5850 | 4500~4950 |
| | | | FEED | 280~890 | 280~890 | 280~890 | 280~890 | 280~890 | 280~890 | 280~890 | 280~890 | 280~890 |
| | | | Ap | 0.070~0.135 | 0.075~0.145 | 0.080~0.160 | 0.090~0.180 | 0.112~0.235 | 0.135~0.270 | 0.180~0.360 | 0.225~0.450 | 0.270~0.540 |
| | 8-9 | | Vc | 47~61 | 50~61 | 51~61 | 51~62 | 49~64 | 51~64 | 51~62 | 49~64 | 51~68 |
| | | | fz | 0.010~0.023 | 0.010~0.024 | 0.011~0.027 | 0.012~0.030 | 0.015~0.036 | 0.018~0.044 | 0.023~0.060 | 0.030~0.073 | 0.035~0.082 |
| | | | RPM | 9900~13050 | 9900~12150 | 9000~10800 | 8100~9900 | 6300~8100 | 5400~6750 | 4050~4950 | 3150~4050 | 2700~3600 |
| | | | FEED | 190~590 | 190~590 | 190~590 | 190~590 | 190~590 | 190~590 | 190~590 | 190~590 | 190~590 |
| | | | Ap | 0.070~0.135 | 0.075~0.145 | 0.080~0.160 | 0.090~0.180 | 0.112~0.235 | 0.135~0.270 | 0.180~0.360 | 0.225~0.450 | 0.270~0.540 |
| | 10 | High alloyed steel, and tool steel | Vc | 66~85 | 68~86 | 71~92 | 71~88 | 71~92 | 72~89 | 74~90 | 71~92 | 85~93 |
| | | | fz | 0.010~0.025 | 0.010~0.026 | 0.011~0.027 | 0.012~0.032 | 0.016~0.038 | 0.018~0.047 | 0.024~0.062 | 0.031~0.076 | 0.031~0.090 |
| | | | RPM | 13950~18000 | 13500~17100 | 12600~16200 | 11250~13950 | 9000~11700 | 7650~9450 | 5850~7200 | 4500~5850 | 4500~4950 |
| | | | FEED | 280~890 | 280~890 | 280~890 | 280~890 | 280~890 | 280~890 | 280~890 | 280~890 | 280~890 |
| | | | Ap | 0.070~0.135 | 0.075~0.145 | 0.080~0.160 | 0.090~0.180 | 0.112~0.235 | 0.135~0.270 | 0.180~0.360 | 0.225~0.450 | 0.270~0.540 |
| | 11.1 - 11.2 | | Vc | 47~61 | 50~61 | 51~61 | 51~62 | 49~64 | 51~64 | 51~62 | 49~64 | 51~68 |
| | | | fz | 0.010~0.023 | 0.010~0.024 | 0.011~0.027 | 0.012~0.030 | 0.015~0.036 | 0.018~0.044 | 0.023~0.060 | 0.030~0.073 | 0.035~0.082 |
| | | | RPM | 9900~13050 | 9900~12150 | 9000~10800 | 8100~9900 | 6300~8100 | 5400~6750 | 4050~4950 | 3150~4050 | 2700~3600 |
| | | | FEED | 190~590 | 190~590 | 190~590 | 190~590 | 190~590 | 190~590 | 190~590 | 190~590 | 190~590 |
| | | | Ap | 0.070~0.135 | 0.075~0.145 | 0.080~0.160 | 0.090~0.180 | 0.112~0.235 | 0.135~0.270 | 0.180~0.360 | 0.225~0.450 | 0.270~0.540 |
| H | 38.1 - 38.2 | Hardened steel | Vc | 30~36 | 29~38 | 31~38 | 31~40 | 32~39 | 30~38 | 31~40 | 31~40 | 34~51 |
| | | | fz | 0.006~0.008 | 0.006~0.008 | 0.006~0.010 | 0.007~0.010 | 0.009~0.013 | 0.011~0.016 | 0.014~0.021 | 0.018~0.026 | 0.019~0.024 |
| | | | RPM | 6300~7650 | 5850~7650 | 5400~6750 | 4950~6300 | 4050~4950 | 3150~4050 | 2430~3150 | 1980~2520 | 1800~2700 |
| | | | FEED | 70~130 | 70~130 | 70~130 | 70~130 | 70~130 | 70~130 | 70~130 | 70~130 | 70~130 |
| | | | Ap | 0.014~0.028 | 0.015~0.030 | 0.016~0.032 | 0.018~0.035 | 0.022~0.045 | 0.028~0.055 | 0.036~0.072 | 0.045~0.090 | 0.054~0.108 |
| | 40 | Chilled Cast Iron | Vc | 47~61 | 50~61 | 51~61 | 51~62 | 49~64 | 51~64 | 51~62 | 49~64 | 51~68 |
| | | | fz | 0.010~0.023 | 0.010~0.024 | 0.011~0.027 | 0.012~0.030 | 0.015~0.036 | 0.018~0.044 | 0.023~0.060 | 0.030~0.073 | 0.035~0.082 |
| | | | RPM | 9900~13050 | 9900~12150 | 9000~10800 | 8100~9900 | 6300~8100 | 5400~6750 | 4050~4950 | 3150~4050 | 2700~3600 |
| | | | FEED | 190~590 | 190~590 | 190~590 | 190~590 | 190~590 | 190~590 | 190~590 | 190~590 | 190~590 |
| | | | Ap | 0.070~0.135 | 0.075~0.145 | 0.080~0.160 | 0.090~0.180 | 0.112~0.235 | 0.135~0.270 | 0.180~0.360 | 0.225~0.450 | 0.270~0.540 |
| | 41 | Hardened Cast Iron | Vc | 30~36 | 29~38 | 31~38 | 31~40 | 32~39 | 30~38 | 31~40 | 31~40 | 34~51 |
| | | | fz | 0.006~0.008 | 0.006~0.008 | 0.006~0.010 | 0.007~0.010 | 0.009~0.013 | 0.011~0.016 | 0.014~0.021 | 0.018~0.026 | 0.019~0.024 |
| | | | RPM | 6300~7650 | 5850~7650 | 5400~6750 | 4950~6300 | 4050~4950 | 3150~4050 | 2430~3150 | 1980~2520 | 1800~2700 |
| | | | FEED | 70~130 | 70~130 | 70~130 | 70~130 | 70~130 | 70~130 | 70~130 | 70~130 | 70~130 |
| | | | Ap | 0.014~0.028 | 0.015~0.030 | 0.016~0.032 | 0.018~0.035 | 0.022~0.045 | 0.028~0.055 | 0.036~0.072 | 0.045~0.090 | 0.054~0.108 |

※ The FEED, in long & extra long types, should be reduced by around 50%
对于长型合超长型进给量应该减少约50%





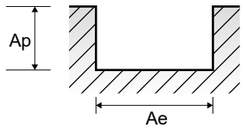

K-2 plus & K-2 END MILLS
RECOMMENDED CUTTING CONDITIONS
推荐加工参数

## EMC52, EMC53 SERIES
**2 FLUTE - SLOTTING**
**2刃 - 槽铣削**

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description 材料描述 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 1.0 | 1.5 | 2.0 | 3.0 | 4.0 | 5.0 | 6.0 | 8.0 | 10.0 | 12.0 | 14.0 | 16.0 | 20.0 |
| P | 1-4 | Non-alloy steel | 1.0D | Up to D3 : 0.2D<br>D3~D20 : 0.5D | Vc | 45 | 44 | 49 | 57 | 65 | 68 | 72 | 72 | 69 | 70 | 75 | 75 | 72 |
| | | | | | fz | 0.004 | 0.008 | 0.010 | 0.015 | 0.025 | 0.031 | 0.039 | 0.057 | 0.064 | 0.065 | 0.063 | 0.062 | 0.063 |
| | | | | | RPM | 14300 | 9350 | 7850 | 6100 | 5150 | 4300 | 3800 | 2850 | 2200 | 1850 | 1700 | 1500 | 1150 |
| | | | | | FEED | 105 | 150 | 160 | 180 | 255 | 270 | 300 | 325 | 280 | 240 | 215 | 185 | 145 |
| | 5 | | 1.0D | Up to D3 : 0.2D<br>D3~D20 : 0.5D | Vc | 27 | 26 | 32 | 36 | 40 | 40 | 43 | 43 | 42 | 43 | 46 | 48 | 44 |
| | | | | | fz | 0.004 | 0.008 | 0.010 | 0.016 | 0.025 | 0.031 | 0.041 | 0.050 | 0.050 | 0.048 | 0.048 | 0.050 | 0.050 |
| | | | | | RPM | 8500 | 5550 | 5150 | 3800 | 3150 | 2550 | 2300 | 1700 | 1350 | 1150 | 1050 | 950 | 700 |
| | | | | | FEED | 65 | 85 | 100 | 120 | 155 | 160 | 190 | 170 | 135 | 110 | 100 | 95 | 70 |
| | 6-7 | Low alloy steel | 1.0D | Up to D3 : 0.2D<br>D3~D20 : 0.5D | Vc | 45 | 44 | 49 | 57 | 65 | 68 | 72 | 72 | 69 | 70 | 75 | 75 | 72 |
| | | | | | fz | 0.004 | 0.008 | 0.010 | 0.015 | 0.025 | 0.031 | 0.039 | 0.057 | 0.064 | 0.065 | 0.063 | 0.062 | 0.063 |
| | | | | | RPM | 14300 | 9350 | 7850 | 6100 | 5150 | 4300 | 3800 | 2850 | 2200 | 1850 | 1700 | 1500 | 1150 |
| | | | | | FEED | 105 | 150 | 160 | 180 | 255 | 270 | 300 | 325 | 280 | 240 | 215 | 185 | 145 |
| | 8-9 | | 1.0D | Up to D3 : 0.2D<br>D3~D20 : 0.5D | Vc | 27 | 26 | 32 | 36 | 40 | 40 | 43 | 43 | 42 | 43 | 46 | 48 | 44 |
| | | | | | fz | 0.004 | 0.008 | 0.010 | 0.016 | 0.025 | 0.031 | 0.041 | 0.050 | 0.050 | 0.048 | 0.048 | 0.050 | 0.050 |
| | | | | | RPM | 8500 | 5550 | 5150 | 3800 | 3150 | 2550 | 2300 | 1700 | 1350 | 1150 | 1050 | 950 | 700 |
| | | | | | FEED | 65 | 85 | 100 | 120 | 155 | 160 | 190 | 170 | 135 | 110 | 100 | 95 | 70 |
| | 10 | High alloyed steel, and tool steel | 1.0D | Up to D3 : 0.2D<br>D3~D20 : 0.5D | Vc | 45 | 44 | 49 | 57 | 65 | 68 | 72 | 72 | 69 | 70 | 75 | 75 | 72 |
| | | | | | fz | 0.004 | 0.008 | 0.010 | 0.015 | 0.025 | 0.031 | 0.039 | 0.057 | 0.064 | 0.065 | 0.063 | 0.062 | 0.063 |
| | | | | | RPM | 14300 | 9350 | 7850 | 6100 | 5150 | 4300 | 3800 | 2850 | 2200 | 1850 | 1700 | 1500 | 1150 |
| | | | | | FEED | 105 | 150 | 160 | 180 | 255 | 270 | 300 | 325 | 280 | 240 | 215 | 185 | 145 |
| | 11.1 - 11.2 | | 1.0D | Up to D3 : 0.2D<br>D3~D20 : 0.5D | Vc | 27 | 26 | 32 | 36 | 40 | 40 | 43 | 43 | 42 | 43 | 46 | 48 | 44 |
| | | | | | fz | 0.004 | 0.008 | 0.010 | 0.016 | 0.025 | 0.031 | 0.041 | 0.050 | 0.050 | 0.048 | 0.048 | 0.050 | 0.050 |
| | | | | | RPM | 8500 | 5550 | 5150 | 3800 | 3150 | 2550 | 2300 | 1700 | 1350 | 1150 | 1050 | 950 | 700 |
| | | | | | FEED | 65 | 85 | 100 | 120 | 155 | 160 | 190 | 170 | 135 | 110 | 100 | 95 | 70 |
| M | 14.1 | Stainless steel | 1.0D | Up to D3 : 0.2D<br>D3~D20 : 0.5D | Vc | 22 | 26 | 27 | 30 | 33 | 34 | 37 | 36 | 36 | 36 | 37 | 35 | 35 |
| | | | | | fz | 0.003 | 0.007 | 0.009 | 0.016 | 0.025 | 0.031 | 0.040 | 0.053 | 0.059 | 0.058 | 0.059 | 0.068 | 0.064 |
| | | | | | RPM | 7150 | 5600 | 4300 | 3150 | 2650 | 2150 | 1950 | 1450 | 1150 | 950 | 850 | 700 | 550 |
| | | | | | FEED | 50 | 80 | 80 | 100 | 130 | 135 | 155 | 155 | 135 | 110 | 100 | 95 | 70 |
| K | 15-20 | Grey cast iron<br>Nodular cast iron<br>Malleable cast iron | 1.0D | 1.0D | Vc | 59 | 57 | 59 | 57 | 58 | 57 | 56 | 55 | 58 | 55 | 57 | 55 | 57 |
| | | | | | fz | 0.005 | 0.008 | 0.012 | 0.018 | 0.024 | 0.030 | 0.043 | 0.063 | 0.077 | 0.102 | 0.119 | 0.145 | 0.189 |
| | | | | | RPM | 18700 | 12100 | 9350 | 6050 | 4600 | 3650 | 2950 | 2200 | 1850 | 1450 | 1300 | 1100 | 900 |
| | | | | | FEED | 205 | 205 | 220 | 220 | 220 | 220 | 255 | 275 | 285 | 295 | 310 | 320 | 340 |
| N | 21~22 | Aluminum-wrought alloy | 1.0D | 1.0D | Vc | 138 | 130 | 138 | 145 | 138 | 144 | 143 | 143 | 145 | 141 | 145 | 143 | 138 |
| | | | | | fz | 0.004 | 0.007 | 0.010 | 0.015 | 0.021 | 0.025 | 0.032 | 0.043 | 0.053 | 0.065 | 0.073 | 0.085 | 0.110 |
| | | | | | RPM | 44000 | 27500 | 22000 | 15400 | 11000 | 9150 | 7600 | 5700 | 4600 | 3750 | 3300 | 2850 | 2200 |
| | | | | | FEED | 330 | 385 | 460 | 460 | 460 | 460 | 485 | 485 | 485 | 485 | 485 | 485 | 485 |
| | 23~25 | Aluminum-cast, alloyed | 1.0D | 1.0D | Vc | 138 | 130 | 138 | 145 | 138 | 144 | 143 | 143 | 145 | 141 | 145 | 143 | 138 |
| | | | | | fz | 0.004 | 0.007 | 0.010 | 0.015 | 0.021 | 0.025 | 0.032 | 0.043 | 0.053 | 0.065 | 0.073 | 0.085 | 0.110 |
| | | | | | RPM | 44000 | 27500 | 22000 | 15400 | 11000 | 9150 | 7600 | 5700 | 4600 | 3750 | 3300 | 2850 | 2200 |
| | | | | | FEED | 330 | 385 | 460 | 460 | 460 | 460 | 485 | 485 | 485 | 485 | 485 | 485 | 485 |
| H | 38.1 | Hardened steel | 1.0D | Up to D3 : 0.2D<br>D3~D20 : 0.5D | Vc | 27 | 26 | 32 | 36 | 40 | 40 | 43 | 43 | 42 | 43 | 46 | 48 | 44 |
| | | | | | fz | 0.004 | 0.008 | 0.010 | 0.016 | 0.025 | 0.031 | 0.041 | 0.050 | 0.050 | 0.048 | 0.048 | 0.050 | 0.050 |
| | | | | | RPM | 8500 | 5550 | 5150 | 3800 | 3150 | 2550 | 2300 | 1700 | 1350 | 1150 | 1050 | 950 | 700 |
| | | | | | FEED | 65 | 85 | 100 | 120 | 155 | 160 | 190 | 170 | 135 | 110 | 100 | 95 | 70 |
| | 40 | Chilled Cast Iron | 1.0D | Up to D3 : 0.2D<br>D3~D20 : 0.5D | Vc | 27 | 26 | 32 | 36 | 40 | 40 | 43 | 43 | 42 | 43 | 46 | 48 | 44 |
| | | | | | fz | 0.004 | 0.008 | 0.010 | 0.016 | 0.025 | 0.031 | 0.041 | 0.050 | 0.050 | 0.048 | 0.048 | 0.050 | 0.050 |
| | | | | | RPM | 8500 | 5550 | 5150 | 3800 | 3150 | 2550 | 2300 | 1700 | 1350 | 1150 | 1050 | 950 | 700 |
| | | | | | FEED | 65 | 85 | 100 | 120 | 155 | 160 | 190 | 170 | 135 | 110 | 100 | 95 | 70 |

※ The FEED, in long & extra long types, should be reduced by around 50%
对于长型合超长型进给量应该减少约50%



# K-2 plus & K-2 END MILLS

# RECOMMENDED CUTTING CONDITIONS
# 推荐加工参数

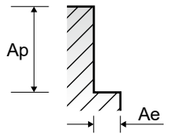
## EMC54, EMC55 SERIES

**4 FLUTE - SIDE CUTTING**
**4刃 - 侧铣削**

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description 材料描述 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 1.0 | 1.5 | 2.0 | 3.0 | 4.0 | 5.0 | 6.0 | 8.0 | 10.0 | 12.0 | 14.0 | 16.0 | 20.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1-4 | Non-alloy steel | 0.1D | 1.0D | Vc | 55 | 56 | 62 | 72 | 81 | 84 | 90 | 89 | 86 | 89 | 92 | 93 | 91 |
| | | | | | fz | 0.002 | 0.005 | 0.006 | 0.009 | 0.019 | 0.024 | 0.029 | 0.043 | 0.047 | 0.047 | 0.047 | 0.047 | 0.047 |
| | | | | | RPM | 17600 | 11800 | 9850 | 7600 | 6450 | 5350 | 4750 | 3550 | 2750 | 2350 | 2100 | 1850 | 1450 |
| | | | | | FEED | 150 | 215 | 240 | 270 | 485 | 510 | 560 | 605 | 520 | 440 | 395 | 350 | 270 |
| | 5 | | 0.1D | 1.0D | Vc | 32 | 33 | 41 | 45 | 50 | 50 | 54 | 54 | 53 | 55 | 57 | 58 | 57 |
| | | | | | fz | 0.002 | 0.004 | 0.006 | 0.009 | 0.019 | 0.024 | 0.031 | 0.038 | 0.038 | 0.037 | 0.038 | 0.037 | 0.038 |
| | | | | | RPM | 10250 | 7050 | 6450 | 4750 | 3950 | 3200 | 2850 | 2150 | 1700 | 1450 | 1300 | 1150 | 900 |
| | | | | | FEED | 85 | 115 | 145 | 170 | 300 | 305 | 350 | 325 | 255 | 215 | 195 | 170 | 135 |
| | 6-7 | Low alloy steel | 0.1D | 1.0D | Vc | 55 | 56 | 62 | 72 | 81 | 84 | 90 | 89 | 86 | 89 | 92 | 93 | 91 |
| | | | | | fz | 0.002 | 0.005 | 0.006 | 0.009 | 0.019 | 0.024 | 0.029 | 0.043 | 0.047 | 0.047 | 0.047 | 0.047 | 0.047 |
| | | | | | RPM | 17600 | 11800 | 9850 | 7600 | 6450 | 5350 | 4750 | 3550 | 2750 | 2350 | 2100 | 1850 | 1450 |
| | | | | | FEED | 150 | 215 | 240 | 270 | 485 | 510 | 560 | 605 | 520 | 440 | 395 | 350 | 270 |
| | 8-9 | | 0.1D | 1.0D | Vc | 32 | 33 | 41 | 45 | 50 | 50 | 54 | 54 | 53 | 55 | 57 | 58 | 57 |
| | | | | | fz | 0.002 | 0.004 | 0.006 | 0.009 | 0.019 | 0.024 | 0.031 | 0.038 | 0.038 | 0.037 | 0.038 | 0.037 | 0.038 |
| | | | | | RPM | 10250 | 7050 | 6450 | 4750 | 3950 | 3200 | 2850 | 2150 | 1700 | 1450 | 1300 | 1150 | 900 |
| | | | | | FEED | 85 | 115 | 145 | 170 | 300 | 305 | 350 | 325 | 255 | 215 | 195 | 170 | 135 |
| | 10 | High alloyed steel, and tool steel | 0.1D | 1.0D | Vc | 55 | 56 | 62 | 72 | 81 | 84 | 90 | 89 | 86 | 89 | 92 | 93 | 91 |
| | | | | | fz | 0.002 | 0.005 | 0.006 | 0.009 | 0.019 | 0.024 | 0.029 | 0.043 | 0.047 | 0.047 | 0.047 | 0.047 | 0.047 |
| | | | | | RPM | 17600 | 11800 | 9850 | 7600 | 6450 | 5350 | 4750 | 3550 | 2750 | 2350 | 2100 | 1850 | 1450 |
| | | | | | FEED | 150 | 215 | 240 | 270 | 485 | 510 | 560 | 605 | 520 | 440 | 395 | 350 | 270 |
| | 11.1 ~ 11.2 | | 0.1D | 1.0D | Vc | 32 | 33 | 41 | 45 | 50 | 50 | 54 | 54 | 53 | 55 | 57 | 58 | 57 |
| | | | | | fz | 0.002 | 0.004 | 0.006 | 0.009 | 0.019 | 0.024 | 0.031 | 0.038 | 0.038 | 0.037 | 0.038 | 0.037 | 0.038 |
| | | | | | RPM | 10250 | 7050 | 6450 | 4750 | 3950 | 3200 | 2850 | 2150 | 1700 | 1450 | 1300 | 1150 | 900 |
| | | | | | FEED | 85 | 115 | 145 | 170 | 300 | 305 | 350 | 325 | 255 | 215 | 195 | 170 | 135 |
| M | 14.1 | Stainless steel | 0.1D | 1.0D | Vc | 27 | 33 | 34 | 37 | 41 | 42 | 45 | 45 | 46 | 43 | 46 | 48 | 44 |
| | | | | | fz | 0.002 | 0.004 | 0.006 | 0.009 | 0.018 | 0.024 | 0.029 | 0.042 | 0.044 | 0.045 | 0.045 | 0.045 | 0.046 |
| | | | | | RPM | 8650 | 7050 | 5350 | 3950 | 3300 | 2700 | 2400 | 1800 | 1450 | 1150 | 1050 | 950 | 700 |
| | | | | | FEED | 75 | 120 | 120 | 145 | 240 | 255 | 280 | 300 | 255 | 205 | 190 | 170 | 130 |
| K | 15-20 | Grey cast iron Nodular cast iron Malleable cast iron | 0.1D | 1.5D | Vc | 59 | 57 | 59 | 57 | 58 | 57 | 56 | 55 | 58 | 55 | 57 | 55 | 57 |
| | | | | | fz | 0.008 | 0.013 | 0.017 | 0.026 | 0.035 | 0.044 | 0.065 | 0.093 | 0.116 | 0.155 | 0.182 | 0.220 | 0.288 |
| | | | | | RPM | 18700 | 12100 | 9350 | 6050 | 4600 | 3650 | 2950 | 2200 | 1850 | 1450 | 1300 | 1100 | 900 |
| | | | | | FEED | 620 | 620 | 640 | 640 | 640 | 640 | 770 | 815 | 860 | 900 | 945 | 970 | 1035 |
| N | 21~22 | Aluminum-wrought alloy | 0.1D | 1.5D | Vc | 138 | 130 | 138 | 145 | 138 | 144 | 143 | 143 | 145 | 141 | 145 | 143 | 138 |
| | | | | | fz | 0.006 | 0.011 | 0.015 | 0.021 | 0.030 | 0.036 | 0.047 | 0.063 | 0.078 | 0.095 | 0.108 | 0.125 | 0.163 |
| | | | | | RPM | 44000 | 27500 | 22000 | 15400 | 11000 | 9150 | 7600 | 5700 | 4600 | 3750 | 3300 | 2850 | 2200 |
| | | | | | FEED | 1050 | 1160 | 1320 | 1320 | 1320 | 1320 | 1430 | 1430 | 1430 | 1430 | 1430 | 1430 | 1430 |
| | 23~25 | Aluminum-cast, alloyed | 0.1D | 1.5D | Vc | 138 | 130 | 138 | 145 | 138 | 144 | 143 | 143 | 145 | 141 | 145 | 143 | 138 |
| | | | | | fz | 0.006 | 0.011 | 0.015 | 0.021 | 0.030 | 0.036 | 0.047 | 0.063 | 0.078 | 0.095 | 0.108 | 0.125 | 0.163 |
| | | | | | RPM | 44000 | 27500 | 22000 | 15400 | 11000 | 9150 | 7600 | 5700 | 4600 | 3750 | 3300 | 2850 | 2200 |
| | | | | | FEED | 1050 | 1160 | 1320 | 1320 | 1320 | 1320 | 1430 | 1430 | 1430 | 1430 | 1430 | 1430 | 1430 |
| H | 38.1 | Hardened steel | 0.1D | 1.0D | Vc | 32 | 33 | 41 | 45 | 50 | 50 | 54 | 54 | 53 | 55 | 57 | 58 | 57 |
| | | | | | fz | 0.002 | 0.004 | 0.006 | 0.009 | 0.019 | 0.024 | 0.031 | 0.038 | 0.038 | 0.037 | 0.038 | 0.037 | 0.038 |
| | | | | | RPM | 10250 | 7050 | 6450 | 4750 | 3950 | 3200 | 2850 | 2150 | 1700 | 1450 | 1300 | 1150 | 900 |
| | | | | | FEED | 85 | 115 | 145 | 170 | 300 | 305 | 350 | 325 | 255 | 215 | 195 | 170 | 135 |
| | 40 | Chilled Cast Iron | 0.1D | 1.0D | Vc | 32 | 33 | 41 | 45 | 50 | 50 | 54 | 54 | 53 | 55 | 57 | 58 | 57 |
| | | | | | fz | 0.002 | 0.004 | 0.006 | 0.009 | 0.019 | 0.024 | 0.031 | 0.038 | 0.038 | 0.037 | 0.038 | 0.037 | 0.038 |
| | | | | | RPM | 10250 | 7050 | 6450 | 4750 | 3950 | 3200 | 2850 | 2150 | 1700 | 1450 | 1300 | 1150 | 900 |
| | | | | | FEED | 85 | 115 | 145 | 170 | 300 | 305 | 350 | 325 | 255 | 215 | 195 | 170 | 135 |

※ The FEED, in long & extra long types, should be reduced by around 50%
对于长型合超长型进给量应该减少约50%








# K-2 plus & K-2 END MILLS

# RECOMMENDED CUTTING CONDITIONS
# 推荐加工参数

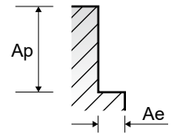
## EMC57, EMC58 SERIES

**4&6 FLUTE - SIDE CUTTING**
**4&6刃 - 侧铣削**

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description 材料描述 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 1.0 | 2.0 | 3.0 | 4.0 | 5.0 | 6.0 | 8.0 | 10.0 | 12.0 | 16.0 | 20.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1-4 | Non-alloy steel | 0.05D | 1.5D | Vc | 60 | 82 | 82 | 83 | 98 | 98 | 98 | 97 | 99 | 98 | 97 |
| | | | | | fz | 0.009 | 0.016 | 0.024 | 0.033 | 0.026 | 0.030 | 0.038 | 0.045 | 0.053 | 0.062 | 0.069 |
| | | | | | RPM | 19000 | 13000 | 8650 | 6600 | 6250 | 5175 | 3900 | 3075 | 2625 | 1950 | 1550 |
| | | | | | FEED | 693 | 825 | 825 | 858 | 990 | 924 | 891 | 831 | 831 | 726 | 641 |
| | 5 | | 0.05D | 1.5D | Vc | 40 | 55 | 54 | 55 | 65 | 65 | 65 | 64 | 66 | 65 | 64 |
| | | | | | fz | 0.009 | 0.016 | 0.024 | 0.033 | 0.027 | 0.030 | 0.038 | 0.045 | 0.053 | 0.062 | 0.070 |
| | | | | | RPM | 12750 | 8750 | 5750 | 4400 | 4150 | 3450 | 2600 | 2050 | 1750 | 1300 | 1025 |
| | | | | | FEED | 468 | 555 | 555 | 581 | 660 | 627 | 594 | 555 | 555 | 482 | 429 |
| | 6-7 | Low alloy steel | 0.05D | 1.5D | Vc | 60 | 82 | 82 | 83 | 98 | 98 | 98 | 97 | 99 | 98 | 97 |
| | | | | | fz | 0.009 | 0.016 | 0.024 | 0.033 | 0.026 | 0.030 | 0.038 | 0.045 | 0.053 | 0.062 | 0.069 |
| | | | | | RPM | 19000 | 13000 | 8650 | 6600 | 6250 | 5175 | 3900 | 3075 | 2625 | 1950 | 1550 |
| | | | | | FEED | 693 | 825 | 825 | 858 | 990 | 924 | 891 | 831 | 831 | 726 | 641 |
| | 8-9 | | 0.05D | 1.5D | Vc | 40 | 55 | 54 | 55 | 65 | 65 | 65 | 64 | 66 | 65 | 64 |
| | | | | | fz | 0.009 | 0.016 | 0.024 | 0.033 | 0.027 | 0.030 | 0.038 | 0.045 | 0.053 | 0.062 | 0.070 |
| | | | | | RPM | 12750 | 8750 | 5750 | 4400 | 4150 | 3450 | 2600 | 2050 | 1750 | 1300 | 1025 |
| | | | | | FEED | 468 | 555 | 555 | 581 | 660 | 627 | 594 | 555 | 555 | 482 | 429 |
| | 10 | High alloyed steel, and tool steel | 0.05D | 1.5D | Vc | 60 | 82 | 82 | 83 | 98 | 98 | 98 | 97 | 99 | 98 | 97 |
| | | | | | fz | 0.009 | 0.016 | 0.024 | 0.033 | 0.026 | 0.030 | 0.038 | 0.045 | 0.053 | 0.062 | 0.069 |
| | | | | | RPM | 19000 | 13000 | 8650 | 6600 | 6250 | 5175 | 3900 | 3075 | 2625 | 1950 | 1550 |
| | | | | | FEED | 693 | 825 | 825 | 858 | 990 | 924 | 891 | 831 | 831 | 726 | 641 |
| | 11.1 ~ 11.2 | | 0.03D | 1.5D | Vc | 40 | 55 | 54 | 55 | 65 | 65 | 65 | 64 | 66 | 65 | 64 |
| | | | | | fz | 0.009 | 0.016 | 0.024 | 0.033 | 0.027 | 0.030 | 0.038 | 0.045 | 0.053 | 0.062 | 0.070 |
| | | | | | RPM | 12750 | 8750 | 5750 | 4400 | 4150 | 3450 | 2600 | 2050 | 1750 | 1300 | 1025 |
| | | | | | FEED | 468 | 555 | 555 | 581 | 660 | 627 | 594 | 555 | 555 | 482 | 429 |
| H | 38.1 | Hardened steel | 0.03D | 1.5D | Vc | 40 | 55 | 54 | 55 | 65 | 65 | 65 | 64 | 66 | 65 | 64 |
| | | | | | fz | 0.009 | 0.016 | 0.024 | 0.033 | 0.027 | 0.030 | 0.038 | 0.045 | 0.053 | 0.062 | 0.070 |
| | | | | | RPM | 12750 | 8750 | 5750 | 4400 | 4150 | 3450 | 2600 | 2050 | 1750 | 1300 | 1025 |
| | | | | | FEED | 468 | 555 | 555 | 581 | 660 | 627 | 594 | 555 | 555 | 482 | 429 |
| | 38.2 | | 0.03D | 1.5D | Vc | 32 | 46 | 45 | 45 | 50 | 50 | 50 | 50 | 69 | 50 | 50 |
| | | | | | fz | 0.007 | 0.012 | 0.018 | 0.025 | 0.020 | 0.023 | 0.029 | 0.033 | 0.029 | 0.046 | 0.052 |
| | | | | | RPM | 10250 | 7250 | 4750 | 3600 | 3200 | 2650 | 2000 | 1600 | 1825 | 1000 | 800 |
| | | | | | FEED | 284 | 344 | 344 | 357 | 383 | 369 | 344 | 317 | 317 | 278 | 251 |
| | 40 | Chilled Cast Iron | 0.03D | 1.5D | Vc | 40 | 55 | 54 | 55 | 65 | 65 | 65 | 64 | 66 | 65 | 64 |
| | | | | | fz | 0.009 | 0.016 | 0.024 | 0.033 | 0.027 | 0.030 | 0.038 | 0.045 | 0.053 | 0.062 | 0.070 |
| | | | | | RPM | 12750 | 8750 | 5750 | 4400 | 4150 | 3450 | 2600 | 2050 | 1750 | 1300 | 1025 |
| | | | | | FEED | 468 | 555 | 555 | 581 | 660 | 627 | 594 | 555 | 555 | 482 | 429 |
| | 41 | Hardened Cast Iron | 0.03D | 1.5D | Vc | 32 | 46 | 45 | 45 | 50 | 50 | 50 | 50 | 69 | 50 | 50 |
| | | | | | fz | 0.007 | 0.012 | 0.018 | 0.025 | 0.020 | 0.023 | 0.029 | 0.033 | 0.029 | 0.046 | 0.052 |
| | | | | | RPM | 10250 | 7250 | 4750 | 3600 | 3200 | 2650 | 2000 | 1600 | 1825 | 1000 | 800 |
| | | | | | FEED | 284 | 344 | 344 | 357 | 383 | 369 | 344 | 317 | 317 | 278 | 251 |

※ The FEED, in long & extra long types, should be reduced by around 50%
对于长型合超长型进给量应该减少约50%



# K-2 plus & K-2 END MILLS

# RECOMMENDED CUTTING CONDITIONS
# 推荐加工参数

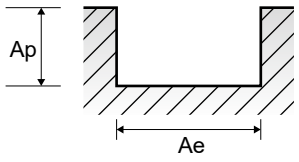
## EMC69 SERIES

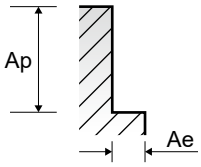
**Multi Flute Roughing - SLOTTING / SIDE CUTTING**
**多刃 粗加工 - 槽铣削 / 侧铣削**

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | SLOTTING 槽铣削 - Diameter (Ø) 直径 6.0 | 8.0 | 10.0 | 12.0 | 16.0 | 20.0 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | SIDE CUTTING 侧铣削 - Diameter (Ø) 直径 6.0 | 8.0 | 10.0 | 12.0 | 16.0 | 20.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1-4 | 1.0D | 0.5D | Vc | 278 | 275 | 273 | 285 | 285 | 285 | 0.3D | 1.5D | Vc | 278 | 275 | 273 | 285 | 285 | 285 |
| | | | | fz | 0.041 | 0.055 | 0.069 | 0.082 | 0.088 | 0.083 | | | fz | 0.041 | 0.055 | 0.069 | 0.082 | 0.088 | 0.083 |
| | | | | RPM | 14740 | 10960 | 8690 | 7560 | 5670 | 4540 | | | RPM | 14740 | 10960 | 8690 | 7560 | 5670 | 4540 |
| | | | | FEED | 2410 | 2410 | 2410 | 2490 | 2490 | 2250 | | | FEED | 2410 | 2410 | 2410 | 2490 | 2490 | 2250 |
| | 5 | 1.0D | 0.5D | Vc | 221 | 218 | 226 | 214 | 228 | 214 | 0.3D | 1.5D | Vc | 221 | 218 | 226 | 214 | 228 | 214 |
| | | | | fz | 0.019 | 0.025 | 0.030 | 0.037 | 0.035 | 0.029 | | | fz | 0.019 | 0.025 | 0.030 | 0.037 | 0.035 | 0.029 |
| | | | | RPM | 11720 | 8690 | 7180 | 5670 | 4540 | 3400 | | | RPM | 11720 | 8690 | 7180 | 5670 | 4540 | 3400 |
| | | | | FEED | 870 | 870 | 870 | 830 | 790 | 585 | | | FEED | 870 | 870 | 870 | 830 | 790 | 590 |
| | 6-7 | 1.0D | 0.5D | Vc | 278 | 275 | 273 | 285 | 285 | 285 | 0.3D | 1.5D | Vc | 278 | 275 | 273 | 285 | 285 | 285 |
| | | | | fz | 0.041 | 0.055 | 0.069 | 0.082 | 0.088 | 0.083 | | | fz | 0.041 | 0.055 | 0.069 | 0.082 | 0.088 | 0.083 |
| | | | | RPM | 14740 | 10960 | 8690 | 7560 | 5670 | 4540 | | | RPM | 14740 | 10960 | 8690 | 7560 | 5670 | 4540 |
| | | | | FEED | 2410 | 2410 | 2410 | 2490 | 2490 | 2250 | | | FEED | 2410 | 2410 | 2410 | 2490 | 2490 | 2250 |
| | 8-9 | 1.0D | 0.5D | Vc | 221 | 218 | 226 | 214 | 228 | 214 | 0.3D | 1.5D | Vc | 221 | 218 | 226 | 214 | 228 | 214 |
| | | | | fz | 0.019 | 0.025 | 0.030 | 0.037 | 0.035 | 0.029 | | | fz | 0.019 | 0.025 | 0.030 | 0.037 | 0.035 | 0.029 |
| | | | | RPM | 11720 | 8690 | 7180 | 5670 | 4540 | 3400 | | | RPM | 11720 | 8690 | 7180 | 5670 | 4540 | 3400 |
| | | | | FEED | 870 | 870 | 870 | 830 | 790 | 585 | | | FEED | 870 | 870 | 870 | 830 | 790 | 590 |
| | 10 | 1.0D | 0.5D | Vc | 278 | 275 | 273 | 285 | 285 | 285 | 0.3D | 1.5D | Vc | 278 | 275 | 273 | 285 | 285 | 285 |
| | | | | fz | 0.041 | 0.055 | 0.069 | 0.082 | 0.088 | 0.083 | | | fz | 0.041 | 0.055 | 0.069 | 0.082 | 0.088 | 0.083 |
| | | | | RPM | 14740 | 10960 | 8690 | 7560 | 5670 | 4540 | | | RPM | 14740 | 10960 | 8690 | 7560 | 5670 | 4540 |
| | | | | FEED | 2410 | 2410 | 2410 | 2490 | 2490 | 2250 | | | FEED | 2410 | 2410 | 2410 | 2490 | 2490 | 2250 |
| | 11.1 - 11.2 | 1.0D | 0.5D | Vc | 221 | 218 | 226 | 214 | 228 | 214 | 0.3D | 1.5D | Vc | 221 | 218 | 226 | 214 | 228 | 214 |
| | | | | fz | 0.019 | 0.025 | 0.030 | 0.037 | 0.035 | 0.029 | | | fz | 0.019 | 0.025 | 0.030 | 0.037 | 0.035 | 0.029 |
| | | | | RPM | 11720 | 8690 | 7180 | 5670 | 4540 | 3400 | | | RPM | 11720 | 8690 | 7180 | 5670 | 4540 | 3400 |
| | | | | FEED | 870 | 870 | 870 | 830 | 790 | 585 | | | FEED | 870 | 870 | 870 | 830 | 790 | 590 |
| M | 14.1 | 1.0D | - | Vc | 150 | 150 | 151 | 150 | 157 | 143 | - | 1.5D | Vc | 150 | 150 | 151 | 150 | 157 | 143 |
| | | | | fz | 0.019 | 0.025 | 0.031 | 0.037 | 0.034 | 0.027 | | | fz | 0.019 | 0.025 | 0.031 | 0.037 | 0.034 | 0.027 |
| | | | | RPM | 7940 | 5950 | 4820 | 3970 | 3120 | 2270 | | | RPM | 7940 | 5950 | 4820 | 3970 | 3120 | 2270 |
| | | | | FEED | 600 | 600 | 590 | 590 | 530 | 370 | | | FEED | 600 | 600 | 590 | 590 | 530 | 370 |
| | | | | Ap | 0.25D | 0.25D | 0.25D | 0.15D | 0.15D | 0.10D | | | Ae | 0.25D | 0.25D | 0.25D | 0.15D | 0.15D | 0.10D |
| S | 31-35 | 1.0D | 0.5D | Vc | 51 | 51 | 46 | 51 | 45 | 46 | 0.05D | 1.0D | Vc | 51 | 51 | 46 | 51 | 45 | 46 |
| | | | | fz | 0.024 | 0.030 | 0.045 | 0.048 | 0.033 | 0.030 | | | fz | 0.024 | 0.030 | 0.045 | 0.048 | 0.033 | 0.030 |
| | | | | RPM | 2700 | 2025 | 1460 | 1350 | 900 | 740 | | | RPM | 2700 | 2025 | 1460 | 1350 | 900 | 740 |
| | | | | FEED | 260 | 240 | 260 | 260 | 150 | 135 | | | FEED | 260 | 240 | 260 | 260 | 150 | 135 |
| H | 40 | 1.0D | 0.3D | Vc | 221 | 218 | 226 | 214 | 228 | 214 | 0.3D | 1.0D | Vc | 221 | 218 | 226 | 214 | 228 | 214 |
| | | | | fz | 0.019 | 0.025 | 0.030 | 0.037 | 0.035 | 0.029 | | | fz | 0.019 | 0.025 | 0.030 | 0.037 | 0.035 | 0.029 |
| | | | | RPM | 11720 | 8690 | 7180 | 5670 | 4540 | 3400 | | | RPM | 11720 | 8690 | 7180 | 5670 | 4540 | 3400 |
| | | | | FEED | 870 | 870 | 870 | 830 | 790 | 585 | | | FEED | 870 | 870 | 870 | 830 | 790 | 590 |

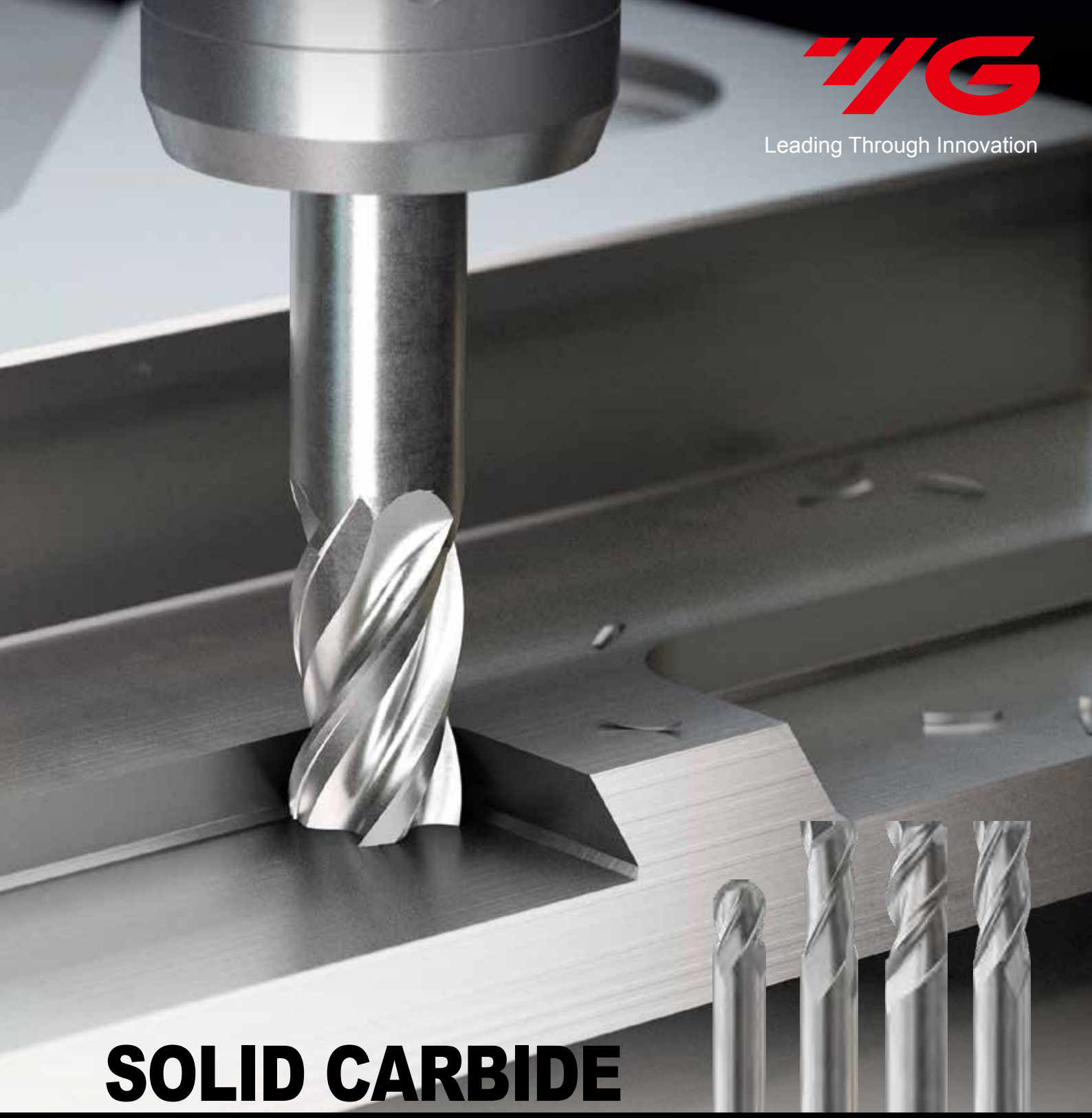
※ The FEED, in long & extra long types, should be reduced by around 50%
对于长型合超长型进给量应该减少约50%



YG

Leading Through Innovation



# SOLID CARBIDE
# GENERAL CARBIDE
# END MILLS

- General Purposes, Non-coated, Any Coating Available
- 适用于普通加工，非涂层及任何涂层都可以提供

# SELECTION GUIDE
## 选用指南

MILLING TOOLS

## SOLID CARBIDE
# GENERAL CARBIDE END MILLS

General Purposes, Non-coated, Any Coating Available

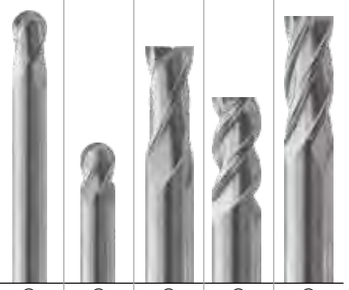
适用于普通加工，非涂层及任何涂层都可以提供

Please visit globalyg1.com/mat for material search

◎ : Excellent (优秀) ○ : Good (良好)

Recommended cutting conditions (推荐加工参数) : p.C512

| | SERIES 系列 | E5414 | E5524 | E5401 | E5423 | E5402 |
|---|---|---|---|---|---|---|
| | FLUTE 槽数 | 2 | 4 | 2 | 3 | 4 |
| | HELIX ANGLE 螺旋角度 | 30° | 30° | 30° | 45° | 30° |
| | CUTTING EDGE SHAPE 类型 | BALL NOSE | BALL NOSE | SQUARE | SQUARE | SQUARE |
| | SIZE MIN 最小尺寸 | R0.2 | R1.0 | D0.4 | D3.0 | D1.5 |
| | SIZE MAX 最大尺寸 | R10.0 | R10.0 | D20.0 | D20.0 | D20.0 |
| | PAGE 页数 | C507 | C508 | C509 | C510 | C511 |
| | | - | SHORT LENGTH | STANDARD | SHORT LENGTH | STANDARD |
| | | Uncoated | Uncoated | Uncoated | Uncoated | Uncoated |



| ISO | VDI 3323 | Material Description 工件材料 | Composition / Structure / Heat Treatment 成分 / 结构 / 热处理 | | HB | HRc | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | About 0.15% C | Annealed | 125 | | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 2 | | About 0.45% C | Annealed | 190 | 13 | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 3 | | About 0.45% C | Quenched & Tempered | 250 | 25 | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 4 | | About 0.75% C | Annealed | 270 | 28 | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 5 | | About 0.75% C | Quenched & Tempered | 300 | 32 | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 6 | Low alloy steel | | Annealed | 180 | 10 | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 7 | | | Quenched & Tempered | 275 | 29 | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 8 | | | Quenched & Tempered | 300 | 32 | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 9 | | | Quenched & Tempered | 350 | 38 | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 10 | High alloyed steel, and tool steel | | Annealed | 200 | 15 | ◎ | ◎ | ◎ | ◎ | ◎ |
| | 11 | | | Quenched & Tempered | 325 | 35 | ◎ | ◎ | ◎ | ◎ | ◎ |
| M | 12 | Stainless steel | Ferritic / Martensitic | Annealed | 200 | 15 | | | ○ | ○ | ○ |
| | 13 | | Martensitic | Quenched & Tempered | 240 | 23 | | | ○ | ○ | ○ |
| | 14 | | Austenitic | | 180 | 10 | | | ○ | ○ | ○ |
| K | 15 | Grey cast iron | Pearlitic / ferritic | | 180 | 10 | ○ | ○ | ○ | ○ | ○ |
| | 16 | | Pearlitic (Martensitic) | | 260 | 26 | ○ | ○ | ○ | ○ | ○ |
| | 17 | Nodular cast iron | Ferritic | | 160 | 3 | ○ | ○ | ○ | ○ | ○ |
| | 18 | | Pearlitic | | 250 | 25 | ○ | ○ | ○ | ○ | ○ |
| | 19 | Malleable cast iron | Ferritic | | 130 | | ○ | ○ | ○ | ○ | ○ |
| | 20 | | Pearlitic | | 230 | 21 | ○ | ○ | ○ | ○ | ○ |
| N | 21 | Aluminum-wrought alloy | Not Curable | | 60 | | ○ | ○ | ○ | ○ | ○ |
| | 22 | | Curable | Hardened | 100 | | ○ | ○ | ○ | ○ | ○ |
| | 23 | Aluminum-cast, alloyed | ≤ 12% Si, Not Curable | | 75 | | ○ | ○ | ○ | ○ | ○ |
| | 24 | | ≤ 12% Si, Curable | Hardened | 90 | | ○ | ○ | ○ | ○ | ○ |
| | 25 | | > 12% Si, Not Curable | | 130 | | ○ | ○ | ○ | ○ | ○ |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | Cutting Alloys, PB>1% | | 110 | | | | ○ | ○ | ○ |
| | 27 | | CuZn, CuSnZn (Brass) | | 90 | | | | ○ | ○ | ○ |
| | 28 | | CuSn, lead-free copper and electrolytic copper | | 100 | | | | ○ | ○ | ○ |
| | 29 | Non Metallic Materials | Duroplastic, Fiber Reinforced Plastic | | | | | | | | |
| | 30 | | Rubber, Wood, etc. | | | | | | | | |
| S | 31 | Heat Resistant Super Alloys | Fe Based | Annealed | 200 | 15 | | | | | |
| | 32 | | | Cured | 280 | 30 | | | | | |
| | 33 | | Ni or Co Based | Annealed | 250 | 25 | | | | | |
| | 34 | | | Cured | 350 | 38 | | | | | |
| | 35 | | | Cast | 320 | 34 | | | | | |
| | 36 | Titanium Alloys | Pure Titanium | | 400 Rm | | | | ○ | | ○ |
| | 37 | | Alpha + Beta Alloys | Hardened | 1050 Rm | | | | ○ | | ○ |
| H | 38 | Hardened steel | | Hardened | 550 | 55 | | | | | |
| | 39 | | | Hardened | 630 | 60 | | | | | |
| | 40 | Chilled Cast Iron | | Cast | 400 | 42 | | | | | |
| | 41 | Hardened Cast Iron | | Hardened | 550 | 55 | | | | | |

BALL NOSE = 球头　SQUARE = 平头　SHORT LENGTH= 短刃　STANDARD = 标准　Uncoated = 非涂层





# GENERAL CARBIDE END MILLS

PLAIN SHANK **E5414** SERIES

## CARBIDE, 2 FLUTE BALL NOSE
## 硬质合金，2刃 球头

▶ The raw materials in micro grain grade has excellent wear resistance as well as great toughness and rigidity which is the same as normal carbide. Designed for cutting hardened & high alloy steels, steel casting, chill casting, malleable cast iron, CrNi-steels, brass, copper, aluminum with a high percentage of silicon and abrasive plastics.

▶ 这种微粒硬质合金具有很好的耐磨性，同时也具有普通硬质合金一样的韧性和刚性，适于切削高硬质合金钢，铸铁，冷铸件，可锻铸铁，铬镍合金，青铜，黄铜，硅含量大的铝和耐磨塑料。

CARBIDE | 2 | 30° | R ±0.02 | PLAIN

p.C512~513

Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK<br>POWER MILLING CHUCK | D15 - 46<br>D161 - 176 |
| ◎ | - | - | SHRINK FIT HOLDER | D47 - 72 |
| ○ | - | - | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Radius of Ball Nose 圆弧角 R (±0.02) | Mill Diameter 直径 | Shank Diameter 柄径 | Length of Cut 刃长 | Overall Length 全长 |
|---|---|---|---|---|---|
| ▲ E5414004 | R0.2 | 0.4 | 3 | 0.8 | 50 |
| ▲ E5414006 | R0.3 | 0.6 | 3 | 1.2 | 50 |
| ▲ E5414008 | R0.4 | 0.8 | 3 | 1.6 | 50 |
| ▲ E5414901 | R0.5 | 1.0 | 6 | 3 | 50 |
| ▲ E5414902 | R1.0 | 2.0 | 6 | 6 | 50 |
| ▲ E5414030 | R1.5 | 3.0 | 6 | 8 | 60 |
| ▲ E5414040 | R2.0 | 4.0 | 6 | 11 | 70 |
| ▲ E5414050 | R2.5 | 5.0 | 6 | 13 | 80 |
| ▲ E5414060 | R3.0 | 6.0 | 6 | 13 | 80 |
| ▲ E5414070 | R3.5 | 7.0 | 8 | 16 | 90 |
| ▲ E5414080 | R4.0 | 8.0 | 8 | 19 | 90 |
| ▲ E5414090 | R4.5 | 9.0 | 10 | 19 | 100 |
| ▲ E5414100 | R5.0 | 10.0 | 10 | 22 | 100 |
| ▲ E5414120 | R6.0 | 12.0 | 12 | 26 | 110 |
| ▲ E5414140 | R7.0 | 14.0 | 14 | 26 | 120 |
| ▲ E5414160 | R8.0 | 16.0 | 16 | 30 | 120 |
| ▲ E5414200 | R10.0 | 20.0 | 20 | 38 | 130 |

▲ : Only available till stock runs out 只提供到消耗现库存

▶ TiCN-COATING & TiAlN-COATING are available on your request.
按客户需求，可以提供TiCN涂层&TiAlN涂层

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.03 | h5 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | | | | | |

# GENERAL CARBIDE END MILLS

FLAT SHANK **E5524** SERIES

## CARBIDE, 4 FLUTE SHORT LENGTH BALL NOSE
## 硬质合金，2刃 短刃 球头

CARBIDE | YG STD | N | 4 | 30° | R ±0.02 | DIN 6535HB | p.C514 ~515

Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK<br>POWER MILLING CHUCK | D15 - 46<br>D161 - 176 |
| ◎ | - | - | SHRINK FIT HOLDER | D47 - 72 |
| ○ | - | - | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | ITEM No. 系列号 | Radius of Ball Nose 圆弧角 R (±0.02) | Mill Diameter 直径 | Shank Diameter 柄径 | Length of Cut 刃长 | Overall Length 全长 |
|---|---|---|---|---|---|---|
| ▲ E5524020 | T4GRB-020AF | R1.0 | **2.0** | 6 | 4 | 48 |
| ▲ E5524030 | T4GRB-030AF | R1.5 | **3.0** | 6 | 4 | 48 |
| ▲ E5524040 | T4GRB-040AF | R2.0 | **4.0** | 6 | 6 | 50 |
| ▲ E5524050 | T4GRB-050AF | R2.5 | **5.0** | 6 | 7 | 51 |
| ▲ E5524080 | T4GRB-080AF | R4.0 | **8.0** | 8 | 9 | 59 |
| ▲ E5524100 | T4GRB-100AF | R5.0 | **10.0** | 10 | 10 | 60 |
| ▲ E5524120 | T4GRB-120AF | R6.0 | **12.0** | 12 | 14 | 71 |
| ▲ E5524160 | T4GRB-160AF | R8.0 | **16.0** | 16 | 16 | 76 |
| ▲ E5524180 | T4GRB-180AF | R9.0 | **18.0** | 18 | 18 | 76 |
| ▲ E5524200 | T4GRB-200AF | R10.0 | **20.0** | 20 | 20 | 82 |

▲ : Only available till stock runs out 只提供到消耗现库存

▶ TiCN-COATING & TiAlN-COATING are available on your request.
按客户需求，可以提供TiCN涂层&TiAlN涂层

**Tolerances according to DIN 7160 & 7161**
按DIN7160&7161的标准公差

| Tolerance range in μm / 公差单位为<br>Nominal-Diameter in mm / 直径单位为 | | | | | |
|---|---|---|---|---|---|
| | from 1 to 3 | over 3 to 6 | over 6 to 10 | over 10 to 18 | over 18 to 30 |
| **h10** | 0<br>- 40 | 0<br>- 48 | 0<br>- 58 | 0<br>- 70 | 0<br>- 84 |
| **h5** | 0<br>- 4 | 0<br>- 5 | 0<br>- 6 | 0<br>- 8 | 0<br>- 9 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | | | | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | | | | | |



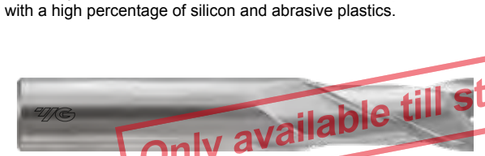
# GENERAL CARBIDE END MILLS

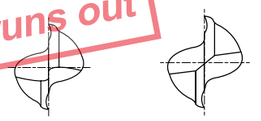
PLAIN SHANK **E5401** SERIES

## CARBIDE, 2 FLUTE STANDARD
## 硬质合金，2刃 标准

▶ The raw materials in micro grain grade has excellent wear resistance as well as great toughness and rigidity which is the same as normal carbide. Designed for cutting hardened & high alloy steels, steel casting, chill casting, malleable cast iron, CrNi-steels, brass, copper, aluminum with a high percentage of silicon and abrasive plastics.

▶ 这种微粒硬质合金具有很好的耐磨性，同时也具有普通硬质合金一样的韧性和刚性，适于切削高硬质合金钢，铸铁，冷铸件，可锻铸铁，铬镍合金，青铜，黄铜，硅含量大的铝和耐磨塑料。




CARBIDE | 2 | 30° | PLAIN | p.C516~517

Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK<br>POWER MILLING CHUCK | D15 - 46<br>D161 - 176 |
| ◎ | - | - | SHRINK FIT HOLDER | D47 - 72 |
| ○ | - | - | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 | Shank Diameter 柄径 | Length of Cut 刃长 | Overall Length 全长 |
|---|---|---|---|---|
| ▲ E5401004 | **0.4** | 3 | 1 | 38 |
| ▲ E5401005 | **0.5** | 3 | 1.5 | 38 |
| ▲ E5401006 | **0.6** | 3 | 1.5 | 38 |
| ▲ E5401008 | **0.8** | 3 | 2 | 38 |
| ▲ E5401010 | **1.0** | 4 | 3 | 40 |
| ▲ E5401915 | **1.5** | 6 | 5 | 40 |
| ▲ E5401015 | **1.5** | 4 | 5 | 40 |
| ▲ E5401020 | **2.0** | 4 | 6 | 40 |
| ▲ E5401920 | **2.0** | 6 | 6 | 40 |
| ▲ E5401030 | **3.0** | 6 | 8 | 45 |
| ▲ E5401040 | **4.0** | 6 | 11 | 45 |
| ▲ E5401050 | **5.0** | 6 | 13 | 50 |
| ▲ E5401060 | **6.0** | 6 | 13 | 50 |
| ▲ E5401080 | **8.0** | 8 | 19 | 60 |
| ▲ E5401090 | **9.0** | 10 | 19 | 70 |
| ▲ E5401100 | **10.0** | 10 | 22 | 70 |
| ▲ E5401110 | **11.0** | 12 | 22 | 75 |
| ▲ E5401120 | **12.0** | 12 | 26 | 75 |
| ▲ E5401160 | **16.0** | 16 | 25 | 75 |
| ▲ E5401180 | **18.0** | 18 | 32 | 100 |
| ▲ E5401200 | **20.0** | 20 | 32 | 100 |

▲ : Only available till stock runs out 只提供到消耗现库存

▶ TiCN-COATING & TiAlN-COATING are available on your request.
按客户需求，可以提供TiCN涂层&TiAlN涂层

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.03 | h5 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | ○ | ○ | | | | |

# GENERAL CARBIDE END MILLS

PLAIN SHANK **E5423** SERIES

## CARBIDE, 3 FLUTE 45°HELIX SHORT LENGTH
## 硬质合金，3刃 45度螺旋 短刃

CARBIDE | YG STD | N | 3 | 45° | DIN 6535HA

p.C518-519

Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK<br>POWER MILLING CHUCK | D15 - 46<br>D161 - 176 |
| ◎ | - | - | SHRINK FIT HOLDER | D47 - 72 |
| ○ | - | - | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | ITEM No.<br>系列号 | Mill Diameter<br>直径 | Shank Diameter<br>柄径 | Length of Cut<br>刃长 | Overall Length<br>全长 |
|---|---|---|---|---|---|
| ▲ E5423030 | T3ERS-030A | 3.0 | 6 | 8 | 45 |
| ▲ E5423040 | T3ERS-040A | 4.0 | 6 | 11 | 45 |
| ▲ E5423050 | T3ERS-050A | 5.0 | 6 | 13 | 50 |
| ▲ E5423060 | T3ERS-060Z | 6.0 | 6 | 13 | 50 |
| ▲ E5423080 | T3ERS-080Z | 8.0 | 8 | 19 | 60 |
| ▲ E5423100 | T3ERS-100Z | 10.0 | 10 | 22 | 70 |
| ▲ E5423120 | T3ERS-120Z | 12.0 | 12 | 26 | 75 |
| ▲ E5423140 | T3ERS-140Z | 14.0 | 14 | 26 | 75 |
| ▲ E5423160 | T3ERS-160Z | 16.0 | 16 | 25 | 75 |
| ▲ E5423200 | T3ERS-200Z | 20.0 | 20 | 32 | 100 |

▲ : Only available till stock runs out 只提供到消耗现库存

▶ TiCN-COATING & TiAlN-COATING are available on your request.
按客户需求，可以提供TiCN涂层&TiAlN涂层

### Tolerances according to DIN 7160 & 7161
按DIN7160&7161的标准公差

| Tolerance range in ㎛ / 公差单位为<br>Nominal-Diameter in mm / 直径单位为 | from 1 to 3 | over 3 to 6 | over 6 to 10 | over 10 to 18 | over 18 to 30 |
|---|---|---|---|---|---|
| h10 | 0<br>- 40 | 0<br>- 48 | 0<br>- 58 | 0<br>- 70 | 0<br>- 84 |
| h5 | 0<br>- 4 | 0<br>- 5 | 0<br>- 6 | 0<br>- 8 | 0<br>- 9 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | Copper and Copper Alloys (Bronze / Brass) | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | | |



# GENERAL CARBIDE END MILLS

PLAIN SHANK **E5402** SERIES

## CARBIDE, 4 FLUTE STANDARD
## 硬质合金，4刃 标准

▶ The raw materials in micro grain grade has excellent wear resistance as well as great toughness and rigidity which is the same as normal carbide. Designed for cutting hardened & high alloy steels, steel casting, chill casting, malleable cast iron, CrNi-steels, brass, copper, aluminum with a high percentage of silicon and abrasive plastics.

▶ 这种微粒硬质合金具有很好的耐磨性，同时也具有普通硬质合金一样的韧性和刚性，适于切削高硬质合金钢，铸铁，冷铸件，可锻铸铁，铬镍合金，青铜，黄铜，硅含量大的铝和耐磨塑料。

CARBIDE | 4 | 30° | PLAIN

p.C520~521

Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | END MILL HOLDER | D118 - 137 | HYDRAULIC CHUCK<br>POWER MILLING CHUCK | D15 - 46<br>D161 - 176 |
| ◎ | - | - | SHRINK FIT HOLDER | D47 - 72 |
| ○ | - | - | ER COLLET CHUCK<br>SK SLIM CHUCK | D73 - 115<br>D183 - 201 |

Unit(单位) : mm

| EDP No. | Mill Diameter<br>直径 | Shank Diameter<br>柄径 | Length of Cut<br>刃长 | Overall Length<br>全长 |
|---|---|---|---|---|
| ▲ E5402015 | 1.5 | 4 | 5 | 40 |
| ▲ E5402020 | 2.0 | 4 | 6 | 40 |
| ▲ E5402025 | 2.5 | 4 | 8 | 40 |
| ▲ E5402030 | 3.0 | 6 | 8 | 45 |
| ▲ E5402035 | 3.5 | 6 | 10 | 45 |
| ▲ E5402040 | 4.0 | 6 | 11 | 45 |
| ▲ E5402045 | 4.5 | 6 | 11 | 45 |
| ▲ E5402050 | 5.0 | 6 | 13 | 50 |
| ▲ E5402055 | 5.5 | 6 | 13 | 50 |
| ▲ E5402060 | 6.0 | 6 | 13 | 50 |
| ▲ E5402080 | 8.0 | 8 | 19 | 60 |
| ▲ E5402090 | 9.0 | 10 | 19 | 70 |
| ▲ E5402100 | 10.0 | 10 | 22 | 70 |
| ▲ E5402110 | 11.0 | 12 | 22 | 75 |
| ▲ E5402120 | 12.0 | 12 | 26 | 75 |
| ▲ E5402140 | 14.0 | 14 | 26 | 75 |
| ▲ E5402160 | 16.0 | 16 | 25 | 75 |
| ▲ E5402180 | 18.0 | 18 | 32 | 100 |
| ▲ E5402200 | 20.0 | 20 | 32 | 100 |

▲ : Only available till stock runs out 只提供到消耗现库存

| Mill Dia.Tolerance (mm)<br>直径公差 | Shank Dia.Tolerance<br>柄径公差 |
|---|---|
| 0 ~ - 0.03 | h5 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| ISO | N | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | Copper and Copper Alloys (Bronze / Brass) | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | | |

# GENERAL CARBIDE END MILLS

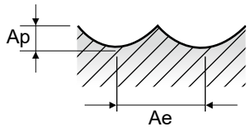
## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

### E5414 SERIES — 2 FLUTE BALL NOSE / 2刃 球头

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description 材料描述 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 2.0 | 3.0 | 4.0 | 5.0 | 6.0 | 8.0 | 10.0 | 12.0 | 14.0 | 16.0 | 18.0 | 20.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1-4 | Non-alloy steel | 0.7D | 0.3D | Vc | 33 | 33 | 33 | 33 | 32 | 32 | 31 | 33 | 33 | 33 | 33 | 31 |
| | | | | | fz | 0.009 | 0.014 | 0.019 | 0.025 | 0.029 | 0.037 | 0.048 | 0.049 | 0.057 | 0.065 | 0.073 | 0.085 |
| | | | | | RPM | 5200 | 3500 | 2600 | 2100 | 1700 | 1270 | 1000 | 870 | 750 | 650 | 580 | 500 |
| | | | | | FEED | 90 | 100 | 100 | 105 | 100 | 95 | 95 | 85 | 85 | 85 | 85 | 85 |
| | 5 | | 0.7D | 0.3D | Vc | 28 | 27 | 26 | 27 | 27 | 28 | 27 | 28 | 27 | 27 | 27 | 27 |
| | | | | | fz | 0.005 | 0.008 | 0.011 | 0.013 | 0.016 | 0.020 | 0.026 | 0.031 | 0.036 | 0.042 | 0.047 | 0.052 |
| | | | | | RPM | 4400 | 2900 | 2100 | 1700 | 1430 | 1100 | 870 | 730 | 620 | 540 | 480 | 430 |
| | | | | | FEED | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 |
| | 6-7 | Low alloy steel | 0.7D | 0.3D | Vc | 33 | 33 | 33 | 33 | 32 | 32 | 31 | 33 | 33 | 33 | 33 | 31 |
| | | | | | fz | 0.009 | 0.014 | 0.019 | 0.025 | 0.029 | 0.037 | 0.048 | 0.049 | 0.057 | 0.065 | 0.073 | 0.085 |
| | | | | | RPM | 5200 | 3500 | 2600 | 2100 | 1700 | 1270 | 1000 | 870 | 750 | 650 | 580 | 500 |
| | | | | | FEED | 90 | 100 | 100 | 105 | 100 | 95 | 95 | 85 | 85 | 85 | 85 | 85 |
| | 8-9 | | 0.7D | 0.3D | Vc | 28 | 27 | 26 | 27 | 27 | 28 | 27 | 28 | 27 | 27 | 27 | 27 |
| | | | | | fz | 0.005 | 0.008 | 0.011 | 0.013 | 0.016 | 0.020 | 0.026 | 0.031 | 0.036 | 0.042 | 0.047 | 0.052 |
| | | | | | RPM | 4400 | 2900 | 2100 | 1700 | 1430 | 1100 | 870 | 730 | 620 | 540 | 480 | 430 |
| | | | | | FEED | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 |
| | 10 | High alloyed steel, and tool steel | 0.7D | 0.3D | Vc | 33 | 33 | 33 | 33 | 32 | 32 | 31 | 33 | 33 | 33 | 33 | 31 |
| | | | | | fz | 0.009 | 0.014 | 0.019 | 0.025 | 0.029 | 0.037 | 0.048 | 0.049 | 0.057 | 0.065 | 0.073 | 0.085 |
| | | | | | RPM | 5200 | 3500 | 2600 | 2100 | 1700 | 1270 | 1000 | 870 | 750 | 650 | 580 | 500 |
| | | | | | FEED | 90 | 100 | 100 | 105 | 100 | 95 | 95 | 85 | 85 | 85 | 85 | 85 |
| | 11.1 | | 0.7D | 0.3D | Vc | 28 | 27 | 26 | 27 | 27 | 28 | 27 | 28 | 27 | 27 | 27 | 27 |
| | | | | | fz | 0.005 | 0.008 | 0.011 | 0.013 | 0.016 | 0.020 | 0.026 | 0.031 | 0.036 | 0.042 | 0.047 | 0.052 |
| | | | | | RPM | 4400 | 2900 | 2100 | 1700 | 1430 | 1100 | 870 | 730 | 620 | 540 | 480 | 430 |
| | | | | | FEED | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 |
| K | 15-20 | Grey cast iron Nodular cast iron Malleable cast iron | 0.7D | 0.3D | Vc | 46 | 46 | 45 | 46 | 45 | 45 | 45 | 45 | 44 | 46 | 46 | 46 |
| | | | | | fz | 0.010 | 0.016 | 0.028 | 0.040 | 0.052 | 0.089 | 0.112 | 0.133 | 0.163 | 0.177 | 0.201 | 0.199 |
| | | | | | RPM | 7300 | 4900 | 3600 | 2900 | 2400 | 1800 | 1430 | 1200 | 1000 | 920 | 810 | 730 |
| | | | | | FEED | 150 | 160 | 200 | 230 | 250 | 320 | 320 | 320 | 325 | 325 | 325 | 290 |
| N | 21~22 | Aluminum-wrought alloy | 0.7D | 0.3D | Vc | 135 | 135 | 137 | 138 | 137 | 138 | 135 | 136 | 132 | 136 | 136 | 132 |
| | | | | | fz | 0.007 | 0.010 | 0.013 | 0.019 | 0.023 | 0.035 | 0.044 | 0.061 | 0.073 | 0.070 | 0.079 | 0.090 |
| | | | | | RPM | 21500 | 14300 | 10900 | 8800 | 7260 | 5500 | 4300 | 3600 | 3000 | 2700 | 2400 | 2100 |
| | | | | | FEED | 280 | 280 | 280 | 330 | 330 | 380 | 380 | 440 | 440 | 380 | 380 | 380 |
| | 23~25 | Aluminum-cast, alloyed | 0.7D | 0.3D | Vc | 135 | 135 | 137 | 138 | 137 | 138 | 135 | 136 | 132 | 136 | 136 | 132 |
| | | | | | fz | 0.007 | 0.010 | 0.013 | 0.019 | 0.023 | 0.035 | 0.044 | 0.061 | 0.073 | 0.070 | 0.079 | 0.090 |
| | | | | | RPM | 21500 | 14300 | 10900 | 8800 | 7260 | 5500 | 4300 | 3600 | 3000 | 2700 | 2400 | 2100 |
| | | | | | FEED | 280 | 280 | 280 | 330 | 330 | 380 | 380 | 440 | 440 | 380 | 380 | 380 |

※ The FEED, in long & extra long types, should be reduced by around 50%
长刃，加长刃类型需要减少约50%进给







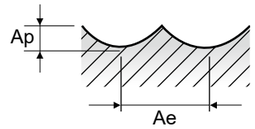

# GENERAL CARBIDE END MILLS

### E5414 SERIES — 2 FLUTE BALL NOSE (TiAlN-COATED) / 2刃 球头 (TiAlN 涂层)

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description 材料描述 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 2.0 | 3.0 | 4.0 | 5.0 | 6.0 | 8.0 | 10.0 | 12.0 | 14.0 | 16.0 | 18.0 | 20.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1-4 | Non-alloy steel | 0.7D | 0.3D | Vc | 46 | 46 | 46 | 46 | 45 | 45 | 44 | 46 | 46 | 46 | 46 | 44 |
| | | | | | fz | 0.009 | 0.014 | 0.019 | 0.025 | 0.029 | 0.038 | 0.048 | 0.049 | 0.057 | 0.066 | 0.074 | 0.086 |
| | | | | | RPM | 7280 | 4900 | 3640 | 2940 | 2380 | 1780 | 1400 | 1220 | 1050 | 910 | 810 | 700 |
| | | | | | FEED | 125 | 140 | 140 | 145 | 140 | 135 | 135 | 120 | 120 | 120 | 120 | 120 |
| | 5 | | 0.7D | 0.3D | Vc | 39 | 38 | 37 | 37 | 38 | 39 | 38 | 38 | 38 | 38 | 38 | 38 |
| | | | | | fz | 0.005 | 0.008 | 0.011 | 0.014 | 0.016 | 0.021 | 0.027 | 0.032 | 0.037 | 0.043 | 0.049 | 0.054 |
| | | | | | RPM | 6160 | 4060 | 2940 | 2380 | 2000 | 1540 | 1220 | 1020 | 870 | 755 | 670 | 600 |
| | | | | | FEED | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 |
| | 6-7 | Low alloy steel | 0.7D | 0.3D | Vc | 46 | 46 | 46 | 46 | 45 | 45 | 44 | 46 | 46 | 46 | 46 | 44 |
| | | | | | fz | 0.009 | 0.014 | 0.019 | 0.025 | 0.029 | 0.038 | 0.048 | 0.049 | 0.057 | 0.066 | 0.074 | 0.086 |
| | | | | | RPM | 7280 | 4900 | 3640 | 2940 | 2380 | 1780 | 1400 | 1220 | 1050 | 910 | 810 | 700 |
| | | | | | FEED | 125 | 140 | 140 | 145 | 140 | 135 | 135 | 120 | 120 | 120 | 120 | 120 |
| | 8-9 | | 0.7D | 0.3D | Vc | 39 | 38 | 37 | 37 | 38 | 39 | 38 | 38 | 38 | 38 | 38 | 38 |
| | | | | | fz | 0.005 | 0.008 | 0.011 | 0.014 | 0.016 | 0.021 | 0.027 | 0.032 | 0.037 | 0.043 | 0.049 | 0.054 |
| | | | | | RPM | 6160 | 4060 | 2940 | 2380 | 2000 | 1540 | 1220 | 1020 | 870 | 755 | 670 | 600 |
| | | | | | FEED | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 |
| | 10 | High alloyed steel, and tool steel | 0.7D | 0.3D | Vc | 46 | 46 | 46 | 46 | 45 | 45 | 44 | 46 | 46 | 46 | 46 | 44 |
| | | | | | fz | 0.009 | 0.014 | 0.019 | 0.025 | 0.029 | 0.038 | 0.048 | 0.049 | 0.057 | 0.066 | 0.074 | 0.086 |
| | | | | | RPM | 7280 | 4900 | 3640 | 2940 | 2380 | 1780 | 1400 | 1220 | 1050 | 910 | 810 | 700 |
| | | | | | FEED | 125 | 140 | 140 | 145 | 140 | 135 | 135 | 120 | 120 | 120 | 120 | 120 |
| | 11.1 | | 0.7D | 0.3D | Vc | 39 | 38 | 37 | 37 | 38 | 39 | 38 | 38 | 38 | 38 | 38 | 38 |
| | | | | | fz | 0.005 | 0.008 | 0.011 | 0.014 | 0.016 | 0.021 | 0.027 | 0.032 | 0.037 | 0.043 | 0.049 | 0.054 |
| | | | | | RPM | 6160 | 4060 | 2940 | 2380 | 2000 | 1540 | 1220 | 1020 | 870 | 755 | 670 | 600 |
| | | | | | FEED | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 |
| K | 15-20 | Grey cast iron Nodular cast iron Malleable cast iron | 0.7D | 0.3D | Vc | 64 | 65 | 63 | 64 | 63 | 63 | 63 | 63 | 62 | 65 | 64 | 64 |
| | | | | | fz | 0.010 | 0.016 | 0.028 | 0.039 | 0.052 | 0.089 | 0.113 | 0.134 | 0.163 | 0.176 | 0.200 | 0.199 |
| | | | | | RPM | 10220 | 6860 | 5040 | 4060 | 3360 | 2520 | 2000 | 1680 | 1400 | 1290 | 1135 | 1020 |
| | | | | | FEED | 210 | 225 | 280 | 320 | 350 | 450 | 450 | 450 | 455 | 455 | 455 | 405 |
| N | 21~22 | Aluminum-wrought alloy | 0.7D | 0.3D | Vc | 189 | 189 | 192 | 194 | 192 | 194 | 189 | 190 | 185 | 190 | 190 | 185 |
| | | | | | fz | 0.006 | 0.010 | 0.013 | 0.019 | 0.023 | 0.034 | 0.044 | 0.061 | 0.073 | 0.070 | 0.079 | 0.090 |
| | | | | | RPM | 30100 | 20020 | 15260 | 12320 | 10165 | 7700 | 6020 | 5040 | 4200 | 3780 | 3360 | 2940 |
| | | | | | FEED | 390 | 390 | 390 | 460 | 460 | 530 | 530 | 615 | 615 | 530 | 530 | 530 |
| | 23~25 | Aluminum-cast, alloyed | 0.7D | 0.3D | Vc | 189 | 189 | 192 | 194 | 192 | 194 | 189 | 190 | 185 | 190 | 190 | 185 |
| | | | | | fz | 0.006 | 0.010 | 0.013 | 0.019 | 0.023 | 0.034 | 0.044 | 0.061 | 0.073 | 0.070 | 0.079 | 0.090 |
| | | | | | RPM | 30100 | 20020 | 15260 | 12320 | 10165 | 7700 | 6020 | 5040 | 4200 | 3780 | 3360 | 2940 |
| | | | | | FEED | 390 | 390 | 390 | 460 | 460 | 530 | 530 | 615 | 615 | 530 | 530 | 530 |

※ The FEED, in long & extra long types, should be reduced by around 50%
长刃，加长刃类型需要减少约50%进给



# GENERAL CARBIDE END MILLS

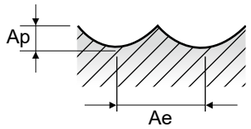
## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

### E5524 SERIES — 4 FLUTE BALL NOSE / 4刃 球头

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description 材料描述 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 2.0 | 3.0 | 4.0 | 5.0 | 6.0 | 8.0 | 10.0 | 12.0 | 14.0 | 16.0 | 18.0 | 20.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1-4 | Non-alloy steel | 0.7D | 0.3D | Vc | 33 | 33 | 33 | 33 | 32 | 32 | 31 | 33 | 33 | 33 | 33 | 31 |
| | | | | | fz | 0.007 | 0.011 | 0.014 | 0.019 | 0.022 | 0.028 | 0.035 | 0.037 | 0.043 | 0.05 | 0.056 | 0.065 |
| | | | | | RPM | 5200 | 3500 | 2600 | 2100 | 1700 | 1270 | 1000 | 870 | 750 | 650 | 580 | 500 |
| | | | | | FEED | 140 | 150 | 150 | 160 | 150 | 140 | 140 | 130 | 130 | 130 | 130 | 130 |
| | 5 | | 0.7D | 0.3D | Vc | 28 | 27 | 26 | 27 | 27 | 28 | 27 | 28 | 27 | 27 | 27 | 27 |
| | | | | | fz | 0.004 | 0.006 | 0.008 | 0.01 | 0.012 | 0.016 | 0.02 | 0.024 | 0.028 | 0.032 | 0.036 | 0.041 |
| | | | | | RPM | 4400 | 2900 | 2100 | 1700 | 1430 | 1100 | 870 | 730 | 620 | 540 | 480 | 430 |
| | | | | | FEED | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 |
| | 6-7 | Low alloy steel | 0.7D | 0.3D | Vc | 33 | 33 | 33 | 33 | 32 | 32 | 31 | 33 | 33 | 33 | 33 | 31 |
| | | | | | fz | 0.007 | 0.011 | 0.014 | 0.019 | 0.022 | 0.028 | 0.035 | 0.037 | 0.043 | 0.05 | 0.056 | 0.065 |
| | | | | | RPM | 5200 | 3500 | 2600 | 2100 | 1700 | 1270 | 1000 | 870 | 750 | 650 | 580 | 500 |
| | | | | | FEED | 140 | 150 | 150 | 160 | 150 | 140 | 140 | 130 | 130 | 130 | 130 | 130 |
| | 8-9 | | 0.7D | 0.3D | Vc | 28 | 27 | 26 | 27 | 27 | 28 | 27 | 28 | 27 | 27 | 27 | 27 |
| | | | | | fz | 0.004 | 0.006 | 0.008 | 0.01 | 0.012 | 0.016 | 0.02 | 0.024 | 0.028 | 0.032 | 0.036 | 0.041 |
| | | | | | RPM | 4400 | 2900 | 2100 | 1700 | 1430 | 1100 | 870 | 730 | 620 | 540 | 480 | 430 |
| | | | | | FEED | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 |
| | 10 | High alloyed steel, and tool steel | 0.7D | 0.3D | Vc | 33 | 33 | 33 | 33 | 32 | 32 | 31 | 33 | 33 | 33 | 33 | 31 |
| | | | | | fz | 0.007 | 0.011 | 0.014 | 0.019 | 0.022 | 0.028 | 0.035 | 0.037 | 0.043 | 0.05 | 0.056 | 0.065 |
| | | | | | RPM | 5200 | 3500 | 2600 | 2100 | 1700 | 1270 | 1000 | 870 | 750 | 650 | 580 | 500 |
| | | | | | FEED | 140 | 150 | 150 | 160 | 150 | 140 | 140 | 130 | 130 | 130 | 130 | 130 |
| | 11.1 | | 0.7D | 0.3D | Vc | 28 | 27 | 26 | 27 | 27 | 28 | 27 | 28 | 27 | 27 | 27 | 27 |
| | | | | | fz | 0.004 | 0.006 | 0.008 | 0.01 | 0.012 | 0.016 | 0.02 | 0.024 | 0.028 | 0.032 | 0.036 | 0.041 |
| | | | | | RPM | 4400 | 2900 | 2100 | 1700 | 1430 | 1100 | 870 | 730 | 620 | 540 | 480 | 430 |
| | | | | | FEED | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 |
| K | 15-20 | Grey cast iron Nodular cast iron Malleable cast iron | 0.7D | 0.3D | Vc | 46 | 46 | 45 | 46 | 45 | 45 | 45 | 45 | 44 | 46 | 46 | 46 |
| | | | | | fz | 0.008 | 0.012 | 0.021 | 0.03 | 0.04 | 0.067 | 0.084 | 0.1 | 0.123 | 0.133 | 0.151 | 0.151 |
| | | | | | RPM | 7300 | 4900 | 3600 | 2900 | 2400 | 1800 | 1430 | 1200 | 1000 | 920 | 810 | 730 |
| | | | | | FEED | 230 | 240 | 300 | 350 | 380 | 480 | 480 | 480 | 490 | 490 | 490 | 440 |
| N | 21~22 | Aluminum-wrought alloy | 0.7D | 0.3D | Vc | 135 | 135 | 137 | 138 | 137 | 138 | 135 | 136 | 132 | 136 | 136 | 132 |
| | | | | | fz | 0.005 | 0.007 | 0.01 | 0.014 | 0.017 | 0.026 | 0.033 | 0.046 | 0.055 | 0.053 | 0.059 | 0.068 |
| | | | | | RPM | 21500 | 14300 | 10900 | 8800 | 7260 | 5500 | 4300 | 3600 | 3000 | 2700 | 2400 | 2100 |
| | | | | | FEED | 420 | 420 | 420 | 500 | 500 | 570 | 570 | 660 | 660 | 570 | 570 | 570 |
| | 23~25 | Aluminum-cast, alloyed | 0.7D | 0.3D | Vc | 135 | 135 | 137 | 138 | 137 | 138 | 135 | 136 | 132 | 136 | 136 | 132 |
| | | | | | fz | 0.005 | 0.007 | 0.01 | 0.014 | 0.017 | 0.026 | 0.033 | 0.046 | 0.055 | 0.053 | 0.059 | 0.068 |
| | | | | | RPM | 21500 | 14300 | 10900 | 8800 | 7260 | 5500 | 4300 | 3600 | 3000 | 2700 | 2400 | 2100 |
| | | | | | FEED | 420 | 420 | 420 | 500 | 500 | 570 | 570 | 660 | 660 | 570 | 570 | 570 |

※ The FEED, in long & extra long types, should be reduced by around 50%
长刃，加长刃类型需要减少约50%进给





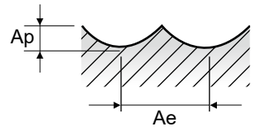

GENERAL CARBIDE END MILLS

### E5524 SERIES — 4 FLUTE BALL NOSE (TiAlN-COATED) / 4刃 球头 (TiAlN 涂层)

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description 材料描述 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 2.0 | 3.0 | 4.0 | 5.0 | 6.0 | 8.0 | 10.0 | 12.0 | 14.0 | 16.0 | 18.0 | 20.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1-4 | Non-alloy steel | 0.7D | 0.3D | Vc | 46 | 46 | 46 | 46 | 45 | 45 | 44 | 46 | 46 | 46 | 46 | 44 |
| | | | | | fz | 0.007 | 0.011 | 0.014 | 0.019 | 0.022 | 0.027 | 0.035 | 0.037 | 0.043 | 0.049 | 0.056 | 0.064 |
| | | | | | RPM | 7280 | 4900 | 3640 | 2940 | 2380 | 1780 | 1400 | 1220 | 1050 | 910 | 810 | 700 |
| | | | | | FEED | 195 | 210 | 210 | 225 | 210 | 195 | 195 | 180 | 180 | 180 | 180 | 180 |
| | 5 | | 0.7D | 0.3D | Vc | 39 | 38 | 37 | 37 | 38 | 39 | 38 | 38 | 38 | 38 | 38 | 38 |
| | | | | | fz | 0.004 | 0.006 | 0.009 | 0.011 | 0.013 | 0.016 | 0.02 | 0.025 | 0.029 | 0.033 | 0.037 | 0.042 |
| | | | | | RPM | 6160 | 4060 | 2940 | 2380 | 2000 | 1540 | 1220 | 1020 | 870 | 755 | 670 | 600 |
| | | | | | FEED | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| | 6-7 | Low alloy steel | 0.7D | 0.3D | Vc | 46 | 46 | 46 | 46 | 45 | 45 | 44 | 46 | 46 | 46 | 46 | 44 |
| | | | | | fz | 0.007 | 0.011 | 0.014 | 0.019 | 0.022 | 0.027 | 0.035 | 0.037 | 0.043 | 0.049 | 0.056 | 0.064 |
| | | | | | RPM | 7280 | 4900 | 3640 | 2940 | 2380 | 1780 | 1400 | 1220 | 1050 | 910 | 810 | 700 |
| | | | | | FEED | 195 | 210 | 210 | 225 | 210 | 195 | 195 | 180 | 180 | 180 | 180 | 180 |
| | 8-9 | | 0.7D | 0.3D | Vc | 39 | 38 | 37 | 37 | 38 | 39 | 38 | 38 | 38 | 38 | 38 | 38 |
| | | | | | fz | 0.004 | 0.006 | 0.009 | 0.011 | 0.013 | 0.016 | 0.02 | 0.025 | 0.029 | 0.033 | 0.037 | 0.042 |
| | | | | | RPM | 6160 | 4060 | 2940 | 2380 | 2000 | 1540 | 1220 | 1020 | 870 | 755 | 670 | 600 |
| | | | | | FEED | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| | 10 | High alloyed steel, and tool steel | 0.7D | 0.3D | Vc | 46 | 46 | 46 | 46 | 45 | 45 | 44 | 46 | 46 | 46 | 46 | 44 |
| | | | | | fz | 0.007 | 0.011 | 0.014 | 0.019 | 0.022 | 0.027 | 0.035 | 0.037 | 0.043 | 0.049 | 0.056 | 0.064 |
| | | | | | RPM | 7280 | 4900 | 3640 | 2940 | 2380 | 1780 | 1400 | 1220 | 1050 | 910 | 810 | 700 |
| | | | | | FEED | 195 | 210 | 210 | 225 | 210 | 195 | 195 | 180 | 180 | 180 | 180 | 180 |
| | 11.1 | | 0.7D | 0.3D | Vc | 39 | 38 | 37 | 37 | 38 | 39 | 38 | 38 | 38 | 38 | 38 | 38 |
| | | | | | fz | 0.004 | 0.006 | 0.009 | 0.011 | 0.013 | 0.016 | 0.02 | 0.025 | 0.029 | 0.033 | 0.037 | 0.042 |
| | | | | | RPM | 6160 | 4060 | 2940 | 2380 | 2000 | 1540 | 1220 | 1020 | 870 | 755 | 670 | 600 |
| | | | | | FEED | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| K | 15-20 | Grey cast iron Nodular cast iron Malleable cast iron | 0.7D | 0.3D | Vc | 64 | 65 | 63 | 64 | 63 | 63 | 63 | 63 | 62 | 65 | 64 | 64 |
| | | | | | fz | 0.008 | 0.012 | 0.021 | 0.03 | 0.039 | 0.066 | 0.084 | 0.1 | 0.122 | 0.133 | 0.151 | 0.151 |
| | | | | | RPM | 10220 | 6860 | 5040 | 4060 | 3360 | 2520 | 2000 | 1680 | 1400 | 1290 | 1135 | 1020 |
| | | | | | FEED | 320 | 335 | 420 | 490 | 530 | 670 | 670 | 670 | 685 | 685 | 685 | 615 |
| N | 21~22 | Aluminum-wrought alloy | 0.7D | 0.3D | Vc | 189 | 189 | 192 | 194 | 192 | 194 | 189 | 190 | 185 | 190 | 190 | 185 |
| | | | | | fz | 0.005 | 0.007 | 0.01 | 0.014 | 0.017 | 0.026 | 0.033 | 0.046 | 0.055 | 0.053 | 0.06 | 0.068 |
| | | | | | RPM | 30100 | 20020 | 15260 | 12320 | 10165 | 7700 | 6020 | 5040 | 4200 | 3780 | 3360 | 2940 |
| | | | | | FEED | 590 | 590 | 590 | 700 | 700 | 800 | 800 | 925 | 925 | 800 | 800 | 800 |
| | 23~25 | Aluminum-cast, alloyed | 0.7D | 0.3D | Vc | 189 | 189 | 192 | 194 | 192 | 194 | 189 | 190 | 185 | 190 | 190 | 185 |
| | | | | | fz | 0.005 | 0.007 | 0.01 | 0.014 | 0.017 | 0.026 | 0.033 | 0.046 | 0.055 | 0.053 | 0.06 | 0.068 |
| | | | | | RPM | 30100 | 20020 | 15260 | 12320 | 10165 | 7700 | 6020 | 5040 | 4200 | 3780 | 3360 | 2940 |
| | | | | | FEED | 590 | 590 | 590 | 700 | 700 | 800 | 800 | 925 | 925 | 800 | 800 | 800 |

※ The FEED, in long & extra long types, should be reduced by around 50%
长刃，加长刃类型需要减少约50%进给



# GENERAL CARBIDE END MILLS

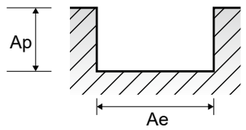
## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

**E5401 SERIES** — **2 FLUTE - SLOTTING**
**2刃 - 槽铣削**

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description 材料描述 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 2.0 | 3.0 | 4.0 | 5.0 | 6.0 | 8.0 | 10.0 | 12.0 | 14.0 | 16.0 | 20.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1-2 | Non-alloy steel | 1.0D | 1.0D | Vc | 35 | 35 | 35 | 35 | 34 | 35 | 35 | 34 | 35 | 35 | 35 |
| | | | | | fz | 0.007 | 0.012 | 0.016 | 0.020 | 0.025 | 0.032 | 0.041 | 0.050 | 0.056 | 0.071 | 0.091 |
| | | | | | RPM | 5500 | 3700 | 2800 | 2200 | 1800 | 1400 | 1100 | 900 | 800 | 700 | 550 |
| | | | | | FEED | 80 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 100 | 100 |
| | 3-4 | | 1.0D | 1.0D | Vc | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 31 | 30 | 30 |
| | | | | | fz | 0.007 | 0.013 | 0.017 | 0.021 | 0.025 | 0.033 | 0.042 | 0.050 | 0.057 | 0.071 | 0.089 |
| | | | | | RPM | 4800 | 3200 | 2400 | 1900 | 1600 | 1200 | 950 | 800 | 700 | 600 | 480 |
| | | | | | FEED | 70 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 85 | 85 |
| | 5 | | 1.0D | 1.0D | Vc | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 |
| | | | | | fz | 0.007 | 0.012 | 0.015 | 0.019 | 0.023 | 0.030 | 0.038 | 0.045 | 0.053 | 0.075 | 0.094 |
| | | | | | RPM | 4000 | 2600 | 2000 | 1600 | 1300 | 1000 | 800 | 660 | 570 | 500 | 400 |
| | | | | | FEED | 55 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 75 | 75 |
| | 6 | Low alloy steel | 1.0D | 1.0D | Vc | 35 | 35 | 35 | 35 | 34 | 35 | 35 | 34 | 35 | 35 | 35 |
| | | | | | fz | 0.007 | 0.012 | 0.016 | 0.020 | 0.025 | 0.032 | 0.041 | 0.050 | 0.056 | 0.071 | 0.091 |
| | | | | | RPM | 5500 | 3700 | 2800 | 2200 | 1800 | 1400 | 1100 | 900 | 800 | 700 | 550 |
| | | | | | FEED | 80 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 100 | 100 |
| | 7 | | 1.0D | 1.0D | Vc | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 31 | 30 | 30 |
| | | | | | fz | 0.007 | 0.013 | 0.017 | 0.021 | 0.025 | 0.033 | 0.042 | 0.050 | 0.057 | 0.071 | 0.089 |
| | | | | | RPM | 4800 | 3200 | 2400 | 1900 | 1600 | 1200 | 950 | 800 | 700 | 600 | 480 |
| | | | | | FEED | 70 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 85 | 85 |
| | 8-9 | | 1.0D | 1.0D | Vc | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 |
| | | | | | fz | 0.007 | 0.012 | 0.015 | 0.019 | 0.023 | 0.030 | 0.038 | 0.045 | 0.053 | 0.075 | 0.094 |
| | | | | | RPM | 4000 | 2600 | 2000 | 1600 | 1300 | 1000 | 800 | 660 | 570 | 500 | 400 |
| | | | | | FEED | 55 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 75 | 75 |
| | 10 | High alloyed steel, and tool steel | 1.0D | 1.0D | Vc | 35 | 35 | 35 | 35 | 34 | 35 | 35 | 34 | 35 | 35 | 35 |
| | | | | | fz | 0.007 | 0.012 | 0.016 | 0.020 | 0.025 | 0.032 | 0.041 | 0.050 | 0.056 | 0.071 | 0.091 |
| | | | | | RPM | 5500 | 3700 | 2800 | 2200 | 1800 | 1400 | 1100 | 900 | 800 | 700 | 550 |
| | | | | | FEED | 80 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 100 | 100 |
| | 11.1 | | 1.0D | 1.0D | Vc | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 |
| | | | | | fz | 0.007 | 0.012 | 0.015 | 0.019 | 0.023 | 0.030 | 0.038 | 0.045 | 0.053 | 0.075 | 0.094 |
| | | | | | RPM | 4000 | 2600 | 2000 | 1600 | 1300 | 1000 | 800 | 660 | 570 | 500 | 400 |
| | | | | | FEED | 55 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 75 | 75 |
| M | 14.1 | Stainless steel | 1.0D | 1.0D | Vc | 50 | 50 | 50 | 50 | 49 | 50 | 50 | 49 | 48 | 50 | 50 |
| | | | | | fz | 0.004 | 0.006 | 0.008 | 0.010 | 0.013 | 0.016 | 0.020 | 0.025 | 0.030 | 0.038 | 0.050 |
| | | | | | RPM | 8000 | 5300 | 4000 | 3200 | 2600 | 2000 | 1600 | 1300 | 1100 | 1000 | 800 |
| | | | | | FEED | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 75 | 80 |
| K | 15-20 | Grey cast iron Nodular cast iron Malleable cast iron | 1.0D | 1.0D | Vc | 41 | 40 | 40 | 39 | 40 | 40 | 41 | 38 | 40 | 40 | 40 |
| | | | | | fz | 0.012 | 0.018 | 0.023 | 0.03 | 0.043 | 0.059 | 0.077 | 0.105 | 0.122 | 0.141 | 0.188 |
| | | | | | RPM | 6500 | 4200 | 3200 | 2500 | 2100 | 1600 | 1300 | 1000 | 900 | 800 | 640 |
| | | | | | FEED | 150 | 150 | 150 | 150 | 180 | 190 | 200 | 210 | 220 | 225 | 240 |
| N | 21~22 | Aluminum-wrought alloy | 1.0D | 1.0D | Vc | 101 | 104 | 101 | 101 | 100 | 101 | 101 | 98 | 101 | 101 | 101 |
| | | | | | fz | 0.010 | 0.015 | 0.020 | 0.025 | 0.032 | 0.043 | 0.053 | 0.065 | 0.074 | 0.085 | 0.106 |
| | | | | | RPM | 16000 | 11000 | 8000 | 6400 | 5300 | 4000 | 3200 | 2600 | 2300 | 2000 | 1600 |
| | | | | | FEED | 320 | 320 | 320 | 320 | 340 | 340 | 340 | 340 | 340 | 340 | 340 |
| | 23~25 | Aluminum-cast, alloyed | 1.0D | 1.0D | Vc | 101 | 104 | 101 | 101 | 100 | 101 | 101 | 98 | 101 | 101 | 101 |
| | | | | | fz | 0.010 | 0.015 | 0.020 | 0.025 | 0.032 | 0.043 | 0.053 | 0.065 | 0.074 | 0.085 | 0.106 |
| | | | | | RPM | 16000 | 11000 | 8000 | 6400 | 5300 | 4000 | 3200 | 2600 | 2300 | 2000 | 1600 |
| | | | | | FEED | 320 | 320 | 320 | 320 | 340 | 340 | 340 | 340 | 340 | 340 | 340 |
| | 26~28 | Copper and Copper Alloys (Bronze / Brass) | 1.0D | 1.0D | Vc | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 |
| | | | | | fz | 0.010 | 0.015 | 0.020 | 0.025 | 0.0325 | 0.0433 | 0.0542 | 0.065 | 0.0765 | 0.0867 | 0.1083 |
| | | | | | RPM | 12000 | 8000 | 6000 | 4800 | 4000 | 3000 | 2400 | 2000 | 1700 | 1500 | 1200 |
| | | | | | FEED | 240 | 240 | 240 | 240 | 260 | 260 | 260 | 260 | 260 | 260 | 260 |
| S | 36-37 | Titanium Alloys | 1.0D | 1.0D | Vc | 50 | 50 | 50 | 50 | 49 | 50 | 50 | 49 | 48 | 50 | 50 |
| | | | | | fz | 0.004 | 0.006 | 0.008 | 0.01 | 0.013 | 0.016 | 0.02 | 0.025 | 0.03 | 0.038 | 0.05 |
| | | | | | RPM | 8000 | 5300 | 4000 | 3200 | 2600 | 2000 | 1600 | 1300 | 1100 | 1000 | 800 |
| | | | | | FEED | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 75 | 80 |

※ The FEED, in long & extra long types, should be reduced by around 50%
长刃，加长刃类型需要减少约50%进给





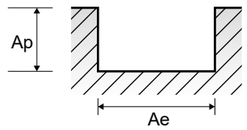

GENERAL CARBIDE END MILLS

**E5401 SERIES** — **2 FLUTE (TiAlN-COATED) - SLOTTING**
**2刃 (TiAlN 涂层) - 槽铣削**

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description 材料描述 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 2.0 | 3.0 | 4.0 | 5.0 | 6.0 | 8.0 | 10.0 | 12.0 | 14.0 | 16.0 | 20.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1-2 | Non-alloy steel | 1.0D | 1.0D | Vc | 48 | 49 | 49 | 48 | 48 | 49 | 48 | 48 | 49 | 49 | 48 |
| | | | | | fz | 0.007 | 0.012 | 0.016 | 0.02 | 0.025 | 0.032 | 0.041 | 0.05 | 0.056 | 0.071 | 0.091 |
| | | | | | RPM | 7700 | 5180 | 3920 | 3080 | 2520 | 1960 | 1540 | 1260 | 1120 | 980 | 770 |
| | | | | | FEED | 110 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 140 | 140 |
| | 3-4 | | 1.0D | 1.0D | Vc | 42 | 42 | 42 | 42 | 42 | 42 | 42 | 42 | 43 | 42 | 42 |
| | | | | | fz | 0.007 | 0.012 | 0.016 | 0.021 | 0.025 | 0.033 | 0.041 | 0.049 | 0.056 | 0.071 | 0.089 |
| | | | | | RPM | 6720 | 4480 | 3360 | 2660 | 2240 | 1680 | 1330 | 1120 | 980 | 840 | 672 |
| | | | | | FEED | 100 | 110 | 110 | 110 | 110 | 110 | 110 | 110 | 110 | 120 | 120 |
| | 5 | | 1.0D | 1.0D | Vc | 35 | 34 | 35 | 35 | 34 | 35 | 35 | 35 | 35 | 35 | 35 |
| | | | | | fz | 0.007 | 0.012 | 0.015 | 0.019 | 0.023 | 0.03 | 0.038 | 0.046 | 0.053 | 0.075 | 0.094 |
| | | | | | RPM | 5600 | 3640 | 2800 | 2240 | 1820 | 1400 | 1120 | 924 | 798 | 700 | 560 |
| | | | | | FEED | 75 | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 105 | 105 |
| | 6 | Low alloy steel | 1.0D | 1.0D | Vc | 48 | 49 | 49 | 48 | 48 | 49 | 48 | 48 | 49 | 49 | 48 |
| | | | | | fz | 0.007 | 0.012 | 0.016 | 0.02 | 0.025 | 0.032 | 0.041 | 0.05 | 0.056 | 0.071 | 0.091 |
| | | | | | RPM | 7700 | 5180 | 3920 | 3080 | 2520 | 1960 | 1540 | 1260 | 1120 | 980 | 770 |
| | | | | | FEED | 110 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 140 | 140 |
| | 7 | | 1.0D | 1.0D | Vc | 42 | 42 | 42 | 42 | 42 | 42 | 42 | 42 | 43 | 42 | 42 |
| | | | | | fz | 0.007 | 0.012 | 0.016 | 0.021 | 0.025 | 0.033 | 0.041 | 0.049 | 0.056 | 0.071 | 0.089 |
| | | | | | RPM | 6720 | 4480 | 3360 | 2660 | 2240 | 1680 | 1330 | 1120 | 980 | 840 | 672 |
| | | | | | FEED | 100 | 110 | 110 | 110 | 110 | 110 | 110 | 110 | 110 | 120 | 120 |
| | 8-9 | | 1.0D | 1.0D | Vc | 35 | 34 | 35 | 35 | 34 | 35 | 35 | 35 | 35 | 35 | 35 |
| | | | | | fz | 0.007 | 0.012 | 0.015 | 0.019 | 0.023 | 0.03 | 0.038 | 0.046 | 0.053 | 0.075 | 0.094 |
| | | | | | RPM | 5600 | 3640 | 2800 | 2240 | 1820 | 1400 | 1120 | 924 | 798 | 700 | 560 |
| | | | | | FEED | 75 | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 105 | 105 |
| | 10 | High alloyed steel, and tool steel | 1.0D | 1.0D | Vc | 48 | 49 | 49 | 48 | 48 | 49 | 48 | 48 | 49 | 49 | 48 |
| | | | | | fz | 0.007 | 0.012 | 0.016 | 0.02 | 0.025 | 0.032 | 0.041 | 0.05 | 0.056 | 0.071 | 0.091 |
| | | | | | RPM | 7700 | 5180 | 3920 | 3080 | 2520 | 1960 | 1540 | 1260 | 1120 | 980 | 770 |
| | | | | | FEED | 110 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 140 | 140 |
| | 11.1 | | 1.0D | 1.0D | Vc | 35 | 34 | 35 | 35 | 34 | 35 | 35 | 35 | 35 | 35 | 35 |
| | | | | | fz | 0.007 | 0.012 | 0.015 | 0.019 | 0.023 | 0.03 | 0.038 | 0.046 | 0.053 | 0.075 | 0.094 |
| | | | | | RPM | 5600 | 3640 | 2800 | 2240 | 1820 | 1400 | 1120 | 924 | 798 | 700 | 560 |
| | | | | | FEED | 75 | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 105 | 105 |
| M | 14.1 | Stainless steel | 1.0D | 1.0D | Vc | 70 | 70 | 70 | 70 | 69 | 70 | 70 | 69 | 68 | 70 | 70 |
| | | | | | fz | 0.004 | 0.006 | 0.008 | 0.01 | 0.012 | 0.016 | 0.02 | 0.025 | 0.029 | 0.038 | 0.049 |
| | | | | | RPM | 11200 | 7420 | 5600 | 4480 | 3640 | 2800 | 2240 | 1820 | 1540 | 1400 | 1120 |
| | | | | | FEED | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 105 | 110 |
| K | 15-20 | Grey cast iron Nodular cast iron Malleable cast iron | 1.0D | 1.0D | Vc | 57 | 55 | 56 | 55 | 55 | 56 | 57 | 53 | 55 | 56 | 57 |
| | | | | | fz | 0.012 | 0.018 | 0.023 | 0.03 | 0.043 | 0.059 | 0.077 | 0.105 | 0.123 | 0.141 | 0.186 |
| | | | | | RPM | 9100 | 5880 | 4480 | 3500 | 2940 | 2240 | 1820 | 1400 | 1260 | 1120 | 900 |
| | | | | | FEED | 210 | 210 | 210 | 210 | 250 | 265 | 280 | 295 | 310 | 315 | 335 |
| N | 21~22 | Aluminum-wrought alloy | 1.0D | 1.0D | Vc | 141 | 145 | 141 | 141 | 140 | 141 | 141 | 137 | 142 | 141 | 141 |
| | | | | | fz | 0.01 | 0.015 | 0.02 | 0.025 | 0.032 | 0.042 | 0.053 | 0.065 | 0.074 | 0.085 | 0.106 |
| | | | | | RPM | 22400 | 15400 | 11200 | 8960 | 7420 | 5600 | 4480 | 3640 | 3220 | 2800 | 2240 |
| | | | | | FEED | 450 | 450 | 450 | 450 | 475 | 475 | 475 | 475 | 475 | 475 | 475 |
| | 23~25 | Aluminum-cast, alloyed | 1.0D | 1.0D | Vc | 141 | 145 | 141 | 141 | 140 | 141 | 141 | 137 | 142 | 141 | 141 |
| | | | | | fz | 0.010 | 0.015 | 0.020 | 0.025 | 0.032 | 0.042 | 0.053 | 0.065 | 0.074 | 0.085 | 0.106 |
| | | | | | RPM | 22400 | 15400 | 11200 | 8960 | 7420 | 5600 | 4480 | 3640 | 3220 | 2800 | 2240 |
| | | | | | FEED | 450 | 450 | 450 | 450 | 475 | 475 | 475 | 475 | 475 | 475 | 475 |
| | 26~28 | Copper and Copper Alloys (Bronze / Brass) | 1.0D | 1.0D | Vc | 106 | 106 | 106 | 106 | 106 | 106 | 106 | 106 | 105 | 106 | 106 |
| | | | | | fz | 0.010 | 0.015 | 0.020 | 0.025 | 0.033 | 0.043 | 0.054 | 0.065 | 0.077 | 0.087 | 0.109 |
| | | | | | RPM | 16800 | 11200 | 8400 | 6720 | 5600 | 4200 | 3360 | 2800 | 2380 | 2100 | 1680 |
| | | | | | FEED | 335 | 335 | 335 | 335 | 365 | 365 | 365 | 365 | 365 | 365 | 365 |
| S | 36-37 | Titanium Alloys | 1.0D | 1.0D | Vc | 70 | 70 | 70 | 70 | 69 | 70 | 70 | 69 | 68 | 70 | 70 |
| | | | | | fz | 0.004 | 0.006 | 0.008 | 0.01 | 0.012 | 0.016 | 0.02 | 0.025 | 0.029 | 0.038 | 0.049 |
| | | | | | RPM | 11200 | 7420 | 5600 | 4480 | 3640 | 2800 | 2240 | 1820 | 1540 | 1400 | 1120 |
| | | | | | FEED | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 105 | 110 |

※ The FEED, in long & extra long types, should be reduced by around 50%
长刃，加长刃类型需要减少约50%进给



# GENERAL CARBIDE END MILLS

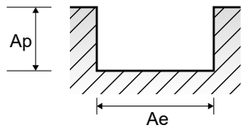
## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

**E5423 SERIES** — 3 FLUTE - SLOTTING / 3刃 - 槽铣削

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description 材料描述 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Uncoated / Diameter (Ø) 直径 | | | | | | | TiAlN-COATED (TiAlN 涂层) / Diameter (Ø) 直径 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 6.0 | 8.0 | 10.0 | 12.0 | 14.0 | 16.0 | 20.0 | 6.0 | 8.0 | 10.0 | 12.0 | 14.0 | 16.0 | 20.0 |
| P | 1-4 | Non-alloy steel | 1.0D | 1.0D | Vc | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 42 | 42 | 42 | 42 | 42 | 42 | 42 |
| | | | | | fz | 0.020 | 0.026 | 0.033 | 0.040 | 0.047 | 0.056 | 0.069 | 0.020 | 0.027 | 0.034 | 0.040 | 0.047 | 0.056 | 0.070 |
| | | | | | RPM | 1600 | 1200 | 950 | 800 | 680 | 600 | 480 | 2240 | 1680 | 1330 | 1120 | 960 | 840 | 670 |
| | | | | | FEED | 95 | 95 | 95 | 95 | 95 | 100 | 100 | 135 | 135 | 135 | 135 | 135 | 140 | 140 |
| | 5 | | 1.0D | 1.0D | Vc | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 35 | 35 | 35 | 35 | 35 | 35 | 35 |
| | | | | | fz | 0.017 | 0.022 | 0.027 | 0.033 | 0.038 | 0.053 | 0.067 | 0.016 | 0.021 | 0.027 | 0.032 | 0.038 | 0.052 | 0.065 |
| | | | | | RPM | 1300 | 1000 | 800 | 660 | 570 | 500 | 400 | 1850 | 1400 | 1120 | 925 | 800 | 700 | 560 |
| | | | | | FEED | 65 | 65 | 65 | 65 | 65 | 80 | 80 | 90 | 90 | 90 | 90 | 90 | 110 | 110 |
| | 6-7 | Low alloy steel | 1.0D | 1.0D | Vc | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 42 | 42 | 42 | 42 | 42 | 42 | 42 |
| | | | | | fz | 0.020 | 0.026 | 0.033 | 0.040 | 0.047 | 0.056 | 0.069 | 0.020 | 0.027 | 0.034 | 0.040 | 0.047 | 0.056 | 0.070 |
| | | | | | RPM | 1600 | 1200 | 950 | 800 | 680 | 600 | 480 | 2240 | 1680 | 1330 | 1120 | 960 | 840 | 670 |
| | | | | | FEED | 95 | 95 | 95 | 95 | 95 | 100 | 100 | 135 | 135 | 135 | 135 | 135 | 140 | 140 |
| | 8-9 | | 1.0D | 1.0D | Vc | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 35 | 35 | 35 | 35 | 35 | 35 | 35 |
| | | | | | fz | 0.017 | 0.022 | 0.027 | 0.033 | 0.038 | 0.053 | 0.067 | 0.016 | 0.021 | 0.027 | 0.032 | 0.038 | 0.052 | 0.065 |
| | | | | | RPM | 1300 | 1000 | 800 | 660 | 570 | 500 | 400 | 1850 | 1400 | 1120 | 925 | 800 | 700 | 560 |
| | | | | | FEED | 65 | 65 | 65 | 65 | 65 | 80 | 80 | 90 | 90 | 90 | 90 | 90 | 110 | 110 |
| | 10 | High alloyed steel, and tool steel | 1.0D | 1.0D | Vc | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 42 | 42 | 42 | 42 | 42 | 42 | 42 |
| | | | | | fz | 0.020 | 0.026 | 0.033 | 0.040 | 0.047 | 0.056 | 0.069 | 0.020 | 0.027 | 0.034 | 0.040 | 0.047 | 0.056 | 0.070 |
| | | | | | RPM | 1600 | 1200 | 950 | 800 | 680 | 600 | 480 | 2240 | 1680 | 1330 | 1120 | 960 | 840 | 670 |
| | | | | | FEED | 95 | 95 | 95 | 95 | 95 | 100 | 100 | 135 | 135 | 135 | 135 | 135 | 140 | 140 |
| | 11.1 | | 1.0D | 1.0D | Vc | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 35 | 35 | 35 | 35 | 35 | 35 | 35 |
| | | | | | fz | 0.017 | 0.022 | 0.027 | 0.033 | 0.038 | 0.053 | 0.067 | 0.016 | 0.021 | 0.027 | 0.032 | 0.038 | 0.052 | 0.065 |
| | | | | | RPM | 1300 | 1000 | 800 | 660 | 570 | 500 | 400 | 1850 | 1400 | 1120 | 925 | 800 | 700 | 560 |
| | | | | | FEED | 65 | 65 | 65 | 65 | 65 | 80 | 80 | 90 | 90 | 90 | 90 | 90 | 110 | 110 |
| K | 15-20 | Grey cast iron Nodular cast iron Malleable cast iron | 1.0D | 1.0D | Vc | 40 | 40 | 41 | 38 | 40 | 40 | 40 | 55 | 56 | 57 | 53 | 55 | 56 | 56 |
| | | | | | fz | 0.035 | 0.048 | 0.062 | 0.083 | 0.096 | 0.113 | 0.151 | 0.035 | 0.048 | 0.061 | 0.083 | 0.097 | 0.113 | 0.151 |
| | | | | | RPM | 2100 | 1600 | 1300 | 1000 | 900 | 800 | 640 | 2940 | 2240 | 1820 | 1400 | 1260 | 1120 | 895 |
| | | | | | FEED | 220 | 230 | 240 | 250 | 260 | 270 | 290 | 310 | 320 | 335 | 350 | 365 | 380 | 405 |
| N | 21~22 | Aluminum-wrought alloy | 1.0D | 1.0D | Vc | 100 | 101 | 101 | 98 | 101 | 101 | 101 | 140 | 141 | 141 | 137 | 142 | 141 | 141 |
| | | | | | fz | 0.026 | 0.034 | 0.043 | 0.053 | 0.059 | 0.068 | 0.085 | 0.026 | 0.034 | 0.043 | 0.053 | 0.060 | 0.068 | 0.086 |
| | | | | | RPM | 5300 | 4000 | 3200 | 2600 | 2300 | 2000 | 1600 | 7420 | 5600 | 4480 | 3640 | 3220 | 2800 | 2240 |
| | | | | | FEED | 410 | 410 | 410 | 410 | 410 | 410 | 410 | 575 | 575 | 575 | 575 | 575 | 575 | 575 |
| | 23~25 | Aluminum-cast, alloyed | 1.0D | 1.0D | Vc | 100 | 101 | 101 | 98 | 101 | 101 | 101 | 140 | 141 | 141 | 137 | 142 | 141 | 141 |
| | | | | | fz | 0.026 | 0.034 | 0.043 | 0.053 | 0.059 | 0.068 | 0.085 | 0.026 | 0.034 | 0.043 | 0.053 | 0.060 | 0.068 | 0.086 |
| | | | | | RPM | 5300 | 4000 | 3200 | 2600 | 2300 | 2000 | 1600 | 7420 | 5600 | 4480 | 3640 | 3220 | 2800 | 2240 |
| | | | | | FEED | 410 | 410 | 410 | 410 | 410 | 410 | 410 | 575 | 575 | 575 | 575 | 575 | 575 | 575 |
| | 26~28 | Copper and Copper Alloys (Bronze / Brass) | 1.0D | 1.0D | Vc | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 106 | 106 | 106 | 106 | 105 | 106 | 106 |
| | | | | | fz | 0.026 | 0.034 | 0.043 | 0.052 | 0.061 | 0.069 | 0.086 | 0.026 | 0.035 | 0.043 | 0.052 | 0.061 | 0.069 | 0.086 |
| | | | | | RPM | 4000 | 3000 | 2400 | 2000 | 1700 | 1500 | 1200 | 5600 | 4200 | 3360 | 2800 | 2380 | 2100 | 1680 |
| | | | | | FEED | 310 | 310 | 310 | 310 | 310 | 310 | 310 | 435 | 435 | 435 | 435 | 435 | 435 | 435 |

※ The FEED, in long & extra long types, should be reduced by around 50%
长刃，加长刃类型需要减少约50%进给





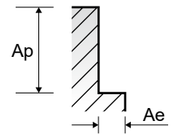

GENERAL CARBIDE END MILLS

**E5423 SERIES** — 3 FLUTE - SIDE CUTTING / 3刃 - 侧铣削

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description 材料描述 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Uncoated / Diameter (Ø) 直径 | | | | | | | TiAlN-COATED (TiAlN 涂层) / Diameter (Ø) 直径 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 6.0 | 8.0 | 10.0 | 12.0 | 14.0 | 16.0 | 20.0 | 6.0 | 8.0 | 10.0 | 12.0 | 14.0 | 16.0 | 20.0 |
| P | 1-4 | Non-alloy steel | 0.1D | 1.5D | Vc | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 40 | 40 | 40 | 40 | 45 | 40 | 40 |
| | | | | | fz | 0.04 | 0.053 | 0.067 | 0.079 | 0.09 | 0.111 | 0.139 | 0.039 | 0.053 | 0.066 | 0.079 | 0.09 | 0.111 | 0.139 |
| | | | | | RPM | 1592 | 1194 | 955 | 796 | 682 | 597 | 477 | 2122 | 1592 | 1273 | 1061 | 1023 | 796 | 637 |
| | | | | | FEED | 191 | 190 | 192 | 189 | 184 | 199 | 199 | 248 | 253 | 252 | 251 | 276 | 265 | 265 |
| | 5 | | 0.1D | 1.5D | Vc | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 35 | 35 | 35 | 35 | 35 | 35 | 35 |
| | | | | | fz | 0.033 | 0.043 | 0.054 | 0.066 | 0.076 | 0.107 | 0.133 | 0.033 | 0.043 | 0.054 | 0.065 | 0.075 | 0.107 | 0.134 |
| | | | | | RPM | 1326 | 995 | 796 | 663 | 568 | 497 | 398 | 1857 | 1393 | 1114 | 928 | 796 | 696 | 557 |
| | | | | | FEED | 131 | 128 | 129 | 131 | 130 | 160 | 159 | 184 | 180 | 180 | 181 | 179 | 224 | 224 |
| | 6-7 | Low alloy steel | 0.1D | 1.5D | Vc | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 40 | 40 | 40 | 40 | 45 | 40 | 40 |
| | | | | | fz | 0.04 | 0.053 | 0.067 | 0.079 | 0.09 | 0.111 | 0.139 | 0.039 | 0.053 | 0.066 | 0.079 | 0.09 | 0.111 | 0.139 |
| | | | | | RPM | 1592 | 1194 | 955 | 796 | 682 | 597 | 477 | 2122 | 1592 | 1273 | 1061 | 1023 | 796 | 637 |
| | | | | | FEED | 191 | 190 | 192 | 189 | 184 | 199 | 199 | 248 | 253 | 252 | 251 | 276 | 265 | 265 |
| | 8-9 | | 0.1D | 1.5D | Vc | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 35 | 35 | 35 | 35 | 35 | 35 | 35 |
| | | | | | fz | 0.033 | 0.043 | 0.054 | 0.066 | 0.076 | 0.107 | 0.133 | 0.033 | 0.043 | 0.054 | 0.065 | 0.075 | 0.107 | 0.134 |
| | | | | | RPM | 1326 | 995 | 796 | 663 | 568 | 497 | 398 | 1857 | 1393 | 1114 | 928 | 796 | 696 | 557 |
| | | | | | FEED | 131 | 128 | 129 | 131 | 130 | 160 | 159 | 184 | 180 | 180 | 181 | 179 | 224 | 224 |
| | 10 | High alloyed steel, and tool steel | 0.1D | 1.5D | Vc | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 40 | 40 | 40 | 40 | 45 | 40 | 40 |
| | | | | | fz | 0.04 | 0.053 | 0.067 | 0.079 | 0.09 | 0.111 | 0.139 | 0.039 | 0.053 | 0.066 | 0.079 | 0.09 | 0.111 | 0.139 |
| | | | | | RPM | 1592 | 1194 | 955 | 796 | 682 | 597 | 477 | 2122 | 1592 | 1273 | 1061 | 1023 | 796 | 637 |
| | | | | | FEED | 191 | 190 | 192 | 189 | 184 | 199 | 199 | 248 | 253 | 252 | 251 | 276 | 265 | 265 |
| | 11.1 | | 0.1D | 1.5D | Vc | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 35 | 35 | 35 | 35 | 35 | 35 | 35 |
| | | | | | fz | 0.033 | 0.043 | 0.054 | 0.066 | 0.076 | 0.107 | 0.133 | 0.033 | 0.043 | 0.054 | 0.065 | 0.075 | 0.107 | 0.134 |
| | | | | | RPM | 1326 | 995 | 796 | 663 | 568 | 497 | 398 | 1857 | 1393 | 1114 | 928 | 796 | 696 | 557 |
| | | | | | FEED | 131 | 128 | 129 | 131 | 130 | 160 | 159 | 184 | 180 | 180 | 181 | 179 | 224 | 224 |
| K | 15-20 | Grey cast iron Nodular cast iron Malleable cast iron | 0.1D | 1.5D | Vc | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 55 | 55 | 55 | 55 | 55 | 55 | 55 |
| | | | | | fz | 0.07 | 0.096 | 0.123 | 0.167 | 0.193 | 0.225 | 0.302 | 0.07 | 0.096 | 0.123 | 0.167 | 0.193 | 0.225 | 0.302 |
| | | | | | RPM | 2122 | 1592 | 1273 | 1061 | 909 | 796 | 637 | 2918 | 2188 | 1751 | 1459 | 1251 | 1094 | 875 |
| | | | | | FEED | 446 | 458 | 470 | 532 | 527 | 537 | 577 | 613 | 630 | 646 | 731 | 724 | 739 | 793 |
| N | 21~22 | Aluminum-wrought alloy | 0.1D | 1.5D | Vc | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 140 | 140 | 140 | 135 | 140 | 140 | 140 |
| | | | | | fz | 0.052 | 0.068 | 0.085 | 0.105 | 0.119 | 0.137 | 0.171 | 0.052 | 0.068 | 0.086 | 0.105 | 0.119 | 0.137 | 0.171 |
| | | | | | RPM | 5305 | 3979 | 3183 | 2653 | 2274 | 1989 | 1592 | 7427 | 5570 | 4456 | 3581 | 3183 | 2785 | 2228 |
| | | | | | FEED | 828 | 812 | 812 | 836 | 812 | 818 | 816 | 1159 | 1136 | 1150 | 1128 | 1136 | 1145 | 1143 |
| | 23~25 | Aluminum-cast, alloyed | 0.1D | 1.5D | Vc | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 140 | 140 | 140 | 135 | 140 | 140 | 140 |
| | | | | | fz | 0.052 | 0.068 | 0.085 | 0.105 | 0.119 | 0.137 | 0.171 | 0.052 | 0.068 | 0.086 | 0.105 | 0.119 | 0.137 | 0.171 |
| | | | | | RPM | 5305 | 3979 | 3183 | 2653 | 2274 | 1989 | 1592 | 7427 | 5570 | 4456 | 3581 | 3183 | 2785 | 2228 |
| | | | | | FEED | 828 | 812 | 812 | 836 | 812 | 818 | 816 | 1159 | 1136 | 1150 | 1128 | 1136 | 1145 | 1143 |
| | 26~28 | Copper and Copper Alloys (Bronze / Brass) | 0.1D | 1.5D | Vc | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 105 | 105 | 105 | 105 | 105 | 105 | 105 |
| | | | | | fz | 0.052 | 0.069 | 0.086 | 0.103 | 0.122 | 0.138 | 0.172 | 0.052 | 0.069 | 0.086 | 0.104 | 0.122 | 0.138 | 0.173 |
| | | | | | RPM | 3979 | 2984 | 2387 | 1989 | 1705 | 1492 | 1194 | 5570 | 4178 | 3342 | 2785 | 2387 | 2089 | 1671 |
| | | | | | FEED | 621 | 618 | 616 | 615 | 624 | 618 | 616 | 869 | 865 | 862 | 869 | 874 | 865 | 867 |

※ The FEED, in long & extra long types, should be reduced by around 50%
长刃，加长刃类型需要减少约50%进给



# GENERAL CARBIDE END MILLS

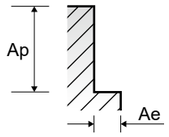
## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

**E5402 SERIES** — **4 FLUTE - SIDE CUTTING**
**4刃 - 侧铣削**

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description 材料描述 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 2.0 | 3.0 | 4.0 | 5.0 | 6.0 | 8.0 | 10.0 | 12.0 | 14.0 | 16.0 | 20.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1-2 | Non-alloy steel | 0.1D | 1.5D | Vc | 35 | 35 | 35 | 35 | 34 | 35 | 35 | 34 | 35 | 35 | 35 |
| | | | | | fz | 0.011 | 0.018 | 0.024 | 0.031 | 0.038 | 0.048 | 0.061 | 0.075 | 0.084 | 0.107 | 0.136 |
| | | | | | RPM | 5500 | 3700 | 2800 | 2200 | 1800 | 1400 | 1100 | 900 | 800 | 700 | 550 |
| | | | | | FEED | 240 | 270 | 270 | 270 | 270 | 270 | 270 | 270 | 270 | 300 | 300 |
| | 3-4 | | 0.1D | 1.5D | Vc | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 31 | 30 | 30 |
| | | | | | fz | 0.011 | 0.019 | 0.025 | 0.032 | 0.038 | 0.05 | 0.063 | 0.075 | 0.086 | 0.108 | 0.135 |
| | | | | | RPM | 4800 | 3200 | 2400 | 1900 | 1600 | 1200 | 950 | 800 | 700 | 600 | 480 |
| | | | | | FEED | 210 | 240 | 240 | 240 | 240 | 240 | 240 | 240 | 240 | 260 | 260 |
| | 5 | | 0.1D | 1.5D | Vc | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 |
| | | | | | fz | 0.01 | 0.017 | 0.023 | 0.028 | 0.035 | 0.045 | 0.056 | 0.068 | 0.079 | 0.11 | 0.138 |
| | | | | | RPM | 4000 | 2600 | 2000 | 1600 | 1300 | 1000 | 800 | 660 | 570 | 500 | 400 |
| | | | | | FEED | 160 | 180 | 180 | 180 | 180 | 180 | 180 | 180 | 180 | 220 | 220 |
| | 6 | Low alloy steel | 0.1D | 1.5D | Vc | 35 | 35 | 35 | 35 | 34 | 35 | 35 | 34 | 35 | 35 | 35 |
| | | | | | fz | 0.011 | 0.018 | 0.024 | 0.031 | 0.038 | 0.048 | 0.061 | 0.075 | 0.084 | 0.107 | 0.136 |
| | | | | | RPM | 5500 | 3700 | 2800 | 2200 | 1800 | 1400 | 1100 | 900 | 800 | 700 | 550 |
| | | | | | FEED | 240 | 270 | 270 | 270 | 270 | 270 | 270 | 270 | 270 | 300 | 300 |
| | 7 | | 0.1D | 1.5D | Vc | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 31 | 30 | 30 |
| | | | | | fz | 0.011 | 0.019 | 0.025 | 0.032 | 0.038 | 0.05 | 0.063 | 0.075 | 0.086 | 0.108 | 0.135 |
| | | | | | RPM | 4800 | 3200 | 2400 | 1900 | 1600 | 1200 | 950 | 800 | 700 | 600 | 480 |
| | | | | | FEED | 210 | 240 | 240 | 240 | 240 | 240 | 240 | 240 | 240 | 260 | 260 |
| | 8-9 | | 0.1D | 1.5D | Vc | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 |
| | | | | | fz | 0.01 | 0.017 | 0.023 | 0.028 | 0.035 | 0.045 | 0.056 | 0.068 | 0.079 | 0.11 | 0.138 |
| | | | | | RPM | 4000 | 2600 | 2000 | 1600 | 1300 | 1000 | 800 | 660 | 570 | 500 | 400 |
| | | | | | FEED | 160 | 180 | 180 | 180 | 180 | 180 | 180 | 180 | 180 | 220 | 220 |
| | 10 | High alloyed steel, and tool steel | 0.1D | 1.5D | Vc | 35 | 35 | 35 | 35 | 34 | 35 | 35 | 34 | 35 | 35 | 35 |
| | | | | | fz | 0.011 | 0.018 | 0.024 | 0.031 | 0.038 | 0.048 | 0.061 | 0.075 | 0.084 | 0.107 | 0.136 |
| | | | | | RPM | 5500 | 3700 | 2800 | 2200 | 1800 | 1400 | 1100 | 900 | 800 | 700 | 550 |
| | | | | | FEED | 240 | 270 | 270 | 270 | 270 | 270 | 270 | 270 | 270 | 300 | 300 |
| | 11.1 | | 0.1D | 1.5D | Vc | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 |
| | | | | | fz | 0.01 | 0.017 | 0.023 | 0.028 | 0.035 | 0.045 | 0.056 | 0.068 | 0.079 | 0.11 | 0.138 |
| | | | | | RPM | 4000 | 2600 | 2000 | 1600 | 1300 | 1000 | 800 | 660 | 570 | 500 | 400 |
| | | | | | FEED | 160 | 180 | 180 | 180 | 180 | 180 | 180 | 180 | 180 | 220 | 220 |
| M | 14.1 | Stainless steel | 0.1D | 1.5D | Vc | 50 | 50 | 50 | 50 | 49 | 50 | 50 | 49 | 48 | 50 | 50 |
| | | | | | fz | 0.006 | 0.009 | 0.013 | 0.016 | 0.019 | 0.025 | 0.031 | 0.038 | 0.045 | 0.056 | 0.075 |
| | | | | | RPM | 8000 | 5300 | 4000 | 3200 | 2600 | 2000 | 1600 | 1300 | 1100 | 1000 | 800 |
| | | | | | FEED | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 225 | 240 |
| K | 15-20 | Grey cast iron Nodular cast iron Malleable cast iron | 0.1D | 1.5D | Vc | 41 | 40 | 40 | 39 | 40 | 40 | 41 | 38 | 40 | 40 | 40 |
| | | | | | fz | 0.017 | 0.027 | 0.035 | 0.045 | 0.064 | 0.089 | 0.115 | 0.158 | 0.183 | 0.213 | 0.281 |
| | | | | | RPM | 6500 | 4200 | 3200 | 2500 | 2100 | 1600 | 1300 | 1000 | 900 | 800 | 640 |
| | | | | | FEED | 450 | 450 | 450 | 450 | 540 | 570 | 600 | 630 | 660 | 680 | 720 |
| N | 21~22 | Aluminum-wrought alloy | 0.1D | 1.5D | Vc | 101 | 104 | 101 | 101 | 100 | 101 | 101 | 98 | 101 | 101 | 101 |
| | | | | | fz | 0.015 | 0.022 | 0.03 | 0.038 | 0.048 | 0.064 | 0.08 | 0.098 | 0.111 | 0.128 | 0.159 |
| | | | | | RPM | 16000 | 11000 | 8000 | 6400 | 5300 | 4000 | 3200 | 2600 | 2300 | 2000 | 1600 |
| | | | | | FEED | 960 | 960 | 960 | 960 | 1020 | 1020 | 1020 | 1020 | 1020 | 1020 | 1020 |
| | 23~25 | Aluminum-cast, alloyed | 0.1D | 1.5D | Vc | 101 | 104 | 101 | 101 | 100 | 101 | 101 | 98 | 101 | 101 | 101 |
| | | | | | fz | 0.015 | 0.022 | 0.03 | 0.038 | 0.048 | 0.064 | 0.08 | 0.098 | 0.111 | 0.128 | 0.159 |
| | | | | | RPM | 16000 | 11000 | 8000 | 6400 | 5300 | 4000 | 3200 | 2600 | 2300 | 2000 | 1600 |
| | | | | | FEED | 960 | 960 | 960 | 960 | 1020 | 1020 | 1020 | 1020 | 1020 | 1020 | 1020 |
| | 26~28 | Copper and Copper Alloys (Bronze / Brass) | 0.1D | 1.5D | Vc | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 |
| | | | | | fz | 0.015 | 0.023 | 0.03 | 0.038 | 0.049 | 0.065 | 0.081 | 0.098 | 0.115 | 0.13 | 0.163 |
| | | | | | RPM | 12000 | 8000 | 6000 | 4800 | 4000 | 3000 | 2400 | 2000 | 1700 | 1500 | 1200 |
| | | | | | FEED | 720 | 720 | 720 | 720 | 780 | 780 | 780 | 780 | 780 | 780 | 780 |
| S | 36-37 | Titanium Alloys | 0.1D | 1.5D | Vc | 50 | 50 | 50 | 50 | 49 | 50 | 50 | 49 | 48 | 50 | 50 |
| | | | | | fz | 0.006 | 0.009 | 0.013 | 0.016 | 0.019 | 0.025 | 0.031 | 0.038 | 0.045 | 0.056 | 0.075 |
| | | | | | RPM | 8000 | 5300 | 4000 | 3200 | 2600 | 2000 | 1600 | 1300 | 1100 | 1000 | 800 |
| | | | | | FEED | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 225 | 240 |

※ The FEED, in long & extra long types, should be reduced by around 50%
长刃，加长刃类型需要减少约50%进给





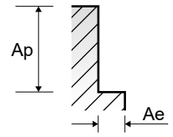

GENERAL CARBIDE END MILLS

**E5402 SERIES** — **4 FLUTE (TiAlN-COATED) - SIDE CUTTING**
**4刃 (TiAlN 涂层) - 侧铣削**

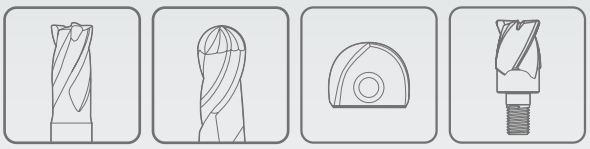
Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description 材料描述 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 2.0 | 3.0 | 4.0 | 5.0 | 6.0 | 8.0 | 10.0 | 12.0 | 14.0 | 16.0 | 20.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1-2 | Non-alloy steel | 0.1D | 1.5D | Vc | 48 | 49 | 49 | 48 | 48 | 49 | 48 | 48 | 49 | 49 | 48 |
| | | | | | fz | 0.011 | 0.018 | 0.024 | 0.031 | 0.038 | 0.048 | 0.062 | 0.075 | 0.085 | 0.107 | 0.136 |
| | | | | | RPM | 7700 | 5180 | 3920 | 3080 | 2520 | 1960 | 1540 | 1260 | 1120 | 980 | 770 |
| | | | | | FEED | 335 | 380 | 380 | 380 | 380 | 380 | 380 | 380 | 380 | 420 | 420 |
| | 3-4 | | 0.1D | 1.5D | Vc | 42 | 42 | 42 | 42 | 42 | 42 | 42 | 42 | 43 | 42 | 42 |
| | | | | | fz | 0.011 | 0.019 | 0.025 | 0.031 | 0.037 | 0.05 | 0.063 | 0.075 | 0.085 | 0.109 | 0.136 |
| | | | | | RPM | 6720 | 4480 | 3360 | 2660 | 2240 | 1680 | 1330 | 1120 | 980 | 840 | 670 |
| | | | | | FEED | 295 | 335 | 335 | 335 | 335 | 335 | 335 | 335 | 335 | 365 | 365 |
| | 5 | | 0.1D | 1.5D | Vc | 35 | 34 | 35 | 35 | 34 | 35 | 35 | 35 | 35 | 35 | 35 |
| | | | | | fz | 0.01 | 0.017 | 0.022 | 0.028 | 0.034 | 0.045 | 0.056 | 0.068 | 0.078 | 0.111 | 0.138 |
| | | | | | RPM | 5600 | 3640 | 2800 | 2240 | 1820 | 1400 | 1120 | 920 | 800 | 700 | 560 |
| | | | | | FEED | 225 | 250 | 250 | 250 | 250 | 250 | 250 | 250 | 250 | 310 | 310 |
| | 6 | Low alloy steel | 0.1D | 1.5D | Vc | 48 | 49 | 49 | 48 | 48 | 49 | 48 | 48 | 49 | 49 | 48 |
| | | | | | fz | 0.011 | 0.018 | 0.024 | 0.031 | 0.038 | 0.048 | 0.062 | 0.075 | 0.085 | 0.107 | 0.136 |
| | | | | | RPM | 7700 | 5180 | 3920 | 3080 | 2520 | 1960 | 1540 | 1260 | 1120 | 980 | 770 |
| | | | | | FEED | 335 | 380 | 380 | 380 | 380 | 380 | 380 | 380 | 380 | 420 | 420 |
| | 7 | | 0.1D | 1.5D | Vc | 42 | 42 | 42 | 42 | 42 | 42 | 42 | 42 | 43 | 42 | 42 |
| | | | | | fz | 0.011 | 0.019 | 0.025 | 0.031 | 0.037 | 0.05 | 0.063 | 0.075 | 0.085 | 0.109 | 0.136 |
| | | | | | RPM | 6720 | 4480 | 3360 | 2660 | 2240 | 1680 | 1330 | 1120 | 980 | 840 | 670 |
| | | | | | FEED | 295 | 335 | 335 | 335 | 335 | 335 | 335 | 335 | 335 | 365 | 365 |
| | 8-9 | | 0.1D | 1.5D | Vc | 35 | 34 | 35 | 35 | 34 | 35 | 35 | 35 | 35 | 35 | 35 |
| | | | | | fz | 0.01 | 0.017 | 0.022 | 0.028 | 0.034 | 0.045 | 0.056 | 0.068 | 0.078 | 0.111 | 0.138 |
| | | | | | RPM | 5600 | 3640 | 2800 | 2240 | 1820 | 1400 | 1120 | 920 | 800 | 700 | 560 |
| | | | | | FEED | 225 | 250 | 250 | 250 | 250 | 250 | 250 | 250 | 250 | 310 | 310 |
| | 10 | High alloyed steel, and tool steel | 0.1D | 1.5D | Vc | 48 | 49 | 49 | 48 | 48 | 49 | 48 | 48 | 49 | 49 | 48 |
| | | | | | fz | 0.011 | 0.018 | 0.024 | 0.031 | 0.038 | 0.048 | 0.062 | 0.075 | 0.085 | 0.107 | 0.136 |
| | | | | | RPM | 7700 | 5180 | 3920 | 3080 | 2520 | 1960 | 1540 | 1260 | 1120 | 980 | 770 |
| | | | | | FEED | 335 | 380 | 380 | 380 | 380 | 380 | 380 | 380 | 380 | 420 | 420 |
| | 11.1 | | 0.1D | 1.5D | Vc | 35 | 34 | 35 | 35 | 34 | 35 | 35 | 35 | 35 | 35 | 35 |
| | | | | | fz | 0.01 | 0.017 | 0.022 | 0.028 | 0.034 | 0.045 | 0.056 | 0.068 | 0.078 | 0.111 | 0.138 |
| | | | | | RPM | 5600 | 3640 | 2800 | 2240 | 1820 | 1400 | 1120 | 920 | 800 | 700 | 560 |
| | | | | | FEED | 225 | 250 | 250 | 250 | 250 | 250 | 250 | 250 | 250 | 310 | 310 |
| M | 14.1 | Stainless steel | 0.1D | 1.5D | Vc | 70 | 70 | 70 | 70 | 69 | 70 | 70 | 69 | 68 | 70 | 70 |
| | | | | | fz | 0.006 | 0.009 | 0.013 | 0.016 | 0.019 | 0.025 | 0.031 | 0.038 | 0.045 | 0.056 | 0.075 |
| | | | | | RPM | 11200 | 7420 | 5600 | 4480 | 3640 | 2800 | 2240 | 1820 | 1540 | 1400 | 1120 |
| | | | | | FEED | 280 | 280 | 280 | 280 | 280 | 280 | 280 | 280 | 280 | 315 | 335 |
| K | 15-20 | Grey cast iron Nodular cast iron Malleable cast iron | 0.1D | 1.5D | Vc | 57 | 55 | 56 | 55 | 55 | 56 | 57 | 53 | 55 | 56 | 57 |
| | | | | | fz | 0.017 | 0.027 | 0.035 | 0.045 | 0.064 | 0.089 | 0.115 | 0.157 | 0.184 | 0.212 | 0.281 |
| | | | | | RPM | 9100 | 5880 | 4480 | 3500 | 2940 | 2240 | 1820 | 1400 | 1260 | 1120 | 900 |
| | | | | | FEED | 630 | 630 | 630 | 630 | 755 | 800 | 840 | 880 | 925 | 950 | 1010 |
| N | 21~22 | Aluminum-wrought alloy | 0.1D | 1.5D | Vc | 141 | 145 | 141 | 141 | 140 | 141 | 141 | 137 | 142 | 141 | 141 |
| | | | | | fz | 0.015 | 0.022 | 0.03 | 0.038 | 0.048 | 0.064 | 0.08 | 0.098 | 0.111 | 0.128 | 0.16 |
| | | | | | RPM | 22400 | 15400 | 11200 | 8960 | 7420 | 5600 | 4480 | 3640 | 3220 | 2800 | 2240 |
| | | | | | FEED | 1345 | 1345 | 1345 | 1345 | 1430 | 1430 | 1430 | 1430 | 1430 | 1430 | 1430 |
| | 23~25 | Aluminum-cast, alloyed | 0.1D | 1.5D | Vc | 141 | 145 | 141 | 141 | 140 | 141 | 141 | 137 | 142 | 141 | 141 |
| | | | | | fz | 0.015 | 0.022 | 0.03 | 0.038 | 0.048 | 0.064 | 0.08 | 0.098 | 0.111 | 0.128 | 0.16 |
| | | | | | RPM | 22400 | 15400 | 11200 | 8960 | 7420 | 5600 | 4480 | 3640 | 3220 | 2800 | 2240 |
| | | | | | FEED | 1345 | 1345 | 1345 | 1345 | 1430 | 1430 | 1430 | 1430 | 1430 | 1430 | 1430 |
| | 26~28 | Copper and Copper Alloys (Bronze / Brass) | 0.1D | 1.5D | Vc | 106 | 106 | 106 | 106 | 106 | 106 | 106 | 106 | 105 | 106 | 106 |
| | | | | | fz | 0.015 | 0.023 | 0.03 | 0.038 | 0.049 | 0.065 | 0.081 | 0.097 | 0.114 | 0.13 | 0.162 |
| | | | | | RPM | 16800 | 11200 | 8400 | 6720 | 5600 | 4200 | 3360 | 2800 | 2380 | 2100 | 1680 |
| | | | | | FEED | 1010 | 1010 | 1010 | 1010 | 1090 | 1090 | 1090 | 1090 | 1090 | 1090 | 1090 |
| S | 36-37 | Titanium Alloys | 0.1D | 1.5D | Vc | 70 | 70 | 70 | 70 | 69 | 70 | 70 | 69 | 68 | 70 | 70 |
| | | | | | fz | 0.006 | 0.009 | 0.013 | 0.016 | 0.019 | 0.025 | 0.031 | 0.038 | 0.045 | 0.056 | 0.075 |
| | | | | | RPM | 11200 | 7420 | 5600 | 4480 | 3640 | 2800 | 2240 | 1820 | 1540 | 1400 | 1120 |
| | | | | | FEED | 280 | 280 | 280 | 280 | 280 | 280 | 280 | 280 | 280 | 315 | 335 |

※ The FEED, in long & extra long types, should be reduced by around 50%
长刃，加长刃类型需要减少约50%进给



Global Cutting Tool Leader **YG-1**



# MILLING

YG

Leading Through Innovation

# HSS PM60

# ONLY ONE

## COATED PM60 END MILLS

**- Perfect Solution of Carbide Chipping under Vibrations**

- 在振动工况硬质合金崩刃的完美解决方案

# SELECTION GUIDE
## 选用指南

YG MILLING TOOLS

# COATED PM60
# ONLY ONE
# END MILLS

Perfect solution to protect Carbide chipping problems under vibrations
在振动工况硬质合金崩刃的完美解决方案

Please visit globalyg1.com/mat for material search

◎ : Excellent (优秀) ○ : Good (良好)

Recommended cutting conditions (推荐加工参数) : p.C536

| SERIES 系列 | GYG77 GYF97 | GYG72 GYF99 | GYG01 |
|---|---|---|---|
| FLUTE 槽数 | 2 | 2 | 3 |
| HELIX ANGLE 螺旋角度 | 30° | 30° | 30° |
| CUTTING EDGE SHAPE 类型 | BALL NOSE | SQUARE | SQUARE |
| SIZE MIN 最小尺寸 | R0.5 | D1.0 | D1.0 |
| SIZE MAX 最大尺寸 | R12.5 | D25.0 | D25.0 |
| PAGE 页数 | C526 | C527 | C528 |
| | SHORT LENGTH | SHORT LENGTH | SHORT LENGTH (Center Cut) |
| | Y-Coating | Y-Coating | Y-Coating |

| ISO | VDI 3323 | Material Description 工件材料 | Composition / Structure / Heat Treatment 成分 / 结构 / 热处理 | | HB | HRc | | | |
|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | About 0.15% C | Annealed | 125 | | ◎ | ◎ | ◎ |
| | 2 | | About 0.45% C | Annealed | 190 | 13 | ◎ | ◎ | ◎ |
| | 3 | | About 0.45% C | Quenched & Tempered | 250 | 25 | ◎ | ◎ | ◎ |
| | 4 | | About 0.75% C | Annealed | 270 | 28 | ◎ | ◎ | ◎ |
| | 5 | | About 0.75% C | Quenched & Tempered | 300 | 32 | ◎ | ◎ | ◎ |
| | 6 | Low alloy steel | | Annealed | 180 | 10 | ◎ | ◎ | ◎ |
| | 7 | | | Quenched & Tempered | 275 | 29 | ◎ | ◎ | ◎ |
| | 8 | | | Quenched & Tempered | 300 | 32 | ◎ | ◎ | ◎ |
| | 9 | | | Quenched & Tempered | 350 | 38 | ○ | ○ | ○ |
| | 10 | High alloyed steel, and tool steel | | Annealed | 200 | 15 | ◎ | ◎ | ◎ |
| | 11 | | | Quenched & Tempered | 325 | 35 | ○ | ○ | ○ |
| M | 12 | Stainless steel | Ferritic / Martensitic | Annealed | 200 | 15 | ◎ | ◎ | ◎ |
| | 13 | | Martensitic | Quenched & Tempered | 240 | 23 | ◎ | ◎ | ◎ |
| | 14 | | Austenitic | | 180 | 10 | ◎ | ◎ | ◎ |
| K | 15 | Grey cast iron | Pearlitic / ferritic | | 180 | 10 | ◎ | ◎ | ◎ |
| | 16 | | Pearlitic (Martensitic) | | 260 | 26 | ◎ | ◎ | ◎ |
| | 17 | Nodular cast iron | Ferritic | | 160 | 3 | ◎ | ◎ | ◎ |
| | 18 | | Pearlitic | | 250 | 25 | ◎ | ◎ | ◎ |
| | 19 | Malleable cast iron | Ferritic | | 130 | | ◎ | ◎ | ◎ |
| | 20 | | Pearlitic | | 230 | 21 | ◎ | ◎ | ◎ |
| N | 21 | Aluminum-wrought alloy | Not Curable | | 60 | | | | |
| | 22 | | Curable | Hardened | 100 | | | | |
| | 23 | Aluminum-cast, alloyed | ≤ 12% Si, Not Curable | | 75 | | | | |
| | 24 | | ≤ 12% Si, Curable | Hardened | 90 | | | | |
| | 25 | | > 12% Si, Not Curable | | 130 | | | | |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | Cutting Alloys, PB>1% | | 110 | | ○ | ○ | ○ |
| | 27 | | CuZn, CuSnZn (Brass) | | 90 | | ○ | ○ | ○ |
| | 28 | | CuSn, lead-free copper and electrolytic copper | | 100 | | ○ | ○ | ○ |
| | 29 | Non Metallic Materials | Duroplastic, Fiber Reinforced Plastic | | | | | | |
| | 30 | | Rubber, Wood, etc. | | | | | | |
| S | 31 | Heat Resistant Super Alloys | Fe Based | Annealed | 200 | 15 | | | |
| | 32 | | | Cured | 280 | 30 | | | |
| | 33 | | Ni or Co Based | Annealed | 250 | 25 | | | |
| | 34 | | | Cured | 350 | 38 | | | |
| | 35 | | | Cast | 320 | 34 | | | |
| | 36 | Titanium Alloys | Pure Titanium | | 400 Rm | | | | |
| | 37 | | Alpha + Beta Alloys | Hardened | 1050 Rm | | | | |
| H | 38 | Hardened steel | | Hardened | 550 | 55 | | | |
| | 39 | | | Hardened | 630 | 60 | | | |
| | 40 | Chilled Cast Iron | | Cast | 400 | 42 | ○ | ○ | ○ |
| | 41 | Hardened Cast Iron | | Hardened | 550 | 55 | | | |



| GYG74 GYF96 | GYG52 | GYG76 GYG02 | GYF95 | GYF94 | GYF98 | GYG03 |
|---|---|---|---|---|---|---|
| 4 | 4 | 4 | Multi Flute | Multi Flute | Multi Flute | Multi Flute |
| 30° | 35°/37° | 30° | 4F : 44°/45° 5F : 44°/44.5°/45° | 30° | 30° | 30° |
| SQUARE | SQUARE | SQUARE | CORNER RADIUS ROUGHING | ROUGHING | ROUGHING | ROUGHING |
| D1.0 | D3.0 | D2.0 | D6.0 | D6.0 | D6.0 | D6.0 |
| D25.0 | D25.0 | D25.0 | D25.0 | D25.0 | D25.0 | D25.0 |
| C529 | C530 | C531 | C532 | C533 | C534 | C535 |
| SHORT LENGTH (Center Cut) | SHORT LENGTH (Center Cut) | LONG LENGTH (Center Cut) | SHORT LENGTH (Center Cut) | SHORT LENGTH (Center Cut) | LONG LENGTH (Center Cut) | SHORT LENGTH (Center Cut) |
| Y-Coating | Y-Coating | Y-Coating | Y-Coating | Y-Coating | Y-Coating | Y-Coating |

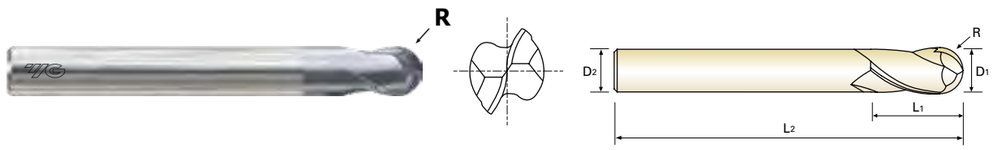
| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 1 | |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 2 | |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 3 | |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 4 | |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 5 | |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 6 | P |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 7 | |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 8 | |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | 9 | |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 10 | |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | 11 | |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 12 | |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 13 | M |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 14 | |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 15 | |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 16 | |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 17 | |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 18 | K |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 19 | |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 20 | |
| | | | | | | | 21 | |
| | | | | | | | 22 | |
| | | | | | | | 23 | |
| | | | | | | | 24 | |
| | | | | | | | 25 | |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | 26 | N |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | 27 | |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | 28 | |
| | | | | | | | 29 | |
| | | | | | | | 30 | |
| | | | | | | | 31 | |
| | | | | | | | 32 | |
| | | | | | | | 33 | |
| | | | | | | | 34 | S |
| | | | | | | | 35 | |
| | | | | | | | 36 | |
| | | | | | | | 37 | |
| | | | | | | | 38 | |
| | | | | | | | 39 | |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | 40 | H |
| | | | | | | | 41 | |

BALL NOSE = 球头 SHORT LENGTH= 短刃 CORNER RADIUS = 圆鼻 LONG LENGTH = 长刃 SQUARE = 平头 Center Cut = 过中心 ROUGHING = 粗加工 MULTIPLE HELIX = 不等螺旋

# ONLY ONE COATED PM60 END MILLS

PLAIN SHANK **GYG77** SERIES
FLAT SHANK **GYF97** SERIES

## PM60, 2 FLUTE BALL NOSE SHORT LENGTH
## PM60，2刃 球头 短刃




PM60 | 2 | 30° | R ±0.02 | PLAIN | FLAT | p.C536

Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| END MILL HOLDER | D118 - 137 | POWER MILLING CHUCK | D161 - 176 |
| - | - | ER COLLET CHUCK | D73 - 115 |
| | | SK SLIM CHUCK | D183 - 201 |

Unit(单位) : mm

| EDP No. | | Radius of Ball Nose 圆弧角 | Mill Diameter 直径 | Shank Diameter 柄径 | Length of Cut 刃长 | Overall Length 全长 |
|---|---|---|---|---|---|---|
| PLAIN | FLAT | R(±0.02) | $D_1$ | $D_2$ | $L_1$ | $L_2$ |
| GYG77010 | GYF97010 | R0.5 | 1.0 | 6 | 2.5 | 47 |
| GYG77020 | GYF97020 | R1.0 | 2.0 | 6 | 4 | 48 |
| GYG77030 | GYF97030 | R1.5 | 3.0 | 6 | 5 | 49 |
| GYG77040 | GYF97040 | R2.0 | 4.0 | 6 | 7 | 51 |
| GYG77050 | GYF97050 | R2.5 | 5.0 | 6 | 8 | 52 |
| GYG77060 | GYF97060 | R3.0 | 6.0 | 6 | 8 | 52 |
| GYG77070 | GYF97070 | R3.5 | 7.0 | 8 | 10 | 60 |
| GYG77080 | GYF97080 | R4.0 | 8.0 | 8 | 11 | 61 |
| GYG77090 | GYF97090 | R4.5 | 9.0 | 10 | 11 | 61 |
| GYG77100 | GYF97100 | R5.0 | 10.0 | 10 | 13 | 63 |
| GYG77120 | GYF97120 | R6.0 | 12.0 | 12 | 16 | 73 |
| GYG77140 | GYF97140 | R7.0 | 14.0 | 12 | 16 | 73 |
| GYG77160 | GYF97160 | R8.0 | 16.0 | 16 | 19 | 79 |
| GYG77180 | GYF97180 | R9.0 | 18.0 | 16 | 19 | 79 |
| GYG77200 | GYF97200 | R10.0 | 20.0 | 20 | 22 | 88 |
| GYG77250 | GYF97250 | R12.5 | 25.0 | 25 | 26 | 102 |

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.03 | h6 |

◎ : Excellent (优秀) ○ : Good (良好)

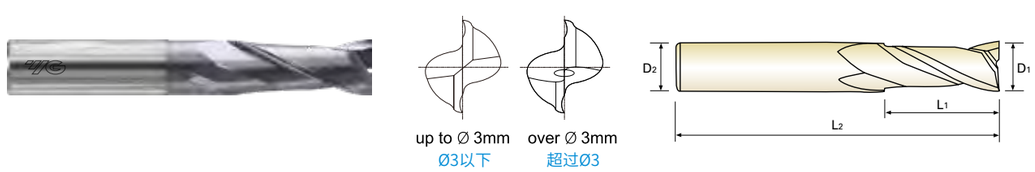
| ISO | P | | | | | | | | | | | | | | | | | | | | M | | | | | K | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | | High alloyed steel, and tool steel | | | | | | | | | | Stainless steel | | | | | Grey cast iron | | Nodular cast iron | | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | | | | | | | | | | | | | |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 | | | | | | | | | | | | | |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 | | | | | | | | | | | | | |
| Recommend | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | | | | | | | | | | | | | |
| ISO | N | | | | | | | | | | | S | | | | | | | | | H | | | | | | | | | | | |
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron | | | | | | | | | |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | | | | | | | | | | | | |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 | | | | | | | | | | | | |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 | | | | | | | | | | | | |
| Recommend | | | | | | ○ | ○ | ○ | | | | | | | | | | | | ○ | | | | | | | | | | | | | |



# ONLY ONE COATED PM60 END MILLS

PLAIN SHANK **GYG72** SERIES
FLAT SHANK **GYF99** SERIES

## PM60, 2 FLUTE SHORT LENGTH
## PM60，2刃 短刃




PM60 | 2 | 30° | PLAIN | FLAT | p.C537

Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| END MILL HOLDER | D118 - 137 | POWER MILLING CHUCK | D161 - 176 |
| - | - | ER COLLET CHUCK | D73 - 115 |
| | | SK SLIM CHUCK | D183 - 201 |

Unit(单位) : mm

| EDP No. | | Mill Diameter 直径 | Shank Diameter 柄径 | Length of Cut 刃长 | Overall Length 全长 |
|---|---|---|---|---|---|
| PLAIN | FLAT | $D_1$ | $D_2$ | $L_1$ | $L_2$ |
| GYG72010 | GYF99010 | 1.0 | 6 | 2.5 | 47 |
| GYG72020 | GYF99020 | 2.0 | 6 | 4 | 48 |
| GYG72030 | GYF99030 | 3.0 | 6 | 5 | 49 |
| GYG72040 | GYF99040 | 4.0 | 6 | 7 | 51 |
| GYG72050 | GYF99050 | 5.0 | 6 | 8 | 52 |
| GYG72060 | GYF99060 | 6.0 | 6 | 8 | 52 |
| GYG72070 | GYF99070 | 7.0 | 8 | 10 | 60 |
| GYG72080 | GYF99080 | 8.0 | 8 | 11 | 61 |
| GYG72090 | GYF99090 | 9.0 | 10 | 11 | 61 |
| GYG72100 | GYF99100 | 10.0 | 10 | 13 | 63 |
| GYG72120 | GYF99120 | 12.0 | 12 | 16 | 73 |
| GYG72140 | GYF99140 | 14.0 | 12 | 16 | 73 |
| GYG72160 | GYF99160 | 16.0 | 16 | 19 | 79 |
| GYG72180 | GYF99180 | 18.0 | 16 | 19 | 79 |
| GYG72200 | GYF99200 | 20.0 | 20 | 22 | 88 |
| GYG72220 | GYF99220 | 22.0 | 20 | 22 | 88 |
| GYG72250 | GYF99250 | 25.0 | 25 | 26 | 102 |

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.03 | h6 |

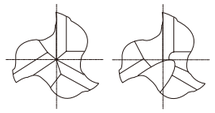
◎ : Excellent (优秀) ○ : Good (良好)

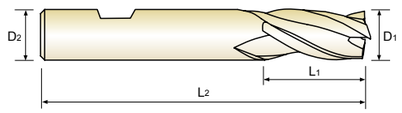
| ISO | P | | | | | | | | | | | | | | | | | | | | M | | | | | K | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | | High alloyed steel, and tool steel | | | | | | | | | | Stainless steel | | | | | Grey cast iron | | Nodular cast iron | | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | | | | | | | | | | | | | |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 | | | | | | | | | | | | | |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 | | | | | | | | | | | | | |
| Recommend | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | | | | | | | | | | | | | |
| ISO | N | | | | | | | | | | | S | | | | | | | | | H | | | | | | | | | | | |
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron | | | | | | | | | |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | | | | | | | | | | | | |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 | | | | | | | | | | | | |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 | | | | | | | | | | | | |
| Recommend | | | | | | ○ | ○ | ○ | | | | | | | | | | | | ○ | | | | | | | | | | | | | |

# ONLY ONE COATED PM60 END MILLS

FLAT SHANK **GYG01 SERIES**

## PM60, 3 FLUTE SHORT LENGTH (Center Cut)
## PM60，3刃 短刃（中心切断）




PM60 | 3 | 30° | FLAT | p.C538-539

Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| END MILL HOLDER | D118 - 137 | POWER MILLING CHUCK | D161 - 176 |
| - | - | ER COLLET CHUCK | D73 - 115 |
| | | SK SLIM CHUCK | D183 - 201 |

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 | Shank Diameter 柄径 | Length of Cut 刃长 | Overall Length 全长 |
|---|---|---|---|---|
| | $D_1$ | $D_2$ | $L_1$ | $L_2$ |
| GYG01010 | 1.0 | 6 | 3 | 47 |
| GYG01020 | 2.0 | 6 | 7 | 51 |
| GYG01030 | 3.0 | 6 | 8 | 52 |
| GYG01040 | 4.0 | 6 | 11 | 55 |
| GYG01050 | 5.0 | 6 | 13 | 57 |
| GYG01060 | 6.0 | 6 | 13 | 57 |
| GYG01070 | 7.0 | 8 | 16 | 66 |
| GYG01080 | 8.0 | 8 | 19 | 69 |
| GYG01090 | 9.0 | 10 | 19 | 69 |
| GYG01100 | 10.0 | 10 | 22 | 72 |
| GYG01120 | 12.0 | 12 | 26 | 83 |
| GYG01140 | 14.0 | 12 | 26 | 83 |
| GYG01160 | 16.0 | 16 | 32 | 92 |
| GYG01180 | 18.0 | 16 | 32 | 92 |
| GYG01200 | 20.0 | 20 | 38 | 104 |
| GYG01220 | 22.0 | 20 | 38 | 104 |
| GYG01250 | 25.0 | 25 | 45 | 121 |

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.03 | h6 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | ○ | ○ | ○ | | | | | | | | | | | | ○ | |

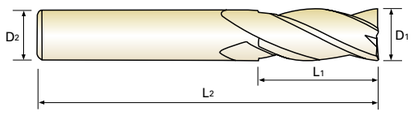


# ONLY ONE COATED PM60 END MILLS

PLAIN SHANK **GYG74 SERIES**

FLAT SHANK **GYF96 SERIES**

## PM60, 4 FLUTE SHORT LENGTH (Center Cut)
## PM60，4刃 短刃（中心切断）




PM60 | 4 | 30° | PLAIN | FLAT | p.C540

Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| END MILL HOLDER | D118 - 137 | POWER MILLING CHUCK | D161 - 176 |
| - | - | ER COLLET CHUCK | D73 - 115 |
| | | SK SLIM CHUCK | D183 - 201 |

Unit(单位) : mm

| EDP No. | | Mill Diameter 直径 | Shank Diameter 柄径 | Length of Cut 刃长 | Overall Length 全长 |
|---|---|---|---|---|---|
| PLAIN | FLAT | $D_1$ | $D_2$ | $L_1$ | $L_2$ |
| GYG74010 | GYF96010 | 1.0 | 6 | 3 | 49 |
| GYG74020 | GYF96020 | 2.0 | 6 | 7 | 51 |
| GYG74030 | GYF96030 | 3.0 | 6 | 8 | 52 |
| GYG74040 | GYF96040 | 4.0 | 6 | 11 | 55 |
| GYG74050 | GYF96050 | 5.0 | 6 | 13 | 57 |
| GYG74060 | GYF96060 | 6.0 | 6 | 13 | 57 |
| GYG74070 | GYF96070 | 7.0 | 8 | 16 | 66 |
| GYG74080 | GYF96080 | 8.0 | 8 | 19 | 69 |
| GYG74090 | GYF96090 | 9.0 | 10 | 19 | 69 |
| GYG74100 | GYF96100 | 10.0 | 10 | 22 | 72 |
| GYG74120 | GYF96120 | 12.0 | 12 | 26 | 83 |
| GYG74140 | GYF96140 | 14.0 | 12 | 26 | 83 |
| GYG74160 | GYF96160 | 16.0 | 16 | 32 | 92 |
| GYG74180 | GYF96180 | 18.0 | 16 | 32 | 92 |
| GYG74200 | GYF96200 | 20.0 | 20 | 38 | 104 |
| GYG74220 | GYF96220 | 22.0 | 20 | 38 | 104 |
| GYG74250 | GYF96250 | 25.0 | 25 | 45 | 121 |

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.03 | h6 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |

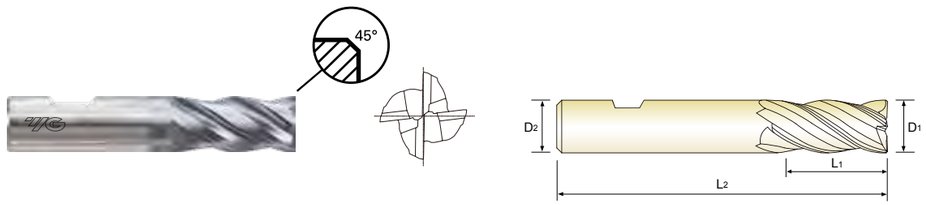
| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | ○ | ○ | ○ | | | | | | | | | | | | ○ | |

# ONLY ONE COATED PM60 END MILLS

FLAT SHANK **GYG52 SERIES**

## PM60, 4 FLUTE MULTIPLE HELIX SHORT LENGTH (Center Cut)

## PM60，4刃 不等螺旋 短刃（中心切断）




PM60 | 4 | 35°/37° | FLAT | C x 45° | p.C541

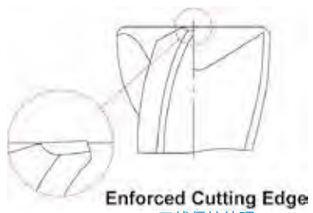
Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| END MILL HOLDER | D118 - 137 | POWER MILLING CHUCK | D161 - 176 |
| - | - | ER COLLET CHUCK | D73 - 115 |
| | | SK SLIM CHUCK | D183 - 201 |

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Overall Length 全长 L2 | Chamfer 导向 |
|---|---|---|---|---|---|
| GYG52030 | 3.0 | 6 | 8 | 52 | 0.1 |
| GYG52040 | 4.0 | 6 | 11 | 55 | 0.1 |
| GYG52050 | 5.0 | 6 | 13 | 57 | 0.1 |
| GYG52060 | 6.0 | 6 | 13 | 57 | 0.1 |
| GYG52070 | 7.0 | 8 | 16 | 66 | 0.1 |
| GYG52080 | 8.0 | 8 | 19 | 69 | 0.1 |
| GYG52090 | 9.0 | 10 | 19 | 69 | 0.1 |
| GYG52100 | 10.0 | 10 | 22 | 72 | 0.1 |
| GYG52120 | 12.0 | 12 | 26 | 83 | 0.1 |
| GYG52140 | 14.0 | 12 | 26 | 83 | 0.2 |
| GYG52160 | 16.0 | 16 | 32 | 92 | 0.2 |
| GYG52180 | 18.0 | 16 | 32 | 92 | 0.2 |
| GYG52200 | 20.0 | 20 | 38 | 104 | 0.2 |
| GYG52220 | 22.0 | 20 | 38 | 104 | 0.2 |
| GYG52250 | 25.0 | 25 | 45 | 121 | 0.2 |

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.03 | h6 |



Enforced Cutting Edge
刃线保护处理

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | ○ | ○ | ○ | | | | | | | | | | | | ○ | |

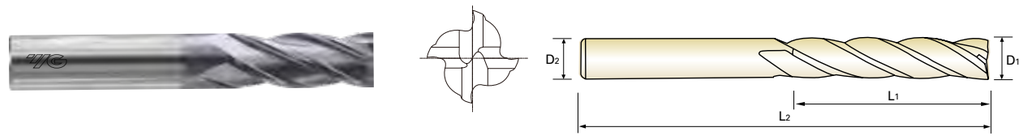


ONLY ONE COATED PM60 END MILLS

PLAIN SHANK **GYG76 SERIES**
FLAT SHANK **GYG02 SERIES**

## PM60, 4 FLUTE LONG LENGTH (Center Cut)

## PM60，4刃 长刃（中心切断）




PM60 | 4 | 30° | PLAIN | FLAT | p.C540

Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| END MILL HOLDER | D118 - 137 | POWER MILLING CHUCK | D161 - 176 |
| - | - | ER COLLET CHUCK | D73 - 115 |
| | | SK SLIM CHUCK | D183 - 201 |

Unit(单位) : mm

| EDP No. PLAIN | EDP No. FLAT | Mill Diameter 直径 D1 | Shank Diameter 柄径 D2 | Length of Cut 刃长 L1 | Overall Length 全长 L2 |
|---|---|---|---|---|---|
| GYG76020 | GYG02020 | 2.0 | 6 | 10 | 54 |
| GYG76030 | GYG02030 | 3.0 | 6 | 12 | 56 |
| GYG76040 | GYG02040 | 4.0 | 6 | 19 | 63 |
| GYG76050 | GYG02050 | 5.0 | 6 | 24 | 68 |
| GYG76060 | GYG02060 | 6.0 | 6 | 24 | 68 |
| GYG76070 | GYG02070 | 7.0 | 8 | 30 | 80 |
| GYG76080 | GYG02080 | 8.0 | 8 | 38 | 88 |
| GYG76090 | GYG02090 | 9.0 | 10 | 38 | 88 |
| GYG76100 | GYG02100 | 10.0 | 10 | 45 | 95 |
| GYG76120 | GYG02120 | 12.0 | 12 | 53 | 110 |
| GYG76140 | GYG02140 | 14.0 | 12 | 53 | 110 |
| GYG76160 | GYG02160 | 16.0 | 16 | 63 | 123 |
| GYG76180 | GYG02180 | 18.0 | 16 | 63 | 123 |
| GYG76200 | GYG02200 | 20.0 | 20 | 75 | 141 |
| GYG76220 | GYG02220 | 22.0 | 20 | 75 | 141 |
| GYG76250 | GYG02250 | 25.0 | 25 | 90 | 166 |

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.03 | h6 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |

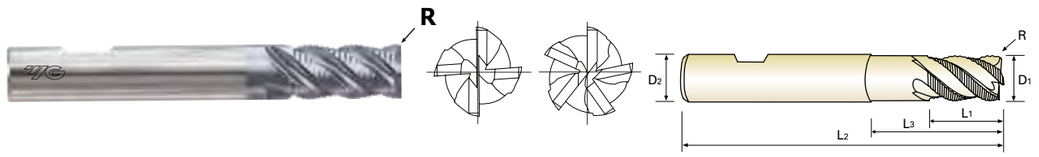
| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | ○ | ○ | ○ | | | | | | | | | | | | ○ | |

# ONLY ONE COATED PM60 END MILLS

FLAT SHANK **GYF95 SERIES**

## PM60, MULTI FLUTE MULTIPLE HELIX SHORT LENGTH CORNER RADIUS ROUGHING - FINE (Center Cut)

## PM60，多刃 不等螺旋 短刃 圆鼻 粗加工 - 细牙（中心切断）




PM60 | 4-5 | 44°/44.5°/45° | HR | FLAT | p.C542

Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| END MILL HOLDER | D118 - 137 | POWER MILLING CHUCK | D161 - 176 |
| - | - | ER COLLET CHUCK | D73 - 115 |
| | | SK SLIM CHUCK | D183 - 201 |

Unit(单位) : mm

| EDP No. | Corner Radius 圆弧角 R | Mill Diameter 直径 D1(js12) | Shank Diameter 柄径 D2(h6) | Length of Cut 刃长 L1 | Length Below Shank 颈长 L3 | Overall engthh 全长 L2 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|---|
| GYF95060 | R0.5 | **6.0** | 6 | 13 | - | 57 | 4 |
| GYF95070 | R0.5 | **7.0** | 10 | 16 | - | 66 | 4 |
| GYF95080 | R0.5 | **8.0** | 10 | 19 | - | 69 | 4 |
| GYF95090 | R0.5 | **9.0** | 10 | 19 | - | 69 | 4 |
| GYF95100 | R0.5 | **10.0** | 10 | 22 | 31 | 72 | 4 |
| GYF95120 | R0.5 | **12.0** | 12 | 26 | 37 | 83 | 4 |
| GYF95140 | R1.0 | **14.0** | 12 | 26 | - | 83 | 5 |
| GYF95160 | R1.0 | **16.0** | 16 | 32 | 44 | 92 | 5 |
| GYF95180 | R1.0 | **18.0** | 16 | 32 | - | 92 | 5 |
| GYF95200 | R1.0 | **20.0** | 20 | 38 | 54 | 104 | 5 |
| GYF95250 | R1.0 | **25.0** | 25 | 45 | 63 | 121 | 5 |

**Tolerances according to DIN 7160 & 7161**
按DIN7160&7161的标准公差

| Tolerance range in μm / 公差范围为 | | | |
|---|---|---|---|
| Nominal-Diameter in mm / 直径范围为 | | | |
| | over 6 to 10 | over 10 to 18 | over 18 to 30 |
| **js12** | ±75 | ±90 | ±105 |
| **h6** | 0 / - 9 | 0 / - 11 | 0 / - 13 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | ○ | ○ | ○ | | | | | | | | | | | | ○ | |



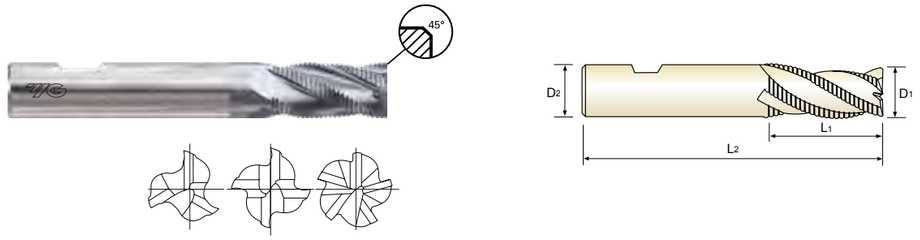


# ONLY ONE COATED PM60 END MILLS

FLAT SHANK **GYF94 SERIES**

## PM60, MULTI FLUTE SHORT LENGTH ROUGHING - FINE (Center Cut)

## PM60，多刃 短刃 粗加工 - 细牙（中心切断）




PM60 | 3-5 | 30° | HR | FLAT | C x 45° | p.C543

Recommended ToolHolder

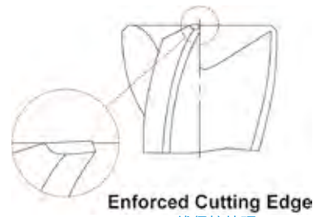
| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| END MILL HOLDER | D118 - 137 | POWER MILLING CHUCK | D161 - 176 |
| - | - | ER COLLET CHUCK | D73 - 115 |
| | | SK SLIM CHUCK | D183 - 201 |

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 D1(js12) | Shank Diameter 柄径 D2(h6) | Length of Cut 刃长 L1 | Overall Length 全长 L2 | No. of Flute 槽数 | Chamfer 导向 |
|---|---|---|---|---|---|---|
| GYF94060 | **6.0** | 6 | 13 | 57 | 3 | 0.18 |
| GYF94070 | **7.0** | 10 | 16 | 66 | 3 | 0.18 |
| GYF94080 | **8.0** | 10 | 19 | 69 | 3 | 0.18 |
| GYF94090 | **9.0** | 10 | 19 | 69 | 3 | 0.18 |
| GYF94100 | **10.0** | 10 | 22 | 72 | 4 | 0.18 |
| GYF94120 | **12.0** | 12 | 26 | 83 | 4 | 0.18 |
| GYF94140 | **14.0** | 12 | 26 | 83 | 4 | 0.25 |
| GYF94160 | **16.0** | 16 | 32 | 92 | 4 | 0.25 |
| GYF94180 | **18.0** | 16 | 32 | 92 | 4 | 0.25 |
| GYF94200 | **20.0** | 20 | 38 | 104 | 4 | 0.25 |
| GYF94250 | **25.0** | 25 | 45 | 121 | 5 | 0.36 |

**Tolerances according to DIN 7160 & 7161**
按DIN7160&7161的标准公差

| Tolerance range in μm / 公差范围为 | | | |
|---|---|---|---|
| Nominal-Diameter in mm / 直径范围为 | | | |
| | over 6 to 10 | over 10 to 18 | over 18 to 30 |
| **js12** | ±75 | ±90 | ±105 |
| **h6** | 0 / - 9 | 0 / - 11 | 0 / - 13 |



**Enforced Cutting Edge**
刃线保护处理

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |

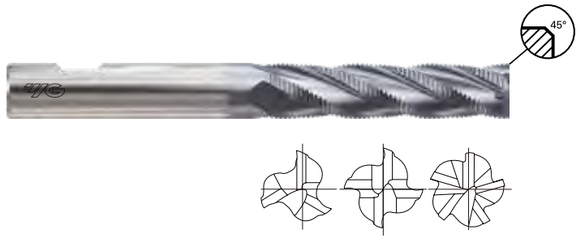
| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | ○ | ○ | ○ | | | | | | | | | | | | ○ | |

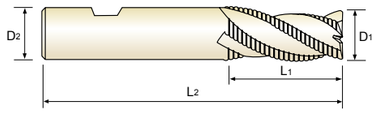
# ONLY ONE COATED PM60 END MILLS

FLAT SHANK **GYF98 SERIES**

## PM60, MULTI FLUTE LONG LENGTH ROUGHING - FINE (Center Cut)

## PM60，多刃 长刃 粗加工 - 细牙（中心切断）




PM 60 | 3-5 | 30° | HR | FLAT | C x 45° | p.C543

Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| END MILL HOLDER | D118 - 137 | POWER MILLING CHUCK | D161 - 176 |
| - | - | ER COLLET CHUCK | D73 - 115 |
| | | SK SLIM CHUCK | D183 - 201 |

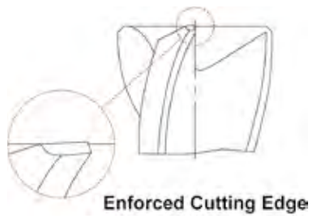
Unit(单位) : mm

| EDP No. | Mill Diameter 直径 D1(js12) | Shank Diameter 柄径 D2(h6) | Length of Cut 刃长 L1 | Overall Length 全长 L2 | No. of Flute 槽数 | Chamfer 导向 |
|---|---|---|---|---|---|---|
| GYF98060 | 6.0 | 6 | 24 | 68 | 3 | 0.18 |
| GYF98070 | 7.0 | 10 | 30 | 80 | 3 | 0.18 |
| GYF98080 | 8.0 | 10 | 38 | 88 | 3 | 0.18 |
| GYF98090 | 9.0 | 10 | 38 | 88 | 3 | 0.18 |
| GYF98100 | 10.0 | 10 | 45 | 95 | 4 | 0.18 |
| GYF98120 | 12.0 | 12 | 53 | 110 | 4 | 0.18 |
| GYF98140 | 14.0 | 12 | 53 | 110 | 4 | 0.25 |
| GYF98160 | 16.0 | 16 | 63 | 123 | 4 | 0.25 |
| GYF98180 | 18.0 | 16 | 63 | 123 | 4 | 0.25 |
| GYF98200 | 20.0 | 20 | 75 | 141 | 4 | 0.25 |
| GYF98250 | 25.0 | 25 | 90 | 166 | 5 | 0.36 |

### Tolerances according to DIN 7160 & 7161

按DIN7160&7161的标准公差

| Tolerance range in μm / 公差范围为 Nominal-Diameter in mm / 直径范围为 | over 6 to 10 | over 10 to 18 | over 18 to 30 |
|---|---|---|---|
| js12 | ±75 | ±90 | ±105 |
| h6 | 0 / - 9 | 0 / - 11 | 0 / - 13 |



Enforced Cutting Edge

刃线保护处理

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | | | | | | | | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | | | | | | | | |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 | | | | | | | | |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 | | | | | | | | |
| Recommend | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | | | | | | | | |
| ISO | N | | | | | | | | | | S | | | | | | | H | | | | | | | | | | |
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron | | | | | | | | |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | | | | | | | | |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 | | | | | | | | |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 | | | | | | | | |
| Recommend | | | | | | ○ | ○ | ○ | | | | | | | | | | | | ○ | | | | | | | | |

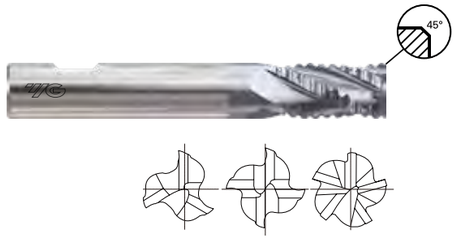


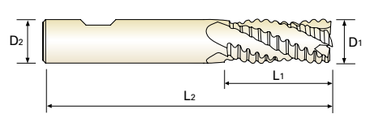
# ONLY ONE COATED PM60 END MILLS

FLAT SHANK **GYG03 SERIES**

## PM60, MULTI FLUTE SHORT LENGTH ROUGHING - COARSE(Center Cut)

## PM60，多刃 长刃 粗加工 - 粗牙（中心切断）




PM 60 | 3-5 | 30° | NR | FLAT | C x 45° | p.C543

Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| END MILL HOLDER | D118 - 137 | POWER MILLING CHUCK | D161 - 176 |
| - | - | ER COLLET CHUCK | D73 - 115 |
| | | SK SLIM CHUCK | D183 - 201 |

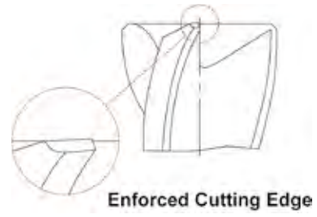
Unit(单位) : mm

| EDP No. | Mill Diameter 直径 D1(js12) | Shank Diameter 柄径 D2(h6) | Length of Cut 刃长 L1 | Overall Length 全长 L2 | No. of Flute 槽数 | Chamfer 导向 |
|---|---|---|---|---|---|---|
| GYG03060 | 6.0 | 6 | 13 | 57 | 3 | 0.25 |
| GYG03070 | 7.0 | 10 | 16 | 66 | 3 | 0.25 |
| GYG03080 | 8.0 | 10 | 19 | 69 | 3 | 0.25 |
| GYG03090 | 9.0 | 10 | 19 | 69 | 3 | 0.36 |
| GYG03100 | 10.0 | 10 | 22 | 72 | 4 | 0.36 |
| GYG03120 | 12.0 | 12 | 26 | 83 | 4 | 0.56 |
| GYG03140 | 14.0 | 12 | 26 | 83 | 4 | 0.6 |
| GYG03160 | 16.0 | 16 | 32 | 92 | 4 | 0.6 |
| GYG03180 | 18.0 | 16 | 32 | 92 | 4 | 0.6 |
| GYG03200 | 20.0 | 20 | 38 | 104 | 4 | 0.6 |
| GYG03250 | 25.0 | 25 | 45 | 121 | 5 | 0.6 |

### Tolerances according to DIN 7160 & 7161

按DIN7160&7161的标准公差

| Tolerance range in μm / 公差范围为 Nominal-Diameter in mm / 直径范围为 | over 6 to 10 | over 10 to 18 | over 18 to 30 |
|---|---|---|---|
| js12 | ±75 | ±90 | ±105 |
| h6 | 0 / - 9 | 0 / - 11 | 0 / - 13 |



Enforced Cutting Edge

刃线保护处理

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | | | | | | | | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | | | | | | | | |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 | | | | | | | | |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 | | | | | | | | |
| Recommend | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | | | | | | | | |
| ISO | N | | | | | | | | | | S | | | | | | | H | | | | | | | | | | |
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron | | | | | | | | |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | | | | | | | | |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 | | | | | | | | |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 | | | | | | | | |
| Recommend | | | | | | ○ | ○ | ○ | | | | | | | | | | | | ○ | | | | | | | | |

# ONLY ONE COATED PM60 END MILLS

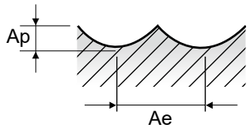
# RECOMMENDED CUTTING CONDITIONS
# 推荐加工参数

## GYG77 , GYF97 SERIES

**2 FLUTE BALL NOSE**
**2刃 球头**

Vc (切削速度) = (m/min.)
f z (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description 材料描述 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 3.0 | 4.0 | 6.0 | 8.0 | 10.0 | 12.0 | 16.0 | 20.0 | 25.0 |
| P | 1 | Non-alloy steel | 0.5D | 0.2D | Vc | 83 | 90 | 100 | 101 | 104 | 104 | 103 | 102 | 90 |
| | | | | | fz | 0.023 | 0.036 | 0.054 | 0.079 | 0.109 | 0.115 | 0.141 | 0.156 | 0.162 |
| | | | | | RPM | 8807 | 7162 | 5305 | 4019 | 3310 | 2759 | 2049 | 1623 | 1146 |
| | | | | | FEED | 405 | 516 | 573 | 635 | 722 | 634 | 578 | 506 | 371 |
| | 2 | | 0.5D | 0.2D | Vc | 66 | 70 | 79 | 78 | 79 | 81 | 78 | 75 | 70 |
| | | | | | fz | 0.020 | 0.032 | 0.046 | 0.067 | 0.095 | 0.097 | 0.123 | 0.140 | 0.140 |
| | | | | | RPM | 7003 | 5570 | 4191 | 3104 | 2515 | 2149 | 1552 | 1194 | 891 |
| | | | | | FEED | 280 | 357 | 386 | 416 | 478 | 417 | 382 | 334 | 250 |
| | 3-4 | | 0.5D | 0.2D | Vc | 44 | 45 | 52 | 54 | 53 | 54 | 54 | 52 | 44 |
| | | | | | fz | 0.016 | 0.026 | 0.039 | 0.056 | 0.082 | 0.083 | 0.1 | 0.11 | 0.125 |
| | | | | | RPM | 4669 | 3581 | 2759 | 2149 | 1687 | 1432 | 1074 | 828 | 560 |
| | | | | | FEED | 149 | 186 | 215 | 241 | 277 | 238 | 215 | 182 | 140 |
| | 5 | | 0.5D | 0.2D | Vc | 23 | 24 | 27 | 27 | 26 | 26 | 27 | 27 | 24 |
| | | | | | fz | 0.014 | 0.023 | 0.035 | 0.047 | 0.073 | 0.071 | 0.090 | 0.099 | 0.100 |
| | | | | | RPM | 2440 | 1910 | 1432 | 1074 | 828 | 690 | 537 | 430 | 306 |
| | | | | | FEED | 68 | 88 | 100 | 101 | 121 | 98 | 97 | 85 | 61 |
| | 6 | Low alloy steel | 0.5D | 0.2D | Vc | 66 | 70 | 79 | 78 | 79 | 81 | 78 | 75 | 70 |
| | | | | | fz | 0.020 | 0.032 | 0.046 | 0.067 | 0.095 | 0.097 | 0.123 | 0.140 | 0.140 |
| | | | | | RPM | 7003 | 5570 | 4191 | 3104 | 2515 | 2149 | 1552 | 1194 | 891 |
| | | | | | FEED | 280 | 357 | 386 | 416 | 478 | 417 | 382 | 334 | 250 |
| | 7 | | 0.5D | 0.2D | Vc | 44 | 45 | 52 | 54 | 53 | 54 | 54 | 52 | 44 |
| | | | | | fz | 0.016 | 0.026 | 0.039 | 0.056 | 0.082 | 0.083 | 0.1 | 0.11 | 0.125 |
| | | | | | RPM | 4669 | 3581 | 2759 | 2149 | 1687 | 1432 | 1074 | 828 | 560 |
| | | | | | FEED | 149 | 186 | 215 | 241 | 277 | 238 | 215 | 182 | 140 |
| | 8-9 | | 0.5D | 0.2D | Vc | 23 | 24 | 27 | 27 | 26 | 26 | 27 | 27 | 24 |
| | | | | | fz | 0.014 | 0.023 | 0.035 | 0.047 | 0.073 | 0.071 | 0.090 | 0.099 | 0.100 |
| | | | | | RPM | 2440 | 1910 | 1432 | 1074 | 828 | 690 | 537 | 430 | 306 |
| | | | | | FEED | 68 | 88 | 100 | 101 | 121 | 98 | 97 | 85 | 61 |
| | 10 | High alloyed steel, and tool steel | 0.5D | 0.2D | Vc | 66 | 70 | 79 | 78 | 79 | 81 | 78 | 75 | 70 |
| | | | | | fz | 0.020 | 0.032 | 0.046 | 0.067 | 0.095 | 0.097 | 0.123 | 0.140 | 0.140 |
| | | | | | RPM | 7003 | 5570 | 4191 | 3104 | 2515 | 2149 | 1552 | 1194 | 891 |
| | | | | | FEED | 280 | 357 | 386 | 416 | 478 | 417 | 382 | 334 | 250 |
| | 11.1 | | 0.5D | 0.2D | Vc | 23 | 24 | 27 | 27 | 26 | 26 | 27 | 27 | 24 |
| | | | | | fz | 0.014 | 0.023 | 0.035 | 0.047 | 0.073 | 0.071 | 0.090 | 0.099 | 0.100 |
| | | | | | RPM | 2440 | 1910 | 1432 | 1074 | 828 | 690 | 537 | 430 | 306 |
| | | | | | FEED | 68 | 88 | 100 | 101 | 121 | 98 | 97 | 85 | 61 |
| | 11.2 | | 0.3D | 0.2D | Vc | 16 | 17 | 19 | 19 | 18 | 18 | 19 | 19 | 16 |
| | | | | | fz | 0.013 | 0.024 | 0.035 | 0.047 | 0.075 | 0.071 | 0.088 | 0.1 | 0.095 |
| | | | | | RPM | 1698 | 1353 | 1008 | 756 | 573 | 477 | 378 | 302 | 204 |
| | | | | | FEED | 44 | 65 | 71 | 71 | 86 | 68 | 67 | 60 | 39 |
| M | 14.1 | Stainless steel | 0.5D | 0.2D | Vc | 25 | 27 | 30 | 30 | 28 | 29 | 30 | 30 | 26 |
| | | | | | fz | 0.013 | 0.023 | 0.036 | 0.049 | 0.072 | 0.075 | 0.093 | 0.099 | 0.098 |
| | | | | | RPM | 2653 | 2149 | 1592 | 1194 | 891 | 769 | 597 | 477 | 331 |
| | | | | | FEED | 69 | 99 | 115 | 117 | 128 | 115 | 111 | 95 | 65 |
| K | 15-20 | Grey cast iron Nodular cast iron Malleable cast iron | 0.5D | 0.2D | Vc | 66 | 70 | 79 | 78 | 79 | 81 | 78 | 75 | 70 |
| | | | | | fz | 0.02 | 0.032 | 0.046 | 0.067 | 0.095 | 0.097 | 0.123 | 0.14 | 0.14 |
| | | | | | RPM | 7003 | 5570 | 4191 | 3104 | 2515 | 2149 | 1552 | 1194 | 891 |
| | | | | | FEED | 280 | 357 | 386 | 416 | 478 | 417 | 382 | 334 | 250 |
| H | 40 | Chilled Cast Iron | 0.3D | 0.2D | Vc | 16 | 17 | 19 | 19 | 18 | 18 | 19 | 19 | 16 |
| | | | | | fz | 0.013 | 0.024 | 0.035 | 0.047 | 0.075 | 0.071 | 0.088 | 0.1 | 0.095 |
| | | | | | RPM | 1698 | 1353 | 1008 | 756 | 573 | 477 | 378 | 302 | 204 |
| | | | | | FEED | 44 | 65 | 71 | 71 | 86 | 68 | 67 | 60 | 39 |





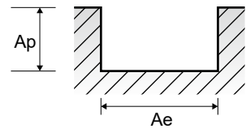

ONLY ONE COATED PM60 END MILLS

## GYG72 , GYF99 SERIES

**2 FLUTE - SLOTTING**
**2刃 - 槽铣削**

Vc (切削速度) = (m/min.)
f z (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description 材料描述 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 2.0 | 3.0 | 4.0 | 5.0 | 6.0 | 8.0 | 10.0 | 12.0 | 14.0 | 16.0 | 18.0 | 20.0 | 22.0 | 25.0 |
| P | 1 | Non-alloy steel | 1.0D | 0.5D | Vc | 53 | 57 | 65 | 74 | 79 | 78 | 79 | 81 | 84 | 81 | 78 | 72 | 70 | 71 |
| | | | | | fz | 0.008 | 0.016 | 0.027 | 0.033 | 0.038 | 0.053 | 0.071 | 0.076 | 0.083 | 0.099 | 0.105 | 0.116 | 0.109 | 0.103 |
| | | | | | RPM | 8435 | 6048 | 5173 | 4711 | 4191 | 3104 | 2515 | 2149 | 1910 | 1611 | 1379 | 1146 | 1013 | 904 |
| | | | | | FEED | 135 | 194 | 279 | 311 | 319 | 329 | 357 | 327 | 317 | 319 | 290 | 266 | 221 | 186 |
| | 2 | | 1.0D | 0.5D | Vc | 44 | 46 | 54 | 61 | 66 | 66 | 68 | 66 | 66 | 69 | 64 | 59 | 59 | 60 |
| | | | | | fz | 0.008 | 0.016 | 0.024 | 0.031 | 0.036 | 0.055 | 0.074 | 0.083 | 0.083 | 0.085 | 0.103 | 0.106 | 0.106 | 0.112 |
| | | | | | RPM | 7003 | 4881 | 4297 | 3883 | 3501 | 2626 | 2165 | 1751 | 1501 | 1373 | 1132 | 939 | 854 | 764 |
| | | | | | FEED | 112 | 156 | 206 | 241 | 252 | 289 | 320 | 291 | 249 | 233 | 233 | 199 | 181 | 171 |
| | 3-4 | | 1.0D | 0.5D | Vc | 37 | 38 | 48 | 49 | 52 | 54 | 55 | 52 | 53 | 54 | 54 | 53 | 50 | 46 |
| | | | | | fz | 0.008 | 0.017 | 0.025 | 0.035 | 0.042 | 0.056 | 0.079 | 0.091 | 0.098 | 0.1 | 0.1 | 0.107 | 0.104 | 0.119 |
| | | | | | RPM | 5889 | 4032 | 3820 | 3119 | 2759 | 2149 | 1751 | 1379 | 1205 | 1074 | 955 | 844 | 723 | 586 |
| | | | | | FEED | 94 | 137 | 191 | 218 | 232 | 241 | 277 | 251 | 236 | 215 | 191 | 181 | 150 | 139 |
| | 5 | | 1.0D | 0.5D | Vc | 24 | 26 | 30 | 32 | 33 | 35 | 34 | 34 | 33 | 34 | 34 | 33 | 33 | 34 |
| | | | | | fz | 0.011 | 0.017 | 0.023 | 0.029 | 0.037 | 0.051 | 0.069 | 0.079 | 0.086 | 0.09 | 0.1 | 0.104 | 0.099 | 0.105 |
| | | | | | RPM | 3820 | 2759 | 2387 | 2037 | 1751 | 1393 | 1082 | 902 | 750 | 676 | 601 | 525 | 477 | 433 |
| | | | | | FEED | 84 | 94 | 110 | 118 | 130 | 142 | 149 | 142 | 129 | 122 | 120 | 109 | 95 | 91 |
| | 6 | Low alloy steel | 1.0D | 0.5D | Vc | 44 | 46 | 54 | 61 | 66 | 66 | 68 | 66 | 66 | 69 | 64 | 59 | 59 | 60 |
| | | | | | fz | 0.008 | 0.016 | 0.024 | 0.031 | 0.036 | 0.055 | 0.074 | 0.083 | 0.083 | 0.085 | 0.103 | 0.106 | 0.106 | 0.112 |
| | | | | | RPM | 7003 | 4881 | 4297 | 3883 | 3501 | 2626 | 2165 | 1751 | 1501 | 1373 | 1132 | 939 | 854 | 764 |
| | | | | | FEED | 112 | 156 | 206 | 241 | 252 | 289 | 320 | 291 | 249 | 233 | 233 | 199 | 181 | 171 |
| | 7 | | 1.0D | 0.5D | Vc | 37 | 38 | 48 | 49 | 52 | 54 | 55 | 52 | 53 | 54 | 54 | 53 | 50 | 46 |
| | | | | | fz | 0.008 | 0.017 | 0.025 | 0.035 | 0.042 | 0.056 | 0.079 | 0.091 | 0.098 | 0.1 | 0.1 | 0.107 | 0.104 | 0.119 |
| | | | | | RPM | 5889 | 4032 | 3820 | 3119 | 2759 | 2149 | 1751 | 1379 | 1205 | 1074 | 955 | 844 | 723 | 586 |
| | | | | | FEED | 94 | 137 | 191 | 218 | 232 | 241 | 277 | 251 | 236 | 215 | 191 | 181 | 150 | 139 |
| | 8 | | 1.0D | 0.5D | Vc | 24 | 26 | 30 | 32 | 33 | 35 | 34 | 34 | 33 | 34 | 34 | 33 | 33 | 34 |
| | | | | | fz | 0.011 | 0.017 | 0.023 | 0.029 | 0.037 | 0.051 | 0.069 | 0.079 | 0.086 | 0.09 | 0.1 | 0.104 | 0.099 | 0.105 |
| | | | | | RPM | 3820 | 2759 | 2387 | 2037 | 1751 | 1393 | 1082 | 902 | 750 | 676 | 601 | 525 | 477 | 433 |
| | | | | | FEED | 84 | 94 | 110 | 118 | 130 | 142 | 149 | 142 | 129 | 122 | 120 | 109 | 95 | 91 |
| | 9 | | 1.0D | 0.3D | Vc | 15 | 20 | 24 | 25 | 26 | 27 | 26 | 26 | 26 | 27 | 27 | 27 | 26 | 24 |
| | | | | | fz | 0.01 | 0.017 | 0.023 | 0.028 | 0.036 | 0.047 | 0.071 | 0.071 | 0.079 | 0.09 | 0.094 | 0.099 | 0.086 | 0.1 |
| | | | | | RPM | 2387 | 2122 | 1910 | 1592 | 1379 | 1074 | 828 | 690 | 591 | 537 | 477 | 430 | 376 | 306 |
| | | | | | FEED | 48 | 72 | 88 | 89 | 99 | 101 | 118 | 98 | 93 | 97 | 90 | 85 | 65 | 61 |
| | 10 | High alloyed steel, and tool steel | 1.0D | 0.5D | Vc | 44 | 46 | 54 | 61 | 66 | 66 | 68 | 66 | 66 | 69 | 64 | 59 | 59 | 60 |
| | | | | | fz | 0.008 | 0.016 | 0.024 | 0.031 | 0.036 | 0.055 | 0.074 | 0.083 | 0.083 | 0.085 | 0.103 | 0.106 | 0.106 | 0.112 |
| | | | | | RPM | 7003 | 4881 | 4297 | 3883 | 3501 | 2626 | 2165 | 1751 | 1501 | 1373 | 1132 | 939 | 854 | 764 |
| | | | | | FEED | 112 | 156 | 206 | 241 | 252 | 289 | 320 | 291 | 249 | 233 | 233 | 199 | 181 | 171 |
| | 11.1 | | 1.0D | 0.5D | Vc | 24 | 26 | 30 | 32 | 33 | 35 | 34 | 34 | 33 | 34 | 34 | 33 | 33 | 34 |
| | | | | | fz | 0.011 | 0.017 | 0.023 | 0.029 | 0.037 | 0.051 | 0.069 | 0.079 | 0.086 | 0.09 | 0.1 | 0.104 | 0.099 | 0.105 |
| | | | | | RPM | 3820 | 2759 | 2387 | 2037 | 1751 | 1393 | 1082 | 902 | 750 | 676 | 601 | 525 | 477 | 433 |
| | | | | | FEED | 84 | 94 | 110 | 118 | 130 | 142 | 149 | 142 | 129 | 122 | 120 | 109 | 95 | 91 |
| | 11.2 | | 1.0D | 0.3D | Vc | 11 | 14 | 17 | 18 | 18 | 19 | 19 | 18 | 18 | 19 | 19 | 19 | 19 | 16 |
| | | | | | fz | 0.01 | 0.018 | 0.024 | 0.029 | 0.036 | 0.047 | 0.072 | 0.071 | 0.077 | 0.088 | 0.096 | 0.1 | 0.083 | 0.095 |
| | | | | | RPM | 1751 | 1485 | 1353 | 1146 | 955 | 756 | 605 | 477 | 409 | 378 | 336 | 302 | 275 | 204 |
| | | | | | FEED | 35 | 53 | 65 | 66 | 69 | 71 | 87 | 68 | 63 | 67 | 65 | 60 | 46 | 39 |
| M | 14.1 | Stainless steel | 1.0D | 0.5D | Vc | 17 | 22 | 27 | 28 | 29 | 30 | 29 | 29 | 29 | 29 | 30 | 30 | 29 | 26 |
| | | | | | fz | 0.01 | 0.018 | 0.024 | 0.028 | 0.036 | 0.047 | 0.071 | 0.071 | 0.08 | 0.091 | 0.094 | 0.101 | 0.083 | 0.098 |
| | | | | | RPM | 2706 | 2334 | 2149 | 1783 | 1538 | 1194 | 923 | 769 | 659 | 577 | 531 | 477 | 420 | 331 |
| | | | | | FEED | 54 | 84 | 103 | 100 | 111 | 112 | 131 | 109 | 105 | 105 | 100 | 96 | 70 | 65 |
| K | 15-20 | Grey cast iron Nodular cast iron Malleable cast iron | 1.0D | 0.5D | Vc | 44 | 46 | 54 | 61 | 66 | 66 | 68 | 66 | 66 | 69 | 64 | 59 | 59 | 60 |
| | | | | | fz | 0.008 | 0.016 | 0.024 | 0.031 | 0.036 | 0.055 | 0.074 | 0.083 | 0.083 | 0.085 | 0.103 | 0.106 | 0.106 | 0.112 |
| | | | | | RPM | 7003 | 4881 | 4297 | 3883 | 3501 | 2626 | 2165 | 1751 | 1501 | 1373 | 1132 | 939 | 854 | 764 |
| | | | | | FEED | 112 | 156 | 206 | 241 | 252 | 289 | 320 | 291 | 249 | 233 | 233 | 199 | 181 | 171 |
| H | 40 | Chilled Cast Iron | 1.0D | 0.3D | Vc | 11 | 14 | 17 | 18 | 18 | 19 | 19 | 18 | 18 | 19 | 19 | 19 | 19 | 16 |
| | | | | | fz | 0.01 | 0.018 | 0.024 | 0.029 | 0.036 | 0.047 | 0.072 | 0.071 | 0.077 | 0.088 | 0.096 | 0.1 | 0.083 | 0.095 |
| | | | | | RPM | 1751 | 1485 | 1353 | 1146 | 955 | 756 | 605 | 477 | 409 | 378 | 336 | 302 | 275 | 204 |
| | | | | | FEED | 35 | 53 | 65 | 66 | 69 | 71 | 87 | 68 | 63 | 67 | 65 | 60 | 46 | 39 |



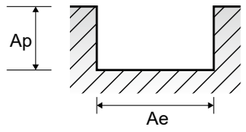
# ONLY ONE COATED PM60 END MILLS

# RECOMMENDED CUTTING CONDITIONS
# 推荐加工参数

## GYG01 SERIES — 3 FLUTE - SLOTTING
## 3刃 - 槽铣削

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description 材料描述 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 2.0 | 3.0 | 4.0 | 5.0 | 6.0 | 8.0 | 10.0 | 12.0 | 14.0 | 16.0 | 18.0 | 20.0 | 22.0 | 25.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | 1.0D | 0.5D | Vc | 49 | 52 | 65 | 72 | 76 | 78 | 79 | 81 | 84 | 81 | 78 | 72 | 70 | 71 |
| | | | | | fz | 0.004 | 0.007 | 0.011 | 0.014 | 0.023 | 0.031 | 0.04 | 0.051 | 0.052 | 0.06 | 0.07 | 0.08 | 0.091 | 0.107 |
| | | | | | RPM | 7799 | 5517 | 5173 | 4584 | 4032 | 3104 | 2515 | 2149 | 1910 | 1611 | 1379 | 1146 | 1013 | 904 |
| | | | | | FEED | 94 | 116 | 171 | 193 | 278 | 289 | 302 | 329 | 298 | 290 | 290 | 275 | 276 | 290 |
| | 2 | | 1.0D | 0.5D | Vc | 41 | 44 | 54 | 60 | 63 | 66 | 68 | 66 | 71 | 69 | 61 | 60 | 61 | 60 |
| | | | | | fz | 0.003 | 0.007 | 0.011 | 0.013 | 0.023 | 0.032 | 0.039 | 0.053 | 0.055 | 0.06 | 0.072 | 0.081 | 0.089 | 0.11 |
| | | | | | RPM | 6525 | 4669 | 4297 | 3820 | 3342 | 2626 | 2165 | 1751 | 1614 | 1373 | 1079 | 955 | 883 | 764 |
| | | | | | FEED | 59 | 98 | 142 | 149 | 231 | 252 | 253 | 278 | 266 | 247 | 233 | 232 | 236 | 252 |
| | 3-4 | | 1.0D | 0.5D | Vc | 36 | 38 | 45 | 49 | 52 | 54 | 53 | 54 | 53 | 54 | 54 | 53 | 50 | 46 |
| | | | | | fz | 0.003 | 0.005 | 0.009 | 0.012 | 0.021 | 0.028 | 0.038 | 0.047 | 0.053 | 0.056 | 0.063 | 0.067 | 0.083 | 0.107 |
| | | | | | RPM | 5730 | 4032 | 3581 | 3119 | 2759 | 2149 | 1687 | 1432 | 1205 | 1074 | 955 | 844 | 723 | 586 |
| | | | | | FEED | 52 | 60 | 97 | 112 | 174 | 180 | 192 | 202 | 192 | 180 | 180 | 170 | 180 | 188 |
| | 5 | | 1.0D | 0.5D | Vc | 23 | 25 | 29 | 32 | 33 | 35 | 34 | 34 | 35 | 34 | 34 | 33 | 33 | 34 |
| | | | | | fz | 0.004 | 0.007 | 0.009 | 0.012 | 0.021 | 0.029 | 0.044 | 0.052 | 0.055 | 0.06 | 0.064 | 0.069 | 0.08 | 0.093 |
| | | | | | RPM | 3661 | 2653 | 2308 | 2037 | 1751 | 1393 | 1082 | 902 | 796 | 676 | 601 | 525 | 477 | 433 |
| | | | | | FEED | 44 | 56 | 62 | 73 | 110 | 121 | 143 | 141 | 131 | 122 | 115 | 109 | 115 | 121 |
| | 6 | | 1.0D | 0.5D | Vc | 41 | 44 | 54 | 60 | 63 | 66 | 68 | 66 | 71 | 69 | 61 | 60 | 61 | 60 |
| | | | | | fz | 0.003 | 0.007 | 0.011 | 0.013 | 0.023 | 0.032 | 0.039 | 0.053 | 0.055 | 0.06 | 0.072 | 0.081 | 0.089 | 0.11 |
| | | | | | RPM | 6525 | 4669 | 4297 | 3820 | 3342 | 2626 | 2165 | 1751 | 1614 | 1373 | 1079 | 955 | 883 | 764 |
| | | | | | FEED | 59 | 98 | 142 | 149 | 231 | 252 | 253 | 278 | 266 | 247 | 233 | 232 | 236 | 252 |
| | 7 | Low alloy steel | 1.0D | 0.5D | Vc | 36 | 38 | 45 | 49 | 52 | 54 | 53 | 54 | 53 | 54 | 54 | 53 | 50 | 46 |
| | | | | | fz | 0.003 | 0.005 | 0.009 | 0.012 | 0.021 | 0.028 | 0.038 | 0.047 | 0.053 | 0.056 | 0.063 | 0.067 | 0.083 | 0.107 |
| | | | | | RPM | 5730 | 4032 | 3581 | 3119 | 2759 | 2149 | 1687 | 1432 | 1205 | 1074 | 955 | 844 | 723 | 586 |
| | | | | | FEED | 52 | 60 | 97 | 112 | 174 | 180 | 192 | 202 | 192 | 180 | 180 | 170 | 180 | 188 |
| | 8 | | 1.0D | 0.5D | Vc | 23 | 25 | 29 | 32 | 33 | 35 | 34 | 34 | 35 | 34 | 34 | 33 | 33 | 34 |
| | | | | | fz | 0.004 | 0.007 | 0.009 | 0.012 | 0.021 | 0.029 | 0.044 | 0.052 | 0.055 | 0.06 | 0.064 | 0.069 | 0.08 | 0.093 |
| | | | | | RPM | 3661 | 2653 | 2308 | 2037 | 1751 | 1393 | 1082 | 902 | 796 | 676 | 601 | 525 | 477 | 433 |
| | | | | | FEED | 44 | 56 | 62 | 73 | 110 | 121 | 143 | 141 | 131 | 122 | 115 | 109 | 115 | 121 |
| | 9 | | 1.0D | 0.3D | Vc | 14 | 20 | 23 | 25 | 25 | 27 | 26 | 26 | 26 | 27 | 27 | 27 | 26 | 24 |
| | | | | | fz | 0.005 | 0.008 | 0.012 | 0.014 | 0.023 | 0.031 | 0.045 | 0.052 | 0.056 | 0.063 | 0.066 | 0.074 | 0.088 | 0.111 |
| | | | | | RPM | 2228 | 2122 | 1830 | 1592 | 1326 | 1074 | 828 | 690 | 591 | 537 | 477 | 430 | 376 | 306 |
| | | | | | FEED | 33 | 51 | 66 | 67 | 92 | 100 | 112 | 108 | 99 | 102 | 95 | 95 | 99 | 102 |
| | 10 | High alloyed steel, and tool steel | 1.0D | 0.5D | Vc | 41 | 44 | 54 | 60 | 63 | 66 | 68 | 66 | 71 | 69 | 61 | 60 | 61 | 60 |
| | | | | | fz | 0.003 | 0.007 | 0.011 | 0.013 | 0.023 | 0.032 | 0.039 | 0.053 | 0.055 | 0.06 | 0.072 | 0.081 | 0.089 | 0.11 |
| | | | | | RPM | 6525 | 4669 | 4297 | 3820 | 3342 | 2626 | 2165 | 1751 | 1614 | 1373 | 1079 | 955 | 883 | 764 |
| | | | | | FEED | 59 | 98 | 142 | 149 | 231 | 252 | 253 | 278 | 266 | 247 | 233 | 232 | 236 | 252 |
| | 11.1 | | 1.0D | 0.5D | Vc | 23 | 25 | 29 | 32 | 33 | 35 | 34 | 34 | 35 | 34 | 34 | 33 | 33 | 34 |
| | | | | | fz | 0.004 | 0.007 | 0.009 | 0.012 | 0.021 | 0.029 | 0.044 | 0.052 | 0.055 | 0.06 | 0.064 | 0.069 | 0.08 | 0.093 |
| | | | | | RPM | 3661 | 2653 | 2308 | 2037 | 1751 | 1393 | 1082 | 902 | 796 | 676 | 601 | 525 | 477 | 433 |
| | | | | | FEED | 44 | 56 | 62 | 73 | 110 | 121 | 143 | 141 | 131 | 122 | 115 | 109 | 115 | 121 |
| | 11.2 | | 1.0D | 0.3D | Vc | 10 | 14 | 16 | 17 | 17 | 19 | 18 | 18 | 18 | 19 | 19 | 19 | 19 | 16 |
| | | | | | fz | 0.005 | 0.009 | 0.012 | 0.014 | 0.024 | 0.031 | 0.044 | 0.051 | 0.056 | 0.063 | 0.064 | 0.072 | 0.086 | 0.111 |
| | | | | | RPM | 1592 | 1485 | 1273 | 1082 | 902 | 756 | 573 | 477 | 409 | 378 | 336 | 302 | 275 | 204 |
| | | | | | FEED | 24 | 40 | 46 | 45 | 65 | 70 | 76 | 73 | 69 | 71 | 65 | 65 | 71 | 68 |
| M | 14.1 | Stainless steel | 1.0D | 0.5D | Vc | 41 | 44 | 54 | 60 | 63 | 66 | 68 | 66 | 71 | 69 | 61 | 60 | 61 | 60 |
| | | | | | fz | 0.003 | 0.007 | 0.011 | 0.013 | 0.023 | 0.032 | 0.039 | 0.053 | 0.055 | 0.06 | 0.072 | 0.081 | 0.089 | 0.11 |
| | | | | | RPM | 6525 | 4669 | 4297 | 3820 | 3342 | 2626 | 2165 | 1751 | 1614 | 1373 | 1079 | 955 | 883 | 764 |
| | | | | | FEED | 59 | 98 | 142 | 149 | 231 | 252 | 253 | 278 | 266 | 247 | 233 | 232 | 236 | 252 |
| K | 15-20 | Grey cast iron Nodular cast iron Malleable cast iron | 1.0D | 0.5D | Vc | 41 | 44 | 54 | 60 | 63 | 66 | 68 | 66 | 71 | 69 | 61 | 60 | 61 | 60 |
| | | | | | fz | 0.003 | 0.007 | 0.011 | 0.013 | 0.023 | 0.032 | 0.039 | 0.053 | 0.055 | 0.06 | 0.072 | 0.081 | 0.089 | 0.11 |
| | | | | | RPM | 6525 | 4669 | 4297 | 3820 | 3342 | 2626 | 2165 | 1751 | 1614 | 1373 | 1079 | 955 | 883 | 764 |
| | | | | | FEED | 59 | 98 | 142 | 149 | 231 | 252 | 253 | 278 | 266 | 247 | 233 | 232 | 236 | 252 |
| H | 40 | Chilled Cast Iron | 1.0D | 0.3D | Vc | 10 | 14 | 16 | 17 | 17 | 19 | 18 | 18 | 18 | 19 | 19 | 19 | 19 | 16 |
| | | | | | fz | 0.005 | 0.009 | 0.012 | 0.014 | 0.024 | 0.031 | 0.044 | 0.051 | 0.056 | 0.063 | 0.064 | 0.072 | 0.086 | 0.111 |
| | | | | | RPM | 1592 | 1485 | 1273 | 1082 | 902 | 756 | 573 | 477 | 409 | 378 | 336 | 302 | 275 | 204 |
| | | | | | FEED | 24 | 40 | 46 | 45 | 65 | 70 | 76 | 73 | 69 | 71 | 65 | 65 | 71 | 68 |



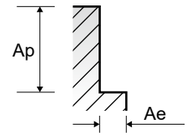



ONLY ONE COATED PM60 END MILLS

## GYG01 SERIES — 3 FLUTE - SIDE CUTTING
## 3刃 - 侧铣削

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description 材料描述 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 2.0 | 3.0 | 4.0 | 5.0 | 6.0 | 8.0 | 10.0 | 12.0 | 14.0 | 16.0 | 18.0 | 20.0 | 22.0 | 25.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | 0.1D | 1.5D | Vc | 62 | 66 | 78 | 89 | 95 | 97 | 94 | 95 | 95 | 97 | 92 | 94 | 95 | 94 |
| | | | | | fz | 0.004 | 0.008 | 0.012 | 0.015 | 0.024 | 0.034 | 0.047 | 0.056 | 0.065 | 0.069 | 0.076 | 0.08 | 0.089 | 0.11 |
| | | | | | RPM | 9868 | 7003 | 6207 | 5666 | 5040 | 3860 | 2992 | 2520 | 2160 | 1930 | 1627 | 1496 | 1375 | 1197 |
| | | | | | FEED | 118 | 168 | 223 | 255 | 363 | 394 | 422 | 423 | 421 | 399 | 371 | 359 | 367 | 395 |
| | 2 | | 0.1D | 1.5D | Vc | 51 | 54 | 66 | 75 | 81 | 78 | 79 | 81 | 79 | 78 | 78 | 79 | 79 | 79 |
| | | | | | fz | 0.004 | 0.008 | 0.012 | 0.015 | 0.023 | 0.035 | 0.046 | 0.056 | 0.063 | 0.071 | 0.077 | 0.081 | 0.094 | 0.109 |
| | | | | | RPM | 8117 | 5730 | 5252 | 4775 | 4297 | 3104 | 2515 | 2149 | 1796 | 1552 | 1379 | 1257 | 1143 | 1006 |
| | | | | | FEED | 97 | 138 | 189 | 215 | 297 | 326 | 347 | 361 | 339 | 331 | 319 | 306 | 322 | 329 |
| | 3-4 | | 0.1D | 1.5D | Vc | 41 | 43 | 53 | 55 | 59 | 60 | 60 | 63 | 61 | 60 | 61 | 59 | 62 | 60 |
| | | | | | fz | 0.004 | 0.007 | 0.01 | 0.014 | 0.025 | 0.033 | 0.043 | 0.055 | 0.06 | 0.067 | 0.073 | 0.082 | 0.088 | 0.11 |
| | | | | | RPM | 6525 | 4562 | 4218 | 3501 | 3130 | 2387 | 1910 | 1671 | 1387 | 1194 | 1079 | 939 | 897 | 764 |
| | | | | | FEED | 78 | 96 | 127 | 147 | 235 | 236 | 246 | 276 | 250 | 240 | 236 | 231 | 237 | 252 |
| | 5 | | 0.1D | 1.5D | Vc | 29 | 31 | 35 | 38 | 41 | 39 | 38 | 41 | 41 | 40 | 40 | 39 | 39 | 39 |
| | | | | | fz | 0.004 | 0.008 | 0.011 | 0.014 | 0.023 | 0.036 | 0.05 | 0.056 | 0.06 | 0.072 | 0.074 | 0.081 | 0.092 | 0.107 |
| | | | | | RPM | 4615 | 3289 | 2785 | 2419 | 2175 | 1552 | 1210 | 1088 | 932 | 796 | 707 | 621 | 564 | 497 |
| | | | | | FEED | 55 | 79 | 92 | 102 | 150 | 168 | 181 | 183 | 168 | 172 | 157 | 151 | 156 | 159 |
| | 6 | | 0.1D | 1.5D | Vc | 51 | 54 | 66 | 75 | 81 | 78 | 79 | 81 | 79 | 78 | 78 | 79 | 79 | 79 |
| | | | | | fz | 0.004 | 0.008 | 0.012 | 0.015 | 0.023 | 0.035 | 0.046 | 0.056 | 0.063 | 0.071 | 0.077 | 0.081 | 0.094 | 0.109 |
| | | | | | RPM | 8117 | 5730 | 5252 | 4775 | 4297 | 3104 | 2515 | 2149 | 1796 | 1552 | 1379 | 1257 | 1143 | 1006 |
| | | | | | FEED | 97 | 138 | 189 | 215 | 297 | 326 | 347 | 361 | 339 | 331 | 319 | 306 | 322 | 329 |
| | 7 | Low alloy steel | 0.1D | 1.5D | Vc | 41 | 43 | 53 | 55 | 59 | 60 | 60 | 63 | 61 | 60 | 61 | 59 | 62 | 60 |
| | | | | | fz | 0.004 | 0.007 | 0.01 | 0.014 | 0.025 | 0.033 | 0.043 | 0.055 | 0.06 | 0.067 | 0.073 | 0.082 | 0.088 | 0.11 |
| | | | | | RPM | 6525 | 4562 | 4218 | 3501 | 3130 | 2387 | 1910 | 1671 | 1387 | 1194 | 1079 | 939 | 897 | 764 |
| | | | | | FEED | 78 | 96 | 127 | 147 | 235 | 236 | 246 | 276 | 250 | 240 | 236 | 231 | 237 | 252 |
| | 8 | | 0.1D | 1.5D | Vc | 29 | 31 | 35 | 38 | 41 | 39 | 38 | 41 | 41 | 40 | 40 | 39 | 39 | 39 |
| | | | | | fz | 0.004 | 0.008 | 0.011 | 0.014 | 0.023 | 0.036 | 0.05 | 0.056 | 0.06 | 0.072 | 0.074 | 0.081 | 0.092 | 0.107 |
| | | | | | RPM | 4615 | 3289 | 2785 | 2419 | 2175 | 1552 | 1210 | 1088 | 932 | 796 | 707 | 621 | 564 | 497 |
| | | | | | FEED | 55 | 79 | 92 | 102 | 150 | 168 | 181 | 183 | 168 | 172 | 157 | 151 | 156 | 159 |
| | 9 | | 0.05D | 1.5D | Vc | 18 | 25 | 29 | 32 | 34 | 33 | 34 | 34 | 33 | 33 | 34 | 33 | 33 | 34 |
| | | | | | fz | 0.006 | 0.01 | 0.013 | 0.015 | 0.022 | 0.035 | 0.047 | 0.056 | 0.064 | 0.071 | 0.072 | 0.082 | 0.09 | 0.112 |
| | | | | | RPM | 2865 | 2653 | 2308 | 2037 | 1804 | 1313 | 1082 | 902 | 750 | 657 | 601 | 525 | 477 | 433 |
| | | | | | FEED | 52 | 80 | 90 | 92 | 119 | 138 | 153 | 152 | 144 | 140 | 130 | 129 | 129 | 145 |
| | 10 | High alloyed steel, and tool steel | 0.1D | 1.5D | Vc | 51 | 54 | 66 | 75 | 81 | 78 | 79 | 81 | 79 | 78 | 78 | 79 | 79 | 79 |
| | | | | | fz | 0.004 | 0.008 | 0.012 | 0.015 | 0.023 | 0.035 | 0.046 | 0.056 | 0.063 | 0.071 | 0.077 | 0.081 | 0.094 | 0.109 |
| | | | | | RPM | 8117 | 5730 | 5252 | 4775 | 4297 | 3104 | 2515 | 2149 | 1796 | 1552 | 1379 | 1257 | 1143 | 1006 |
| | | | | | FEED | 97 | 138 | 189 | 215 | 297 | 326 | 347 | 361 | 339 | 331 | 319 | 306 | 322 | 329 |
| | 11.1 | | 0.1D | 1.5D | Vc | 29 | 31 | 35 | 38 | 41 | 39 | 38 | 41 | 41 | 40 | 40 | 39 | 39 | 39 |
| | | | | | fz | 0.004 | 0.008 | 0.011 | 0.014 | 0.023 | 0.036 | 0.05 | 0.056 | 0.06 | 0.072 | 0.074 | 0.081 | 0.092 | 0.107 |
| | | | | | RPM | 4615 | 3289 | 2785 | 2419 | 2175 | 1552 | 1210 | 1088 | 932 | 796 | 707 | 621 | 564 | 497 |
| | | | | | FEED | 55 | 79 | 92 | 102 | 150 | 168 | 181 | 183 | 168 | 172 | 157 | 151 | 156 | 159 |
| | 11.2 | | 0.05D | 1.5D | Vc | 13 | 17 | 20 | 22 | 24 | 23 | 24 | 23 | 23 | 23 | 24 | 23 | 23 | 24 |
| | | | | | fz | 0.006 | 0.01 | 0.014 | 0.015 | 0.022 | 0.036 | 0.047 | 0.056 | 0.063 | 0.072 | 0.071 | 0.081 | 0.088 | 0.111 |
| | | | | | RPM | 2069 | 1804 | 1592 | 1401 | 1273 | 915 | 764 | 610 | 523 | 458 | 424 | 366 | 333 | 306 |
| | | | | | FEED | 37 | 54 | 67 | 63 | 84 | 99 | 108 | 102 | 99 | 99 | 90 | 89 | 88 | 102 |
| M | 14.1 | Stainless steel | 0.1D | 1.5D | Vc | 20 | 27 | 32 | 35 | 37 | 36 | 37 | 37 | 37 | 37 | 37 | 36 | 37 | 37 |
| | | | | | fz | 0.006 | 0.01 | 0.013 | 0.015 | 0.022 | 0.036 | 0.047 | 0.056 | 0.063 | 0.071 | 0.073 | 0.083 | 0.091 | 0.113 |
| | | | | | RPM | 3183 | 2865 | 2546 | 2228 | 1963 | 1432 | 1178 | 981 | 841 | 736 | 654 | 573 | 535 | 471 |
| | | | | | FEED | 57 | 86 | 99 | 100 | 130 | 155 | 166 | 165 | 159 | 157 | 143 | 143 | 146 | 160 |
| K | 15-20 | Grey cast iron Nodular cast iron Malleable cast iron | 0.1D | 1.5D | Vc | 51 | 54 | 66 | 75 | 81 | 78 | 79 | 81 | 79 | 78 | 78 | 79 | 79 | 79 |
| | | | | | fz | 0.004 | 0.008 | 0.012 | 0.015 | 0.023 | 0.035 | 0.046 | 0.056 | 0.063 | 0.071 | 0.077 | 0.081 | 0.094 | 0.109 |
| | | | | | RPM | 8117 | 5730 | 5252 | 4775 | 4297 | 3104 | 2515 | 2149 | 1796 | 1552 | 1379 | 1257 | 1143 | 1006 |
| | | | | | FEED | 97 | 138 | 189 | 215 | 297 | 326 | 347 | 361 | 339 | 331 | 319 | 306 | 322 | 329 |
| H | 40 | Chilled Cast Iron | 0.05D | 1.5D | Vc | 13 | 17 | 20 | 22 | 24 | 23 | 24 | 23 | 23 | 23 | 24 | 23 | 23 | 24 |
| | | | | | fz | 0.006 | 0.01 | 0.014 | 0.015 | 0.022 | 0.036 | 0.047 | 0.056 | 0.063 | 0.072 | 0.071 | 0.081 | 0.088 | 0.111 |
| | | | | | RPM | 2069 | 1804 | 1592 | 1401 | 1273 | 915 | 764 | 610 | 523 | 458 | 424 | 366 | 333 | 306 |
| | | | | | FEED | 37 | 54 | 67 | 63 | 84 | 99 | 108 | 102 | 99 | 99 | 90 | 89 | 88 | 102 |



# ONLY ONE COATED PM60 END MILLS

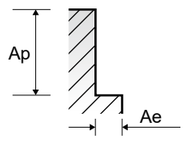
# RECOMMENDED CUTTING CONDITIONS
# 推荐加工参数

## GYG74 , GYF96 , GYG76 , GYG02 SERIES

**4 FLUTE - SIDE CUTTING**
**4刃 - 侧铣削**

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description 材料描述 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 2.0 | 3.0 | 4.0 | 5.0 | 6.0 | 8.0 | 10.0 | 12.0 | 14.0 | 16.0 | 18.0 | 20.0 | 22.0 | 25.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | 0.1D | 1.5D | Vc | 69 | 75 | 80 | 83 | 88 | 93 | 87 | 90 | 95 | 97 | 102 | 94 | 87 | 94 |
| | | | | | fz | 0.008 | 0.015 | 0.023 | 0.029 | 0.035 | 0.046 | 0.068 | 0.071 | 0.076 | 0.079 | 0.076 | 0.088 | 0.097 | 0.093 |
| | | | | | RPM | 10982 | 7958 | 6366 | 5284 | 4669 | 3700 | 2769 | 2387 | 2160 | 1930 | 1804 | 1496 | 1259 | 1197 |
| | | | | | FEED | 351 | 477 | 586 | 613 | 654 | 681 | 753 | 678 | 657 | 610 | 548 | 527 | 488 | 445 |
| | 2 | | 0.1D | 1.5D | Vc | 63 | 68 | 71 | 75 | 81 | 78 | 79 | 81 | 84 | 84 | 85 | 79 | 79 | 79 |
| | | | | | fz | 0.007 | 0.015 | 0.021 | 0.026 | 0.031 | 0.046 | 0.063 | 0.067 | 0.072 | 0.077 | 0.08 | 0.088 | 0.084 | 0.09 |
| | | | | | RPM | 10027 | 7215 | 5650 | 4775 | 4297 | 3104 | 2515 | 2149 | 1910 | 1671 | 1503 | 1257 | 1143 | 1006 |
| | | | | | FEED | 281 | 433 | 475 | 497 | 533 | 571 | 634 | 576 | 550 | 515 | 481 | 443 | 384 | 362 |
| | 3-4 | | 0.1D | 1.5D | Vc | 46 | 50 | 54 | 55 | 59 | 60 | 60 | 63 | 58 | 60 | 61 | 59 | 57 | 60 |
| | | | | | fz | 0.007 | 0.014 | 0.021 | 0.028 | 0.032 | 0.046 | 0.059 | 0.066 | 0.08 | 0.085 | 0.086 | 0.088 | 0.093 | 0.09 |
| | | | | | RPM | 7321 | 5305 | 4297 | 3501 | 3130 | 2387 | 1910 | 1671 | 1319 | 1194 | 1079 | 939 | 825 | 764 |
| | | | | | FEED | 205 | 297 | 361 | 392 | 401 | 439 | 451 | 441 | 422 | 406 | 371 | 331 | 307 | 275 |
| | 5 | | 0.1D | 1.5D | Vc | 31 | 31 | 35 | 38 | 41 | 42 | 38 | 40 | 42 | 41 | 43 | 40 | 39 | 39 |
| | | | | | fz | 0.008 | 0.017 | 0.022 | 0.028 | 0.032 | 0.043 | 0.067 | 0.068 | 0.072 | 0.081 | 0.077 | 0.082 | 0.085 | 0.09 |
| | | | | | RPM | 4934 | 3289 | 2785 | 2419 | 2175 | 1671 | 1210 | 1061 | 955 | 816 | 760 | 637 | 564 | 497 |
| | | | | | FEED | 158 | 224 | 245 | 271 | 278 | 287 | 324 | 289 | 275 | 264 | 234 | 209 | 192 | 179 |
| | 6 | Low alloy steel | 0.1D | 1.5D | Vc | 63 | 68 | 71 | 75 | 81 | 78 | 79 | 81 | 84 | 84 | 85 | 79 | 79 | 79 |
| | | | | | fz | 0.007 | 0.015 | 0.021 | 0.026 | 0.031 | 0.046 | 0.063 | 0.067 | 0.072 | 0.077 | 0.08 | 0.088 | 0.084 | 0.09 |
| | | | | | RPM | 10027 | 7215 | 5650 | 4775 | 4297 | 3104 | 2515 | 2149 | 1910 | 1671 | 1503 | 1257 | 1143 | 1006 |
| | | | | | FEED | 281 | 433 | 475 | 497 | 533 | 571 | 634 | 576 | 550 | 515 | 481 | 443 | 384 | 362 |
| | 7 | | 0.1D | 1.5D | Vc | 46 | 50 | 54 | 55 | 59 | 60 | 60 | 63 | 58 | 60 | 61 | 59 | 57 | 60 |
| | | | | | fz | 0.007 | 0.014 | 0.021 | 0.028 | 0.032 | 0.046 | 0.059 | 0.066 | 0.08 | 0.085 | 0.086 | 0.088 | 0.093 | 0.09 |
| | | | | | RPM | 7321 | 5305 | 4297 | 3501 | 3130 | 2387 | 1910 | 1671 | 1319 | 1194 | 1079 | 939 | 825 | 764 |
| | | | | | FEED | 205 | 297 | 361 | 392 | 401 | 439 | 451 | 441 | 422 | 406 | 371 | 331 | 307 | 275 |
| | 8 | | 0.1D | 1.5D | Vc | 31 | 31 | 35 | 38 | 41 | 42 | 38 | 40 | 42 | 41 | 43 | 40 | 39 | 39 |
| | | | | | fz | 0.008 | 0.017 | 0.022 | 0.028 | 0.032 | 0.043 | 0.067 | 0.068 | 0.072 | 0.081 | 0.077 | 0.082 | 0.085 | 0.09 |
| | | | | | RPM | 4934 | 3289 | 2785 | 2419 | 2175 | 1671 | 1210 | 1061 | 955 | 816 | 760 | 637 | 564 | 497 |
| | | | | | FEED | 158 | 224 | 245 | 271 | 278 | 287 | 324 | 289 | 275 | 264 | 234 | 209 | 192 | 179 |
| | 9 | | 0.05D | 1.5D | Vc | 25 | 27 | 30 | 32 | 33 | 35 | 34 | 32 | 33 | 33 | 34 | 33 | 33 | 34 |
| | | | | | fz | 0.006 | 0.013 | 0.019 | 0.023 | 0.031 | 0.04 | 0.056 | 0.064 | 0.067 | 0.076 | 0.075 | 0.08 | 0.081 | 0.087 |
| | | | | | RPM | 3979 | 2865 | 2387 | 2037 | 1751 | 1393 | 1082 | 849 | 750 | 657 | 601 | 525 | 477 | 433 |
| | | | | | FEED | 95 | 149 | 181 | 187 | 217 | 223 | 242 | 217 | 201 | 200 | 180 | 168 | 155 | 151 |
| | 10 | High alloyed steel, and tool steel | 0.1D | 1.5D | Vc | 63 | 68 | 71 | 75 | 81 | 78 | 79 | 81 | 84 | 84 | 85 | 79 | 79 | 79 |
| | | | | | fz | 0.007 | 0.015 | 0.021 | 0.026 | 0.031 | 0.046 | 0.063 | 0.067 | 0.072 | 0.077 | 0.08 | 0.088 | 0.084 | 0.09 |
| | | | | | RPM | 10027 | 7215 | 5650 | 4775 | 4297 | 3104 | 2515 | 2149 | 1910 | 1671 | 1503 | 1257 | 1143 | 1006 |
| | | | | | FEED | 281 | 433 | 475 | 497 | 533 | 571 | 634 | 576 | 550 | 515 | 481 | 443 | 384 | 362 |
| | 11.1 | | 0.1D | 1.5D | Vc | 31 | 31 | 35 | 38 | 41 | 42 | 38 | 40 | 42 | 41 | 43 | 40 | 39 | 39 |
| | | | | | fz | 0.008 | 0.017 | 0.022 | 0.028 | 0.032 | 0.043 | 0.067 | 0.068 | 0.072 | 0.081 | 0.077 | 0.082 | 0.085 | 0.09 |
| | | | | | RPM | 4934 | 3289 | 2785 | 2419 | 2175 | 1671 | 1210 | 1061 | 955 | 816 | 760 | 637 | 564 | 497 |
| | | | | | FEED | 158 | 224 | 245 | 271 | 278 | 287 | 324 | 289 | 275 | 264 | 234 | 209 | 192 | 179 |
| | 11.2 | | 0.05D | 1.5D | Vc | 17 | 19 | 21 | 22 | 23 | 24 | 24 | 23 | 23 | 23 | 24 | 23 | 23 | 24 |
| | | | | | fz | 0.006 | 0.013 | 0.019 | 0.024 | 0.031 | 0.04 | 0.057 | 0.065 | 0.068 | 0.076 | 0.074 | 0.081 | 0.081 | 0.088 |
| | | | | | RPM | 2706 | 2016 | 1671 | 1401 | 1220 | 955 | 764 | 610 | 523 | 458 | 424 | 366 | 333 | 306 |
| | | | | | FEED | 65 | 105 | 127 | 134 | 151 | 153 | 174 | 159 | 142 | 139 | 126 | 119 | 108 | 108 |
| M | 14.1 | Stainless steel | 0.1D | 1.5D | Vc | 27 | 30 | 33 | 35 | 36 | 38 | 37 | 36 | 37 | 37 | 37 | 36 | 37 | 37 |
| | | | | | fz | 0.006 | 0.013 | 0.019 | 0.023 | 0.031 | 0.039 | 0.056 | 0.063 | 0.067 | 0.075 | 0.076 | 0.08 | 0.08 | 0.088 |
| | | | | | RPM | 4297 | 3183 | 2626 | 2228 | 1910 | 1512 | 1178 | 955 | 841 | 736 | 654 | 573 | 535 | 471 |
| | | | | | FEED | 103 | 166 | 200 | 205 | 237 | 236 | 264 | 241 | 225 | 221 | 199 | 183 | 171 | 166 |
| K | 15-20 | Grey cast iron Nodular cast iron Malleable cast iron | 0.1D | 1.5D | Vc | 63 | 68 | 71 | 75 | 81 | 78 | 79 | 81 | 84 | 84 | 85 | 79 | 79 | 79 |
| | | | | | fz | 0.007 | 0.015 | 0.021 | 0.026 | 0.031 | 0.046 | 0.063 | 0.067 | 0.072 | 0.077 | 0.08 | 0.088 | 0.084 | 0.09 |
| | | | | | RPM | 10027 | 7215 | 5650 | 4775 | 4297 | 3104 | 2515 | 2149 | 1910 | 1671 | 1503 | 1257 | 1143 | 1006 |
| | | | | | FEED | 281 | 433 | 475 | 497 | 533 | 571 | 634 | 576 | 550 | 515 | 481 | 443 | 384 | 362 |
| H | 40 | Chilled Cast Iron | 0.05D | 1.5D | Vc | 17 | 19 | 21 | 22 | 23 | 24 | 24 | 23 | 23 | 23 | 24 | 23 | 23 | 24 |
| | | | | | fz | 0.006 | 0.013 | 0.019 | 0.024 | 0.031 | 0.04 | 0.057 | 0.065 | 0.068 | 0.076 | 0.074 | 0.081 | 0.081 | 0.088 |
| | | | | | RPM | 2706 | 2016 | 1671 | 1401 | 1220 | 955 | 764 | 610 | 523 | 458 | 424 | 366 | 333 | 306 |
| | | | | | FEED | 65 | 105 | 127 | 134 | 151 | 153 | 174 | 159 | 142 | 139 | 126 | 119 | 108 | 108 |





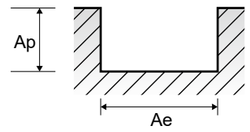

ONLY ONE COATED PM60 END MILLS

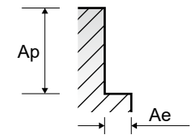
## GYG52 SERIES

**4 FLUTE - SLOTTING, SIDE CUTTING**
**4刃 - 槽铣削，侧铣削**

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description 材料描述 | Slotting 槽铣削 Ae(mm) | Slotting 槽铣削 Ap(mm) | Side Cutting 侧铣削 Ae(mm) | Side Cutting 侧铣削 Ap(mm) | Parameter 参数 | Diameter (Ø) 直径 3.0 | 4.0 | 5.0 | 6.0 | 8.0 | 10.0 | 12.0 | 14.0 | 16.0 | 18.0 | 20.0 | 25.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1-2 | Non-alloy steel | 1.0D | 0.5D | 0.3D | 1.5D | Vc | 70 | 70 | 70 | 70 | 70 | 77 | 77 | 77 | 77 | 77 | 77 | 77 |
| | | | | | | | fz | 0.005 | 0.008 | 0.012 | 0.016 | 0.028 | 0.039 | 0.047 | 0.049 | 0.053 | 0.059 | 0.065 | 0.063 |
| | | | | | | | RPM | 7427 | 5570 | 4456 | 3714 | 2785 | 2451 | 2042 | 1751 | 1532 | 1362 | 1225 | 980 |
| | | | | | | | FEED | 149 | 178 | 214 | 238 | 312 | 382 | 384 | 343 | 325 | 321 | 319 | 247 |
| | 3-4 | | 1.0D | 0.5D | 0.3D | 1.5D | Vc | 64 | 63 | 63 | 64 | 64 | 70 | 70 | 70 | 70 | 70 | 70 | 70 |
| | | | | | | | fz | 0.005 | 0.008 | 0.011 | 0.016 | 0.028 | 0.039 | 0.047 | 0.049 | 0.053 | 0.059 | 0.065 | 0.063 |
| | | | | | | | RPM | 6791 | 5013 | 4011 | 3395 | 2546 | 2228 | 1857 | 1592 | 1393 | 1238 | 1114 | 891 |
| | | | | | | | FEED | 136 | 160 | 176 | 217 | 285 | 348 | 349 | 312 | 295 | 292 | 290 | 225 |
| | 5 | | 1.0D | 0.5D | 0.3D | 1.5D | Vc | 44 | 44 | 44 | 44 | 44 | 49 | 49 | 49 | 49 | 49 | 49 | 49 |
| | | | | | | | fz | 0.005 | 0.008 | 0.011 | 0.016 | 0.028 | 0.038 | 0.047 | 0.05 | 0.052 | 0.059 | 0.066 | 0.065 |
| | | | | | | | RPM | 4669 | 3501 | 2801 | 2334 | 1751 | 1560 | 1300 | 1114 | 975 | 867 | 780 | 624 |
| | | | | | | | FEED | 93 | 112 | 123 | 149 | 196 | 237 | 244 | 223 | 203 | 204 | 206 | 162 |
| | 6 | Low alloy steel | 1.0D | 0.5D | 0.3D | 1.5D | Vc | 70 | 70 | 70 | 70 | 70 | 77 | 77 | 77 | 77 | 77 | 77 | 77 |
| | | | | | | | fz | 0.005 | 0.008 | 0.012 | 0.016 | 0.028 | 0.039 | 0.047 | 0.049 | 0.053 | 0.059 | 0.065 | 0.063 |
| | | | | | | | RPM | 7427 | 5570 | 4456 | 3714 | 2785 | 2451 | 2042 | 1751 | 1532 | 1362 | 1225 | 980 |
| | | | | | | | FEED | 149 | 178 | 214 | 238 | 312 | 382 | 384 | 343 | 325 | 321 | 319 | 247 |
| | 7 | | 1.0D | 0.5D | 0.3D | 1.5D | Vc | 64 | 63 | 63 | 64 | 64 | 70 | 70 | 70 | 70 | 70 | 70 | 70 |
| | | | | | | | fz | 0.005 | 0.008 | 0.011 | 0.016 | 0.028 | 0.039 | 0.047 | 0.049 | 0.053 | 0.059 | 0.065 | 0.063 |
| | | | | | | | RPM | 6791 | 5013 | 4011 | 3395 | 2546 | 2228 | 1857 | 1592 | 1393 | 1238 | 1114 | 891 |
| | | | | | | | FEED | 136 | 160 | 176 | 217 | 285 | 348 | 349 | 312 | 295 | 292 | 290 | 225 |
| | 8 | | 1.0D | 0.5D | 0.3D | 1.5D | Vc | 44 | 44 | 44 | 44 | 44 | 49 | 49 | 49 | 49 | 49 | 49 | 49 |
| | | | | | | | fz | 0.005 | 0.008 | 0.011 | 0.016 | 0.028 | 0.038 | 0.047 | 0.05 | 0.052 | 0.059 | 0.066 | 0.065 |
| | | | | | | | RPM | 4669 | 3501 | 2801 | 2334 | 1751 | 1560 | 1300 | 1114 | 975 | 867 | 780 | 624 |
| | | | | | | | FEED | 93 | 112 | 123 | 149 | 196 | 237 | 244 | 223 | 203 | 204 | 206 | 162 |
| | 9 | | 1.0D | 0.3D | 0.15D | 1.5D | Vc | 27 | 27 | 27 | 27 | 27 | 30 | 29 | 29 | 30 | 29 | 30 | 29 |
| | | | | | | | fz | 0.004 | 0.007 | 0.01 | 0.014 | 0.024 | 0.032 | 0.04 | 0.041 | 0.044 | 0.05 | 0.056 | 0.054 |
| | | | | | | | RPM | 2865 | 2149 | 1719 | 1432 | 1074 | 955 | 769 | 659 | 597 | 513 | 477 | 369 |
| | | | | | | | FEED | 46 | 60 | 69 | 80 | 103 | 122 | 123 | 108 | 105 | 103 | 107 | 80 |
| | 10 | High alloyed steel, and tool steel | 1.0D | 0.5D | 0.3D | 1.5D | Vc | 70 | 70 | 70 | 70 | 70 | 77 | 77 | 77 | 77 | 77 | 77 | 77 |
| | | | | | | | fz | 0.005 | 0.008 | 0.012 | 0.016 | 0.028 | 0.039 | 0.047 | 0.049 | 0.053 | 0.059 | 0.065 | 0.063 |
| | | | | | | | RPM | 7427 | 5570 | 4456 | 3714 | 2785 | 2451 | 2042 | 1751 | 1532 | 1362 | 1225 | 980 |
| | | | | | | | FEED | 149 | 178 | 214 | 238 | 312 | 382 | 384 | 343 | 325 | 321 | 319 | 247 |
| | 11.1 | | 1.0D | 0.5D | 0.3D | 1.5D | Vc | 44 | 44 | 44 | 44 | 44 | 49 | 49 | 49 | 49 | 49 | 49 | 49 |
| | | | | | | | fz | 0.005 | 0.008 | 0.011 | 0.016 | 0.028 | 0.038 | 0.047 | 0.05 | 0.052 | 0.059 | 0.066 | 0.065 |
| | | | | | | | RPM | 4669 | 3501 | 2801 | 2334 | 1751 | 1560 | 1300 | 1114 | 975 | 867 | 780 | 624 |
| | | | | | | | FEED | 93 | 112 | 123 | 149 | 196 | 237 | 244 | 223 | 203 | 204 | 206 | 162 |
| | 11.2 | | 1.0D | 0.3D | 0.15D | 1.5D | Vc | 27 | 27 | 27 | 27 | 27 | 30 | 29 | 29 | 30 | 29 | 30 | 29 |
| | | | | | | | fz | 0.004 | 0.007 | 0.01 | 0.014 | 0.024 | 0.032 | 0.04 | 0.041 | 0.044 | 0.05 | 0.056 | 0.054 |
| | | | | | | | RPM | 2865 | 2149 | 1719 | 1432 | 1074 | 955 | 769 | 659 | 597 | 513 | 477 | 369 |
| | | | | | | | FEED | 46 | 60 | 69 | 80 | 103 | 122 | 123 | 108 | 105 | 103 | 107 | 80 |
| M | 14.1 | Stainless steel | 1.0D | 0.5D | 0.3D | 1.5D | Vc | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 |
| | | | | | | | fz | 0.005 | 0.008 | 0.013 | 0.018 | 0.029 | 0.048 | 0.056 | 0.06 | 0.063 | 0.071 | 0.077 | 0.078 |
| | | | | | | | RPM | 5093 | 3820 | 3056 | 2546 | 1910 | 1528 | 1273 | 1091 | 955 | 849 | 764 | 611 |
| | | | | | | | FEED | 102 | 122 | 159 | 183 | 222 | 293 | 285 | 262 | 241 | 241 | 235 | 191 |
| K | 15-20 | Grey cast iron Nodular cast iron Malleable cast iron | 1.0D | 0.5D | 0.3D | 1.5D | Vc | 70 | 70 | 70 | 70 | 70 | 77 | 77 | 77 | 77 | 77 | 77 | 77 |
| | | | | | | | fz | 0.005 | 0.008 | 0.012 | 0.016 | 0.028 | 0.039 | 0.047 | 0.049 | 0.053 | 0.059 | 0.065 | 0.063 |
| | | | | | | | RPM | 7427 | 5570 | 4456 | 3714 | 2785 | 2451 | 2042 | 1751 | 1532 | 1362 | 1225 | 980 |
| | | | | | | | FEED | 149 | 178 | 214 | 238 | 312 | 382 | 384 | 343 | 325 | 321 | 319 | 247 |
| H | 40 | Chilled Cast Iron | 1.0D | 0.3D | 0.15D | 1.5D | Vc | 27 | 27 | 27 | 27 | 27 | 30 | 29 | 29 | 30 | 29 | 30 | 29 |
| | | | | | | | fz | 0.004 | 0.007 | 0.01 | 0.014 | 0.024 | 0.032 | 0.04 | 0.041 | 0.044 | 0.05 | 0.056 | 0.054 |
| | | | | | | | RPM | 2865 | 2149 | 1719 | 1432 | 1074 | 955 | 769 | 659 | 597 | 513 | 477 | 369 |
| | | | | | | | FEED | 46 | 60 | 69 | 80 | 103 | 122 | 123 | 108 | 105 | 103 | 107 | 80 |



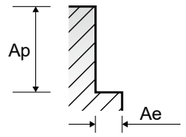
# ONLY ONE COATED PM60 END MILLS

# RECOMMENDED CUTTING CONDITIONS
# 推荐加工参数

## GYF95 SERIES
## MULTI FLUTE ROUGHING - SIDE CUTTING
## 多刃 粗加工- 侧铣削

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description 材料描述 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 6.0 | 8.0 | 10.0 | 12.0 | 14.0 | 16.0 | 18.0 | 20.0 | 25.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | 0.5D | 1.5D | Vc | 76 | 87 | 86 | 87 | 89 | 87 | 85 | 87 | 90 |
| | | | | | fz | 0.02 | 0.03 | 0.055 | 0.065 | 0.059 | 0.069 | 0.079 | 0.088 | 0.105 |
| | | | | | RPM | 4032 | 3462 | 2737 | 2308 | 2024 | 1731 | 1503 | 1385 | 1146 |
| | | | | | FEED | 323 | 415 | 602 | 600 | 597 | 597 | 594 | 609 | 602 |
| | 2 | | 0.5D | 1.5D | Vc | 60 | 69 | 68 | 65 | 66 | 69 | 72 | 68 | 68 |
| | | | | | fz | 0.021 | 0.03 | 0.053 | 0.069 | 0.063 | 0.069 | 0.074 | 0.087 | 0.106 |
| | | | | | RPM | 3183 | 2745 | 2165 | 1724 | 1501 | 1373 | 1273 | 1082 | 866 |
| | | | | | FEED | 267 | 329 | 459 | 476 | 473 | 474 | 471 | 471 | 459 |
| | 3 | | 0.5D | 1.5D | Vc | 43 | 51 | 47 | 49 | 48 | 48 | 50 | 48 | 47 |
| | | | | | fz | 0.018 | 0.028 | 0.046 | 0.063 | 0.061 | 0.069 | 0.075 | 0.086 | 0.107 |
| | | | | | RPM | 2281 | 2029 | 1496 | 1300 | 1091 | 955 | 884 | 764 | 598 |
| | | | | | FEED | 164 | 227 | 275 | 328 | 333 | 329 | 332 | 328 | 320 |
| | 4 | | 0.5D | 1.5D | Vc | 43 | 51 | 47 | 49 | 48 | 48 | 50 | 48 | 47 |
| | | | | | fz | 0.018 | 0.028 | 0.046 | 0.063 | 0.061 | 0.069 | 0.075 | 0.086 | 0.107 |
| | | | | | RPM | 2281 | 2029 | 1496 | 1300 | 1091 | 955 | 884 | 764 | 598 |
| | | | | | FEED | 164 | 227 | 275 | 328 | 266 | 264 | 265 | 263 | 256 |
| | 5 | | 0.5D | 1.5D | Vc | 35 | 38 | 40 | 40 | 40 | 40 | 40 | 40 | 41 |
| | | | | | fz | 0.02 | 0.03 | 0.045 | 0.061 | 0.057 | 0.066 | 0.073 | 0.081 | 0.1 |
| | | | | | RPM | 1857 | 1512 | 1273 | 1061 | 909 | 796 | 707 | 637 | 522 |
| | | | | | FEED | 149 | 181 | 229 | 259 | 259 | 263 | 258 | 258 | 261 |
| | 6 | Low alloy steel | 0.5D | 1.5D | Vc | 60 | 69 | 68 | 65 | 66 | 69 | 72 | 68 | 68 |
| | | | | | fz | 0.021 | 0.03 | 0.053 | 0.069 | 0.063 | 0.069 | 0.074 | 0.087 | 0.106 |
| | | | | | RPM | 3183 | 2745 | 2165 | 1724 | 1501 | 1373 | 1273 | 1082 | 866 |
| | | | | | FEED | 267 | 329 | 459 | 476 | 473 | 474 | 471 | 471 | 459 |
| | 7 | | 0.5D | 1.5D | Vc | 43 | 51 | 47 | 49 | 48 | 48 | 50 | 48 | 47 |
| | | | | | fz | 0.018 | 0.028 | 0.046 | 0.063 | 0.061 | 0.069 | 0.075 | 0.086 | 0.107 |
| | | | | | RPM | 2281 | 2029 | 1496 | 1300 | 1091 | 955 | 884 | 764 | 598 |
| | | | | | FEED | 164 | 227 | 275 | 328 | 333 | 329 | 332 | 328 | 320 |
| | 8-9 | | 0.5D | 1.5D | Vc | 35 | 38 | 40 | 40 | 40 | 40 | 40 | 40 | 41 |
| | | | | | fz | 0.02 | 0.03 | 0.045 | 0.061 | 0.057 | 0.066 | 0.073 | 0.081 | 0.1 |
| | | | | | RPM | 1857 | 1512 | 1273 | 1061 | 909 | 796 | 707 | 637 | 522 |
| | | | | | FEED | 149 | 181 | 229 | 259 | 259 | 263 | 258 | 258 | 261 |
| | 10 | High alloyed steel, and tool steel | 0.5D | 1.5D | Vc | 60 | 69 | 68 | 65 | 66 | 69 | 72 | 68 | 68 |
| | | | | | fz | 0.021 | 0.03 | 0.053 | 0.069 | 0.063 | 0.069 | 0.074 | 0.087 | 0.106 |
| | | | | | RPM | 3183 | 2745 | 2165 | 1724 | 1501 | 1373 | 1273 | 1082 | 866 |
| | | | | | FEED | 267 | 329 | 459 | 476 | 473 | 474 | 471 | 471 | 459 |
| | 11.1 | | 0.5D | 1.5D | Vc | 35 | 38 | 40 | 40 | 40 | 40 | 40 | 40 | 41 |
| | | | | | fz | 0.02 | 0.03 | 0.045 | 0.061 | 0.057 | 0.066 | 0.073 | 0.081 | 0.1 |
| | | | | | RPM | 1857 | 1512 | 1273 | 1061 | 909 | 796 | 707 | 637 | 522 |
| | | | | | FEED | 149 | 181 | 229 | 259 | 259 | 263 | 258 | 258 | 261 |
| | 11.2 | | 0.3D | 1.5D | Vc | 25 | 27 | 28 | 28 | 28 | 28 | 28 | 28 | 28 |
| | | | | | fz | 0.02 | 0.029 | 0.044 | 0.06 | 0.056 | 0.065 | 0.072 | 0.08 | 0.1 |
| | | | | | RPM | 1326 | 1074 | 891 | 743 | 637 | 557 | 495 | 446 | 357 |
| | | | | | FEED | 106 | 125 | 157 | 178 | 178 | 181 | 178 | 178 | 178 |
| M | 14.1 | Stainless steel | 0.5D | 1.5D | Vc | 39 | 43 | 43 | 43 | 44 | 43 | 45 | 44 | 44 |
| | | | | | fz | 0.019 | 0.03 | 0.045 | 0.064 | 0.059 | 0.069 | 0.075 | 0.084 | 0.104 |
| | | | | | RPM | 2069 | 1711 | 1369 | 1141 | 1000 | 855 | 796 | 700 | 560 |
| | | | | | FEED | 157 | 205 | 246 | 292 | 295 | 295 | 298 | 294 | 291 |
| K | 15-20 | Grey cast iron Nodular cast iron Malleable cast iron | 0.5D | 1.5D | Vc | 60 | 69 | 68 | 65 | 66 | 69 | 72 | 68 | 68 |
| | | | | | fz | 0.021 | 0.03 | 0.053 | 0.069 | 0.063 | 0.069 | 0.074 | 0.087 | 0.106 |
| | | | | | RPM | 3183 | 2745 | 2165 | 1724 | 1501 | 1373 | 1273 | 1082 | 866 |
| | | | | | FEED | 267 | 329 | 459 | 476 | 473 | 474 | 471 | 471 | 459 |
| H | 40 | Chilled Cast Iron | 0.3D | 1.5D | Vc | 25 | 27 | 28 | 28 | 28 | 28 | 28 | 28 | 28 |
| | | | | | fz | 0.02 | 0.029 | 0.044 | 0.06 | 0.056 | 0.065 | 0.072 | 0.08 | 0.1 |
| | | | | | RPM | 1326 | 1074 | 891 | 743 | 637 | 557 | 495 | 446 | 357 |
| | | | | | FEED | 106 | 125 | 157 | 178 | 178 | 181 | 178 | 178 | 178 |



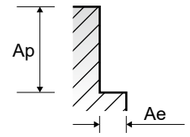




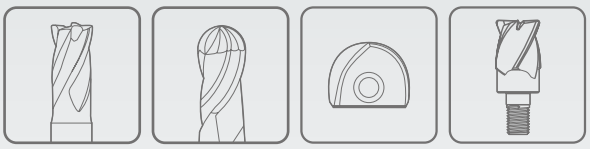

## GYF94, GYF98, GYG03 SERIES
## MULTI FLUTE ROUGHING - SIDE CUTTING
## 多刃 粗加工- 侧铣削

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description 材料描述 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 6.0 | 8.0 | 10.0 | 12.0 | 14.0 | 16.0 | 18.0 | 20.0 | 25.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | 0.5D | 1.5D | Vc | 63 | 72 | 72 | 72 | 74 | 72 | 71 | 72 | 75 |
| | | | | | fz | 0.027 | 0.041 | 0.055 | 0.065 | 0.074 | 0.087 | 0.099 | 0.111 | 0.105 |
| | | | | | RPM | 3342 | 2865 | 2292 | 1910 | 1682 | 1432 | 1256 | 1146 | 955 |
| | | | | | FEED | 271 | 352 | 504 | 497 | 498 | 498 | 497 | 509 | 501 |
| | 2 | | 0.5D | 1.5D | Vc | 50 | 57 | 57 | 54 | 55 | 57 | 61 | 57 | 57 |
| | | | | | fz | 0.027 | 0.04 | 0.053 | 0.069 | 0.078 | 0.087 | 0.092 | 0.109 | 0.106 |
| | | | | | RPM | 2653 | 2268 | 1814 | 1432 | 1251 | 1134 | 1079 | 907 | 726 |
| | | | | | FEED | 215 | 272 | 385 | 395 | 390 | 395 | 397 | 396 | 385 |
| | 3-4 | | 0.5D | 1.5D | Vc | 36 | 42 | 40 | 41 | 40 | 40 | 41 | 40 | 39 |
| | | | | | fz | 0.024 | 0.038 | 0.047 | 0.064 | 0.076 | 0.087 | 0.094 | 0.107 | 0.106 |
| | | | | | RPM | 1910 | 1671 | 1273 | 1088 | 909 | 796 | 725 | 637 | 497 |
| | | | | | FEED | 138 | 191 | 239 | 278 | 276 | 277 | 273 | 272 | 263 |
| | 5 | | 0.5D | 1.5D | Vc | 29 | 32 | 34 | 34 | 33 | 33 | 33 | 33 | 34 |
| | | | | | fz | 0.027 | 0.04 | 0.044 | 0.06 | 0.071 | 0.081 | 0.091 | 0.101 | 0.1 |
| | | | | | RPM | 1538 | 1273 | 1082 | 902 | 750 | 657 | 584 | 525 | 433 |
| | | | | | FEED | 125 | 153 | 190 | 216 | 213 | 213 | 212 | 212 | 216 |
| | 6 | Low alloy steel | 0.5D | 1.5D | Vc | 50 | 57 | 57 | 54 | 55 | 57 | 61 | 57 | 57 |
| | | | | | fz | 0.027 | 0.04 | 0.053 | 0.069 | 0.078 | 0.087 | 0.092 | 0.109 | 0.106 |
| | | | | | RPM | 2653 | 2268 | 1814 | 1432 | 1251 | 1134 | 1079 | 907 | 726 |
| | | | | | FEED | 215 | 272 | 385 | 395 | 390 | 395 | 397 | 396 | 385 |
| | 7 | | 0.5D | 1.5D | Vc | 36 | 42 | 40 | 41 | 40 | 40 | 41 | 40 | 39 |
| | | | | | fz | 0.024 | 0.038 | 0.047 | 0.064 | 0.076 | 0.087 | 0.094 | 0.107 | 0.106 |
| | | | | | RPM | 1910 | 1671 | 1273 | 1088 | 909 | 796 | 725 | 637 | 497 |
| | | | | | FEED | 138 | 191 | 239 | 278 | 276 | 277 | 273 | 272 | 263 |
| | 8-9 | | 0.5D | 1.5D | Vc | 29 | 32 | 34 | 34 | 33 | 33 | 33 | 33 | 34 |
| | | | | | fz | 0.027 | 0.04 | 0.044 | 0.06 | 0.071 | 0.081 | 0.091 | 0.101 | 0.1 |
| | | | | | RPM | 1538 | 1273 | 1082 | 902 | 750 | 657 | 584 | 525 | 433 |
| | | | | | FEED | 125 | 153 | 190 | 216 | 213 | 213 | 212 | 212 | 216 |
| | 10 | High alloyed steel, and tool steel | 0.5D | 1.5D | Vc | 50 | 57 | 57 | 54 | 55 | 57 | 61 | 57 | 57 |
| | | | | | fz | 0.027 | 0.04 | 0.053 | 0.069 | 0.078 | 0.087 | 0.092 | 0.109 | 0.106 |
| | | | | | RPM | 2653 | 2268 | 1814 | 1432 | 1251 | 1134 | 1079 | 907 | 726 |
| | | | | | FEED | 215 | 272 | 385 | 395 | 390 | 395 | 397 | 396 | 385 |
| | 11.1 | | 0.5D | 1.5D | Vc | 29 | 32 | 34 | 34 | 33 | 33 | 33 | 33 | 34 |
| | | | | | fz | 0.027 | 0.04 | 0.044 | 0.06 | 0.071 | 0.081 | 0.091 | 0.101 | 0.1 |
| | | | | | RPM | 1538 | 1273 | 1082 | 902 | 750 | 657 | 584 | 525 | 433 |
| | | | | | FEED | 125 | 153 | 190 | 216 | 213 | 213 | 212 | 212 | 216 |
| | 11.2 | | 0.3D | 1.5D | Vc | 21 | 22 | 24 | 23 | 23 | 23 | 23 | 23 | 24 |
| | | | | | fz | 0.028 | 0.04 | 0.045 | 0.06 | 0.071 | 0.082 | 0.091 | 0.101 | 0.1 |
| | | | | | RPM | 1114 | 875 | 764 | 610 | 523 | 458 | 407 | 366 | 306 |
| | | | | | FEED | 94 | 105 | 138 | 146 | 149 | 150 | 148 | 148 | 153 |
| M | 14.1 | Stainless steel | 0.5D | 1.5D | Vc | 33 | 36 | 36 | 36 | 37 | 36 | 37 | 36 | 37 |
| | | | | | fz | 0.025 | 0.039 | 0.045 | 0.064 | 0.074 | 0.085 | 0.093 | 0.106 | 0.102 |
| | | | | | RPM | 1751 | 1432 | 1146 | 955 | 841 | 716 | 654 | 573 | 471 |
| | | | | | FEED | 131 | 168 | 206 | 244 | 249 | 244 | 243 | 243 | 240 |
| K | 15-20 | Grey cast iron Nodular cast iron Malleable cast iron | 0.5D | 1.5D | Vc | 50 | 57 | 57 | 54 | 55 | 57 | 61 | 57 | 57 |
| | | | | | fz | 0.027 | 0.04 | 0.053 | 0.069 | 0.078 | 0.087 | 0.092 | 0.109 | 0.106 |
| | | | | | RPM | 2653 | 2268 | 1814 | 1432 | 1251 | 1134 | 1079 | 907 | 726 |
| | | | | | FEED | 215 | 272 | 385 | 395 | 390 | 395 | 397 | 396 | 385 |
| H | 40 | Chilled Cast Iron | 0.3D | 1.5D | Vc | 21 | 22 | 24 | 23 | 23 | 23 | 23 | 23 | 24 |
| | | | | | fz | 0.028 | 0.04 | 0.045 | 0.06 | 0.071 | 0.082 | 0.091 | 0.101 | 0.1 |
| | | | | | RPM | 1114 | 875 | 764 | 610 | 523 | 458 | 407 | 366 | 306 |
| | | | | | FEED | 94 | 105 | 138 | 146 | 149 | 150 | 148 | 148 | 153 |



Global Cutting Tool Leader **YG-1**



# MILLING

YG

Leading Through Innovation

HSS-PM

# TANK-POWER
# END MILLS

- **High Toughness for Stainless Steels, Carbon steels and Alloy Steels**
- 适用于不锈钢，碳钢和合金钢的高韧性铣刀

# SELECTION GUIDE
## 选用指南

YG MILLING TOOLS

## HSS-PM
# TANK-POWER
# END MILLS

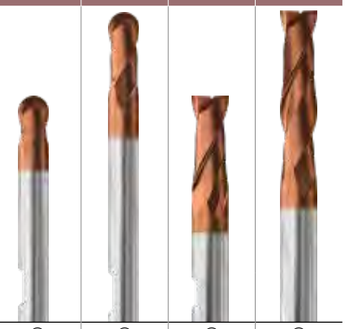
High Toughness, for Stainless Steels, Carbon steels, Alloy Steels
For General Application, Rough & Finish
适用于不锈钢，碳钢，合金钢
可用于普通加工，粗&精加工的高韧性铣刀

Please visit globalyg1.com/mat for material search

◎ : Excellent (优秀) ○ : Good (良好)

Recommended cutting conditions (推荐加工参数) : p.C562

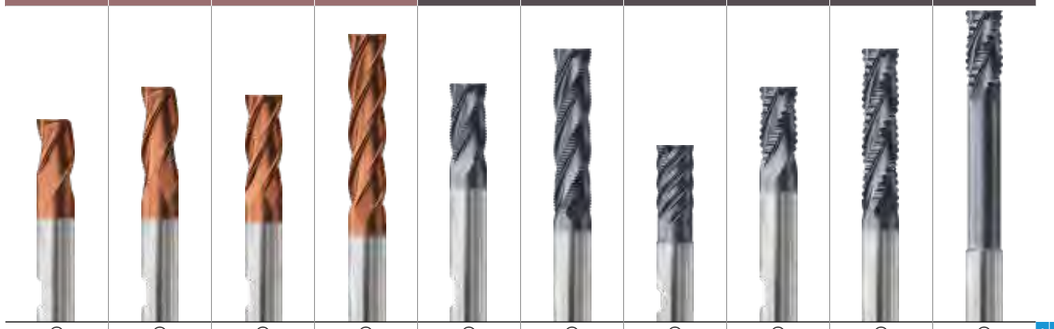
| SERIES 系列 | E9940 GA940 | E9A32 GAA32 | E9936 GA936 | E9A29 GAA29 |
|---|---|---|---|---|
| FLUTE 槽数 | 2 | 2 | 2 | 2 |
| HELIX ANGLE 螺旋角度 | 30° | 30° | 30° | 30° |
| CUTTING EDGE SHAPE 类型 | BALL NOSE | BALL NOSE | SQUARE | SQUARE |
| SIZE MIN 最小尺寸 | R0.5 | R1.0 | D1.0 | D1.0 |
| SIZE MAX 最大尺寸 | R12.5 | R12.5 | D25.0 | D25.0 |
| PAGE 页数 | C548 | C549 | C550 | C551 |
| | SHORT LENGTH | LONG LENGTH | SHORT LENGTH | LONG LENGTH |
| | TiAlN | TiAlN | TiAlN | TiAlN |



| ISO | VDI 3323 | Material Description 材料描述 | Composition / Structure / Heat Treatment 成分 / 组织 / 热处理 | | HB | HRc | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | About 0.15% C | Annealed | 125 | | ◎ | ◎ | ◎ | ◎ | |
| | 2 | | About 0.45% C | Annealed | 190 | 13 | ◎ | ◎ | ◎ | ◎ | |
| | 3 | | About 0.45% C | Quenched & Tempered | 250 | 25 | ◎ | ◎ | ◎ | ◎ | |
| | 4 | | About 0.75% C | Annealed | 270 | 28 | ◎ | ◎ | ◎ | ◎ | |
| | 5 | | About 0.75% C | Quenched & Tempered | 300 | 32 | ◎ | ◎ | ◎ | ◎ | |
| | 6 | Low alloy steel | | Annealed | 180 | 10 | ◎ | ◎ | ◎ | ◎ | |
| | 7 | | | Quenched & Tempered | 275 | 29 | ◎ | ◎ | ◎ | ◎ | |
| | 8 | | | Quenched & Tempered | 300 | 32 | ◎ | ◎ | ◎ | ◎ | |
| | 9 | | | Quenched & Tempered | 350 | 38 | ○ | ○ | ○ | ○ | |
| | 10 | High alloyed steel, and tool steel | | Annealed | 200 | 15 | ◎ | ◎ | ◎ | ◎ | |
| | 11 | | | Quenched & Tempered | 325 | 35 | ○ | ○ | ○ | ○ | |
| M | 12 | Stainless steel | Ferritic / Martensitic | Annealed | 200 | 15 | ◎ | ◎ | ◎ | ◎ | |
| | 13 | | Martensitic | Quenched & Tempered | 240 | 23 | ◎ | ◎ | ◎ | ◎ | |
| | 14 | | Austenitic | | 180 | 10 | ◎ | ◎ | ◎ | ◎ | |
| K | 15 | Grey cast iron | Pearlitic / ferritic | | 180 | 10 | ◎ | ◎ | ◎ | ◎ | |
| | 16 | | Pearlitic (Martensitic) | | 260 | 26 | ◎ | ◎ | ◎ | ◎ | |
| | 17 | Nodular cast iron | Ferritic | | 160 | 3 | ◎ | ◎ | ◎ | ◎ | |
| | 18 | | Pearlitic | | 250 | 25 | ◎ | ◎ | ◎ | ◎ | |
| | 19 | Malleable cast iron | Ferritic | | 130 | | ◎ | ◎ | ◎ | ◎ | |
| | 20 | | Pearlitic | | 230 | 21 | ◎ | ◎ | ◎ | ◎ | |
| N | 21 | Aluminum-wrought alloy | Not Curable | | 60 | | | | | | |
| | 22 | | Curable | Hardened | 100 | | | | | | |
| | 23 | Aluminum-cast, alloyed | ≤ 12% Si, Not Curable | | 75 | | | | | | |
| | 24 | | ≤ 12% Si, Curable | Hardened | 90 | | | | | | |
| | 25 | | > 12% Si, Not Curable | | 130 | | | | | | |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | Cutting Alloys, PB>1% | | 110 | | ○ | ○ | ○ | ○ | |
| | 27 | | CuZn, CuSnZn (Brass) | | 90 | | ○ | ○ | ○ | ○ | |
| | 28 | | CuSn, lead-free copper and electrolytic copper | | 100 | | ○ | ○ | ○ | ○ | |
| | 29 | Non Metallic Materials | Duroplastic, Fiber Reinforced Plastic | | | | | | | | |
| | 30 | | Rubber, Wood, etc. | | | | | | | | |
| S | 31 | Heat Resistant Super Alloys | Fe Based | Annealed | 200 | 15 | | | | | |
| | 32 | | | Cured | 280 | 30 | | | | | |
| | 33 | | Ni or Co Based | Annealed | 250 | 25 | | | | | |
| | 34 | | | Cured | 350 | 38 | | | | | |
| | 35 | | | Cast | 320 | 34 | | | | | |
| | 36 | Titanium Alloys | Pure Titanium | | 400 Rm | | | | | | |
| | 37 | | Alpha + Beta Alloys | Hardened | 1050 Rm | | | | | | |
| H | 38 | Hardened steel | | Hardened | 550 | 55 | | | | | |
| | 39 | | | Hardened | 630 | 60 | | | | | |
| | 40 | Chilled Cast Iron | | Cast | 400 | 42 | | | | | |
| | 41 | Hardened Cast Iron | | Hardened | 550 | 55 | | | | | |



| SERIES 系列 | E9942 GA942 | E9A30 GAA30 | E9938 GA938 | E9A31 GAA31 | E9941 GA941 | E9A35 GAA35 | E9A26 GAA26 | E9A33 GAA33 | E9A34 GAA34 | E9E43 GAE43 |
|---|---|---|---|---|---|---|---|---|---|---|
| FLUTE 槽数 | 3 | 3 | 4 | 4 | Multi Flute | Multi Flute | Multi Flute | Multi Flute | Multi Flute | Multi Flute |
| HELIX ANGLE 螺旋角度 | 30° | 30° | 30° | 30° | 30° | 30° | 45° | 30° | 30° | 30° |
| CUTTING EDGE SHAPE 类型 | SQUARE | SQUARE | SQUARE | SQUARE | ROUGHING | ROUGHING | ROUGHING | ROUGHING | ROUGHING | ROUGHING |
| SIZE MIN 最小尺寸 | D1.0 | D1.0 | D1.0 | D2.0 | D6.0 | D6.0 | D4.0 | D6.0 | D6.0 | D10.0 |
| SIZE MAX 最大尺寸 | D25.0 | D25.0 | D25.0 | D25.0 | D25.0 | D25.0 | D25.0 | D25.0 | D25.0 | D25.0 |
| PAGE 页数 | C552 | C553 | 554 | C555 | C556 | C557 | C558 | C559 | C560 | C561 |
| | STUB LENGTH | SHORT LENGTH | SHORT LENGTH | LONG LENGTH | SHORT LENGTH | LONG LENGTH | SHORT LENGTH | SHORT LENGTH | LONG LENGTH | WITH NECK |
| | TiAlN | TiAlN | TiAlN | TiAlN | X-Coating | X-Coating | X-Coating | X-Coating | X-Coating | X-Coating |



| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 1 | | |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 2 | | |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 3 | | |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 4 | | |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 5 | | |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 6 | P | |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 7 | | |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 8 | | |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 9 | | |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 10 | | |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 11 | | |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 12 | | |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 13 | M | |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 14 | | |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 15 | | |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 16 | | |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 17 | | |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 18 | K | |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 19 | | |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 20 | | |
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| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 26 | N | |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 27 | | |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 28 | | |
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| | | | | | | | | | | 39 | | |
| | | | | | | | | | | 40 | H | |
| | | | | | | | | | | 41 | | |

BALL NOSE = 球头　SQUARE = 平头　ROUGHING = 粗加工
SHORT LENGTH= 短刃　LONG LENGTH = 长刃　WITH NECK = 带颈部　MULTIPLE HELIX = 不等螺旋

# TANK-POWER HSS-PM END MILLS

UNCOATED **E9940 SERIES**
TiAlN COATED **GA940 SERIES**

## HSS-PM, 2 FLUTE SHORT LENGTH BALL NOSE
## 粉末高速钢，2刃 短刃 球头

- ▶ Designed to machine carbon steels, alloyed steels, stainless steels.
- ▶ Designed for milling of radius bottom slots, fillets and special contours.
- ▶ YG-1's new developed TANK-POWER Coating suitable for high speed cutting.

- ▶ 适合加工碳钢、合金钢、不锈钢
- ▶ 适合底部圆弧槽、圆角和特殊轮廓的铣削
- ▶ 采用YG-1最新研发的 适合高速加工 TANK-POWER 涂层，

HSS PM | DIN 327 | 2 | 30° | R ±0.02 | DIN 1835B

p.C562-563

Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| END MILL HOLDER | D118 - 137 | POWER MILLING CHUCK | D161 - 176 |
| - | - | ER COLLET CHUCK | D73 - 115 |
| | | SK SLIM CHUCK | D183 - 201 |

Unit(单位) : mm

| EDP No. UNCOATED | EDP No. TiAlN | Radius of Ball Nose 圆弧角 R(±0.02) | Mill Diameter 直径 | Shank Diameter 柄径 | Length of Cut 刃长 | Overall Length 全长 |
|---|---|---|---|---|---|---|
| **E9940010** | **GA940010** | R0.5 | **1.0** | 6 | 2.5 | 47 |
| **E9940020** | **GA940020** | R1.0 | **2.0** | 6 | 4 | 48 |
| **E9940030** | **GA940030** | R1.5 | **3.0** | 6 | 5 | 49 |
| **E9940040** | **GA940040** | R2.0 | **4.0** | 6 | 7 | 51 |
| **E9940050** | **GA940050** | R2.5 | **5.0** | 6 | 8 | 52 |
| **E9940060** | **GA940060** | R3.0 | **6.0** | 6 | 8 | 52 |
| **E9940070** | **GA940070** | R3.5 | **7.0** | 10 | 10 | 60 |
| **E9940080** | **GA940080** | R4.0 | **8.0** | 10 | 11 | 61 |
| **E9940090** | **GA940090** | R4.5 | **9.0** | 10 | 11 | 61 |
| **E9940100** | **GA940100** | R5.0 | **10.0** | 10 | 13 | 63 |
| **E9940120** | **GA940120** | R6.0 | **12.0** | 12 | 16 | 73 |
| **E9940140** | **GA940140** | R7.0 | **14.0** | 12 | 16 | 73 |
| **E9940160** | **GA940160** | R8.0 | **16.0** | 16 | 19 | 79 |
| **E9940180** | **GA940180** | R9.0 | **18.0** | 16 | 19 | 79 |
| **E9940200** | **GA940200** | R10.0 | **20.0** | 20 | 22 | 88 |
| **E9940220** | **GA940220** | R11.0 | **22.0** | 20 | 22 | 88 |
| **E9940250** | **GA940250** | R12.5 | **25.0** | 25 | 26 | 102 |

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.03 | h6 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | ○ | ○ | ○ | | | | | | | | | | | | | |



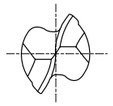
# TANK-POWER HSS-PM END MILLS

UNCOATED **E9A32 SERIES**
TiAlN COATED **GAA32 SERIES**

## HSS-PM, 2 FLUTE LONG LENGTH BALL NOSE
## 粉末高速钢，2刃 长刃 球头

- ▶ Designed to machine carbon steels, alloyed steels, stainless steels.
- ▶ Designed for milling of radius bottom slots, fillets and special contours.
- ▶ YG-1's new developed TANK-POWER Coating suitable for high speed cutting.

- ▶ 适合加工碳钢、合金钢、不锈钢
- ▶ 适合底部圆弧槽、圆角和特殊轮廓的铣削
- ▶ 采用YG-1最新研发的 适合高速加工 TANK-POWER 涂层，



HSS PM | DIN 1889 | 2 | 30° | R ±0.02 | DIN 1835B

p.C562-563

Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| END MILL HOLDER | D118 - 137 | POWER MILLING CHUCK | D161 - 176 |
| - | - | ER COLLET CHUCK | D73 - 115 |
| | | SK SLIM CHUCK | D183 - 201 |

Unit(单位) : mm

| EDP No. UNCOATED | EDP No. TiAlN | Radius of Ball Nose 圆弧角 R(±0.02) | Mill Diameter 直径 | Shank Diameter 柄径 | Length of Cut 刃长 | Overall Length 全长 |
|---|---|---|---|---|---|---|
| **E9A32020** | **GAA32020** | R1.0 | **2.0** | 6 | 7 | 54 |
| **E9A32030** | **GAA32030** | R1.5 | **3.0** | 6 | 8 | 56 |
| **E9A32040** | **GAA32040** | R2.0 | **4.0** | 6 | 11 | 63 |
| **E9A32050** | **GAA32050** | R2.5 | **5.0** | 6 | 13 | 68 |
| **E9A32060** | **GAA32060** | R3.0 | **6.0** | 6 | 13 | 68 |
| **E9A32070** | **GAA32070** | R3.5 | **7.0** | 10 | 16 | 80 |
| **E9A32080** | **GAA32080** | R4.0 | **8.0** | 10 | 19 | 88 |
| **E9A32090** | **GAA32090** | R4.5 | **9.0** | 10 | 19 | 88 |
| **E9A32100** | **GAA32100** | R5.0 | **10.0** | 10 | 22 | 95 |
| **E9A32120** | **GAA32120** | R6.0 | **12.0** | 12 | 26 | 110 |
| **E9A32140** | **GAA32140** | R7.0 | **14.0** | 12 | 26 | 110 |
| **E9A32160** | **GAA32160** | R8.0 | **16.0** | 16 | 32 | 123 |
| **E9A32180** | **GAA32180** | R9.0 | **18.0** | 16 | 32 | 123 |
| **E9A32200** | **GAA32200** | R10.0 | **20.0** | 20 | 38 | 141 |
| **E9A32220** | **GAA32220** | R11.0 | **22.0** | 20 | 38 | 141 |
| **E9A32250** | **GAA32250** | R12.5 | **25.0** | 25 | 45 | 166 |

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.03 | h6 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | ○ | ○ | ○ | | | | | | | | | | | | | |

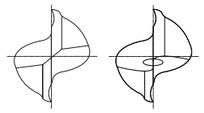
# TANK-POWER HSS-PM END MILLS

UNCOATED **E9936** SERIES
TiAlN COATED **GA936** SERIES

## HSS-PM, 2 FLUTE SHORT LENGTH
## 粉末高速钢，2刃 短刃

- ▶ Designed to machine carbon steels, alloyed steels, stainless steels.
- ▶ 2 Flute design for slotting.
- ▶ Suitable for high speed cutting of difficult-to-cut materials.
- ▶ YG-1's new developed TANK-POWER Coating suitable for high speed cutting.

- ▶ 适合加工碳钢、合金钢、不锈钢
- ▶ 为了槽铣削采用2槽设计
- ▶ 适用于高速加工难切削材料
- ▶ 采用YG-1最新研发的 适合高速加工 TANK-POWER 涂层，



to Ø 3mm Ø3以下 | over Ø 3m 超过Ø3

HSS PM | DIN 327 | 2 | 30° | DIN 1835B

p.C564-565

Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| END MILL HOLDER | D118 - 137 | POWER MILLING CHUCK | D161 - 176 |
| - | - | ER COLLET CHUCK | D73 - 115 |
| | | SK SLIM CHUCK | D183 - 201 |

Unit(单位) : mm

| EDP No. UNCOATED | EDP No. TiAlN | Mill Diameter 直径 e8 | Shank Diameter 柄径 h6 | Length of Cut 刃长 | Overall Length 全长 |
|---|---|---|---|---|---|
| E9936010 | GA936010 | 1.0 | 6 | 2.5 | 47 |
| E9936020 | GA936020 | 2.0 | 6 | 4 | 48 |
| E9936030 | GA936030 | 3.0 | 6 | 5 | 49 |
| E9936040 | GA936040 | 4.0 | 6 | 7 | 51 |
| E9936050 | GA936050 | 5.0 | 6 | 8 | 52 |
| E9936060 | GA936060 | 6.0 | 6 | 8 | 52 |
| E9936070 | GA936070 | 7.0 | 10 | 10 | 60 |
| E9936080 | GA936080 | 8.0 | 10 | 11 | 61 |
| E9936090 | GA936090 | 9.0 | 10 | 11 | 61 |
| E9936100 | GA936100 | 10.0 | 10 | 13 | 63 |
| E9936120 | GA936120 | 12.0 | 12 | 16 | 73 |
| E9936140 | GA936140 | 14.0 | 12 | 16 | 73 |
| E9936160 | GA936160 | 16.0 | 16 | 19 | 79 |
| E9936180 | GA936180 | 18.0 | 16 | 19 | 79 |
| E9936200 | GA936200 | 20.0 | 20 | 22 | 88 |
| E9936220 | GA936220 | 22.0 | 20 | 22 | 88 |
| E9936250 | GA936250 | 25.0 | 25 | 26 | 102 |

### Tolerances according to DIN 7160 & 7161
按DIN7160&7161的标准公差

| Tolerance range in ㎛ / 公差单位为 Nominal-Diameter in (直径单位为) ㎜ | from 1 to 3 | over 3 to 6 | over 6 to 10 | over 10 to 18 | over 18 to 30 |
|---|---|---|---|---|---|
| e8 | - 14<br>- 28 | - 20<br>- 38 | - 25<br>- 47 | - 32<br>- 59 | - 40<br>- 73 |
| h6 | 0<br>- 6 | 0<br>- 8 | 0<br>- 9 | 0<br>- 11 | 0<br>- 13 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | ○ | ○ | ○ | | | | | | | | | | | | | |



CARBIDE
HSS
CBN END MILLS
i-Xmill END MILLS
i-SMART MODULAR END MILLS
X5070 END MILLS
4G MILL END MILLS
X-POWER PRO END MILLS
TitaNox-POWER END MILLS
SUS-CUT END MILLS
V7 PLUS END MILLS
ALU-POWER HPC END MILLS
ALU-CUT END MILLS
G-CUT END MILLS
CRX S END MILLS
K-2 END MILLS
GENERAL CARBIDE END MILLS
ONLY ONE COATED PM60 END MILLS
TANK-POWER END MILLS
GENERAL HSS END MILLS
MILLING CUTTERS
TECHNICAL DATA

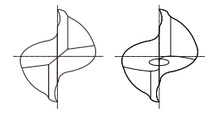
# TANK-POWER HSS-PM END MILLS

UNCOATED **E9A29** SERIES
TiAlN COATED **GAA29** SERIES

## HSS-PM, 2 FLUTE LONG LENGTH
## 粉末高速钢，2刃 长刃

- ▶ Designed to machine carbon steels, alloyed steels, stainless steels.
- ▶ 2 Flute design for slotting.
- ▶ Suitable for high speed cutting of difficult-to-cut materials.
- ▶ YG-1's new developed TANK-POWER Coating suitable for high speed cutting.

- ▶ 适合加工碳钢、合金钢、不锈钢
- ▶ 为了槽铣削采用2槽设计
- ▶ 适用于高速加工难切削材料
- ▶ 采用YG-1最新研发的 适合高速加工 TANK-POWER 涂层，



to Ø 3mm Ø3以下 | over Ø 3m 超过Ø3

HSS PM | DIN 844 | 2 | 30° | DIN 1835B

p.C564-565

Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| END MILL HOLDER | D118 - 137 | POWER MILLING CHUCK | D161 - 176 |
| - | - | ER COLLET CHUCK | D73 - 115 |
| | | SK SLIM CHUCK | D183 - 201 |

Unit(单位) : mm

| EDP No. UNCOATED | EDP No. TiAlN | Mill Diameter 直径 e8 | Shank Diameter 柄径 h6 | Length of Cut 刃长 | Overall Length 全长 |
|---|---|---|---|---|---|
| E9A29010 | GAA29010 | 1.0 | 6 | 3 | 47 |
| E9A29020 | GAA29020 | 2.0 | 6 | 7 | 51 |
| E9A29030 | GAA29030 | 3.0 | 6 | 8 | 52 |
| E9A29040 | GAA29040 | 4.0 | 6 | 11 | 55 |
| E9A29050 | GAA29050 | 5.0 | 6 | 13 | 57 |
| E9A29060 | GAA29060 | 6.0 | 6 | 13 | 57 |
| E9A29070 | GAA29070 | 7.0 | 10 | 16 | 66 |
| E9A29080 | GAA29080 | 8.0 | 10 | 19 | 69 |
| E9A29090 | GAA29090 | 9.0 | 10 | 19 | 69 |
| E9A29100 | GAA29100 | 10.0 | 10 | 22 | 72 |
| E9A29120 | GAA29120 | 12.0 | 12 | 26 | 83 |
| E9A29140 | GAA29140 | 14.0 | 12 | 26 | 83 |
| E9A29160 | GAA29160 | 16.0 | 16 | 32 | 92 |
| E9A29180 | GAA29180 | 18.0 | 16 | 32 | 92 |
| E9A29200 | GAA29200 | 20.0 | 20 | 38 | 104 |
| E9A29220 | GAA29220 | 22.0 | 20 | 38 | 104 |
| E9A29250 | GAA29250 | 25.0 | 25 | 45 | 121 |

### Tolerances according to DIN 7160 & 7161
按DIN7160&7161的标准公差

| Tolerance range in ㎛ / 公差单位为 Nominal-Diameter in (直径单位为) ㎜ | from 1 to 3 | over 3 to 6 | over 6 to 10 | over 10 to 18 | over 18 to 30 |
|---|---|---|---|---|---|
| e8 | - 14<br>- 28 | - 20<br>- 38 | - 25<br>- 47 | - 32<br>- 59 | - 40<br>- 73 |
| h6 | 0<br>- 6 | 0<br>- 8 | 0<br>- 9 | 0<br>- 11 | 0<br>- 13 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| HB | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| Recommend | | | | | | ○ | ○ | ○ | | | | | | | | | | | | | |

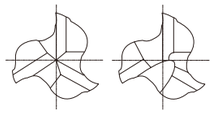
# TANK-POWER HSS-PM END MILLS

UNCOATED **E9942 SERIES**
TiAlN COATED **GA942 SERIES**

## HSS-PM, 3 FLUTE STUB LENGTH
## 粉末高速钢，3刃 超短刃

- ▶ Designed to machine carbon steels, alloyed steels, stainless steels.
- ▶ Well balanced web design to minimize deflection and chattering.
- ▶ 3 flute design possess the advantage of 2 flute and 4 flute end mill.
- ▶ YG-1's new developed TANK-POWER Coating suitable for high speed cutting.

- ▶ 适合加工碳钢、合金钢、不锈钢
- ▶ 平衡良好的芯核设计，最大限度地减少挠度和抖振
- ▶ 3槽设计兼具2槽4槽铣刀的优点
- ▶ 采用YG-1最新研发的 适合高速加工 TANK-POWER 涂层，



up to Ø 1mm Ø1mm以下 | over Ø 1mm 超过Ø1mm

HSS PM | DIN 327 | 3 | 30° | DIN 1835B

p.C566-567

Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| END MILL HOLDER | D118 - 137 | POWER MILLING CHUCK | D161 - 176 |
| - | - | ER COLLET CHUCK | D73 - 115 |
| | | SK SLIM CHUCK | D183 - 201 |

Unit(单位) : mm

| EDP No. UNCOATED | EDP No. TiAlN | Mill Diameter 直径 e8 | Shank Diameter 柄径 h6 | Length of Cut 刃长 | Overall Length 全长 |
|---|---|---|---|---|---|
| E9942010 | GA942010 | 1.0 | 6 | 2.5 | 47 |
| E9942020 | GA942020 | 2.0 | 6 | 4 | 48 |
| E9942030 | GA942030 | 3.0 | 6 | 5 | 49 |
| E9942040 | GA942040 | 4.0 | 6 | 7 | 51 |
| E9942050 | GA942050 | 5.0 | 6 | 8 | 52 |
| E9942060 | GA942060 | 6.0 | 6 | 8 | 52 |
| E9942070 | GA942070 | 7.0 | 10 | 10 | 60 |
| E9942080 | GA942080 | 8.0 | 10 | 11 | 61 |
| E9942090 | GA942090 | 9.0 | 10 | 11 | 61 |
| E9942100 | GA942100 | 10.0 | 10 | 13 | 63 |
| E9942120 | GA942120 | 12.0 | 12 | 16 | 73 |
| E9942140 | GA942140 | 14.0 | 12 | 16 | 73 |
| E9942160 | GA942160 | 16.0 | 16 | 19 | 79 |
| E9942180 | GA942180 | 18.0 | 16 | 19 | 79 |
| E9942200 | GA942200 | 20.0 | 20 | 22 | 88 |
| E9942220 | GA942220 | 22.0 | 20 | 22 | 88 |
| E9942250 | GA942250 | 25.0 | 25 | 26 | 102 |

### Tolerances according to DIN 7160 & 7161
按DIN7160&7161的标准公差

| Tolerance range in μm / 公差单位为 Nominal-Diameter in mm / 直径单位为 | from 1 to 3 | over 3 to 6 | over 6 to 10 | over 10 to 18 | over 18 to 30 |
|---|---|---|---|---|---|
| e8 | - 14<br>- 28 | - 20<br>- 38 | - 25<br>- 47 | - 32<br>- 59 | - 40<br>- 73 |
| h6 | 0<br>- 6 | 0<br>- 8 | 0<br>- 9 | 0<br>- 11 | 0<br>- 13 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | ○ | ○ | ○ | | | | | | | | | | | | | |



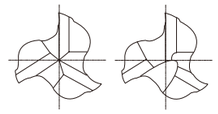
# TANK-POWER HSS-PM END MILLS

UNCOATED **E9A30 SERIES**
TiAlN COATED **GAA30 SERIES**

## HSS-PM, 3 FLUTE SHORT LENGTH
## 粉末高速钢，3刃 短刃

- ▶ Designed to machine carbon steels, alloyed steels, stainless steels.
- ▶ Well balanced web design to minimize deflection and chattering.
- ▶ 3 flute design possess the advantage of 2 flute and 4 flute end mill.
- ▶ YG-1's new developed TANK-POWER Coating suitable for high speed cutting.

- ▶ 适合加工碳钢、合金钢、不锈钢
- ▶ 平衡良好的芯核设计，最大限度地减少挠度和抖振
- ▶ 3槽设计兼具2槽4槽铣刀的优点
- ▶ 采用YG-1最新研发的 适合高速加工 TANK-POWER 涂层，



up to Ø 1mm Ø1mm以下 | over Ø 1mm 超过Ø1mm

HSS PM | DIN 844 | 3 | 30° | DIN 1835B

p.C566-567

Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| END MILL HOLDER | D118 - 137 | POWER MILLING CHUCK | D161 - 176 |
| - | - | ER COLLET CHUCK | D73 - 115 |
| | | SK SLIM CHUCK | D183 - 201 |

Unit(单位) : mm

| EDP No. UNCOATED | EDP No. TiAlN | Mill Diameter 直径 e8 | Shank Diameter 柄径 h6 | Length of Cut 刃长 | Overall Length 全长 |
|---|---|---|---|---|---|
| E9A30010 | GAA30010 | 1.0 | 6 | 3 | 47 |
| E9A30020 | GAA30020 | 2.0 | 6 | 7 | 51 |
| E9A30030 | GAA30030 | 3.0 | 6 | 8 | 52 |
| E9A30040 | GAA30040 | 4.0 | 6 | 11 | 55 |
| E9A30050 | GAA30050 | 5.0 | 6 | 13 | 57 |
| E9A30060 | GAA30060 | 6.0 | 6 | 13 | 57 |
| E9A30070 | GAA30070 | 7.0 | 10 | 16 | 66 |
| E9A30080 | GAA30080 | 8.0 | 10 | 19 | 69 |
| E9A30090 | GAA30090 | 9.0 | 10 | 19 | 69 |
| E9A30100 | GAA30100 | 10.0 | 10 | 22 | 72 |
| E9A30120 | GAA30120 | 12.0 | 12 | 26 | 83 |
| E9A30140 | GAA30140 | 14.0 | 12 | 26 | 83 |
| E9A30160 | GAA30160 | 16.0 | 16 | 32 | 92 |
| E9A30180 | GAA30180 | 18.0 | 16 | 32 | 92 |
| E9A30200 | GAA30200 | 20.0 | 20 | 38 | 104 |
| E9A30220 | GAA30220 | 22.0 | 20 | 38 | 104 |
| E9A30250 | GAA30250 | 25.0 | 25 | 45 | 121 |

### Tolerances according to DIN 7160 & 7161
按DIN7160&7161的标准公差

| Tolerance range in μm / 公差单位为 Nominal-Diameter in mm / 直径单位为 | from 1 to 3 | over 3 to 6 | over 6 to 10 | over 10 to 18 | over 18 to 30 |
|---|---|---|---|---|---|
| e8 | - 14<br>- 28 | - 20<br>- 38 | - 25<br>- 47 | - 32<br>- 59 | - 40<br>- 73 |
| h6 | 0<br>- 6 | 0<br>- 8 | 0<br>- 9 | 0<br>- 11 | 0<br>- 13 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | ○ | ○ | ○ | | | | | | | | | | | | | |

# TANK-POWER HSS-PM END MILLS

UNCOATED **E9938 SERIES**
TiAlN COATED **GA938 SERIES**

## HSS-PM, 4 FLUTE SHORT LENGTH
## 粉末高速钢，4刃 短刃

- ▶ Designed to machine carbon steels, alloyed steels, stainless steels.
- ▶ Recommended for pocketing, cam milling, die sinking and slotting..
- ▶ Designed for high speed cutting of difficult-to-cut materials.
- ▶ YG-1's new developed TANK-POWER Coating suitable for high speed cutting.

- ▶ 适合加工碳钢、合金钢、不锈钢
- ▶ 推荐用于型腔、凸轮铣削、凹模和开槽加工
- ▶ 专为难切削材料的高速切削而设计
- ▶ 采用YG-1最新研发的 适合高速加工 TANK-POWER 涂层，

HSS PM | DIN 844 | 4 | 30° | DIN 1835B

p.C570-571

Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | END MILL HOLDER | D118 - 137 | POWER MILLING CHUCK | D161 - 176 |
| ◎ | - | - | ER COLLET CHUCK | D73 - 115 |
| | | | SK SLIM CHUCK | D183 - 201 |

Unit(单位) : mm

| EDP No. UNCOATED | EDP No. TiAlN | Mill Diameter 直径 | Shank Diameter 柄径 | Length of Cut 刃长 | Overall Length 全长 |
|---|---|---|---|---|---|
| E9938010 | GA938010 | 1.0 | 6 | 3 | 49 |
| E9938020 | GA938020 | 2.0 | 6 | 7 | 51 |
| E9938030 | GA938030 | 3.0 | 6 | 8 | 52 |
| E9938040 | GA938040 | 4.0 | 6 | 11 | 55 |
| E9938050 | GA938050 | 5.0 | 6 | 13 | 57 |
| E9938060 | GA938060 | 6.0 | 6 | 13 | 57 |
| E9938070 | GA938070 | 7.0 | 10 | 16 | 66 |
| E9938080 | GA938080 | 8.0 | 10 | 19 | 69 |
| E9938090 | GA938090 | 9.0 | 10 | 19 | 69 |
| E9938100 | GA938100 | 10.0 | 10 | 22 | 72 |
| E9938120 | GA938120 | 12.0 | 12 | 26 | 83 |
| E9938140 | GA938140 | 14.0 | 12 | 26 | 83 |
| E9938160 | GA938160 | 16.0 | 16 | 32 | 92 |
| E9938180 | GA938180 | 18.0 | 16 | 32 | 92 |
| E9938200 | GA938200 | 20.0 | 20 | 38 | 104 |
| E9938220 | GA938220 | 22.0 | 20 | 38 | 104 |
| E9938250 | GA938250 | 25.0 | 25 | 45 | 121 |

▶Mill Diameter 1mm: Center match end teeth

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.03 | h6 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 | |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 | |
| Recommend | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | ○ | ○ | ○ | | | | | | | | | | | | | |



# TANK-POWER HSS-PM END MILLS

UNCOATED **E9A31 SERIES**
TiAlN COATED **GAA31 SERIES**

## HSS-PM, 4 FLUTE LONG LENGTH
## 粉末高速钢，4刃 长刃

- ▶ Designed to machine carbon steels, alloyed steels, stainless steels.
- ▶ Recommended for pocketing, cam milling, die sinking and slotting..
- ▶ Designed for high speed cutting of difficult-to-cut materials.
- ▶ YG-1's new developed TANK-POWER Coating suitable for high speed cutting.

- ▶ 适合加工碳钢、合金钢、不锈钢
- ▶ 推荐用于型腔、凸轮铣削、凹模和开槽加工
- ▶ 专为难切削材料的高速切削而设计
- ▶ 采用YG-1最新研发的 适合高速加工 TANK-POWER 涂层，

HSS PM | DIN 844 | 4 | 30° | DIN 1835B

p.C570-571

Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | END MILL HOLDER | D118 - 137 | POWER MILLING CHUCK | D161 - 176 |
| ◎ | - | - | ER COLLET CHUCK | D73 - 115 |
| | | | SK SLIM CHUCK | D183 - 201 |

Unit(单位) : mm

| EDP No. UNCOATED | EDP No. TiAlN | Mill Diameter 直径 | Shank Diameter 柄径 | Length of Cut 刃长 | Overall Length 全长 |
|---|---|---|---|---|---|
| E9A31020 | GAA31020 | 2.0 | 6 | 10 | 54 |
| E9A31030 | GAA31030 | 3.0 | 6 | 12 | 56 |
| E9A31040 | GAA31040 | 4.0 | 6 | 19 | 63 |
| E9A31050 | GAA31050 | 5.0 | 6 | 24 | 68 |
| E9A31060 | GAA31060 | 6.0 | 6 | 24 | 68 |
| E9A31070 | GAA31070 | 7.0 | 10 | 30 | 80 |
| E9A31080 | GAA31080 | 8.0 | 10 | 38 | 88 |
| E9A31090 | GAA31090 | 9.0 | 10 | 38 | 88 |
| E9A31100 | GAA31100 | 10.0 | 10 | 45 | 95 |
| E9A31120 | GAA31120 | 12.0 | 12 | 53 | 110 |
| E9A31140 | GAA31140 | 14.0 | 12 | 53 | 110 |
| E9A31160 | GAA31160 | 16.0 | 16 | 63 | 123 |
| E9A31180 | GAA31180 | 18.0 | 16 | 63 | 123 |
| E9A31200 | GAA31200 | 20.0 | 20 | 75 | 141 |
| E9A31220 | GAA31220 | 22.0 | 20 | 75 | 141 |
| E9A31250 | GAA31250 | 25.0 | 25 | 90 | 166 |

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.03 | h6 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 | |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 | |
| Recommend | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | ○ | ○ | ○ | | | | | | | | | | | | | |

# TANK-POWER HSS-PM END MILLS

UNCOATED **E9941** SERIES
X-COATED **GA941** SERIES

## HSS-PM, MULTI FLUTE SHORT LENGTH ROUGHING - FINE
## 粉末高速钢，多刃 短刃 粗加工 - 细牙

▶ Suitable for high-feed roughing milling.
▶ Designed to machine carbon steels, alloyed steels, stainless steels.
▶ Providing excellent finished surfaces in many cases.
▶ YG-1's new developed TANK-POWER Coating suitable for high speed cutting.
▶ up to Ø20 : center cut, over Ø20 : non center cut

▶ 适合高速粗加工
▶ 适合加工碳钢、合金钢、不锈钢
▶ 多数情况下，可实现精加工
▶ 采用YG-1最新研发的 适合高速加工 TANK-POWER 涂层，
▶ Ø20以下，底刃过中心，Ø20以上，底刃不过中心

HSS PM | DIN 844 | HR | 3-5
30° | DIN 1835B | ~Ø20 | Ø22~ | C x 45° | p.C572-573

Recommended ToolHolder

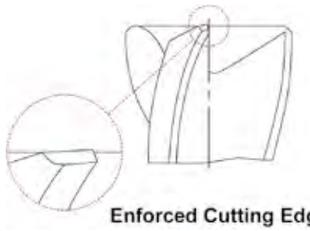
| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| END MILL HOLDER | D118 - 137 | POWER MILLING CHUCK | D161 - 176 |
| - | - | ER COLLET CHUCK | D73 - 115 |
| | | SK SLIM CHUCK | D183 - 201 |

Unit(单位) : mm

| EDP No. UNCOATED | EDP No. X-COATING | Mill Diameter 直径 | Shank Diameter 柄径 | Length of Cut 刃长 | Overall Length 全长 | No. of Flute 槽数 | Chamfer 导向 |
|---|---|---|---|---|---|---|---|
| | | js12 | h6 | | | | |
| E9941060 | GA941060 | 6.0 | 6 | 13 | 57 | 3 | 0.18 |
| E9941070 | GA941070 | 7.0 | 10 | 16 | 66 | 3 | 0.18 |
| E9941080 | GA941080 | 8.0 | 10 | 19 | 69 | 3 | 0.18 |
| E9941090 | GA941090 | 9.0 | 10 | 19 | 69 | 3 | 0.18 |
| E9941100 | GA941100 | 10.0 | 10 | 22 | 72 | 4 | 0.18 |
| E9941120 | GA941120 | 12.0 | 12 | 26 | 83 | 4 | 0.18 |
| E9941140 | GA941140 | 14.0 | 12 | 26 | 83 | 4 | 0.25 |
| E9941160 | GA941160 | 16.0 | 16 | 32 | 92 | 4 | 0.25 |
| E9941180 | GA941180 | 18.0 | 16 | 32 | 92 | 4 | 0.25 |
| E9941200 | GA941200 | 20.0 | 20 | 38 | 104 | 4 | 0.25 |
| E9941220 | GA941220 | 22.0 | 20 | 38 | 104 | 5 | 0.36 |
| E9941250 | GA941250 | 25.0 | 25 | 45 | 121 | 5 | 0.36 |

**Tolerances according to DIN 7160 & 7161(标准精度)**
按DIN7160&7161的标准公差

| Tolerance range in ㎛ / 公差单位为 | | | | | | |
|---|---|---|---|---|---|---|
| Nominal-Diameter in mm / 直径单位为 | | | | | | |
| | from 1 to 3 | over 3 to 6 | over 6 to 10 | over 10 to 18 | over 18 to 30 | over 30 to 50 |
| **js12** | ± 50 | ± 60 | ± 75 | ± 90 | ± 105 | ± 125 |
| **h6** | 0 - 6 | 0 - 8 | 0 - 9 | 0 - 11 | 0 - 13 | 0 - 16 |




◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | ○ | ○ | ○ | | | | | | | | | | | | | |



# TANK-POWER HSS-PM END MILLS

UNCOATED **E9A35** SERIES
X-COATED **GAA35** SERIES

## HSS-PM, MULTI FLUTE LONG LENGTH ROUGHING - FINE
## 粉末高速钢，多刃 长刃 粗加工 - 细牙

▶ Suitable for high-feed roughing milling.
▶ Designed to machine carbon steels, alloyed steels, stainless steels.
▶ Providing excellent finished surfaces in many cases.
▶ YG-1's new developed TANK-POWER Coating suitable for high speed cutting.
▶ up to Ø20 : center cut, over Ø20 : non center cut

▶ 适合高速粗加工
▶ 适合加工碳钢、合金钢、不锈钢
▶ 多数情况下，可实现精加工
▶ 采用YG-1最新研发的 适合高速加工 TANK-POWER 涂层，
▶ Ø20以下，底刃过中心，Ø20以上，底刃不过中心

HSS PM | DIN 844 | HR | 3-5
30° | DIN 1835B | ~Ø20 | Ø22~ | C x 45° | p.C572-573

Recommended ToolHolder

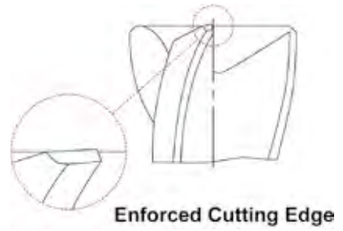
| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| END MILL HOLDER | D118 - 137 | POWER MILLING CHUCK | D161 - 176 |
| - | - | ER COLLET CHUCK | D73 - 115 |
| | | SK SLIM CHUCK | D183 - 201 |

Unit(单位) : mm

| EDP No. UNCOATED | EDP No. X-COATING | Mill Diameter 直径 | Shank Diameter 柄径 | Length of Cut 刃长 | Overall Length 全长 | No. of Flute 槽数 | Chamfer 导向 |
|---|---|---|---|---|---|---|---|
| | | js12 | h6 | | | | |
| E9A35060 | GAA35060 | 6.0 | 6 | 24 | 68 | 3 | 0.18 |
| E9A35070 | GAA35070 | 7.0 | 10 | 30 | 80 | 3 | 0.18 |
| E9A35080 | GAA35080 | 8.0 | 10 | 38 | 88 | 3 | 0.18 |
| E9A35090 | GAA35090 | 9.0 | 10 | 38 | 88 | 3 | 0.18 |
| E9A35100 | GAA35100 | 10.0 | 10 | 45 | 95 | 4 | 0.18 |
| E9A35120 | GAA35120 | 12.0 | 12 | 53 | 110 | 4 | 0.18 |
| E9A35140 | GAA35140 | 14.0 | 12 | 53 | 110 | 4 | 0.25 |
| E9A35160 | GAA35160 | 16.0 | 16 | 63 | 123 | 4 | 0.25 |
| E9A35180 | GAA35180 | 18.0 | 16 | 63 | 123 | 4 | 0.25 |
| E9A35200 | GAA35200 | 20.0 | 20 | 75 | 141 | 4 | 0.25 |
| E9A35220 | GAA35220 | 22.0 | 20 | 75 | 141 | 5 | 0.36 |
| E9A35250 | GAA35250 | 25.0 | 25 | 90 | 166 | 5 | 0.36 |

**Tolerances according to DIN 7160 & 7161(标准精度)**
按DIN7160&7161的标准公差

| Tolerance range in ㎛ / 公差单位为 | | | | | | |
|---|---|---|---|---|---|---|
| Nominal-Diameter in mm / 直径单位为 | | | | | | |
| | from 1 to 3 | over 3 to 6 | over 6 to 10 | over 10 to 18 | over 18 to 30 | over 30 to 50 |
| **js12** | ± 50 | ± 60 | ± 75 | ± 90 | ± 105 | ± 125 |
| **h6** | 0 - 6 | 0 - 8 | 0 - 9 | 0 - 11 | 0 - 13 | 0 - 16 |




◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | ○ | ○ | ○ | | | | | | | | | | | | | |

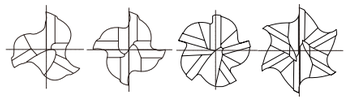
# TANK-POWER HSS-PM END MILLS

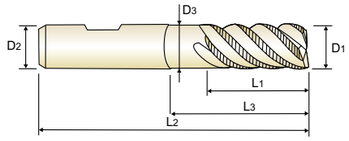
UNCOATED **E9A26** SERIES
X-COATED **GAA26** SERIES

## HSS-PM, MULTI FLUTE 45°HELIX SHORT LENGTH ROUGHING - FINE
## 粉末高速钢，多刃 45度螺旋 粗加工 - 细牙

▶ High chip removal and minimizing breakages of cutting edges.
▶ Designed to machine carbon steels, alloyed steels, stainless steels
▶ YG-1's new developed TANK-POWER Coating suitable for high speed cutting

▶ 高切屑去除率和最大限度地减少切削刃的破损
▶ 适合加工碳钢、合金钢、不锈钢
▶ 采用YG-1最新研发的 适合高速加工 TANK-POWER 涂层，






HSS PM | DIN 844 | HR | 3-6 | 45° | DIN 1835B | C x 45°

p.C574-575

Recommended ToolHolder

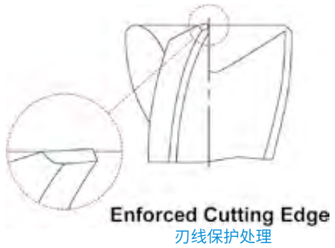
| Flat Shank | | Page | Plain Shank | | Page |
|---|---|---|---|---|---|
| END MILL HOLDER | D118 - 137 | | POWER MILLING CHUCK | D161 - 176 | |
| - | - | | ER COLLET CHUCK | D73 - 115 | |
| | | | SK SLIM CHUCK | D183 - 201 | |

Unit(单位) : mm

| EDP No. | | Mill Diameter 直径 | Shank Diameter 柄径 | Length of Cut 刃长 | Length Below Shank 颈长 | Overall Length 全长 | Neck Diameter 颈径 | No. of Flute 槽数 | Chamfer 导向 |
|---|---|---|---|---|---|---|---|---|---|
| UNCOATED | X-COATING | $D_1$(js12) | $D_2$(h6) | $L_1$ | $L_3$ | $L_2$ | $D_3$ | | |
| **E9A26040** | **GAA26040** | **4.0** | 6 | 11 | - | 57 | - | 3 | 0.1 |
| **E9A26050** | **GAA26050** | **5.0** | 6 | 13 | - | 57 | - | 4 | 0.13 |
| **E9A26060** | **GAA26060** | **6.0** | 6 | 13 | - | 57 | - | 4 | 0.15 |
| **E9A26070** | **GAA26070** | **7.0** | 10 | 16 | - | 66 | - | 4 | 0.15 |
| **E9A26080** | **GAA26080** | **8.0** | 10 | 19 | - | 69 | - | 4 | 0.18 |
| **E9A26090** | **GAA26090** | **9.0** | 10 | 19 | - | 69 | - | 4 | 0.18 |
| **E9A26100** | **GAA26100** | **10.0** | 10 | 22 | 31 | 72 | 9.5 | 4 | 0.20 |
| **E9A26120** | **GAA26120** | **12.0** | 12 | 26 | 37 | 83 | 11.5 | 4 | 0.20 |
| **E9A26140** | **GAA26140** | **14.0** | 12 | 26 | - | 83 | - | 5 | 0.20 |
| **E9A26160** | **GAA26160** | **16.0** | 16 | 32 | 44 | 92 | 15 | 5 | 0.20 |
| **E9A26180** | **GAA26180** | **18.0** | 16 | 32 | - | 92 | - | 6 | 0.20 |
| **E9A26200** | **GAA26200** | **20.0** | 20 | 38 | 54 | 104 | 19 | 6 | 0.20 |
| **E9A26250** | **GAA26250** | **25.0** | 25 | 45 | 63 | 121 | 24 | 6 | 0.20 |

### Tolerances according to DIN 7160 & 7161(标准精度)
按DIN7160&7161的标准公差

| Tolerance range in ㎛ / 公差单位为 | | | | | | |
|---|---|---|---|---|---|---|
| Nominal-Diameter in mm / 直径单位为 | | | | | | |
| | from 1 to 3 | over 3 to 6 | over 6 to 10 | over 10 to 18 | over 18 to 30 | over 30 to 50 |
| **js12** | ± 50 | ± 60 | ± 75 | ± 90 | ± 105 | ± 125 |
| **h6** | 0<br>- 6 | 0<br>- 8 | 0<br>- 9 | 0<br>- 11 | 0<br>- 13 | 0<br>- 16 |



Enforced Cutting Edge
刃线保护处理

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | M | | | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | | | | | | | | | | | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | | | | | | | | | | |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 | | | | | | | | | | |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 | | | | | | | | | | |
| Recommend | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | | | | | | | | | | |
| ISO | N | | | | | | | | | | | S | | | | | | | | | H | | | | | | | | | |
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron | | | | | | |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | | 31 | 32 | 33 | 34 | 35 | 36 | 37 | | | 38 | 39 | 40 | 41 | | | | | | |
| HRc | | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | | | 55 | 60 | 42 | 55 | | | | | | |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | | | 550 | 630 | 400 | 550 | | | | | | |
| Recommend | | | | | | ○ | ○ | ○ | | | | | | | | | | | | | | | | | | | | | | |



# TANK-POWER HSS-PM END MILLS

UNCOATED **E9A33** SERIES
X-COATED **GAA33** SERIES

## HSS-PM, MULTI FLUTE SHORT LENGTH ROUGHING - COARSE
## 粉末高速钢，多刃 短刃 粗加工 - 粗牙

▶ Suitable for high-feed roughing milling.
▶ Designed to machine carbon steels, alloyed steels, stainless steels.
▶ YG-1's new developed TANK-POWER Coating suitable for high speed cutting.
▶ up to Ø20 : center cut, over Ø20 : non center cut

▶ 适合高速粗加工
▶ 多数情况下，可实现精加工
▶ 采用YG-1最新研发的 适合高速加工 TANK-POWER 涂层，
▶ Ø20以下，底刃过中心，Ø20以上，底刃不过中心

up to Ø9 Ø9 以下 | Ø10~Ø20 | over Ø20 超过Ø20

HSS PM | DIN 844 | NR | 3-5 | 30° | DIN 1835B | ~Ø20 | Ø22~ | C x 45°

p.C572-573

Recommended ToolHolder

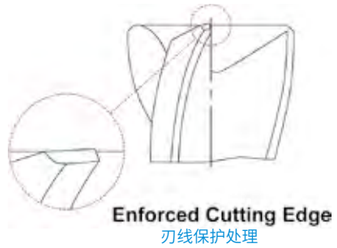
| Flat Shank | | Page | Plain Shank | | Page |
|---|---|---|---|---|---|
| END MILL HOLDER | D118 - 137 | | POWER MILLING CHUCK | D161 - 176 | |
| - | - | | ER COLLET CHUCK | D73 - 115 | |
| | | | SK SLIM CHUCK | D183 - 201 | |

Unit(单位) : mm

| EDP No. | | Mill Diameter 直径 | Shank Diameter 柄径 | Length of Cut 刃长 | Overall Length 全长 | No. of Flute 槽数 | Chamfer 导向 |
|---|---|---|---|---|---|---|---|
| UNCOATED | X-COATING | js12 | h6 | | | | |
| **E9A33060** | **GAA33060** | **6.0** | 6 | 13 | 57 | 3 | 0.25 |
| **E9A33070** | **GAA33070** | **7.0** | 10 | 16 | 66 | 3 | 0.25 |
| **E9A33080** | **GAA33080** | **8.0** | 10 | 19 | 69 | 3 | 0.25 |
| **E9A33090** | **GAA33090** | **9.0** | 10 | 19 | 69 | 3 | 0.36 |
| **E9A33100** | **GAA33100** | **10.0** | 10 | 22 | 72 | 4 | 0.36 |
| **E9A33120** | **GAA33120** | **12.0** | 12 | 26 | 83 | 4 | 0.5 |
| **E9A33140** | **GAA33140** | **14.0** | 12 | 26 | 83 | 4 | 0.55 |
| **E9A33160** | **GAA33160** | **16.0** | 16 | 32 | 92 | 4 | 0.55 |
| **E9A33180** | **GAA33180** | **18.0** | 16 | 32 | 92 | 4 | 0.55 |
| **E9A33200** | **GAA33200** | **20.0** | 20 | 38 | 104 | 4 | 0.55 |
| **E9A33220** | **GAA33220** | **22.0** | 20 | 38 | 104 | 5 | 0.55 |
| **E9A33250** | **GAA33250** | **25.0** | 25 | 45 | 121 | 5 | 0.55 |

### Tolerances according to DIN 7160 & 7161(标准精度)
按DIN7160&7161的标准公差

| Tolerance range in ㎛ / 公差单位为 | | | | | | |
|---|---|---|---|---|---|---|
| Nominal-Diameter in mm / 直径单位为 | | | | | | |
| | from 1 to 3 | over 3 to 6 | over 6 to 10 | over 10 to 18 | over 18 to 30 | over 30 to 50 |
| **js12** | ± 50 | ± 60 | ± 75 | ± 90 | ± 105 | ± 125 |
| **h6** | 0<br>- 6 | 0<br>- 8 | 0<br>- 9 | 0<br>- 11 | 0<br>- 13 | 0<br>- 16 |



Enforced Cutting Edge
刃线保护处理

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | High alloyed steel, and tool steel | | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| ISO | N | | | | | | | | | | S | | | | | | | | H | | | |
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | | 550 | 630 | 400 | 550 |
| Recommend | | | | | | ○ | ○ | ○ | | | | | | | | | | | | | | |

# TANK-POWER HSS-PM END MILLS

UNCOATED **E9A34** SERIES
X-COATING **GAA34** SERIES

## HSS-PM, MULTI FLUTE LONG LENGTH ROUGHING - COARSE
## 粉末高速钢，多刃 长刃 粗加工 - 粗牙

- ▶ Suitable for high-feed roughing milling.
- ▶ Designed to machine carbon steels, alloyed steels, stainless steels.
- ▶ YG-1's new developed TANK-POWER Coating suitable for high speed cutting.
- ▶ up to Ø20 : center cut, over Ø20 : non center cut

- ▶ 适合高速粗加工
- ▶ 多数情况下，可实现精加工
- ▶ 采用YG-1最新研发的 适合高速加工 TANK-POWER 涂层，
- ▶ Ø20以下，底刃过中心，Ø20以上，底刃不过中心

HSS PM | DIN 844 | NR | 3-5 | 30° | DIN 1835B | ~Ø20 | Ø22~ | C x 45°

p.C572-573

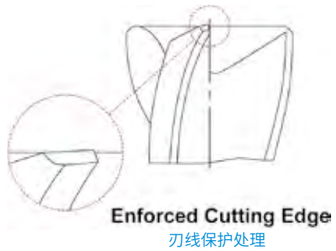
| Recommended ToolHolder | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| | END MILL HOLDER | D118 - 137 | POWER MILLING CHUCK | D161 - 176 |
| | - | - | ER COLLET CHUCK | D73 - 115 |
| | | | SK SLIM CHUCK | D183 - 201 |

Unit(单位) : mm

| EDP No. UNCOATED | EDP No. X-COATING | Mill Diameter 直径 | Shank Diameter 柄径 | Length of Cut 刃长 | Overall Length 全长 | No. of Flute 槽数 | Chamfer 导向 |
|---|---|---|---|---|---|---|---|
| | | js12 | h6 | | | | |
| E9A34060 | GAA34060 | 6.0 | 6 | 24 | 68 | 3 | 0.25 |
| E9A34070 | GAA34070 | 7.0 | 10 | 30 | 80 | 3 | 0.25 |
| E9A34080 | GAA34080 | 8.0 | 10 | 38 | 88 | 3 | 0.25 |
| E9A34090 | GAA34090 | 9.0 | 10 | 38 | 88 | 3 | 0.36 |
| E9A34100 | GAA34100 | 10.0 | 10 | 45 | 95 | 4 | 0.36 |
| E9A34120 | GAA34120 | 12.0 | 12 | 53 | 110 | 4 | 0.5 |
| E9A34140 | GAA34140 | 14.0 | 12 | 53 | 110 | 4 | 0.55 |
| E9A34160 | GAA34160 | 16.0 | 16 | 63 | 123 | 4 | 0.55 |
| E9A34180 | GAA34180 | 18.0 | 16 | 63 | 123 | 4 | 0.55 |
| E9A34200 | GAA34200 | 20.0 | 20 | 75 | 141 | 4 | 0.55 |
| E9A34220 | GAA34220 | 22.0 | 20 | 75 | 141 | 5 | 0.55 |
| E9A34250 | GAA34250 | 25.0 | 25 | 90 | 166 | 5 | 0.55 |

**Tolerances according to DIN 7160 & 7161(标准精度)**
按DIN7160&7161的标准公差

| Tolerance range in ㎛ / 公差单位为 | | | | | | |
|---|---|---|---|---|---|---|
| Nominal-Diameter in mm / 直径单位为 | | | | | | |
| | from 1 to 3 | over 3 to 6 | over 6 to 10 | over 10 to 18 | over 18 to 30 | over 30 to 50 |
| **js12** | ± 50 | ± 60 | ± 75 | ± 90 | ± 105 | ± 125 |
| **h6** | 0<br>- 6 | 0<br>- 8 | 0<br>- 9 | 0<br>- 11 | 0<br>- 13 | 0<br>- 16 |




◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | ○ | ○ | ○ | | | | | | | | | | | | | |



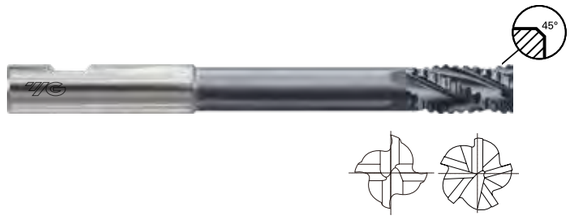
# TANK-POWER HSS-PM END MILLS

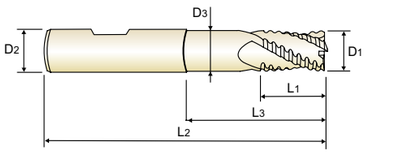
UNCOATED **E9E43** SERIES
X-COATING **GAE43** SERIES

## HSS-PM, 4&5 FLUTE ROUGHING WITH NECK - COARSE
## 粉末高速钢，4&5刃 粗加工 带颈部 - 粗牙

- ▶ High chip removal and minimizing breakages of cutting edges.
- ▶ Design to machine carbon steels, alloyed steels, stainless steels.
- ▶ YG-1's new developed TANK-POWER Coating suitable for high speed cutting.

- ▶ 高切屑去除率和最大限度地减少切削刃的破损
- ▶ 适合加工碳钢、合金钢、不锈钢
- ▶ 采用YG-1最新研发的 适合高速加工 TANK-POWER 涂层，




HSS PM | NR | 4&5 | 30° | DIN 1835B | C x 45°

p.C576-577

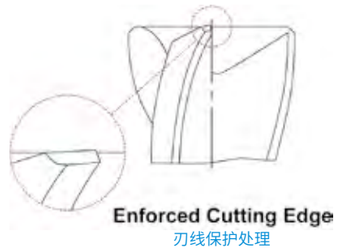
| Recommended ToolHolder | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| | END MILL HOLDER | D118 - 137 | POWER MILLING CHUCK | D161 - 176 |
| | - | - | ER COLLET CHUCK | D73 - 115 |
| | | | SK SLIM CHUCK | D183 - 201 |

Unit(单位) : mm

| EDP No. UNCOATED | EDP No. X-COATING | Mill Diameter 直径 | Shank Diameter 柄径 | Length of Cut 刃长 | Length Below Shank 颈长 | Overall Length 全长 | Neck Diameter 颈径 | No. of Flute 槽数 | Chamfer 导向 |
|---|---|---|---|---|---|---|---|---|---|
| | | D1(js12) | D2(h6) | L1 | L3 | L2 | D3 | | |
| E9E43100 | GAE43100 | 10.0 | 10 | 22 | 69 | 110 | 8.5 | 4 | 0.34 |
| E9E43120 | GAE43120 | 12.0 | 12 | 26 | 78 | 125 | 10.5 | 4 | 0.50 |
| E9E43160 | GAE43160 | 16.0 | 16 | 32 | 87 | 138 | 14 | 4 | 0.55 |
| E9E43200 | GAE43200 | 20.0 | 20 | 38 | 108 | 160 | 18 | 5 | 0.55 |
| E9E43250 | GAE43250 | 25.0 | 25 | 45 | 155 | 216 | 23 | 5 | 0.55 |

**Tolerances according to DIN 7160 & 7161(标准精度)**
按DIN7160&7161的标准公差

| Tolerance range in ㎛ / 公差单位为 | | | | | | |
|---|---|---|---|---|---|---|
| Nominal-Diameter in mm / 直径单位为 | | | | | | |
| | from 1 to 3 | over 3 to 6 | over 6 to 10 | over 10 to 18 | over 18 to 30 | over 30 to 50 |
| **js12** | ± 50 | ± 60 | ± 75 | ± 90 | ± 105 | ± 125 |
| **h6** | 0<br>- 6 | 0<br>- 8 | 0<br>- 9 | 0<br>- 11 | 0<br>- 13 | 0<br>- 16 |




◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | | | | | | ○ | ○ | ○ | | | | | | | | | | | | | |

# TANK-POWER HSS-PM END MILLS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

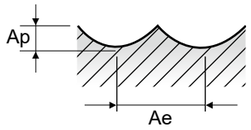
### GA940 , GAA32 SERIES

**2 FLUTE BALL NOSE**
**2刃 球头**

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description 材料描述 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 3.0 | 4.0 | 6.0 | 8.0 | 10.0 | 12.0 | 16.0 | 20.0 | 25.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | 0.5D | 0.2D | Vc | 70 | 75 | 85 | 85 | 85 | 85 | 85 | 85 | 75 |
| | | | | | fz | 0.023 | 0.036 | 0.055 | 0.079 | 0.109 | 0.115 | 0.141 | 0.156 | 0.163 |
| | | | | | RPM | 7427 | 5968 | 4509 | 3382 | 2706 | 2255 | 1691 | 1353 | 955 |
| | | | | | FEED | 342 | 430 | 496 | 534 | 590 | 519 | 477 | 422 | 311 |
| | 2 | | 0.5D | 0.2D | Vc | 55 | 60 | 65 | 65 | 65 | 70 | 65 | 65 | 60 |
| | | | | | fz | 0.02 | 0.031 | 0.046 | 0.067 | 0.095 | 0.097 | 0.123 | 0.14 | 0.142 |
| | | | | | RPM | 5836 | 4775 | 3448 | 2586 | 2069 | 1857 | 1293 | 1035 | 764 |
| | | | | | FEED | 233 | 296 | 317 | 347 | 393 | 360 | 318 | 290 | 217 |
| | 3-4 | | 0.5D | 0.2D | Vc | 35 | 40 | 45 | 45 | 45 | 45 | 45 | 45 | 35 |
| | | | | | fz | 0.016 | 0.027 | 0.039 | 0.056 | 0.082 | 0.083 | 0.101 | 0.11 | 0.122 |
| | | | | | RPM | 3714 | 3183 | 2387 | 1790 | 1432 | 1194 | 895 | 716 | 446 |
| | | | | | FEED | 119 | 172 | 186 | 201 | 235 | 198 | 181 | 158 | 109 |
| | 5 | | 0.5D | 0.2D | Vc | 20 | 20 | 25 | 20 | 20 | 20 | 20 | 25 | 20 |
| | | | | | fz | 0.014 | 0.023 | 0.035 | 0.048 | 0.075 | 0.073 | 0.091 | 0.097 | 0.104 |
| | | | | | RPM | 2122 | 1592 | 1326 | 796 | 637 | 531 | 398 | 398 | 255 |
| | | | | | FEED | 59 | 73 | 93 | 76 | 95 | 77 | 72 | 77 | 53 |
| | 6 | Low alloy steel | 0.5D | 0.2D | Vc | 55 | 60 | 65 | 65 | 65 | 70 | 65 | 65 | 60 |
| | | | | | fz | 0.02 | 0.031 | 0.046 | 0.067 | 0.095 | 0.097 | 0.123 | 0.14 | 0.142 |
| | | | | | RPM | 5836 | 4775 | 3448 | 2586 | 2069 | 1857 | 1293 | 1035 | 764 |
| | | | | | FEED | 233 | 296 | 317 | 347 | 393 | 360 | 318 | 290 | 217 |
| | 7 | | 0.5D | 0.2D | Vc | 35 | 40 | 45 | 45 | 45 | 45 | 45 | 45 | 35 |
| | | | | | fz | 0.016 | 0.027 | 0.039 | 0.056 | 0.082 | 0.083 | 0.101 | 0.11 | 0.122 |
| | | | | | RPM | 3714 | 3183 | 2387 | 1790 | 1432 | 1194 | 895 | 716 | 446 |
| | | | | | FEED | 119 | 172 | 186 | 201 | 235 | 198 | 181 | 158 | 109 |
| | 8-9 | | 0.5D | 0.2D | Vc | 20 | 20 | 25 | 20 | 20 | 20 | 20 | 25 | 20 |
| | | | | | fz | 0.014 | 0.023 | 0.035 | 0.048 | 0.075 | 0.073 | 0.091 | 0.097 | 0.104 |
| | | | | | RPM | 2122 | 1592 | 1326 | 796 | 637 | 531 | 398 | 398 | 255 |
| | | | | | FEED | 59 | 73 | 93 | 76 | 95 | 77 | 72 | 77 | 53 |
| | 10 | High alloyed steel, and tool steel | 0.5D | 0.2D | Vc | 55 | 60 | 65 | 65 | 65 | 70 | 65 | 65 | 60 |
| | | | | | fz | 0.02 | 0.031 | 0.046 | 0.067 | 0.095 | 0.097 | 0.123 | 0.14 | 0.142 |
| | | | | | RPM | 5836 | 4775 | 3448 | 2586 | 2069 | 1857 | 1293 | 1035 | 764 |
| | | | | | FEED | 233 | 296 | 317 | 347 | 393 | 360 | 318 | 290 | 217 |
| | 11.1 | | 0.5D | 0.2D | Vc | 20 | 20 | 25 | 20 | 20 | 20 | 20 | 25 | 20 |
| | | | | | fz | 0.014 | 0.023 | 0.035 | 0.048 | 0.075 | 0.073 | 0.091 | 0.097 | 0.104 |
| | | | | | RPM | 2122 | 1592 | 1326 | 796 | 637 | 531 | 398 | 398 | 255 |
| | | | | | FEED | 59 | 73 | 93 | 76 | 95 | 77 | 72 | 77 | 53 |
| M | 14.1 | Stainless steel | 0.5D | 0.2D | Vc | 20 | 20 | 25 | 25 | 25 | 25 | 25 | 25 | 20 |
| | | | | | fz | 0.014 | 0.023 | 0.036 | 0.048 | 0.073 | 0.074 | 0.092 | 0.1 | 0.1 |
| | | | | | RPM | 2122 | 1592 | 1326 | 995 | 796 | 663 | 497 | 398 | 255 |
| | | | | | FEED | 59 | 73 | 95 | 95 | 116 | 98 | 92 | 80 | 51 |
| K | 15-20 | Grey cast iron Nodular cast iron Malleable cast iron | 0.5D | 0.2D | Vc | 55 | 60 | 65 | 65 | 65 | 70 | 65 | 65 | 60 |
| | | | | | fz | 0.02 | 0.031 | 0.046 | 0.067 | 0.095 | 0.097 | 0.123 | 0.14 | 0.142 |
| | | | | | RPM | 5836 | 4775 | 3448 | 2586 | 2069 | 1857 | 1293 | 1035 | 764 |
| | | | | | FEED | 233 | 296 | 317 | 347 | 393 | 360 | 318 | 290 | 217 |

※ The FEED, in long & extra long types, should be reduced by around 50%






TANK-POWER HSS-PM END MILLS

RECOMMENDED CUTTING CONDITIONS
推荐加工参数

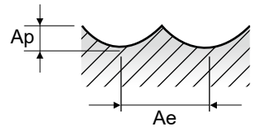
### E9940 , E9A32 SERIES

**2 FLUTE BALL NOSE**
**2刃 球头**

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description 材料描述 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 3.0 | 4.0 | 6.0 | 8.0 | 10.0 | 12.0 | 16.0 | 20.0 | 25.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | 0.5D | 0.2D | Vc | 45 | 50 | 55 | 60 | 55 | 55 | 55 | 60 | 50 |
| | | | | | fz | 0.021 | 0.033 | 0.05 | 0.072 | 0.103 | 0.11 | 0.136 | 0.14 | 0.148 |
| | | | | | RPM | 4775 | 3979 | 2918 | 2387 | 1751 | 1459 | 1094 | 955 | 637 |
| | | | | | FEED | 201 | 263 | 292 | 344 | 361 | 321 | 298 | 267 | 188 |
| | 2 | | 0.5D | 0.2D | Vc | 35 | 40 | 45 | 45 | 45 | 45 | 45 | 45 | 40 |
| | | | | | fz | 0.018 | 0.029 | 0.043 | 0.061 | 0.089 | 0.092 | 0.111 | 0.12 | 0.13 |
| | | | | | RPM | 3714 | 3183 | 2387 | 1790 | 1432 | 1194 | 895 | 716 | 509 |
| | | | | | FEED | 134 | 185 | 205 | 218 | 255 | 220 | 199 | 172 | 132 |
| | 3-4 | | 0.5D | 0.2D | Vc | 25 | 25 | 30 | 30 | 30 | 30 | 30 | 30 | 25 |
| | | | | | fz | 0.015 | 0.024 | 0.034 | 0.052 | 0.07 | 0.076 | 0.092 | 0.099 | 0.103 |
| | | | | | RPM | 2653 | 1989 | 1592 | 1194 | 955 | 796 | 597 | 477 | 318 |
| | | | | | FEED | 80 | 95 | 108 | 124 | 134 | 121 | 110 | 95 | 66 |
| | 5 | | 0.5D | 0.2D | Vc | 10 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 |
| | | | | | fz | 0.013 | 0.023 | 0.034 | 0.046 | 0.068 | 0.069 | 0.083 | 0.094 | 0.086 |
| | | | | | RPM | 1061 | 1194 | 796 | 597 | 477 | 398 | 298 | 239 | 191 |
| | | | | | FEED | 28 | 55 | 54 | 55 | 65 | 55 | 50 | 45 | 33 |
| | 6 | Low alloy steel | 0.5D | 0.2D | Vc | 35 | 40 | 45 | 45 | 45 | 45 | 45 | 45 | 40 |
| | | | | | fz | 0.018 | 0.029 | 0.043 | 0.061 | 0.089 | 0.092 | 0.111 | 0.12 | 0.13 |
| | | | | | RPM | 3714 | 3183 | 2387 | 1790 | 1432 | 1194 | 895 | 716 | 509 |
| | | | | | FEED | 134 | 185 | 205 | 218 | 255 | 220 | 199 | 172 | 132 |
| | 7 | | 0.5D | 0.2D | Vc | 25 | 25 | 30 | 30 | 30 | 30 | 30 | 30 | 25 |
| | | | | | fz | 0.015 | 0.024 | 0.034 | 0.052 | 0.07 | 0.076 | 0.092 | 0.099 | 0.103 |
| | | | | | RPM | 2653 | 1989 | 1592 | 1194 | 955 | 796 | 597 | 477 | 318 |
| | | | | | FEED | 80 | 95 | 108 | 124 | 134 | 121 | 110 | 95 | 66 |
| | 8-9 | | 0.5D | 0.2D | Vc | 10 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 |
| | | | | | fz | 0.013 | 0.023 | 0.034 | 0.046 | 0.068 | 0.069 | 0.083 | 0.094 | 0.086 |
| | | | | | RPM | 1061 | 1194 | 796 | 597 | 477 | 398 | 298 | 239 | 191 |
| | | | | | FEED | 28 | 55 | 54 | 55 | 65 | 55 | 50 | 45 | 33 |
| | 10 | High alloyed steel, and tool steel | 0.5D | 0.2D | Vc | 35 | 40 | 45 | 45 | 45 | 45 | 45 | 45 | 40 |
| | | | | | fz | 0.018 | 0.029 | 0.043 | 0.061 | 0.089 | 0.092 | 0.111 | 0.12 | 0.13 |
| | | | | | RPM | 3714 | 3183 | 2387 | 1790 | 1432 | 1194 | 895 | 716 | 509 |
| | | | | | FEED | 134 | 185 | 205 | 218 | 255 | 220 | 199 | 172 | 132 |
| | 11.1 | | 0.5D | 0.2D | Vc | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 |
| | | | | | fz | 0.013 | 0.023 | 0.034 | 0.046 | 0.068 | 0.069 | 0.083 | 0.094 | 0.086 |
| | | | | | RPM | 1061 | 1194 | 796 | 597 | 477 | 398 | 298 | 239 | 191 |
| | | | | | FEED | 28 | 55 | 54 | 55 | 65 | 55 | 50 | 45 | 33 |
| M | 14.1 | Stainless steel | 0.5D | 0.2D | Vc | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 |
| | | | | | fz | 0.014 | 0.025 | 0.036 | 0.049 | 0.075 | 0.074 | 0.091 | 0.104 | 0.09 |
| | | | | | RPM | 1592 | 1194 | 796 | 597 | 477 | 398 | 298 | 239 | 191 |
| | | | | | FEED | 45 | 60 | 57 | 58 | 72 | 59 | 54 | 50 | 34 |
| K | 15-20 | Grey cast iron Nodular cast iron Malleable cast iron | 0.5D | 0.2D | Vc | 35 | 40 | 45 | 45 | 45 | 45 | 45 | 45 | 40 |
| | | | | | fz | 0.018 | 0.029 | 0.043 | 0.061 | 0.089 | 0.092 | 0.111 | 0.12 | 0.13 |
| | | | | | RPM | 3714 | 3183 | 2387 | 1790 | 1432 | 1194 | 895 | 716 | 509 |
| | | | | | FEED | 134 | 185 | 205 | 218 | 255 | 220 | 199 | 172 | 132 |

※ The FEED, in long & extra long types, should be reduced by around 50%



# TANK-POWER HSS-PM END MILLS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

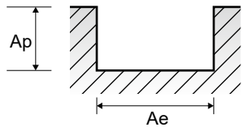
### GA936 , GAA29 SERIES

**2 FLUTE - SLOTTING**
**2刃 - 槽铣削**

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description 材料描述 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 2.0 | 3.0 | 4.0 | 5.0 | 6.0 | 8.0 | 10.0 | 12.0 | 14.0 | 16.0 | 18.0 | 20.0 | 22.0 | 25.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | 1.0D | 0.5D | Vc | 45 | 45 | 55 | 60 | 65 | 65 | 65 | 70 | 70 | 70 | 65 | 60 | 60 | 60 |
| | | | | | fz | 0.008 | 0.016 | 0.027 | 0.033 | 0.038 | 0.053 | 0.071 | 0.076 | 0.083 | 0.098 | 0.104 | 0.116 | 0.11 | 0.103 |
| | | | | | RPM | 7162 | 4775 | 4377 | 3820 | 3448 | 2586 | 2069 | 1857 | 1592 | 1393 | 1149 | 955 | 868 | 764 |
| | | | | | FEED | 115 | 153 | 236 | 252 | 262 | 274 | 294 | 282 | 264 | 273 | 239 | 222 | 191 | 157 |
| | 2 | | 1.0D | 0.5D | Vc | 35 | 40 | 45 | 50 | 55 | 55 | 55 | 55 | 55 | 60 | 55 | 50 | 50 | 50 |
| | | | | | fz | 0.008 | 0.016 | 0.024 | 0.031 | 0.036 | 0.055 | 0.074 | 0.083 | 0.084 | 0.085 | 0.103 | 0.106 | 0.106 | 0.111 |
| | | | | | RPM | 5570 | 4244 | 3581 | 3183 | 2918 | 2188 | 1751 | 1459 | 1251 | 1194 | 973 | 796 | 723 | 637 |
| | | | | | FEED | 89 | 136 | 172 | 197 | 210 | 241 | 259 | 242 | 210 | 203 | 200 | 169 | 153 | 141 |
| | 3-4 | | 1.0D | 0.5D | Vc | 30 | 30 | 40 | 40 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 40 | 40 |
| | | | | | fz | 0.008 | 0.017 | 0.025 | 0.036 | 0.041 | 0.056 | 0.079 | 0.091 | 0.098 | 0.101 | 0.101 | 0.107 | 0.104 | 0.117 |
| | | | | | RPM | 4775 | 3183 | 3183 | 2546 | 2387 | 1790 | 1432 | 1194 | 1023 | 895 | 796 | 716 | 579 | 509 |
| | | | | | FEED | 76 | 108 | 159 | 183 | 196 | 201 | 226 | 217 | 201 | 181 | 161 | 153 | 120 | 119 |
| | 5 | | 1.0D | 0.5D | Vc | 45 | 45 | 55 | 60 | 65 | 65 | 65 | 70 | 70 | 70 | 65 | 60 | 60 | 60 |
| | | | | | fz | 0.008 | 0.016 | 0.027 | 0.033 | 0.038 | 0.053 | 0.071 | 0.076 | 0.083 | 0.098 | 0.104 | 0.116 | 0.11 | 0.103 |
| | | | | | RPM | 7162 | 4775 | 4377 | 3820 | 3448 | 2586 | 2069 | 1857 | 1592 | 1393 | 1149 | 955 | 868 | 764 |
| | | | | | FEED | 115 | 153 | 236 | 252 | 262 | 274 | 294 | 282 | 264 | 273 | 239 | 222 | 191 | 157 |
| | 6 | Low alloy steel | 1.0D | 0.5D | Vc | 35 | 40 | 45 | 50 | 55 | 55 | 55 | 55 | 55 | 60 | 55 | 50 | 50 | 50 |
| | | | | | fz | 0.008 | 0.016 | 0.024 | 0.031 | 0.036 | 0.055 | 0.074 | 0.083 | 0.084 | 0.085 | 0.103 | 0.106 | 0.106 | 0.111 |
| | | | | | RPM | 5570 | 4244 | 3581 | 3183 | 2918 | 2188 | 1751 | 1459 | 1251 | 1194 | 973 | 796 | 723 | 637 |
| | | | | | FEED | 89 | 136 | 172 | 197 | 210 | 241 | 259 | 242 | 210 | 203 | 200 | 169 | 153 | 141 |
| | 7 | | 1.0D | 0.5D | Vc | 30 | 30 | 40 | 40 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 40 | 40 |
| | | | | | fz | 0.008 | 0.017 | 0.025 | 0.036 | 0.041 | 0.056 | 0.079 | 0.091 | 0.098 | 0.101 | 0.101 | 0.107 | 0.104 | 0.117 |
| | | | | | RPM | 4775 | 3183 | 3183 | 2546 | 2387 | 1790 | 1432 | 1194 | 1023 | 895 | 796 | 716 | 579 | 509 |
| | | | | | FEED | 76 | 108 | 159 | 183 | 196 | 201 | 226 | 217 | 201 | 181 | 161 | 153 | 120 | 119 |
| | 8 | | 1.0D | 0.5D | Vc | 45 | 45 | 55 | 60 | 65 | 65 | 65 | 70 | 70 | 70 | 65 | 60 | 60 | 60 |
| | | | | | fz | 0.008 | 0.016 | 0.027 | 0.033 | 0.038 | 0.053 | 0.071 | 0.076 | 0.083 | 0.098 | 0.104 | 0.116 | 0.11 | 0.103 |
| | | | | | RPM | 7162 | 4775 | 4377 | 3820 | 3448 | 2586 | 2069 | 1857 | 1592 | 1393 | 1149 | 955 | 868 | 764 |
| | | | | | FEED | 115 | 153 | 236 | 252 | 262 | 274 | 294 | 282 | 264 | 273 | 239 | 222 | 191 | 157 |
| | 9 | | 1.0D | 0.5D | Vc | 35 | 40 | 45 | 50 | 55 | 55 | 55 | 55 | 55 | 60 | 55 | 50 | 50 | 50 |
| | | | | | fz | 0.008 | 0.016 | 0.024 | 0.031 | 0.036 | 0.055 | 0.074 | 0.083 | 0.084 | 0.085 | 0.103 | 0.106 | 0.106 | 0.111 |
| | | | | | RPM | 5570 | 4244 | 3581 | 3183 | 2918 | 2188 | 1751 | 1459 | 1251 | 1194 | 973 | 796 | 723 | 637 |
| | | | | | FEED | 89 | 136 | 172 | 197 | 210 | 241 | 259 | 242 | 210 | 203 | 200 | 169 | 153 | 141 |
| | 10 | High alloyed steel, and tool steel | 1.0D | 0.5D | Vc | 35 | 40 | 45 | 50 | 55 | 55 | 55 | 55 | 55 | 60 | 55 | 50 | 50 | 50 |
| | | | | | fz | 0.008 | 0.016 | 0.024 | 0.031 | 0.036 | 0.055 | 0.074 | 0.083 | 0.084 | 0.085 | 0.103 | 0.106 | 0.106 | 0.111 |
| | | | | | RPM | 5570 | 4244 | 3581 | 3183 | 2918 | 2188 | 1751 | 1459 | 1251 | 1194 | 973 | 796 | 723 | 637 |
| | | | | | FEED | 89 | 136 | 172 | 197 | 210 | 241 | 259 | 242 | 210 | 203 | 200 | 169 | 153 | 141 |
| | 11.1 | | 1.0D | 0.5D | Vc | 45 | 45 | 55 | 60 | 65 | 65 | 65 | 70 | 70 | 70 | 65 | 60 | 60 | 60 |
| | | | | | fz | 0.008 | 0.016 | 0.027 | 0.033 | 0.038 | 0.053 | 0.071 | 0.076 | 0.083 | 0.098 | 0.104 | 0.116 | 0.11 | 0.103 |
| | | | | | RPM | 7162 | 4775 | 4377 | 3820 | 3448 | 2586 | 2069 | 1857 | 1592 | 1393 | 1149 | 955 | 868 | 764 |
| | | | | | FEED | 115 | 153 | 236 | 252 | 262 | 274 | 294 | 282 | 264 | 273 | 239 | 222 | 191 | 157 |
| K | 15-20 | Grey cast iron Nodular cast iron Malleable cast iron | 1.0D | 0.5D | Vc | 35 | 40 | 45 | 50 | 55 | 55 | 55 | 55 | 55 | 60 | 55 | 50 | 50 | 50 |
| | | | | | fz | 0.008 | 0.016 | 0.024 | 0.031 | 0.036 | 0.055 | 0.074 | 0.083 | 0.084 | 0.085 | 0.103 | 0.106 | 0.106 | 0.111 |
| | | | | | RPM | 5570 | 4244 | 3581 | 3183 | 2918 | 2188 | 1751 | 1459 | 1251 | 1194 | 973 | 796 | 723 | 637 |
| | | | | | FEED | 89 | 136 | 172 | 197 | 210 | 241 | 259 | 242 | 210 | 203 | 200 | 169 | 153 | 141 |

※ The FEED, in long & extra long types, should be reduced by around 50%
长刃，加长刃类型需要减少约50%进给






TANK-POWER HSS-PM END MILLS
RECOMMENDED CUTTING CONDITIONS
推荐加工参数

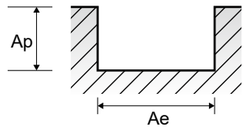
### E9936 , E9A29 SERIES

**2 FLUTE - SLOTTING**
**2刃 - 槽铣削**

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description 材料描述 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 2.0 | 3.0 | 4.0 | 5.0 | 6.0 | 8.0 | 10.0 | 12.0 | 14.0 | 16.0 | 18.0 | 20.0 | 22.0 | 25.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | 1.0D | 0.5D | Vc | 30 | 30 | 35 | 40 | 45 | 45 | 45 | 45 | 50 | 45 | 45 | 40 | 40 | 40 |
| | | | | | fz | 0.007 | 0.015 | 0.024 | 0.031 | 0.035 | 0.047 | 0.064 | 0.071 | 0.073 | 0.089 | 0.094 | 0.102 | 0.096 | 0.093 |
| | | | | | RPM | 4775 | 3183 | 2785 | 2546 | 2387 | 1790 | 1432 | 1194 | 1137 | 895 | 796 | 637 | 579 | 509 |
| | | | | | FEED | 67 | 95 | 134 | 158 | 167 | 168 | 183 | 170 | 166 | 159 | 150 | 130 | 111 | 95 |
| | 2 | | 1.0D | 0.5D | Vc | 25 | 25 | 30 | 35 | 40 | 40 | 40 | 40 | 35 | 40 | 35 | 35 | 35 | 35 |
| | | | | | fz | 0.007 | 0.015 | 0.023 | 0.028 | 0.034 | 0.05 | 0.069 | 0.075 | 0.082 | 0.09 | 0.094 | 0.093 | 0.094 | 0.099 |
| | | | | | RPM | 3979 | 2653 | 2387 | 2228 | 2122 | 1592 | 1273 | 1061 | 796 | 796 | 619 | 557 | 506 | 446 |
| | | | | | FEED | 56 | 80 | 110 | 125 | 144 | 159 | 176 | 159 | 131 | 143 | 116 | 104 | 95 | 88 |
| | 3-4 | | 1.0D | 0.5D | Vc | 20 | 20 | 25 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 25 |
| | | | | | fz | 0.008 | 0.017 | 0.024 | 0.032 | 0.038 | 0.052 | 0.07 | 0.081 | 0.088 | 0.092 | 0.094 | 0.099 | 0.094 | 0.103 |
| | | | | | RPM | 3183 | 2122 | 1989 | 1910 | 1592 | 1194 | 955 | 796 | 682 | 597 | 531 | 477 | 434 | 318 |
| | | | | | FEED | 51 | 72 | 95 | 122 | 121 | 124 | 134 | 129 | 120 | 110 | 100 | 95 | 82 | 66 |
| | 5 | | 1.0D | 0.5D | Vc | 15 | 15 | 15 | 15 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| | | | | | fz | 0.01 | 0.016 | 0.023 | 0.03 | 0.033 | 0.047 | 0.067 | 0.07 | 0.076 | 0.086 | 0.081 | 0.092 | 0.093 | 0.094 |
| | | | | | RPM | 2387 | 1592 | 1194 | 955 | 1061 | 796 | 637 | 531 | 455 | 398 | 354 | 318 | 289 | 255 |
| | | | | | FEED | 48 | 51 | 55 | 57 | 70 | 75 | 85 | 74 | 69 | 68 | 57 | 59 | 54 | 48 |
| | 6 | Low alloy steel | 1.0D | 0.5D | Vc | 25 | 25 | 30 | 35 | 40 | 40 | 40 | 40 | 35 | 40 | 35 | 35 | 35 | 35 |
| | | | | | fz | 0.007 | 0.015 | 0.023 | 0.028 | 0.034 | 0.05 | 0.069 | 0.075 | 0.082 | 0.09 | 0.094 | 0.093 | 0.094 | 0.099 |
| | | | | | RPM | 3979 | 2653 | 2387 | 2228 | 2122 | 1592 | 1273 | 1061 | 796 | 796 | 619 | 557 | 506 | 446 |
| | | | | | FEED | 56 | 80 | 110 | 125 | 144 | 159 | 176 | 159 | 131 | 143 | 116 | 104 | 95 | 88 |
| | 7 | | 1.0D | 0.5D | Vc | 20 | 20 | 25 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 25 |
| | | | | | fz | 0.008 | 0.017 | 0.024 | 0.032 | 0.038 | 0.052 | 0.07 | 0.081 | 0.088 | 0.092 | 0.094 | 0.099 | 0.094 | 0.103 |
| | | | | | RPM | 3183 | 2122 | 1989 | 1910 | 1592 | 1194 | 955 | 796 | 682 | 597 | 531 | 477 | 434 | 318 |
| | | | | | FEED | 51 | 72 | 95 | 122 | 121 | 124 | 134 | 129 | 120 | 110 | 100 | 95 | 82 | 66 |
| | 8 | | 1.0D | 0.5D | Vc | 15 | 15 | 15 | 15 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| | | | | | fz | 0.01 | 0.016 | 0.023 | 0.03 | 0.033 | 0.047 | 0.067 | 0.07 | 0.076 | 0.086 | 0.081 | 0.092 | 0.093 | 0.094 |
| | | | | | RPM | 2387 | 1592 | 1194 | 955 | 1061 | 796 | 637 | 531 | 455 | 398 | 354 | 318 | 289 | 255 |
| | | | | | FEED | 48 | 51 | 55 | 57 | 70 | 75 | 85 | 74 | 69 | 68 | 57 | 59 | 54 | 48 |
| | 9 | | 1.0D | 0.5D | Vc | 10 | 10 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 |
| | | | | | fz | 0.01 | 0.017 | 0.021 | 0.025 | 0.037 | 0.046 | 0.068 | 0.069 | 0.074 | 0.083 | 0.083 | 0.083 | 0.083 | 0.086 |
| | | | | | RPM | 1592 | 1061 | 1194 | 955 | 796 | 597 | 477 | 398 | 341 | 298 | 265 | 239 | 217 | 191 |
| | | | | | FEED | 32 | 36 | 50 | 48 | 59 | 55 | 65 | 55 | 50 | 50 | 44 | 40 | 36 | 33 |
| | 10 | High alloyed steel, and tool steel | 1.0D | 0.5D | Vc | 25 | 25 | 30 | 35 | 40 | 40 | 40 | 40 | 35 | 40 | 35 | 35 | 35 | 35 |
| | | | | | fz | 0.007 | 0.015 | 0.023 | 0.028 | 0.034 | 0.05 | 0.069 | 0.075 | 0.082 | 0.09 | 0.094 | 0.093 | 0.094 | 0.099 |
| | | | | | RPM | 3979 | 2653 | 2387 | 2228 | 2122 | 1592 | 1273 | 1061 | 796 | 796 | 619 | 557 | 506 | 446 |
| | | | | | FEED | 56 | 80 | 110 | 125 | 144 | 159 | 176 | 159 | 131 | 143 | 116 | 104 | 95 | 88 |
| | 11.1 | | 1.0D | 0.5D | Vc | 15 | 15 | 15 | 15 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| | | | | | fz | 0.01 | 0.016 | 0.023 | 0.03 | 0.033 | 0.047 | 0.067 | 0.07 | 0.076 | 0.086 | 0.081 | 0.092 | 0.093 | 0.094 |
| | | | | | RPM | 2387 | 1592 | 1194 | 955 | 1061 | 796 | 637 | 531 | 455 | 398 | 354 | 318 | 289 | 255 |
| | | | | | FEED | 48 | 51 | 55 | 57 | 70 | 75 | 85 | 74 | 69 | 68 | 57 | 59 | 54 | 48 |
| K | 15-20 | Grey cast iron Nodular cast iron Malleable cast iron | 1.0D | 0.5D | Vc | 25 | 25 | 30 | 35 | 40 | 40 | 40 | 40 | 35 | 40 | 35 | 35 | 35 | 35 |
| | | | | | fz | 0.007 | 0.015 | 0.023 | 0.028 | 0.034 | 0.05 | 0.069 | 0.075 | 0.082 | 0.09 | 0.094 | 0.093 | 0.094 | 0.099 |
| | | | | | RPM | 3979 | 2653 | 2387 | 2228 | 2122 | 1592 | 1273 | 1061 | 796 | 796 | 619 | 557 | 506 | 446 |
| | | | | | FEED | 56 | 80 | 110 | 125 | 144 | 159 | 176 | 159 | 131 | 143 | 116 | 104 | 95 | 88 |

※ The FEED, in long & extra long types, should be reduced by around 50%
长刃，加长刃类型需要减少约50%进给



# TANK-POWER HSS-PM END MILLS

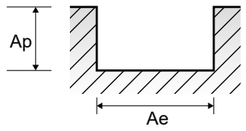
## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

### GA942 , GAA30 SERIES

**3 FLUTE - SLOTTING**
**3刃 - 槽铣削**

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description 材料描述 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 2.0 | 3.0 | 4.0 | 5.0 | 6.0 | 8.0 | 10.0 | 12.0 | 14.0 | 16.0 | 18.0 | 20.0 | 22.0 | 25.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | 1.0D | 0.5D | Vc | 40 | 45 | 55 | 60 | 65 | 65 | 65 | 70 | 70 | 70 | 65 | 60 | 60 | 60 |
| | | | | | fz | 0.004 | 0.007 | 0.011 | 0.014 | 0.023 | 0.031 | 0.033 | 0.051 | 0.052 | 0.059 | 0.07 | 0.081 | 0.091 | 0.107 |
| | | | | | RPM | 6366 | 4775 | 4377 | 3820 | 3448 | 2586 | 2069 | 1857 | 1592 | 1393 | 1149 | 955 | 868 | 764 |
| | | | | | FEED | 76 | 100 | 144 | 160 | 238 | 241 | 205 | 284 | 248 | 246 | 241 | 232 | 237 | 245 |
| | 2 | | 1.0D | 0.5D | Vc | 35 | 35 | 45 | 50 | 55 | 55 | 55 | 55 | 60 | 60 | 50 | 50 | 50 | 50 |
| | | | | | fz | 0.003 | 0.007 | 0.011 | 0.014 | 0.023 | 0.032 | 0.039 | 0.053 | 0.054 | 0.061 | 0.071 | 0.08 | 0.089 | 0.111 |
| | | | | | RPM | 5570 | 3714 | 3581 | 3183 | 2918 | 2188 | 1751 | 1459 | 1364 | 1194 | 884 | 796 | 723 | 637 |
| | | | | | FEED | 50 | 78 | 118 | 134 | 201 | 210 | 205 | 232 | 221 | 218 | 188 | 191 | 193 | 212 |
| | 3-4 | | 1.0D | 0.5D | Vc | 30 | 30 | 40 | 40 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 40 | 40 |
| | | | | | fz | 0.003 | 0.005 | 0.009 | 0.012 | 0.02 | 0.028 | 0.038 | 0.047 | 0.053 | 0.056 | 0.063 | 0.067 | 0.083 | 0.109 |
| | | | | | RPM | 4775 | 3183 | 3183 | 2546 | 2387 | 1790 | 1432 | 1194 | 1023 | 895 | 796 | 716 | 579 | 509 |
| | | | | | FEED | 43 | 48 | 86 | 92 | 143 | 150 | 163 | 168 | 163 | 150 | 150 | 144 | 144 | 167 |
| | 5 | | 1.0D | 0.5D | Vc | 20 | 20 | 25 | 25 | 25 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 |
| | | | | | fz | 0.004 | 0.007 | 0.009 | 0.012 | 0.021 | 0.03 | 0.043 | 0.052 | 0.056 | 0.061 | 0.063 | 0.07 | 0.079 | 0.094 |
| | | | | | RPM | 3183 | 2122 | 1989 | 1592 | 1326 | 1194 | 955 | 796 | 682 | 597 | 531 | 477 | 434 | 382 |
| | | | | | FEED | 38 | 45 | 54 | 57 | 84 | 107 | 123 | 124 | 115 | 109 | 100 | 100 | 103 | 108 |
| | 6 | Low alloy steel | 1.0D | 0.5D | Vc | 35 | 35 | 45 | 50 | 55 | 55 | 55 | 55 | 60 | 60 | 50 | 50 | 50 | 50 |
| | | | | | fz | 0.003 | 0.007 | 0.011 | 0.014 | 0.023 | 0.032 | 0.039 | 0.053 | 0.054 | 0.061 | 0.071 | 0.08 | 0.089 | 0.111 |
| | | | | | RPM | 5570 | 3714 | 3581 | 3183 | 2918 | 2188 | 1751 | 1459 | 1364 | 1194 | 884 | 796 | 723 | 637 |
| | | | | | FEED | 50 | 78 | 118 | 134 | 201 | 210 | 205 | 232 | 221 | 218 | 188 | 191 | 193 | 212 |
| | 7 | | 1.0D | 0.5D | Vc | 30 | 30 | 40 | 40 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 40 | 40 |
| | | | | | fz | 0.003 | 0.005 | 0.009 | 0.012 | 0.02 | 0.028 | 0.038 | 0.047 | 0.053 | 0.056 | 0.063 | 0.067 | 0.083 | 0.109 |
| | | | | | RPM | 4775 | 3183 | 3183 | 2546 | 2387 | 1790 | 1432 | 1194 | 1023 | 895 | 796 | 716 | 579 | 509 |
| | | | | | FEED | 43 | 48 | 86 | 92 | 143 | 150 | 163 | 168 | 163 | 150 | 150 | 144 | 144 | 167 |
| | 8 | | 1.0D | 0.5D | Vc | 20 | 20 | 25 | 25 | 25 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 |
| | | | | | fz | 0.004 | 0.007 | 0.009 | 0.012 | 0.021 | 0.03 | 0.043 | 0.052 | 0.056 | 0.061 | 0.063 | 0.07 | 0.079 | 0.094 |
| | | | | | RPM | 3183 | 2122 | 1989 | 1592 | 1326 | 1194 | 955 | 796 | 682 | 597 | 531 | 477 | 434 | 382 |
| | | | | | FEED | 38 | 45 | 54 | 57 | 84 | 107 | 123 | 124 | 115 | 109 | 100 | 100 | 103 | 108 |
| | 9 | | 1.0D | 0.5D | Vc | 10 | 15 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 25 | 25 | 20 | 20 |
| | | | | | fz | 0.005 | 0.008 | 0.012 | 0.014 | 0.023 | 0.032 | 0.045 | 0.053 | 0.057 | 0.064 | 0.067 | 0.074 | 0.09 | 0.113 |
| | | | | | RPM | 1592 | 1592 | 1592 | 1273 | 1061 | 796 | 637 | 531 | 455 | 398 | 442 | 398 | 289 | 255 |
| | | | | | FEED | 24 | 38 | 57 | 53 | 73 | 76 | 86 | 84 | 78 | 76 | 89 | 88 | 78 | 86 |
| | 10 | High alloyed steel, and tool steel | 1.0D | 0.5D | Vc | 35 | 35 | 45 | 50 | 55 | 55 | 55 | 55 | 60 | 60 | 50 | 50 | 50 | 50 |
| | | | | | fz | 0.003 | 0.007 | 0.011 | 0.014 | 0.023 | 0.032 | 0.039 | 0.053 | 0.054 | 0.061 | 0.071 | 0.08 | 0.089 | 0.111 |
| | | | | | RPM | 5570 | 3714 | 3581 | 3183 | 2918 | 2188 | 1751 | 1459 | 1364 | 1194 | 884 | 796 | 723 | 637 |
| | | | | | FEED | 50 | 78 | 118 | 134 | 201 | 210 | 205 | 232 | 221 | 218 | 188 | 191 | 193 | 212 |
| | 11.1 | | 1.0D | 0.5D | Vc | 20 | 20 | 25 | 25 | 25 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 |
| | | | | | fz | 0.004 | 0.007 | 0.009 | 0.012 | 0.021 | 0.03 | 0.043 | 0.052 | 0.056 | 0.061 | 0.063 | 0.07 | 0.079 | 0.094 |
| | | | | | RPM | 3183 | 2122 | 1989 | 1592 | 1326 | 1194 | 955 | 796 | 682 | 597 | 531 | 477 | 434 | 382 |
| | | | | | FEED | 38 | 45 | 54 | 57 | 84 | 107 | 123 | 124 | 115 | 109 | 100 | 100 | 103 | 108 |
| K | 15-20 | Grey cast iron Nodular cast iron Malleable cast iron | 1.0D | 0.5D | Vc | 35 | 35 | 45 | 50 | 55 | 55 | 55 | 55 | 60 | 60 | 50 | 50 | 50 | 50 |
| | | | | | fz | 0.003 | 0.007 | 0.011 | 0.014 | 0.023 | 0.032 | 0.039 | 0.053 | 0.054 | 0.061 | 0.071 | 0.08 | 0.089 | 0.111 |
| | | | | | RPM | 5570 | 3714 | 3581 | 3183 | 2918 | 2188 | 1751 | 1459 | 1364 | 1194 | 884 | 796 | 723 | 637 |
| | | | | | FEED | 50 | 78 | 118 | 134 | 201 | 210 | 205 | 232 | 221 | 218 | 188 | 191 | 193 | 212 |






TANK-POWER HSS-PM END MILLS

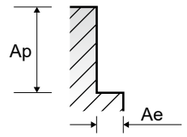
## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

### GA942 , GAA30 SERIES

**3 FLUTE - SIDE CUTTING**
**3刃 - 侧铣削**

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description 材料描述 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 2.0 | 3.0 | 4.0 | 5.0 | 6.0 | 8.0 | 10.0 | 12.0 | 14.0 | 16.0 | 18.0 | 20.0 | 22.0 | 25.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | 0.1D | 1.5D | Vc | 50 | 55 | 65 | 75 | 80 | 80 | 80 | 80 | 80 | 80 | 75 | 80 | 80 | 80 |
| | | | | | fz | 0.004 | 0.008 | 0.012 | 0.015 | 0.024 | 0.034 | 0.047 | 0.056 | 0.065 | 0.069 | 0.077 | 0.08 | 0.09 | 0.11 |
| | | | | | RPM | 7958 | 5836 | 5173 | 4775 | 4244 | 3183 | 2546 | 2122 | 1819 | 1592 | 1326 | 1273 | 1157 | 1019 |
| | | | | | FEED | 95 | 140 | 186 | 215 | 306 | 325 | 359 | 357 | 355 | 329 | 306 | 306 | 313 | 336 |
| | 2 | | 0.1D | 1.5D | Vc | 45 | 45 | 55 | 65 | 70 | 65 | 65 | 70 | 65 | 65 | 65 | 65 | 65 | 65 |
| | | | | | fz | 0.004 | 0.008 | 0.012 | 0.015 | 0.023 | 0.035 | 0.046 | 0.056 | 0.063 | 0.071 | 0.077 | 0.081 | 0.093 | 0.109 |
| | | | | | RPM | 7162 | 4775 | 4377 | 4138 | 3714 | 2586 | 2069 | 1857 | 1478 | 1293 | 1149 | 1035 | 940 | 828 |
| | | | | | FEED | 86 | 115 | 158 | 186 | 256 | 272 | 286 | 312 | 279 | 275 | 266 | 251 | 262 | 271 |
| | 3-4 | | 0.1D | 1.5D | Vc | 35 | 35 | 45 | 45 | 50 | 50 | 50 | 55 | 50 | 50 | 50 | 50 | 50 | 50 |
| | | | | | fz | 0.004 | 0.007 | 0.01 | 0.014 | 0.024 | 0.033 | 0.044 | 0.055 | 0.061 | 0.067 | 0.073 | 0.081 | 0.088 | 0.111 |
| | | | | | RPM | 5570 | 3714 | 3581 | 2865 | 2653 | 1989 | 1592 | 1459 | 1137 | 995 | 884 | 796 | 723 | 637 |
| | | | | | FEED | 67 | 78 | 107 | 120 | 191 | 197 | 210 | 241 | 208 | 200 | 194 | 193 | 191 | 212 |
| | 5 | | 0.1D | 1.5D | Vc | 25 | 25 | 30 | 30 | 35 | 35 | 30 | 35 | 35 | 35 | 35 | 35 | 30 | 35 |
| | | | | | fz | 0.004 | 0.008 | 0.011 | 0.014 | 0.023 | 0.036 | 0.05 | 0.056 | 0.06 | 0.071 | 0.075 | 0.08 | 0.092 | 0.107 |
| | | | | | RPM | 3979 | 2653 | 2387 | 1910 | 1857 | 1393 | 955 | 928 | 796 | 696 | 619 | 557 | 434 | 446 |
| | | | | | FEED | 48 | 64 | 79 | 80 | 128 | 150 | 143 | 156 | 143 | 148 | 139 | 134 | 120 | 143 |
| | 6 | Low alloy steel | 0.1D | 1.5D | Vc | 45 | 45 | 55 | 65 | 70 | 65 | 65 | 70 | 65 | 65 | 65 | 65 | 65 | 65 |
| | | | | | fz | 0.004 | 0.008 | 0.012 | 0.015 | 0.023 | 0.035 | 0.046 | 0.056 | 0.063 | 0.071 | 0.077 | 0.081 | 0.093 | 0.109 |
| | | | | | RPM | 7162 | 4775 | 4377 | 4138 | 3714 | 2586 | 2069 | 1857 | 1478 | 1293 | 1149 | 1035 | 940 | 828 |
| | | | | | FEED | 86 | 115 | 158 | 186 | 256 | 272 | 286 | 312 | 279 | 275 | 266 | 251 | 262 | 271 |
| | 7 | | 0.1D | 1.5D | Vc | 35 | 35 | 45 | 45 | 50 | 50 | 50 | 55 | 50 | 50 | 50 | 50 | 50 | 50 |
| | | | | | fz | 0.004 | 0.007 | 0.01 | 0.014 | 0.024 | 0.033 | 0.044 | 0.055 | 0.061 | 0.067 | 0.073 | 0.081 | 0.088 | 0.111 |
| | | | | | RPM | 5570 | 3714 | 3581 | 2865 | 2653 | 1989 | 1592 | 1459 | 1137 | 995 | 884 | 796 | 723 | 637 |
| | | | | | FEED | 67 | 78 | 107 | 120 | 191 | 197 | 210 | 241 | 208 | 200 | 194 | 193 | 191 | 212 |
| | 8 | | 0.1D | 1.5D | Vc | 25 | 25 | 30 | 30 | 35 | 35 | 30 | 35 | 35 | 35 | 35 | 35 | 30 | 35 |
| | | | | | fz | 0.004 | 0.008 | 0.011 | 0.014 | 0.023 | 0.036 | 0.05 | 0.056 | 0.06 | 0.071 | 0.075 | 0.08 | 0.092 | 0.107 |
| | | | | | RPM | 3979 | 2653 | 2387 | 1910 | 1857 | 1393 | 955 | 928 | 796 | 696 | 619 | 557 | 434 | 446 |
| | | | | | FEED | 48 | 64 | 79 | 80 | 128 | 150 | 143 | 156 | 143 | 148 | 139 | 134 | 120 | 143 |
| | 9 | | 0.1D | 1.5D | Vc | 15 | 20 | 25 | 25 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 |
| | | | | | fz | 0.006 | 0.01 | 0.013 | 0.015 | 0.022 | 0.035 | 0.047 | 0.056 | 0.063 | 0.07 | 0.073 | 0.083 | 0.092 | 0.111 |
| | | | | | RPM | 2387 | 2122 | 1989 | 1592 | 1592 | 1194 | 955 | 796 | 682 | 597 | 531 | 477 | 434 | 382 |
| | | | | | FEED | 43 | 64 | 78 | 72 | 105 | 125 | 135 | 134 | 129 | 125 | 116 | 119 | 120 | 127 |
| | 10 | High alloyed steel, and tool steel | 0.1D | 1.5D | Vc | 45 | 45 | 55 | 65 | 70 | 65 | 65 | 70 | 65 | 65 | 65 | 65 | 65 | 65 |
| | | | | | fz | 0.004 | 0.008 | 0.012 | 0.015 | 0.023 | 0.035 | 0.046 | 0.056 | 0.063 | 0.071 | 0.077 | 0.081 | 0.093 | 0.109 |
| | | | | | RPM | 7162 | 4775 | 4377 | 4138 | 3714 | 2586 | 2069 | 1857 | 1478 | 1293 | 1149 | 1035 | 940 | 828 |
| | | | | | FEED | 86 | 115 | 158 | 186 | 256 | 272 | 286 | 312 | 279 | 275 | 266 | 251 | 262 | 271 |
| | 11.1 | | 0.1D | 1.5D | Vc | 25 | 25 | 30 | 30 | 35 | 35 | 30 | 35 | 35 | 35 | 35 | 35 | 30 | 35 |
| | | | | | fz | 0.004 | 0.008 | 0.011 | 0.014 | 0.023 | 0.036 | 0.05 | 0.056 | 0.06 | 0.071 | 0.075 | 0.08 | 0.092 | 0.107 |
| | | | | | RPM | 3979 | 2653 | 2387 | 1910 | 1857 | 1393 | 955 | 928 | 796 | 696 | 619 | 557 | 434 | 446 |
| | | | | | FEED | 48 | 64 | 79 | 80 | 128 | 150 | 143 | 156 | 143 | 148 | 139 | 134 | 120 | 143 |
| K | 15-20 | Grey cast iron Nodular cast iron Malleable cast iron | 0.1D | 1.5D | Vc | 45 | 45 | 55 | 65 | 70 | 65 | 65 | 70 | 65 | 65 | 65 | 65 | 65 | 65 |
| | | | | | fz | 0.004 | 0.008 | 0.012 | 0.015 | 0.023 | 0.035 | 0.046 | 0.056 | 0.063 | 0.071 | 0.077 | 0.081 | 0.093 | 0.109 |
| | | | | | RPM | 7162 | 4775 | 4377 | 4138 | 3714 | 2586 | 2069 | 1857 | 1478 | 1293 | 1149 | 1035 | 940 | 828 |
| | | | | | FEED | 86 | 115 | 158 | 186 | 256 | 272 | 286 | 312 | 279 | 275 | 266 | 251 | 262 | 271 |






CARBIDE
HSS
CBN END MILLS
i-Xmill END MILLS
i-SMART MODULAR END MILLS
X5070 END MILLS
4G MILL END MILLS
X-POWER PRO END MILLS
TitaNox-POWER END MILLS
SUS-CUT END MILLS
V7 PLUS END MILLS
ALU-POWER HPC END MILLS
ALU-CUT END MILLS
G-CUT END MILLS
CRX S END MILLS
K-2 END MILLS
GENERAL CARBIDE END MILLS
ONLY ONE COATED PM60 END MILLS
TANK-POWER END MILLS
GENERAL HSS END MILLS
MILLING CUTTERS
TECHNICAL DATA

# TANK-POWER HSS-PM END MILLS

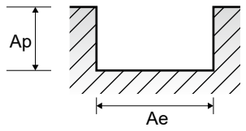
## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

### E9942 , E9A30 SERIES

### 3 FLUTE - SLOTTING
### 3刃 - 槽铣削

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description 材料描述 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 2.0 | 3.0 | 4.0 | 5.0 | 6.0 | 8.0 | 10.0 | 12.0 | 14.0 | 16.0 | 18.0 | 20.0 | 22.0 | 25.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | 1.0D | 0.5D | Vc | 30 | 30 | 35 | 40 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 40 | 40 | 40 |
| | | | | | fz | 0.003 | 0.007 | 0.01 | 0.013 | 0.021 | 0.028 | 0.037 | 0.047 | 0.048 | 0.054 | 0.064 | 0.076 | 0.085 | 0.096 |
| | | | | | RPM | 4775 | 3183 | 2785 | 2546 | 2387 | 1790 | 1432 | 1194 | 1023 | 895 | 796 | 637 | 579 | 509 |
| | | | | | FEED | 43 | 67 | 84 | 99 | 150 | 150 | 159 | 168 | 147 | 145 | 153 | 145 | 148 | 147 |
| | 2 | | 1.0D | 0.5D | Vc | 25 | 25 | 30 | 35 | 35 | 40 | 40 | 40 | 40 | 40 | 35 | 35 | 35 | 35 |
| | | | | | fz | 0.003 | 0.007 | 0.01 | 0.012 | 0.021 | 0.029 | 0.036 | 0.048 | 0.048 | 0.056 | 0.066 | 0.075 | 0.08 | 0.101 |
| | | | | | RPM | 3979 | 2653 | 2387 | 2228 | 1857 | 1592 | 1273 | 1061 | 909 | 796 | 619 | 557 | 506 | 446 |
| | | | | | FEED | 36 | 56 | 72 | 80 | 117 | 138 | 138 | 153 | 131 | 134 | 123 | 125 | 122 | 135 |
| | 3-4 | | 1.0D | 0.5D | Vc | 20 | 30 | 25 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 25 |
| | | | | | fz | 0.003 | 0.003 | 0.008 | 0.01 | 0.018 | 0.026 | 0.035 | 0.043 | 0.049 | 0.052 | 0.06 | 0.059 | 0.077 | 0.098 |
| | | | | | RPM | 3183 | 3183 | 1989 | 1910 | 1592 | 1194 | 955 | 796 | 682 | 597 | 531 | 477 | 434 | 318 |
| | | | | | FEED | 29 | 29 | 48 | 57 | 86 | 93 | 100 | 103 | 100 | 93 | 95 | 85 | 100 | 94 |
| | 5 | | 1.0D | 0.5D | Vc | 15 | 15 | 15 | 15 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| | | | | | fz | 0.003 | 0.007 | 0.009 | 0.012 | 0.018 | 0.028 | 0.038 | 0.047 | 0.048 | 0.057 | 0.057 | 0.061 | 0.074 | 0.09 |
| | | | | | RPM | 2387 | 1592 | 1194 | 955 | 1061 | 796 | 637 | 531 | 455 | 398 | 354 | 318 | 289 | 255 |
| | | | | | FEED | 21 | 33 | 32 | 34 | 57 | 67 | 73 | 75 | 65 | 68 | 60 | 58 | 64 | 69 |
| | 6 | | 1.0D | 0.5D | Vc | 25 | 25 | 30 | 35 | 35 | 40 | 40 | 40 | 40 | 40 | 35 | 35 | 35 | 35 |
| | | | | | fz | 0.003 | 0.007 | 0.01 | 0.012 | 0.021 | 0.029 | 0.036 | 0.048 | 0.048 | 0.056 | 0.066 | 0.075 | 0.08 | 0.101 |
| | | | | | RPM | 3979 | 2653 | 2387 | 2228 | 1857 | 1592 | 1273 | 1061 | 909 | 796 | 619 | 557 | 506 | 446 |
| | | | | | FEED | 36 | 56 | 72 | 80 | 117 | 138 | 138 | 153 | 131 | 134 | 123 | 125 | 122 | 135 |
| | 7 | Low alloy steel | 1.0D | 0.5D | Vc | 20 | 30 | 25 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 25 |
| | | | | | fz | 0.003 | 0.003 | 0.008 | 0.01 | 0.018 | 0.026 | 0.035 | 0.043 | 0.049 | 0.052 | 0.06 | 0.059 | 0.077 | 0.098 |
| | | | | | RPM | 3183 | 3183 | 1989 | 1910 | 1592 | 1194 | 955 | 796 | 682 | 597 | 531 | 477 | 434 | 318 |
| | | | | | FEED | 29 | 29 | 48 | 57 | 86 | 93 | 100 | 103 | 100 | 93 | 95 | 85 | 100 | 94 |
| | 8 | | 1.0D | 0.5D | Vc | 15 | 15 | 15 | 15 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| | | | | | fz | 0.003 | 0.007 | 0.009 | 0.012 | 0.018 | 0.028 | 0.038 | 0.047 | 0.048 | 0.057 | 0.057 | 0.061 | 0.074 | 0.09 |
| | | | | | RPM | 2387 | 1592 | 1194 | 955 | 1061 | 796 | 637 | 531 | 455 | 398 | 354 | 318 | 289 | 255 |
| | | | | | FEED | 21 | 33 | 32 | 34 | 57 | 67 | 73 | 75 | 65 | 68 | 60 | 58 | 64 | 69 |
| | 9 | | 1.0D | 0.5D | Vc | 10 | 10 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 |
| | | | | | fz | 0.005 | 0.008 | 0.012 | 0.013 | 0.02 | 0.03 | 0.042 | 0.049 | 0.053 | 0.061 | 0.062 | 0.068 | 0.085 | 0.108 |
| | | | | | RPM | 1592 | 1061 | 1194 | 955 | 796 | 597 | 477 | 398 | 341 | 298 | 265 | 239 | 217 | 191 |
| | | | | | FEED | 24 | 25 | 43 | 37 | 48 | 54 | 60 | 58 | 54 | 55 | 49 | 49 | 55 | 62 |
| | 10 | High alloyed steel, and tool steel | 1.0D | 0.5D | Vc | 25 | 25 | 30 | 35 | 35 | 40 | 40 | 40 | 40 | 40 | 35 | 35 | 35 | 35 |
| | | | | | fz | 0.003 | 0.007 | 0.01 | 0.012 | 0.021 | 0.029 | 0.036 | 0.048 | 0.048 | 0.056 | 0.066 | 0.075 | 0.08 | 0.101 |
| | | | | | RPM | 3979 | 2653 | 2387 | 2228 | 1857 | 1592 | 1273 | 1061 | 909 | 796 | 619 | 557 | 506 | 446 |
| | | | | | FEED | 36 | 56 | 72 | 80 | 117 | 138 | 138 | 153 | 131 | 134 | 123 | 125 | 122 | 135 |
| | 11.1 | | 1.0D | 0.5D | Vc | 15 | 15 | 15 | 15 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| | | | | | fz | 0.003 | 0.007 | 0.009 | 0.012 | 0.018 | 0.028 | 0.038 | 0.047 | 0.048 | 0.057 | 0.057 | 0.061 | 0.074 | 0.09 |
| | | | | | RPM | 2387 | 1592 | 1194 | 955 | 1061 | 796 | 637 | 531 | 455 | 398 | 354 | 318 | 289 | 255 |
| | | | | | FEED | 21 | 33 | 32 | 34 | 57 | 67 | 73 | 75 | 65 | 68 | 60 | 58 | 64 | 69 |
| K | 15-20 | Grey cast iron Nodular cast iron Malleable cast iron | 1.0D | 0.5D | Vc | 25 | 25 | 30 | 35 | 35 | 40 | 40 | 40 | 40 | 40 | 35 | 35 | 35 | 35 |
| | | | | | fz | 0.003 | 0.007 | 0.01 | 0.012 | 0.021 | 0.029 | 0.036 | 0.048 | 0.048 | 0.056 | 0.066 | 0.075 | 0.08 | 0.101 |
| | | | | | RPM | 3979 | 2653 | 2387 | 2228 | 1857 | 1592 | 1273 | 1061 | 909 | 796 | 619 | 557 | 506 | 446 |
| | | | | | FEED | 36 | 56 | 72 | 80 | 117 | 138 | 138 | 153 | 131 | 134 | 123 | 125 | 122 | 135 |





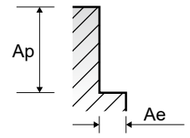

TANK-POWER HSS-PM END MILLS
RECOMMENDED CUTTING CONDITIONS
推荐加工参数

### E9942 , E9A30 SERIES

### 3 FLUTE - SIDE CUTTING
### 3刃 - 侧铣削

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description 材料描述 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 2.0 | 3.0 | 4.0 | 5.0 | 6.0 | 8.0 | 10.0 | 12.0 | 14.0 | 16.0 | 18.0 | 20.0 | 22.0 | 25.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | 0.1D | 1.5D | Vc | 50 | 55 | 65 | 75 | 80 | 80 | 80 | 80 | 80 | 80 | 75 | 80 | 80 | 80 |
| | | | | | fz | 0.004 | 0.008 | 0.012 | 0.015 | 0.024 | 0.034 | 0.047 | 0.056 | 0.065 | 0.069 | 0.077 | 0.08 | 0.09 | 0.11 |
| | | | | | RPM | 7958 | 5836 | 5173 | 4775 | 4244 | 3183 | 2546 | 2122 | 1819 | 1592 | 1326 | 1273 | 1157 | 1019 |
| | | | | | FEED | 95 | 140 | 186 | 215 | 306 | 325 | 359 | 357 | 355 | 329 | 306 | 306 | 313 | 336 |
| | 2 | | 0.1D | 1.5D | Vc | 45 | 45 | 55 | 65 | 70 | 65 | 65 | 70 | 65 | 65 | 65 | 65 | 65 | 65 |
| | | | | | fz | 0.004 | 0.008 | 0.012 | 0.015 | 0.023 | 0.035 | 0.046 | 0.056 | 0.063 | 0.071 | 0.077 | 0.081 | 0.093 | 0.109 |
| | | | | | RPM | 7162 | 4775 | 4377 | 4138 | 3714 | 2586 | 2069 | 1857 | 1478 | 1293 | 1149 | 1035 | 940 | 828 |
| | | | | | FEED | 86 | 115 | 158 | 186 | 256 | 272 | 286 | 312 | 279 | 275 | 266 | 251 | 262 | 271 |
| | 3-4 | | 0.1D | 1.5D | Vc | 35 | 35 | 45 | 45 | 50 | 50 | 50 | 55 | 50 | 50 | 50 | 50 | 50 | 50 |
| | | | | | fz | 0.004 | 0.007 | 0.01 | 0.014 | 0.024 | 0.033 | 0.044 | 0.055 | 0.061 | 0.067 | 0.073 | 0.081 | 0.088 | 0.111 |
| | | | | | RPM | 5570 | 3714 | 3581 | 2865 | 2653 | 1989 | 1592 | 1459 | 1137 | 995 | 884 | 796 | 723 | 637 |
| | | | | | FEED | 67 | 78 | 107 | 120 | 191 | 197 | 210 | 241 | 208 | 200 | 194 | 193 | 191 | 212 |
| | 5 | | 0.1D | 1.5D | Vc | 25 | 25 | 30 | 30 | 35 | 35 | 30 | 35 | 35 | 35 | 35 | 35 | 30 | 35 |
| | | | | | fz | 0.004 | 0.008 | 0.011 | 0.014 | 0.023 | 0.036 | 0.05 | 0.056 | 0.06 | 0.071 | 0.075 | 0.08 | 0.092 | 0.107 |
| | | | | | RPM | 3979 | 2653 | 2387 | 1910 | 1857 | 1393 | 955 | 928 | 796 | 696 | 619 | 557 | 434 | 446 |
| | | | | | FEED | 48 | 64 | 79 | 80 | 128 | 150 | 143 | 156 | 143 | 148 | 139 | 134 | 120 | 143 |
| | 6 | | 0.1D | 1.5D | Vc | 45 | 45 | 55 | 65 | 70 | 65 | 65 | 70 | 65 | 65 | 65 | 65 | 65 | 65 |
| | | | | | fz | 0.004 | 0.008 | 0.012 | 0.015 | 0.023 | 0.035 | 0.046 | 0.056 | 0.063 | 0.071 | 0.077 | 0.081 | 0.093 | 0.109 |
| | | | | | RPM | 7162 | 4775 | 4377 | 4138 | 3714 | 2586 | 2069 | 1857 | 1478 | 1293 | 1149 | 1035 | 940 | 828 |
| | | | | | FEED | 86 | 115 | 158 | 186 | 256 | 272 | 286 | 312 | 279 | 275 | 266 | 251 | 262 | 271 |
| | 7 | Low alloy steel | 0.1D | 1.5D | Vc | 35 | 35 | 45 | 45 | 50 | 50 | 50 | 55 | 50 | 50 | 50 | 50 | 50 | 50 |
| | | | | | fz | 0.004 | 0.007 | 0.01 | 0.014 | 0.024 | 0.033 | 0.044 | 0.055 | 0.061 | 0.067 | 0.073 | 0.081 | 0.088 | 0.111 |
| | | | | | RPM | 5570 | 3714 | 3581 | 2865 | 2653 | 1989 | 1592 | 1459 | 1137 | 995 | 884 | 796 | 723 | 637 |
| | | | | | FEED | 67 | 78 | 107 | 120 | 191 | 197 | 210 | 241 | 208 | 200 | 194 | 193 | 191 | 212 |
| | 8 | | 0.1D | 1.5D | Vc | 25 | 25 | 30 | 30 | 35 | 35 | 30 | 35 | 35 | 35 | 35 | 35 | 30 | 35 |
| | | | | | fz | 0.004 | 0.008 | 0.011 | 0.014 | 0.023 | 0.036 | 0.05 | 0.056 | 0.06 | 0.071 | 0.075 | 0.08 | 0.092 | 0.107 |
| | | | | | RPM | 3979 | 2653 | 2387 | 1910 | 1857 | 1393 | 955 | 928 | 796 | 696 | 619 | 557 | 434 | 446 |
| | | | | | FEED | 48 | 64 | 79 | 80 | 128 | 150 | 143 | 156 | 143 | 148 | 139 | 134 | 120 | 143 |
| | 9 | | 0.1D | 1.5D | Vc | 15 | 20 | 25 | 25 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 |
| | | | | | fz | 0.006 | 0.01 | 0.013 | 0.015 | 0.022 | 0.035 | 0.047 | 0.056 | 0.063 | 0.07 | 0.073 | 0.083 | 0.092 | 0.111 |
| | | | | | RPM | 2387 | 2122 | 1989 | 1592 | 1592 | 1194 | 955 | 796 | 682 | 597 | 531 | 477 | 434 | 382 |
| | | | | | FEED | 43 | 64 | 78 | 72 | 105 | 125 | 135 | 134 | 129 | 125 | 116 | 119 | 120 | 127 |
| | 10 | High alloyed steel, and tool steel | 0.1D | 1.5D | Vc | 45 | 45 | 55 | 65 | 70 | 65 | 65 | 70 | 65 | 65 | 65 | 65 | 65 | 65 |
| | | | | | fz | 0.004 | 0.008 | 0.012 | 0.015 | 0.023 | 0.035 | 0.046 | 0.056 | 0.063 | 0.071 | 0.077 | 0.081 | 0.093 | 0.109 |
| | | | | | RPM | 7162 | 4775 | 4377 | 4138 | 3714 | 2586 | 2069 | 1857 | 1478 | 1293 | 1149 | 1035 | 940 | 828 |
| | | | | | FEED | 86 | 115 | 158 | 186 | 256 | 272 | 286 | 312 | 279 | 275 | 266 | 251 | 262 | 271 |
| | 11.1 | | 0.1D | 1.5D | Vc | 25 | 25 | 30 | 30 | 35 | 35 | 30 | 35 | 35 | 35 | 35 | 35 | 30 | 35 |
| | | | | | fz | 0.004 | 0.008 | 0.011 | 0.014 | 0.023 | 0.036 | 0.05 | 0.056 | 0.06 | 0.071 | 0.075 | 0.08 | 0.092 | 0.107 |
| | | | | | RPM | 3979 | 2653 | 2387 | 1910 | 1857 | 1393 | 955 | 928 | 796 | 696 | 619 | 557 | 434 | 446 |
| | | | | | FEED | 48 | 64 | 79 | 80 | 128 | 150 | 143 | 156 | 143 | 148 | 139 | 134 | 120 | 143 |
| K | 15-20 | Grey cast iron Nodular cast iron Malleable cast iron | 0.1D | 1.5D | Vc | 45 | 45 | 55 | 65 | 70 | 65 | 65 | 70 | 65 | 65 | 65 | 65 | 65 | 65 |
| | | | | | fz | 0.004 | 0.008 | 0.012 | 0.015 | 0.023 | 0.035 | 0.046 | 0.056 | 0.063 | 0.071 | 0.077 | 0.081 | 0.093 | 0.109 |
| | | | | | RPM | 7162 | 4775 | 4377 | 4138 | 3714 | 2586 | 2069 | 1857 | 1478 | 1293 | 1149 | 1035 | 940 | 828 |
| | | | | | FEED | 86 | 115 | 158 | 186 | 256 | 272 | 286 | 312 | 279 | 275 | 266 | 251 | 262 | 271 |



# TANK-POWER HSS-PM END MILLS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

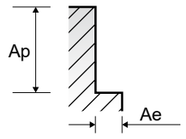
### GA938 , GAA31 SERIES

**4 FLUTE - SIDE CUTTING**
**4刃 - 侧铣削**

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description 材料描述 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 2.0 | 3.0 | 4.0 | 5.0 | 6.0 | 8.0 | 10.0 | 12.0 | 14.0 | 16.0 | 18.0 | 20.0 | 22.0 | 25.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | 0.1D | 1.5D | Vc | 60 | 60 | 65 | 70 | 75 | 80 | 70 | 75 | 80 | 80 | 85 | 80 | 75 | 80 |
| | | | | | fz | 0.008 | 0.016 | 0.023 | 0.029 | 0.035 | 0.046 | 0.068 | 0.071 | 0.076 | 0.08 | 0.077 | 0.088 | 0.098 | 0.093 |
| | | | | | RPM | 9549 | 6366 | 5173 | 4456 | 3979 | 3183 | 2228 | 1989 | 1819 | 1592 | 1503 | 1273 | 1085 | 1019 |
| | | | | | FEED | 306 | 407 | 476 | 517 | 557 | 586 | 606 | 565 | 553 | 509 | 463 | 448 | 425 | 379 |
| | 2 | | 0.1D | 1.5D | Vc | 55 | 55 | 60 | 65 | 70 | 65 | 65 | 70 | 70 | 70 | 70 | 65 | 65 | 65 |
| | | | | | fz | 0.007 | 0.015 | 0.021 | 0.026 | 0.031 | 0.046 | 0.063 | 0.067 | 0.072 | 0.077 | 0.08 | 0.088 | 0.084 | 0.091 |
| | | | | | RPM | 8754 | 5836 | 4775 | 4138 | 3714 | 2586 | 2069 | 1857 | 1592 | 1393 | 1238 | 1035 | 940 | 828 |
| | | | | | FEED | 245 | 350 | 401 | 430 | 460 | 476 | 521 | 498 | 458 | 429 | 396 | 364 | 316 | 301 |
| | 3-4 | | 0.1D | 1.5D | Vc | 40 | 40 | 45 | 45 | 50 | 50 | 50 | 55 | 50 | 50 | 50 | 50 | 45 | 50 |
| | | | | | fz | 0.007 | 0.014 | 0.021 | 0.028 | 0.032 | 0.046 | 0.059 | 0.066 | 0.08 | 0.085 | 0.087 | 0.088 | 0.094 | 0.091 |
| | | | | | RPM | 6366 | 4244 | 3581 | 2865 | 2653 | 1989 | 1592 | 1459 | 1137 | 995 | 884 | 796 | 651 | 637 |
| | | | | | FEED | 178 | 238 | 301 | 321 | 340 | 366 | 376 | 385 | 364 | 338 | 308 | 280 | 245 | 232 |
| | 5 | | 0.1D | 1.5D | Vc | 25 | 25 | 30 | 30 | 35 | 35 | 30 | 35 | 35 | 35 | 35 | 35 | 30 | 35 |
| | | | | | fz | 0.008 | 0.017 | 0.022 | 0.028 | 0.032 | 0.043 | 0.066 | 0.067 | 0.073 | 0.081 | 0.077 | 0.083 | 0.085 | 0.089 |
| | | | | | RPM | 3979 | 2653 | 2387 | 1910 | 1857 | 1393 | 955 | 928 | 796 | 696 | 619 | 557 | 434 | 446 |
| | | | | | FEED | 127 | 180 | 210 | 214 | 238 | 240 | 252 | 249 | 232 | 226 | 191 | 185 | 148 | 159 |
| | 6 | | 0.1D | 1.5D | Vc | 55 | 55 | 60 | 65 | 70 | 65 | 65 | 70 | 70 | 70 | 70 | 65 | 65 | 65 |
| | | | | | fz | 0.007 | 0.015 | 0.021 | 0.026 | 0.031 | 0.046 | 0.063 | 0.067 | 0.072 | 0.077 | 0.08 | 0.088 | 0.084 | 0.091 |
| | | | | | RPM | 8754 | 5836 | 4775 | 4138 | 3714 | 2586 | 2069 | 1857 | 1592 | 1393 | 1238 | 1035 | 940 | 828 |
| | | | | | FEED | 245 | 350 | 401 | 430 | 460 | 476 | 521 | 498 | 458 | 429 | 396 | 364 | 316 | 301 |
| | 7 | Low alloy steel | 0.1D | 1.5D | Vc | 40 | 40 | 45 | 45 | 50 | 50 | 50 | 55 | 50 | 50 | 50 | 50 | 45 | 50 |
| | | | | | fz | 0.007 | 0.014 | 0.021 | 0.028 | 0.032 | 0.046 | 0.059 | 0.066 | 0.08 | 0.085 | 0.087 | 0.088 | 0.094 | 0.091 |
| | | | | | RPM | 6366 | 4244 | 3581 | 2865 | 2653 | 1989 | 1592 | 1459 | 1137 | 995 | 884 | 796 | 651 | 637 |
| | | | | | FEED | 178 | 238 | 301 | 321 | 340 | 366 | 376 | 385 | 364 | 338 | 308 | 280 | 245 | 232 |
| | 8 | | 0.1D | 1.5D | Vc | 25 | 25 | 30 | 30 | 35 | 35 | 30 | 35 | 35 | 35 | 35 | 35 | 30 | 35 |
| | | | | | fz | 0.008 | 0.017 | 0.022 | 0.028 | 0.032 | 0.043 | 0.066 | 0.067 | 0.073 | 0.081 | 0.077 | 0.083 | 0.085 | 0.089 |
| | | | | | RPM | 3979 | 2653 | 2387 | 1910 | 1857 | 1393 | 955 | 928 | 796 | 696 | 619 | 557 | 434 | 446 |
| | | | | | FEED | 127 | 180 | 210 | 214 | 238 | 240 | 252 | 249 | 232 | 226 | 191 | 185 | 148 | 159 |
| | 9 | | 0.1D | 1.5D | Vc | 20 | 25 | 25 | 25 | 25 | 30 | 30 | 25 | 30 | 30 | 30 | 30 | 30 | 30 |
| | | | | | fz | 0.006 | 0.013 | 0.019 | 0.024 | 0.031 | 0.04 | 0.056 | 0.064 | 0.067 | 0.075 | 0.075 | 0.08 | 0.081 | 0.087 |
| | | | | | RPM | 3183 | 2653 | 1989 | 1592 | 1326 | 1194 | 955 | 663 | 682 | 597 | 531 | 477 | 434 | 382 |
| | | | | | FEED | 76 | 138 | 151 | 153 | 164 | 191 | 214 | 170 | 183 | 179 | 159 | 153 | 141 | 133 |
| | 10 | High alloyed steel, and tool steel | 0.1D | 1.5D | Vc | 55 | 55 | 60 | 65 | 70 | 65 | 65 | 70 | 70 | 70 | 70 | 65 | 65 | 65 |
| | | | | | fz | 0.007 | 0.015 | 0.021 | 0.026 | 0.031 | 0.046 | 0.063 | 0.067 | 0.072 | 0.077 | 0.08 | 0.088 | 0.084 | 0.091 |
| | | | | | RPM | 8754 | 5836 | 4775 | 4138 | 3714 | 2586 | 2069 | 1857 | 1592 | 1393 | 1238 | 1035 | 940 | 828 |
| | | | | | FEED | 245 | 350 | 401 | 430 | 460 | 476 | 521 | 498 | 458 | 429 | 396 | 364 | 316 | 301 |
| | 11.1 | | 0.1D | 1.5D | Vc | 25 | 25 | 30 | 30 | 35 | 35 | 30 | 35 | 35 | 35 | 35 | 35 | 30 | 35 |
| | | | | | fz | 0.008 | 0.017 | 0.022 | 0.028 | 0.032 | 0.043 | 0.066 | 0.067 | 0.073 | 0.081 | 0.077 | 0.083 | 0.085 | 0.089 |
| | | | | | RPM | 3979 | 2653 | 2387 | 1910 | 1857 | 1393 | 955 | 928 | 796 | 696 | 619 | 557 | 434 | 446 |
| | | | | | FEED | 127 | 180 | 210 | 214 | 238 | 240 | 252 | 249 | 232 | 226 | 191 | 185 | 148 | 159 |
| K | 15-20 | Grey cast iron Nodular cast iron Malleable cast iron | 0.1D | 1.5D | Vc | 55 | 55 | 60 | 65 | 70 | 65 | 65 | 70 | 70 | 70 | 70 | 65 | 65 | 65 |
| | | | | | fz | 0.007 | 0.015 | 0.021 | 0.026 | 0.031 | 0.046 | 0.063 | 0.067 | 0.072 | 0.077 | 0.08 | 0.088 | 0.084 | 0.091 |
| | | | | | RPM | 8754 | 5836 | 4775 | 4138 | 3714 | 2586 | 2069 | 1857 | 1592 | 1393 | 1238 | 1035 | 940 | 828 |
| | | | | | FEED | 245 | 350 | 401 | 430 | 460 | 476 | 521 | 498 | 458 | 429 | 396 | 364 | 316 | 301 |

※ The FEED, in long & extra long types, should be reduced by around 50%






TANK-POWER HSS-PM END MILLS
RECOMMENDED CUTTING CONDITIONS
推荐加工参数

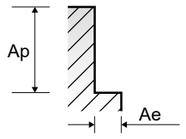
### E9938 , E9A31 SERIES

**4 FLUTE - SIDE CUTTING**
**4刃 - 侧铣削**

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description 材料描述 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 2.0 | 3.0 | 4.0 | 5.0 | 6.0 | 8.0 | 10.0 | 12.0 | 14.0 | 16.0 | 18.0 | 20.0 | 22.0 | 25.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | 0.1D | 1.5D | Vc | 40 | 40 | 45 | 45 | 50 | 55 | 50 | 50 | 55 | 55 | 55 | 55 | 50 | 55 |
| | | | | | fz | 0.007 | 0.014 | 0.021 | 0.026 | 0.032 | 0.043 | 0.061 | 0.069 | 0.071 | 0.07 | 0.07 | 0.079 | 0.092 | 0.085 |
| | | | | | RPM | 6366 | 4244 | 3581 | 2865 | 2653 | 2188 | 1592 | 1326 | 1251 | 1094 | 973 | 875 | 723 | 700 |
| | | | | | FEED | 178 | 238 | 301 | 298 | 340 | 376 | 388 | 366 | 355 | 306 | 272 | 277 | 266 | 238 |
| | 2 | | 0.1D | 1.5D | Vc | 35 | 40 | 40 | 40 | 45 | 45 | 45 | 45 | 50 | 45 | 50 | 45 | 45 | 45 |
| | | | | | fz | 0.007 | 0.013 | 0.02 | 0.025 | 0.029 | 0.042 | 0.059 | 0.063 | 0.065 | 0.074 | 0.074 | 0.081 | 0.078 | 0.083 |
| | | | | | RPM | 5570 | 4244 | 3183 | 2546 | 2387 | 1790 | 1432 | 1194 | 1137 | 895 | 884 | 716 | 651 | 573 |
| | | | | | FEED | 156 | 221 | 255 | 255 | 277 | 301 | 338 | 301 | 296 | 265 | 262 | 232 | 203 | 190 |
| | 3-4 | | 0.1D | 1.5D | Vc | 25 | 30 | 30 | 30 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 30 | 35 |
| | | | | | fz | 0.007 | 0.013 | 0.02 | 0.024 | 0.028 | 0.041 | 0.053 | 0.064 | 0.069 | 0.075 | 0.079 | 0.081 | 0.087 | 0.081 |
| | | | | | RPM | 3979 | 3183 | 2387 | 1910 | 1857 | 1393 | 1114 | 928 | 796 | 696 | 619 | 557 | 434 | 446 |
| | | | | | FEED | 111 | 166 | 191 | 183 | 208 | 228 | 236 | 238 | 220 | 209 | 196 | 180 | 151 | 144 |
| | 5 | | 0.1D | 1.5D | Vc | 20 | 20 | 20 | 20 | 25 | 25 | 20 | 25 | 25 | 25 | 25 | 25 | 20 | 20 |
| | | | | | fz | 0.007 | 0.014 | 0.02 | 0.024 | 0.029 | 0.042 | 0.058 | 0.063 | 0.066 | 0.075 | 0.07 | 0.076 | 0.078 | 0.085 |
| | | | | | RPM | 3183 | 2122 | 1592 | 1273 | 1326 | 995 | 637 | 663 | 568 | 497 | 442 | 398 | 289 | 255 |
| | | | | | FEED | 89 | 119 | 127 | 122 | 154 | 167 | 148 | 167 | 150 | 149 | 124 | 121 | 90 | 87 |
| | 6 | | 0.1D | 1.5D | Vc | 35 | 40 | 40 | 40 | 45 | 45 | 45 | 45 | 50 | 45 | 50 | 45 | 45 | 45 |
| | | | | | fz | 0.007 | 0.013 | 0.02 | 0.025 | 0.029 | 0.042 | 0.059 | 0.063 | 0.065 | 0.074 | 0.074 | 0.081 | 0.078 | 0.083 |
| | | | | | RPM | 5570 | 4244 | 3183 | 2546 | 2387 | 1790 | 1432 | 1194 | 1137 | 895 | 884 | 716 | 651 | 573 |
| | | | | | FEED | 156 | 221 | 255 | 255 | 277 | 301 | 338 | 301 | 296 | 265 | 262 | 232 | 203 | 190 |
| | 7 | Low alloy steel | 0.1D | 1.5D | Vc | 25 | 30 | 30 | 30 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 30 | 35 |
| | | | | | fz | 0.007 | 0.013 | 0.02 | 0.024 | 0.028 | 0.041 | 0.053 | 0.064 | 0.069 | 0.075 | 0.079 | 0.081 | 0.087 | 0.081 |
| | | | | | RPM | 3979 | 3183 | 2387 | 1910 | 1857 | 1393 | 1114 | 928 | 796 | 696 | 619 | 557 | 434 | 446 |
| | | | | | FEED | 111 | 166 | 191 | 183 | 208 | 228 | 236 | 238 | 220 | 209 | 196 | 180 | 151 | 144 |
| | 8 | | 0.1D | 1.5D | Vc | 20 | 20 | 20 | 20 | 25 | 25 | 20 | 25 | 25 | 25 | 25 | 25 | 20 | 20 |
| | | | | | fz | 0.007 | 0.014 | 0.02 | 0.024 | 0.029 | 0.042 | 0.058 | 0.063 | 0.066 | 0.075 | 0.07 | 0.076 | 0.078 | 0.085 |
| | | | | | RPM | 3183 | 2122 | 1592 | 1273 | 1326 | 995 | 637 | 663 | 568 | 497 | 442 | 398 | 289 | 255 |
| | | | | | FEED | 89 | 119 | 127 | 122 | 154 | 167 | 148 | 167 | 150 | 149 | 124 | 121 | 90 | 87 |
| | 9 | | 0.1D | 1.5D | Vc | 15 | 15 | 15 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| | | | | | fz | 0.006 | 0.012 | 0.018 | 0.022 | 0.028 | 0.038 | 0.052 | 0.058 | 0.061 | 0.067 | 0.07 | 0.071 | 0.074 | 0.083 |
| | | | | | RPM | 2387 | 1592 | 1194 | 1273 | 1061 | 796 | 637 | 531 | 455 | 398 | 354 | 318 | 289 | 255 |
| | | | | | FEED | 57 | 76 | 86 | 112 | 119 | 121 | 132 | 123 | 111 | 107 | 99 | 90 | 86 | 85 |
| | 10 | High alloyed steel, and tool steel | 0.1D | 1.5D | Vc | 35 | 40 | 40 | 40 | 45 | 45 | 45 | 45 | 50 | 45 | 50 | 45 | 45 | 45 |
| | | | | | fz | 0.007 | 0.013 | 0.02 | 0.025 | 0.029 | 0.042 | 0.059 | 0.063 | 0.065 | 0.074 | 0.074 | 0.081 | 0.078 | 0.083 |
| | | | | | RPM | 5570 | 4244 | 3183 | 2546 | 2387 | 1790 | 1432 | 1194 | 1137 | 895 | 884 | 716 | 651 | 573 |
| | | | | | FEED | 156 | 221 | 255 | 255 | 277 | 301 | 338 | 301 | 296 | 265 | 262 | 232 | 203 | 190 |
| | 11.1 | | 0.1D | 1.5D | Vc | 20 | 20 | 20 | 20 | 25 | 25 | 20 | 25 | 25 | 25 | 25 | 25 | 20 | 20 |
| | | | | | fz | 0.007 | 0.014 | 0.02 | 0.024 | 0.029 | 0.042 | 0.058 | 0.063 | 0.066 | 0.075 | 0.07 | 0.076 | 0.078 | 0.085 |
| | | | | | RPM | 3183 | 2122 | 1592 | 1273 | 1326 | 995 | 637 | 663 | 568 | 497 | 442 | 398 | 289 | 255 |
| | | | | | FEED | 89 | 119 | 127 | 122 | 154 | 167 | 148 | 167 | 150 | 149 | 124 | 121 | 90 | 87 |
| K | 15-20 | Grey cast iron Nodular cast iron Malleable cast iron | 0.1D | 1.5D | Vc | 35 | 40 | 40 | 40 | 45 | 45 | 45 | 45 | 50 | 45 | 50 | 45 | 45 | 45 |
| | | | | | fz | 0.007 | 0.013 | 0.02 | 0.025 | 0.029 | 0.042 | 0.059 | 0.063 | 0.065 | 0.074 | 0.074 | 0.081 | 0.078 | 0.083 |
| | | | | | RPM | 5570 | 4244 | 3183 | 2546 | 2387 | 1790 | 1432 | 1194 | 1137 | 895 | 884 | 716 | 651 | 573 |
| | | | | | FEED | 156 | 221 | 255 | 255 | 277 | 301 | 338 | 301 | 296 | 265 | 262 | 232 | 203 | 190 |

※ The FEED, in long & extra long types, should be reduced by around 50%



# TANK-POWER HSS-PM END MILLS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

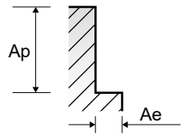
### GA941 , GAA35 , GAA33 , GAA34 SERIES

**MULTI FLUTE ROUGHING - SIDE CUTTING**
**多刃 粗加工- 侧铣削**

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description 材料描述 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 6.0 | 8.0 | 10.0 | 12.0 | 22.0 | 25.0 | 18.0 | 20.0 | 22.0 | 25.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | 0.5D | 1.5D | Vc | 55 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 |
| | | | | | fz | 0.027 | 0.04 | 0.055 | 0.065 | 0.074 | 0.086 | 0.099 | 0.111 | 0.096 | 0.105 |
| | | | | | RPM | 2918 | 2387 | 1910 | 1592 | 1364 | 1194 | 1061 | 955 | 868 | 764 |
| | | | | | FEED | 236 | 286 | 420 | 414 | 404 | 411 | 420 | 424 | 417 | 401 |
| | 2 | | 0.5D | 1.5D | Vc | 40 | 50 | 45 | 45 | 45 | 50 | 50 | 50 | 45 | 45 |
| | | | | | fz | 0.027 | 0.04 | 0.053 | 0.069 | 0.079 | 0.087 | 0.093 | 0.109 | 0.102 | 0.105 |
| | | | | | RPM | 2122 | 1989 | 1432 | 1194 | 1023 | 995 | 884 | 796 | 651 | 573 |
| | | | | | FEED | 172 | 239 | 304 | 329 | 323 | 346 | 329 | 347 | 332 | 301 |
| | 3-4 | | 0.5D | 1.5D | Vc | 30 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 30 | 35 |
| | | | | | fz | 0.024 | 0.038 | 0.046 | 0.064 | 0.076 | 0.087 | 0.094 | 0.108 | 0.098 | 0.105 |
| | | | | | RPM | 1592 | 1393 | 1114 | 928 | 796 | 696 | 619 | 557 | 434 | 446 |
| | | | | | FEED | 115 | 159 | 205 | 238 | 242 | 242 | 233 | 241 | 213 | 234 |
| | 5 | | 0.5D | 1.5D | Vc | 25 | 25 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 |
| | | | | | fz | 0.027 | 0.04 | 0.045 | 0.061 | 0.071 | 0.082 | 0.092 | 0.102 | 0.09 | 0.1 |
| | | | | | RPM | 1326 | 995 | 955 | 796 | 682 | 597 | 531 | 477 | 434 | 382 |
| | | | | | FEED | 107 | 119 | 172 | 194 | 194 | 196 | 195 | 195 | 195 | 191 |
| | 6 | Low alloy steel | 0.5D | 1.5D | Vc | 40 | 50 | 45 | 45 | 45 | 50 | 50 | 50 | 45 | 45 |
| | | | | | fz | 0.027 | 0.04 | 0.053 | 0.069 | 0.079 | 0.087 | 0.093 | 0.109 | 0.102 | 0.105 |
| | | | | | RPM | 2122 | 1989 | 1432 | 1194 | 1023 | 995 | 884 | 796 | 651 | 573 |
| | | | | | FEED | 172 | 239 | 304 | 329 | 323 | 346 | 329 | 347 | 332 | 301 |
| | 7 | | 0.5D | 1.5D | Vc | 30 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 30 | 35 |
| | | | | | fz | 0.024 | 0.038 | 0.046 | 0.064 | 0.076 | 0.087 | 0.094 | 0.108 | 0.098 | 0.105 |
| | | | | | RPM | 1592 | 1393 | 1114 | 928 | 796 | 696 | 619 | 557 | 434 | 446 |
| | | | | | FEED | 115 | 159 | 205 | 238 | 242 | 242 | 233 | 241 | 213 | 234 |
| | 8-9 | | 0.5D | 1.5D | Vc | 25 | 25 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 |
| | | | | | fz | 0.027 | 0.04 | 0.045 | 0.061 | 0.071 | 0.082 | 0.092 | 0.102 | 0.09 | 0.1 |
| | | | | | RPM | 1326 | 995 | 955 | 796 | 682 | 597 | 531 | 477 | 434 | 382 |
| | | | | | FEED | 107 | 119 | 172 | 194 | 194 | 196 | 195 | 195 | 195 | 191 |
| | 10 | High alloyed steel, and tool steel | 0.5D | 1.5D | Vc | 40 | 50 | 45 | 45 | 45 | 50 | 50 | 50 | 45 | 45 |
| | | | | | fz | 0.027 | 0.04 | 0.053 | 0.069 | 0.079 | 0.087 | 0.093 | 0.109 | 0.102 | 0.105 |
| | | | | | RPM | 2122 | 1989 | 1432 | 1194 | 1023 | 995 | 884 | 796 | 651 | 573 |
| | | | | | FEED | 172 | 239 | 304 | 329 | 323 | 346 | 329 | 347 | 332 | 301 |
| | 11.1 | | 0.5D | 1.5D | Vc | 25 | 25 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 |
| | | | | | fz | 0.027 | 0.04 | 0.045 | 0.061 | 0.071 | 0.082 | 0.092 | 0.102 | 0.09 | 0.1 |
| | | | | | RPM | 1326 | 995 | 955 | 796 | 682 | 597 | 531 | 477 | 434 | 382 |
| | | | | | FEED | 107 | 119 | 172 | 194 | 194 | 196 | 195 | 195 | 195 | 191 |
| M | 14.1 | Stainless steel | 0.5D | 1.5D | Vc | 25 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 |
| | | | | | fz | 0.025 | 0.039 | 0.045 | 0.064 | 0.074 | 0.085 | 0.093 | 0.107 | 0.095 | 0.103 |
| | | | | | RPM | 1326 | 1194 | 955 | 796 | 682 | 597 | 531 | 477 | 434 | 382 |
| | | | | | FEED | 99 | 140 | 172 | 204 | 202 | 203 | 197 | 204 | 206 | 197 |
| K | 15-20 | Grey cast iron Nodular cast iron Malleable cast iron | 0.5D | 1.5D | Vc | 40 | 50 | 45 | 45 | 45 | 50 | 50 | 50 | 45 | 45 |
| | | | | | fz | 0.027 | 0.04 | 0.053 | 0.069 | 0.079 | 0.087 | 0.093 | 0.109 | 0.102 | 0.105 |
| | | | | | RPM | 2122 | 1989 | 1432 | 1194 | 1023 | 995 | 884 | 796 | 651 | 573 |
| | | | | | FEED | 172 | 239 | 304 | 329 | 323 | 346 | 329 | 347 | 332 | 301 |

※ The FEED, in long & extra long types, should be reduced by around 50%






TANK-POWER HSS-PM END MILLS
RECOMMENDED CUTTING CONDITIONS
推荐加工参数

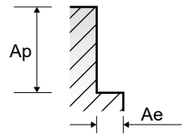
### E9941 , E9A35 , E9A33 , E9A34 SERIES

**MULTI FLUTE ROUGHING - SIDE CUTTING**
**多刃 粗加工- 侧铣削**

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description 材料描述 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 6.0 | 8.0 | 10.0 | 12.0 | 22.0 | 25.0 | 18.0 | 20.0 | 22.0 | 25.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | 0.5D | 1.5D | Vc | 35 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 |
| | | | | | fz | 0.018 | 0.028 | 0.05 | 0.059 | 0.056 | 0.063 | 0.061 | 0.067 | 0.072 | 0.08 |
| | | | | | RPM | 1857 | 1592 | 1273 | 1061 | 909 | 796 | 707 | 637 | 579 | 509 |
| | | | | | FEED | 100 | 134 | 255 | 250 | 204 | 201 | 173 | 171 | 208 | 204 |
| | 2 | | 0.5D | 1.5D | Vc | 30 | 35 | 30 | 30 | 30 | 30 | 35 | 30 | 30 | 30 |
| | | | | | fz | 0.018 | 0.027 | 0.049 | 0.063 | 0.058 | 0.064 | 0.056 | 0.067 | 0.078 | 0.081 |
| | | | | | RPM | 1592 | 1393 | 955 | 796 | 682 | 597 | 619 | 477 | 434 | 382 |
| | | | | | FEED | 86 | 113 | 187 | 201 | 158 | 153 | 139 | 128 | 169 | 155 |
| | 3-4 | | 0.5D | 1.5D | Vc | 20 | 25 | 20 | 25 | 20 | 25 | 25 | 25 | 20 | 20 |
| | | | | | fz | 0.017 | 0.028 | 0.044 | 0.058 | 0.055 | 0.062 | 0.057 | 0.065 | 0.073 | 0.08 |
| | | | | | RPM | 1061 | 995 | 637 | 663 | 455 | 497 | 442 | 398 | 289 | 255 |
| | | | | | FEED | 54 | 84 | 112 | 154 | 100 | 123 | 101 | 103 | 106 | 102 |
| | 5 | | 0.5D | 1.5D | Vc | 15 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| | | | | | fz | 0.018 | 0.027 | 0.042 | 0.055 | 0.051 | 0.059 | 0.056 | 0.061 | 0.068 | 0.076 |
| | | | | | RPM | 796 | 796 | 637 | 531 | 455 | 398 | 354 | 318 | 289 | 255 |
| | | | | | FEED | 43 | 64 | 107 | 117 | 93 | 94 | 79 | 78 | 98 | 97 |
| | 6 | Low alloy steel | 0.5D | 1.5D | Vc | 30 | 35 | 30 | 30 | 30 | 30 | 35 | 30 | 30 | 30 |
| | | | | | fz | 0.018 | 0.027 | 0.049 | 0.063 | 0.058 | 0.064 | 0.056 | 0.067 | 0.078 | 0.081 |
| | | | | | RPM | 1592 | 1393 | 955 | 796 | 682 | 597 | 619 | 477 | 434 | 382 |
| | | | | | FEED | 86 | 113 | 187 | 201 | 158 | 153 | 139 | 128 | 169 | 155 |
| | 7 | | 0.5D | 1.5D | Vc | 20 | 25 | 20 | 25 | 20 | 25 | 25 | 25 | 20 | 20 |
| | | | | | fz | 0.017 | 0.028 | 0.044 | 0.058 | 0.055 | 0.062 | 0.057 | 0.065 | 0.073 | 0.08 |
| | | | | | RPM | 1061 | 995 | 637 | 663 | 455 | 497 | 442 | 398 | 289 | 255 |
| | | | | | FEED | 54 | 84 | 112 | 154 | 100 | 123 | 101 | 103 | 106 | 102 |
| | 8-9 | | 0.5D | 1.5D | Vc | 15 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| | | | | | fz | 0.018 | 0.027 | 0.042 | 0.055 | 0.051 | 0.059 | 0.056 | 0.061 | 0.068 | 0.076 |
| | | | | | RPM | 796 | 796 | 637 | 531 | 455 | 398 | 354 | 318 | 289 | 255 |
| | | | | | FEED | 43 | 64 | 107 | 117 | 93 | 94 | 79 | 78 | 98 | 97 |
| | 10 | High alloyed steel, and tool steel | 0.5D | 1.5D | Vc | 30 | 35 | 30 | 30 | 30 | 30 | 35 | 30 | 30 | 30 |
| | | | | | fz | 0.018 | 0.027 | 0.049 | 0.063 | 0.058 | 0.064 | 0.056 | 0.067 | 0.078 | 0.081 |
| | | | | | RPM | 1592 | 1393 | 955 | 796 | 682 | 597 | 619 | 477 | 434 | 382 |
| | | | | | FEED | 86 | 113 | 187 | 201 | 158 | 153 | 139 | 128 | 169 | 155 |
| | 11.1 | | 0.5D | 1.5D | Vc | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| | | | | | fz | 0.018 | 0.027 | 0.042 | 0.055 | 0.051 | 0.059 | 0.056 | 0.061 | 0.068 | 0.076 |
| | | | | | RPM | 796 | 796 | 637 | 531 | 455 | 398 | 354 | 318 | 289 | 255 |
| | | | | | FEED | 43 | 64 | 107 | 117 | 93 | 94 | 79 | 78 | 98 | 97 |
| M | 14.1 | Stainless steel | 0.5D | 1.5D | Vc | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| | | | | | fz | 0.02 | 0.03 | 0.045 | 0.065 | 0.06 | 0.069 | 0.064 | 0.073 | 0.081 | 0.086 |
| | | | | | RPM | 1061 | 796 | 637 | 531 | 455 | 398 | 354 | 318 | 289 | 255 |
| | | | | | FEED | 64 | 72 | 115 | 138 | 109 | 110 | 91 | 93 | 117 | 109 |
| K | 15-20 | Grey cast iron Nodular cast iron Malleable cast iron | 0.5D | 1.5D | Vc | 30 | 35 | 30 | 30 | 30 | 30 | 35 | 30 | 30 | 30 |
| | | | | | fz | 0.018 | 0.027 | 0.049 | 0.063 | 0.058 | 0.064 | 0.056 | 0.067 | 0.078 | 0.081 |
| | | | | | RPM | 1592 | 1393 | 955 | 796 | 682 | 597 | 619 | 477 | 434 | 382 |
| | | | | | FEED | 86 | 113 | 187 | 201 | 158 | 153 | 139 | 128 | 169 | 155 |

※ The FEED, in long & extra long types, should be reduced by around 50%



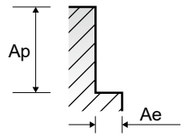
# TANK-POWER HSS-PM END MILLS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

### GAA26 SERIES — MULTI FLUTE ROUGHING - SIDE CUTTING
### 多刃 粗加工- 侧铣削

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description 材料描述 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 6.0 | 8.0 | 10.0 | 12.0 | 14.0 | 16.0 | 18.0 | 20.0 | 22.0 | 25.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | 0.5D | 1.5D | Vc | 55 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 |
| | | | | | fz | 0.021 | 0.03 | 0.055 | 0.065 | 0.059 | 0.069 | 0.066 | 0.074 | 0.08 | 0.088 |
| | | | | | RPM | 2918 | 2387 | 1910 | 1592 | 1364 | 1194 | 1061 | 955 | 868 | 764 |
| | | | | | FEED | 245 | 286 | 420 | 414 | 402 | 412 | 420 | 424 | 417 | 403 |
| | 2 | | 0.5D | 1.5D | Vc | 40 | 50 | 45 | 45 | 45 | 50 | 50 | 50 | 45 | 45 |
| | | | | | fz | 0.02 | 0.03 | 0.053 | 0.069 | 0.063 | 0.069 | 0.062 | 0.072 | 0.085 | 0.088 |
| | | | | | RPM | 2122 | 1989 | 1432 | 1194 | 1023 | 995 | 884 | 796 | 651 | 573 |
| | | | | | FEED | 170 | 239 | 304 | 329 | 322 | 343 | 329 | 344 | 332 | 303 |
| | 3-4 | | 0.5D | 1.5D | Vc | 30 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 30 | 35 |
| | | | | | fz | 0.018 | 0.029 | 0.046 | 0.064 | 0.061 | 0.07 | 0.063 | 0.072 | 0.082 | 0.087 |
| | | | | | RPM | 1592 | 1393 | 1114 | 928 | 796 | 696 | 619 | 557 | 434 | 446 |
| | | | | | FEED | 115 | 162 | 205 | 238 | 243 | 244 | 234 | 241 | 214 | 233 |
| | 5 | | 0.5D | 1.5D | Vc | 25 | 25 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 |
| | | | | | fz | 0.02 | 0.03 | 0.045 | 0.061 | 0.057 | 0.065 | 0.061 | 0.068 | 0.075 | 0.083 |
| | | | | | RPM | 1326 | 995 | 955 | 796 | 682 | 597 | 531 | 477 | 434 | 382 |
| | | | | | FEED | 106 | 119 | 172 | 194 | 194 | 194 | 194 | 195 | 195 | 190 |
| | 6 | Low alloy steel | 0.5D | 1.5D | Vc | 40 | 50 | 45 | 45 | 45 | 50 | 50 | 50 | 45 | 45 |
| | | | | | fz | 0.02 | 0.03 | 0.053 | 0.069 | 0.063 | 0.069 | 0.062 | 0.072 | 0.085 | 0.088 |
| | | | | | RPM | 2122 | 1989 | 1432 | 1194 | 1023 | 995 | 884 | 796 | 651 | 573 |
| | | | | | FEED | 170 | 239 | 304 | 329 | 322 | 343 | 329 | 344 | 332 | 303 |
| | 7 | | 0.5D | 1.5D | Vc | 30 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 30 | 35 |
| | | | | | fz | 0.018 | 0.029 | 0.046 | 0.064 | 0.061 | 0.07 | 0.063 | 0.072 | 0.082 | 0.087 |
| | | | | | RPM | 1592 | 1393 | 1114 | 928 | 796 | 696 | 619 | 557 | 434 | 446 |
| | | | | | FEED | 115 | 162 | 205 | 238 | 243 | 244 | 234 | 241 | 214 | 233 |
| | 8-9 | | 0.5D | 1.5D | Vc | 25 | 25 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 |
| | | | | | fz | 0.02 | 0.03 | 0.045 | 0.061 | 0.057 | 0.065 | 0.061 | 0.068 | 0.075 | 0.083 |
| | | | | | RPM | 1326 | 995 | 955 | 796 | 682 | 597 | 531 | 477 | 434 | 382 |
| | | | | | FEED | 106 | 119 | 172 | 194 | 194 | 194 | 194 | 195 | 195 | 190 |
| | 10 | High alloyed steel, and tool steel | 0.5D | 1.5D | Vc | 40 | 50 | 45 | 45 | 45 | 50 | 50 | 50 | 45 | 45 |
| | | | | | fz | 0.02 | 0.03 | 0.053 | 0.069 | 0.063 | 0.069 | 0.062 | 0.072 | 0.085 | 0.088 |
| | | | | | RPM | 2122 | 1989 | 1432 | 1194 | 1023 | 995 | 884 | 796 | 651 | 573 |
| | | | | | FEED | 170 | 239 | 304 | 329 | 322 | 343 | 329 | 344 | 332 | 303 |
| | 11.1 | | 0.5D | 1.5D | Vc | 25 | 25 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 |
| | | | | | fz | 0.02 | 0.03 | 0.045 | 0.061 | 0.057 | 0.065 | 0.061 | 0.068 | 0.075 | 0.083 |
| | | | | | RPM | 1326 | 995 | 955 | 796 | 682 | 597 | 531 | 477 | 434 | 382 |
| | | | | | FEED | 106 | 119 | 172 | 194 | 194 | 194 | 194 | 195 | 195 | 190 |
| M | 14.1 | Stainless steel | 0.5D | 1.5D | Vc | 25 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 |
| | | | | | fz | 0.019 | 0.029 | 0.045 | 0.064 | 0.059 | 0.068 | 0.062 | 0.071 | 0.079 | 0.085 |
| | | | | | RPM | 1326 | 1194 | 955 | 796 | 682 | 597 | 531 | 477 | 434 | 382 |
| | | | | | FEED | 101 | 138 | 172 | 204 | 201 | 203 | 197 | 203 | 206 | 195 |
| K | 15-20 | Grey cast iron Nodular cast iron Malleable cast iron | 0.5D | 1.5D | Vc | 40 | 50 | 45 | 45 | 45 | 50 | 50 | 50 | 45 | 45 |
| | | | | | fz | 0.02 | 0.03 | 0.053 | 0.069 | 0.063 | 0.069 | 0.062 | 0.072 | 0.085 | 0.088 |
| | | | | | RPM | 2122 | 1989 | 1432 | 1194 | 1023 | 995 | 884 | 796 | 651 | 573 |
| | | | | | FEED | 170 | 239 | 304 | 329 | 322 | 343 | 329 | 344 | 332 | 303 |





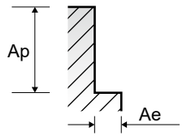

TANK-POWER HSS-PM END MILLS

RECOMMENDED CUTTING CONDITIONS
推荐加工参数

### E9A26 SERIES — MULTI FLUTE ROUGHING - SIDE CUTTING
### 多刃 粗加工- 侧铣削

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description 材料描述 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 6.0 | 8.0 | 10.0 | 12.0 | 14.0 | 16.0 | 18.0 | 20.0 | 22.0 | 25.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | 0.5D | 1.5D | Vc | 35 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 |
| | | | | | fz | 0.018 | 0.028 | 0.05 | 0.059 | 0.056 | 0.063 | 0.061 | 0.067 | 0.072 | 0.08 |
| | | | | | RPM | 1857 | 1592 | 1273 | 1061 | 909 | 796 | 707 | 637 | 579 | 509 |
| | | | | | FEED | 134 | 178 | 255 | 250 | 255 | 251 | 259 | 256 | 250 | 244 |
| | 2 | | 0.5D | 1.5D | Vc | 30 | 35 | 30 | 30 | 30 | 30 | 35 | 30 | 30 | 30 |
| | | | | | fz | 0.018 | 0.027 | 0.049 | 0.063 | 0.058 | 0.064 | 0.056 | 0.067 | 0.078 | 0.081 |
| | | | | | RPM | 1592 | 1393 | 955 | 796 | 682 | 597 | 619 | 477 | 434 | 382 |
| | | | | | FEED | 115 | 150 | 187 | 201 | 198 | 191 | 208 | 192 | 203 | 186 |
| | 3-4 | | 0.5D | 1.5D | Vc | 20 | 25 | 20 | 25 | 20 | 25 | 25 | 25 | 20 | 20 |
| | | | | | fz | 0.017 | 0.028 | 0.044 | 0.058 | 0.055 | 0.062 | 0.057 | 0.065 | 0.073 | 0.08 |
| | | | | | RPM | 1061 | 995 | 637 | 663 | 455 | 497 | 442 | 398 | 289 | 255 |
| | | | | | FEED | 72 | 111 | 112 | 154 | 125 | 154 | 151 | 155 | 127 | 122 |
| | 5 | | 0.5D | 1.5D | Vc | 15 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| | | | | | fz | 0.018 | 0.027 | 0.042 | 0.055 | 0.051 | 0.059 | 0.056 | 0.061 | 0.068 | 0.076 |
| | | | | | RPM | 796 | 796 | 637 | 531 | 455 | 398 | 354 | 318 | 289 | 255 |
| | | | | | FEED | 57 | 86 | 107 | 117 | 116 | 117 | 119 | 117 | 118 | 116 |
| | 6 | Low alloy steel | 0.5D | 1.5D | Vc | 30 | 35 | 30 | 30 | 30 | 30 | 35 | 30 | 30 | 30 |
| | | | | | fz | 0.018 | 0.027 | 0.049 | 0.063 | 0.058 | 0.064 | 0.056 | 0.067 | 0.078 | 0.081 |
| | | | | | RPM | 1592 | 1393 | 955 | 796 | 682 | 597 | 619 | 477 | 434 | 382 |
| | | | | | FEED | 115 | 150 | 187 | 201 | 198 | 191 | 208 | 192 | 203 | 186 |
| | 7 | | 0.5D | 1.5D | Vc | 20 | 25 | 20 | 25 | 20 | 25 | 25 | 25 | 20 | 20 |
| | | | | | fz | 0.017 | 0.028 | 0.044 | 0.058 | 0.055 | 0.062 | 0.057 | 0.065 | 0.073 | 0.08 |
| | | | | | RPM | 1061 | 995 | 637 | 663 | 455 | 497 | 442 | 398 | 289 | 255 |
| | | | | | FEED | 72 | 111 | 112 | 154 | 125 | 154 | 151 | 155 | 127 | 122 |
| | 8-9 | | 0.5D | 1.5D | Vc | 15 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| | | | | | fz | 0.018 | 0.027 | 0.042 | 0.055 | 0.051 | 0.059 | 0.056 | 0.061 | 0.068 | 0.076 |
| | | | | | RPM | 796 | 796 | 637 | 531 | 455 | 398 | 354 | 318 | 289 | 255 |
| | | | | | FEED | 57 | 86 | 107 | 117 | 116 | 117 | 119 | 117 | 118 | 116 |
| | 10 | High alloyed steel, and tool steel | 0.5D | 1.5D | Vc | 30 | 35 | 30 | 30 | 30 | 30 | 35 | 30 | 30 | 30 |
| | | | | | fz | 0.018 | 0.027 | 0.049 | 0.063 | 0.058 | 0.064 | 0.056 | 0.067 | 0.078 | 0.081 |
| | | | | | RPM | 1592 | 1393 | 955 | 796 | 682 | 597 | 619 | 477 | 434 | 382 |
| | | | | | FEED | 115 | 150 | 187 | 201 | 198 | 191 | 208 | 192 | 203 | 186 |
| | 11.1 | | 0.5D | 1.5D | Vc | 15 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| | | | | | fz | 0.018 | 0.027 | 0.042 | 0.055 | 0.051 | 0.059 | 0.056 | 0.061 | 0.068 | 0.076 |
| | | | | | RPM | 796 | 796 | 637 | 531 | 455 | 398 | 354 | 318 | 289 | 255 |
| | | | | | FEED | 57 | 86 | 107 | 117 | 116 | 117 | 119 | 117 | 118 | 116 |
| M | 14.1 | Stainless steel | 0.5D | 1.5D | Vc | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| | | | | | fz | 0.02 | 0.03 | 0.045 | 0.065 | 0.06 | 0.069 | 0.064 | 0.073 | 0.081 | 0.086 |
| | | | | | RPM | 1061 | 796 | 637 | 531 | 455 | 398 | 354 | 318 | 289 | 255 |
| | | | | | FEED | 85 | 95 | 115 | 138 | 136 | 137 | 136 | 139 | 141 | 131 |
| K | 15-20 | Grey cast iron Nodular cast iron Malleable cast iron | 0.5D | 1.5D | Vc | 30 | 35 | 30 | 30 | 30 | 30 | 35 | 30 | 30 | 30 |
| | | | | | fz | 0.018 | 0.027 | 0.049 | 0.063 | 0.058 | 0.064 | 0.056 | 0.067 | 0.078 | 0.081 |
| | | | | | RPM | 1592 | 1393 | 955 | 796 | 682 | 597 | 619 | 477 | 434 | 382 |
| | | | | | FEED | 115 | 150 | 187 | 201 | 198 | 191 | 208 | 192 | 203 | 186 |



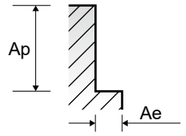
# TANK-POWER HSS-PM END MILLS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

### E9E43 SERIES
**MULTI FLUTE ROUGHING - SIDE CUTTING**
**多刃 粗加工- 侧铣削**

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description 材料描述 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | 10.0 | 12.0 | 16.0 | 20.0 | 25.0 |
|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | 0.5D | 1.5D | Vc | 41 | 41 | 41 | 41 | 41 |
| | | | | | fz | 0.042 | 0.05 | 0.067 | 0.085 | 0.081 |
| | | | | | RPM | 1305 | 1088 | 816 | 653 | 522 |
| | | | | | FEED | 219 | 218 | 219 | 222 | 211 |
| | 2 | | 0.5D | 1.5D | Vc | 32 | 32 | 32 | 32 | 32 |
| | | | | | fz | 0.041 | 0.053 | 0.068 | 0.086 | 0.083 |
| | | | | | RPM | 1019 | 849 | 637 | 509 | 407 |
| | | | | | FEED | 167 | 180 | 173 | 175 | 169 |
| | 3-4 | | 0.5D | 1.5D | Vc | 23 | 23 | 23 | 23 | 23 |
| | | | | | fz | 0.037 | 0.05 | 0.067 | 0.083 | 0.082 |
| | | | | | RPM | 732 | 610 | 458 | 366 | 293 |
| | | | | | FEED | 108 | 122 | 123 | 122 | 120 |
| | 5 | | 0.5D | 1.5D | Vc | 19 | 19 | 19 | 19 | 19 |
| | | | | | fz | 0.035 | 0.048 | 0.064 | 0.079 | 0.079 |
| | | | | | RPM | 605 | 504 | 378 | 302 | 242 |
| | | | | | FEED | 85 | 97 | 97 | 96 | 96 |
| | 6 | Low alloy steel | 0.5D | 1.5D | Vc | 32 | 32 | 32 | 32 | 32 |
| | | | | | fz | 0.041 | 0.053 | 0.068 | 0.086 | 0.083 |
| | | | | | RPM | 1019 | 849 | 637 | 509 | 407 |
| | | | | | FEED | 167 | 180 | 173 | 175 | 169 |
| | 7 | | 0.5D | 1.5D | Vc | 23 | 23 | 23 | 23 | 23 |
| | | | | | fz | 0.037 | 0.05 | 0.067 | 0.083 | 0.082 |
| | | | | | RPM | 732 | 610 | 458 | 366 | 293 |
| | | | | | FEED | 108 | 122 | 123 | 122 | 120 |
| | 8 | | 0.5D | 1.5D | Vc | 19 | 19 | 19 | 19 | 19 |
| | | | | | fz | 0.035 | 0.048 | 0.064 | 0.079 | 0.079 |
| | | | | | RPM | 605 | 504 | 378 | 302 | 242 |
| | | | | | FEED | 85 | 97 | 97 | 96 | 96 |
| | 9 | | 0.5D | 1.5D | Vc | 19 | 19 | 19 | 19 | 19 |
| | | | | | fz | 0.035 | 0.048 | 0.064 | 0.079 | 0.079 |
| | | | | | RPM | 605 | 504 | 378 | 302 | 242 |
| | | | | | FEED | 64 | 97 | 97 | 119 | 96 |
| | 10 | High alloyed steel, and tool steel | 0.5D | 1.5D | Vc | 32 | 32 | 32 | 32 | 32 |
| | | | | | fz | 0.041 | 0.053 | 0.068 | 0.086 | 0.083 |
| | | | | | RPM | 1019 | 849 | 637 | 509 | 407 |
| | | | | | FEED | 167 | 180 | 173 | 175 | 169 |
| | 11.1 | | 0.5D | 1.5D | Vc | 19 | 19 | 19 | 19 | 19 |
| | | | | | fz | 0.035 | 0.048 | 0.064 | 0.079 | 0.079 |
| | | | | | RPM | 605 | 504 | 378 | 302 | 242 |
| | | | | | FEED | 85 | 97 | 97 | 96 | 96 |
| M | 14.1 | Stainless steel | 0.5D | 1.5D | Vc | 21 | 21 | 21 | 21 | 21 |
| | | | | | fz | 0.038 | 0.058 | 0.074 | 0.095 | 0.089 |
| | | | | | RPM | 668 | 557 | 418 | 334 | 267 |
| | | | | | FEED | 102 | 129 | 124 | 127 | 119 |
| K | 15-20 | Grey cast iron Nodular cast iron Malleable cast iron | 0.5D | 1.5D | Vc | 32 | 32 | 32 | 32 | 32 |
| | | | | | fz | 0.041 | 0.053 | 0.068 | 0.086 | 0.083 |
| | | | | | RPM | 1019 | 849 | 637 | 509 | 407 |
| | | | | | FEED | 167 | 180 | 173 | 175 | 169 |



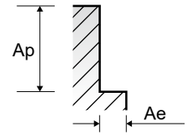



TANK-POWER HSS-PM END MILLS
RECOMMENDED CUTTING CONDITIONS
推荐加工参数

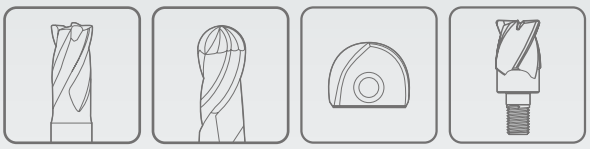
### GAE43 SERIES
**MULTI FLUTE ROUGHING - SIDE CUTTING**
**多刃 粗加工- 侧铣削**

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description 材料描述 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | 10.0 | 12.0 | 16.0 | 20.0 | 25.0 |
|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | 0.5D | 1.5D | Vc | 60 | 60 | 60 | 60 | 60 |
| | | | | | fz | 0.047 | 0.055 | 0.074 | 0.094 | 0.09 |
| | | | | | RPM | 1910 | 1592 | 1194 | 955 | 764 |
| | | | | | FEED | 359 | 350 | 353 | 359 | 344 |
| | 2 | | 0.5D | 1.5D | Vc | 47 | 47 | 47 | 47 | 47 |
| | | | | | fz | 0.045 | 0.058 | 0.074 | 0.092 | 0.09 |
| | | | | | RPM | 1496 | 1247 | 935 | 748 | 598 |
| | | | | | FEED | 269 | 289 | 277 | 275 | 269 |
| | 3-4 | | 0.5D | 1.5D | Vc | 33 | 33 | 33 | 33 | 33 |
| | | | | | fz | 0.039 | 0.054 | 0.074 | 0.092 | 0.088 |
| | | | | | RPM | 1050 | 875 | 657 | 525 | 420 |
| | | | | | FEED | 164 | 189 | 194 | 193 | 185 |
| | 5 | | 0.5D | 1.5D | Vc | 28 | 28 | 28 | 28 | 28 |
| | | | | | fz | 0.038 | 0.052 | 0.07 | 0.088 | 0.086 |
| | | | | | RPM | 891 | 743 | 557 | 446 | 357 |
| | | | | | FEED | 135 | 154 | 156 | 157 | 153 |
| | 6 | Low alloy steel | 0.5D | 1.5D | Vc | 47 | 47 | 47 | 47 | 47 |
| | | | | | fz | 0.045 | 0.058 | 0.074 | 0.092 | 0.09 |
| | | | | | RPM | 1496 | 1247 | 935 | 748 | 598 |
| | | | | | FEED | 269 | 289 | 277 | 275 | 269 |
| | 7 | | 0.5D | 1.5D | Vc | 33 | 33 | 33 | 33 | 33 |
| | | | | | fz | 0.039 | 0.054 | 0.074 | 0.092 | 0.088 |
| | | | | | RPM | 1050 | 875 | 657 | 525 | 420 |
| | | | | | FEED | 164 | 189 | 194 | 193 | 185 |
| | 8-9 | | 0.5D | 1.5D | Vc | 28 | 28 | 28 | 28 | 28 |
| | | | | | fz | 0.038 | 0.052 | 0.07 | 0.088 | 0.086 |
| | | | | | RPM | 891 | 743 | 557 | 446 | 357 |
| | | | | | FEED | 135 | 154 | 156 | 157 | 153 |
| | 10 | High alloyed steel, and tool steel | 0.5D | 1.5D | Vc | 47 | 47 | 47 | 47 | 47 |
| | | | | | fz | 0.045 | 0.058 | 0.074 | 0.092 | 0.09 |
| | | | | | RPM | 1496 | 1247 | 935 | 748 | 598 |
| | | | | | FEED | 269 | 289 | 277 | 275 | 269 |
| | 11.1 | | 0.5D | 1.5D | Vc | 28 | 28 | 28 | 28 | 28 |
| | | | | | fz | 0.038 | 0.052 | 0.07 | 0.088 | 0.086 |
| | | | | | RPM | 891 | 743 | 557 | 446 | 357 |
| | | | | | FEED | 135 | 154 | 156 | 157 | 153 |
| M | 14.1 | Stainless steel | 0.5D | 1.5D | Vc | 30 | 30 | 30 | 30 | 30 |
| | | | | | fz | 0.038 | 0.055 | 0.073 | 0.091 | 0.087 |
| | | | | | RPM | 955 | 796 | 597 | 477 | 382 |
| | | | | | FEED | 145 | 175 | 174 | 174 | 166 |
| K | 15-20 | Grey cast iron Nodular cast iron Malleable cast iron | 0.5D | 1.5D | Vc | 47 | 47 | 47 | 47 | 47 |
| | | | | | fz | 0.045 | 0.058 | 0.074 | 0.092 | 0.09 |
| | | | | | RPM | 1496 | 1247 | 935 | 748 | 598 |
| | | | | | FEED | 269 | 289 | 277 | 275 | 269 |



Global Cutting Tool Leader **YG-1**



# MILLING

Leading Through Innovation

HSS

# GENERAL HSS
# END MILLS

- General Purpose / Coating Available
- 普通加工 / 可以提供涂层

# SELECTION GUIDE
## 选用指南

YG MILLING TOOLS

## HSS
# GENERAL HSS END MILLS

General Purpose, Non-coated, Any Coating Available
普通加工，非涂层，任何涂层都可以提供

Please visit globalyg1.com/mat for material search

◎ : Excellent (优秀) ○ : Good (良好)

Recommended cutting conditions (推荐加工参数) : p.C600

| ISO | VDI 3323 | Material Description | Composition / Structure / Heat Treatment | | HB | HRc | E2480 | E2401 | E2406 |
|---|---|---|---|---|---|---|---|---|---|
| | | SERIES 系列 | | | | | E2480 | E2401 | E2406 |
| | | FLUTE 槽数 | | | | | 2 | 2 | 2 |
| | | HELIX ANGLE 螺旋角度 | | | | | 30° | 30° | 30° |
| | | CUTTING EDGE SHAPE 类型 | | | | | BALL NOSE | SQUARE | SQUARE |
| | | SIZE MIN 最小尺寸 | | | | | R0.5 | D1.0 | D3.0 |
| | | SIZE MAX 最大尺寸 | | | | | R25.0 | D50.0 | D50.0 |
| | | PAGE 页数 | | | | | C582-583 | C584-586 | C587-588 |
| | | | | | | | REGULAR LENGTH | REGULAR LENGTH | LONG LENGTH |
| | | | | | | | Uncoated / TiAlN | Uncoated / TiAlN | Uncoated / TiAlN |
| | | | | | | | HSSCo8 | HSSCo8 | HSSCo8 |
| P | 1 | Non-alloy steel | About 0.15% C | Annealed | 125 | | ◎ | ◎ | ◎ |
| | 2 | | About 0.45% C | Annealed | 190 | 13 | ◎ | ◎ | ◎ |
| | 3 | | About 0.45% C | Quenched & Tempered | 250 | 25 | ◎ | ◎ | ◎ |
| | 4 | | About 0.75% C | Annealed | 270 | 28 | ◎ | ◎ | ◎ |
| | 5 | | About 0.75% C | Quenched & Tempered | 300 | 32 | ◎ | ◎ | ◎ |
| | 6 | Low alloy steel | | Annealed | 180 | 10 | ◎ | ◎ | ◎ |
| | 7 | | | Quenched & Tempered | 275 | 29 | ◎ | ◎ | ◎ |
| | 8 | | | Quenched & Tempered | 300 | 32 | ◎ | ◎ | ◎ |
| | 9 | | | Quenched & Tempered | 350 | 38 | ○ | ○ | ○ |
| | 10 | High alloyed steel, and tool steel | | Annealed | 200 | 15 | ◎ | ◎ | ◎ |
| | 11 | | | Quenched & Tempered | 325 | 35 | ○ | ○ | ○ |
| M | 12 | Stainless steel | Ferritic / Martensitic | Annealed | 200 | 15 | | | |
| | 13 | | Martensitic | Quenched & Tempered | 240 | 23 | | | |
| | 14 | | Austenitic | | 180 | 10 | | | |
| K | 15 | Grey cast iron | Pearlitic / ferritic | | 180 | 10 | | | |
| | 16 | | Pearlitic (Martensitic) | | 260 | 26 | | | |
| | 17 | Nodular cast iron | Ferritic | | 160 | 3 | | | |
| | 18 | | Pearlitic | | 250 | 25 | | | |
| | 19 | Malleable cast iron | Ferritic | | 130 | | | | |
| | 20 | | Pearlitic | | 230 | 21 | | | |
| N | 21 | Aluminum-wrought alloy | Not Curable | | 60 | | ○ | ○ | ○ |
| | 22 | | Curable | Hardened | 100 | | ○ | ○ | ○ |
| | 23 | Aluminum-cast, alloyed | ≤ 12% Si, Not Curable | | 75 | | ○ | ○ | ○ |
| | 24 | | ≤ 12% Si, Curable | Hardened | 90 | | ○ | ○ | ○ |
| | 25 | | > 12% Si, Not Curable | | 130 | | ○ | ○ | ○ |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | Cutting Alloys, PB>1% | | 110 | | | | |
| | 27 | | CuZn, CuSnZn (Brass) | | 90 | | | | |
| | 28 | | CuSn, lead-free copper and electrolytic copper | | 100 | | | | |
| | 29 | Non Metallic Materials | Duroplastic, Fiber Reinforced Plastic | | | | | | |
| | 30 | | Rubber, Wood, etc. | | | | | | |
| S | 31 | Heat Resistant Super Alloys | Fe Based | Annealed | 200 | 15 | | | |
| | 32 | | | Cured | 280 | 30 | | | |
| | 33 | | Ni or Co Based | Annealed | 250 | 25 | | | |
| | 34 | | | Cured | 350 | 38 | | | |
| | 35 | | | Cast | 320 | 34 | | | |
| | 36 | Titanium Alloys | Pure Titanium | | 400 Rm | | | | |
| | 37 | | Alpha + Beta Alloys | Hardened | 1050 Rm | | | | |
| H | 38 | Hardened steel | | Hardened | 550 | 55 | | | |
| | 39 | | | Hardened | 630 | 60 | | | |
| | 40 | Chilled Cast Iron | | Cast | 400 | 42 | | | |
| | 41 | Hardened Cast Iron | | Hardened | 550 | 55 | | | |

| E2412 | E2659 | E2750 | E2760 | E2759 | E2753 | EL612 |
|---|---|---|---|---|---|---|
| 4 | 4 | 4 | 4-6 (Multi Flute) | 4-6 (Multi Flute) | 3-6 (Multi Flute) | 1 |
| 30° | 30° | 30° | 30° | 30° | 30° | ≒ 30° |
| SQUARE | SQUARE | SQUARE | SQUARE ROUGHING - COARSE | SQUARE ROUGHING - COARSE | SQUARE ROUGHING - FINE | SQUARE |
| D1.0 | D3.0 | D16.0 | D6.0 | D10.0 | D6.0 | D3.0 |
| D50.0 | D50.0 | D50.0 | D50.0 | D50.0 | D40.0 | D10.0 |
| C589-591 | C592-593 | C594 | C595-596 | C597 | C598 | C599 |
| REGULAR LENGTH CENTER CUT | LONG LENGTH CENTER CUT | EXTRA LONG LENGTH | SHORT LENGTH | LONG LENGTH | SHORT LENGTH | - |
| Uncoated / TiAlN | Uncoated / TiAlN | Uncoated / TiAlN | Uncoated / TiAlN | Uncoated / TiAlN | Uncoated / TiAlN | Uncoated |
| HSSCo8 | HSSCo8 | HSSCo8 | HSSCo8 | HSSCo8 | HSSCo8 | HSS-E |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | |
| ○ | ○ | ○ | ○ | ○ | ○ | |
| ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ |
| ○ | ○ | ○ | ○ | ○ | ○ | |
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| ○ | ○ | ○ | ○ | ○ | ○ | ◎ |
| ○ | ○ | ○ | ○ | ○ | ○ | ◎ |
| ○ | ○ | ○ | ○ | ○ | ○ | ◎ |
| ○ | ○ | ○ | ○ | ○ | ○ | ◎ |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ |
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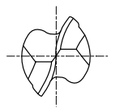
# GENERAL HSS END MILLS

PLAIN SHANK **E2480** SERIES
PLAIN SHANK **EQ480** SERIES

## HSSCo8, 2 FLUTE REGULAR LENGTH BALL NOSE
## HSSCo8，2刃 普通刃长 球头

▶The two flute ball End Mills are designed for milling of radius bottom slot, fillet and special contour. The end teeth are cut to center allowing these end mills to drill into material at the beginning of a slotting cut. The two flute design provides good chip ejection ability in slotting.

▶2个刃的球头铣刀是用来加工圆弧底面的立槽，带沟和特殊轮廓而设计的。底刃切削刃到中心允许这些铁刀在开立槽之前在材料上先钻孔。2刃设计为开立槽时提供了很好的排屑能力。



HSS Co8 | 2 | 30° | R ±0.02 | PLAIN

p.C600~601

| Recommended ToolHolder | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| | END MILL HOLDER | D118 - 137 | POWER MILLING CHUCK | D161 - 176 |
| | - | - | ER COLLET CHUCK | D73 - 115 |
| | | | SK SLIM CHUCK | D183 - 201 |

Unit(单位) : mm

| EDP No. UNCOATED | EDP No. TiAlN | Radius of Ball Nose 圆弧角 R (±0.02) | Mill Diameter 直径 | Shank Diameter 柄径 | Length of Cut 刃长 | Overall Length 全长 |
|---|---|---|---|---|---|---|
| **E2480010** | **EQ480010** | R0.5 | **1.0** | 6 | 2.5 | 50 |
| **E2480015** | **EQ480015** | R0.75 | **1.5** | 6 | 4 | 50 |
| **E2480020** | **EQ480020** | R1.0 | **2.0** | 6 | 5 | 50 |
| **E2480025** | **EQ480025** | R1.25 | **2.5** | 6 | 6 | 60 |
| **E2480030** | **EQ480030** | R1.5 | **3.0** | 6 | 8 | 60 |
| **E2480901** | **EQ480901** | R2.0 | **4.0** | 6 | 8 | 70 |
| **E2480902** | **EQ480902** | R2.5 | **5.0** | 6 | 10 | 80 |
| **E2480903** | **EQ480903** | R3.0 | **6.0** | 6 | 12 | 90 |
| **E2480904** | **EQ480904** | R3.5 | **7.0** | 8 | 14 | 90 |
| **E2480905** | **EQ480905** | R4.0 | **8.0** | 8 | 14 | 100 |
| **E2480090** | **EQ480090** | R4.5 | **9.0** | 10 | 18 | 100 |
| **E2480100** | **EQ480100** | R5.0 | **10.0** | 10 | 18 | 100 |
| **E2480110** | **EQ480110** | R5.5 | **11.0** | 12 | 22 | 100 |
| **E2480120** | **EQ480120** | R6.0 | **12.0** | 12 | 22 | 110 |
| **E2480130** | **EQ480130** | R6.5 | **13.0** | 12 | 26 | 110 |
| **E2480906** | **EQ480906** | R7.0 | **14.0** | 12 | 26 | 110 |
| **E2480907** | **EQ480907** | R7.5 | **15.0** | 12 | 30 | 110 |
| **E2480160** | **EQ480160** | R8.0 | **16.0** | 16 | 30 | 140 |
| **E2480170** | **EQ480170** | R8.5 | **17.0** | 16 | 34 | 140 |
| **E2480180** | **EQ480180** | R9.0 | **18.0** | 16 | 34 | 140 |
| **E2480190** | **EQ480190** | R9.5 | **19.0** | 16 | 38 | 140 |
| **E2480200** | **EQ480200** | R10.0 | **20.0** | 20 | 38 | 160 |
| **E2480210** | **EQ480210** | R10.5 | **21.0** | 20 | 45 | 170 |
| **E2480220** | **EQ480220** | R11.0 | **22.0** | 20 | 45 | 170 |

▶ NEXT PAGE 下页

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.03 | h6 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 | |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 | |
| Recommend | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ○ | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | | | | | |



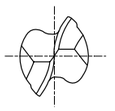
GENERAL HSS END MILLS

PLAIN SHANK E2480 SERIES
PLAIN SHANK EQ480 SERIES

HSSCo8, 2 FLUTE REGULAR LENGTH BALL NOSE
HSSCo8，2刃 普通刃长 球头

▶The two flute ball End Mills are designed for milling of radius bottom slot, fillet and special contour. The end teeth are cut to center allowing these end mills to drill into material at the beginning of a slotting cut. The two flute design provides good chip ejection ability in slotting.

▶2个刃的球头铣刀是用来加工圆弧底面的立槽，带沟和特殊轮廓而设计的。底刃切削刃到中心允许这些铁刀在开立槽之前在材料上先钻孔。2刃设计为开立槽时提供了很好的排屑能力。



HSS Co8 | 2 | 30° | R ±0.02 | PLAIN

p.C600~601

| Recommended ToolHolder | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| | END MILL HOLDER | D118 - 137 | POWER MILLING CHUCK | D161 - 176 |
| | - | - | ER COLLET CHUCK | D73 - 115 |
| | | | SK SLIM CHUCK | D183 - 201 |

Unit(单位) : mm

| EDP No. UNCOATED | EDP No. TiAlN | Radius of Ball Nose 圆弧角 R (±0.02) | Mill Diameter 直径 | Shank Diameter 柄径 | Length of Cut 刃长 | Overall Length 全长 |
|---|---|---|---|---|---|---|
| **E2480230** | **EQ480230** | R11.5 | **23.0** | 20 | 50 | 180 |
| **E2480908** | **EQ480908** | R12.0 | **24.0** | 20 | 50 | 180 |
| **E2480240** | **EQ480240** | R12.0 | **24.0** | 25 | 50 | 180 |
| **E2480250** | **EQ480250** | R12.5 | **25.0** | 25 | 50 | 180 |
| **E2480260** | **EQ480260** | R13.0 | **26.0** | 25 | 50 | 180 |
| **E2480270** | **EQ480270** | R13.5 | **27.0** | 25 | 50 | 180 |
| **E2480280** | **EQ480280** | R14.0 | **28.0** | 25 | 50 | 180 |
| **E2480300** | **EQ480300** | R15.0 | **30.0** | 25 | 55 | 180 |
| **E2480320** | **EQ480320** | R16.0 | **32.0** | 32 | 60 | 180 |
| **E2480350** | **EQ480350** | R17.5 | **35.0** | 32 | 60 | 180 |
| **E2480400** | **EQ480400** | R20.0 | **40.0** | 32 | 65 | 200 |
| **E2480500** | **EQ480500** | R25.0 | **50.0** | 42 | 75 | 210 |

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.03 | h6 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 | |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 | |
| Recommend | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ○ | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | | | | | |

# GENERAL HSS END MILLS

PLAIN SHANK **E2401** SERIES
PLAIN SHANK **EQ401** SERIES

## HSSCo8, 2 FLUTE REGULAR LENGTH
## HSSCo8，2刃 普通刃长

▶ These end mills are furnished as regular with right-hand cutting and right-hand helical flutes. These are designed for slotting, drilling, pocketing and general-purpose operation.

▶ 这些铁刀是右向螺旋角右向切削的正规铁刀，为开立槽，钻孔，型腔和普通用途加工而设计

HSS Co8 | 2 | 30° | PLAIN | p.C602~603

Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| END MILL HOLDER | D118 - 137 | POWER MILLING CHUCK | D161 - 176 |
| - | - | ER COLLET CHUCK | D73 - 115 |
| | | SK SLIM CHUCK | D183 - 201 |

Unit(单位) : mm

| EDP No. | | Mill Diameter | Shank Diameter | Length of Cut | Overall Length |
|---|---|---|---|---|---|
| UNCOATED | TiAlN | 直径 | 柄径 | 刃长 | 全长 |
| E2401010 | EQ401010 | 1.0 | 6 | 2.5 | 55 |
| E2401015 | EQ401015 | 1.5 | 6 | 4 | 55 |
| E2401020 | EQ401020 | 2.0 | 6 | 6 | 55 |
| E2401025 | EQ401025 | 2.5 | 6 | 7 | 55 |
| E2401030 | EQ401030 | 3.0 | 6 | 10 | 55 |
| E2401035 | EQ401035 | 3.5 | 8 | 12 | 60 |
| E2401903 | EQ401903 | 4.0 | 6 | 12 | 55 |
| E2401040 | EQ401040 | 4.0 | 8 | 12 | 60 |
| E2401045 | EQ401045 | 4.5 | 8 | 15 | 65 |
| E2401905 | EQ401905 | 5.0 | 6 | 15 | 60 |
| E2401050 | EQ401050 | 5.0 | 8 | 15 | 65 |
| E2401055 | EQ401055 | 5.5 | 8 | 15 | 65 |
| E2401907 | EQ401907 | •6.0 | 6 | 15 | 60 |
| E2401060 | EQ401060 | •6.0 | 8 | 15 | 65 |
| E2401065 | EQ401065 | 6.5 | 10 | 20 | 75 |
| E2401070 | EQ401070 | 7.0 | 10 | 20 | 75 |
| E2401909 | EQ401909 | 7.0 | 8 | 20 | 70 |
| E2401075 | EQ401075 | 7.5 | 10 | 20 | 75 |
| E2401080 | EQ401080 | •8.0 | 10 | 21 | 75 |
| E2401911 | EQ401911 | •8.0 | 8 | 20 | 70 |
| E2401085 | EQ401085 | 8.5 | 10 | 25 | 80 |
| E2401090 | EQ401090 | 9.0 | 10 | 25 | 80 |
| E2401095 | EQ401095 | 9.5 | 10 | 25 | 80 |
| E2401100 | EQ401100 | 10.0 | 10 | 26 | 80 |
| E2401105 | EQ401105 | 10.5 | 12 | 30 | 90 |
| E2401110 | EQ401110 | 11.0 | 12 | 30 | 90 |

▶ NEXT PAGE 下页

| Mill Dia.Tolerance (mm) 直径公差 | | | | | Shank Dia.Tolerance 柄径公差 |
|---|---|---|---|---|---|
| •6 | •8 | •10 | •12 | Other size | |
| 0<br>- 0.035 | 0<br>- 0.040 | 0<br>- 0.040 | 0<br>- 0.045 | 0<br>- 0.030 | h6 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 | |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 | |
| Recommend | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ○ | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | | | | | |



CARBIDE
HSS
CBN END MILLS
i-Xmill END MILLS
i-SMART MODULAR END MILLS
X5070 END MILLS
4G MILL END MILLS
X-POWER PRO END MILLS
TitaNox-POWER END MILLS
SUS-CUT END MILLS
V7 PLUS END MILLS
ALU-POWER HPC END MILLS
ALU-CUT END MILLS
G-CUT END MILLS
CRX S END MILLS
K-2 END MILLS
GENERAL CARBIDE END MILLS
ONLY ONE COATED PM60 END MILLS
TANK-POWER END MILLS
GENERAL HSS END MILLS
MILLING CUTTERS
TECHNICAL DATA

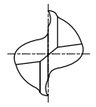
# GENERAL HSS END MILLS

PLAIN SHANK **E2401** SERIES
PLAIN SHANK **EQ401** SERIES

## HSSCo8, 2 FLUTE REGULAR LENGTH
## HSSCo8，2刃 普通刃长

▶ These end mills are furnished as regular with right-hand cutting and right-hand helical flutes. These are designed for slotting, drilling, pocketing and general-purpose operation.

▶ 这些铁刀是右向螺旋角右向切削的正规铁刀，为开立槽，钻孔，型腔和普通用途加工而设计



HSS Co8 | 2 | 30° | PLAIN | p.C602~603

Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| END MILL HOLDER | D118 - 137 | POWER MILLING CHUCK | D161 - 176 |
| - | - | ER COLLET CHUCK | D73 - 115 |
| | | SK SLIM CHUCK | D183 - 201 |

Unit(单位) : mm

| EDP No. | | Mill Diameter | Shank Diameter | Length of Cut | Overall Length |
|---|---|---|---|---|---|
| UNCOATED | TiAlN | 直径 | 柄径 | 刃长 | 全长 |
| E2401115 | EQ401115 | 11.5 | 12 | 30 | 90 |
| E2401120 | EQ401120 | •12.0 | 12 | 31 | 90 |
| E2401130 | EQ401130 | 13.0 | 12 | 35 | 95 |
| E2401916 | EQ401916 | 14.0 | 12 | 35 | 95 |
| E2401140 | EQ401140 | 14.0 | 16 | 35 | 100 |
| E2401150 | EQ401150 | 15.0 | 16 | 40 | 105 |
| E2401160 | EQ401160 | 16.0 | 16 | 40 | 105 |
| E2401170 | EQ401170 | 17.0 | 16 | 40 | 105 |
| E2401180 | EQ401180 | 18.0 | 16 | 40 | 105 |
| E2401190 | EQ401190 | 19.0 | 20 | 45 | 115 |
| E2401200 | EQ401200 | 20.0 | 20 | 45 | 115 |
| E2401210 | EQ401210 | 21.0 | 20 | 45 | 115 |
| E2401220 | EQ401220 | 22.0 | 20 | 45 | 115 |
| E2401230 | EQ401230 | 23.0 | 25 | 50 | 125 |
| E2401240 | EQ401240 | 24.0 | 25 | 50 | 125 |
| E2401250 | EQ401250 | 25.0 | 25 | 50 | 125 |
| E2401260 | EQ401260 | 26.0 | 25 | 50 | 125 |
| E2401270 | EQ401270 | 27.0 | 25 | 55 | 125 |
| E2401280 | EQ401280 | 28.0 | 25 | 55 | 125 |
| E2401290 | EQ401290 | 29.0 | 25 | 55 | 125 |
| E2401300 | EQ401300 | 30.0 | 25 | 55 | 125 |
| E2401310 | EQ401310 | 31.0 | 32 | 60 | 145 |
| E2401320 | EQ401320 | 32.0 | 32 | 60 | 145 |
| E2401330 | EQ401330 | 33.0 | 32 | 60 | 145 |
| E2401340 | EQ401340 | 34.0 | 32 | 60 | 145 |
| E2401350 | EQ401350 | 35.0 | 32 | 60 | 145 |

▶ NEXT PAGE 下页

| Mill Dia.Tolerance (mm) 直径公差 | | | | | Shank Dia.Tolerance 柄径公差 |
|---|---|---|---|---|---|
| •6 | •8 | •10 | •12 | Other size | |
| 0<br>- 0.035 | 0<br>- 0.040 | 0<br>- 0.040 | 0<br>- 0.045 | 0<br>- 0.030 | h6 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 | |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 | |
| Recommend | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ○ | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | | | | | |

# GENERAL HSS END MILLS

PLAIN SHANK **E2401** SERIES
PLAIN SHANK **EQ401** SERIES

## HSSCo8, 2 FLUTE REGULAR LENGTH
## HSSCo8，2刃 普通刃长

▶ These end mills are furnished as regular with right-hand cutting and right-hand helical flutes. These are designed for slotting, drilling, pocketing and general-purpose operation.

▶ 这些铣刀是右向螺旋角右向切削的正规铣刀，为开立槽，钻孔，型腔和普通用途加工而设计

HSS Co8 | 2 | 30° | PLAIN | p.C602~605

| Recommended ToolHolder | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| | END MILL HOLDER | D118 - 137 | POWER MILLING CHUCK | D161 - 176 |
| | - | - | ER COLLET CHUCK | D73 - 115 |
| | | | SK SLIM CHUCK | D183 - 201 |

Unit(单位) : mm

| EDP No. | | Mill Diameter | Shank Diameter | Length of Cut | Overall Length |
|---|---|---|---|---|---|
| UNCOATED | TiAlN | 直径 | 柄径 | 刃长 | 全长 |
| E2401360 | EQ401360 | 36.0 | 32 | 65 | 150 |
| E2401370 | EQ401370 | 37.0 | 32 | 65 | 150 |
| E2401380 | EQ401380 | 38.0 | 32 | 65 | 150 |
| E2401390 | EQ401390 | 39.0 | 32 | 65 | 150 |
| E2401400 | EQ401400 | 40.0 | 32 | 65 | 150 |
| E2401420 | EQ401420 | 42.0 | 42 | 70 | 160 |
| E2401450 | EQ401450 | 45.0 | 42 | 70 | 160 |
| E2401460 | EQ401460 | 46.0 | 42 | 75 | 160 |
| E2401480 | EQ401480 | 48.0 | 42 | 75 | 165 |
| E2401500 | EQ401500 | 50.0 | 42 | 75 | 165 |

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.03 | h6 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ○ | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | | | | | |



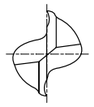
# GENERAL HSS END MILLS

PLAIN SHANK **E2406** SERIES
PLAIN SHANK **EQ406** SERIES

## HSSCo8, 2 FLUTE LONG LENGTH
## HSSCo8，2刃 长刃

▶ Possible for deeper & wider cutting by using the much longer flutes.

▶ 通过使用更长的沟槽可以进行更深更宽的加工



HSS Co8 | 2 | 30° | PLAIN | p.C602~605

| Recommended ToolHolder | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| | END MILL HOLDER | D118 - 137 | POWER MILLING CHUCK | D161 - 176 |
| | - | - | ER COLLET CHUCK | D73 - 115 |
| | | | SK SLIM CHUCK | D183 - 201 |

Unit(单位) : mm

| EDP No. | | Mill Diameter | Shank Diameter | Length of Cut | Overall Length |
|---|---|---|---|---|---|
| UNCOATED | TiAlN | 直径 | 柄径 | 刃长 | 全长 |
| E2406030 | EQ406030 | 3.0 | 6 | 15 | 60 |
| E2406901 | EQ406901 | 4.0 | 6 | 20 | 65 |
| E2406902 | EQ406902 | 5.0 | 6 | 25 | 70 |
| E2406050 | EQ406050 | 5.0 | 8 | 25 | 75 |
| E2406903 | EQ406903 | 6.0 | 6 | 25 | 70 |
| E2406060 | EQ406060 | 6.0 | 8 | 25 | 75 |
| E2406070 | EQ406070 | 7.0 | 10 | 35 | 90 |
| E2406080 | EQ406080 | 8.0 | 10 | 35 | 90 |
| E2406090 | EQ406090 | 9.0 | 10 | 45 | 100 |
| E2406100 | EQ406100 | 10.0 | 10 | 45 | 100 |
| E2406110 | EQ406110 | 11.0 | 12 | 55 | 115 |
| E2406120 | EQ406120 | 12.0 | 12 | 55 | 115 |
| E2406130 | EQ406130 | 13.0 | 12 | 55 | 115 |
| E2406140 | EQ406140 | 14.0 | 16 | 55 | 120 |
| E2406150 | EQ406150 | 15.0 | 16 | 65 | 130 |
| E2406160 | EQ406160 | 16.0 | 16 | 65 | 130 |
| E2406170 | EQ406170 | 17.0 | 16 | 65 | 130 |
| E2406180 | EQ406180 | 18.0 | 16 | 65 | 130 |
| E2406190 | EQ406190 | 19.0 | 20 | 75 | 145 |
| E2406200 | EQ406200 | 20.0 | 20 | 75 | 145 |
| E2406210 | EQ406210 | 21.0 | 20 | 75 | 145 |
| E2406220 | EQ406220 | 22.0 | 20 | 75 | 145 |
| E2406230 | EQ406230 | 23.0 | 25 | 90 | 165 |
| E2406240 | EQ406240 | 24.0 | 25 | 90 | 165 |
| E2406250 | EQ406250 | 25.0 | 25 | 90 | 165 |
| E2406260 | EQ406260 | 26.0 | 25 | 90 | 165 |
| E2406270 | EQ406270 | 27.0 | 25 | 90 | 165 |
| E2406280 | EQ406280 | 28.0 | 25 | 90 | 165 |

▶ NEXT PAGE 下页

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.03 | h6 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ○ | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | | | | | |

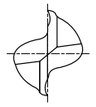
# GENERAL HSS END MILLS

PLAIN SHANK **E2406** SERIES
PLAIN SHANK **EQ406** SERIES

## HSSCo8, 2 FLUTE LONG LENGTH
## HSSCo8，2刃 长刃

▶ Possible for deeper & wider cutting by using the much longer flutes.

▶ 通过使用更长的沟槽可以进行更深更宽的加工



HSS Co8 | 2 | 30° | PLAIN

p.C602~605

Recommended ToolHolder

| Flat Shank | | Page | Plain Shank | | Page |
|---|---|---|---|---|---|
| ◎ | END MILL HOLDER | D118 - 137 | | POWER MILLING CHUCK | D161 - 176 |
| ◎ | - | - | | ER COLLET CHUCK | D73 - 115 |
| | | | | SK SLIM CHUCK | D183 - 201 |

Unit(单位) : mm

| EDP No. | | Mill Diameter | Shank Diameter | Length of Cut | Overall Length |
|---|---|---|---|---|---|
| UNCOATED | TiAlN | 直径 | 柄径 | 刃长 | 全长 |
| E2406290 | EQ406290 | 29.0 | 25 | 90 | 165 |
| E2406300 | EQ406300 | 30.0 | 25 | 90 | 165 |
| E2406310 | EQ406310 | 31.0 | 32 | 95 | 180 |
| E2406320 | EQ406320 | 32.0 | 32 | 95 | 180 |
| E2406330 | EQ406330 | 33.0 | 32 | 100 | 185 |
| E2406340 | EQ406340 | 34.0 | 32 | 100 | 185 |
| E2406350 | EQ406350 | 35.0 | 32 | 100 | 185 |
| E2406360 | EQ406360 | 36.0 | 32 | 105 | 190 |
| E2406370 | EQ406370 | 37.0 | 32 | 105 | 190 |
| E2406380 | EQ406380 | 38.0 | 32 | 105 | 190 |
| E2406390 | EQ406390 | 39.0 | 32 | 110 | 195 |
| E2406400 | EQ406400 | 40.0 | 32 | 110 | 195 |
| E2406420 | EQ406420 | 42.0 | 42 | 115 | 200 |
| E2406450 | EQ406450 | 45.0 | 42 | 120 | 205 |
| E2406480 | EQ406480 | 48.0 | 42 | 125 | 215 |
| E2406500 | EQ406500 | 50.0 | 42 | 125 | 215 |

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ - 0.03 | h6 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | M | | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | | |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 | | |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 | | |
| Recommend | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ○ | | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | | | | | |



# GENERAL HSS END MILLS

PLAIN SHANK **E2412** SERIES
PLAIN SHANK **EQ412** SERIES

## HSSCo8, 4FLUTE REGULAR LENGTH (Center Cut)
## HSSCo8，4刃 普通刃长（过中心）

▶ These end mills are furnished as regular with right-hand cutting and right-hand helical flutes. These are designed for slotting, drilling, pocketing and general-purpose operation.

▶ 这些铁刀是右向螺旋角右向切削的正规铁刀，为开立槽，钻孔，型腔和普通用途加工而设计

HSS Co8 | 4 | 30° | PLAIN

p.C606~609

Recommended ToolHolder

| Flat Shank | | Page | Plain Shank | | Page |
|---|---|---|---|---|---|
| ◎ | END MILL HOLDER | D118 - 137 | | POWER MILLING CHUCK | D161 - 176 |
| ◎ | - | - | | ER COLLET CHUCK | D73 - 115 |
| | | | | SK SLIM CHUCK | D183 - 201 |

Unit(单位) : mm

| EDP No. | | Mill Diameter | Shank Diameter | Length of Cut | Overall Length |
|---|---|---|---|---|---|
| UNCOATED | TiAlN | 直径 | 柄径 | 刃长 | 全长 |
| E2412010 | EQ412010 | 1.0 | 6 | 2.5 | 55 |
| E2412015 | EQ412015 | 1.5 | 6 | 4 | 55 |
| E2412020 | EQ412020 | 2.0 | 6 | 6 | 55 |
| E2412025 | EQ412025 | 2.5 | 6 | 7 | 55 |
| E2412030 | EQ412030 | 3.0 | 6 | 10 | 55 |
| E2412035 | EQ412035 | 3.5 | 8 | 12 | 60 |
| E2412040 | EQ412040 | 4.0 | 8 | 12 | 60 |
| E2412045 | EQ412045 | 4.5 | 8 | 15 | 65 |
| E2412050 | EQ412050 | 5.0 | 8 | 15 | 65 |
| E2412055 | EQ412055 | 5.5 | 8 | 15 | 65 |
| E2412060 | EQ412060 | 6.0 | 8 | 15 | 65 |
| E2412065 | EQ412065 | 6.5 | 10 | 20 | 75 |
| E2412070 | EQ412070 | 7.0 | 10 | 20 | 75 |
| E2412075 | EQ412075 | 7.5 | 10 | 20 | 75 |
| E2412080 | EQ412080 | 8.0 | 10 | 20 | 75 |
| E2412085 | EQ412085 | 8.5 | 10 | 25 | 80 |
| E2412090 | EQ412090 | 9.0 | 10 | 25 | 80 |
| E2412095 | EQ412095 | 9.5 | 10 | 25 | 80 |
| E2412100 | EQ412100 | 10.0 | 10 | 25 | 80 |
| E2412105 | EQ412105 | 10.5 | 12 | 30 | 90 |
| E2412110 | EQ412110 | 11.0 | 12 | 30 | 90 |
| E2412115 | EQ412115 | 11.5 | 12 | 30 | 90 |
| E2412120 | EQ412120 | 12.0 | 12 | 30 | 90 |
| E2412130 | EQ412130 | 13.0 | 12 | 35 | 95 |
| E2412912 | EQ412912 | 14.0 | 12 | 35 | 95 |
| E2412140 | EQ412140 | 14.0 | 16 | 35 | 100 |
| E2412150 | EQ412150 | 15.0 | 16 | 40 | 105 |
| E2412160 | EQ412160 | 16.0 | 16 | 40 | 105 |

▶ NEXT PAGE 下页

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ + 0.03 | h6 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | M | | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | | |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 | | |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 | | |
| Recommend | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ○ | | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | | | | | |

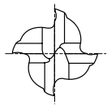
# GENERAL HSS END MILLS

PLAIN SHANK **E2412** SERIES
PLAIN SHANK **EQ412** SERIES

## HSSCo8, 4FLUTE REGULAR LENGTH (Center Cut)
## HSSCo8，4刃 普通刃长（过中心）

▶ These end mills are furnished as regular with right-hand cutting and right-hand helical flutes. These are designed for slotting, drilling, pocketing and general-purpose operation.

▶ 这些铁刀是右向螺旋角右向切削的正规铁刀，为开立槽，钻孔，型腔和普通用途加工而设计



HSS Co8 | 4 | 30° | PLAIN

p.C606~609

Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| END MILL HOLDER | D118 - 137 | POWER MILLING CHUCK | D161 - 176 |
| - | - | ER COLLET CHUCK | D73 - 115 |
| | | SK SLIM CHUCK | D183 - 201 |

Unit(单位) : mm

| EDP No. | | Mill Diameter | Shank Diameter | Length of Cut | Overall Length |
|---|---|---|---|---|---|
| UNCOATED | TiAlN | 直径 | 柄径 | 刃长 | 全长 |
| E2412170 | EQ412170 | 17.0 | 16 | 40 | 105 |
| E2412180 | EQ412180 | 18.0 | 16 | 40 | 105 |
| E2412190 | EQ412190 | 19.0 | 20 | 45 | 115 |
| E2412200 | EQ412200 | 20.0 | 20 | 45 | 115 |
| E2412210 | EQ412210 | 21.0 | 20 | 45 | 115 |
| E2412220 | EQ412220 | 22.0 | 20 | 45 | 115 |
| E2412230 | EQ412230 | 23.0 | 25 | 50 | 125 |
| E2412240 | EQ412240 | 24.0 | 25 | 50 | 125 |
| E2412250 | EQ412250 | 25.0 | 25 | 50 | 125 |
| E2412260 | EQ412260 | 26.0 | 25 | 50 | 125 |
| E2412270 | EQ412270 | 27.0 | 25 | 55 | 125 |
| E2412280 | EQ412280 | 28.0 | 25 | 55 | 125 |
| E2412290 | EQ412290 | 29.0 | 25 | 55 | 125 |
| E2412300 | EQ412300 | 30.0 | 25 | 55 | 125 |
| E2412310 | EQ412310 | 31.0 | 32 | 60 | 145 |
| E2412320 | EQ412320 | 32.0 | 32 | 60 | 145 |
| E2412330 | EQ412330 | 33.0 | 32 | 60 | 145 |
| E2412340 | EQ412340 | 34.0 | 32 | 60 | 145 |
| E2412350 | EQ412350 | 35.0 | 32 | 60 | 145 |
| E2412360 | EQ412360 | 36.0 | 32 | 65 | 150 |
| E2412370 | EQ412370 | 37.0 | 32 | 65 | 150 |
| E2412380 | EQ412380 | 38.0 | 32 | 65 | 150 |
| E2412390 | EQ412390 | 39.0 | 32 | 65 | 150 |
| E2412400 | EQ412400 | 40.0 | 32 | 65 | 150 |
| E2412410 | EQ412410 | 41.0 | 42 | 70 | 160 |
| E2412420 | EQ412420 | 42.0 | 42 | 70 | 160 |
| E2412430 | EQ412430 | 43.0 | 42 | 70 | 160 |
| E2412440 | EQ412440 | 44.0 | 42 | 70 | 160 |

▶ NEXT PAGE 下页

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ + 0.03 | h6 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ○ | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | | | | | |



GENERAL HSS END MILLS

PLAIN SHANK E2412 SERIES
PLAIN SHANK EQ412 SERIES

HSSCo8, 4FLUTE REGULAR LENGTH (Center Cut)
HSSCo8，4刃 普通刃长（过中心）

▶ These end mills are furnished as regular with right-hand cutting and right-hand helical flutes. These are designed for slotting, drilling, pocketing and general-purpose operation.

▶ 这些铁刀是右向螺旋角右向切削的正规铁刀，为开立槽，钻孔，型腔和普通用途加工而设计

HSS Co8 | 4 | 30° | PLAIN

p.C606~609

Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| END MILL HOLDER | D118 - 137 | POWER MILLING CHUCK | D161 - 176 |
| - | - | ER COLLET CHUCK | D73 - 115 |
| | | SK SLIM CHUCK | D183 - 201 |

Unit(单位) : mm

| EDP No. | | Mill Diameter | Shank Diameter | Length of Cut | Overall Length |
|---|---|---|---|---|---|
| UNCOATED | TiAlN | 直径 | 柄径 | 刃长 | 全长 |
| E2412450 | EQ412450 | 45.0 | 42 | 70 | 160 |
| E2412460 | EQ412460 | 46.0 | 42 | 70 | 160 |
| E2412470 | EQ412470 | 47.0 | 42 | 75 | 165 |
| E2412480 | EQ412480 | 48.0 | 42 | 75 | 165 |
| E2412490 | EQ412490 | 49.0 | 42 | 75 | 165 |
| E2412500 | EQ412500 | 50.0 | 42 | 75 | 165 |

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ + 0.03 | h6 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ○ | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | | | | | |

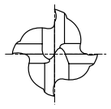
# GENERAL HSS END MILLS

PLAIN SHANK **E2659 SERIES**
PLAIN SHANK **EQ659 SERIES**

## HSSCo8, 4FLUTE LONG LENGTH (Center Cut)
## HSSCo8，4刃 长刃（过中心）

▶ Possible for deeper & wider cutting by using the much longer flutes.

▶ 通过使用更长的沟槽可以进行更深更宽的加工



HSS Co8 | 4 | 30° | PLAIN

p.C606~609

Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | END MILL HOLDER | D118 - 137 | POWER MILLING CHUCK | D161 - 176 |
| ○ | - | - | ER COLLET CHUCK | D73 - 115 |
| | | | SK SLIM CHUCK | D183 - 201 |

Unit(单位) : mm

| EDP No. | | Mill Diameter | Shank Diameter | Length of Cut | Overall Length |
|---|---|---|---|---|---|
| UNCOATED | TiAlN | 直径 | 柄径 | 刃长 | 全长 |
| E2659030 | EQ659030 | 3.0 | 6 | 15 | 60 |
| E2659040 | EQ659040 | 4.0 | 8 | 20 | 70 |
| E2659050 | EQ659050 | 5.0 | 8 | 25 | 75 |
| E2659060 | EQ659060 | 6.0 | 8 | 25 | 75 |
| E2659070 | EQ659070 | 7.0 | 10 | 35 | 90 |
| E2659080 | EQ659080 | 8.0 | 10 | 35 | 90 |
| E2659090 | EQ659090 | 9.0 | 10 | 45 | 100 |
| E2659100 | EQ659100 | 10.0 | 10 | 45 | 100 |
| E2659110 | EQ659110 | 11.0 | 12 | 55 | 115 |
| E2659120 | EQ659120 | 12.0 | 12 | 55 | 115 |
| E2659130 | EQ659130 | 13.0 | 12 | 55 | 115 |
| E2659140 | EQ659140 | 14.0 | 16 | 55 | 120 |
| E2659150 | EQ659150 | 15.0 | 16 | 65 | 130 |
| E2659160 | EQ659160 | 16.0 | 16 | 65 | 130 |
| E2659170 | EQ659170 | 17.0 | 16 | 65 | 130 |
| E2659180 | EQ659180 | 18.0 | 16 | 65 | 130 |
| E2659190 | EQ659190 | 19.0 | 20 | 75 | 145 |
| E2659200 | EQ659200 | 20.0 | 20 | 75 | 145 |
| E2659210 | EQ659210 | 21.0 | 20 | 75 | 145 |
| E2659220 | EQ659220 | 22.0 | 20 | 75 | 145 |
| E2659230 | EQ659230 | 23.0 | 25 | 90 | 165 |
| E2659240 | EQ659240 | 24.0 | 25 | 90 | 165 |
| E2659250 | EQ659250 | 25.0 | 25 | 90 | 165 |
| E2659260 | EQ659260 | 26.0 | 25 | 90 | 165 |
| E2659270 | EQ659270 | 27.0 | 25 | 90 | 165 |
| E2659280 | EQ659280 | 28.0 | 25 | 90 | 165 |
| E2659290 | EQ659290 | 29.0 | 25 | 90 | 165 |
| E2659300 | EQ659300 | 30.0 | 25 | 90 | 165 |

▶ NEXT PAGE 下页

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ + 0.03 | h6 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 | |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 | |
| Recommend | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ○ | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | | | | | |



GENERAL HSS END MILLS

PLAIN SHANK E2659 SERIES
PLAIN SHANK EQ659 SERIES

HSSCo8, 4FLUTE LONG LENGTH (Center Cut)
HSSCo8，4刃 长刃（过中心）

▶ Possible for deeper & wider cutting by using the much longer flutes.

▶ 通过使用更长的沟槽可以进行更深更宽的加工

HSS Co8 | 4 | 30° | PLAIN

p.C606~609

Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | END MILL HOLDER | D118 - 137 | POWER MILLING CHUCK | D161 - 176 |
| ○ | - | - | ER COLLET CHUCK | D73 - 115 |
| | | | SK SLIM CHUCK | D183 - 201 |

Unit(单位) : mm

| EDP No. | | Mill Diameter | Shank Diameter | Length of Cut | Overall Length |
|---|---|---|---|---|---|
| UNCOATED | TiAlN | 直径 | 柄径 | 刃长 | 全长 |
| E2659310 | EQ659310 | 31.0 | 32 | 95 | 180 |
| E2659320 | EQ659320 | 32.0 | 32 | 95 | 180 |
| E2659330 | EQ659330 | 33.0 | 32 | 100 | 185 |
| E2659340 | EQ659340 | 34.0 | 32 | 100 | 185 |
| E2659350 | EQ659350 | 35.0 | 32 | 100 | 185 |
| E2659360 | EQ659360 | 36.0 | 32 | 105 | 190 |
| E2659370 | EQ659370 | 37.0 | 32 | 105 | 190 |
| E2659380 | EQ659380 | 38.0 | 32 | 105 | 190 |
| E2659390 | EQ659390 | 39.0 | 32 | 110 | 195 |
| E2659400 | EQ659400 | 40.0 | 32 | 110 | 195 |
| E2659420 | EQ659420 | 42.0 | 42 | 115 | 200 |
| E2659450 | EQ659450 | 45.0 | 42 | 120 | 205 |
| E2659460 | EQ659460 | 46.0 | 42 | 125 | 215 |
| E2659480 | EQ659480 | 48.0 | 42 | 125 | 215 |
| E2659500 | EQ659500 | 50.0 | 42 | 125 | 215 |

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ + 0.03 | h6 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 | |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 | |
| Recommend | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ○ | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | | | | | |

# GENERAL HSS END MILLS

PLAIN SHANK **E2750** SERIES
PLAIN SHANK **EQ750** SERIES

## HSSCo8, 4 FLUTE EXTRA LONG LENGTH
## HSSCo8，4刃 加长刃

HSS Co8 | 4 | 30° | PLAIN

p.C606~609

Recommended ToolHolder

| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| END MILL HOLDER | D118 - 137 | POWER MILLING CHUCK | D161 - 176 |
| - | - | ER COLLET CHUCK | D73 - 115 |
| | | SK SLIM CHUCK | D183 - 201 |

Unit(单位) : mm

| EDP No. UNCOATED | EDP No. TiAlN | Mill Diameter 直径 | Shank Diameter 柄径 | Length of Cut 刃长 | Overall Length 全长 |
|---|---|---|---|---|---|
| E2750160 | EQ750160 | 16.0 | 16 | 100 | 160 |
| E2750180 | EQ750180 | 18.0 | 16 | 100 | 180 |
| E2750200 | EQ750200 | 20.0 | 20 | 100 | 180 |
| E2750901 | EQ750901 | 20.0 | 20 | 120 | 200 |
| E2750902 | EQ750902 | 20.0 | 20 | 150 | 230 |
| E2750220 | EQ750220 | 22.0 | 20 | 120 | 200 |
| E2750240 | EQ750240 | 24.0 | 25 | 100 | 180 |
| E2750903 | EQ750903 | 24.0 | 25 | 150 | 250 |
| E2750250 | EQ750250 | 25.0 | 25 | 100 | 180 |
| E2750904 | EQ750904 | 25.0 | 25 | 120 | 220 |
| E2750905 | EQ750905 | 25.0 | 25 | 150 | 250 |
| E2750260 | EQ750260 | 26.0 | 25 | 150 | 250 |
| E2750280 | EQ750280 | 28.0 | 25 | 150 | 250 |
| E2750300 | EQ750300 | 30.0 | 25 | 120 | 200 |
| E2750906 | EQ750906 | 30.0 | 25 | 150 | 250 |
| E2750907 | EQ750907 | 30.0 | 25 | 200 | 280 |
| E2750320 | EQ750320 | 32.0 | 32 | 150 | 230 |
| E2750908 | EQ750908 | 32.0 | 32 | 200 | 280 |
| E2750350 | EQ750350 | 35.0 | 32 | 150 | 250 |
| E2750909 | EQ750909 | 35.0 | 32 | 200 | 300 |
| E2750360 | EQ750360 | 36.0 | 32 | 150 | 250 |
| E2750380 | EQ750380 | 38.0 | 32 | 150 | 250 |
| E2750400 | EQ750400 | 40.0 | 32 | 150 | 250 |
| E2750910 | EQ750910 | 40.0 | 32 | 200 | 300 |
| E2750450 | EQ750450 | 45.0 | 42 | 200 | 300 |
| E2750500 | EQ750500 | 50.0 | 42 | 200 | 300 |

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| 0 ~ + 0.03 | h6 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 | |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 | |
| Recommend | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ○ | | | | | | | | | | |

| ISO | N | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | | | | | |



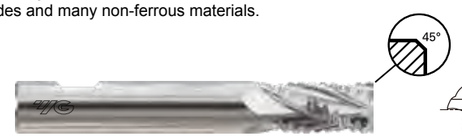
# GENERAL HSS END MILLS

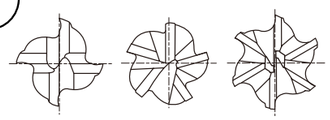
FLAT SHANK **E2760** SERIES
FLAT SHANK **EQ760** SERIES

## HSSCo8, MULTI FLUTE SHORT LENGTH ROUGHING-COARSE
## HSSCo8，多刃 短刃 粗加工 - 粗牙

▶ This general purpose rougher is designed for high production metal removal in a wide range of work piece material. It is recommanded for cutting steel grades and many non-ferrous materials.

▶ 普通用途的粗加工刀具为在广泛的被加工材料上进行高生产量金属切削而设计的



HSS Co8 | NR | 4-6 | 30° | DIN 1835B

p.C610~613

Recommended ToolHolder

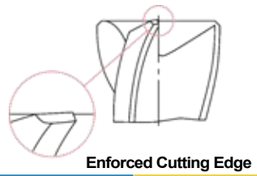
| Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|
| END MILL HOLDER | D118 - 137 | POWER MILLING CHUCK | D161 - 176 |
| - | - | ER COLLET CHUCK | D73 - 115 |
| | | SK SLIM CHUCK | D183 - 201 |

Unit(单位) : mm

| EDP No. UNCOATED | EDP No. TiAlN | Mill Diameter 直径 | Shank Diameter 柄径 | Length of Cut 刃长 | Overall Length 全长 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|
| E2760060 | EQ760060 | 6.0 | 8 | 15 | 60 | 4 |
| E2760070 | EQ760070 | 7.0 | 10 | 20 | 65 | 4 |
| E2760080 | EQ760080 | 8.0 | 10 | 20 | 65 | 4 |
| E2760090 | EQ760090 | 9.0 | 12 | 25 | 75 | 4 |
| E2760100 | EQ760100 | 10.0 | 12 | 25 | 75 | 4 |
| E2760110 | EQ760110 | 11.0 | 12 | 30 | 80 | 4 |
| E2760120 | EQ760120 | 12.0 | 12 | 30 | 80 | 4 |
| E2760130 | EQ760130 | 13.0 | 16 | 35 | 90 | 4 |
| E2760140 | EQ760140 | 14.0 | 16 | 35 | 90 | 4 |
| E2760150 | EQ760150 | 15.0 | 16 | 40 | 95 | 4 |
| E2760160 | EQ760160 | 16.0 | 16 | 40 | 95 | 4 |
| E2760170 | EQ760170 | 17.0 | 20 | 40 | 105 | 4 |
| E2760180 | EQ760180 | 18.0 | 20 | 40 | 105 | 4 |
| E2760190 | EQ760190 | 19.0 | 20 | 45 | 110 | 4 |
| E2760200 | EQ760200 | 20.0 | 20 | 45 | 110 | 4 |
| E2760210 | EQ760210 | 21.0 | 20 | 45 | 110 | 5 |
| E2760220 | EQ760220 | 22.0 | 20 | 45 | 110 | 5 |
| E2760230 | EQ760230 | 23.0 | 25 | 50 | 120 | 5 |
| E2760240 | EQ760240 | 24.0 | 25 | 50 | 120 | 5 |
| E2760250 | EQ760250 | 25.0 | 25 | 50 | 120 | 5 |
| E2760260 | EQ760260 | 26.0 | 25 | 50 | 120 | 6 |
| E2760270 | EQ760270 | 27.0 | 25 | 55 | 125 | 6 |
| E2760280 | EQ760280 | 28.0 | 25 | 55 | 125 | 6 |
| E2760290 | EQ760290 | 29.0 | 25 | 55 | 125 | 6 |
| E2760300 | EQ760300 | 30.0 | 25 | 55 | 125 | 6 |
| E2760310 | EQ760310 | 31.0 | 32 | 60 | 145 | 6 |

▶ NEXT PAGE 下页

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| ± 0.12 | h6 |



**Enforced Cutting Edge**

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 | |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 | |
| Recommend | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ○ | | | | | | | | | | |

| ISO | N | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | | | | | |

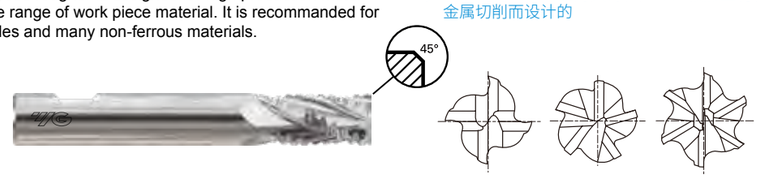
# GENERAL HSS END MILLS

FLAT SHANK **E2760 SERIES**
FLAT SHANK **EQ760 SERIES**

## HSSCo8, MULTI FLUTE SHORT LENGTH ROUGHING-COARSE
## HSSCo8，多刃 短刃 粗加工 - 粗牙

▶ This general purpose rougher is designed for high production metal removal in a wide range of work piece material. It is recommanded for cutting steel grades and many non-ferrous materials.

▶ 普通用途的粗加工刀具为在广泛的被加工材料上进行高生产量金属切削而设计的




HSS Co8 | NR | 4-6 | 30° | DIN 1835B

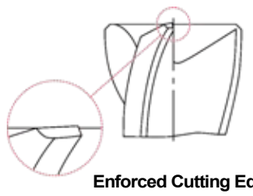
p.C610~613

| Recommended ToolHolder | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| | END MILL HOLDER | D118 - 137 | POWER MILLING CHUCK | D161 - 176 |
| | - | - | ER COLLET CHUCK | D73 - 115 |
| | | | SK SLIM CHUCK | D183 - 201 |

Unit(单位) : mm

| EDP No. UNCOATED | EDP No. TiAlN | Mill Diameter 直径 | Shank Diameter 柄径 | Length of Cut 刃长 | Overall Length 全长 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|
| E2760320 | EQ760320 | 32.0 | 32 | 60 | 145 | 6 |
| E2760330 | EQ760330 | 33.0 | 32 | 60 | 145 | 6 |
| E2760340 | EQ760340 | 34.0 | 32 | 60 | 145 | 6 |
| E2760350 | EQ760350 | 35.0 | 32 | 60 | 145 | 6 |
| E2760360 | EQ760360 | 36.0 | 32 | 60 | 145 | 6 |
| E2760370 | EQ760370 | 37.0 | 32 | 65 | 150 | 6 |
| E2760380 | EQ760380 | 38.0 | 32 | 65 | 150 | 6 |
| E2760390 | EQ760390 | 39.0 | 32 | 65 | 150 | 6 |
| E2760400 | EQ760400 | 40.0 | 32 | 65 | 150 | 6 |
| E2760420 | EQ760420 | 42.0 | 32 | 65 | 155 | 6 |
| E2760942 | EQ760942 | 42.0 | 42 | 65 | 155 | 6 |
| E2760450 | EQ760450 | 45.0 | 32 | 70 | 160 | 6 |
| E2760945 | EQ760945 | 45.0 | 42 | 70 | 160 | 6 |
| E2760480 | EQ760480 | 48.0 | 32 | 70 | 160 | 6 |
| E2760948 | EQ760948 | 48.0 | 42 | 70 | 160 | 6 |
| E2760500 | EQ760500 | 50.0 | 32 | 70 | 160 | 6 |
| E2760950 | EQ760950 | 50.0 | 42 | 70 | 160 | 6 |

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| ± 0.12 | h6 |



**Enforced Cutting Edge**

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 | |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 | |
| Recommend | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ○ | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | | | | | |



# GENERAL HSS END MILLS

PLAIN SHANK **E2759 SERIES**
PLAIN SHANK **EQ759 SERIES**

## HSSCo8, MULTI FLUTE LONG LENGTH ROUGHING-COARSE
## HSSCo8，多刃 长刃 粗加工 - 粗牙

HSS Co8 | NR | 4-6 | 30° | PLAIN

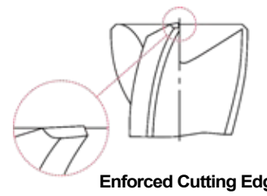
p.C614~615

| Recommended ToolHolder | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| | END MILL HOLDER | D118 - 137 | POWER MILLING CHUCK | D161 - 176 |
| | - | - | ER COLLET CHUCK | D73 - 115 |
| | | | SK SLIM CHUCK | D183 - 201 |

Unit(单位) : mm

| EDP No. UNCOATED | EDP No. TiAlN | Mill Diameter 直径 | Shank Diameter 柄径 | Length of Cut 刃长 | Overall Length 全长 | No. of Flute 槽数 |
|---|---|---|---|---|---|---|
| E2759100 | EQ759100 | 10.0 | 10 | 45 | 95 | 4 |
| E2759120 | EQ759120 | 12.0 | 12 | 53 | 110 | 4 |
| E2759140 | EQ759140 | 14.0 | 12 | 53 | 110 | 4 |
| E2759160 | EQ759160 | 16.0 | 16 | 63 | 123 | 4 |
| E2759180 | EQ759180 | 18.0 | 16 | 63 | 123 | 4 |
| E2759200 | EQ759200 | 20.0 | 20 | 75 | 141 | 4 |
| E2759220 | EQ759220 | 22.0 | 20 | 75 | 141 | 5 |
| E2759250 | EQ759250 | 25.0 | 25 | 90 | 166 | 5 |
| E2759280 | EQ759280 | 28.0 | 25 | 90 | 166 | 5 |
| E2759300 | EQ759300 | 30.0 | 25 | 90 | 166 | 6 |
| E2759320 | EQ759320 | 32.0 | 32 | 106 | 186 | 6 |
| E2759350 | EQ759350 | 35.0 | 32 | 106 | 186 | 6 |
| E2759360 | EQ759360 | 36.0 | 32 | 106 | 186 | 6 |
| E2759400 | EQ759400 | 40.0 | 32 | 125 | 205 | 6 |
| E2759450 | EQ759450 | 45.0 | 42 | 125 | 227 | 6 |
| E2759500 | EQ759500 | 50.0 | 42 | 150 | 252 | 6 |

| Mill Dia.Tolerance (mm) 直径公差 | Shank Dia.Tolerance 柄径公差 |
|---|---|
| ± 0.12 | h6 |



**Enforced Cutting Edge**

◎ : Excellent (优秀) ○ : Good (良好)

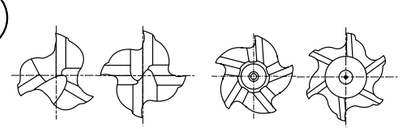
| ISO | P | | | | | | | | | | | M | | | K | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 | |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 | |
| Recommend | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ○ | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | | | | | |

# GENERAL HSS END MILLS

FLAT SHANK **E2753** SERIES
FLAT SHANK **EQ753** SERIES

## HSSCo8, MULTI FLUTE SHORT LENGTH ROUGHING - FINE
## HSSCo8，多刃 短刃 粗加工 - 细牙



Up to Ø20mm



Over Ø20mm

HSS Co8 | DIN 844 | HR | 3-6 | 30° | DIN 1835B | ~Ø20 | Ø25~ | C x 45°

p.C616~619

Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | END MILL HOLDER | D118 - 137 | POWER MILLING CHUCK | D161 - 176 |
| ◎ | - | - | ER COLLET CHUCK | D73 - 115 |
| | | | SK SLIM CHUCK | D183 - 201 |

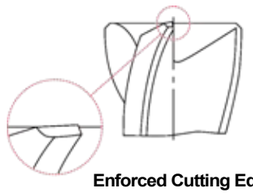
Unit(单位) : mm

| EDP No. | | Mill Diameter 直径 | Shank Diameter 柄径 | Length of Cut 刃长 | Overall Length 全长 | No. of Flute 槽数 | Chamfer 导向 |
|---|---|---|---|---|---|---|---|
| UNCOATED | TiAlN | js12 | h6 | | | | |
| E2753060 | EQ753060 | 6.0 | 6 | 13 | 57 | 3 | 0.18 |
| E2753070 | EQ753070 | 7.0 | 10 | 16 | 66 | 3 | 0.18 |
| E2753080 | EQ753080 | 8.0 | 10 | 19 | 69 | 3 | 0.18 |
| E2753090 | EQ753090 | 9.0 | 10 | 19 | 69 | 3 | 0.18 |
| E2753100 | EQ753100 | 10.0 | 10 | 22 | 72 | 4 | 0.18 |
| E2753110 | EQ753110 | 11.0 | 12 | 22 | 79 | 4 | 0.18 |
| E2753120 | EQ753120 | 12.0 | 12 | 26 | 83 | 4 | 0.18 |
| E2753130 | EQ753130 | 13.0 | 12 | 26 | 83 | 4 | 0.18 |
| E2753140 | EQ753140 | 14.0 | 12 | 26 | 83 | 4 | 0.25 |
| E2753150 | EQ753150 | 15.0 | 12 | 26 | 83 | 4 | 0.25 |
| E2753160 | EQ753160 | 16.0 | 16 | 32 | 92 | 4 | 0.25 |
| E2753180 | EQ753180 | 18.0 | 16 | 32 | 92 | 4 | 0.25 |
| E2753200 | EQ753200 | 20.0 | 20 | 38 | 104 | 4 | 0.25 |
| E2753250 | EQ753250 | 25.0 | 25 | 45 | 121 | 5 | 0.36 |
| E2753280 | EQ753280 | 28.0 | 25 | 45 | 121 | 6 | 0.36 |
| E2753300 | EQ753300 | 30.0 | 25 | 45 | 121 | 6 | 0.36 |
| E2753320 | EQ753320 | 32.0 | 32 | 53 | 133 | 6 | 0.51 |
| E2753350 | EQ753350 | 35.0 | 32 | 53 | 133 | 6 | 0.51 |
| E2753400 | EQ753400 | 40.0 | 32 | 63 | 155 | 6 | 0.56 |

▶ Other shank design on your request.
其他柄部按照您的要求设计
▶ TiN and TiCN Coatings are available on your request.
TiN涂层和TiCN涂层可根据您的要求加工

### Tolerances according to DIN 7160 & 7161
按DIN7160&7161的标准公差

| Tolerance range in μm / 公差单位为 | | | | | | |
|---|---|---|---|---|---|---|
| Nominal-Diameter in mm / 直径单位为 | | | | | | |
| | from 1 to 3 | over 3 to 6 | over 6 to 10 | over 10 to 18 | over 18 to 30 | over 30 to 50 |
| js12 | ±50 | ±60 | ±75 | ±90 | ±105 | ±125 |
| h6 | 0 - 6 | 0 - 8 | 0 - 9 | 0 - 11 | 0 - 13 | 0 - 16 |



Enforced Cutting Edge

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ○ | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | | | | | |



# GENERAL HSS END MILLS

PLAIN SHANK **EL612** SERIES

## HSS-E, 1 FLUTE for ALUMINUM
## HSS-E, 1刃 铝用

for ALUMINUM
适用于加工铝

HSS-E | 1 | 30° | DIN 1835A

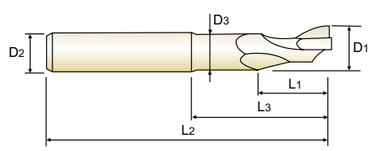
p.C619

Recommended ToolHolder

| | Flat Shank | Page | Plain Shank | Page |
|---|---|---|---|---|
| ◎ | END MILL HOLDER | D118 - 137 | POWER MILLING CHUCK | D161 - 176 |
| ◎ | - | - | ER COLLET CHUCK | D73 - 115 |
| | | | SK SLIM CHUCK | D183 - 201 |

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 | Shank Diameter 柄径 | Length of Cut 刃长 | Overall Length 全长 |
|---|---|---|---|---|
| UNCOATED | js14 | h6 | | |
| EL612030 | 3.0 | 8 | 12 | 60 |
| EL612040 | 4.0 | 8 | 12 | 60 |
| EL612050 | 5.0 | 8 | 12 | 60 |
| EL612060 | 6.0 | 8 | 14 | 60 |
| EL612070 | 7.0 | 8 | 14 | 60 |
| EL612080 | 8.0 | 8 | 14 | 80 |
| EL612090 | 9.0 | 8 | 14 | 80 |
| EL612100 | 10.0 | 8 | 14 | 80 |




Unit(单位) : mm

| EDP No. | Mill Diameter 直径 | Shank Diameter 柄径 | Length of Cut 刃长 | Length Below Shank 颈长 | Overall Length 全长 | Neck Diameter 颈径 |
|---|---|---|---|---|---|---|
| UNCOATED | D1(js14) | D2(h6) | L1 | L3 | L2 | L2 |
| EL612904 | 5.0 | 8 | 18 | 35 | 80 | 4.8 |
| EL612909 | 5.0 | 8 | 40 | - | 100 | - |
| EL612932 | 8.0 | 8 | 14 | 68 | 120 | 7.5 |

### Tolerances according to DIN 7160 & 7161
按DIN7160&7161的标准公差

| Tolerance range in μm / 公差单位为 | | | | | | |
|---|---|---|---|---|---|---|
| Nominal-Diameter in mm / 直径单位为 | | | | | | |
| | from 1 to 3 | over 3 to 6 | over 6 to 10 | over 10 to 18 | over 18 to 30 | over 30 to 50 |
| js14 | ±125 | ±150 | ±180 | ±215 | ±260 | ±310 |
| h6 | 0 - 6 | 0 - 8 | 0 - 9 | 0 - 11 | 0 - 13 | 0 - 16 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommend | ○ | ○ | | | | ○ | | | | ○ | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommend | ◎ | ◎ | ◎ | ◎ | ○ | | | | | | | | | | | | | | | | |

# GENERAL HSS END MILLS

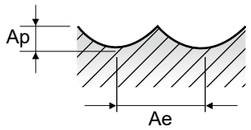
## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

### E2480 SERIES — 2 FLUTE BALL NOSE / 2刃 球头

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description 材料描述 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 3.0 | 4.0 | 6.0 | 8.0 | 10.0 | 12.0 | 16.0 | 20.0 | 25.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | 0.7D | 0.3D | Vc | 42 | 40 | 41 | 40 | 41 | 38 | 40 | 38 | 39 |
| | | | | | fz | 0.011 | 0.018 | 0.031 | 0.050 | 0.069 | 0.085 | 0.094 | 0.117 | 0.130 |
| | | | | | RPM | 4500 | 3200 | 2200 | 1600 | 1300 | 1000 | 800 | 600 | 500 |
| | | | | | FEED | 95 | 115 | 135 | 160 | 180 | 170 | 150 | 140 | 130 |
| | 2 | | 0.7D | 0.3D | Vc | 32 | 30 | 32 | 30 | 31 | 30 | 30 | 31 | 31 |
| | | | | | fz | 0.010 | 0.017 | 0.026 | 0.044 | 0.060 | 0.066 | 0.083 | 0.085 | 0.088 |
| | | | | | RPM | 3400 | 2400 | 1700 | 1200 | 1000 | 800 | 600 | 500 | 400 |
| | | | | | FEED | 70 | 80 | 90 | 105 | 120 | 105 | 100 | 85 | 70 |
| | 3-4 | | 0.7D | 0.3D | Vc | 19 | 18 | 19 | 18 | 18 | 17 | 18 | 19 | 17 |
| | | | | | fz | 0.008 | 0.013 | 0.023 | 0.036 | 0.054 | 0.061 | 0.079 | 0.083 | 0.091 |
| | | | | | RPM | 2000 | 1400 | 1000 | 700 | 560 | 450 | 350 | 300 | 220 |
| | | | | | FEED | 30 | 35 | 45 | 50 | 60 | 55 | 55 | 50 | 40 |
| | 5 | | 0.7D | 0.3D | Vc | 13 | 13 | 13 | 13 | 13 | 12 | 13 | 13 | 13 |
| | | | | | fz | 0.007 | 0.013 | 0.018 | 0.030 | 0.044 | 0.055 | 0.070 | 0.088 | 0.094 |
| | | | | | RPM | 1400 | 1000 | 700 | 500 | 400 | 320 | 250 | 200 | 160 |
| | | | | | FEED | 20 | 25 | 25 | 30 | 35 | 35 | 35 | 35 | 30 |
| | 6 | Low alloy steel | 0.7D | 0.3D | Vc | 32 | 30 | 32 | 30 | 31 | 30 | 30 | 31 | 31 |
| | | | | | fz | 0.010 | 0.017 | 0.026 | 0.044 | 0.060 | 0.066 | 0.083 | 0.085 | 0.088 |
| | | | | | RPM | 3400 | 2400 | 1700 | 1200 | 1000 | 800 | 600 | 500 | 400 |
| | | | | | FEED | 70 | 80 | 90 | 105 | 120 | 105 | 100 | 85 | 70 |
| | 7 | | 0.7D | 0.3D | Vc | 19 | 18 | 19 | 18 | 18 | 17 | 18 | 19 | 17 |
| | | | | | fz | 0.008 | 0.013 | 0.023 | 0.036 | 0.054 | 0.061 | 0.079 | 0.083 | 0.091 |
| | | | | | RPM | 2000 | 1400 | 1000 | 700 | 560 | 450 | 350 | 300 | 220 |
| | | | | | FEED | 30 | 35 | 45 | 50 | 60 | 55 | 55 | 50 | 40 |
| | 8-9 | | 0.7D | 0.3D | Vc | 13 | 13 | 13 | 13 | 13 | 12 | 13 | 13 | 13 |
| | | | | | fz | 0.007 | 0.013 | 0.018 | 0.030 | 0.044 | 0.055 | 0.070 | 0.088 | 0.094 |
| | | | | | RPM | 1400 | 1000 | 700 | 500 | 400 | 320 | 250 | 200 | 160 |
| | | | | | FEED | 20 | 25 | 25 | 30 | 35 | 35 | 35 | 35 | 30 |
| | 10 | High alloyed steel, and tool steel | 0.7D | 0.3D | Vc | 32 | 30 | 32 | 30 | 31 | 30 | 30 | 31 | 31 |
| | | | | | fz | 0.010 | 0.017 | 0.026 | 0.044 | 0.060 | 0.066 | 0.083 | 0.085 | 0.088 |
| | | | | | RPM | 3400 | 2400 | 1700 | 1200 | 1000 | 800 | 600 | 500 | 400 |
| | | | | | FEED | 70 | 80 | 90 | 105 | 120 | 105 | 100 | 85 | 70 |
| | 11.1 | | 0.7D | 0.3D | Vc | 13 | 13 | 13 | 13 | 13 | 12 | 13 | 13 | 13 |
| | | | | | fz | 0.007 | 0.013 | 0.018 | 0.030 | 0.044 | 0.055 | 0.070 | 0.088 | 0.094 |
| | | | | | RPM | 1400 | 1000 | 700 | 500 | 400 | 320 | 250 | 200 | 160 |
| | | | | | FEED | 20 | 25 | 25 | 30 | 35 | 35 | 35 | 35 | 30 |
| N | 21-22 | Aluminum-wrought alloy | 0.7D | 0.3D | Vc | 104 | 101 | 106 | 101 | 101 | 94 | 101 | 101 | 102 |
| | | | | | fz | 0.010 | 0.016 | 0.025 | 0.044 | 0.056 | 0.068 | 0.075 | 0.088 | 0.096 |
| | | | | | RPM | 11000 | 8000 | 5600 | 4000 | 3200 | 2500 | 2000 | 1600 | 1300 |
| | | | | | FEED | 230 | 260 | 280 | 350 | 360 | 340 | 300 | 280 | 250 |
| | 23-25 | Aluminum-cast, alloyed | 0.7D | 0.3D | Vc | 104 | 101 | 106 | 101 | 101 | 94 | 101 | 101 | 102 |
| | | | | | fz | 0.010 | 0.016 | 0.025 | 0.044 | 0.056 | 0.068 | 0.075 | 0.088 | 0.096 |
| | | | | | RPM | 11000 | 8000 | 5600 | 4000 | 3200 | 2500 | 2000 | 1600 | 1300 |
| | | | | | FEED | 230 | 260 | 280 | 350 | 360 | 340 | 300 | 280 | 250 |

※ The FEED, in long & extra long types, should be reduced by around 50%
长刃，加长刃类型需要减少约50%进给





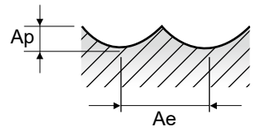

GENERAL HSS END MILLS
RECOMMENDED CUTTING CONDITIONS
推荐加工参数

### EQ480 SERIES — 2 FLUTE BALL NOSE (TiAlN-COATED) / 2刃 球头 (TiAlN 涂层)

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description 材料描述 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 3.0 | 4.0 | 6.0 | 8.0 | 10.0 | 12.0 | 16.0 | 20.0 | 25.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | 0.7D | 0.3D | Vc | 59 | 57 | 58 | 57 | 57 | 53 | 55 | 53 | 55 |
| | | | | | fz | 0.011 | 0.018 | 0.031 | 0.05 | 0.069 | 0.086 | 0.095 | 0.115 | 0.129 |
| | | | | | RPM | 6300 | 4500 | 3100 | 2250 | 1800 | 1400 | 1100 | 850 | 700 |
| | | | | | FEED | 135 | 160 | 190 | 225 | 250 | 240 | 210 | 195 | 180 |
| | 2 | | 0.7D | 0.3D | Vc | 45 | 42 | 45 | 43 | 44 | 41 | 43 | 44 | 43 |
| | | | | | fz | 0.011 | 0.016 | 0.026 | 0.043 | 0.061 | 0.066 | 0.082 | 0.086 | 0.091 |
| | | | | | RPM | 4750 | 3350 | 2400 | 1700 | 1400 | 1100 | 850 | 700 | 550 |
| | | | | | FEED | 100 | 110 | 125 | 145 | 170 | 145 | 140 | 120 | 100 |
| | 3-4 | | 0.7D | 0.3D | Vc | 26 | 25 | 26 | 25 | 25 | 25 | 25 | 25 | 24 |
| | | | | | fz | 0.007 | 0.013 | 0.023 | 0.035 | 0.053 | 0.058 | 0.075 | 0.088 | 0.092 |
| | | | | | RPM | 2800 | 1950 | 1400 | 1000 | 800 | 650 | 500 | 400 | 300 |
| | | | | | FEED | 40 | 50 | 65 | 70 | 85 | 75 | 75 | 70 | 55 |
| | 5 | | 0.7D | 0.3D | Vc | 18 | 18 | 19 | 18 | 17 | 17 | 18 | 19 | 16 |
| | | | | | fz | 0.008 | 0.013 | 0.018 | 0.029 | 0.045 | 0.056 | 0.071 | 0.083 | 0.1 |
| | | | | | RPM | 1950 | 1400 | 1000 | 700 | 550 | 450 | 350 | 300 | 200 |
| | | | | | FEED | 30 | 35 | 35 | 40 | 50 | 50 | 50 | 50 | 40 |
| | 6 | Low alloy steel | 0.7D | 0.3D | Vc | 45 | 42 | 45 | 43 | 44 | 41 | 43 | 44 | 43 |
| | | | | | fz | 0.011 | 0.016 | 0.026 | 0.043 | 0.061 | 0.066 | 0.082 | 0.086 | 0.091 |
| | | | | | RPM | 4750 | 3350 | 2400 | 1700 | 1400 | 1100 | 850 | 700 | 550 |
| | | | | | FEED | 100 | 110 | 125 | 145 | 170 | 145 | 140 | 120 | 100 |
| | 7 | | 0.7D | 0.3D | Vc | 26 | 25 | 26 | 25 | 25 | 25 | 25 | 25 | 24 |
| | | | | | fz | 0.007 | 0.013 | 0.023 | 0.035 | 0.053 | 0.058 | 0.075 | 0.088 | 0.092 |
| | | | | | RPM | 2800 | 1950 | 1400 | 1000 | 800 | 650 | 500 | 400 | 300 |
| | | | | | FEED | 40 | 50 | 65 | 70 | 85 | 75 | 75 | 70 | 55 |
| | 8-9 | | 0.7D | 0.3D | Vc | 18 | 18 | 19 | 18 | 17 | 17 | 18 | 19 | 16 |
| | | | | | fz | 0.008 | 0.013 | 0.018 | 0.029 | 0.045 | 0.056 | 0.071 | 0.083 | 0.1 |
| | | | | | RPM | 1950 | 1400 | 1000 | 700 | 550 | 450 | 350 | 300 | 200 |
| | | | | | FEED | 30 | 35 | 35 | 40 | 50 | 50 | 50 | 50 | 40 |
| | 10 | High alloyed steel, and tool steel | 0.7D | 0.3D | Vc | 45 | 42 | 45 | 43 | 44 | 41 | 43 | 44 | 43 |
| | | | | | fz | 0.011 | 0.016 | 0.026 | 0.043 | 0.061 | 0.066 | 0.082 | 0.086 | 0.091 |
| | | | | | RPM | 4750 | 3350 | 2400 | 1700 | 1400 | 1100 | 850 | 700 | 550 |
| | | | | | FEED | 100 | 110 | 125 | 145 | 170 | 145 | 140 | 120 | 100 |
| | 11.1 | | 0.7D | 0.3D | Vc | 18 | 18 | 19 | 18 | 17 | 17 | 18 | 19 | 16 |
| | | | | | fz | 0.008 | 0.013 | 0.018 | 0.029 | 0.045 | 0.056 | 0.071 | 0.083 | 0.1 |
| | | | | | RPM | 1950 | 1400 | 1000 | 700 | 550 | 450 | 350 | 300 | 200 |
| | | | | | FEED | 30 | 35 | 35 | 40 | 50 | 50 | 50 | 50 | 40 |
| N | 21-22 | Aluminum-wrought alloy | 0.7D | 0.3D | Vc | 145 | 141 | 148 | 141 | 141 | 132 | 141 | 141 | 141 |
| | | | | | fz | 0.01 | 0.016 | 0.025 | 0.044 | 0.056 | 0.068 | 0.075 | 0.087 | 0.097 |
| | | | | | RPM | 15400 | 11200 | 7850 | 5600 | 4500 | 3500 | 2800 | 2250 | 1800 |
| | | | | | FEED | 320 | 365 | 390 | 490 | 505 | 475 | 420 | 390 | 350 |
| | 23-24 | Aluminum-cast, alloyed | 0.7D | 0.3D | Vc | 145 | 141 | 148 | 141 | 141 | 132 | 141 | 141 | 141 |
| | | | | | fz | 0.01 | 0.016 | 0.025 | 0.044 | 0.056 | 0.068 | 0.075 | 0.087 | 0.097 |
| | | | | | RPM | 15400 | 11200 | 7850 | 5600 | 4500 | 3500 | 2800 | 2250 | 1800 |
| | | | | | FEED | 320 | 365 | 390 | 490 | 505 | 475 | 420 | 390 | 350 |

※ The FEED, in long & extra long types, should be reduced by around 50%
长刃，加长刃类型需要减少约50%进给



# GENERAL HSS END MILLS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

### E2401, E2406 SERIES

**2 FLUTE - SLOTTING**
**2刃 - 槽铣削**

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description 材料描述 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 2.0 | 3.0 | 4.0 | 5.0 | 6.0 | 8.0 | 10.0 | 12.0 | 14.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | 1.0D | 0.5D | Vc | 35 | 33 | 35 | 35 | 34 | 35 | 35 | 34 | 35 |
| | | | | | fz | 0.004 | 0.008 | 0.013 | 0.020 | 0.025 | 0.036 | 0.045 | 0.061 | 0.069 |
| | | | | | RPM | 5600 | 3500 | 2800 | 2200 | 1800 | 1400 | 1100 | 900 | 800 |
| | | | | | FEED | 40 | 55 | 70 | 90 | 90 | 100 | 100 | 110 | 110 |
| | 2 | | 1.0D | 0.5D | Vc | 28 | 30 | 28 | 28 | 30 | 28 | 28 | 30 | 31 |
| | | | | | fz | 0.003 | 0.007 | 0.013 | 0.019 | 0.025 | 0.041 | 0.050 | 0.063 | 0.064 |
| | | | | | RPM | 4500 | 3200 | 2200 | 1800 | 1600 | 1100 | 900 | 800 | 700 |
| | | | | | FEED | 30 | 45 | 55 | 70 | 80 | 90 | 90 | 100 | 90 |
| | 3-4 | | 1.0D | 0.5D | Vc | 25 | 24 | 23 | 25 | 23 | 23 | 25 | 24 | 25 |
| | | | | | fz | 0.004 | 0.008 | 0.013 | 0.019 | 0.025 | 0.039 | 0.050 | 0.063 | 0.071 |
| | | | | | RPM | 4000 | 2500 | 1800 | 1600 | 1200 | 900 | 800 | 630 | 560 |
| | | | | | FEED | 30 | 40 | 45 | 60 | 60 | 70 | 80 | 80 | 80 |
| | 5 | | 1.0D | 0.5D | Vc | 14 | 15 | 14 | 14 | 15 | 14 | 14 | 15 | 15 |
| | | | | | fz | 0.003 | 0.006 | 0.014 | 0.019 | 0.025 | 0.040 | 0.050 | 0.063 | 0.071 |
| | | | | | RPM | 2200 | 1600 | 1100 | 900 | 800 | 560 | 450 | 400 | 350 |
| | | | | | FEED | 15 | 20 | 30 | 35 | 40 | 45 | 45 | 50 | 50 |
| | 6 | Low alloy steel | 1.0D | 0.5D | Vc | 28 | 30 | 28 | 28 | 30 | 28 | 28 | 30 | 31 |
| | | | | | fz | 0.003 | 0.007 | 0.013 | 0.019 | 0.025 | 0.041 | 0.050 | 0.063 | 0.064 |
| | | | | | RPM | 4500 | 3200 | 2200 | 1800 | 1600 | 1100 | 900 | 800 | 700 |
| | | | | | FEED | 30 | 45 | 55 | 70 | 80 | 90 | 90 | 100 | 90 |
| | 7 | | 1.0D | 0.5D | Vc | 25 | 24 | 23 | 25 | 23 | 23 | 25 | 24 | 25 |
| | | | | | fz | 0.004 | 0.008 | 0.013 | 0.019 | 0.025 | 0.039 | 0.050 | 0.063 | 0.071 |
| | | | | | RPM | 4000 | 2500 | 1800 | 1600 | 1200 | 900 | 800 | 630 | 560 |
| | | | | | FEED | 30 | 40 | 45 | 60 | 60 | 70 | 80 | 80 | 80 |
| | 8-9 | | 1.0D | 0.5D | Vc | 14 | 15 | 14 | 14 | 15 | 14 | 14 | 15 | 15 |
| | | | | | fz | 0.003 | 0.006 | 0.014 | 0.019 | 0.025 | 0.040 | 0.050 | 0.063 | 0.071 |
| | | | | | RPM | 2200 | 1600 | 1100 | 900 | 800 | 560 | 450 | 400 | 350 |
| | | | | | FEED | 15 | 20 | 30 | 35 | 40 | 45 | 45 | 50 | 50 |
| | 10 | High alloyed steel, and tool steel | 1.0D | 0.5D | Vc | 28 | 30 | 28 | 28 | 30 | 28 | 28 | 30 | 31 |
| | | | | | fz | 0.003 | 0.007 | 0.013 | 0.019 | 0.025 | 0.041 | 0.050 | 0.063 | 0.064 |
| | | | | | RPM | 4500 | 3200 | 2200 | 1800 | 1600 | 1100 | 900 | 800 | 700 |
| | | | | | FEED | 30 | 45 | 55 | 70 | 80 | 90 | 90 | 100 | 90 |
| | 11.1 | | 1.0D | 0.5D | Vc | 14 | 15 | 14 | 14 | 15 | 14 | 14 | 15 | 15 |
| | | | | | fz | 0.003 | 0.006 | 0.014 | 0.019 | 0.025 | 0.040 | 0.050 | 0.063 | 0.071 |
| | | | | | RPM | 2200 | 1600 | 1100 | 900 | 800 | 560 | 450 | 400 | 350 |
| | | | | | FEED | 15 | 20 | 30 | 35 | 40 | 45 | 45 | 50 | 50 |
| N | 21-22 | Aluminum-wrought alloy | 1.0D | 0.5D | Vc | 75 | 104 | 101 | 99 | 106 | 101 | 97 | 94 | 97 |
| | | | | | fz | 0.007 | 0.011 | 0.018 | 0.025 | 0.028 | 0.049 | 0.065 | 0.076 | 0.080 |
| | | | | | RPM | 12000 | 11000 | 8000 | 6300 | 5600 | 4000 | 3100 | 2500 | 2200 |
| | | | | | FEED | 160 | 250 | 290 | 310 | 310 | 390 | 400 | 380 | 350 |
| | 23-25 | Aluminum-cast, alloyed | 1.0D | 0.5D | Vc | 75 | 104 | 101 | 99 | 106 | 101 | 97 | 94 | 97 |
| | | | | | fz | 0.007 | 0.011 | 0.018 | 0.025 | 0.028 | 0.049 | 0.065 | 0.076 | 0.080 |
| | | | | | RPM | 12000 | 11000 | 8000 | 6300 | 5600 | 4000 | 3100 | 2500 | 2200 |
| | | | | | FEED | 160 | 250 | 290 | 310 | 310 | 390 | 400 | 380 | 350 |

※ The FEED, in long & extra long types, should be reduced by around 50%
长刃，加长刃类型需要减少约50%进给

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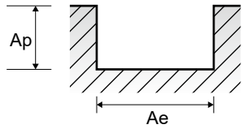
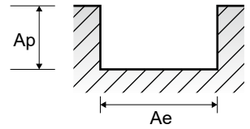





GENERAL HSS END MILLS
RECOMMENDED CUTTING CONDITIONS
推荐加工参数
E2401, E2406 SERIES
2 FLUTE - SLOTTING
2刃 - 槽铣削
Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description 材料描述 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 16.0 | 18.0 | 20.0 | 22.0 | 25.0 | 28.0 | 30.0 | 32.0 | 36.0 | 40.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | 1.0D | 0.5D | Vc | 35 | 36 | 35 | 35 | 35 | 35 | 33 | 35 | 35 | 35 |
| | | | | | fz | 0.079 | 0.079 | 0.089 | 0.100 | 0.100 | 0.100 | 0.100 | 0.100 | 0.097 | 0.107 |
| | | | | | RPM | 700 | 630 | 560 | 500 | 450 | 400 | 350 | 350 | 310 | 280 |
| | | | | | FEED | 110 | 100 | 100 | 100 | 90 | 80 | 70 | 70 | 60 | 60 |
| | 2 | | 1.0D | 0.5D | Vc | 28 | 28 | 28 | 31 | 31 | 31 | 29 | 28 | 28 | 28 |
| | | | | | fz | 0.080 | 0.090 | 0.100 | 0.100 | 0.100 | 0.100 | 0.097 | 0.098 | 0.100 | 0.114 |
| | | | | | RPM | 560 | 500 | 450 | 450 | 400 | 350 | 310 | 280 | 250 | 220 |
| | | | | | FEED | 90 | 90 | 90 | 90 | 80 | 70 | 60 | 55 | 50 | 50 |
| | 3-4 | | 1.0D | 0.5D | Vc | 23 | 23 | 25 | 24 | 24 | 25 | 24 | 22 | 23 | 23 |
| | | | | | fz | 0.078 | 0.088 | 0.088 | 0.100 | 0.097 | 0.098 | 0.100 | 0.102 | 0.100 | 0.111 |
| | | | | | RPM | 450 | 400 | 400 | 350 | 310 | 280 | 250 | 220 | 200 | 180 |
| | | | | | FEED | 70 | 70 | 70 | 70 | 60 | 55 | 50 | 45 | 40 | 40 |
| | 5 | | 1.0D | 0.5D | Vc | 14 | 14 | 14 | 15 | 14 | 14 | 15 | 14 | 14 | 14 |
| | | | | | fz | 0.080 | 0.090 | 0.102 | 0.102 | 0.097 | 0.094 | 0.094 | 0.107 | 0.104 | 0.114 |
| | | | | | RPM | 280 | 250 | 220 | 220 | 180 | 160 | 160 | 140 | 120 | 110 |
| | | | | | FEED | 45 | 45 | 45 | 45 | 35 | 30 | 30 | 30 | 25 | 25 |
| | 6 | Low alloy steel | 1.0D | 0.5D | Vc | 28 | 28 | 28 | 31 | 31 | 31 | 29 | 28 | 28 | 28 |
| | | | | | fz | 0.080 | 0.090 | 0.100 | 0.100 | 0.100 | 0.100 | 0.097 | 0.098 | 0.100 | 0.114 |
| | | | | | RPM | 560 | 500 | 450 | 450 | 400 | 350 | 310 | 280 | 250 | 220 |
| | | | | | FEED | 90 | 90 | 90 | 90 | 80 | 70 | 60 | 55 | 50 | 50 |
| | 7 | | 1.0D | 0.5D | Vc | 23 | 23 | 25 | 24 | 24 | 25 | 24 | 22 | 23 | 23 |
| | | | | | fz | 0.078 | 0.088 | 0.088 | 0.100 | 0.097 | 0.098 | 0.100 | 0.102 | 0.100 | 0.111 |
| | | | | | RPM | 450 | 400 | 400 | 350 | 310 | 280 | 250 | 220 | 200 | 180 |
| | | | | | FEED | 70 | 70 | 70 | 70 | 60 | 55 | 50 | 45 | 40 | 40 |
| | 8-9 | | 1.0D | 0.5D | Vc | 14 | 14 | 14 | 15 | 14 | 14 | 15 | 14 | 14 | 14 |
| | | | | | fz | 0.080 | 0.090 | 0.102 | 0.102 | 0.097 | 0.094 | 0.094 | 0.107 | 0.104 | 0.114 |
| | | | | | RPM | 280 | 250 | 220 | 220 | 180 | 160 | 160 | 140 | 120 | 110 |
| | | | | | FEED | 45 | 45 | 45 | 45 | 35 | 30 | 30 | 30 | 25 | 25 |
| | 10 | High alloyed steel, and tool steel | 1.0D | 0.5D | Vc | 28 | 28 | 28 | 31 | 31 | 31 | 29 | 28 | 28 | 28 |
| | | | | | fz | 0.080 | 0.090 | 0.100 | 0.100 | 0.100 | 0.100 | 0.097 | 0.098 | 0.100 | 0.114 |
| | | | | | RPM | 560 | 500 | 450 | 450 | 400 | 350 | 310 | 280 | 250 | 220 |
| | | | | | FEED | 90 | 90 | 90 | 90 | 80 | 70 | 60 | 55 | 50 | 50 |
| | 11.1 | | 1.0D | 0.5D | Vc | 14 | 14 | 14 | 15 | 14 | 14 | 15 | 14 | 14 | 14 |
| | | | | | fz | 0.080 | 0.090 | 0.102 | 0.102 | 0.097 | 0.094 | 0.094 | 0.107 | 0.104 | 0.114 |
| | | | | | RPM | 280 | 250 | 220 | 220 | 180 | 160 | 160 | 140 | 120 | 110 |
| | | | | | FEED | 45 | 45 | 45 | 45 | 35 | 30 | 30 | 30 | 25 | 25 |
| N | 21-22 | Aluminum-wrought alloy | 1.0D | 0.5D | Vc | 101 | 102 | 101 | 97 | 94 | 97 | 104 | 101 | 102 | 101 |
| | | | | | fz | 0.088 | 0.097 | 0.100 | 0.107 | 0.117 | 0.123 | 0.123 | 0.120 | 0.122 | 0.125 |
| | | | | | RPM | 2000 | 1800 | 1600 | 1400 | 1200 | 1100 | 1100 | 1000 | 900 | 800 |
| | | | | | FEED | 350 | 350 | 320 | 300 | 280 | 270 | 270 | 240 | 220 | 200 |
| | 23-25 | Aluminum-cast, alloyed | 1.0D | 0.5D | Vc | 101 | 102 | 101 | 97 | 94 | 97 | 104 | 101 | 102 | 101 |
| | | | | | fz | 0.088 | 0.097 | 0.100 | 0.107 | 0.117 | 0.123 | 0.123 | 0.120 | 0.122 | 0.125 |
| | | | | | RPM | 2000 | 1800 | 1600 | 1400 | 1200 | 1100 | 1100 | 1000 | 900 | 800 |
| | | | | | FEED | 350 | 350 | 320 | 300 | 280 | 270 | 270 | 240 | 220 | 200 |

※ The FEED, in long & extra long types, should be reduced by around 50%
长刃，加长刃类型需要减少约50%进给



# GENERAL HSS END MILLS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

### EQ401, EQ406 SERIES

**2 FLUTE**(TiAlN-COATED) - **SLOTTING**
**2刃**(TiAlN 涂层) - **槽铣削**

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description 材料描述 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 2.0 | 3.0 | 4.0 | 5.0 | 6.0 | 8.0 | 10.0 | 12.0 | 14.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | 1.0D | 0.5D | Vc | 49 | 46 | 49 | 49 | 47 | 49 | 49 | 47 | 48 |
| | | | | | fz | 0.004 | 0.008 | 0.013 | 0.020 | 0.025 | 0.036 | 0.045 | 0.062 | 0.070 |
| | | | | | RPM | 7850 | 4900 | 3900 | 3100 | 2500 | 1950 | 1550 | 1250 | 1100 |
| | | | | | FEED | 55 | 75 | 100 | 125 | 125 | 140 | 140 | 155 | 155 |
| | 2 | | 1.0D | 0.5D | Vc | 40 | 42 | 39 | 39 | 42 | 39 | 39 | 41 | 44 |
| | | | | | fz | 0.003 | 0.007 | 0.012 | 0.020 | 0.024 | 0.040 | 0.050 | 0.064 | 0.063 |
| | | | | | RPM | 6300 | 4500 | 3100 | 2500 | 2250 | 1550 | 1250 | 1100 | 1000 |
| | | | | | FEED | 40 | 65 | 75 | 100 | 110 | 125 | 125 | 140 | 125 |
| | 3-4 | | 1.0D | 0.5D | Vc | 35 | 33 | 31 | 35 | 32 | 31 | 35 | 34 | 35 |
| | | | | | fz | 0.004 | 0.008 | 0.013 | 0.019 | 0.025 | 0.040 | 0.050 | 0.061 | 0.069 |
| | | | | | RPM | 5600 | 3500 | 2500 | 2250 | 1700 | 1250 | 1100 | 900 | 800 |
| | | | | | FEED | 40 | 55 | 65 | 85 | 85 | 100 | 110 | 110 | 110 |
| | 5 | | 1.0D | 0.5D | Vc | 19 | 21 | 19 | 20 | 21 | 20 | 20 | 21 | 22 |
| | | | | | fz | 0.003 | 0.007 | 0.013 | 0.020 | 0.025 | 0.041 | 0.050 | 0.064 | 0.070 |
| | | | | | RPM | 3100 | 2250 | 1550 | 1250 | 1100 | 800 | 650 | 550 | 500 |
| | | | | | FEED | 20 | 30 | 40 | 50 | 55 | 65 | 65 | 70 | 70 |
| | 6 | Low alloy steel | 1.0D | 0.5D | Vc | 40 | 42 | 39 | 39 | 42 | 39 | 39 | 41 | 44 |
| | | | | | fz | 0.003 | 0.007 | 0.012 | 0.020 | 0.024 | 0.040 | 0.050 | 0.064 | 0.063 |
| | | | | | RPM | 6300 | 4500 | 3100 | 2500 | 2250 | 1550 | 1250 | 1100 | 1000 |
| | | | | | FEED | 40 | 65 | 75 | 100 | 110 | 125 | 125 | 140 | 125 |
| | 7 | | 1.0D | 0.5D | Vc | 35 | 33 | 31 | 35 | 32 | 31 | 35 | 34 | 35 |
| | | | | | fz | 0.004 | 0.008 | 0.013 | 0.019 | 0.025 | 0.040 | 0.050 | 0.061 | 0.069 |
| | | | | | RPM | 5600 | 3500 | 2500 | 2250 | 1700 | 1250 | 1100 | 900 | 800 |
| | | | | | FEED | 40 | 55 | 65 | 85 | 85 | 100 | 110 | 110 | 110 |
| | 8-9 | | 1.0D | 0.5D | Vc | 19 | 21 | 19 | 20 | 21 | 20 | 20 | 21 | 22 |
| | | | | | fz | 0.003 | 0.007 | 0.013 | 0.020 | 0.025 | 0.041 | 0.050 | 0.064 | 0.070 |
| | | | | | RPM | 3100 | 2250 | 1550 | 1250 | 1100 | 800 | 650 | 550 | 500 |
| | | | | | FEED | 20 | 30 | 40 | 50 | 55 | 65 | 65 | 70 | 70 |
| | 10 | High alloyed steel, and tool steel | 1.0D | 0.5D | Vc | 40 | 42 | 39 | 39 | 42 | 39 | 39 | 41 | 44 |
| | | | | | fz | 0.003 | 0.007 | 0.012 | 0.020 | 0.024 | 0.040 | 0.050 | 0.064 | 0.063 |
| | | | | | RPM | 6300 | 4500 | 3100 | 2500 | 2250 | 1550 | 1250 | 1100 | 1000 |
| | | | | | FEED | 40 | 65 | 75 | 100 | 110 | 125 | 125 | 140 | 125 |
| | 11.1 | | 1.0D | 0.5D | Vc | 19 | 21 | 19 | 20 | 21 | 20 | 20 | 21 | 22 |
| | | | | | fz | 0.003 | 0.007 | 0.013 | 0.020 | 0.025 | 0.041 | 0.050 | 0.064 | 0.070 |
| | | | | | RPM | 3100 | 2250 | 1550 | 1250 | 1100 | 800 | 650 | 550 | 500 |
| | | | | | FEED | 20 | 30 | 40 | 50 | 55 | 65 | 65 | 70 | 70 |
| N | 21-22 | Aluminum-wrought alloy | 1.0D | 0.5D | Vc | 106 | 145 | 141 | 138 | 148 | 141 | 137 | 132 | 136 |
| | | | | | fz | 0.007 | 0.011 | 0.018 | 0.025 | 0.028 | 0.049 | 0.064 | 0.076 | 0.079 |
| | | | | | RPM | 16800 | 15400 | 11200 | 8800 | 7850 | 5600 | 4350 | 3500 | 3100 |
| | | | | | FEED | 225 | 350 | 405 | 435 | 435 | 545 | 560 | 530 | 490 |
| | 23-25 | Aluminum-cast, alloyed | 1.0D | 0.5D | Vc | 106 | 145 | 141 | 138 | 148 | 141 | 137 | 132 | 136 |
| | | | | | fz | 0.007 | 0.011 | 0.018 | 0.025 | 0.028 | 0.049 | 0.064 | 0.076 | 0.079 |
| | | | | | RPM | 16800 | 15400 | 11200 | 8800 | 7850 | 5600 | 4350 | 3500 | 3100 |
| | | | | | FEED | 225 | 350 | 405 | 435 | 435 | 545 | 560 | 530 | 490 |

※ The FEED, in long & extra long types, should be reduced by around 50%
长刃，加长刃类型需要减少约50%进给

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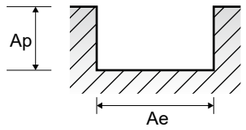
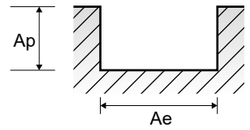





GENERAL HSS END MILLS
RECOMMENDED CUTTING CONDITIONS
推荐加工参数
EQ401, EQ406 SERIES
2 FLUTE(TiAlN-COATED) - SLOTTING
2刃(TiAlN 涂层) - 槽铣削
Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 16.0 | 18.0 | 20.0 | 22.0 | 25.0 | 28.0 | 30.0 | 32.0 | 36.0 | 40.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | 1.0D | 0.5D | Vc | 50 | 51 | 50 | 48 | 51 | 48 | 47 | 50 | 51 | 50 |
| | | | | fz | 0.078 | 0.078 | 0.088 | 0.100 | 0.096 | 0.100 | 0.100 | 0.100 | 0.094 | 0.106 |
| | | | | RPM | 1000 | 900 | 800 | 700 | 650 | 550 | 500 | 500 | 450 | 400 |
| | | | | FEED | 155 | 140 | 140 | 140 | 125 | 110 | 100 | 100 | 85 | 85 |
| | 2 | 1.0D | 0.5D | Vc | 40 | 40 | 41 | 45 | 43 | 44 | 42 | 40 | 40 | 38 |
| | | | | fz | 0.078 | 0.089 | 0.096 | 0.096 | 0.100 | 0.100 | 0.094 | 0.094 | 0.100 | 0.117 |
| | | | | RPM | 800 | 700 | 650 | 650 | 550 | 500 | 450 | 400 | 350 | 300 |
| | | | | FEED | 125 | 125 | 125 | 125 | 110 | 100 | 85 | 75 | 70 | 70 |
| | 3-4 | 1.0D | 0.5D | Vc | 33 | 31 | 35 | 35 | 35 | 35 | 33 | 30 | 34 | 31 |
| | | | | fz | 0.077 | 0.091 | 0.091 | 0.100 | 0.094 | 0.094 | 0.100 | 0.108 | 0.092 | 0.110 |
| | | | | RPM | 650 | 550 | 550 | 500 | 450 | 400 | 350 | 300 | 300 | 250 |
| | | | | FEED | 100 | 100 | 100 | 100 | 85 | 75 | 70 | 65 | 55 | 55 |
| | 5 | 1.0D | 0.5D | Vc | 20 | 20 | 19 | 21 | 20 | 18 | 19 | 20 | 17 | 19 |
| | | | | fz | 0.081 | 0.093 | 0.108 | 0.108 | 0.100 | 0.100 | 0.100 | 0.100 | 0.117 | 0.117 |
| | | | | RPM | 400 | 350 | 300 | 300 | 250 | 200 | 200 | 200 | 150 | 150 |
| | | | | FEED | 65 | 65 | 65 | 65 | 50 | 40 | 40 | 40 | 35 | 35 |
| | 6 | 1.0D | 0.5D | Vc | 40 | 40 | 41 | 45 | 43 | 44 | 42 | 40 | 40 | 38 |
| | | | | fz | 0.078 | 0.089 | 0.096 | 0.096 | 0.100 | 0.100 | 0.094 | 0.094 | 0.100 | 0.117 |
| | | | | RPM | 800 | 700 | 650 | 650 | 550 | 500 | 450 | 400 | 350 | 300 |
| | | | | FEED | 125 | 125 | 125 | 125 | 110 | 100 | 85 | 75 | 70 | 70 |
| | 7 | 1.0D | 0.5D | Vc | 33 | 31 | 35 | 35 | 35 | 35 | 33 | 30 | 34 | 31 |
| | | | | fz | 0.077 | 0.091 | 0.091 | 0.100 | 0.094 | 0.094 | 0.100 | 0.108 | 0.092 | 0.110 |
| | | | | RPM | 650 | 550 | 550 | 500 | 450 | 400 | 350 | 300 | 300 | 250 |
| | | | | FEED | 100 | 100 | 100 | 100 | 85 | 75 | 70 | 65 | 55 | 55 |
| | 8-9 | 1.0D | 0.5D | Vc | 20 | 20 | 19 | 21 | 20 | 18 | 19 | 20 | 17 | 19 |
| | | | | fz | 0.081 | 0.093 | 0.108 | 0.108 | 0.100 | 0.100 | 0.100 | 0.100 | 0.117 | 0.117 |
| | | | | RPM | 400 | 350 | 300 | 300 | 250 | 200 | 200 | 200 | 150 | 150 |
| | | | | FEED | 65 | 65 | 65 | 65 | 50 | 40 | 40 | 40 | 35 | 35 |
| | 10 | 1.0D | 0.5D | Vc | 40 | 40 | 41 | 45 | 43 | 44 | 42 | 40 | 40 | 38 |
| | | | | fz | 0.078 | 0.089 | 0.096 | 0.096 | 0.100 | 0.100 | 0.094 | 0.094 | 0.100 | 0.117 |
| | | | | RPM | 800 | 700 | 650 | 650 | 550 | 500 | 450 | 400 | 350 | 300 |
| | | | | FEED | 125 | 125 | 125 | 125 | 110 | 100 | 85 | 75 | 70 | 70 |
| | 11.1 | 1.0D | 0.5D | Vc | 20 | 20 | 19 | 21 | 20 | 18 | 19 | 20 | 17 | 19 |
| | | | | fz | 0.081 | 0.093 | 0.108 | 0.108 | 0.100 | 0.100 | 0.100 | 0.100 | 0.117 | 0.117 |
| | | | | RPM | 400 | 350 | 300 | 300 | 250 | 200 | 200 | 200 | 150 | 150 |
| | | | | FEED | 65 | 65 | 65 | 65 | 50 | 40 | 40 | 40 | 35 | 35 |
| N | 21-22 | 1.0D | 0.5D | Vc | 141 | 141 | 141 | 135 | 134 | 136 | 146 | 141 | 141 | 138 |
| | | | | fz | 0.088 | 0.098 | 0.100 | 0.108 | 0.115 | 0.123 | 0.123 | 0.120 | 0.124 | 0.127 |
| | | | | RPM | 2800 | 2500 | 2250 | 1950 | 1700 | 1550 | 1550 | 1400 | 1250 | 1100 |
| | | | | FEED | 490 | 490 | 450 | 420 | 390 | 380 | 380 | 335 | 310 | 280 |
| | 23-25 | 1.0D | 0.5D | Vc | 141 | 141 | 141 | 135 | 134 | 136 | 146 | 141 | 141 | 138 |
| | | | | fz | 0.088 | 0.098 | 0.100 | 0.108 | 0.115 | 0.123 | 0.123 | 0.120 | 0.124 | 0.127 |
| | | | | RPM | 2800 | 2500 | 2250 | 1950 | 1700 | 1550 | 1550 | 1400 | 1250 | 1100 |
| | | | | FEED | 490 | 490 | 450 | 420 | 390 | 380 | 380 | 335 | 310 | 280 |

※ The FEED, in long & extra long types, should be reduced by around 50%
长刃，加长刃类型需要减少约50%进给






CARBIDE
HSS
CBN END MILLS
i-Xmill END MILLS
i-SMART MODULAR END MILLS
X5070 END MILLS
4G MILL END MILLS
X-POWER PRO END MILLS
TitaNox-POWER END MILLS
SUS-CUT END MILLS
V7 PLUS END MILLS
ALU-POWER HPC END MILLS
ALU-CUT END MILLS
G-CUT END MILLS
CRX S END MILLS
K-2 END MILLS
GENERAL CARBIDE END MILLS
ONLY ONE COATED PM60 END MILLS
TANK-POWER END MILLS
GENERAL HSS END MILLS
MILLING CUTTERS
TECHNICAL DATA

# GENERAL HSS END MILLS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

### E2412, E2659, E2750 SERIES

**4 FLUTE - SIDE CUTTING**
**4刃 - 侧铣削**

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description 材料描述 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 2.0 | 3.0 | 4.0 | 5.0 | 6.0 | 8.0 | 10.0 | 12.0 | 14.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | 0.1D | 1.5D | Vc | 35 | 33 | 35 | 35 | 34 | 35 | 35 | 34 | 35 |
| | | | | | fz | 0.004 | 0.008 | 0.013 | 0.02 | 0.025 | 0.036 | 0.045 | 0.061 | 0.069 |
| | | | | | RPM | 5600 | 3500 | 2800 | 2200 | 1800 | 1400 | 1100 | 900 | 800 |
| | | | | | FEED | 80 | 110 | 140 | 180 | 180 | 200 | 200 | 220 | 220 |
| | 2 | | 0.1D | 1.5D | Vc | 28 | 30 | 28 | 28 | 30 | 28 | 28 | 30 | 31 |
| | | | | | fz | 0.003 | 0.006 | 0.011 | 0.017 | 0.023 | 0.036 | 0.044 | 0.056 | 0.057 |
| | | | | | RPM | 4500 | 3200 | 2200 | 1800 | 1600 | 1100 | 900 | 800 | 700 |
| | | | | | FEED | 55 | 80 | 100 | 125 | 145 | 160 | 160 | 180 | 160 |
| | 3-4 | | 0.1D | 1.5D | Vc | 25 | 24 | 23 | 25 | 23 | 23 | 25 | 24 | 25 |
| | | | | | fz | 0.003 | 0.006 | 0.009 | 0.014 | 0.019 | 0.029 | 0.038 | 0.048 | 0.054 |
| | | | | | RPM | 4000 | 2500 | 1800 | 1600 | 1200 | 900 | 800 | 630 | 560 |
| | | | | | FEED | 45 | 60 | 65 | 90 | 90 | 105 | 120 | 120 | 120 |
| | 5 | | 0.1D | 1.5D | Vc | 14 | 15 | 14 | 14 | 15 | 14 | 14 | 15 | 15 |
| | | | | | fz | 0.002 | 0.005 | 0.01 | 0.014 | 0.019 | 0.029 | 0.036 | 0.047 | 0.054 |
| | | | | | RPM | 2200 | 1600 | 1100 | 900 | 800 | 560 | 450 | 400 | 350 |
| | | | | | FEED | 20 | 30 | 45 | 50 | 60 | 65 | 65 | 75 | 75 |
| | 6 | Low alloy steel | 0.1D | 1.5D | Vc | 28 | 30 | 28 | 28 | 30 | 28 | 28 | 30 | 31 |
| | | | | | fz | 0.003 | 0.006 | 0.011 | 0.017 | 0.023 | 0.036 | 0.044 | 0.056 | 0.057 |
| | | | | | RPM | 4500 | 3200 | 2200 | 1800 | 1600 | 1100 | 900 | 800 | 700 |
| | | | | | FEED | 55 | 80 | 100 | 125 | 145 | 160 | 160 | 180 | 160 |
| | 7 | | 0.1D | 1.5D | Vc | 25 | 24 | 23 | 25 | 23 | 23 | 25 | 24 | 25 |
| | | | | | fz | 0.003 | 0.006 | 0.009 | 0.014 | 0.019 | 0.029 | 0.038 | 0.048 | 0.054 |
| | | | | | RPM | 4000 | 2500 | 1800 | 1600 | 1200 | 900 | 800 | 630 | 560 |
| | | | | | FEED | 45 | 60 | 65 | 90 | 90 | 105 | 120 | 120 | 120 |
| | 8-9 | | 0.1D | 1.5D | Vc | 14 | 15 | 14 | 14 | 15 | 14 | 14 | 15 | 15 |
| | | | | | fz | 0.002 | 0.005 | 0.01 | 0.014 | 0.019 | 0.029 | 0.036 | 0.047 | 0.054 |
| | | | | | RPM | 2200 | 1600 | 1100 | 900 | 800 | 560 | 450 | 400 | 350 |
| | | | | | FEED | 20 | 30 | 45 | 50 | 60 | 65 | 65 | 75 | 75 |
| | 10 | High alloyed steel, and tool steel | 0.1D | 1.5D | Vc | 28 | 30 | 28 | 28 | 30 | 28 | 28 | 30 | 31 |
| | | | | | fz | 0.003 | 0.006 | 0.011 | 0.017 | 0.023 | 0.036 | 0.044 | 0.056 | 0.057 |
| | | | | | RPM | 4500 | 3200 | 2200 | 1800 | 1600 | 1100 | 900 | 800 | 700 |
| | | | | | FEED | 55 | 80 | 100 | 125 | 145 | 160 | 160 | 180 | 160 |
| | 11.1 | | 0.1D | 1.5D | Vc | 14 | 15 | 14 | 14 | 15 | 14 | 14 | 15 | 15 |
| | | | | | fz | 0.002 | 0.005 | 0.01 | 0.014 | 0.019 | 0.029 | 0.036 | 0.047 | 0.054 |
| | | | | | RPM | 2200 | 1600 | 1100 | 900 | 800 | 560 | 450 | 400 | 350 |
| | | | | | FEED | 20 | 30 | 45 | 50 | 60 | 65 | 65 | 75 | 75 |
| N | 21-22 | Aluminum-wrought alloy | 0.1D | 1.5D | Vc | 75 | 104 | 101 | 99 | 106 | 101 | 97 | 94 | 97 |
| | | | | | fz | 0.005 | 0.009 | 0.014 | 0.019 | 0.021 | 0.036 | 0.048 | 0.057 | 0.06 |
| | | | | | RPM | 12000 | 11000 | 8000 | 6300 | 5600 | 4000 | 3100 | 2500 | 2200 |
| | | | | | FEED | 240 | 380 | 440 | 470 | 470 | 580 | 600 | 570 | 530 |
| | 23-25 | Aluminum-cast, alloyed | 0.1D | 1.5D | Vc | 75 | 104 | 101 | 99 | 106 | 101 | 97 | 94 | 97 |
| | | | | | fz | 0.005 | 0.009 | 0.014 | 0.019 | 0.021 | 0.036 | 0.048 | 0.057 | 0.06 |
| | | | | | RPM | 12000 | 11000 | 8000 | 6300 | 5600 | 4000 | 3100 | 2500 | 2200 |
| | | | | | FEED | 240 | 380 | 440 | 470 | 470 | 580 | 600 | 570 | 530 |

※ The FEED, in long & extra long types, should be reduced by around 50%
长刃，加长刃类型需要减少约50%进给

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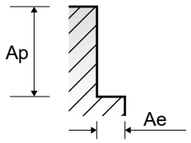
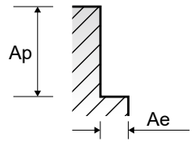





GENERAL HSS END MILLS
RECOMMENDED CUTTING CONDITIONS
推荐加工参数
E2412, E2659, E2750 SERIES
4 FLUTE - SIDE CUTTING
4刃 - 侧铣削
Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 16.0 | 18.0 | 20.0 | 22.0 | 25.0 | 28.0 | 30.0 | 32.0 | 36.0 | 40.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | 0.1D | 1.5D | Vc | 35 | 36 | 35 | 35 | 35 | 35 | 33 | 35 | 35 | 35 |
| | | | | fz | 0.079 | 0.079 | 0.089 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.097 | 0.107 |
| | | | | RPM | 700 | 630 | 560 | 500 | 450 | 400 | 350 | 350 | 310 | 280 |
| | | | | FEED | 220 | 200 | 200 | 200 | 180 | 160 | 140 | 140 | 120 | 120 |
| | 2 | 0.1D | 1.5D | Vc | 28 | 28 | 28 | 31 | 31 | 31 | 29 | 28 | 28 | 28 |
| | | | | fz | 0.071 | 0.08 | 0.089 | 0.089 | 0.091 | 0.089 | 0.089 | 0.089 | 0.09 | 0.102 |
| | | | | RPM | 560 | 500 | 450 | 450 | 400 | 350 | 310 | 280 | 250 | 220 |
| | | | | FEED | 160 | 160 | 160 | 160 | 145 | 125 | 110 | 100 | 90 | 90 |
| | 3-4 | 0.1D | 1.5D | Vc | 23 | 23 | 25 | 24 | 24 | 25 | 24 | 22 | 23 | 23 |
| | | | | fz | 0.058 | 0.066 | 0.066 | 0.075 | 0.073 | 0.071 | 0.075 | 0.074 | 0.075 | 0.083 |
| | | | | RPM | 450 | 400 | 400 | 350 | 310 | 280 | 250 | 220 | 200 | 180 |
| | | | | FEED | 105 | 105 | 105 | 105 | 90 | 80 | 75 | 65 | 60 | 60 |
| | 5 | 0.1D | 1.5D | Vc | 14 | 14 | 14 | 15 | 14 | 14 | 15 | 14 | 14 | 14 |
| | | | | fz | 0.058 | 0.065 | 0.074 | 0.074 | 0.069 | 0.07 | 0.07 | 0.08 | 0.073 | 0.08 |
| | | | | RPM | 280 | 250 | 220 | 220 | 180 | 160 | 160 | 140 | 120 | 110 |
| | | | | FEED | 65 | 65 | 65 | 65 | 50 | 45 | 45 | 45 | 35 | 35 |
| | 6 | 0.1D | 1.5D | Vc | 28 | 28 | 28 | 31 | 31 | 31 | 29 | 28 | 28 | 28 |
| | | | | fz | 0.071 | 0.08 | 0.089 | 0.089 | 0.091 | 0.089 | 0.089 | 0.089 | 0.09 | 0.102 |
| | | | | RPM | 560 | 500 | 450 | 450 | 400 | 350 | 310 | 280 | 250 | 220 |
| | | | | FEED | 160 | 160 | 160 | 160 | 145 | 125 | 110 | 100 | 90 | 90 |
| | 7 | 0.1D | 1.5D | Vc | 23 | 23 | 25 | 24 | 24 | 25 | 24 | 22 | 23 | 23 |
| | | | | fz | 0.058 | 0.066 | 0.066 | 0.075 | 0.073 | 0.071 | 0.075 | 0.074 | 0.075 | 0.083 |
| | | | | RPM | 450 | 400 | 400 | 350 | 310 | 280 | 250 | 220 | 200 | 180 |
| | | | | FEED | 105 | 105 | 105 | 105 | 90 | 80 | 75 | 65 | 60 | 60 |
| | 8-9 | 0.1D | 1.5D | Vc | 14 | 14 | 14 | 15 | 14 | 14 | 15 | 14 | 14 | 14 |
| | | | | fz | 0.058 | 0.065 | 0.074 | 0.074 | 0.069 | 0.07 | 0.07 | 0.08 | 0.073 | 0.08 |
| | | | | RPM | 280 | 250 | 220 | 220 | 180 | 160 | 160 | 140 | 120 | 110 |
| | | | | FEED | 65 | 65 | 65 | 65 | 50 | 45 | 45 | 45 | 35 | 35 |
| | 10 | 0.1D | 1.5D | Vc | 28 | 28 | 28 | 31 | 31 | 31 | 29 | 28 | 28 | 28 |
| | | | | fz | 0.071 | 0.08 | 0.089 | 0.089 | 0.091 | 0.089 | 0.089 | 0.089 | 0.09 | 0.102 |
| | | | | RPM | 560 | 500 | 450 | 450 | 400 | 350 | 310 | 280 | 250 | 220 |
| | | | | FEED | 160 | 160 | 160 | 160 | 145 | 125 | 110 | 100 | 90 | 90 |
| | 11.1 | 0.1D | 1.5D | Vc | 14 | 14 | 14 | 15 | 14 | 14 | 15 | 14 | 14 | 14 |
| | | | | fz | 0.058 | 0.065 | 0.074 | 0.074 | 0.069 | 0.07 | 0.07 | 0.08 | 0.073 | 0.08 |
| | | | | RPM | 280 | 250 | 220 | 220 | 180 | 160 | 160 | 140 | 120 | 110 |
| | | | | FEED | 65 | 65 | 65 | 65 | 50 | 45 | 45 | 45 | 35 | 35 |
| N | 21-22 | 0.1D | 1.5D | Vc | 101 | 102 | 101 | 97 | 94 | 97 | 104 | 101 | 102 | 101 |
| | | | | fz | 0.066 | 0.074 | 0.075 | 0.08 | 0.088 | 0.091 | 0.091 | 0.09 | 0.092 | 0.094 |
| | | | | RPM | 2000 | 1800 | 1600 | 1400 | 1200 | 1100 | 1100 | 1000 | 900 | 800 |
| | | | | FEED | 530 | 530 | 480 | 450 | 420 | 400 | 400 | 360 | 330 | 300 |
| | 23-25 | 0.1D | 1.5D | Vc | 101 | 102 | 101 | 97 | 94 | 97 | 104 | 101 | 102 | 101 |
| | | | | fz | 0.066 | 0.074 | 0.075 | 0.08 | 0.088 | 0.091 | 0.091 | 0.09 | 0.092 | 0.094 |
| | | | | RPM | 2000 | 1800 | 1600 | 1400 | 1200 | 1100 | 1100 | 1000 | 900 | 800 |
| | | | | FEED | 530 | 530 | 480 | 450 | 420 | 400 | 400 | 360 | 330 | 300 |

※ The FEED, in long & extra long types, should be reduced by around 50%
长刃，加长刃类型需要减少约50%进给



# GENERAL HSS END MILLS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

### EQ412, EQ659, EQ750 SERIES

**4 FLUTE**(TiAlN-COATED) - **SIDE CUTTING**
**4刃**(TiAlN 涂层)- **侧铣削**

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description 材料描述 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 2.0 | 3.0 | 4.0 | 5.0 | 6.0 | 8.0 | 10.0 | 12.0 | 14.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | 0.1D | 1.5D | Vc | 49 | 46 | 49 | 49 | 47 | 49 | 49 | 47 | 48 |
| | | | | | fz | 0.004 | 0.008 | 0.013 | 0.020 | 0.025 | 0.036 | 0.045 | 0.062 | 0.070 |
| | | | | | RPM | 7850 | 4900 | 3900 | 3100 | 2500 | 1950 | 1550 | 1250 | 1100 |
| | | | | | FEED | 110 | 155 | 195 | 250 | 250 | 280 | 280 | 310 | 310 |
| | 2 | | 0.1D | 1.5D | Vc | 40 | 42 | 39 | 39 | 42 | 39 | 39 | 41 | 44 |
| | | | | | fz | 0.003 | 0.006 | 0.011 | 0.018 | 0.023 | 0.036 | 0.045 | 0.057 | 0.056 |
| | | | | | RPM | 6300 | 4500 | 3100 | 2500 | 2250 | 1550 | 1250 | 1100 | 1000 |
| | | | | | FEED | 75 | 110 | 140 | 175 | 205 | 225 | 225 | 250 | 225 |
| | 3-4 | | 0.1D | 1.5D | Vc | 35 | 33 | 31 | 35 | 32 | 31 | 35 | 34 | 35 |
| | | | | | fz | 0.003 | 0.006 | 0.009 | 0.014 | 0.018 | 0.029 | 0.039 | 0.047 | 0.053 |
| | | | | | RPM | 5600 | 3500 | 2500 | 2250 | 1700 | 1250 | 1100 | 900 | 800 |
| | | | | | FEED | 65 | 85 | 90 | 125 | 125 | 145 | 170 | 170 | 170 |
| | 5 | | 0.1D | 1.5D | Vc | 19 | 21 | 19 | 20 | 21 | 20 | 20 | 21 | 22 |
| | | | | | fz | 0.002 | 0.004 | 0.010 | 0.014 | 0.019 | 0.028 | 0.035 | 0.048 | 0.053 |
| | | | | | RPM | 3100 | 2250 | 1550 | 1250 | 1100 | 800 | 650 | 550 | 500 |
| | | | | | FEED | 30 | 40 | 65 | 70 | 85 | 90 | 90 | 105 | 105 |
| | 6 | Low alloy steel | 0.1D | 1.5D | Vc | 40 | 42 | 39 | 39 | 42 | 39 | 39 | 41 | 44 |
| | | | | | fz | 0.003 | 0.006 | 0.011 | 0.018 | 0.023 | 0.036 | 0.045 | 0.057 | 0.056 |
| | | | | | RPM | 6300 | 4500 | 3100 | 2500 | 2250 | 1550 | 1250 | 1100 | 1000 |
| | | | | | FEED | 75 | 110 | 140 | 175 | 205 | 225 | 225 | 250 | 225 |
| | 7 | | 0.1D | 1.5D | Vc | 35 | 33 | 31 | 35 | 32 | 31 | 35 | 34 | 35 |
| | | | | | fz | 0.003 | 0.006 | 0.009 | 0.014 | 0.018 | 0.029 | 0.039 | 0.047 | 0.053 |
| | | | | | RPM | 5600 | 3500 | 2500 | 2250 | 1700 | 1250 | 1100 | 900 | 800 |
| | | | | | FEED | 65 | 85 | 90 | 125 | 125 | 145 | 170 | 170 | 170 |
| | 8-9 | | 0.1D | 1.5D | Vc | 19 | 21 | 19 | 20 | 21 | 20 | 20 | 21 | 22 |
| | | | | | fz | 0.002 | 0.004 | 0.010 | 0.014 | 0.019 | 0.028 | 0.035 | 0.048 | 0.053 |
| | | | | | RPM | 3100 | 2250 | 1550 | 1250 | 1100 | 800 | 650 | 550 | 500 |
| | | | | | FEED | 30 | 40 | 65 | 70 | 85 | 90 | 90 | 105 | 105 |
| | 10 | High alloyed steel, and tool steel | 0.1D | 1.5D | Vc | 40 | 42 | 39 | 39 | 42 | 39 | 39 | 41 | 44 |
| | | | | | fz | 0.003 | 0.006 | 0.011 | 0.018 | 0.023 | 0.036 | 0.045 | 0.057 | 0.056 |
| | | | | | RPM | 6300 | 4500 | 3100 | 2500 | 2250 | 1550 | 1250 | 1100 | 1000 |
| | | | | | FEED | 75 | 110 | 140 | 175 | 205 | 225 | 225 | 250 | 225 |
| | 11.1 | | 0.1D | 1.5D | Vc | 19 | 21 | 19 | 20 | 21 | 20 | 20 | 21 | 22 |
| | | | | | fz | 0.002 | 0.004 | 0.010 | 0.014 | 0.019 | 0.028 | 0.035 | 0.048 | 0.053 |
| | | | | | RPM | 3100 | 2250 | 1550 | 1250 | 1100 | 800 | 650 | 550 | 500 |
| | | | | | FEED | 30 | 40 | 65 | 70 | 85 | 90 | 90 | 105 | 105 |
| N | 21-22 | Aluminum-wrought alloy | 0.1D | 1.5D | Vc | 106 | 145 | 141 | 138 | 148 | 141 | 137 | 132 | 136 |
| | | | | | fz | 0.005 | 0.009 | 0.014 | 0.019 | 0.021 | 0.036 | 0.048 | 0.057 | 0.060 |
| | | | | | RPM | 16800 | 15400 | 11200 | 8800 | 7850 | 5600 | 4350 | 3500 | 3100 |
| | | | | | FEED | 335 | 530 | 615 | 660 | 660 | 810 | 840 | 800 | 740 |
| | 23-25 | Aluminum-cast, alloyed | 0.1D | 1.5D | Vc | 106 | 145 | 141 | 138 | 148 | 141 | 137 | 132 | 136 |
| | | | | | fz | 0.005 | 0.009 | 0.014 | 0.019 | 0.021 | 0.036 | 0.048 | 0.057 | 0.060 |
| | | | | | RPM | 16800 | 15400 | 11200 | 8800 | 7850 | 5600 | 4350 | 3500 | 3100 |
| | | | | | FEED | 335 | 530 | 615 | 660 | 660 | 810 | 840 | 800 | 740 |

※ The FEED, in long & extra long types, should be reduced by around 50%
长刃，加长刃类型需要减少约50%进给

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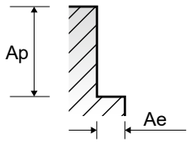
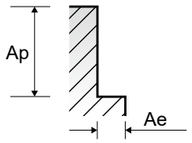





GENERAL HSS END MILLS
RECOMMENDED CUTTING CONDITIONS
推荐加工参数
EQ412, EQ659, EQ750 SERIES
4 FLUTE(TiAlN-COATED) - SIDE CUTTING
4刃(TiAlN 涂层)- 侧铣削
Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 16.0 | 18.0 | 20.0 | 22.0 | 25.0 | 28.0 | 30.0 | 32.0 | 36.0 | 40.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | 0.1D | 1.5D | Vc | 50 | 51 | 50 | 48 | 51 | 48 | 47 | 50 | 51 | 50 |
| | | | | fz | 0.078 | 0.078 | 0.088 | 0.100 | 0.096 | 0.102 | 0.098 | 0.098 | 0.094 | 0.106 |
| | | | | RPM | 1000 | 900 | 800 | 700 | 650 | 550 | 500 | 500 | 450 | 400 |
| | | | | FEED | 310 | 280 | 280 | 280 | 250 | 225 | 195 | 195 | 170 | 170 |
| | 2 | 0.1D | 1.5D | Vc | 40 | 40 | 41 | 45 | 43 | 44 | 42 | 40 | 40 | 38 |
| | | | | fz | 0.070 | 0.080 | 0.087 | 0.087 | 0.093 | 0.088 | 0.086 | 0.088 | 0.089 | 0.104 |
| | | | | RPM | 800 | 700 | 650 | 650 | 550 | 500 | 450 | 400 | 350 | 300 |
| | | | | FEED | 225 | 225 | 225 | 225 | 205 | 175 | 155 | 140 | 125 | 125 |
| | 3-4 | 0.1D | 1.5D | Vc | 33 | 31 | 35 | 35 | 35 | 35 | 33 | 30 | 34 | 31 |
| | | | | fz | 0.056 | 0.066 | 0.066 | 0.073 | 0.069 | 0.069 | 0.075 | 0.075 | 0.071 | 0.085 |
| | | | | RPM | 650 | 550 | 550 | 500 | 450 | 400 | 350 | 300 | 300 | 250 |
| | | | | FEED | 145 | 145 | 145 | 145 | 125 | 110 | 105 | 90 | 85 | 85 |
| | 5 | 0.1D | 1.5D | Vc | 20 | 20 | 19 | 21 | 20 | 18 | 19 | 20 | 17 | 19 |
| | | | | fz | 0.056 | 0.064 | 0.075 | 0.075 | 0.070 | 0.081 | 0.081 | 0.081 | 0.083 | 0.083 |
| | | | | RPM | 400 | 350 | 300 | 300 | 250 | 200 | 200 | 200 | 150 | 150 |
| | | | | FEED | 90 | 90 | 90 | 90 | 70 | 65 | 65 | 65 | 50 | 50 |
| | 6 | 0.1D | 1.5D | Vc | 40 | 40 | 41 | 45 | 43 | 44 | 42 | 40 | 40 | 38 |
| | | | | fz | 0.070 | 0.080 | 0.087 | 0.087 | 0.093 | 0.088 | 0.086 | 0.088 | 0.089 | 0.104 |
| | | | | RPM | 800 | 700 | 650 | 650 | 550 | 500 | 450 | 400 | 350 | 300 |
| | | | | FEED | 225 | 225 | 225 | 225 | 205 | 175 | 155 | 140 | 125 | 125 |
| | 7 | 0.1D | 1.5D | Vc | 33 | 31 | 35 | 35 | 35 | 35 | 33 | 30 | 34 | 31 |
| | | | | fz | 0.056 | 0.066 | 0.066 | 0.073 | 0.069 | 0.069 | 0.075 | 0.075 | 0.071 | 0.085 |
| | | | | RPM | 650 | 550 | 550 | 500 | 450 | 400 | 350 | 300 | 300 | 250 |
| | | | | FEED | 145 | 145 | 145 | 145 | 125 | 110 | 105 | 90 | 85 | 85 |
| | 8-9 | 0.1D | 1.5D | Vc | 20 | 20 | 19 | 21 | 20 | 18 | 19 | 20 | 17 | 19 |
| | | | | fz | 0.056 | 0.064 | 0.075 | 0.075 | 0.070 | 0.081 | 0.081 | 0.081 | 0.083 | 0.083 |
| | | | | RPM | 400 | 350 | 300 | 300 | 250 | 200 | 200 | 200 | 150 | 150 |
| | | | | FEED | 90 | 90 | 90 | 90 | 70 | 65 | 65 | 65 | 50 | 50 |
| | 10 | 0.1D | 1.5D | Vc | 40 | 40 | 41 | 45 | 43 | 44 | 42 | 40 | 40 | 38 |
| | | | | fz | 0.070 | 0.080 | 0.087 | 0.087 | 0.093 | 0.088 | 0.086 | 0.088 | 0.089 | 0.104 |
| | | | | RPM | 800 | 700 | 650 | 650 | 550 | 500 | 450 | 400 | 350 | 300 |
| | | | | FEED | 225 | 225 | 225 | 225 | 205 | 175 | 155 | 140 | 125 | 125 |
| | 11.1 | 0.1D | 1.5D | Vc | 20 | 20 | 19 | 21 | 20 | 18 | 19 | 20 | 17 | 19 |
| | | | | fz | 0.056 | 0.064 | 0.075 | 0.075 | 0.070 | 0.081 | 0.081 | 0.081 | 0.083 | 0.083 |
| | | | | RPM | 400 | 350 | 300 | 300 | 250 | 200 | 200 | 200 | 150 | 150 |
| | | | | FEED | 90 | 90 | 90 | 90 | 70 | 65 | 65 | 65 | 50 | 50 |
| N | 21-22 | 0.1D | 1.5D | Vc | 141 | 141 | 141 | 135 | 134 | 136 | 146 | 141 | 141 | 138 |
| | | | | fz | 0.066 | 0.074 | 0.074 | 0.081 | 0.087 | 0.090 | 0.090 | 0.090 | 0.092 | 0.095 |
| | | | | RPM | 2800 | 2500 | 2250 | 1950 | 1700 | 1550 | 1550 | 1400 | 1250 | 1100 |
| | | | | FEED | 740 | 740 | 670 | 630 | 590 | 560 | 560 | 505 | 460 | 420 |
| | 23-25 | 0.1D | 1.5D | Vc | 141 | 141 | 141 | 135 | 134 | 136 | 146 | 141 | 141 | 138 |
| | | | | fz | 0.066 | 0.074 | 0.074 | 0.081 | 0.087 | 0.090 | 0.090 | 0.090 | 0.092 | 0.095 |
| | | | | RPM | 2800 | 2500 | 2250 | 1950 | 1700 | 1550 | 1550 | 1400 | 1250 | 1100 |
| | | | | FEED | 740 | 740 | 670 | 630 | 590 | 560 | 560 | 505 | 460 | 420 |

※ The FEED, in long & extra long types, should be reduced by around 50%
长刃，加长刃类型需要减少约50%进给






CARBIDE
HSS
CBN END MILLS
i-Xmill END MILLS
i-SMART MODULAR END MILLS
X5070 END MILLS
4G MILL END MILLS
X-POWER PRO END MILLS
TitaNox-POWER END MILLS
SUS-CUT END MILLS
V7 PLUS END MILLS
ALU-POWER HPC END MILLS
ALU-CUT END MILLS
G-CUT END MILLS
CRX S END MILLS
K-2 END MILLS
GENERAL CARBIDE END MILLS
ONLY ONE COATED PM60 END MILLS
TANK-POWER END MILLS
GENERAL HSS END MILLS
MILLING CUTTERS
TECHNICAL DATA

# GENERAL HSS END MILLS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

### E2760 SERIES

**MULTI FLUTE ROUGHING - SIDE CUTTING**
**多刃 粗加工- 侧铣削**

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description 材料描述 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 6.0 | 8.0 | 10.0 | 12.0 | 14.0 | 16.0 | 18.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | 0.5D | 1.5D | Vc | 34 | 35 | 35 | 34 | 35 | 35 | 36 |
| | | | | | fz | 0.011 | 0.019 | 0.034 | 0.05 | 0.056 | 0.064 | 0.071 |
| | | | | | RPM | 1800 | 1400 | 1100 | 900 | 800 | 700 | 630 |
| | | | | | FEED | 80 | 105 | 150 | 180 | 180 | 180 | 180 |
| | 2 | | 0.5D | 1.5D | Vc | 30 | 28 | 28 | 30 | 31 | 28 | 28 |
| | | | | | fz | 0.009 | 0.017 | 0.033 | 0.044 | 0.05 | 0.063 | 0.07 |
| | | | | | RPM | 1600 | 1100 | 900 | 800 | 700 | 560 | 500 |
| | | | | | FEED | 60 | 75 | 120 | 140 | 140 | 140 | 140 |
| | 3-4 | | 0.5D | 1.5D | Vc | 23 | 23 | 25 | 24 | 25 | 23 | 23 |
| | | | | | fz | 0.011 | 0.018 | 0.034 | 0.044 | 0.049 | 0.061 | 0.069 |
| | | | | | RPM | 1200 | 900 | 800 | 630 | 560 | 450 | 400 |
| | | | | | FEED | 55 | 65 | 110 | 110 | 110 | 110 | 110 |
| | 5 | | 0.5D | 1.5D | Vc | 15 | 14 | 14 | 15 | 15 | 14 | 14 |
| | | | | | fz | 0.009 | 0.016 | 0.033 | 0.044 | 0.05 | 0.063 | 0.07 |
| | | | | | RPM | 800 | 560 | 450 | 400 | 350 | 280 | 250 |
| | | | | | FEED | 30 | 35 | 60 | 70 | 70 | 70 | 70 |
| | 6 | Low alloy steel | 0.5D | 1.5D | Vc | 30 | 28 | 28 | 30 | 31 | 28 | 28 |
| | | | | | fz | 0.009 | 0.017 | 0.033 | 0.044 | 0.05 | 0.063 | 0.07 |
| | | | | | RPM | 1600 | 1100 | 900 | 800 | 700 | 560 | 500 |
| | | | | | FEED | 60 | 75 | 120 | 140 | 140 | 140 | 140 |
| | 7 | | 0.5D | 1.5D | Vc | 23 | 23 | 25 | 24 | 25 | 23 | 23 |
| | | | | | fz | 0.011 | 0.018 | 0.034 | 0.044 | 0.049 | 0.061 | 0.069 |
| | | | | | RPM | 1200 | 900 | 800 | 630 | 560 | 450 | 400 |
| | | | | | FEED | 55 | 65 | 110 | 110 | 110 | 110 | 110 |
| | 8-9 | | 0.5D | 1.5D | Vc | 15 | 14 | 14 | 15 | 15 | 14 | 14 |
| | | | | | fz | 0.009 | 0.016 | 0.033 | 0.044 | 0.05 | 0.063 | 0.07 |
| | | | | | RPM | 800 | 560 | 450 | 400 | 350 | 280 | 250 |
| | | | | | FEED | 30 | 35 | 60 | 70 | 70 | 70 | 70 |
| | 10 | High alloyed steel, and tool steel | 0.5D | 1.5D | Vc | 30 | 28 | 28 | 30 | 31 | 28 | 28 |
| | | | | | fz | 0.009 | 0.017 | 0.033 | 0.044 | 0.05 | 0.063 | 0.07 |
| | | | | | RPM | 1600 | 1100 | 900 | 800 | 700 | 560 | 500 |
| | | | | | FEED | 60 | 75 | 120 | 140 | 140 | 140 | 140 |
| | 11.1 | | 0.5D | 1.5D | Vc | 15 | 14 | 14 | 15 | 15 | 14 | 14 |
| | | | | | fz | 0.009 | 0.016 | 0.033 | 0.044 | 0.05 | 0.063 | 0.07 |
| | | | | | RPM | 800 | 560 | 450 | 400 | 350 | 280 | 250 |
| | | | | | FEED | 30 | 35 | 60 | 70 | 70 | 70 | 70 |
| N | 21-22 | Aluminum-wrought alloy | 0.5D | 1.5D | Vc | 85 | 78 | 79 | 75 | 79 | 80 | 79 |
| | | | | | fz | 0.011 | 0.019 | 0.035 | 0.05 | 0.058 | 0.07 | 0.084 |
| | | | | | RPM | 4500 | 3100 | 2500 | 2000 | 1800 | 1600 | 1400 |
| | | | | | FEED | 200 | 230 | 350 | 400 | 420 | 450 | 470 |
| | 23-25 | Aluminum-cast, alloyed | 0.5D | 1.5D | Vc | 85 | 78 | 79 | 75 | 79 | 80 | 79 |
| | | | | | fz | 0.011 | 0.019 | 0.035 | 0.05 | 0.058 | 0.07 | 0.084 |
| | | | | | RPM | 4500 | 3100 | 2500 | 2000 | 1800 | 1600 | 1400 |
| | | | | | FEED | 200 | 230 | 350 | 400 | 420 | 450 | 470 |

※ The FEED, in long & extra long types, should be reduced by around 50%
长刃，加长刃类型需要减少约50%进给

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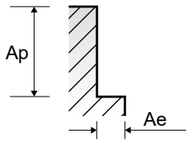
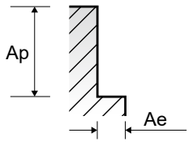





GENERAL HSS END MILLS
RECOMMENDED CUTTING CONDITIONS
推荐加工参数
E2760 SERIES
MULTI FLUTE ROUGHING - SIDE CUTTING
多刃 粗加工- 侧铣削
Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 20.0 | 22.0 | 25.0 | 28.0 | 30.0 | 32.0 | 36.0 | 40.0 | 50.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | 0.5D | 1.5D | Vc | 35 | 35 | 35 | 35 | 33 | 35 | 35 | 35 | 35 |
| | | | | fz | 0.08 | 0.088 | 0.098 | 0.088 | 0.1 | 0.1 | 0.113 | 0.119 | 0.152 |
| | | | | RPM | 560 | 500 | 450 | 400 | 350 | 350 | 310 | 280 | 220 |
| | | | | FEED | 180 | 220 | 220 | 210 | 210 | 210 | 210 | 200 | 200 |
| | 2 | 0.5D | 1.5D | Vc | 28 | 31 | 31 | 31 | 29 | 28 | 28 | 28 | 28 |
| | | | | fz | 0.078 | 0.076 | 0.085 | 0.076 | 0.086 | 0.095 | 0.107 | 0.114 | 0.157 |
| | | | | RPM | 450 | 450 | 400 | 350 | 310 | 280 | 250 | 220 | 180 |
| | | | | FEED | 140 | 170 | 170 | 160 | 160 | 160 | 160 | 150 | 170 |
| | 3-4 | 0.5D | 1.5D | Vc | 25 | 24 | 24 | 25 | 24 | 22 | 23 | 23 | 25 |
| | | | | fz | 0.069 | 0.08 | 0.09 | 0.077 | 0.087 | 0.098 | 0.108 | 0.111 | 0.146 |
| | | | | RPM | 400 | 350 | 310 | 280 | 250 | 220 | 200 | 180 | 160 |
| | | | | FEED | 110 | 140 | 140 | 130 | 130 | 130 | 130 | 120 | 140 |
| | 5 | 0.5D | 1.5D | Vc | 14 | 15 | 14 | 14 | 15 | 14 | 14 | 14 | 14 |
| | | | | fz | 0.08 | 0.077 | 0.094 | 0.089 | 0.089 | 0.101 | 0.118 | 0.121 | 0.148 |
| | | | | RPM | 220 | 220 | 180 | 160 | 160 | 140 | 120 | 110 | 90 |
| | | | | FEED | 70 | 85 | 85 | 85 | 85 | 85 | 85 | 80 | 80 |
| | 6 | 0.5D | 1.5D | Vc | 28 | 31 | 31 | 31 | 29 | 28 | 28 | 28 | 28 |
| | | | | fz | 0.078 | 0.076 | 0.085 | 0.076 | 0.086 | 0.095 | 0.107 | 0.114 | 0.157 |
| | | | | RPM | 450 | 450 | 400 | 350 | 310 | 280 | 250 | 220 | 180 |
| | | | | FEED | 140 | 170 | 170 | 160 | 160 | 160 | 160 | 150 | 170 |
| | 7 | 0.5D | 1.5D | Vc | 25 | 24 | 24 | 25 | 24 | 22 | 23 | 23 | 25 |
| | | | | fz | 0.069 | 0.08 | 0.09 | 0.077 | 0.087 | 0.098 | 0.108 | 0.111 | 0.146 |
| | | | | RPM | 400 | 350 | 310 | 280 | 250 | 220 | 200 | 180 | 160 |
| | | | | FEED | 110 | 140 | 140 | 130 | 130 | 130 | 130 | 120 | 140 |
| | 8-9 | 0.5D | 1.5D | Vc | 14 | 15 | 14 | 14 | 15 | 14 | 14 | 14 | 14 |
| | | | | fz | 0.08 | 0.077 | 0.094 | 0.089 | 0.089 | 0.101 | 0.118 | 0.121 | 0.148 |
| | | | | RPM | 220 | 220 | 180 | 160 | 160 | 140 | 120 | 110 | 90 |
| | | | | FEED | 70 | 85 | 85 | 85 | 85 | 85 | 85 | 80 | 80 |
| | 10 | 0.5D | 1.5D | Vc | 28 | 31 | 31 | 31 | 29 | 28 | 28 | 28 | 28 |
| | | | | fz | 0.078 | 0.076 | 0.085 | 0.076 | 0.086 | 0.095 | 0.107 | 0.114 | 0.157 |
| | | | | RPM | 450 | 450 | 400 | 350 | 310 | 280 | 250 | 220 | 180 |
| | | | | FEED | 140 | 170 | 170 | 160 | 160 | 160 | 160 | 150 | 170 |
| | 11.1 | 0.5D | 1.5D | Vc | 14 | 15 | 14 | 14 | 15 | 14 | 14 | 14 | 14 |
| | | | | fz | 0.08 | 0.077 | 0.094 | 0.089 | 0.089 | 0.101 | 0.118 | 0.121 | 0.148 |
| | | | | RPM | 220 | 220 | 180 | 160 | 160 | 140 | 120 | 110 | 90 |
| | | | | FEED | 70 | 85 | 85 | 85 | 85 | 85 | 85 | 80 | 80 |
| N | 21-22 | 0.5D | 1.5D | Vc | 75 | 76 | 79 | 79 | 85 | 80 | 79 | 79 | 79 |
| | | | | fz | 0.104 | 0.085 | 0.09 | 0.094 | 0.098 | 0.104 | 0.112 | 0.119 | 0.123 |
| | | | | RPM | 1200 | 1100 | 1000 | 900 | 900 | 800 | 700 | 630 | 500 |
| | | | | FEED | 500 | 470 | 450 | 510 | 530 | 500 | 470 | 450 | 370 |
| | 23-25 | 0.5D | 1.5D | Vc | 75 | 76 | 79 | 79 | 85 | 80 | 79 | 79 | 79 |
| | | | | fz | 0.104 | 0.085 | 0.09 | 0.094 | 0.098 | 0.104 | 0.112 | 0.119 | 0.123 |
| | | | | RPM | 1200 | 1100 | 1000 | 900 | 900 | 800 | 700 | 630 | 500 |
| | | | | FEED | 500 | 470 | 450 | 510 | 530 | 500 | 470 | 450 | 370 |

※ The FEED, in long & extra long types, should be reduced by around 50%
长刃，加长刃类型需要减少约50%进给



# GENERAL HSS END MILLS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

### EQ760 SERIES

**MULTI FLUTE ROUGHING(TiAlN-COATED) - SIDE CUTTING**
**多刃 粗加工(TiAlN 涂层) - 侧铣削**

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description 材料描述 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 6.0 | 8.0 | 10.0 | 12.0 | 14.0 | 16.0 | 18.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | 0.5D | 1.5D | Vc | 47 | 49 | 49 | 47 | 48 | 50 | 51 |
| | | | | | fz | 0.011 | 0.019 | 0.034 | 0.05 | 0.057 | 0.063 | 0.069 |
| | | | | | RPM | 2500 | 1950 | 1550 | 1250 | 1100 | 1000 | 900 |
| | | | | | FEED | 110 | 145 | 210 | 250 | 250 | 250 | 250 |
| | 2 | | 0.5D | 1.5D | Vc | 42 | 39 | 39 | 41 | 44 | 40 | 40 |
| | | | | | fz | 0.009 | 0.017 | 0.034 | 0.044 | 0.049 | 0.061 | 0.07 |
| | | | | | RPM | 2250 | 1550 | 1250 | 1100 | 1000 | 800 | 700 |
| | | | | | FEED | 85 | 105 | 170 | 195 | 195 | 195 | 195 |
| | 3-4 | | 0.5D | 1.5D | Vc | 32 | 31 | 35 | 34 | 35 | 33 | 31 |
| | | | | | fz | 0.011 | 0.018 | 0.035 | 0.043 | 0.048 | 0.06 | 0.07 |
| | | | | | RPM | 1700 | 1250 | 1100 | 900 | 800 | 650 | 550 |
| | | | | | FEED | 75 | 90 | 155 | 155 | 155 | 155 | 155 |
| | 5 | | 0.5D | 1.5D | Vc | 21 | 20 | 20 | 21 | 22 | 20 | 20 |
| | | | | | fz | 0.009 | 0.016 | 0.033 | 0.045 | 0.05 | 0.063 | 0.071 |
| | | | | | RPM | 1100 | 800 | 650 | 550 | 500 | 400 | 350 |
| | | | | | FEED | 40 | 50 | 85 | 100 | 100 | 100 | 100 |
| | 6 | Low alloy steel | 0.5D | 1.5D | Vc | 42 | 39 | 39 | 41 | 44 | 40 | 40 |
| | | | | | fz | 0.009 | 0.017 | 0.034 | 0.044 | 0.049 | 0.061 | 0.07 |
| | | | | | RPM | 2250 | 1550 | 1250 | 1100 | 1000 | 800 | 700 |
| | | | | | FEED | 85 | 105 | 170 | 195 | 195 | 195 | 195 |
| | 7 | | 0.5D | 1.5D | Vc | 32 | 31 | 35 | 34 | 35 | 33 | 31 |
| | | | | | fz | 0.011 | 0.018 | 0.035 | 0.043 | 0.048 | 0.06 | 0.07 |
| | | | | | RPM | 1700 | 1250 | 1100 | 900 | 800 | 650 | 550 |
| | | | | | FEED | 75 | 90 | 155 | 155 | 155 | 155 | 155 |
| | 8-9 | | 0.5D | 1.5D | Vc | 21 | 20 | 20 | 21 | 22 | 20 | 20 |
| | | | | | fz | 0.009 | 0.016 | 0.033 | 0.045 | 0.05 | 0.063 | 0.071 |
| | | | | | RPM | 1100 | 800 | 650 | 550 | 500 | 400 | 350 |
| | | | | | FEED | 40 | 50 | 85 | 100 | 100 | 100 | 100 |
| | 10 | High alloyed steel, and tool steel | 0.5D | 1.5D | Vc | 42 | 39 | 39 | 41 | 44 | 40 | 40 |
| | | | | | fz | 0.009 | 0.017 | 0.034 | 0.044 | 0.049 | 0.061 | 0.07 |
| | | | | | RPM | 2250 | 1550 | 1250 | 1100 | 1000 | 800 | 700 |
| | | | | | FEED | 85 | 105 | 170 | 195 | 195 | 195 | 195 |
| | 11.1 | | 0.5D | 1.5D | Vc | 21 | 20 | 20 | 21 | 22 | 20 | 20 |
| | | | | | fz | 0.009 | 0.016 | 0.033 | 0.045 | 0.05 | 0.063 | 0.071 |
| | | | | | RPM | 1100 | 800 | 650 | 550 | 500 | 400 | 350 |
| | | | | | FEED | 40 | 50 | 85 | 100 | 100 | 100 | 100 |
| N | 21-22 | Aluminum-wrought alloy | 0.5D | 1.5D | Vc | 119 | 109 | 110 | 106 | 110 | 113 | 110 |
| | | | | | fz | 0.011 | 0.018 | 0.035 | 0.05 | 0.059 | 0.07 | 0.085 |
| | | | | | RPM | 6300 | 4350 | 3500 | 2800 | 2500 | 2250 | 1950 |
| | | | | | FEED | 280 | 320 | 490 | 560 | 590 | 630 | 660 |
| | 23-25 | Aluminum-cast, alloyed | 0.5D | 1.5D | Vc | 119 | 109 | 110 | 106 | 110 | 113 | 110 |
| | | | | | fz | 0.011 | 0.018 | 0.035 | 0.05 | 0.059 | 0.07 | 0.085 |
| | | | | | RPM | 6300 | 4350 | 3500 | 2800 | 2500 | 2250 | 1950 |
| | | | | | FEED | 280 | 320 | 490 | 560 | 590 | 630 | 660 |

※ The FEED, in long & extra long types, should be reduced by around 50%
长刃，加长刃类型需要减少约50%进给

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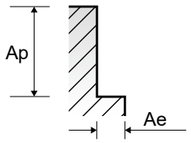





GENERAL HSS END MILLS

RECOMMENDED CUTTING CONDITIONS
推荐加工参数

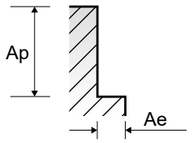
EQ760 SERIES

MULTI FLUTE ROUGHING(TiAlN-COATED) - SIDE CUTTING
多刃 粗加工(TiAlN 涂层) - 侧铣削

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 20.0 | 22.0 | 25.0 | 28.0 | 30.0 | 32.0 | 36.0 | 40.0 | 50.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | 0.5D | 1.5D | Vc | 50 | 48 | 51 | 48 | 47 | 50 | 51 | 50 | 47 |
| | | | | fz | 0.078 | 0.089 | 0.095 | 0.089 | 0.098 | 0.098 | 0.109 | 0.117 | 0.156 |
| | | | | RPM | 800 | 700 | 650 | 550 | 500 | 500 | 450 | 400 | 300 |
| | | | | FEED | 250 | 310 | 310 | 295 | 295 | 295 | 295 | 280 | 280 |
| | 2 | 0.5D | 1.5D | Vc | 41 | 45 | 43 | 44 | 42 | 40 | 40 | 38 | 39 |
| | | | | fz | 0.075 | 0.074 | 0.087 | 0.075 | 0.083 | 0.094 | 0.107 | 0.117 | 0.16 |
| | | | | RPM | 650 | 650 | 550 | 500 | 450 | 400 | 350 | 300 | 250 |
| | | | | FEED | 195 | 240 | 240 | 225 | 225 | 225 | 225 | 210 | 240 |
| | 3-4 | 0.5D | 1.5D | Vc | 35 | 35 | 35 | 35 | 33 | 30 | 34 | 31 | 35 |
| | | | | fz | 0.07 | 0.078 | 0.087 | 0.075 | 0.086 | 0.1 | 0.1 | 0.113 | 0.148 |
| | | | | RPM | 550 | 500 | 450 | 400 | 350 | 300 | 300 | 250 | 220 |
| | | | | FEED | 155 | 195 | 195 | 180 | 180 | 180 | 180 | 170 | 195 |
| | 5 | 0.5D | 1.5D | Vc | 19 | 21 | 20 | 19 | 21 | 20 | 19 | 16 | 19 |
| | | | | fz | 0.083 | 0.08 | 0.096 | 0.091 | 0.091 | 0.1 | 0.118 | 0.141 | 0.153 |
| | | | | RPM | 300 | 300 | 250 | 220 | 220 | 200 | 170 | 130 | 120 |
| | | | | FEED | 100 | 120 | 120 | 120 | 120 | 120 | 120 | 110 | 110 |
| | 6 | 0.5D | 1.5D | Vc | 41 | 45 | 43 | 44 | 42 | 40 | 40 | 38 | 39 |
| | | | | fz | 0.075 | 0.074 | 0.087 | 0.075 | 0.083 | 0.094 | 0.107 | 0.117 | 0.16 |
| | | | | RPM | 650 | 650 | 550 | 500 | 450 | 400 | 350 | 300 | 250 |
| | | | | FEED | 195 | 240 | 240 | 225 | 225 | 225 | 225 | 210 | 240 |
| | 7 | 0.5D | 1.5D | Vc | 35 | 35 | 35 | 35 | 33 | 30 | 34 | 31 | 35 |
| | | | | fz | 0.07 | 0.078 | 0.087 | 0.075 | 0.086 | 0.1 | 0.1 | 0.113 | 0.148 |
| | | | | RPM | 550 | 500 | 450 | 400 | 350 | 300 | 300 | 250 | 220 |
| | | | | FEED | 155 | 195 | 195 | 180 | 180 | 180 | 180 | 170 | 195 |
| | 8-9 | 0.5D | 1.5D | Vc | 19 | 21 | 20 | 19 | 21 | 20 | 19 | 16 | 19 |
| | | | | fz | 0.083 | 0.08 | 0.096 | 0.091 | 0.091 | 0.1 | 0.118 | 0.141 | 0.153 |
| | | | | RPM | 300 | 300 | 250 | 220 | 220 | 200 | 170 | 130 | 120 |
| | | | | FEED | 100 | 120 | 120 | 120 | 120 | 120 | 120 | 110 | 110 |
| | 10 | 0.5D | 1.5D | Vc | 41 | 45 | 43 | 44 | 42 | 40 | 40 | 38 | 39 |
| | | | | fz | 0.075 | 0.074 | 0.087 | 0.075 | 0.083 | 0.094 | 0.107 | 0.117 | 0.16 |
| | | | | RPM | 650 | 650 | 550 | 500 | 450 | 400 | 350 | 300 | 250 |
| | | | | FEED | 195 | 240 | 240 | 225 | 225 | 225 | 225 | 210 | 240 |
| | 11.1 | 0.5D | 1.5D | Vc | 19 | 21 | 20 | 19 | 21 | 20 | 19 | 16 | 19 |
| | | | | fz | 0.083 | 0.08 | 0.096 | 0.091 | 0.091 | 0.1 | 0.118 | 0.141 | 0.153 |
| | | | | RPM | 300 | 300 | 250 | 220 | 220 | 200 | 170 | 130 | 120 |
| | | | | FEED | 100 | 120 | 120 | 120 | 120 | 120 | 120 | 110 | 110 |
| N | 21-22 | 0.5D | 1.5D | Vc | 107 | 107 | 110 | 110 | 118 | 111 | 113 | 113 | 110 |
| | | | | fz | 0.103 | 0.106 | 0.113 | 0.143 | 0.148 | 0.159 | 0.165 | 0.175 | 0.186 |
| | | | | RPM | 1700 | 1550 | 1400 | 1250 | 1250 | 1100 | 1000 | 900 | 700 |
| | | | | FEED | 700 | 660 | 630 | 715 | 740 | 700 | 660 | 630 | 520 |
| | 23-25 | 0.5D | 1.5D | Vc | 107 | 107 | 110 | 110 | 118 | 111 | 113 | 113 | 110 |
| | | | | fz | 0.103 | 0.106 | 0.113 | 0.143 | 0.148 | 0.159 | 0.165 | 0.175 | 0.186 |
| | | | | RPM | 1700 | 1550 | 1400 | 1250 | 1250 | 1100 | 1000 | 900 | 700 |
| | | | | FEED | 700 | 660 | 630 | 715 | 740 | 700 | 660 | 630 | 520 |

※ The FEED, in long & extra long types, should be reduced by around 50%
长刃，加长刃类型需要减少约50%进给






CARBIDE
HSS
CBN END MILLS
i-Xmill END MILLS
i-SMART MODULAR END MILLS
X5070 END MILLS
4G MILL END MILLS
X-POWER PRO END MILLS
TitaNox-POWER END MILLS
SUS-CUT END MILLS
V7 PLUS END MILLS
ALU-POWER HPC END MILLS
ALU-CUT END MILLS
G-CUT END MILLS
CRX S END MILLS
K-2 END MILLS
GENERAL CARBIDE END MILLS
ONLY ONE COATED PM60 END MILLS
TANK-POWER END MILLS
GENERAL HSS END MILLS
MILLING CUTTERS
TECHNICAL DATA

# GENERAL HSS END MILLS

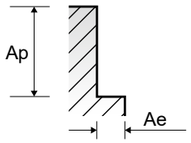
## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

### E2759 SERIES — MULTI FLUTE ROUGHING - SIDE CUTTING
### 多刃 粗加工- 侧铣削

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description 材料描述 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 10.0 | 12.0 | 14.0 | 16.0 | 18.0 | 20.0 | 22.0 | 25.0 | 28.0 | 30.0 | 32.0 | 36.0 | 40.0 | 50.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | 0.5D | 1.5D | Vc | 35 | 34 | 35 | 35 | 36 | 35 | 35 | 35 | 35 | 33 | 35 | 35 | 35 | 35 |
| | | | | | fz | 0.034 | 0.05 | 0.056 | 0.064 | 0.071 | 0.08 | 0.088 | 0.098 | 0.105 | 0.1 | 0.1 | 0.113 | 0.119 | 0.152 |
| | | | | | RPM | 1100 | 900 | 800 | 700 | 630 | 560 | 500 | 450 | 400 | 350 | 350 | 310 | 280 | 220 |
| | | | | | FEED | 150 | 180 | 180 | 180 | 180 | 180 | 220 | 220 | 210 | 210 | 210 | 210 | 200 | 200 |
| | 2 | | 0.5D | 1.5D | Vc | 28 | 30 | 31 | 28 | 28 | 28 | 31 | 31 | 31 | 29 | 28 | 28 | 28 | 28 |
| | | | | | fz | 0.033 | 0.044 | 0.05 | 0.063 | 0.07 | 0.078 | 0.076 | 0.085 | 0.091 | 0.086 | 0.095 | 0.107 | 0.114 | 0.157 |
| | | | | | RPM | 900 | 800 | 700 | 560 | 500 | 450 | 450 | 400 | 350 | 310 | 280 | 250 | 220 | 180 |
| | | | | | FEED | 120 | 140 | 140 | 140 | 140 | 140 | 170 | 170 | 160 | 160 | 160 | 160 | 150 | 170 |
| | 3-4 | | 0.5D | 1.5D | Vc | 25 | 24 | 25 | 23 | 23 | 25 | 24 | 24 | 25 | 24 | 22 | 23 | 23 | 25 |
| | | | | | fz | 0.034 | 0.044 | 0.049 | 0.061 | 0.069 | 0.069 | 0.08 | 0.09 | 0.093 | 0.087 | 0.098 | 0.108 | 0.111 | 0.146 |
| | | | | | RPM | 800 | 630 | 560 | 450 | 400 | 400 | 350 | 310 | 280 | 250 | 220 | 200 | 180 | 160 |
| | | | | | FEED | 110 | 110 | 110 | 110 | 110 | 110 | 140 | 140 | 130 | 130 | 130 | 130 | 120 | 140 |
| | 5 | | 0.5D | 1.5D | Vc | 14 | 15 | 15 | 14 | 14 | 14 | 15 | 14 | 14 | 15 | 14 | 14 | 14 | 14 |
| | | | | | fz | 0.033 | 0.044 | 0.05 | 0.063 | 0.07 | 0.08 | 0.077 | 0.094 | 0.106 | 0.089 | 0.101 | 0.118 | 0.121 | 0.148 |
| | | | | | RPM | 450 | 400 | 350 | 280 | 250 | 220 | 220 | 180 | 160 | 160 | 140 | 120 | 110 | 90 |
| | | | | | FEED | 60 | 70 | 70 | 70 | 70 | 70 | 85 | 85 | 85 | 85 | 85 | 85 | 80 | 80 |
| | 6 | Low alloy steel | 0.5D | 1.5D | Vc | 28 | 30 | 31 | 28 | 28 | 28 | 31 | 31 | 31 | 29 | 28 | 28 | 28 | 28 |
| | | | | | fz | 0.033 | 0.044 | 0.05 | 0.063 | 0.07 | 0.078 | 0.076 | 0.085 | 0.091 | 0.086 | 0.095 | 0.107 | 0.114 | 0.157 |
| | | | | | RPM | 900 | 800 | 700 | 560 | 500 | 450 | 450 | 400 | 350 | 310 | 280 | 250 | 220 | 180 |
| | | | | | FEED | 120 | 140 | 140 | 140 | 140 | 140 | 170 | 170 | 160 | 160 | 160 | 160 | 150 | 170 |
| | 7 | | 0.5D | 1.5D | Vc | 25 | 24 | 25 | 23 | 23 | 25 | 24 | 24 | 25 | 24 | 22 | 23 | 23 | 25 |
| | | | | | fz | 0.034 | 0.044 | 0.049 | 0.061 | 0.069 | 0.069 | 0.08 | 0.09 | 0.093 | 0.087 | 0.098 | 0.108 | 0.111 | 0.146 |
| | | | | | RPM | 800 | 630 | 560 | 450 | 400 | 400 | 350 | 310 | 280 | 250 | 220 | 200 | 180 | 160 |
| | | | | | FEED | 110 | 110 | 110 | 110 | 110 | 110 | 140 | 140 | 130 | 130 | 130 | 130 | 120 | 140 |
| | 8-9 | | 0.5D | 1.5D | Vc | 14 | 15 | 15 | 14 | 14 | 14 | 15 | 14 | 14 | 15 | 14 | 14 | 14 | 14 |
| | | | | | fz | 0.033 | 0.044 | 0.05 | 0.063 | 0.07 | 0.08 | 0.077 | 0.094 | 0.106 | 0.089 | 0.101 | 0.118 | 0.121 | 0.148 |
| | | | | | RPM | 450 | 400 | 350 | 280 | 250 | 220 | 220 | 180 | 160 | 160 | 140 | 120 | 110 | 90 |
| | | | | | FEED | 60 | 70 | 70 | 70 | 70 | 70 | 85 | 85 | 85 | 85 | 85 | 85 | 80 | 80 |
| | 10 | High alloyed steel, and tool steel | 0.5D | 1.5D | Vc | 28 | 30 | 31 | 28 | 28 | 28 | 31 | 31 | 31 | 29 | 28 | 28 | 28 | 28 |
| | | | | | fz | 0.033 | 0.044 | 0.05 | 0.063 | 0.07 | 0.078 | 0.076 | 0.085 | 0.091 | 0.086 | 0.095 | 0.107 | 0.114 | 0.157 |
| | | | | | RPM | 900 | 800 | 700 | 560 | 500 | 450 | 450 | 400 | 350 | 310 | 280 | 250 | 220 | 180 |
| | | | | | FEED | 120 | 140 | 140 | 140 | 140 | 140 | 170 | 170 | 160 | 160 | 160 | 160 | 150 | 170 |
| | 11.1 | | 0.5D | 1.5D | Vc | 14 | 15 | 15 | 14 | 14 | 14 | 15 | 14 | 14 | 15 | 14 | 14 | 14 | 14 |
| | | | | | fz | 0.033 | 0.044 | 0.05 | 0.063 | 0.07 | 0.08 | 0.077 | 0.094 | 0.106 | 0.089 | 0.101 | 0.118 | 0.121 | 0.148 |
| | | | | | RPM | 450 | 400 | 350 | 280 | 250 | 220 | 220 | 180 | 160 | 160 | 140 | 120 | 110 | 90 |
| | | | | | FEED | 60 | 70 | 70 | 70 | 70 | 70 | 85 | 85 | 85 | 85 | 85 | 85 | 80 | 80 |
| N | 21-22 | Aluminum-wrought alloy | 0.5D | 1.5D | Vc | 79 | 75 | 79 | 80 | 79 | 75 | 76 | 79 | 79 | 85 | 80 | 79 | 79 | 79 |
| | | | | | fz | 0.035 | 0.05 | 0.058 | 0.07 | 0.084 | 0.104 | 0.085 | 0.09 | 0.113 | 0.098 | 0.104 | 0.112 | 0.119 | 0.123 |
| | | | | | RPM | 2500 | 2000 | 1800 | 1600 | 1400 | 1200 | 1100 | 1000 | 900 | 900 | 800 | 700 | 630 | 500 |
| | | | | | FEED | 350 | 400 | 420 | 450 | 470 | 500 | 470 | 450 | 510 | 530 | 500 | 470 | 450 | 370 |
| | 23-25 | Aluminum-cast, alloyed | 0.5D | 1.5D | Vc | 79 | 75 | 79 | 80 | 79 | 75 | 76 | 79 | 79 | 85 | 80 | 79 | 79 | 79 |
| | | | | | fz | 0.035 | 0.05 | 0.058 | 0.07 | 0.084 | 0.104 | 0.085 | 0.09 | 0.113 | 0.098 | 0.104 | 0.112 | 0.119 | 0.123 |
| | | | | | RPM | 2500 | 2000 | 1800 | 1600 | 1400 | 1200 | 1100 | 1000 | 900 | 900 | 800 | 700 | 630 | 500 |
| | | | | | FEED | 350 | 400 | 420 | 450 | 470 | 500 | 470 | 450 | 510 | 530 | 500 | 470 | 450 | 370 |

※ The FEED, in long & extra long types, should be reduced by around 50%
长刃，加长刃类型需要减少约50%进给





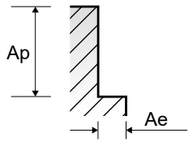

GENERAL HSS END MILLS
RECOMMENDED CUTTING CONDITIONS
推荐加工参数

### EQ759 SERIES — MULTI FLUTE ROUGHING(TiAlN-COATED) - SIDE CUTTING
### 多刃 粗加工(TiAlN 涂层) - 侧铣削

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description 材料描述 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 10.0 | 12.0 | 14.0 | 16.0 | 18.0 | 20.0 | 22.0 | 25.0 | 28.0 | 30.0 | 32.0 | 36.0 | 40.0 | 50.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | 0.5D | 1.5D | Vc | 49 | 47 | 48 | 50 | 51 | 50 | 48 | 51 | 48 | 47 | 50 | 51 | 50 | 47 |
| | | | | | fz | 0.034 | 0.05 | 0.057 | 0.063 | 0.069 | 0.078 | 0.089 | 0.095 | 0.107 | 0.098 | 0.098 | 0.109 | 0.117 | 0.156 |
| | | | | | RPM | 1550 | 1250 | 1100 | 1000 | 900 | 800 | 700 | 650 | 550 | 500 | 500 | 450 | 400 | 300 |
| | | | | | FEED | 210 | 250 | 250 | 250 | 250 | 250 | 310 | 310 | 295 | 295 | 295 | 295 | 280 | 280 |
| | 2 | | 0.5D | 1.5D | Vc | 39 | 41 | 44 | 40 | 40 | 41 | 45 | 43 | 44 | 42 | 40 | 40 | 38 | 39 |
| | | | | | fz | 0.034 | 0.044 | 0.049 | 0.061 | 0.07 | 0.075 | 0.074 | 0.087 | 0.09 | 0.083 | 0.094 | 0.107 | 0.117 | 0.16 |
| | | | | | RPM | 1250 | 1100 | 1000 | 800 | 700 | 650 | 650 | 550 | 500 | 450 | 400 | 350 | 300 | 250 |
| | | | | | FEED | 170 | 195 | 195 | 195 | 195 | 195 | 240 | 240 | 225 | 225 | 225 | 225 | 210 | 240 |
| | 3-4 | | 0.5D | 1.5D | Vc | 35 | 34 | 35 | 33 | 31 | 35 | 35 | 35 | 35 | 33 | 30 | 34 | 31 | 35 |
| | | | | | fz | 0.035 | 0.043 | 0.048 | 0.06 | 0.07 | 0.07 | 0.078 | 0.087 | 0.09 | 0.086 | 0.1 | 0.1 | 0.113 | 0.148 |
| | | | | | RPM | 1100 | 900 | 800 | 650 | 550 | 550 | 500 | 450 | 400 | 350 | 300 | 300 | 250 | 220 |
| | | | | | FEED | 155 | 155 | 155 | 155 | 155 | 155 | 195 | 195 | 180 | 180 | 180 | 180 | 170 | 195 |
| | 5 | | 0.5D | 1.5D | Vc | 20 | 21 | 22 | 20 | 20 | 19 | 21 | 20 | 19 | 21 | 20 | 19 | 16 | 19 |
| | | | | | fz | 0.033 | 0.045 | 0.05 | 0.063 | 0.071 | 0.083 | 0.08 | 0.096 | 0.109 | 0.091 | 0.1 | 0.118 | 0.141 | 0.153 |
| | | | | | RPM | 650 | 550 | 500 | 400 | 350 | 300 | 300 | 250 | 220 | 220 | 200 | 170 | 130 | 120 |
| | | | | | FEED | 85 | 100 | 100 | 100 | 100 | 100 | 120 | 120 | 120 | 120 | 120 | 120 | 110 | 110 |
| | 6 | Low alloy steel | 0.5D | 1.5D | Vc | 39 | 41 | 44 | 40 | 40 | 41 | 45 | 43 | 44 | 42 | 40 | 40 | 38 | 39 |
| | | | | | fz | 0.034 | 0.044 | 0.049 | 0.061 | 0.07 | 0.075 | 0.074 | 0.087 | 0.09 | 0.083 | 0.094 | 0.107 | 0.117 | 0.16 |
| | | | | | RPM | 1250 | 1100 | 1000 | 800 | 700 | 650 | 650 | 550 | 500 | 450 | 400 | 350 | 300 | 250 |
| | | | | | FEED | 170 | 195 | 195 | 195 | 195 | 195 | 240 | 240 | 225 | 225 | 225 | 225 | 210 | 240 |
| | 7 | | 0.5D | 1.5D | Vc | 35 | 34 | 35 | 33 | 31 | 35 | 35 | 35 | 35 | 33 | 30 | 34 | 31 | 35 |
| | | | | | fz | 0.035 | 0.043 | 0.048 | 0.06 | 0.07 | 0.07 | 0.078 | 0.087 | 0.09 | 0.086 | 0.1 | 0.1 | 0.113 | 0.148 |
| | | | | | RPM | 1100 | 900 | 800 | 650 | 550 | 550 | 500 | 450 | 400 | 350 | 300 | 300 | 250 | 220 |
| | | | | | FEED | 155 | 155 | 155 | 155 | 155 | 155 | 195 | 195 | 180 | 180 | 180 | 180 | 170 | 195 |
| | 8-9 | | 0.5D | 1.5D | Vc | 20 | 21 | 22 | 20 | 20 | 19 | 21 | 20 | 19 | 21 | 20 | 19 | 16 | 19 |
| | | | | | fz | 0.033 | 0.045 | 0.05 | 0.063 | 0.071 | 0.083 | 0.08 | 0.096 | 0.109 | 0.091 | 0.1 | 0.118 | 0.141 | 0.153 |
| | | | | | RPM | 650 | 550 | 500 | 400 | 350 | 300 | 300 | 250 | 220 | 220 | 200 | 170 | 130 | 120 |
| | | | | | FEED | 85 | 100 | 100 | 100 | 100 | 100 | 120 | 120 | 120 | 120 | 120 | 120 | 110 | 110 |
| | 10 | High alloyed steel, and tool steel | 0.5D | 1.5D | Vc | 39 | 41 | 44 | 40 | 40 | 41 | 45 | 43 | 44 | 42 | 40 | 40 | 38 | 39 |
| | | | | | fz | 0.034 | 0.044 | 0.049 | 0.061 | 0.07 | 0.075 | 0.074 | 0.087 | 0.09 | 0.083 | 0.094 | 0.107 | 0.117 | 0.16 |
| | | | | | RPM | 1250 | 1100 | 1000 | 800 | 700 | 650 | 650 | 550 | 500 | 450 | 400 | 350 | 300 | 250 |
| | | | | | FEED | 170 | 195 | 195 | 195 | 195 | 195 | 240 | 240 | 225 | 225 | 225 | 225 | 210 | 240 |
| | 11.1 | | 0.5D | 1.5D | Vc | 20 | 21 | 22 | 20 | 20 | 19 | 21 | 20 | 19 | 21 | 20 | 19 | 16 | 19 |
| | | | | | fz | 0.033 | 0.045 | 0.05 | 0.063 | 0.071 | 0.083 | 0.08 | 0.096 | 0.109 | 0.091 | 0.1 | 0.118 | 0.141 | 0.153 |
| | | | | | RPM | 650 | 550 | 500 | 400 | 350 | 300 | 300 | 250 | 220 | 220 | 200 | 170 | 130 | 120 |
| | | | | | FEED | 85 | 100 | 100 | 100 | 100 | 100 | 120 | 120 | 120 | 120 | 120 | 120 | 110 | 110 |
| N | 21-22 | Aluminum-wrought alloy | 0.5D | 1.5D | Vc | 110 | 106 | 110 | 113 | 110 | 107 | 107 | 110 | 110 | 118 | 111 | 113 | 113 | 110 |
| | | | | | fz | 0.035 | 0.05 | 0.059 | 0.07 | 0.085 | 0.103 | 0.085 | 0.09 | 0.114 | 0.099 | 0.106 | 0.11 | 0.117 | 0.124 |
| | | | | | RPM | 3500 | 2800 | 2500 | 2250 | 1950 | 1700 | 1550 | 1400 | 1250 | 1250 | 1100 | 1000 | 900 | 700 |
| | | | | | FEED | 490 | 560 | 590 | 630 | 660 | 700 | 660 | 630 | 715 | 740 | 700 | 660 | 630 | 520 |
| | 23-25 | Aluminum-cast, alloyed | 0.5D | 1.5D | Vc | 110 | 106 | 110 | 113 | 110 | 107 | 107 | 110 | 110 | 118 | 111 | 113 | 113 | 110 |
| | | | | | fz | 0.035 | 0.05 | 0.059 | 0.07 | 0.085 | 0.103 | 0.085 | 0.09 | 0.114 | 0.099 | 0.106 | 0.11 | 0.117 | 0.124 |
| | | | | | RPM | 3500 | 2800 | 2500 | 2250 | 1950 | 1700 | 1550 | 1400 | 1250 | 1250 | 1100 | 1000 | 900 | 700 |
| | | | | | FEED | 490 | 560 | 590 | 630 | 660 | 700 | 660 | 630 | 715 | 740 | 700 | 660 | 630 | 520 |

※ The FEED, in long & extra long types, should be reduced by around 50%
长刃，加长刃类型需要减少约50%进给



# GENERAL HSS END MILLS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

### E2753 SERIES — MULTI FLUTE ROUGHING - SIDE CUTTING
### 多刃 粗加工- 侧铣削

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description 材料描述 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 6.0 | 8.0 | 10.0 | 12.0 | 14.0 | 16.0 | 18.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | 0.1D | 1.5D | Vc | 35 | 35 | 35 | 35 | 35 | 35 | 35 |
| | | | | | fz | 0.015 | 0.025 | 0.034 | 0.05 | 0.056 | 0.064 | 0.071 |
| | | | | | RPM | 1857 | 1393 | 1114 | 928 | 796 | 696 | 619 |
| | | | | | FEED | 84 | 104 | 152 | 186 | 178 | 178 | 176 |
| | 2 | | 0.1D | 1.5D | Vc | 30 | 30 | 30 | 30 | 30 | 30 | 30 |
| | | | | | fz | 0.013 | 0.023 | 0.033 | 0.044 | 0.05 | 0.063 | 0.07 |
| | | | | | RPM | 1592 | 1194 | 955 | 796 | 682 | 597 | 531 |
| | | | | | FEED | 62 | 82 | 126 | 140 | 136 | 150 | 149 |
| | 3-4 | | 0.1D | 1.5D | Vc | 25 | 25 | 25 | 25 | 25 | 25 | 25 |
| | | | | | fz | 0.015 | 0.024 | 0.034 | 0.044 | 0.049 | 0.061 | 0.069 |
| | | | | | RPM | 1326 | 995 | 796 | 663 | 568 | 497 | 442 |
| | | | | | FEED | 60 | 72 | 108 | 117 | 111 | 121 | 122 |
| | 5 | | 0.1D | 1.5D | Vc | 15 | 15 | 15 | 15 | 15 | 15 | 15 |
| | | | | | fz | 0.013 | 0.021 | 0.033 | 0.044 | 0.05 | 0.063 | 0.07 |
| | | | | | RPM | 796 | 597 | 477 | 398 | 341 | 298 | 265 |
| | | | | | FEED | 31 | 38 | 63 | 70 | 68 | 75 | 74 |
| | 6 | Low alloy steel | 0.1D | 1.5D | Vc | 30 | 30 | 30 | 30 | 30 | 30 | 30 |
| | | | | | fz | 0.013 | 0.023 | 0.033 | 0.044 | 0.05 | 0.063 | 0.07 |
| | | | | | RPM | 1592 | 1194 | 955 | 796 | 682 | 597 | 531 |
| | | | | | FEED | 62 | 82 | 126 | 140 | 136 | 150 | 149 |
| | 7 | | 0.1D | 1.5D | Vc | 25 | 25 | 25 | 25 | 25 | 25 | 25 |
| | | | | | fz | 0.015 | 0.024 | 0.034 | 0.044 | 0.049 | 0.061 | 0.069 |
| | | | | | RPM | 1326 | 995 | 796 | 663 | 568 | 497 | 442 |
| | | | | | FEED | 60 | 72 | 108 | 117 | 111 | 121 | 122 |
| | 8-9 | | 0.1D | 1.5D | Vc | 15 | 15 | 15 | 15 | 15 | 15 | 15 |
| | | | | | fz | 0.013 | 0.021 | 0.033 | 0.044 | 0.05 | 0.063 | 0.07 |
| | | | | | RPM | 796 | 597 | 477 | 398 | 341 | 298 | 265 |
| | | | | | FEED | 31 | 38 | 63 | 70 | 68 | 75 | 74 |
| | 10 | High alloyed steel, and tool steel | 0.1D | 1.5D | Vc | 30 | 30 | 30 | 30 | 30 | 30 | 30 |
| | | | | | fz | 0.013 | 0.023 | 0.033 | 0.044 | 0.05 | 0.063 | 0.07 |
| | | | | | RPM | 1592 | 1194 | 955 | 796 | 682 | 597 | 531 |
| | | | | | FEED | 62 | 82 | 126 | 140 | 136 | 150 | 149 |
| | 11.1 | | 0.1D | 1.5D | Vc | 15 | 15 | 15 | 15 | 15 | 15 | 15 |
| | | | | | fz | 0.013 | 0.021 | 0.033 | 0.044 | 0.05 | 0.063 | 0.07 |
| | | | | | RPM | 796 | 597 | 477 | 398 | 341 | 298 | 265 |
| | | | | | FEED | 31 | 38 | 63 | 70 | 68 | 75 | 74 |
| N | 21-22 | Aluminum-wrought alloy | 0.1D | 1.5D | Vc | 85 | 80 | 80 | 75 | 80 | 80 | 80 |
| | | | | | fz | 0.015 | 0.025 | 0.035 | 0.05 | 0.058 | 0.07 | 0.084 |
| | | | | | RPM | 4509 | 3183 | 2546 | 1989 | 1819 | 1592 | 1415 |
| | | | | | FEED | 203 | 239 | 357 | 398 | 422 | 446 | 475 |
| | 23-24 | Aluminum-cast, alloyed | 0.1D | 1.5D | Vc | 55 | 52 | 52 | 49 | 52 | 52 | 52 |
| | | | | | fz | 0.015 | 0.025 | 0.035 | 0.05 | 0.058 | 0.07 | 0.084 |
| | | | | | RPM | 2918 | 2069 | 1655 | 1300 | 1182 | 1035 | 920 |
| | | | | | FEED | 131 | 155 | 232 | 260 | 274 | 290 | 309 |

※ The FEED, in long & extra long types, should be reduced by around 50%
长刃，加长刃类型需要减少约50%进给

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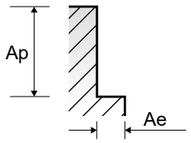
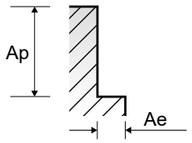





GENERAL HSS END MILLS
RECOMMENDED CUTTING CONDITIONS
推荐加工参数
E2753 SERIES — MULTI FLUTE ROUGHING - SIDE CUTTING
多刃 粗加工- 侧铣削
Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 20.0 | 22.0 | 25.0 | 28.0 | 30.0 | 32.0 | 36.0 | 40.0 | 50.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | 0.1D | 1.5D | Vc | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 |
| | | | | fz | 0.08 | 0.088 | 0.098 | 0.088 | 0.1 | 0.1 | 0.113 | 0.119 | 0.152 |
| | | | | RPM | 557 | 506 | 446 | 398 | 371 | 348 | 309 | 279 | 223 |
| | | | | FEED | 178 | 223 | 218 | 210 | 223 | 209 | 210 | 199 | 203 |
| | 2 | 0.1D | 1.5D | Vc | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 |
| | | | | fz | 0.078 | 0.076 | 0.085 | 0.076 | 0.086 | 0.095 | 0.107 | 0.114 | 0.157 |
| | | | | RPM | 477 | 434 | 382 | 341 | 318 | 298 | 265 | 239 | 191 |
| | | | | FEED | 149 | 165 | 162 | 156 | 164 | 170 | 170 | 163 | 180 |
| | 3-4 | 0.1D | 1.5D | Vc | 25 | 25 | 25 | 25 | 25 | 20 | 25 | 25 | 25 |
| | | | | fz | 0.069 | 0.08 | 0.09 | 0.077 | 0.087 | 0.098 | 0.108 | 0.111 | 0.146 |
| | | | | RPM | 398 | 362 | 318 | 284 | 265 | 199 | 221 | 199 | 159 |
| | | | | FEED | 110 | 145 | 143 | 131 | 138 | 117 | 143 | 132 | 139 |
| | 5 | 0.1D | 1.5D | Vc | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 |
| | | | | fz | 0.08 | 0.077 | 0.094 | 0.089 | 0.089 | 0.101 | 0.118 | 0.121 | 0.148 |
| | | | | RPM | 239 | 217 | 191 | 171 | 159 | 149 | 133 | 119 | 95 |
| | | | | FEED | 76 | 84 | 90 | 91 | 85 | 90 | 94 | 87 | 85 |
| | 6 | 0.1D | 1.5D | Vc | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 |
| | | | | fz | 0.078 | 0.076 | 0.085 | 0.076 | 0.086 | 0.095 | 0.107 | 0.114 | 0.157 |
| | | | | RPM | 477 | 434 | 382 | 341 | 318 | 298 | 265 | 239 | 191 |
| | | | | FEED | 149 | 165 | 162 | 156 | 164 | 170 | 170 | 163 | 180 |
| | 7 | 0.1D | 1.5D | Vc | 25 | 25 | 25 | 25 | 25 | 20 | 25 | 25 | 25 |
| | | | | fz | 0.069 | 0.08 | 0.09 | 0.077 | 0.087 | 0.098 | 0.108 | 0.111 | 0.146 |
| | | | | RPM | 398 | 362 | 318 | 284 | 265 | 199 | 221 | 199 | 159 |
| | | | | FEED | 110 | 145 | 143 | 131 | 138 | 117 | 143 | 132 | 139 |
| | 8-9 | 0.1D | 1.5D | Vc | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 |
| | | | | fz | 0.08 | 0.077 | 0.094 | 0.089 | 0.089 | 0.101 | 0.118 | 0.121 | 0.148 |
| | | | | RPM | 239 | 217 | 191 | 171 | 159 | 149 | 133 | 119 | 95 |
| | | | | FEED | 76 | 84 | 90 | 91 | 85 | 90 | 94 | 87 | 85 |
| | 10 | 0.1D | 1.5D | Vc | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 |
| | | | | fz | 0.078 | 0.076 | 0.085 | 0.076 | 0.086 | 0.095 | 0.107 | 0.114 | 0.157 |
| | | | | RPM | 477 | 434 | 382 | 341 | 318 | 298 | 265 | 239 | 191 |
| | | | | FEED | 149 | 165 | 162 | 156 | 164 | 170 | 170 | 163 | 180 |
| | 11.1 | 0.1D | 1.5D | Vc | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 |
| | | | | fz | 0.08 | 0.077 | 0.094 | 0.089 | 0.089 | 0.101 | 0.118 | 0.121 | 0.148 |
| | | | | RPM | 239 | 217 | 191 | 171 | 159 | 149 | 133 | 119 | 95 |
| | | | | FEED | 76 | 84 | 90 | 91 | 85 | 90 | 94 | 87 | 85 |
| N | 21-22 | 0.1D | 1.5D | Vc | 75 | 75 | 80 | 80 | 85 | 80 | 80 | 80 | 80 |
| | | | | fz | 0.104 | 0.085 | 0.09 | 0.094 | 0.098 | 0.104 | 0.112 | 0.119 | 0.123 |
| | | | | RPM | 1194 | 1085 | 1019 | 909 | 902 | 796 | 707 | 637 | 509 |
| | | | | FEED | 497 | 461 | 458 | 513 | 530 | 497 | 475 | 455 | 376 |
| | 23-24 | 0.1D | 1.5D | Vc | 49 | 49 | 52 | 52 | 55 | 52 | 52 | 52 | 52 |
| | | | | fz | 0.104 | 0.085 | 0.09 | 0.094 | 0.098 | 0.104 | 0.112 | 0.119 | 0.123 |
| | | | | RPM | 780 | 709 | 662 | 591 | 584 | 517 | 460 | 414 | 331 |
| | | | | FEED | 324 | 301 | 298 | 333 | 343 | 323 | 309 | 295 | 244 |

※ The FEED, in long & extra long types, should be reduced by around 50%
长刃，加长刃类型需要减少约50%进给






CARBIDE
HSS
CBN END MILLS
i-Xmill END MILLS
i-SMART MODULAR END MILLS
X5070 END MILLS
4G MILL END MILLS
X-POWER PRO END MILLS
TitaNox-POWER END MILLS
SUS-CUT END MILLS
V7 PLUS END MILLS
ALU-POWER HPC END MILLS
ALU-CUT END MILLS
G-CUT END MILLS
CRX S END MILLS
K-2 END MILLS
GENERAL CARBIDE END MILLS
ONLY ONE COATED PM60 END MILLS
TANK-POWER END MILLS
GENERAL HSS END MILLS
MILLING CUTTERS
TECHNICAL DATA

# GENERAL HSS END MILLS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

### EQ753 SERIES — MULTI FLUTE ROUGHING(TiAlN-COATED) - SIDE CUTTING
### 多刃 粗加工(TiAlN 涂层) - 侧铣削

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description 材料描述 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 6.0 | 8.0 | 10.0 | 12.0 | 14.0 | 16.0 | 18.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | 0.1D | 1.5D | Vc | 45 | 50 | 50 | 45 | 50 | 50 | 50 |
| | | | | | fz | 0.015 | 0.025 | 0.034 | 0.05 | 0.057 | 0.063 | 0.069 |
| | | | | | RPM | 2387 | 1989 | 1592 | 1194 | 1137 | 995 | 884 |
| | | | | | FEED | 107 | 149 | 216 | 239 | 259 | 251 | 244 |
| | 2 | | 0.1D | 1.5D | Vc | 40 | 40 | 40 | 40 | 45 | 40 | 40 |
| | | | | | fz | 0.013 | 0.023 | 0.034 | 0.044 | 0.049 | 0.061 | 0.07 |
| | | | | | RPM | 2122 | 1592 | 1273 | 1061 | 1023 | 796 | 707 |
| | | | | | FEED | 83 | 110 | 173 | 187 | 201 | 194 | 198 |
| | 3-4 | | 0.1D | 1.5D | Vc | 30 | 30 | 35 | 35 | 35 | 35 | 30 |
| | | | | | fz | 0.015 | 0.024 | 0.035 | 0.043 | 0.048 | 0.06 | 0.07 |
| | | | | | RPM | 1592 | 1194 | 1114 | 928 | 796 | 696 | 531 |
| | | | | | FEED | 72 | 86 | 156 | 160 | 153 | 167 | 149 |
| | 5 | | 0.1D | 1.5D | Vc | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| | | | | | fz | 0.012 | 0.021 | 0.033 | 0.045 | 0.05 | 0.063 | 0.071 |
| | | | | | RPM | 1061 | 796 | 637 | 531 | 455 | 398 | 354 |
| | | | | | FEED | 38 | 50 | 84 | 95 | 91 | 100 | 100 |
| | 6 | Low alloy steel | 0.1D | 1.5D | Vc | 40 | 40 | 40 | 40 | 45 | 40 | 40 |
| | | | | | fz | 0.013 | 0.023 | 0.034 | 0.044 | 0.049 | 0.061 | 0.07 |
| | | | | | RPM | 2122 | 1592 | 1273 | 1061 | 1023 | 796 | 707 |
| | | | | | FEED | 83 | 110 | 173 | 187 | 201 | 194 | 198 |
| | 7 | | 0.1D | 1.5D | Vc | 30 | 30 | 35 | 35 | 35 | 35 | 30 |
| | | | | | fz | 0.015 | 0.024 | 0.035 | 0.043 | 0.048 | 0.06 | 0.07 |
| | | | | | RPM | 1592 | 1194 | 1114 | 928 | 796 | 696 | 531 |
| | | | | | FEED | 72 | 86 | 156 | 160 | 153 | 167 | 149 |
| | 8-9 | | 0.1D | 1.5D | Vc | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| | | | | | fz | 0.012 | 0.021 | 0.033 | 0.045 | 0.05 | 0.063 | 0.071 |
| | | | | | RPM | 1061 | 796 | 637 | 531 | 455 | 398 | 354 |
| | | | | | FEED | 38 | 50 | 84 | 95 | 91 | 100 | 100 |
| | 10 | High alloyed steel, and tool steel | 0.1D | 1.5D | Vc | 40 | 40 | 40 | 40 | 45 | 40 | 40 |
| | | | | | fz | 0.013 | 0.023 | 0.034 | 0.044 | 0.049 | 0.061 | 0.07 |
| | | | | | RPM | 2122 | 1592 | 1273 | 1061 | 1023 | 796 | 707 |
| | | | | | FEED | 83 | 110 | 173 | 187 | 201 | 194 | 198 |
| | 11.1 | | 0.1D | 1.5D | Vc | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| | | | | | fz | 0.012 | 0.021 | 0.033 | 0.045 | 0.05 | 0.063 | 0.071 |
| | | | | | RPM | 1061 | 796 | 637 | 531 | 455 | 398 | 354 |
| | | | | | FEED | 38 | 50 | 84 | 95 | 91 | 100 | 100 |
| N | 21-22 | Aluminum-wrought alloy | 0.1D | 1.5D | Vc | 120 | 110 | 110 | 105 | 110 | 115 | 110 |
| | | | | | fz | 0.015 | 0.025 | 0.035 | 0.05 | 0.059 | 0.07 | 0.085 |
| | | | | | RPM | 6366 | 4377 | 3501 | 2785 | 2501 | 2288 | 1945 |
| | | | | | FEED | 286 | 328 | 490 | 557 | 590 | 641 | 661 |
| | 23-24 | Aluminum-cast, alloyed | 0.1D | 1.5D | Vc | 78 | 72 | 72 | 68 | 72 | 75 | 72 |
| | | | | | fz | 0.015 | 0.025 | 0.035 | 0.05 | 0.059 | 0.07 | 0.085 |
| | | | | | RPM | 4138 | 2865 | 2292 | 1804 | 1637 | 1492 | 1273 |
| | | | | | FEED | 186 | 215 | 321 | 361 | 386 | 418 | 433 |

※ The FEED, in long & extra long types, should be reduced by around 50%
长刃，加长刃类型需要减少约50%进给

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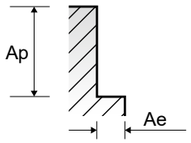
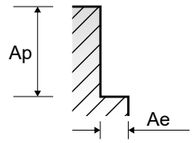




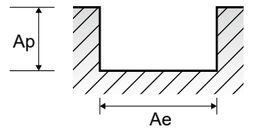

GENERAL HSS END MILLS
RECOMMENDED CUTTING CONDITIONS
推荐加工参数
EQ753 SERIES — MULTI FLUTE ROUGHING(TiAlN-COATED) - SIDE CUTTING
多刃 粗加工(TiAlN 涂层) - 侧铣削
Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description 材料描述 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 20.0 | 22.0 | 25.0 | 28.0 | 30.0 | 32.0 | 36.0 | 40.0 | 50.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | 0.1D | 1.5D | Vc | 50 | 50 | 50 | 50 | 45 | 50 | 50 | 50 | 45 |
| | | | | | fz | 0.078 | 0.089 | 0.095 | 0.089 | 0.098 | 0.098 | 0.109 | 0.117 | 0.156 |
| | | | | | RPM | 796 | 723 | 637 | 568 | 477 | 497 | 442 | 398 | 286 |
| | | | | | FEED | 248 | 322 | 302 | 304 | 281 | 292 | 289 | 279 | 268 |
| | 2 | | 0.1D | 1.5D | Vc | 40 | 45 | 45 | 45 | 40 | 40 | 40 | 40 | 40 |
| | | | | | fz | 0.075 | 0.074 | 0.087 | 0.075 | 0.083 | 0.094 | 0.107 | 0.117 | 0.16 |
| | | | | | RPM | 637 | 651 | 573 | 512 | 424 | 398 | 354 | 318 | 255 |
| | | | | | FEED | 191 | 241 | 249 | 230 | 211 | 224 | 227 | 223 | 244 |
| | 3-4 | | 0.1D | 1.5D | Vc | 35 | 35 | 35 | 35 | 35 | 30 | 35 | 30 | 35 |
| | | | | | fz | 0.07 | 0.078 | 0.087 | 0.075 | 0.086 | 0.1 | 0.1 | 0.113 | 0.148 |
| | | | | | RPM | 557 | 506 | 446 | 398 | 371 | 298 | 309 | 239 | 223 |
| | | | | | FEED | 156 | 197 | 194 | 179 | 192 | 179 | 186 | 162 | 198 |
| | 5 | | 0.1D | 1.5D | Vc | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 15 | 20 |
| | | | | | fz | 0.083 | 0.08 | 0.096 | 0.091 | 0.091 | 0.1 | 0.118 | 0.141 | 0.153 |
| | | | | | RPM | 318 | 289 | 255 | 227 | 212 | 199 | 177 | 119 | 127 |
| | | | | | FEED | 106 | 116 | 122 | 124 | 116 | 119 | 125 | 101 | 117 |
| | 6 | Low alloy steel | 0.1D | 1.5D | Vc | 40 | 45 | 45 | 45 | 40 | 40 | 40 | 40 | 40 |
| | | | | | fz | 0.075 | 0.074 | 0.087 | 0.075 | 0.083 | 0.094 | 0.107 | 0.117 | 0.16 |
| | | | | | RPM | 637 | 651 | 573 | 512 | 424 | 398 | 354 | 318 | 255 |
| | | | | | FEED | 191 | 241 | 249 | 230 | 211 | 224 | 227 | 223 | 244 |
| | 7 | | 0.1D | 1.5D | Vc | 35 | 35 | 35 | 35 | 35 | 30 | 35 | 30 | 35 |
| | | | | | fz | 0.07 | 0.078 | 0.087 | 0.075 | 0.086 | 0.1 | 0.1 | 0.113 | 0.148 |
| | | | | | RPM | 557 | 506 | 446 | 398 | 371 | 298 | 309 | 239 | 223 |
| | | | | | FEED | 156 | 197 | 194 | 179 | 192 | 179 | 186 | 162 | 198 |
| | 8-9 | | 0.1D | 1.5D | Vc | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 15 | 20 |
| | | | | | fz | 0.083 | 0.08 | 0.096 | 0.091 | 0.091 | 0.1 | 0.118 | 0.141 | 0.153 |
| | | | | | RPM | 318 | 289 | 255 | 227 | 212 | 199 | 177 | 119 | 127 |
| | | | | | FEED | 106 | 116 | 122 | 124 | 116 | 119 | 125 | 101 | 117 |
| | 10 | High alloyed steel, and tool steel | 0.1D | 1.5D | Vc | 40 | 45 | 45 | 45 | 40 | 40 | 40 | 40 | 40 |
| | | | | | fz | 0.075 | 0.074 | 0.087 | 0.075 | 0.083 | 0.094 | 0.107 | 0.117 | 0.16 |
| | | | | | RPM | 637 | 651 | 573 | 512 | 424 | 398 | 354 | 318 | 255 |
| | | | | | FEED | 191 | 241 | 249 | 230 | 211 | 224 | 227 | 223 | 244 |
| | 11.1 | | 0.1D | 1.5D | Vc | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 15 | 20 |
| | | | | | fz | 0.083 | 0.08 | 0.096 | 0.091 | 0.091 | 0.1 | 0.118 | 0.141 | 0.153 |
| | | | | | RPM | 318 | 289 | 255 | 227 | 212 | 199 | 177 | 119 | 127 |
| | | | | | FEED | 106 | 116 | 122 | 124 | 116 | 119 | 125 | 101 | 117 |
| N | 21-22 | Aluminum-wrought alloy | 0.1D | 1.5D | Vc | 105 | 105 | 110 | 110 | 120 | 110 | 115 | 115 | 110 |
| | | | | | fz | 0.103 | 0.085 | 0.09 | 0.095 | 0.099 | 0.106 | 0.11 | 0.117 | 0.124 |
| | | | | | RPM | 1671 | 1519 | 1401 | 1251 | 1273 | 1094 | 1017 | 915 | 700 |
| | | | | | FEED | 689 | 646 | 630 | 713 | 756 | 696 | 671 | 642 | 521 |
| | 23-24 | Aluminum-cast, alloyed | 0.1D | 1.5D | Vc | 68 | 68 | 72 | 72 | 78 | 72 | 75 | 75 | 72 |
| | | | | | fz | 0.103 | 0.085 | 0.09 | 0.095 | 0.099 | 0.106 | 0.11 | 0.117 | 0.124 |
| | | | | | RPM | 1082 | 984 | 917 | 819 | 828 | 716 | 663 | 597 | 458 |
| | | | | | FEED | 446 | 418 | 413 | 467 | 492 | 456 | 438 | 419 | 341 |

※ The FEED, in long & extra long types, should be reduced by around 50%
长刃，加长刃类型需要减少约50%进给

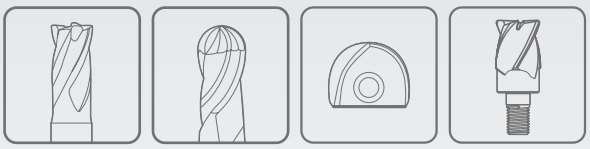



### EL612 SERIES — 1 FLUTE - SLOTTING
### 1刃- 槽铣削



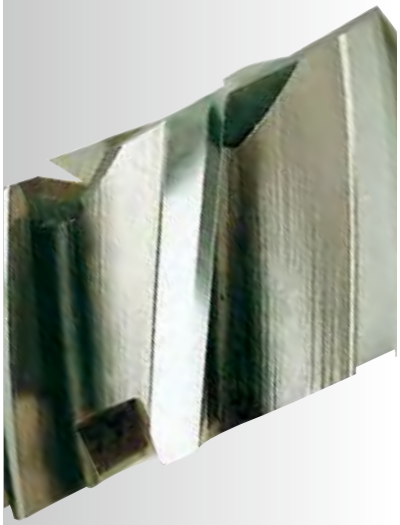

| ISO | VDI 3323 | Material Description | Ae | Ap | Parameter | Diameter (Ø) 3.0 | 4.0 | 5.0 | 6.0 | 7.0 | 8.0 | 10.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N | 21-22 | Aluminum-wrought alloy | 1.0D | 0.5D (~Ø3:0.2D) | Vc | 188 | 226 | 220 | 207 | 220 | 214 | 220 |
| | | | | | fz | 0.055 | 0.053 | 0.054 | 0.055 | 0.055 | 0.053 | 0.054 |
| | | | | | RPM | 19947 | 17985 | 14006 | 10982 | 10004 | 8515 | 7003 |
| | | | | | FEED | 1097 | 953 | 756 | 604 | 550 | 451 | 378 |
| | 23-24 | Aluminum-cast, alloyed | 1.0D | 0.5D (~Ø3:0.2D) | Vc | 122 | 147 | 143 | 135 | 143 | 139 | 143 |
| | | | | | fz | 0.055 | 0.053 | 0.054 | 0.055 | 0.055 | 0.053 | 0.054 |
| | | | | | RPM | 12945 | 11698 | 9104 | 7162 | 6503 | 5531 | 4552 |
| | | | | | FEED | 712 | 620 | 492 | 394 | 358 | 293 | 246 |

Global Cutting Tool Leader **YG-1**



# MILLING

Leading Through Innovation



# HSS

# MILLING CUTTERS

- General Works. Available Dovetail, Woodruff Keyseat, T-slot, Side Milling Cutters and HSS (8% cobalt) Corner Rounding, Shell End Mills

- 普通加工，可提供燕尾槽铣刀，月牙键槽铣刀，T型铣刀，三面刃铣刀，含钴8%的圆角铣刀和圆筒形端铣刀

# SELECTION GUIDE
## 选用指南

YG MILLING TOOLS

# HSS MILLING CUTTERS

General Works. Available Dovetail, Woodruff Keyseat, T-slot, Side Milling Cutters and HSS (8% cobalt) Corner Rounding, Shell End Mills

普通加工，可提供燕尾槽铣刀，月牙键槽铣刀，T型铣刀，三面刃铣刀， 含钴8%的圆角铣刀和圆筒形端铣刀

Please visit globalyg1.com/mat for material search

◎ : Excellent (优秀) ○ : Good (良好)

Recommended cutting conditions (推荐加工参数) : p.C644

| ISO | VDI 3323 | Material Description 材料描述 | Composition / Structure / Heat Treatment 成分 / 组织 / 热处理 | | HB | HRc | ML012, ML022 ML112, ML122 ML212, ML222 | ML032, ML042 ML132, ML142 ML232, ML242 | ML062 ML162 ML262 |
|---|---|---|---|---|---|---|---|---|---|
| | SERIES 系列 | | | | | | DOVETAIL CUTTERS | DOVETAIL CUTTERS | WOODRUFF KEYSEAT CUTTERS |
| | FLUTE 槽数 | | | | | | - | - | - |
| | HELIX ANGLE 螺旋角度 | | | | | | 0° | 0° | 10°-20° |
| | CUTTING EDGE SHAPE 类型 | | | | | | D16.0 | D16.0 | D10.5 |
| | SIZE MIN 最小尺寸 | | | | | | D50.0 | D38.0 | D45.5 |
| | SIZE MAX 最大尺寸 | | | | | | C624 | C625 | C626-627 |
| | PAGE 页数 | | | | | | Type A, C, E | Type B, D, F | Type B, D, F |
| | | | | | | | Uncoated | Uncoated | Uncoated |
| | | | | | | | HSS-E | HSS-E | HSS-E |
| P | 1 | Non-alloy steel | About 0.15% C | Annealed | 125 | | ◎ | ◎ | ◎ |
| | 2 | | About 0.45% C | Annealed | 190 | 13 | ◎ | ◎ | ◎ |
| | 3 | | About 0.45% C | Quenched & Tempered | 250 | 25 | ◎ | ◎ | ◎ |
| | 4 | | About 0.75% C | Annealed | 270 | 28 | ◎ | ◎ | ◎ |
| | 5 | | About 0.75% C | Quenched & Tempered | 300 | 32 | ◎ | ◎ | ◎ |
| | 6 | Low alloy steel | | Annealed | 180 | 10 | ◎ | ◎ | ◎ |
| | 7 | | | Quenched & Tempered | 275 | 29 | ◎ | ◎ | ◎ |
| | 8 | | | Quenched & Tempered | 300 | 32 | ◎ | ◎ | ◎ |
| | 9 | | | Quenched & Tempered | 350 | 38 | ○ | ○ | ○ |
| | 10 | High alloyed steel, and tool steel | | Annealed | 200 | 15 | ◎ | ◎ | ◎ |
| | 11 | | | Quenched & Tempered | 325 | 35 | ○ | ○ | ○ |
| M | 12 | Stainless steel | Ferritic / Martensitic | Annealed | 200 | 15 | | | |
| | 13 | | Martensitic | Quenched & Tempered | 240 | 23 | | | |
| | 14 | | Austenitic | | 180 | 10 | | | |
| K | 15 | Grey cast iron | Pearlitic / ferritic | | 180 | 10 | | | |
| | 16 | | Pearlitic (Martensitic) | | 260 | 26 | | | |
| | 17 | Nodular cast iron | Ferritic | | 160 | 3 | | | |
| | 18 | | Pearlitic | | 250 | 25 | | | |
| | 19 | Malleable cast iron | Ferritic | | 130 | | | | |
| | 20 | | Pearlitic | | 230 | 21 | | | |
| N | 21 | Aluminum-wrought alloy | Not Curable | | 60 | | ○ | ○ | ○ |
| | 22 | | Curable | Hardened | 100 | | ○ | ○ | ○ |
| | 23 | Aluminum-cast, alloyed | ≤ 12% Si, Not Curable | | 75 | | ○ | ○ | ○ |
| | 24 | | ≤ 12% Si, Curable | Hardened | 90 | | ○ | ○ | ○ |
| | 25 | | > 12% Si, Not Curable | | 130 | | ○ | ○ | ○ |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | Cutting Alloys, PB>1% | | 110 | | | | |
| | 27 | | CuZn, CuSnZn (Brass) | | 90 | | | | |
| | 28 | | CuSn, lead-free copper and electrolytic copper | | 100 | | | | |
| | 29 | Non Metallic Materials | Duroplastic, Fiber Reinforced Plastic | | | | | | |
| | 30 | | Rubber, Wood, etc. | | | | | | |
| S | 31 | Heat Resistant Super Alloys | Fe Based | Annealed | 200 | 15 | | | |
| | 32 | | | Cured | 280 | 30 | | | |
| | 33 | | Ni or Co Based | Annealed | 250 | 25 | | | |
| | 34 | | | Cured | 350 | 38 | | | |
| | 35 | | | Cast | 320 | 34 | | | |
| | 36 | Titanium Alloys | Pure Titanium | | 400 Rm | | | | |
| | 37 | | Alpha + Beta Alloys | Hardened | 1050 Rm | | | | |
| H | 38 | Hardened steel | | Hardened | 550 | 55 | | | |
| | 39 | | | Hardened | 630 | 60 | | | |
| | 40 | Chilled Cast Iron | | Cast | 400 | 42 | | | |
| | 41 | Hardened Cast Iron | | Hardened | 550 | 55 | | | |

| ML072 ML172 ML272 | ML092 | ML102 | E2675 | E2676 | E2677 | E2678 | E2679 | E2498 | |
|---|---|---|---|---|---|---|---|---|---|
| T-SLOT CUTTERS | SIDE AND FACE MILLING CUTTERS | SIDE AND FACE MILLING CUTTERS | SHELL END MILL | SHELL END MILL | ROUGHING SHELL END MILL | ROUGHING SHELL END MILL | ROUGHING & FINISHING SHELL END MILL | CORNER ROUNDING CUTTERS | |
| - | - | - | Multi Flute | Multi Flute | Multi Flute | Multi Flute | Multi Flute | 4 | |
| 10°-20° | 10° | - | 30° | 42° | 30° | 30° | 30° | 0° | |
| D12.5 | D50.0 | D50.0 | D30.0 | D30.0 | D40.0 | D40.0 | D40.0 | D8.0 | |
| D40.0 | D125.0 | D200.0 | D160.0 | D100.0 | D160.0 | D160.0 | D160.0 | D56.0 | |
| C628 | C629-630 | C631-636 | C637 | C638 | C639 | C640 | C641 | C642-643 | |
| Type AA, AB, AD | with STRAIGHT TEETH | with STAGGERED TEETH | - | for ALUMINUM | - | - | - | - | |
| Uncoated | Uncoated | Uncoated | Uncoated | Uncoated | Uncoated | Uncoated | Uncoated | Uncoated | |
| HSS-E | HSS-E | HSS-E | HSS Co8 | HSS Co8 | HSS Co8 | HSS Co8 | HSS Co8 | HSS Co8 | |
| ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ◎ | 1 |
| ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ◎ | 2 |
| ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ◎ | 3 |
| ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ◎ | 4 |
| ◎ | ◎ | ◎ | ◎ | | ○ | ○ | ○ | ○ | 5 |
| ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ◎ | 6 P |
| ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ◎ | 7 |
| ◎ | ◎ | ◎ | ◎ | | ○ | ○ | ○ | ○ | 8 |
| | ○ | ○ | ○ | | ○ | ○ | ○ | ○ | 9 |
| ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ◎ | 10 |
| | ○ | ○ | ○ | | ○ | ○ | ○ | ○ | 11 |
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| ○ | ○ | ○ | | ◎ | ○ | ○ | ○ | ○ | 22 |
| ○ | ○ | ○ | | ◎ | ○ | ○ | ○ | ○ | 23 |
| ○ | ○ | ○ | | ◎ | ○ | ○ | ○ | ○ | 24 |
| ○ | ○ | ○ | | ◎ | ○ | ○ | ○ | ○ | 25 N |
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DOVETAIL CUTTERS = 燕尾槽铣刀　WOODRUFF KEYSEAT CUTTERS = 月牙键槽铣刀　T-SLOT CUTTERS = T型铣刀　SIDE AND FACE MILLING CUTTERS = 三面刃铣刀
STRAIGHT TEETH = 直齿　SHELL END MILL = 圆筒形端铣刀　CORNER ROUNDING CUTTERS = 圆角铣刀　Uncoated = 非涂层　ROUGHING & FINISHING = 粗加工&精加工

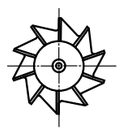
# MILLING CUTTERS

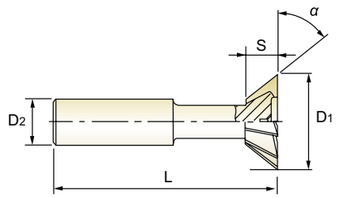
PLAIN SHANK **ML012, ML022** SERIES
FLAT SHANK **ML112, ML122** SERIES
THREAD SHANK **ML212, ML222** SERIES

## HSS-E, DOVETAIL CUTTERS TYPE “A”, “C”, “E”
## HSS-E, 燕尾槽铣刀 A型，C型，E型

▶ Recommanded for use in place of arbor and threaded hole type cutters to reduce set time and facilitate handling.

▶ 推荐使用机器心轴和螺纹孔盘铣刀来降低调试时间并且容易处理






HSS-E | DIN 1833 | N | 0° | DIN 1835A | DIN 1835B | DIN 1835D

p.C644

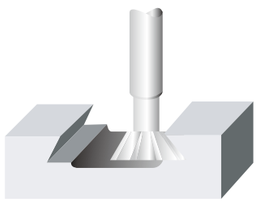
Unit(单位) : mm

| EDP No. | | | Cutter Diameter 直径 | Width of Face 刃幅 | Divergent Taper Angle 锥度 | Shank Diameter 柄径 | Overall Length 全长 | No. of Teeth 刃数 |
|---|---|---|---|---|---|---|---|---|
| PLAIN | FLAT | THREAD | D1(js16) | S(js14) | α(±15´) | D2(h6) | L(js18) | Z |
| ML01201601 | ML11201601 | - | 16.0 | 4 | 45° | 12 | 60 | 6 |
| ML01202001 | ML11202001 | ▲ML21202001 | 20.0 | 5 | 45° | 12 | 63 | 6 |
| ML01202201 | ML11202201 | - | 22.0 | 6 | 45° | 12 | 67 | 6 |
| ML01202501 | ML11202501 | ▲ML21202501 | 25.0 | 6.3 | 45° | 16 | 67 | 8 |
| ML01202801 | ML11202801 | - | 28.0 | 7.5 | 45° | 16 | 67 | 8 |
| ML01203201 | ML11203201 | - | 32.0 | 8 | 45° | 16 | 71 | 10 |
| ML01203801 | ML11203801 | - | 38.0 | 10 | 45° | 16 | 80 | 12 |
| ML02201601 | ML12201601 | ▲ML22201601 | 16.0 | 6.3 | 60° | 12 | 60 | 6 |
| ML02202001 | ML12202001 | - | 20.0 | 8 | 60° | 12 | 63 | 6 |
| ML02202201 | ML12202201 | - | 22.0 | 9 | 60° | 12 | 67 | 6 |
| ML02202501 | ML12202501 | - | 25.0 | 10 | 60° | 16 | 67 | 8 |
| ML02202801 | ML12202801 | - | 28.0 | 11 | 60° | 16 | 67 | 8 |
| ML02203201 | ML12203201 | - | 32.0 | 12.5 | 60° | 16 | 71 | 10 |
| ML02203801 | ML12203801 | - | 38.0 | 16 | 60° | 16 | 80 | 12 |
| ML02204001 | ML12204001 | ▲ML22204001 | 40.0 | 13 | 60° | 25 | 85 | 12 |
| ML02205001 | ML12205001 | - | 50.0 | 16 | 60° | 25 | 100 | 16 |

▲ : Only available till stock runs out 只提供到消耗现库存

### Tolerances according to DIN 7160 & 7161
按DIN7160&7161的标准公差

| Nominal-Diameter in mm / 直径单位为 | | | | | | | |
|---|---|---|---|---|---|---|---|
| | over 3 to 6 | over 6 to 10 | over 10 to 18 | over 18 to 30 | over 30 to 50 | over 50 to 80 | over 80 to 120 |
| Tolerance range in mm / 公差单位为 | | | | | | | |
| js16 | ±0.375 | ±0.45 | ±0.55 | ±0.65 | ±0.80 | ±0.95 | ±1.10 |
| js14 | ±0.15 | ±0.18 | ±0.215 | ±0.26 | ±0.31 | ±0.37 | ±0.435 |
| js18 | ±0.90 | ±1.10 | ±1.35 | ±1.65 | ±1.95 | ±2.30 | ±2.70 |
| Tolerance range in μm / 公差单位为 | | | | | | | |
| h6 | 0 / -8 | 0 / -9 | 0 / -11 | 0 / -13 | 0 / -16 | 0 / -19 | 0 / -22 |



◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ○ | | | | | | | | | |

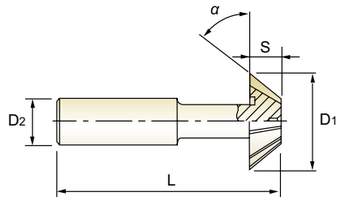
| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | | | | | |



# MILLING CUTTERS

PLAIN SHANK **ML032, ML042** SERIES
FLAT SHANK **ML132, ML142** SERIES
THREAD SHANK **ML232, ML242** SERIES

## HSS-E, DOVETAIL CUTTERS TYPE “B”, “D”, “F”
## HSS-E, 燕尾槽铣刀 B型，D型，F型




HSS-E | DIN 1833 | N | 0° | DIN 1835A | DIN 1835B | DIN 1835D

p.C645

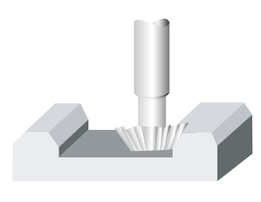
Unit(单位) : mm

| EDP No. | | | Cutter Diameter 直径 | Width of Face 刃幅 | Divergent Taper Angle 锥度 | Shank Diameter 柄径 | Overall Length 全长 | No. of Teeth 刃数 |
|---|---|---|---|---|---|---|---|---|
| PLAIN | FLAT | THREAD | D1(js16) | S(js14) | α(±15´) | D2(h6) | L(js18) | Z |
| ML03201601 | ML13201601 | - | 16.0 | 4 | 45° | 12 | 60 | 6 |
| ML03202001 | ML13202001 | - | 20.0 | 5 | 45° | 12 | 63 | 6 |
| ML03202201 | ML13202201 | - | 22.0 | 6 | 45° | 12 | 67 | 6 |
| ML03202501 | ML13202501 | ▲ML23202501 | 25.0 | 6.3 | 45° | 16 | 67 | 8 |
| ML03202801 | ML13202801 | - | 28.0 | 7.5 | 45° | 16 | 67 | 8 |
| ML03203201 | ML13203201 | - | 32.0 | 8 | 45° | 16 | 71 | 10 |
| ML03203801 | ML13203801 | - | 38.0 | 10 | 45° | 16 | 80 | 12 |
| ML04201601 | ML14201601 | - | 16.0 | 6.3 | 60° | 12 | 60 | 6 |
| ML04202001 | ML14202001 | ▲ML24202001 | 20.0 | 8 | 60° | 12 | 63 | 6 |
| ML04202201 | ML14202201 | - | 22.0 | 9 | 60° | 12 | 67 | 6 |
| ML04202501 | ML14202501 | - | 25.0 | 10 | 60° | 16 | 67 | 8 |
| ML04202801 | ML14202801 | - | 28.0 | 11 | 60° | 16 | 67 | 8 |
| ML04203201 | ML14203201 | - | 32.0 | 12.5 | 60° | 16 | 71 | 10 |
| ML04203801 | ML14203801 | - | 38.0 | 16 | 60° | 16 | 80 | 12 |

▲ : Only available till stock runs out 只提供到消耗现库存

### Tolerances according to DIN 7160 & 7161
按DIN7160&7161的标准公差

| Nominal-Diameter in mm / 直径单位为 | | | | | | | |
|---|---|---|---|---|---|---|---|
| | over 3 to 6 | over 6 to 10 | over 10 to 18 | over 18 to 30 | over 30 to 50 | over 50 to 80 | over 80 to 120 |
| Tolerance range in mm / 公差单位为 | | | | | | | |
| js16 | ±0.375 | ±0.45 | ±0.55 | ±0.65 | ±0.80 | ±0.95 | ±1.10 |
| js14 | ±0.15 | ±0.18 | ±0.215 | ±0.26 | ±0.31 | ±0.37 | ±0.435 |
| js18 | ±0.90 | ±1.10 | ±1.35 | ±1.65 | ±1.95 | ±2.30 | ±2.70 |
| Tolerance range in μm / 公差单位为 | | | | | | | |
| h6 | 0 / -8 | 0 / -9 | 0 / -11 | 0 / -13 | 0 / -16 | 0 / -19 | 0 / -22 |



◎ : Excellent (优秀) ○ : Good (良好)

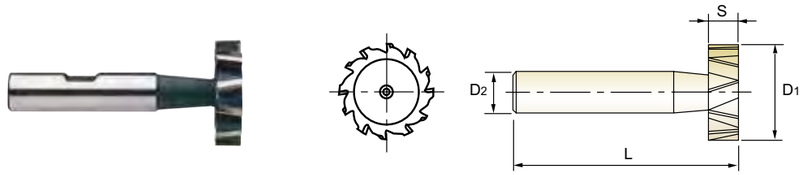
| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ○ | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | | | | | |

# MILLING CUTTERS

PLAIN SHANK **ML062** SERIES
FLAT SHANK **ML162** SERIES
THREAD SHANK **ML262** SERIES

## HSS-E, WOODRUFF KEYSEAT CUTTERS TYPE “B”, “D”, “F”
## HSS-E, 月牙键槽铣刀 B型，D型，F型




HSS-E | DIN 850 | N | 10~12° | DIN 1835A | DIN 1835B | DIN 1835D

p.C646

Unit(单位) : mm

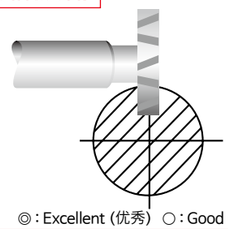
| EDP No. | | | Cutter Diameter | Width of Face | Shank Diameter | Overall Length | No. of Teeth |
|---|---|---|---|---|---|---|---|
| | | | 直径 | 刃幅 | 柄径 | 全长 | 刃数 |
| PLAIN | FLAT | THREAD | D1(h11) | S(e8) | D2(h6) | L(js18) | Z |
| ML06210E01 | ML16210E01 | - | 10.5 | 2 | 6 | 50 | 8 |
| ML06210E02 | ML16210E02 | - | 10.5 | 2.5 | 6 | 50 | 8 |
| ML06210E03 | ML16210E03 | - | 10.5 | 3 | 6 | 50 | 8 |
| ML06213E01 | ML16213E01 | - | 13.5 | 2 | 10 | 56 | 8 |
| ML06213E02 | ML16213E02 | - | 13.5 | 2.5 | 10 | 56 | 8 |
| ML06213E03 | ML16213E03 | - | 13.5 | 3 | 10 | 56 | 8 |
| ML06213E04 | ML16213E04 | - | 13.5 | 4 | 10 | 56 | 8 |
| ML06216E01 | ML16216E01 | - | 16.5 | 2.5 | 10 | 56 | 8 |
| ML06216E02 | ML16216E02 | - | 16.5 | 3 | 10 | 56 | 8 |
| ML06216E03 | ML16216E03 | - | 16.5 | 4 | 10 | 56 | 8 |
| ML06216E04 | ML16216E04 | - | 16.5 | 5 | 10 | 56 | 8 |
| ML06219E01 | ML16219E01 | - | 19.5 | 3 | 10 | 56 | 8 |
| ML06219E02 | ML16219E02 | - | 19.5 | 4 | 10 | 63 | 8 |
| ML06219E03 | ML16219E03 | - | 19.5 | 5 | 10 | 63 | 8 |
| ML06219E04 | ML16219E04 | - | 19.5 | 6 | 10 | 63 | 8 |
| ML06222E01 | ML16222E01 | - | 22.5 | 4 | 10 | 63 | 10 |
| ML06222E02 | ML16222E02 | ▲ML26222E02 | 22.5 | 5 | 10 | 63 | 10 |
| ML06222E03 | ML16222E03 | - | 22.5 | 6 | 10 | 63 | 10 |
| ML06222E04 | ML16222E04 | - | 22.5 | 8 | 10 | 63 | 10 |
| ML06225E01 | ML16225E01 | - | 25.5 | 5 | 10 | 63 | 10 |

**Tolerances according to DIN 7160 & 7161**
按DIN7160&7161的标准公差

▲ : Only available till stock runs out 只提供到消耗现库存

▶ NEXT PAGE 下页

| Nominal-Diameter in mm / 直径单位为 | | | | | | | |
|---|---|---|---|---|---|---|---|
| | from 1 to 3 | over 3 to 6 | over 6 to 10 | over 10 to 18 | over 18 to 30 | over 30 to 50 | over 50 to 80 |
| Tolerance range in mm / 公差单位为 | | | | | | | |
| js18 | ± 0.90 | ± 1.10 | ± 1.35 | ± 1.65 | ± 1.95 | ± 2.30 | ± 2.70 |
| Tolerance range in μm / 公差单位为 | | | | | | | |
| h11 | 0<br>- 60 | 0<br>- 75 | 0<br>- 90 | 0<br>- 110 | 0<br>- 130 | 0<br>- 160 | 0<br>- 190 |
| e8 | - 14<br>- 28 | - 20<br>- 38 | - 25<br>- 47 | - 32<br>- 59 | - 40<br>- 73 | - 50<br>- 89 | - 60<br>- 106 |
| h6 | 0<br>- 6 | 0<br>- 8 | 0<br>- 9 | 0<br>- 11 | 0<br>- 13 | 0<br>- 16 | 0<br>- 19 |



◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ○ | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | | | | | |

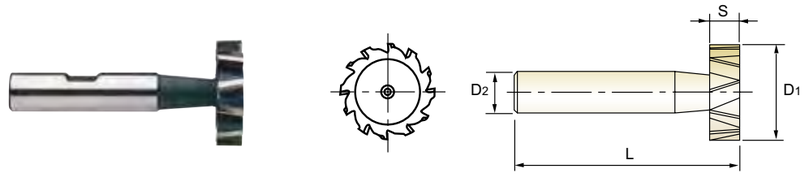


CARBIDE
HSS
CBN END MILLS
i-Xmill END MILLS
i-SMART MODULAR END MILLS
X5070 END MILLS
4G MILL END MILLS
X-POWER PRO END MILLS
TitaNox-POWER END MILLS
SUS-CUT END MILLS
V7 PLUS END MILLS
ALU-POWER HPC END MILLS
ALU-CUT END MILLS
G-CUT
CRX S END MILLS
K-2 END MILLS
GENERAL CARBIDE END MILLS
ONLY ONE COATED PM60 END MILLS
TANK-POWER END MILLS
GENERAL HSS END MILLS
MILLING CUTTERS
TECHNICAL DATA

MILLING CUTTERS

PLAIN SHANK ML062 SERIES
FLAT SHANK ML162 SERIES
THREAD SHANK ML262 SERIES

HSS-E, WOODRUFF KEYSEAT CUTTERS TYPE “B”, “D”, “F”
HSS-E, 月牙键槽铣刀 B型，D型，F型




HSS-E | DIN 850 | N | 10~12° | DIN 1835A | DIN 1835B | DIN 1835D

p.C646

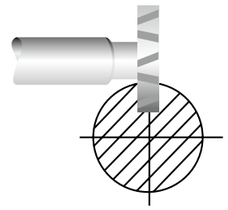
Unit(单位) : mm

| EDP No. | | | Cutter Diameter | Width of Face | Shank Diameter | Overall Length | No. of Teeth |
|---|---|---|---|---|---|---|---|
| | | | 直径 | 刃幅 | 柄径 | 全长 | 刃数 |
| PLAIN | FLAT | THREAD | D1(h11) | S(e8) | D2(h6) | L(js18) | Z |
| ML06225E02 | ML16225E02 | - | 25.5 | 6 | 10 | 63 | 10 |
| ML06225E03 | ML16225E03 | - | 25.5 | 7 | 10 | 63 | 10 |
| ML06225E04 | ML16225E04 | - | 25.5 | 8 | 10 | 63 | 10 |
| ML06228E01 | ML16228E01 | ▲ML26228E01 | 28.5 | 5 | 10 | 63 | 10 |
| ML06228E02 | ML16228E02 | - | 28.5 | 6 | 10 | 63 | 10 |
| ML06228E03 | ML16228E03 | - | 28.5 | 7 | 10 | 63 | 10 |
| ML06228E04 | ML16228E04 | - | 28.5 | 8 | 10 | 63 | 10 |
| ML06228E05 | ML16228E05 | ▲ML26228E05 | 28.5 | 10 | 12 | 71 | 10 |
| ML06232E01 | ML16232E01 | - | 32.5 | 5 | 12 | 71 | 12 |
| ML06232E02 | ML16232E02 | - | 32.5 | 6 | 12 | 71 | 12 |
| ML06232E03 | ML16232E03 | ▲ML26232E03 | 32.5 | 7 | 12 | 71 | 12 |
| ML06232E04 | ML16232E04 | - | 32.5 | 8 | 12 | 71 | 12 |
| ML06232E05 | ML16232E05 | ▲ML26232E05 | 32.5 | 10 | 12 | 71 | 12 |
| ML06238E01 | ML16238E01 | - | 38.5 | 7 | 12 | 71 | 12 |
| ML06238E02 | ML16238E02 | - | 38.5 | 8 | 12 | 71 | 12 |
| ML06238E03 | ML16238E03 | - | 38.5 | 9 | 12 | 71 | 12 |
| ML06238E04 | ML16238E04 | - | 38.5 | 10 | 12 | 71 | 12 |
| ML06245E01 | ML16245E01 | - | 45.5 | 10 | 12 | 71 | 14 |

▲ : Only available till stock runs out 只提供到消耗现库存

Tolerances according to DIN 7160 & 7161
按DIN7160&7161的标准公差

| Nominal-Diameter in mm / 直径单位为 | | | | | | | |
|---|---|---|---|---|---|---|---|
| | from 1 to 3 | over 3 to 6 | over 6 to 10 | over 10 to 18 | over 18 to 30 | over 30 to 50 | over 50 to 80 |
| Tolerance range in mm / 公差单位为 | | | | | | | |
| js18 | ± 0.90 | ± 1.10 | ± 1.35 | ± 1.65 | ± 1.95 | ± 2.30 | ± 2.70 |
| Tolerance range in μm / 公差单位为 | | | | | | | |
| h11 | 0<br>- 60 | 0<br>- 75 | 0<br>- 90 | 0<br>- 110 | 0<br>- 130 | 0<br>- 160 | 0<br>- 190 |
| e8 | - 14<br>- 28 | - 20<br>- 38 | - 25<br>- 47 | - 32<br>- 59 | - 40<br>- 73 | - 50<br>- 89 | - 60<br>- 106 |
| h6 | 0<br>- 6 | 0<br>- 8 | 0<br>- 9 | 0<br>- 11 | 0<br>- 13 | 0<br>- 16 | 0<br>- 19 |



◎ : Excellent (优秀) ○ : Good (良好)

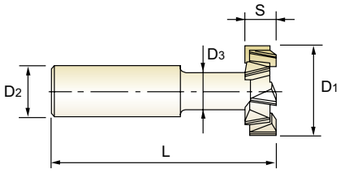
| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ○ | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | | | | | |

# MILLING CUTTERS

PLAIN SHANK **ML072** SERIES
FLAT SHANK **ML172** SERIES
THREAD SHANK **ML272** SERIES

## HSS-E, T-SLOT CUTTERS TYPE “AA”, “AB”, “AD”
## HSS-E, T型铣刀 AA型，AB型，AD型




HSS-E | DIN 851 | N | 10° | DIN 1835A | DIN 1835B | DIN 1835D

p.C647

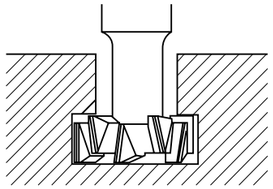
Unit(单位) : mm

| EDP No. | | | Cutter Diameter | Width of Face | Shank Diameter | Neck Diameter | Overall Length | No. of Teeth |
|---|---|---|---|---|---|---|---|---|
| | | | 直径 | 刃幅 | 柄径 | 颈部 | 全长 | 刃数 |
| PLAIN | FLAT | THREAD | D1(d11) | S(d11) | D2(h6) | D3(h12) | L(js18) | Z |
| ML07212E01 | ML17212E01 | - | 12.5 | 6 | 10 | 5 | 57 | 6 |
| ML07201601 | ML17201601 | - | 16.0 | 8 | 10 | 6.5 | 62 | 6 |
| ML07201801 | ML17201801 | - | 18.0 | 8 | 12 | 8 | 70 | 6 |
| ML07201901 | ML17201901 | - | 19.0 | 9 | 12 | 8 | 71 | 6 |
| ML07202101 | ML17202101 | - | 21.0 | 9 | 12 | 10 | 74 | 6 |
| ML07202201 | ML17202201 | - | 22.0 | 10 | 12 | 10 | 75 | 6 |
| ML07202501 | ML17202501 | - | 25.0 | 11 | 16 | 12 | 82 | 6 |
| ML07202801 | ML17202801 | ▲ML27202801 | 28.0 | 12 | 16 | 13 | 83 | 6 |
| ML07203201 | ML17203201 | - | 32.0 | 14 | 16 | 15 | 90 | 8 |
| ML07203601 | ML17203601 | ▲ML27203601 | 36.0 | 16 | 25 | 17 | 103 | 8 |
| ML07204001 | ML17204001 | ▲ML27204001 | 40.0 | 18 | 25 | 19 | 108 | 8 |

▲ : Only available till stock runs out 只提供到消耗现库存

### Tolerances according to DIN 7160 & 7161
按DIN7160&7161的标准公差

| Nominal-Diameter in mm / 直径单位为 | over 3 to 6 | over 6 to 10 | over 10 to 18 | over 18 to 30 | over 30 to 50 | over 50 to 80 | over 80 to 120 |
|---|---|---|---|---|---|---|---|
| Tolerance range in mm / 公差单位为 | | | | | | | |
| h12 | 0 - 0.12 | 0 - 0.15 | 0 - 0.18 | 0 - 0.21 | 0 - 0.25 | 0 - 0.30 | 0 - 0.35 |
| js18 | ± 0.90 | ± 1.10 | ± 1.35 | ± 1.65 | ± 1.95 | ± 2.30 | ± 2.70 |
| Tolerance range in μm / 公差单位为 | | | | | | | |
| d11 | - 30 - 105 | - 40 - 130 | - 50 - 160 | - 65 - 195 | - 80 - 240 | - 100 - 290 | - 120 - 340 |
| h6 | 0 - 8 | 0 - 9 | 0 - 11 | 0 - 13 | 0 - 16 | 0 - 19 | 0 - 22 |



◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | | ◎ | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | | | | | |





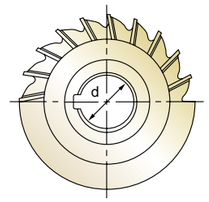
# MILLING CUTTERS

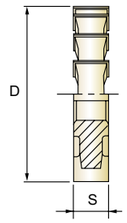
STRAIGHT TEETH **ML092** SERIES

## HSS-E, SIDE AND FACE MILLING CUTTERS with STRAIGHT TEETH
## HSS-E, 三面刃铣刀 直齿

▶ The tools are used for general purpose side and straddle milling where deep cut is not required.

▶ 刀具用在普通用途的侧铣和跨铣，这种铣法不要求深切削




HSS-E | DIN 885-B | H

p.C648

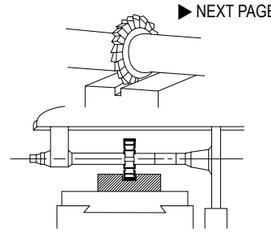
Unit(单位) : mm

| EDP No. | Cutter Diameter | Width of Face | Internal Diameter | No. of Teeth |
|---|---|---|---|---|
| | 直径 | 刃幅 | 内径 | 刃数 |
| | D1(js14) | S(k11) | d(H7) | Z |
| ML09205001 | 50.0 | 4 | 16 | 18 |
| ML09205002 | 50.0 | 5 | 16 | 18 |
| ML09205003 | 50.0 | 6 | 16 | 18 |
| ML09205004 | 50.0 | 8 | 16 | 16 |
| ML09205005 | 50.0 | 10 | 16 | 16 |
| ML09206301 | 63.0 | 5 | 22 | 22 |
| ML09206302 | 63.0 | 6 | 22 | 22 |
| ML09206303 | 63.0 | 8 | 22 | 20 |
| ML09206304 | 63.0 | 10 | 22 | 20 |
| ML09206305 | 63.0 | 12 | 22 | 20 |
| ML09208001 | 80.0 | 6 | 22 | 24 |
| ML09208002 | 80.0 | 8 | 22 | 24 |
| ML09208003 | 80.0 | 10 | 22 | 24 |
| ML09208004 | 80.0 | 12 | 22 | 20 |
| ML09208005 | 80.0 | 6 | 27 | 24 |
| ML09208006 | 80.0 | 8 | 27 | 24 |
| ML09208007 | 80.0 | 10 | 27 | 24 |
| ML09208008 | 80.0 | 12 | 27 | 20 |
| ML09210001 | 100.0 | 6 | 27 | 26 |
| ML09210002 | 100.0 | 8 | 27 | 26 |

▶ NEXT PAGE 下页

### Tolerances according to DIN 7160 & 7161
按DIN7160&7161的标准公差

| Nominal-Diameter in mm / 直径单位为 | over 3 to 6 | over 6 to 10 | over 10 to 18 | over 18 to 30 | over 30 to 50 | over 50 to 80 | over 80 to 120 | over 120 to 180 |
|---|---|---|---|---|---|---|---|---|
| Tolerance range in mm / 公差单位为 | | | | | | | | |
| js14 | ± 0.15 | ± 0.18 | ± 0.215 | ± 0.26 | ± 0.31 | ± 0.37 | ± 0.435 | ± 0.50 |
| Tolerance range in μm / 公差单位为 | | | | | | | | |
| k11 | + 75 0 | + 90 0 | + 110 0 | + 130 0 | + 160 0 | + 190 0 | + 220 0 | + 250 0 |
| H7 | + 12 0 | + 15 0 | + 18 0 | + 21 0 | + 25 0 | + 30 0 | + 35 0 | + 40 0 |



◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ○ | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | | | | | |

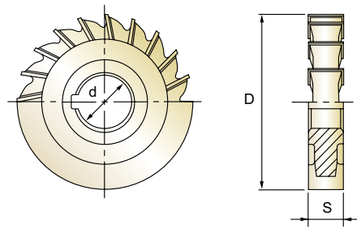
MILLING CUTTERS

STRAIGHT TEETH **ML092** SERIES

## HSS-E, SIDE AND FACE MILLING CUTTERS with STRAIGHT TEETH
## HSS-E, 三面刃铣刀 直齿

▶ The tools are used for general purpose side and straddle milling where deep cut is not required.

▶ 刀具用在普通用途的侧铣和跨铣，这种铣法不要求深切削




HSS-E | DIN 885-B | H

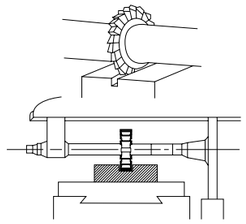
p.C648

Unit(单位) : mm

| EDP No. | Cutter Diameter 直径 $D_1$(js14) | Width of Face 刃幅 S(k11) | Internal Diameter 内径 d(H7) | No. of Teeth 刃数 Z |
|---|---|---|---|---|
| ML09210003 | 100.0 | 10 | 27 | 22 |
| ML09210004 | 100.0 | 6 | 32 | 26 |
| ML09210005 | 100.0 | 8 | 32 | 26 |
| ML09210006 | 100.0 | 10 | 32 | 22 |
| ML09210007 | 100.0 | 12 | 32 | 22 |
| ML09212501 | 125.0 | 8 | 32 | 30 |
| ML09212502 | 125.0 | 10 | 32 | 30 |
| ML09212503 | 125.0 | 12 | 32 | 24 |

### Tolerances according to DIN 7160 & 7161
按DIN7160&7161的标准公差

| Nominal-Diameter in mm / 直径单位为 | over 3 to 6 | over 6 to 10 | over 10 to 18 | over 18 to 30 | over 30 to 50 | over 50 to 80 | over 80 to 120 | over 120 to 180 |
|---|---|---|---|---|---|---|---|---|
| Tolerance range in mm / 公差单位为 | | | | | | | | |
| **js14** | ± 0.15 | ± 0.18 | ± 0.215 | ± 0.26 | ± 0.31 | ± 0.37 | ± 0.435 | ± 0.50 |
| Tolerance range in μm / 公差单位为 | | | | | | | | |
| **k11** | + 75 0 | + 90 0 | + 110 0 | + 130 0 | + 160 0 | + 190 0 | + 220 0 | + 250 0 |
| **H7** | + 12 0 | + 15 0 | + 18 0 | + 21 0 | + 25 0 | + 30 0 | + 35 0 | + 40 0 |



◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ○ | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | | | | | |



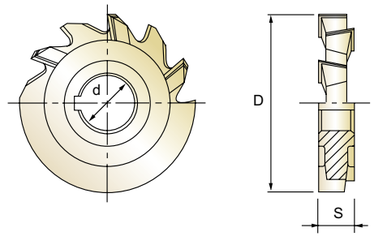
MILLING CUTTERS

STAGGERED TEETH **ML102** SERIES

## HSS-E, SIDE AND FACE MILLING CUTTERS with STAGGERED TEETH
## HSS-E, 三面刃铣刀 错齿

▶ The type of cutter is recommended for slotting operations. The alternate spiral effectively counteracts all tendency to chatter.

▶ 这种盘铣刀荐于开槽加工。交替的螺旋可有效的防治加工中的震动




HSS-E | DIN 885-A | H

p.C649

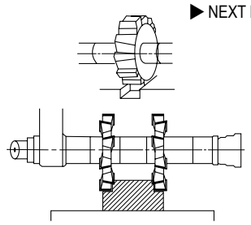
Unit(单位) : mm

| EDP No. | Cutter Diameter 直径 D(js14) | Width of Face 刃幅 S(k11) | Internal Diameter 内径 d(H7) | No. of Teeth 刃数 Z |
|---|---|---|---|---|
| ML10205001 | 50.0 | 3 | 16 | 14 |
| ML10205002 | 50.0 | 4 | 16 | 14 |
| ML10205003 | 50.0 | 5 | 16 | 14 |
| ML10205004 | 50.0 | 6 | 16 | 14 |
| ML10205005 | 50.0 | 7 | 16 | 14 |
| ML10205006 | 50.0 | 8 | 16 | 14 |
| ML10205007 | 50.0 | 9 | 16 | 14 |
| ML10205008 | 50.0 | 10 | 16 | 14 |
| ML10206301 | 63.0 | 3 | 22 | 16 |
| ML10206302 | 63.0 | 4 | 22 | 16 |
| ML10206303 | 63.0 | 5 | 22 | 16 |
| ML10206304 | 63.0 | 6 | 22 | 16 |
| ML10206305 | 63.0 | 7 | 22 | 16 |
| ML10206306 | 63.0 | 8 | 22 | 16 |
| ML10206307 | 63.0 | 9 | 22 | 16 |
| ML10206308 | 63.0 | 10 | 22 | 16 |
| ML10206309 | 63.0 | 12 | 22 | 16 |
| ML10206310 | 63.0 | 14 | 22 | 16 |
| ML10206311 | 63.0 | 16 | 22 | 16 |
| ML10206312 | 63.0 | 18 | 22 | 16 |

▶ NEXT PAGE 下页

### Tolerances according to DIN 7160 & 7161
按DIN7160&7161的标准公差

| Nominal-Diameter in mm / 直径单位为 | over 3 to 6 | over 6 to 10 | over 10 to 18 | over 18 to 30 | over 30 to 50 | over 50 to 80 | over 80 to 120 | over 120 to 180 | over 180 to 250 |
|---|---|---|---|---|---|---|---|---|---|
| Tolerance range in mm / 公差单位为 | | | | | | | | | |
| **js14** | ± 0.15 | ± 0.18 | ± 0.215 | ± 0.26 | ± 0.31 | ± 0.37 | ± 0.435 | ± 0.50 | ± 0.575 |
| Tolerance range in μm / 公差单位为 | | | | | | | | | |
| **k11** | + 75 0 | + 90 0 | + 110 0 | + 130 0 | + 160 0 | + 190 0 | + 220 0 | + 250 0 | + 290 0 |
| **H7** | + 12 0 | + 15 0 | + 18 0 | + 21 0 | + 25 0 | + 30 0 | + 35 0 | + 40 0 | + 46 0 |



◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ○ | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | | | | | |

MILLING CUTTERS

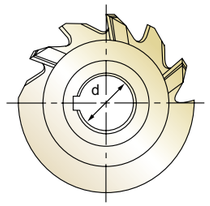
STAGGERED TEETH **ML102** SERIES

# HSS-E, SIDE AND FACE MILLING CUTTERS with STAGGERED TEETH

## HSS-E, 三面刃铣刀 错齿

▶ The type of cutter is recommended for slotting operations.
The alternate spiral effectively counteracts all tendency to chatter.

▶这种盘铣刀荐于开槽加工。交替的螺旋可有效的防治加工中的震动




HSS-E | DIN 885-A | H

p.C649

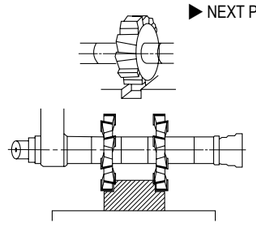
Unit(单位) : mm

| EDP No. | Cutter Diameter 直径 D(js14) | Width of Face 刃幅 S(k11) | Internal Diameter 内径 d(H7) | No. of Teeth 刃数 Z |
|---|---|---|---|---|
| ML10208001 | 80.0 | 3 | 22 | 18 |
| ML10208002 | 80.0 | 4 | 22 | 18 |
| ML10208003 | 80.0 | 5 | 22 | 18 |
| ML10208004 | 80.0 | 6 | 22 | 18 |
| ML10208005 | 80.0 | 7 | 22 | 18 |
| ML10208006 | 80.0 | 8 | 22 | 18 |
| ML10208007 | 80.0 | 9 | 22 | 18 |
| ML10208008 | 80.0 | 10 | 22 | 18 |
| ML10208009 | 80.0 | 12 | 22 | 18 |
| ML10208010 | 80.0 | 14 | 22 | 18 |
| ML10208011 | 80.0 | 16 | 22 | 18 |
| ML10208012 | 80.0 | 18 | 22 | 18 |
| ML10208013 | 80.0 | 20 | 22 | 18 |
| ML10208014 | 80.0 | 4 | 27 | 18 |
| ML10208015 | 80.0 | 5 | 27 | 18 |
| ML10208016 | 80.0 | 6 | 27 | 18 |
| ML10208017 | 80.0 | 7 | 27 | 18 |
| ML10208018 | 80.0 | 8 | 27 | 18 |
| ML10208019 | 80.0 | 9 | 27 | 18 |
| ML10208020 | 80.0 | 10 | 27 | 18 |

▶ NEXT PAGE 下页

**Tolerances according to DIN 7160 & 7161**
按DIN7160&7161的标准公差

| Nominal-Diameter in mm / 直径单位为 | over 3 to 6 | over 6 to 10 | over 10 to 18 | over 18 to 30 | over 30 to 50 | over 50 to 80 | over 80 to 120 | over 120 to 180 | over 180 to 250 |
|---|---|---|---|---|---|---|---|---|---|
| Tolerance range in mm / 公差单位为 | | | | | | | | | |
| js14 | ± 0.15 | ± 0.18 | ± 0.215 | ± 0.26 | ± 0.31 | ± 0.37 | ± 0.435 | ± 0.50 | ± 0.575 |
| Tolerance range in μm / 公差单位为 | | | | | | | | | |
| k11 | + 75 0 | + 90 0 | + 110 0 | + 130 0 | + 160 0 | + 190 0 | + 220 0 | + 250 0 | + 290 0 |
| H7 | + 12 0 | + 15 0 | + 18 0 | + 21 0 | + 25 0 | + 30 0 | + 35 0 | + 40 0 | + 46 0 |



◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ○ | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | | | | | |



MILLING CUTTERS

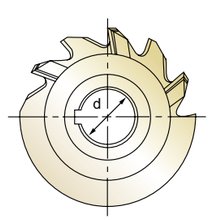
STAGGERED TEETH ML102 SERIES

HSS-E, SIDE AND FACE MILLING CUTTERS with STAGGERED TEETH

HSS-E, 三面刃铣刀 错齿

▶ The type of cutter is recommended for slotting operations.
The alternate spiral effectively counteracts all tendency to chatter.

▶这种盘铣刀荐于开槽加工。交替的螺旋可有效的防治加工中的震动




HSS-E | DIN 885-A | H

p.C649

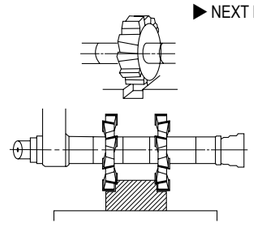
Unit(单位) : mm

| EDP No. | Cutter Diameter 直径 D(js14) | Width of Face 刃幅 S(k11) | Internal Diameter 内径 d(H7) | No. of Teeth 刃数 Z |
|---|---|---|---|---|
| ML10208021 | 80.0 | 12 | 27 | 18 |
| ML10208022 | 80.0 | 14 | 27 | 18 |
| ML10208023 | 80.0 | 16 | 27 | 18 |
| ML10208024 | 80.0 | 18 | 27 | 18 |
| ML10208025 | 80.0 | 20 | 27 | 18 |
| ML10210001 | 100.0 | 3 | 27 | 20 |
| ML10210002 | 100.0 | 4 | 27 | 20 |
| ML10210003 | 100.0 | 5 | 27 | 20 |
| ML10210004 | 100.0 | 6 | 27 | 20 |
| ML10210005 | 100.0 | 7 | 27 | 20 |
| ML10210006 | 100.0 | 8 | 27 | 20 |
| ML10210007 | 100.0 | 9 | 27 | 20 |
| ML10210008 | 100.0 | 10 | 27 | 20 |
| ML10210009 | 100.0 | 12 | 27 | 20 |
| ML10210010 | 100.0 | 14 | 27 | 20 |
| ML10210011 | 100.0 | 15 | 27 | 20 |
| ML10210012 | 100.0 | 16 | 27 | 20 |
| ML10210013 | 100.0 | 18 | 27 | 20 |
| ML10210014 | 100.0 | 20 | 27 | 20 |
| ML10210015 | 100.0 | 4 | 32 | 20 |

▶ NEXT PAGE 下页

**Tolerances according to DIN 7160 & 7161**
按DIN7160&7161的标准公差

| Nominal-Diameter in mm / 直径单位为 | over 3 to 6 | over 6 to 10 | over 10 to 18 | over 18 to 30 | over 30 to 50 | over 50 to 80 | over 80 to 120 | over 120 to 180 | over 180 to 250 |
|---|---|---|---|---|---|---|---|---|---|
| Tolerance range in mm / 公差单位为 | | | | | | | | | |
| js14 | ± 0.15 | ± 0.18 | ± 0.215 | ± 0.26 | ± 0.31 | ± 0.37 | ± 0.435 | ± 0.50 | ± 0.575 |
| Tolerance range in μm / 公差单位为 | | | | | | | | | |
| k11 | + 75 0 | + 90 0 | + 110 0 | + 130 0 | + 160 0 | + 190 0 | + 220 0 | + 250 0 | + 290 0 |
| H7 | + 12 0 | + 15 0 | + 18 0 | + 21 0 | + 25 0 | + 30 0 | + 35 0 | + 40 0 | + 46 0 |



◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ○ | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | | | | | |

MILLING CUTTERS

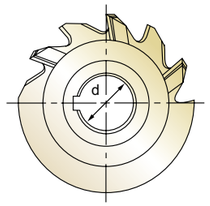
STAGGERED TEETH **ML102** SERIES

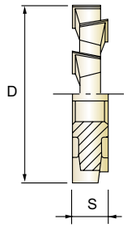
# HSS-E, SIDE AND FACE MILLING CUTTERS with STAGGERED TEETH

## HSS-E, 三面刃铣刀 错齿

▶ The type of cutter is recommended for slotting operations.
The alternate spiral effectively counteracts all tendency to chatter.

▶这种盘铣刀荐于开槽加工。交替的螺旋可有效的防治加工中的震动




HSS-E | DIN 885-A | H

p.C649

Unit(单位) : mm

| EDP No. | Cutter Diameter 直径 D(js14) | Width of Face 刃幅 S(k11) | Internal Diameter 内径 d(H7) | No. of Teeth 刃数 Z |
|---|---|---|---|---|
| ML10210016 | 100.0 | 5 | 32 | 20 |
| ML10210017 | 100.0 | 6 | 32 | 20 |
| ML10210018 | 100.0 | 7 | 32 | 20 |
| ML10210019 | 100.0 | 8 | 32 | 20 |
| ML10210020 | 100.0 | 9 | 32 | 20 |
| ML10210021 | 100.0 | 10 | 32 | 20 |
| ML10210022 | 100.0 | 12 | 32 | 20 |
| ML10210023 | 100.0 | 14 | 32 | 20 |
| ML10210024 | 100.0 | 15 | 32 | 20 |
| ML10210025 | 100.0 | 16 | 32 | 20 |
| ML10210026 | 100.0 | 18 | 32 | 20 |
| ML10210027 | 100.0 | 20 | 32 | 20 |
| ML10212501 | 125.0 | 5 | 32 | 22 |
| ML10212502 | 125.0 | 6 | 32 | 22 |
| ML10212503 | 125.0 | 8 | 32 | 22 |
| ML10212504 | 125.0 | 10 | 32 | 22 |
| ML10212505 | 125.0 | 12 | 32 | 22 |
| ML10212506 | 125.0 | 14 | 32 | 22 |
| ML10212507 | 125.0 | 16 | 32 | 22 |
| ML10212508 | 125.0 | 18 | 32 | 22 |

▶ NEXT PAGE 下页

### Tolerances according to DIN 7160 & 7161
按DIN7160&7161的标准公差

| | Nominal-Diameter in mm / 直径单位为 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | over 3 to 6 | over 6 to 10 | over 10 to 18 | over 18 to 30 | over 30 to 50 | over 50 to 80 | over 80 to 120 | over 120 to 180 | over 180 to 250 |
| Tolerance range in mm / 公差单位为 | | | | | | | | | |
| **js14** | ± 0.15 | ± 0.18 | ± 0.215 | ± 0.26 | ± 0.31 | ± 0.37 | ± 0.435 | ± 0.50 | ± 0.575 |
| Tolerance range in μm / 公差单位为 | | | | | | | | | |
| **k11** | + 75 0 | + 90 0 | + 110 0 | + 130 0 | + 160 0 | + 190 0 | + 220 0 | + 250 0 | + 290 0 |
| **H7** | + 12 0 | + 15 0 | + 18 0 | + 21 0 | + 25 0 | + 30 0 | + 35 0 | + 40 0 | + 46 0 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ○ | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | | | | | |



MILLING CUTTERS

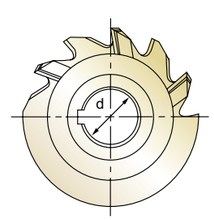
STAGGERED TEETH ML102 SERIES

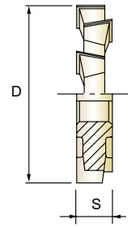
HSS-E, SIDE AND FACE MILLING CUTTERS with STAGGERED TEETH

HSS-E, 三面刃铣刀 错齿

▶ The type of cutter is recommended for slotting operations.
The alternate spiral effectively counteracts all tendency to chatter.

▶这种盘铣刀荐于开槽加工。交替的螺旋可有效的防治加工中的震动




HSS-E | DIN 885-A | H

p.C649

Unit(单位) : mm

| EDP No. | Cutter Diameter 直径 D(js14) | Width of Face 刃幅 S(k11) | Internal Diameter 内径 d(H7) | No. of Teeth 刃数 Z |
|---|---|---|---|---|
| ML10212509 | 125.0 | 20 | 32 | 22 |
| ML10216001 | 160.0 | 6 | 32 | 26 |
| ML10216002 | 160.0 | 8 | 32 | 26 |
| ML10216003 | 160.0 | 10 | 32 | 26 |
| ML10216004 | 160.0 | 12 | 32 | 26 |
| ML10216005 | 160.0 | 14 | 32 | 26 |
| ML10216006 | 160.0 | 16 | 32 | 26 |
| ML10216007 | 160.0 | 18 | 32 | 26 |
| ML10216008 | 160.0 | 20 | 32 | 26 |
| ML10216009 | 160.0 | 6 | 40 | 26 |
| ML10216010 | 160.0 | 8 | 40 | 26 |
| ML10216011 | 160.0 | 10 | 40 | 26 |
| ML10216012 | 160.0 | 12 | 40 | 26 |
| ML10216013 | 160.0 | 14 | 40 | 26 |
| ML10216014 | 160.0 | 16 | 40 | 26 |
| ML10216015 | 160.0 | 18 | 40 | 26 |
| ML10216016 | 160.0 | 20 | 40 | 26 |
| ML10220001 | 200.0 | 10 | 40 | 30 |
| ML10220002 | 200.0 | 12 | 40 | 30 |
| ML10220003 | 200.0 | 14 | 40 | 30 |

▶ NEXT PAGE 下页

Tolerances according to DIN 7160 & 7161
按DIN7160&7161的标准公差

| | Nominal-Diameter in mm / 直径单位为 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | over 3 to 6 | over 6 to 10 | over 10 to 18 | over 18 to 30 | over 30 to 50 | over 50 to 80 | over 80 to 120 | over 120 to 180 | over 180 to 250 |
| Tolerance range in mm / 公差单位为 | | | | | | | | | |
| **js14** | ± 0.15 | ± 0.18 | ± 0.215 | ± 0.26 | ± 0.31 | ± 0.37 | ± 0.435 | ± 0.50 | ± 0.575 |
| Tolerance range in μm / 公差单位为 | | | | | | | | | |
| **k11** | + 75 0 | + 90 0 | + 110 0 | + 130 0 | + 160 0 | + 190 0 | + 220 0 | + 250 0 | + 290 0 |
| **H7** | + 12 0 | + 15 0 | + 18 0 | + 21 0 | + 25 0 | + 30 0 | + 35 0 | + 40 0 | + 46 0 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ○ | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | | | | | |

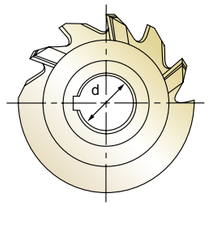
MILLING CUTTERS

STAGGERED TEETH **ML102** SERIES

## HSS-E, SIDE AND FACE MILLING CUTTERS with STAGGERED TEETH
## HSS-E, 三面刃铣刀 错齿

▶ The type of cutter is recommended for slotting operations.
The alternate spiral effectively counteracts all tendency to chatter.

▶这种盘铣刀荐于开槽加工。交替的螺旋可有效的防治加工中的震动




HSS-E | DIN 885-A | H

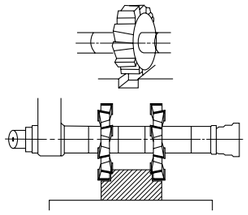
p.C649

Unit(单位) : mm

| EDP No. | Cutter Diameter 直径 D(js14) | Width of Face 刃幅 S(k11) | Internal Diameter 内径 d(H7) | No. of Teeth 刃数 Z |
|---|---|---|---|---|
| ML10220004 | 200.0 | 16 | 40 | 30 |
| ML10220005 | 200.0 | 18 | 40 | 30 |
| ML10220006 | 200.0 | 20 | 40 | 30 |
| ML10220007 | 200.0 | 22 | 40 | 30 |
| ML10220008 | 200.0 | 25 | 40 | 30 |

**Tolerances according to DIN 7160 & 7161**
按DIN7160&7161的标准公差

| Nominal-Diameter in mm / 直径单位为 | over 3 to 6 | over 6 to 10 | over 10 to 18 | over 18 to 30 | over 30 to 50 | over 50 to 80 | over 80 to 120 | over 120 to 180 | over 180 to 250 |
|---|---|---|---|---|---|---|---|---|---|
| Tolerance range in mm / 公差单位为 | | | | | | | | | |
| js14 | ± 0.15 | ± 0.18 | ± 0.215 | ± 0.26 | ± 0.31 | ± 0.37 | ± 0.435 | ± 0.50 | ± 0.575 |
| Tolerance range in μm / 公差单位为 | | | | | | | | | |
| k11 | + 75 0 | + 90 0 | + 110 0 | + 130 0 | + 160 0 | + 190 0 | + 220 0 | + 250 0 | + 290 0 |
| H7 | + 12 0 | + 15 0 | + 18 0 | + 21 0 | + 25 0 | + 30 0 | + 35 0 | + 40 0 | + 46 0 |



◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ○ | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | | | | | |

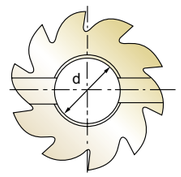


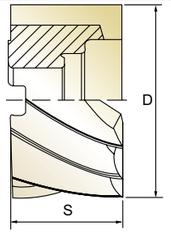


MILLING CUTTERS

**E2675** SERIES

## HSSCo8, MULTI FLUTE SHELL END MILL
## HSSCo8, 多刃 圆筒形端铣刀




HSS Co8 | DIN 841 | N | 6-10 | 30°

p.C650

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 D | Width of Face 刃幅 S | Internal Diameter 内径 d | No. of Teeth 刃数 Z |
|---|---|---|---|---|
| E2675300 | 30.0 | 30 | ● 13 | 6 |
| E2675350 | 35.0 | 35 | ● 16 | 6 |
| E2675400 | 40.0 | 20 | ● 16 | 8 |
| E2675402 | 40.0 | 40 | ● 16 | 8 |
| E2675500 | 50.0 | 25 | 22 | 8 |
| E2675502 | 50.0 | 50 | 22 | 8 |
| E2675600 | 60.0 | 30 | 27 | 8 |
| E2675601 | 60.0 | 60 | 27 | 8 |
| E2675750 | 75.0 | 35 | 27 | 10 |
| E2675751 | 75.0 | 75 | 27 | 10 |
| E2675900 | 90.0 | 35 | 27 | 10 |
| E2675902 | 110.0 | 35 | 32 | 10 |

● Tolerance of Internal Diameter = +0.018 ~ 0
▶ TiN-COATING, TiCN-COATING & TiAlN-COATING is available on your request.

● 内径公差=+0.018~0
▶ 按客户要求可以提供TiN,TiCN,TiAlN涂层

HSS Co8 | DIN 1880 | N | 8-14 | 30°

p.C650

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 D | Width of Face 刃幅 S | Internal Diameter 内径 d | No. of Teeth 刃数 Z |
|---|---|---|---|---|
| E2675401 | 40.0 | 32 | ● 16 | 8 |
| E2675501 | 50.0 | 36 | 22 | 8 |
| E2675630 | 63.0 | 40 | 27 | 8 |
| E2675800 | 80.0 | 45 | 27 | 10 |
| E2675901 | 100.0 | 50 | 32 | 10 |
| E2675903 | 125.0 | 56 | 40 | 12 |
| E2675904 | 160.0 | 63 | 50 | 14 |

● Tolerance of Internal Diameter = +0.018 ~ 0
▶ TiN-COATING, TiCN-COATING & TiAlN-COATING is available on your request.

● 内径公差=+0.018~0
▶ 按客户要求可以提供TiN,TiCN,TiAlN涂层

| Mill Dia.Tolerance(mm) 直径公差 | Width of Face Tolerance(mm) 刃幅公差 | Internal Dia Tolerance(mm) 内径公差 |
|---|---|---|
| + 0.25 - 0.15 | + 0.5 - 0 | + 0.02 - 0 |

◎ : Excellent (优秀) ○ : Good (良好)

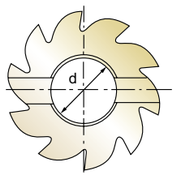
| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ○ | | | | | | | | | |

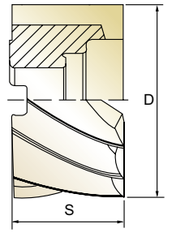
| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | | | | | | | | | | | | | | | | | | | | | |

MILLING CUTTERS

## E2676 SERIES

### HSSCo8, MULTI FLUTE SHELL END MILL for ALUMINUM
### HSSCo8, 多刃 圆筒形端铣刀




HSS Co8 | DIN 841 | W | 4&6 | 42° | p.C650

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 D | Width of Face 刃幅 S | Internal Diameter 内径 d | No. of Teeth 刃数 Z |
|---|---|---|---|---|
| **E2676300** | **30.0** | 30 | ● 13 | 4 |
| **E2676400** | **40.0** | 20 | ● 16 | 4 |
| **E2676402** | **40.0** | 40 | ● 16 | 4 |
| **E2676500** | **50.0** | 25 | 22 | 6 |
| **E2676502** | **50.0** | 50 | 22 | 6 |
| **E2676600** | **60.0** | 30 | 27 | 6 |
| **E2676601** | **60.0** | 60 | 27 | 6 |
| **E2676750** | **75.0** | 75 | 27 | 6 |

● Tolerance of Internal Diameter = +0.018 ~ 0
▶ TiN-COATING, TiCN-COATING & TiAlN-COATING is available on your request.

● 内径公差=+0.018~0
▶ 按客户要求可以提供TiN,TiCN,TiAlN涂层

HSS Co8 | DIN 1880 | W | 4&6 | 42° | p.C650

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 D | Width of Face 刃幅 S | Internal Diameter 内径 d | No. of Teeth 刃数 Z |
|---|---|---|---|---|
| **E2676401** | **40.0** | 32 | ● 16 | 4 |
| **E2676501** | **50.0** | 36 | 22 | 6 |
| **E2676630** | **63.0** | 40 | 27 | 6 |
| **E2676800** | **80.0** | 45 | 27 | 6 |
| **E2676901** | **100.0** | 50 | 32 | 6 |

● Tolerance of Internal Diameter = +0.018 ~ 0
▶ TiN-COATING, TiCN-COATING & TiAlN-COATING is available on your request.

● 内径公差=+0.018~0
▶ 按客户要求可以提供TiN,TiCN,TiAlN涂层

| Mill Dia.Tolerance(mm) 直径公差 | Width of Face Tolerance(mm) 刃幅公差 | Internal Dia Tolerance(mm) 内径公差 |
|---|---|---|
| + 0.25<br>- 0.15 | + 0.5<br>- 0 | + 0.02<br>- 0 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ○ | ○ | ○ | ○ | | ○ | ○ | | | ○ | | | | | | | | | | |

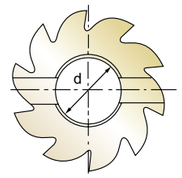
| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ◎ | ◎ | ◎ | ◎ | ◎ | | | | | | | | | | | | | | | | |

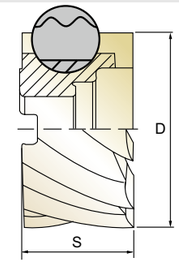


MILLING CUTTERS

## E2677 SERIES

### HSSCo8, MULTI FLUTE ROUGHING SHELL END MILL - COARSE
### HSSCo8, 多刃 圆筒形端铣刀 粗加工 粗牙




HSS Co8 | DIN 841 | NR | 6-12 | 30° | p.C651

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 D | Width of Face 刃幅 S | Internal Diameter 内径 d | No. of Teeth 刃数 Z |
|---|---|---|---|---|
| **E2677401** | **40.0** | 40 | ● 16 | 6 |
| **E2677501** | **50.0** | 50 | 22 | 8 |
| **E2677600** | **60.0** | 30 | 27 | 8 |
| **E2677601** | **60.0** | 60 | 27 | 8 |
| **E2677750** | **75.0** | 35 | 27 | 10 |
| **E2677751** | **75.0** | 75 | 27 | 10 |
| **E2677900** | **90.0** | 35 | 27 | 10 |
| **E2677902** | **110.0** | 35 | 32 | 12 |

● Tolerance of Internal Diameter = +0.018 ~ 0
▶ TiN-COATING, TiCN-COATING & TiAlN-COATING is available on your request.

● 内径公差=+0.018~0
▶ 按客户要求可以提供TiN,TiCN,TiAlN涂层

HSS Co8 | DIN 1880 | NR | 6-12 | 30° | p.C651

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 D | Width of Face 刃幅 S | Internal Diameter 内径 d | No. of Teeth 刃数 Z |
|---|---|---|---|---|
| **E2677400** | **40.0** | 32 | ● 16 | 6 |
| **E2677500** | **50.0** | 36 | 22 | 8 |
| **E2677630** | **63.0** | 40 | 27 | 8 |
| **E2677800** | **80.0** | 45 | 27 | 10 |
| **E2677901** | **100.0** | 50 | 32 | 10 |
| **E2677903** | **125.0** | 56 | 40 | 12 |
| **E2677904** | **160.0** | 63 | 50 | 12 |

● Tolerance of Internal Diameter = +0.018 ~ 0
▶ TiN-COATING, TiCN-COATING & TiAlN-COATING is available on your request.

● 内径公差=+0.018~0
▶ 按客户要求可以提供TiN,TiCN,TiAlN涂层

| Mill Dia.Tolerance(mm) 直径公差 | Width of Face Tolerance(mm) 刃幅公差 | Internal Dia Tolerance(mm) 内径公差 |
|---|---|---|
| + 0.25<br>- 0.15 | + 0.5<br>- 0 | + 0.02<br>- 0 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ○ | ○ | ◎ | ○ | | | | | | | | | |

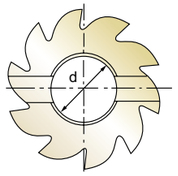
| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | | | | | |

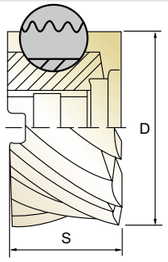
MILLING CUTTERS

## E2678 SERIES

# HSSCo8, MULTI FLUTE ROUGHING SHELL END MILL - FINE

## HSSCo8, 多刃 圆筒形端铣刀 粗加工 细牙




HSS Co8 | DIN 841 | HR | 6-12 | 30° p.C651

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 D | Width of Face 刃幅 S | Internal Diameter 内径 d | No. of Teeth 刃数 Z |
|---|---|---|---|---|
| E2678401 | 40.0 | 40 | ● 16 | 6 |
| E2678501 | 50.0 | 50 | 22 | 8 |
| E2678600 | 60.0 | 30 | 27 | 8 |
| E2678601 | 60.0 | 60 | 27 | 8 |
| E2678750 | 75.0 | 35 | 27 | 10 |
| E2678751 | 75.0 | 75 | 27 | 10 |
| E2678900 | 90.0 | 35 | 27 | 10 |
| E2678902 | 110.0 | 35 | 32 | 12 |

● Tolerance of Internal Diameter = +0.018 ~ 0
▶ TiN-COATING, TiCN-COATING & TiAlN-COATING is available on your request.

● 内径公差=+0.018~0
▶ 按客户要求可以提供TiN,TiCN,TiAlN涂层

HSS Co8 | DIN 1880 | HR | 6-12 | 30° p.C651

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 D | Width of Face 刃幅 S | Internal Diameter 内径 d | No. of Teeth 刃数 Z |
|---|---|---|---|---|
| E2678400 | 40.0 | 32 | ● 16 | 6 |
| E2678500 | 50.0 | 36 | 22 | 8 |
| E2678630 | 63.0 | 40 | 27 | 8 |
| E2678800 | 80.0 | 45 | 27 | 10 |
| E2678901 | 100.0 | 50 | 32 | 10 |
| E2678903 | 125.0 | 56 | 40 | 12 |
| E2678904 | 160.0 | 63 | 50 | 12 |

● Tolerance of Internal Diameter = +0.018 ~ 0
▶ TiN-COATING, TiCN-COATING & TiAlN-COATING is available on your request.

● 内径公差=+0.018~0
▶ 按客户要求可以提供TiN,TiCN,TiAlN涂层

| Mill Dia.Tolerance(mm) 直径公差 | Width of Face Tolerance(mm) 刃幅公差 | Internal Dia Tolerance(mm) 内径公差 |
|---|---|---|
| + 0.25<br>- 0.15 | + 0.5<br>- 0 | + 0.02<br>- 0 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 | |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 | |
| Recommended | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ○ | ○ | ◎ | ○ | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | | | | | |

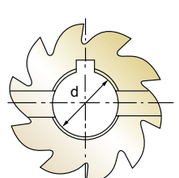


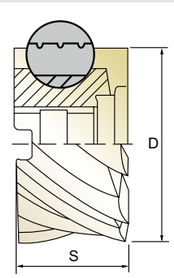
MILLING CUTTERS

## E2679 SERIES

# HSSCo8, MULTI FLUTE ROUGHING & FINISHING SHELL END MILL

## HSSCo8, 多刃 圆筒形端铣刀 粗加工&精加工




HSS Co8 | DIN 841 | NF | 6-12 | 30° p.C651

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 D | Width of Face 刃幅 S | Internal Diameter 内径 d | No. of Teeth 刃数 Z |
|---|---|---|---|---|
| E2679401 | 40.0 | 40 | ● 16 | 6 |
| E2679501 | 50.0 | 50 | 22 | 8 |
| E2679600 | 60.0 | 30 | 27 | 8 |
| E2679601 | 60.0 | 60 | 27 | 8 |
| E2679750 | 75.0 | 35 | 27 | 10 |
| E2679751 | 75.0 | 75 | 27 | 10 |
| E2679900 | 90.0 | 35 | 27 | 10 |
| E2679902 | 110.0 | 35 | 32 | 12 |

● Tolerance of Internal Diameter = +0.018 ~ 0
▶ TiN-COATING, TiCN-COATING & TiAlN-COATING is available on your request.

● 内径公差=+0.018~0
▶ 按客户要求可以提供TiN,TiCN,TiAlN涂层

HSS Co8 | DIN 1880 | NF | 6-12 | 30° p.C651

Unit(单位) : mm

| EDP No. | Mill Diameter 直径 D | Width of Face 刃幅 S | Internal Diameter 内径 d | No. of Teeth 刃数 Z |
|---|---|---|---|---|
| E2679400 | 40.0 | 32 | ● 16 | 6 |
| E2679500 | 50.0 | 36 | 22 | 8 |
| E2679630 | 63.0 | 40 | 27 | 8 |
| E2679800 | 80.0 | 45 | 27 | 10 |
| E2679901 | 100.0 | 50 | 32 | 10 |
| E2679903 | 125.0 | 56 | 40 | 12 |
| E2679904 | 160.0 | 63 | 50 | 12 |

● Tolerance of Internal Diameter = +0.018 ~ 0
▶ TiN-COATING, TiCN-COATING & TiAlN-COATING is available on your request.

● 内径公差=+0.018~0
▶ 按客户要求可以提供TiN,TiCN,TiAlN涂层

| Mill Dia.Tolerance(mm) 直径公差 | Width of Face Tolerance(mm) 刃幅公差 | Internal Dia Tolerance(mm) 内径公差 |
|---|---|---|
| + 0.25<br>- 0.15 | + 0.5<br>- 0 | + 0.02<br>- 0 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | M | | | K | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 | |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 | |
| Recommended | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ○ | ○ | ◎ | ○ | | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | | | | | |

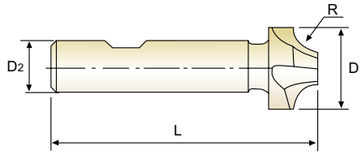
MILLING CUTTERS

FLAT SHANK **E2498** SERIES

# HSSCo8, 4 FLUTE CORNER ROUNDING CUTTERS
## HSSCo8, 4刃 圆角铣刀

▶ These tools can be adapted for many screw machine applications as end formming tools to form a specific radius.

▶ 这种产品用在自动切削机上对产品的端部进行详细精确的圆弧加工




HSS Co8 | DIN 6518 | N | 4 | 0° | DIN 1835B

p.C652

Unit(单位) : mm

| EDP No. | Radius<br>半径<br>R(H11) | Outside Diameter<br>外径<br>D | Shank Diameter<br>柄径<br>D2(h6) | Overall Length<br>全长<br>L |
|---|---|---|---|---|
| **E2498010** | R1.0 | **8.0** | 10 | 60 |
| **E2498015** | R1.5 | **9.0** | 10 | 60 |
| **E2498020** | R2.0 | **10.0** | 10 | 60 |
| **E2498025** | R2.5 | **11.0** | 10 | 60 |
| **E2498030** | R3.0 | **12.0** | 12 | 60 |
| **E2498035** | R3.5 | **13.0** | 12 | 60 |
| **E2498040** | R4.0 | **14.0** | 12 | 60 |
| **E2498045** | R4.5 | **15.0** | 12 | 60 |
| **E2498050** | R5.0 | **16.0** | 12 | 60 |
| **E2498055** | R5.5 | **19.0** | 16 | 67 |
| **E2498060** | R6.0 | **20.0** | 16 | 67 |
| **E2498065** | R6.5 | **21.0** | 16 | 71 |
| **E2498070** | R7.0 | **22.0** | 16 | 71 |
| **E2498075** | R7.5 | **23.0** | 16 | 71 |
| **E2498080** | R8.0 | **24.0** | 16 | 71 |
| **E2498085** | R8.5 | **25.0** | 25 | 85 |
| **E2498090** | R9.0 | **26.0** | 25 | 85 |
| **E2498095** | R9.5 | **27.0** | 25 | 85 |

▶ TiN-COATING, TiCN-COATING & TiAlN-COATING is available on your request.
▶ 按客户要求可以提供TiN,TiCN,TiAlN涂层

▶ NEXT PAGE 下页

### Tolerances according to DIN 7160 & 7161
按DIN7160&7161的标准公差

| Nominal-Diameter in mm / 直径单位为 | | | | | | |
|---|---|---|---|---|---|---|
| | from 1 to 3 | over 3 to 6 | over 6 to 10 | over 10 to 18 | over 18 to 30 | over 30 to 50 |
| Tolerance range in mm / 公差单位为 | | | | | | |
| **H11** | + 60<br>0 | + 75<br>0 | + 90<br>0 | + 110<br>0 | + 130<br>0 | + 160<br>0 |
| **h6** | 0<br>- 6 | 0<br>- 8 | 0<br>- 9 | 0<br>- 11 | 0<br>- 13 | 0<br>- 16 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ○ | ○ | ◎ | ○ | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | | | | | |



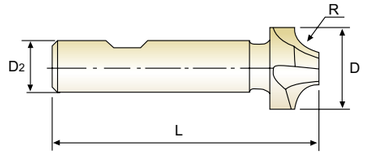
MILLING CUTTERS

FLAT SHANK **E2498** SERIES

# HSSCo8, 4 FLUTE CORNER ROUNDING CUTTERS
## HSSCo8, 4刃 圆角铣刀

▶ These tools can be adapted for many screw machine applications as end formming tools to form a specific radius.

▶ 这种产品用在自动切削机上对产品的端部进行详细精确的圆弧加工




HSS Co8 | DIN 6518 | N | 4 | 0° | DIN 1835B

p.C652

Unit(单位) : mm

| EDP No. | Radius<br>半径<br>R(H11) | Outside Diameter<br>外径<br>D | Shank Diameter<br>柄径<br>D2(h6) | Overall Length<br>全长<br>L |
|---|---|---|---|---|
| **E2498100** | R10.0 | **28.0** | 25 | 85 |
| **E2498105** | R10.5 | **31.0** | 25 | 90 |
| **E2498110** | R11.0 | **32.0** | 25 | 90 |
| **E2498120** | R12.0 | **34.0** | 25 | 90 |
| **E2498125** | R12.5 | **41.0** | 25 | 100 |
| **E2498130** | R13.0 | **42.0** | 25 | 100 |
| **E2498140** | R14.0 | **44.0** | 25 | 100 |
| **E2498150** | R15.0 | **46.0** | 25 | 100 |
| **E2498160** | R16.0 | **48.0** | 25 | 100 |
| **E2498180** | R18.0 | **52.0** | 32 | 112 |
| **E2498200** | R20.0 | **56.0** | 32 | 112 |

▶ TiN-COATING, TiCN-COATING & TiAlN-COATING is available on your request.
▶ 按客户要求可以提供TiN,TiCN,TiAlN涂层

### Tolerances according to DIN 7160 & 7161
按DIN7160&7161的标准公差

| Nominal-Diameter in mm / 直径单位为 | | | | | | |
|---|---|---|---|---|---|---|
| | from 1 to 3 | over 3 to 6 | over 6 to 10 | over 10 to 18 | over 18 to 30 | over 30 to 50 |
| Tolerance range in mm / 公差单位为 | | | | | | |
| **H11** | + 60<br>0 | + 75<br>0 | + 90<br>0 | + 110<br>0 | + 130<br>0 | + 160<br>0 |
| **h6** | 0<br>- 6 | 0<br>- 8 | 0<br>- 9 | 0<br>- 11 | 0<br>- 13 | 0<br>- 16 |

◎ : Excellent (优秀) ○ : Good (良好)

| ISO | P | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Non-alloy steel | | | | | Low alloy steel | | | | High alloyed steel, and tool steel | | Stainless steel | | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| HRc | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 |
| Recommended | ◎ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | ○ | ○ | ◎ | ○ | | | | | | | | | |

| ISO | N | | | | | | | | | | S | | | | | | | H | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | Aluminum-wrought alloy | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | Heat Resistant Super Alloys | | | | | Titanium Alloys | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRc | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400 Rm | 1050 Rm | 550 | 630 | 400 | 550 |
| Recommended | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | | | | | |

MILLING CUTTERS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

### ML012, ML112, ML022, ML122, ML212, ML222 SERIES

**DOVETAIL CUTTERS TYPE 'A', 'C', 'E'**

**燕尾槽铣刀 A型，C型，E型**

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description 材料描述 | Parameter 参数 | Diameter (Ø) 直径 16.0 | 20.0 | 25.0 | 32.0 | 40.0 | 50.0 | 63.0 |
|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | Vc | 30 | 30 | 30 | 30 | 30 | 30 | 30 |
| | | | fz | 0.03 | 0.037 | 0.026 | 0.042 | 0.043 | 0.03 | 0.031 |
| | | | RPM | 597 | 477 | 382 | 298 | 239 | 191 | 152 |
| | | | FEED | 107 | 106 | 79 | 125 | 123 | 92 | 75 |
| | 2 | | Vc | 15 | 15 | 15 | 15 | 15 | 15 | 15 |
| | | | fz | 0.031 | 0.036 | 0.031 | 0.041 | 0.043 | 0.026 | 0.031 |
| | | | RPM | 298 | 239 | 191 | 149 | 119 | 95 | 76 |
| | | | FEED | 56 | 52 | 47 | 61 | 62 | 40 | 38 |
| | 3-4 | | Vc | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| | | | fz | 0.031 | 0.035 | 0.028 | 0.04 | 0.042 | 0.03 | 0.033 |
| | | | RPM | 199 | 159 | 127 | 99 | 80 | 64 | 51 |
| | | | FEED | 37 | 33 | 29 | 40 | 40 | 31 | 27 |
| | 5 | | Vc | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| | | | fz | 0.021 | 0.02 | 0.02 | 0.02 | 0.022 | 0.02 | 0.023 |
| | | | RPM | 199 | 159 | 127 | 99 | 80 | 64 | 51 |
| | | | FEED | 25 | 19 | 20 | 20 | 21 | 20 | 19 |
| | 6 | Low alloy steel | Vc | 15 | 15 | 15 | 15 | 15 | 15 | 15 |
| | | | fz | 0.031 | 0.036 | 0.031 | 0.041 | 0.043 | 0.026 | 0.031 |
| | | | RPM | 298 | 239 | 191 | 149 | 119 | 95 | 76 |
| | | | FEED | 56 | 52 | 47 | 61 | 62 | 40 | 38 |
| | 7 | | Vc | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| | | | fz | 0.031 | 0.035 | 0.028 | 0.04 | 0.042 | 0.03 | 0.033 |
| | | | RPM | 199 | 159 | 127 | 99 | 80 | 64 | 51 |
| | | | FEED | 37 | 33 | 29 | 40 | 40 | 31 | 27 |
| | 8-9 | | Vc | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| | | | fz | 0.021 | 0.02 | 0.02 | 0.02 | 0.022 | 0.02 | 0.023 |
| | | | RPM | 199 | 159 | 127 | 99 | 80 | 64 | 51 |
| | | | FEED | 25 | 19 | 20 | 20 | 21 | 20 | 19 |
| | 10 | High alloyed steel, and tool steel | Vc | 15 | 15 | 15 | 15 | 15 | 15 | 15 |
| | | | fz | 0.031 | 0.036 | 0.031 | 0.041 | 0.043 | 0.026 | 0.031 |
| | | | RPM | 298 | 239 | 191 | 149 | 119 | 95 | 76 |
| | | | FEED | 56 | 52 | 47 | 61 | 62 | 40 | 38 |
| | 11.1 | | Vc | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| | | | fz | 0.021 | 0.02 | 0.02 | 0.02 | 0.022 | 0.02 | 0.023 |
| | | | RPM | 199 | 159 | 127 | 99 | 80 | 64 | 51 |
| | | | FEED | 25 | 19 | 20 | 20 | 21 | 20 | 19 |
| N | 21~25 | Aluminum-wrought alloy, Aluminum-cast, alloyed | Vc | 95 | 85 | 90 | 90 | 95 | 85 | 90 |
| | | | fz | 0.03 | 0.04 | 0.029 | 0.041 | 0.042 | 0.03 | 0.033 |
| | | | RPM | 1890 | 1353 | 1146 | 895 | 756 | 541 | 455 |
| | | | FEED | 340 | 325 | 266 | 367 | 381 | 260 | 240 |



MILLING CUTTERS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

### ML032, ML132, ML042, ML142, ML232, ML242 SERIES

**DOVETAIL CUTTERS TYPE 'B', 'D', 'F'**

**燕尾槽铣刀 B型，D型，F型**

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description 材料描述 | Parameter 参数 | Diameter (Ø) 直径 16.0 | 20.0 | 25.0 | 32.0 |
|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | Vc | 30 | 30 | 30 | 30 |
| | | | fz | 0.03 | 0.037 | 0.026 | 0.042 |
| | | | RPM | 597 | 477 | 382 | 298 |
| | | | FEED | 107 | 106 | 79 | 125 |
| | 2 | | Vc | 15 | 15 | 15 | 15 |
| | | | fz | 0.031 | 0.036 | 0.031 | 0.041 |
| | | | RPM | 298 | 239 | 191 | 149 |
| | | | FEED | 56 | 52 | 47 | 61 |
| | 3-4 | | Vc | 10 | 10 | 10 | 10 |
| | | | fz | 0.031 | 0.035 | 0.028 | 0.04 |
| | | | RPM | 199 | 159 | 127 | 99 |
| | | | FEED | 37 | 33 | 29 | 40 |
| | 5 | | Vc | 10 | 10 | 10 | 10 |
| | | | fz | 0.021 | 0.02 | 0.02 | 0.02 |
| | | | RPM | 199 | 159 | 127 | 99 |
| | | | FEED | 25 | 19 | 20 | 20 |
| | 6 | Low alloy steel | Vc | 15 | 15 | 15 | 15 |
| | | | fz | 0.031 | 0.036 | 0.031 | 0.041 |
| | | | RPM | 298 | 239 | 191 | 149 |
| | | | FEED | 56 | 52 | 47 | 61 |
| | 7 | | Vc | 10 | 10 | 10 | 10 |
| | | | fz | 0.031 | 0.035 | 0.028 | 0.04 |
| | | | RPM | 199 | 159 | 127 | 99 |
| | | | FEED | 37 | 33 | 29 | 40 |
| | 8-9 | | Vc | 10 | 10 | 10 | 10 |
| | | | fz | 0.021 | 0.02 | 0.02 | 0.02 |
| | | | RPM | 199 | 159 | 127 | 99 |
| | | | FEED | 25 | 19 | 20 | 20 |
| | 10 | High alloyed steel, and tool steel | Vc | 15 | 15 | 15 | 15 |
| | | | fz | 0.031 | 0.036 | 0.031 | 0.041 |
| | | | RPM | 298 | 239 | 191 | 149 |
| | | | FEED | 56 | 52 | 47 | 61 |
| | 11.1 | | Vc | 10 | 10 | 10 | 10 |
| | | | fz | 0.021 | 0.02 | 0.02 | 0.02 |
| | | | RPM | 199 | 159 | 127 | 99 |
| | | | FEED | 25 | 19 | 20 | 20 |
| N | 21~25 | Aluminum-wrought alloy, Aluminum-cast, alloyed | Vc | 95 | 85 | 90 | 90 |
| | | | fz | 0.03 | 0.04 | 0.029 | 0.041 |
| | | | RPM | 1890 | 1353 | 1146 | 895 |
| | | | FEED | 340 | 325 | 266 | 367 |



CARBIDE
HSS
CBN END MILLS
i-Xmill END MILLS
i-SMART MODULAR END MILLS
X5070 END MILLS
4G MILL END MILLS
X-POWER PRO END MILLS
TitaNox-POWER END MILLS
SUS-CUT END MILLS
V7 PLUS END MILLS
ALU-POWER HPC END MILLS
ALU-CUT END MILLS
G-CUT END MILLS
CRX S END MILLS
K-2 END MILLS
GENERAL CARBIDE END MILLS
ONLY ONE COATED PM60 END MILLS
TANK-POWER END MILLS
GENERAL HSS END MILLS
MILLING CUTTERS
TECHNICAL DATA

MILLING CUTTERS

## RECOMMENDED CUTTING CONDITIONS
推荐加工参数

# ML062, ML162, ML262 SERIES

### WOODRUFF KEYSEAT CUTTERS TYPE 'B', 'D', 'F'
月牙键槽铣刀 B型，D型，F型

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description 材料描述 | Parameter 参数 | Diameter (Ø) 直径 10.5 | 13.5 | 16.5 | 19.5 | 22.5 | 28.5 | 32.5 | 45.5 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | Vc | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 |
| | | | fz | 0.01 | 0.01 | 0.025 | 0.035 | 0.04 | 0.05 | 0.06 | 0.07 |
| | | | RPM | 909 | 707 | 579 | 490 | 424 | 335 | 294 | 210 |
| | | | FEED | 73 | 57 | 116 | 137 | 170 | 168 | 212 | 206 |
| | 2 | | Vc | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| | | | fz | 0.01 | 0.01 | 0.025 | 0.035 | 0.04 | 0.05 | 0.06 | 0.07 |
| | | | RPM | 606 | 472 | 386 | 326 | 283 | 223 | 196 | 140 |
| | | | FEED | 49 | 38 | 77 | 91 | 113 | 112 | 141 | 137 |
| | 3-4 | | Vc | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 |
| | | | fz | 0.01 | 0.01 | 0.025 | 0.035 | 0.04 | 0.05 | 0.06 | 0.07 |
| | | | RPM | 455 | 354 | 289 | 245 | 212 | 168 | 147 | 105 |
| | | | FEED | 36 | 28 | 58 | 69 | 85 | 84 | 106 | 103 |
| | 5 | | Vc | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| | | | fz | 0.01 | 0.01 | 0.025 | 0.035 | 0.04 | 0.05 | 0.06 | 0.07 |
| | | | RPM | 303 | 236 | 193 | 163 | 141 | 112 | 98 | 70 |
| | | | FEED | 24 | 19 | 39 | 46 | 57 | 56 | 71 | 69 |
| | 6 | Low alloy steel | Vc | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| | | | fz | 0.01 | 0.01 | 0.025 | 0.035 | 0.04 | 0.05 | 0.06 | 0.07 |
| | | | RPM | 606 | 472 | 386 | 326 | 283 | 223 | 196 | 140 |
| | | | FEED | 49 | 38 | 77 | 91 | 113 | 112 | 141 | 137 |
| | 7 | | Vc | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 |
| | | | fz | 0.01 | 0.01 | 0.025 | 0.035 | 0.04 | 0.05 | 0.06 | 0.07 |
| | | | RPM | 455 | 354 | 289 | 245 | 212 | 168 | 147 | 105 |
| | | | FEED | 36 | 28 | 58 | 69 | 85 | 84 | 106 | 103 |
| | 8-9 | | Vc | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| | | | fz | 0.01 | 0.01 | 0.025 | 0.035 | 0.04 | 0.05 | 0.06 | 0.07 |
| | | | RPM | 303 | 236 | 193 | 163 | 141 | 112 | 98 | 70 |
| | | | FEED | 24 | 19 | 39 | 46 | 57 | 56 | 71 | 69 |
| | 10 | High alloyed steel, and tool steel | Vc | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| | | | fz | 0.01 | 0.01 | 0.025 | 0.035 | 0.04 | 0.05 | 0.06 | 0.07 |
| | | | RPM | 606 | 472 | 386 | 326 | 283 | 223 | 196 | 140 |
| | | | FEED | 49 | 38 | 77 | 91 | 113 | 112 | 141 | 137 |
| | 11.1 | | Vc | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| | | | fz | 0.01 | 0.01 | 0.025 | 0.035 | 0.04 | 0.05 | 0.06 | 0.07 |
| | | | RPM | 303 | 236 | 193 | 163 | 141 | 112 | 98 | 70 |
| | | | FEED | 24 | 19 | 39 | 46 | 57 | 56 | 71 | 69 |
| N | 21~25 | Aluminum-wrought alloy, Aluminum-cast, alloyed | Vc | 100 | 100 | 100 | 100 | 100 | 100 | 90 | 100 |
| | | | fz | 0.01 | 0.01 | 0.025 | 0.035 | 0.04 | 0.05 | 0.06 | 0.07 |
| | | | RPM | 3032 | 2358 | 1929 | 1632 | 1415 | 1117 | 881 | 700 |
| | | | FEED | 243 | 189 | 386 | 457 | 566 | 558 | 635 | 686 |



MILLING CUTTERS

RECOMMENDED CUTTING CONDITIONS
推荐加工参数

# ML072, ML172, ML272 SERIES

### T-SLOT CUTTERS TYPE 'AA', 'AB', 'AD'
T型铣刀 AA型，AB型，AD型

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description 材料描述 | Parameter 参数 | Diameter (Ø) 直径 12.5 | 16.0 | 18.0 | 19.0 | 21.0 | 22.0 | 25.0 | 28.0 | 32.0 | 50.0 | 63.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | Vc | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 40 | 50 |
| | | | fz | 0.008 | 0.013 | 0.014 | 0.017 | 0.018 | 0.021 | 0.028 | 0.036 | 0.036 | 0.037 | 0.036 |
| | | | RPM | 764 | 597 | 531 | 503 | 455 | 434 | 382 | 341 | 298 | 255 | 253 |
| | | | FEED | 37 | 47 | 45 | 51 | 49 | 55 | 64 | 74 | 86 | 75 | 73 |
| | 2 | | Vc | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 20 | 25 |
| | | | fz | 0.007 | 0.011 | 0.012 | 0.013 | 0.016 | 0.019 | 0.026 | 0.037 | 0.035 | 0.037 | 0.04 |
| | | | RPM | 382 | 298 | 265 | 251 | 227 | 217 | 191 | 171 | 149 | 127 | 126 |
| | | | FEED | 16 | 20 | 19 | 20 | 22 | 25 | 30 | 38 | 42 | 38 | 40 |
| | 3-4 | | Vc | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 15 | 15 |
| | | | fz | 0.005 | 0.007 | 0.01 | 0.014 | 0.017 | 0.019 | 0.022 | 0.028 | 0.025 | 0.028 | 0.029 |
| | | | RPM | 255 | 199 | 177 | 168 | 152 | 145 | 127 | 114 | 99 | 95 | 76 |
| | | | FEED | 8 | 8 | 11 | 14 | 15 | 16 | 17 | 19 | 20 | 21 | 18 |
| | 6 | Low alloy steel | Vc | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 20 | 25 |
| | | | fz | 0.007 | 0.011 | 0.012 | 0.013 | 0.016 | 0.019 | 0.026 | 0.037 | 0.035 | 0.037 | 0.04 |
| | | | RPM | 382 | 298 | 265 | 251 | 227 | 217 | 191 | 171 | 149 | 127 | 126 |
| | | | FEED | 16 | 20 | 19 | 20 | 22 | 25 | 30 | 38 | 42 | 38 | 40 |
| | 7 | | Vc | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 15 | 15 |
| | | | fz | 0.005 | 0.007 | 0.01 | 0.014 | 0.017 | 0.019 | 0.022 | 0.028 | 0.025 | 0.028 | 0.029 |
| | | | RPM | 255 | 199 | 177 | 168 | 152 | 145 | 127 | 114 | 99 | 95 | 76 |
| | | | FEED | 8 | 8 | 11 | 14 | 15 | 16 | 17 | 19 | 20 | 21 | 18 |
| | 10 | High alloyed steel, and tool steel | Vc | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 20 | 25 |
| | | | fz | 0.007 | 0.011 | 0.012 | 0.013 | 0.016 | 0.019 | 0.026 | 0.037 | 0.035 | 0.037 | 0.04 |
| | | | RPM | 382 | 298 | 265 | 251 | 227 | 217 | 191 | 171 | 149 | 127 | 126 |
| | | | FEED | 16 | 20 | 19 | 20 | 22 | 25 | 30 | 38 | 42 | 38 | 40 |
| N | 21~25 | Aluminum-wrought alloy, Aluminum-cast, alloyed | Vc | 90 | 90 | 95 | 90 | 95 | 90 | 90 | 90 | 90 | 125 | 145 |
| | | | fz | 0.008 | 0.013 | 0.015 | 0.017 | 0.019 | 0.021 | 0.026 | 0.034 | 0.034 | 0.036 | 0.036 |
| | | | RPM | 2292 | 1790 | 1680 | 1508 | 1440 | 1302 | 1146 | 1023 | 895 | 796 | 733 |
| | | | FEED | 110 | 140 | 151 | 154 | 164 | 164 | 179 | 209 | 244 | 229 | 211 |

MILLING CUTTERS

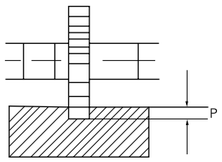
# RECOMMENDED CUTTING CONDITIONS
推荐加工参数

## ML092 SERIES

### SIDE AND FACE MILLING CUTTERS WITH STRAIGHT TEETH
三面刃铣刀 直齿

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description | Parameter 参数 | Diameter (Ø) 直径 | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | 50.0 | 63.0 | 80.0 | 100.0 | 125.0 |
| P | 1 | Non-alloy steel | Vc | 25 | 25 | 25 | 25 | 25 |
| | | | fz | 0.045 | 0.058 | 0.06 | 0.063 | 0.066 |
| | | | RPM | 159 | 126 | 99 | 80 | 64 |
| | | | FEED | 129 | 161 | 143 | 130 | 126 |
| | 2 | | Vc | 20 | 20 | 20 | 20 | 20 |
| | | | fz | 0.04 | 0.036 | 0.041 | 0.038 | 0.05 |
| | | | RPM | 127 | 101 | 80 | 64 | 51 |
| | | | FEED | 92 | 80 | 78 | 63 | 76 |
| | 3-4 | | Vc | 15 | 15 | 15 | 15 | 15 |
| | | | fz | 0.034 | 0.031 | 0.033 | 0.034 | 0.042 |
| | | | RPM | 95 | 76 | 60 | 48 | 38 |
| | | | FEED | 58 | 52 | 47 | 42 | 48 |
| | 5 | | Vc | 10 | 10 | 10 | 10 | 10 |
| | | | fz | 0.031 | 0.029 | 0.03 | 0.03 | 0.036 |
| | | | RPM | 64 | 51 | 40 | 32 | 25 |
| | | | FEED | 36 | 32 | 29 | 25 | 28 |
| | 6 | Low alloy steel | Vc | 20 | 20 | 20 | 20 | 20 |
| | | | fz | 0.04 | 0.036 | 0.041 | 0.038 | 0.05 |
| | | | RPM | 127 | 101 | 80 | 64 | 51 |
| | | | FEED | 92 | 80 | 78 | 63 | 76 |
| | 7 | | Vc | 15 | 15 | 15 | 15 | 15 |
| | | | fz | 0.034 | 0.031 | 0.033 | 0.034 | 0.042 |
| | | | RPM | 95 | 76 | 60 | 48 | 38 |
| | | | FEED | 58 | 52 | 47 | 42 | 48 |
| | 8-9 | | Vc | 10 | 10 | 10 | 10 | 10 |
| | | | fz | 0.031 | 0.029 | 0.03 | 0.03 | 0.036 |
| | | | RPM | 64 | 51 | 40 | 32 | 25 |
| | | | FEED | 36 | 32 | 29 | 25 | 28 |
| | 10 | High alloyed steel, and tool steel | Vc | 20 | 20 | 20 | 20 | 20 |
| | | | fz | 0.04 | 0.036 | 0.041 | 0.038 | 0.05 |
| | | | RPM | 127 | 101 | 80 | 64 | 51 |
| | | | FEED | 92 | 80 | 78 | 63 | 76 |
| | 11.1 | | Vc | 10 | 10 | 10 | 10 | 10 |
| | | | fz | 0.031 | 0.029 | 0.03 | 0.03 | 0.036 |
| | | | RPM | 64 | 51 | 40 | 32 | 25 |
| | | | FEED | 36 | 32 | 29 | 25 | 28 |
| N | 21~25 | Aluminum-wrought alloy, Aluminum-cast, alloyed | Vc | 100 | 100 | 100 | 100 | 100 |
| | | | fz | 0.018 | 0.023 | 0.026 | 0.024 | 0.033 |
| | | | RPM | 637 | 505 | 398 | 318 | 255 |
| | | | FEED | 206 | 256 | 248 | 199 | 252 |




MILLING DEPTH P = WIDTH OF FACES
铣削深度=刃幅



MILLING CUTTERS

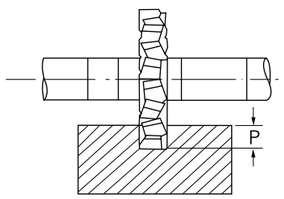
# RECOMMENDED CUTTING CONDITIONS
推荐加工参数

## ML102 SERIES

### SIDE AND FACE MILLING CUTTERS WITH STAGGERED TEETH
三面刃铣刀 错齿

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description | Parameter 参数 | Diameter (Ø) 直径 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 50.0 | 63.0 | 80.0 | 100.0 | 125.0 | 160.0 | 200.0 |
| P | 1 | Non-alloy steel | Vc | 25 | 25 | 25 | 25 | 25 | 25 | 25 |
| | | | fz | 0.058 | 0.08 | 0.081 | 0.081 | 0.072 | 0.081 | 0.079 |
| | | | RPM | 159 | 126 | 99 | 80 | 64 | 50 | 40 |
| | | | FEED | 129 | 162 | 145 | 129 | 101 | 105 | 94 |
| | 2 | | Vc | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| | | | fz | 0.053 | 0.052 | 0.055 | 0.05 | 0.055 | 0.05 | 0.048 |
| | | | RPM | 127 | 101 | 80 | 64 | 51 | 40 | 32 |
| | | | FEED | 94 | 84 | 79 | 64 | 62 | 52 | 46 |
| | 3-4 | | Vc | 15 | 15 | 15 | 15 | 15 | 15 | 15 |
| | | | fz | 0.044 | 0.043 | 0.044 | 0.044 | 0.045 | 0.044 | 0.041 |
| | | | RPM | 95 | 76 | 60 | 48 | 38 | 30 | 24 |
| | | | FEED | 59 | 52 | 47 | 42 | 38 | 34 | 29 |
| | 5 | | Vc | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| | | | fz | 0.039 | 0.04 | 0.04 | 0.039 | 0.039 | 0.04 | 0.039 |
| | | | RPM | 64 | 51 | 40 | 32 | 25 | 20 | 16 |
| | | | FEED | 35 | 32 | 29 | 25 | 22 | 21 | 19 |
| | 6 | Low alloy steel | Vc | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| | | | fz | 0.053 | 0.052 | 0.055 | 0.05 | 0.055 | 0.05 | 0.048 |
| | | | RPM | 127 | 101 | 80 | 64 | 51 | 40 | 32 |
| | | | FEED | 94 | 84 | 79 | 64 | 62 | 52 | 46 |
| | 7 | | Vc | 15 | 15 | 15 | 15 | 15 | 15 | 15 |
| | | | fz | 0.044 | 0.043 | 0.044 | 0.044 | 0.045 | 0.044 | 0.041 |
| | | | RPM | 95 | 76 | 60 | 48 | 38 | 30 | 24 |
| | | | FEED | 59 | 52 | 47 | 42 | 38 | 34 | 29 |
| | 8-9 | | Vc | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| | | | fz | 0.039 | 0.04 | 0.04 | 0.039 | 0.039 | 0.04 | 0.039 |
| | | | RPM | 64 | 51 | 40 | 32 | 25 | 20 | 16 |
| | | | FEED | 35 | 32 | 29 | 25 | 22 | 21 | 19 |
| | 10 | High alloyed steel, and tool steel | Vc | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| | | | fz | 0.053 | 0.052 | 0.055 | 0.05 | 0.055 | 0.05 | 0.048 |
| | | | RPM | 127 | 101 | 80 | 64 | 51 | 40 | 32 |
| | | | FEED | 94 | 84 | 79 | 64 | 62 | 52 | 46 |
| | 11.1 | | Vc | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| | | | fz | 0.039 | 0.04 | 0.04 | 0.039 | 0.039 | 0.04 | 0.039 |
| | | | RPM | 64 | 51 | 40 | 32 | 25 | 20 | 16 |
| | | | FEED | 35 | 32 | 29 | 25 | 22 | 21 | 19 |
| N | 21~25 | Aluminum-wrought alloy, Aluminum-cast, alloyed | Vc | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| | | | fz | 0.023 | 0.031 | 0.035 | 0.031 | 0.036 | 0.029 | 0.031 |
| | | | RPM | 637 | 505 | 398 | 318 | 255 | 199 | 159 |
| | | | FEED | 205 | 251 | 251 | 197 | 202 | 150 | 148 |




MILLING DEPTH P = WIDTH OF FACES
铣削深度=刃幅

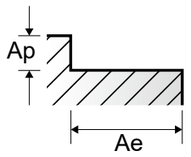
# MILLING CUTTERS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

### E2675 SERIES — MULTI FLUTE SHELL END MILL / 多刃 圆筒形端铣刀

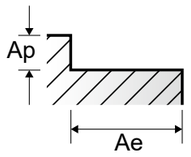
Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description 材料描述 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 40.0 | 50.0 | 63.0 | 80.0 | 100.0 | 125.0 | 160.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1-2 | Non-alloy steel | 0.75D | 0.25D | Vc | 30 | 30 | 30 | 30 | 30 | 30 | 30 |
| | | | | | fz | 0.07 | 0.078 | 0.092 | 0.1 | 0.115 | 0.12 | 0.131 |
| | | | | | RPM | 239 | 191 | 152 | 119 | 95 | 76 | 60 |
| | | | | | FEED | 134 | 119 | 112 | 119 | 110 | 110 | 109 |
| | 3-4 | | 0.75D | 0.25D | Vc | 25 | 25 | 25 | 25 | 25 | 25 | 30 |
| | | | | | fz | 0.075 | 0.077 | 0.091 | 0.1 | 0.119 | 0.113 | 0.119 |
| | | | | | RPM | 199 | 159 | 126 | 99 | 80 | 64 | 60 |
| | | | | | FEED | 119 | 98 | 92 | 99 | 95 | 86 | 99 |
| | 5 | | 0.75D | 0.25D | Vc | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| | | | | | fz | 0.071 | 0.078 | 0.09 | 0.094 | 0.117 | 0.108 | 0.116 |
| | | | | | RPM | 159 | 127 | 101 | 80 | 64 | 51 | 40 |
| | | | | | FEED | 90 | 79 | 73 | 75 | 74 | 66 | 65 |
| | 6 | Low alloy steel | 0.75D | 0.25D | Vc | 30 | 30 | 30 | 30 | 30 | 30 | 30 |
| | | | | | fz | 0.07 | 0.078 | 0.092 | 0.1 | 0.115 | 0.12 | 0.131 |
| | | | | | RPM | 239 | 191 | 152 | 119 | 95 | 76 | 60 |
| | | | | | FEED | 134 | 119 | 112 | 119 | 110 | 110 | 109 |
| | 7 | | 0.75D | 0.25D | Vc | 25 | 25 | 25 | 25 | 25 | 25 | 30 |
| | | | | | fz | 0.075 | 0.077 | 0.091 | 0.1 | 0.119 | 0.113 | 0.119 |
| | | | | | RPM | 199 | 159 | 126 | 99 | 80 | 64 | 60 |
| | | | | | FEED | 119 | 98 | 92 | 99 | 95 | 86 | 99 |
| | 8 | | 0.75D | 0.25D | Vc | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| | | | | | fz | 0.071 | 0.078 | 0.09 | 0.094 | 0.117 | 0.108 | 0.116 |
| | | | | | RPM | 159 | 127 | 101 | 80 | 64 | 51 | 40 |
| | | | | | FEED | 90 | 79 | 73 | 75 | 74 | 66 | 65 |
| | 9 | | 0.75D | 0.25D | Vc | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| | | | | | fz | 0.078 | 0.08 | 0.1 | 0.1 | 0.117 | 0.146 | 0.125 |
| | | | | | RPM | 80 | 64 | 51 | 40 | 32 | 25 | 20 |
| | | | | | FEED | 50 | 41 | 40 | 40 | 37 | 45 | 35 |
| | 10 | High alloyed steel, and tool steel | 0.75D | 0.25D | Vc | 30 | 30 | 30 | 30 | 30 | 30 | 30 |
| | | | | | fz | 0.07 | 0.078 | 0.092 | 0.1 | 0.115 | 0.12 | 0.131 |
| | | | | | RPM | 239 | 191 | 152 | 119 | 95 | 76 | 60 |
| | | | | | FEED | 134 | 119 | 112 | 119 | 110 | 110 | 109 |
| | 11.1 | | 0.75D | 0.25D | Vc | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| | | | | | fz | 0.071 | 0.078 | 0.09 | 0.094 | 0.117 | 0.108 | 0.116 |
| | | | | | RPM | 159 | 127 | 101 | 80 | 64 | 51 | 40 |
| | | | | | FEED | 90 | 79 | 73 | 75 | 74 | 66 | 65 |




### E2676 SERIES — MULTI FLUTE SHELL END MILL for ALUMINUM / 多刃 圆筒形端铣刀 铝用

| ISO | VDI 3323 | Material Description 材料描述 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 30.0 | 40.0 | 50.0 | 60.0 | 63.0 | 75.0 | 80.0 | 100.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N | 21~25 | Aluminum-wrought alloy, Aluminum-cast, alloyed | 0.75D | 0.25D | Vc | 100 | 105 | 95 | 95 | 95 | 105 | 100 | 100 |
| | | | | | fz | 0.05 | 0.06 | 0.069 | 0.1 | 0.115 | 0.13 | 0.128 | 0.151 |
| | | | | | RPM | 1061 | 836 | 605 | 504 | 480 | 446 | 398 | 318 |
| | | | | | FEED | 212 | 201 | 250 | 302 | 331 | 348 | 306 | 288 |



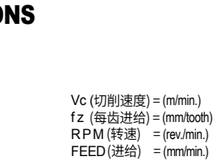



MILLING CUTTERS
RECOMMENDED CUTTING CONDITIONS
推荐加工参数

### E2677, E2678 SERIES — MULTI FLUTE ROUGHING SHELL END MILL / 多刃 圆筒形端铣刀 粗加工

Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description 材料描述 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 40.0 | 50.0 | 63.0 | 80.0 | 100.0 | 125.0 | 160.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1-2 | Non-alloy steel | 0.75D | 0.25D | Vc | 30 | 30 | 30 | 30 | 30 | 30 | 30 |
| | | | | | fz | 0.069 | 0.078 | 0.092 | 0.1 | 0.115 | 0.12 | 0.153 |
| | | | | | RPM | 239 | 191 | 152 | 119 | 95 | 76 | 60 |
| | | | | | FEED | 99 | 119 | 112 | 119 | 110 | 110 | 110 |
| | 3-4 | | 0.75D | 0.25D | Vc | 25 | 25 | 25 | 25 | 25 | 25 | 30 |
| | | | | | fz | 0.071 | 0.077 | 0.091 | 0.1 | 0.119 | 0.113 | 0.139 |
| | | | | | RPM | 199 | 159 | 126 | 99 | 80 | 64 | 60 |
| | | | | | FEED | 85 | 98 | 92 | 99 | 95 | 86 | 100 |
| | 5 | | 0.75D | 0.25D | Vc | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| | | | | | fz | 0.071 | 0.078 | 0.09 | 0.094 | 0.117 | 0.108 | 0.135 |
| | | | | | RPM | 159 | 127 | 101 | 80 | 64 | 51 | 40 |
| | | | | | FEED | 68 | 79 | 73 | 75 | 74 | 66 | 64 |
| | 6 | Low alloy steel | 0.75D | 0.25D | Vc | 30 | 30 | 30 | 30 | 30 | 30 | 30 |
| | | | | | fz | 0.069 | 0.078 | 0.092 | 0.1 | 0.115 | 0.12 | 0.153 |
| | | | | | RPM | 239 | 191 | 152 | 119 | 95 | 76 | 60 |
| | | | | | FEED | 99 | 119 | 112 | 119 | 110 | 110 | 110 |
| | 7 | | 0.75D | 0.25D | Vc | 25 | 25 | 25 | 25 | 25 | 25 | 30 |
| | | | | | fz | 0.071 | 0.077 | 0.091 | 0.1 | 0.119 | 0.113 | 0.139 |
| | | | | | RPM | 199 | 159 | 126 | 99 | 80 | 64 | 60 |
| | | | | | FEED | 85 | 98 | 92 | 99 | 95 | 86 | 100 |
| | 8 | | 0.75D | 0.25D | Vc | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| | | | | | fz | 0.071 | 0.078 | 0.09 | 0.094 | 0.117 | 0.108 | 0.135 |
| | | | | | RPM | 159 | 127 | 101 | 80 | 64 | 51 | 40 |
| | | | | | FEED | 68 | 79 | 73 | 75 | 74 | 66 | 64 |
| | 9 | | 0.75D | 0.25D | Vc | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| | | | | | fz | 0.073 | 0.08 | 0.1 | 0.1 | 0.117 | 0.146 | 0.146 |
| | | | | | RPM | 80 | 64 | 51 | 40 | 32 | 25 | 20 |
| | | | | | FEED | 35 | 41 | 40 | 40 | 37 | 45 | 35 |
| | 10 | High alloyed steel, and tool steel | 0.75D | 0.25D | Vc | 30 | 30 | 30 | 30 | 30 | 30 | 30 |
| | | | | | fz | 0.069 | 0.078 | 0.092 | 0.1 | 0.115 | 0.12 | 0.153 |
| | | | | | RPM | 239 | 191 | 152 | 119 | 95 | 76 | 60 |
| | | | | | FEED | 99 | 119 | 112 | 119 | 110 | 110 | 110 |
| | 11.1 | | 0.75D | 0.25D | Vc | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| | | | | | fz | 0.071 | 0.078 | 0.09 | 0.094 | 0.117 | 0.108 | 0.135 |
| | | | | | RPM | 159 | 127 | 101 | 80 | 64 | 51 | 40 |
| | | | | | FEED | 68 | 79 | 73 | 75 | 74 | 66 | 64 |




### E2679 SERIES — MULTI FLUTE ROUGHING & FINISHING SHELL END MILL / 多刃 圆筒形端铣刀 粗加工&精加工

| ISO | VDI 3323 | Material Description 材料描述 | Ae(mm) 切削宽度 | Ap(mm) 切削深度 | Parameter 参数 | Diameter (Ø) 直径 40.0 | 50.0 | 63.0 | 80.0 | 100.0 | 125.0 | 160.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1-2 | Non-alloy steel | 0.75D | 0.25D | Vc | 30 | 30 | 30 | 30 | 30 | 30 | 30 |
| | | | | | fz | 0.069 | 0.078 | 0.092 | 0.1 | 0.115 | 0.12 | 0.153 |
| | | | | | RPM | 239 | 191 | 152 | 119 | 95 | 76 | 60 |
| | | | | | FEED | 99 | 119 | 112 | 119 | 110 | 110 | 110 |
| | 3-4 | | 0.75D | 0.25D | Vc | 25 | 25 | 25 | 25 | 25 | 25 | 30 |
| | | | | | fz | 0.071 | 0.077 | 0.091 | 0.1 | 0.119 | 0.113 | 0.139 |
| | | | | | RPM | 199 | 159 | 126 | 99 | 80 | 64 | 60 |
| | | | | | FEED | 85 | 98 | 92 | 99 | 95 | 86 | 100 |
| | 5 | | 0.75D | 0.25D | Vc | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| | | | | | fz | 0.071 | 0.078 | 0.09 | 0.094 | 0.117 | 0.108 | 0.135 |
| | | | | | RPM | 159 | 127 | 101 | 80 | 64 | 51 | 40 |
| | | | | | FEED | 68 | 79 | 73 | 75 | 74 | 66 | 64 |
| | 6 | Low alloy steel | 0.75D | 0.25D | Vc | 30 | 30 | 30 | 30 | 30 | 30 | 30 |
| | | | | | fz | 0.069 | 0.078 | 0.092 | 0.1 | 0.115 | 0.12 | 0.153 |
| | | | | | RPM | 239 | 191 | 152 | 119 | 95 | 76 | 60 |
| | | | | | FEED | 99 | 119 | 112 | 119 | 110 | 110 | 110 |
| | 7 | | 0.75D | 0.25D | Vc | 25 | 25 | 25 | 25 | 25 | 25 | 30 |
| | | | | | fz | 0.071 | 0.077 | 0.091 | 0.1 | 0.119 | 0.113 | 0.139 |
| | | | | | RPM | 199 | 159 | 126 | 99 | 80 | 64 | 60 |
| | | | | | FEED | 85 | 98 | 92 | 99 | 95 | 86 | 100 |
| | 8 | | 0.75D | 0.25D | Vc | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| | | | | | fz | 0.071 | 0.078 | 0.09 | 0.094 | 0.117 | 0.108 | 0.135 |
| | | | | | RPM | 159 | 127 | 101 | 80 | 64 | 51 | 40 |
| | | | | | FEED | 68 | 79 | 73 | 75 | 74 | 66 | 64 |
| | 9 | | 0.75D | 0.25D | Vc | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| | | | | | fz | 0.073 | 0.08 | 0.1 | 0.1 | 0.117 | 0.146 | 0.146 |
| | | | | | RPM | 80 | 64 | 51 | 40 | 32 | 25 | 20 |
| | | | | | FEED | 35 | 41 | 40 | 40 | 37 | 45 | 35 |
| | 10 | High alloyed steel, and tool steel | 0.75D | 0.25D | Vc | 30 | 30 | 30 | 30 | 30 | 30 | 30 |
| | | | | | fz | 0.069 | 0.078 | 0.092 | 0.1 | 0.115 | 0.12 | 0.153 |
| | | | | | RPM | 239 | 191 | 152 | 119 | 95 | 76 | 60 |
| | | | | | FEED | 99 | 119 | 112 | 119 | 110 | 110 | 110 |
| | 11.1 | | 0.75D | 0.25D | Vc | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| | | | | | fz | 0.071 | 0.078 | 0.09 | 0.094 | 0.117 | 0.108 | 0.135 |
| | | | | | RPM | 159 | 127 | 101 | 80 | 64 | 51 | 40 |
| | | | | | FEED | 68 | 79 | 73 | 75 | 74 | 66 | 64 |

# MILLING CUTTERS

## RECOMMENDED CUTTING CONDITIONS
## 推荐加工参数

**E2498** SERIES

### 4 FLUTE CORNER ROUNDING CUTTERS
### 4刃 圆角铣刀

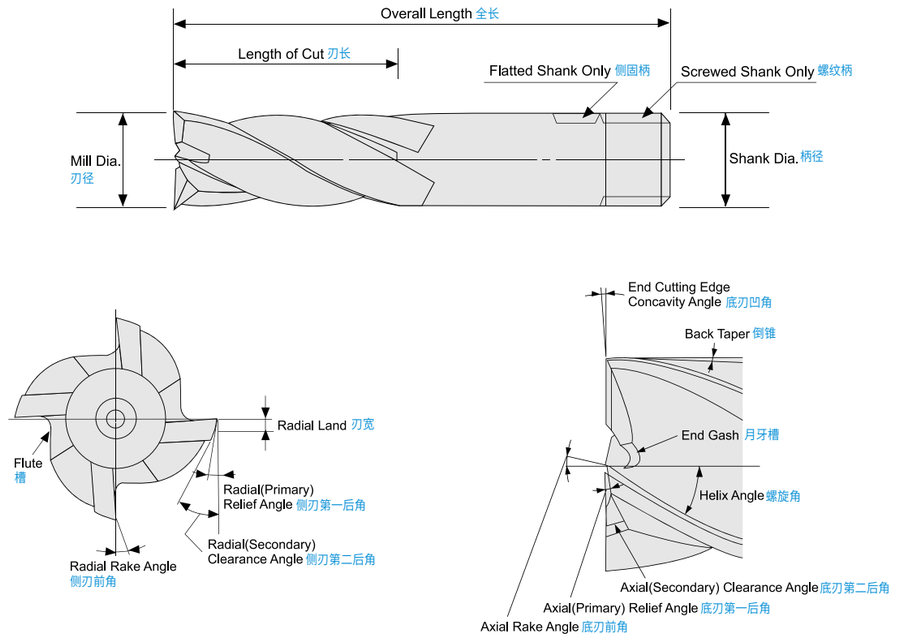
Vc (切削速度) = (m/min.)
fz (每齿进给) = (mm/tooth)
RPM (转速) = (rev./min.)
FEED (进给) = (mm/min.)

| ISO | VDI 3323 | Material Description 材料描述 | Parameter 参数 | Diameter (Ø) 直径 | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 8.0 | 9.0 | 10.0 | 11.0 | 12.0 | 14.0 | 16.0 | 20.0 | 24.0 | 28.0 | 34.0 | 48.0 |
| P | 1 | Non-alloy steel | Vc | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| | | | fz | 0.017 | 0.022 | 0.02 | 0.021 | 0.021 | 0.025 | 0.029 | 0.032 | 0.038 | 0.042 | 0.049 | 0.058 |
| | | | RPM | 796 | 707 | 637 | 579 | 531 | 455 | 398 | 318 | 265 | 227 | 187 | 133 |
| | | | FEED | 54 | 62 | 51 | 49 | 45 | 45 | 46 | 41 | 40 | 38 | 37 | 31 |
| | 2 | | Vc | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 |
| | | | fz | 0.015 | 0.016 | 0.016 | 0.019 | 0.019 | 0.023 | 0.029 | 0.033 | 0.039 | 0.04 | 0.048 | 0.053 |
| | | | RPM | 597 | 531 | 477 | 434 | 398 | 341 | 298 | 239 | 199 | 171 | 140 | 99 |
| | | | FEED | 36 | 34 | 31 | 33 | 30 | 31 | 35 | 32 | 31 | 27 | 27 | 21 |
| | 3-4 | | Vc | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| | | | fz | 0.018 | 0.023 | 0.02 | 0.024 | 0.024 | 0.023 | 0.03 | 0.034 | 0.04 | 0.05 | 0.048 | 0.05 |
| | | | RPM | 398 | 354 | 318 | 289 | 265 | 227 | 199 | 159 | 133 | 114 | 94 | 66 |
| | | | FEED | 29 | 33 | 25 | 28 | 25 | 21 | 24 | 22 | 21 | 23 | 18 | 13 |
| | 6 | Low alloy steel | Vc | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 |
| | | | fz | 0.015 | 0.016 | 0.016 | 0.019 | 0.019 | 0.023 | 0.029 | 0.033 | 0.039 | 0.04 | 0.048 | 0.053 |
| | | | RPM | 597 | 531 | 477 | 434 | 398 | 341 | 298 | 239 | 199 | 171 | 140 | 99 |
| | | | FEED | 36 | 34 | 31 | 33 | 30 | 31 | 35 | 32 | 31 | 27 | 27 | 21 |
| | 7-8 | | Vc | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| | | | fz | 0.018 | 0.023 | 0.02 | 0.024 | 0.024 | 0.023 | 0.03 | 0.034 | 0.04 | 0.05 | 0.048 | 0.05 |
| | | | RPM | 398 | 354 | 318 | 289 | 265 | 227 | 199 | 159 | 133 | 114 | 94 | 66 |
| | | | FEED | 29 | 33 | 25 | 28 | 25 | 21 | 24 | 22 | 21 | 23 | 18 | 13 |
| | 10 | High alloyed steel, and tool steel | Vc | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 |
| | | | fz | 0.015 | 0.016 | 0.016 | 0.019 | 0.019 | 0.023 | 0.029 | 0.033 | 0.039 | 0.04 | 0.048 | 0.053 |
| | | | RPM | 597 | 531 | 477 | 434 | 398 | 341 | 298 | 239 | 199 | 171 | 140 | 99 |
| | | | FEED | 36 | 34 | 31 | 33 | 30 | 31 | 35 | 32 | 31 | 27 | 27 | 21 |
| | 11.1 | | Vc | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| | | | fz | 0.018 | 0.023 | 0.02 | 0.024 | 0.024 | 0.023 | 0.03 | 0.034 | 0.04 | 0.05 | 0.048 | 0.05 |
| | | | RPM | 398 | 354 | 318 | 289 | 265 | 227 | 199 | 159 | 133 | 114 | 94 | 66 |
| | | | FEED | 29 | 33 | 25 | 28 | 25 | 21 | 24 | 22 | 21 | 23 | 18 | 13 |
| N | 21~25 | Aluminum-wrought alloy, Aluminum-cast, alloyed | Vc | 90 | 80 | 90 | 85 | 90 | 90 | 80 | 90 | 90 | 85 | 85 | 90 |
| | | | fz | 0.018 | 0.021 | 0.02 | 0.023 | 0.022 | 0.025 | 0.031 | 0.034 | 0.038 | 0.045 | 0.05 | 0.058 |
| | | | RPM | 3581 | 2829 | 2865 | 2460 | 2387 | 2046 | 1592 | 1432 | 1194 | 966 | 796 | 597 |
| | | | FEED | 258 | 238 | 229 | 226 | 210 | 205 | 197 | 195 | 181 | 174 | 159 | 138 |

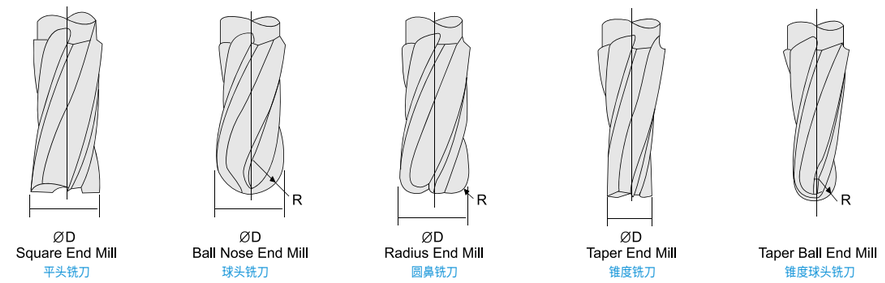
Leading Through Innovation

# TECHNICAL DATA

## 1 NAMES OF END MILL PARTS
## 铣刀各部分名称




## 2 TYPES OF END MILL
## 铣刀类型

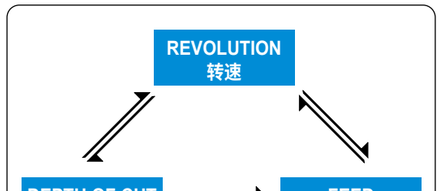







Speed, feed and depth of cut are the most important factors to consider for best results in milling. Improper feeds and speeds often cause low production, poor work quality and unnecessary damage to the cutter.
This section covers the basic principles of speed and feed selection for milling cutters and end mills. It will serve as a guide in setting-up new milling jobs.

速度，进给量和切削深度是确定切削效果最重要的因素。
不合适的进给量和速度常常导致降低产率，工作质量差和刀具的破损。
这部分包含了切削刀具的速度和进给量选择的基本原理。它将是铣削的向导



INTERRELATIONSHIP OF THREE FACTORS

## 3 SPEEDS
## 速度

In milling, SPEED is measured in peripheral feet per minute.(revolution per minute times cutter circumference in feet) This is frequently referred to as “peripheral speed” “cutting speed” or “surface speed”.
在铣削，速度是指在圆周上每分钟的英制数（以英制计算在刀具圆周上每分钟的转数），这通常指的是“圆周速度”，“切削速度”或“表面速度”

Revolutions per Minute
每分钟转数

$$N = \frac{1000V}{\pi D}$$

V : Cutting Speed(m/min) / 切削速度
D : Diameter of Tool(mm) / 刀具直径
N : Revolution per minute(rev/min) / 每分钟转数
$\pi$: 3.1416

They will have to be tempered to suit the conditons ON THE JOB. For example:
必须调节工作中适合条件。列如：

| Use Lower Speed Ranges for<br>低线速度用在 | Use Higher Speed Ranges for<br>高线速度用在 |
|---|---|
| Hard materials / 高硬材料 | Softer materials / 软质材料 |
| Tough materials / 大韧性材料 | Better finishes / 更好表面质量 |
| Abrasive materials / 耐磨材料 | Smaller diameter cutters / 更小刀具直径 |
| Heavy cuts / 重切削 | Light cuts / 轻切削 |
| Minimum tool wear / 刀具磨损最小化 | Frail work pieces or set-ups / 大脆性工件 |
| Maximum cutter life / 刀具寿命最大化 | Hand feed operations / 手动工作 |
| | Maximum production rates / 产率最大化 |
| | Non-metallics / 非铁金属 |

## 4 FEEDS
## 进给量

Feed is usually measured in milimeters per minute. It is the product of feed per tooth times revolution per minute times the number of teeth in the cutter. Due to variations in cutter sizes, numbers of teeth and revolutions per minute, all feed rates should be calculated from feed per tooth. Feed per tooth is the basis of all feed rates per minute, whether the cutters are large or small, fine or coarse tooth, and are run at high or low peripheral speed. Because feed per tooth affects chip thickness. It is a very important factor in cutter life.
Highest possible feed per tooth will usually give longer cutter life between grinds and greater production per grind. Excessive feeds may over load the cutter teeth and cause breakage or chipping of the cutting edges. The following factors should be kept in mind when using the recommended starting feed per tooth.

进给通常是通过每分钟的毫米数来测量的。
它是“每齿进给乘以每分钟的转速再乘以刀具上的齿数”的产物。由于刀具尺寸，刃数和每分钟转数的变化，
所有进给率应该通过每刃的进给来计算。无论刀具的大小，粗牙和细牙，高速或低速的圆周速度下运行，
每刃的进给是所有每分钟的进给率的基础因为每刃的进给影响铁屑的厚度。这是影响刀具寿命的一个非常重要的因素。
尽可能高的每齿进给可以带来更长的刀具寿命和更高的产率。过分的进给可能导致刀具的切削刃超负荷并引起刀具的切削刃破损或崩刃。
开始使用每齿进给时，下面隐私必须牢记

# TECHNICAL DATA SUPER CUTTING END MILLS

Feed in milimeters per Minute / 每分钟进给的毫米数

F.M = F.R. × R.P.M

F.R. : Feed per Revolutions in milimeters / 每转的进给毫米数

R.P.M .: Revolutions per Minutes / 每分钟转数

The following factors should be kept in mind when using the recommended stating feed per tooth.

开始使用每齿进给时，下面因素必须牢记

| Use Higher Feeds For<br>高进给量用在 | Use Lower Feeds For<br>低进给量用在 |
|---|---|
| Heavy, roughing cuts / 重切削，粗加工<br>Rigid set-ups / 刚性结构<br>Easy-to-machine work materials / 易切削材料<br>Rugged cutters / 粗加工刀具<br>Slab milling cuts / 平面切削<br>Low tensile strength materials / 低抗拉强度材料<br>Coarse tooth cutters / 粗牙刀具<br>Abrasive materials / 耐磨材料 | Light, and finishing cuts / 轻切削，精加工<br>Frail set-ups / 脆性结构<br>Hard to machine work materials / 难切削材料<br>Frail and small cutters / 细小刀具<br>Deep slots / 深立槽加工<br>High tensile strength materials / 高抗拉强度材料<br>Fine tooth cutters / 细牙刀具 |

## SPEED AND FEED CALCULATIONS FOR MILLING CUTTERS AND OTHER ROTATING TOOLS
## 在铣刀和其他旋转刀具的 速度和进给量计算公式

| TO FIND 求值 | HAVING 已知条件 | FORMULA 公式 |
|---|---|---|
| Surface(or Periphery) Speed in meter per Minute=S.P.M.<br>切削速度 | Diameter of Tool in milimeters 刀具直径 =D<br>Revolutions per Minute 转速 =R.P.M. | $V=\frac{D\times3.1416\times R.P.M.}{1000}$ |
| Revolutions per Minute=R.P.M.<br>转速 | Surface Speed in meter per Minute 切削速度 =S.P.M<br>Diameter of Tool in milimeters 刀具直径 =D | $R.P.M.=\frac{V\times1000}{D\times3.1416}$ |
| Feed per Revolution in milimeters-F.R.<br>每转进给量 | Feed in milimeters per Minute 每分钟进给量 =F.M.<br>Revolution per Minute 转速 =R.P.M. | $F.R.=\frac{F.M.}{R.P.M.}$ |
| Feed in milimeters per Minute-F.M.<br>每分钟进给量 | Feed per Revolution in milimeters =F.R.<br>Revolution per Minute 转速 =R.P.M. | F.M.= F.R. × R.P.M. |
| Number of Cutting Teeth per Minute=T.M.<br>每分钟切削齿数 | Number of Teeth in Tool 刀具齿数 =T<br>Revolution per Minute 转速 =R.P.M. | T.M=T × R.P.M. |
| Feed per tooth=F.T.<br>每齿进给 | Number of Teeth in Tool 刀具齿数 =T<br>Revolution per Minute 转速 =R.P.M. | $F.T.=\frac{F.R.}{T}$ |
| Feed per Tooth=F.T.<br>每齿进给 | Number of Teeth in Tool 刀具齿数 =T<br>Feed in milimeters per Minute 每分钟进给量 =F.M.<br>Speed in Revolution per Minute 转速 =R.P.M. | $F.T.=\frac{F.M.}{T\times R.P.M.}$ |



TECHNICAL DATA SUPER CUTTING END MILLS

## 5 CASE OF RESHARPENING
## 修磨分析

When the product finish become worse, the cutting edge must get dulled, chips become smaller and the cutting sound gets louder. In such cases, a end mill must be resharpened. The following are the damages of end mills when the resharpening is required.

当产品的表面变差，切削刃变顿，切屑变小，切削声音变大，在这种情况下，铣刀必须要修磨。下面是铣刀需要修磨时的破损情况

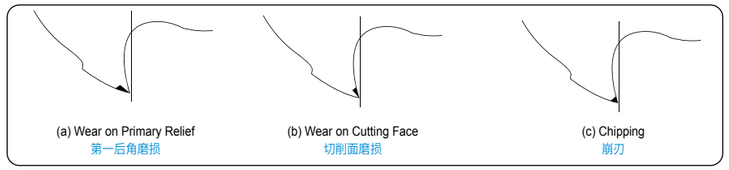



Fig. 1. Damages of Cutting Edge
图1.切削刃的破损

## 6 SHARPEN AT PREDETERMINED WEAR LAND
## 按预定的磨损修磨

Cutters should be sharpened as soons as the wear land(Fig. 2.) reaches a predetermined width. This width should permit sharpening without excessive loss of tool life. it may vary from a few hunderts to some tenth of a millimeter, depending on the type of cutter and the finish required on the product. This method is used on production runs where uneven amounts of stock is removed or where the material varies in machinability. It is also used on small quantity product lots.

一旦磨损刃线(图 2)到达预定程度，刀具需要修磨。
这个程度应该在刀具寿命不受到过分降低时允许修磨。
根据刀具的类型和所需要的表面粗糙度，它有从几十到几百的选择范围。
这个办法可用在加工不均一的切削余量或切削性能不同的材料上。
它也使用在小的数量生产批次上

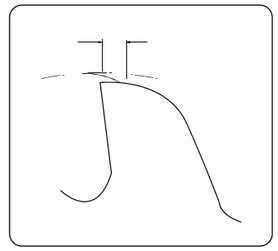


Fig. 2. Wear Land
图 2.刃线磨损

## RESHARPENING PERIPHERAL CUTTING EDGE
## 外周切削刃修磨

### 1 RESHARPENING PERIPHERAL CUTTING EDGE
外周切削刃修

The geometry of relief angle in an end mill consist of three methods as shown in Fig.3 concave, flat, and eccentric. Recently, most end mills have the eccentric relief(eccenrtic sharpening). In this method, since the relief is formed an eccentric are surface in cylindrical grinding method, the roughness of the finished surface of the relief improves and the strength of cutting edge increase at the same time.(Fig.4) As a result, the tool life is improved.

铣刀前角的几何形状由3种表示法：凹形，平面，和弧形，如图 3所示。最近，大多数铣刀使用弧形前角(弧形磨尖)。
在这种办法，自从弧形前角采用了外周磨削法，同时提高了前角的表面粗糙度并加强了切削刃的力度。
（图4）从结果上看，提高了刀具寿命

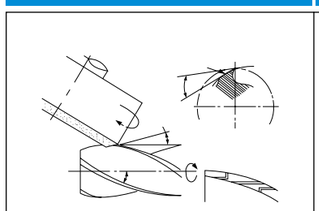
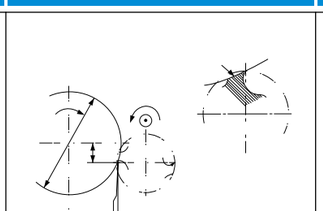
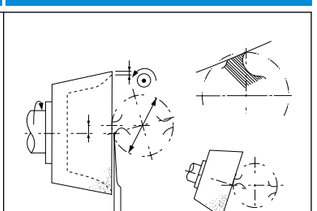
| Eccentric | Concave | Flat |
|---|---|---|
|  |  |  |

Fig. 3. Three Types of Primary Relief
图 3.三种前角

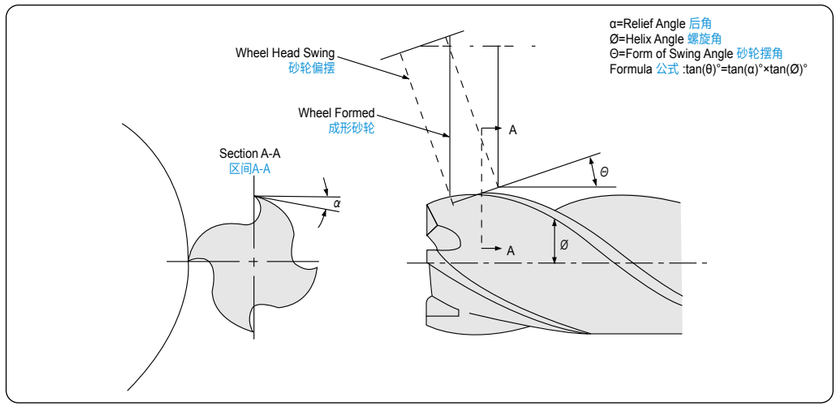



Fig. 4. Toothing of Eccentric Relief Angle
图 4. 切削刃的后角

## 2 ANGLE OF WHEEL INCLINATION
## 砂轮倾斜角度

Eccentric relief is produced with a plain wheel positioned with its axis parallel or at a slight angle with the cutter axis. The degree of relief is varied by changing the angle of wheel inclination.

弧形前角是通过普通砂轮的位置与轴平行或刀具轴向偏移轻微的角度来产生的，
通过改变砂轮的倾向的角度可以得到多种前角度

**Table 1. RECOMMENDED RELIEF ON END MILLS**
**表格 1.推荐铣刀前角**

| Mill Diameter (mm) | Eccentric relief indicator drop for relief Angles shown | | Checking Distance | Wheel Angles(Deg.)∂ | | | Radial Relief Angles(α1) | Clearance Angles(α2) |
|---|---|---|---|---|---|---|---|---|
| | | | | 15° Helix | 30° Helix | 60° Helix | | |
| - | Min | Max. | - | *Angle | *Angle | *Angle | *Angle | *Angle |
| 3.0 | 0.100 | 0.130 | 0.40 | 4° 24´ | 9° 25´ | 26° 28´ | 16° 02´ | 25° |
| 6.0 | 0.090 | 0.125 | 0.50 | 3° 18´ | 7° 05´ | 20° 25´ | 12° 08´ | 25° |
| 12.0 | 0.100 | 0.135 | 0.65 | 2° 46´ | 5° 46´ | 17° 23´ | 10° 15´ | 25° |
| 25.0 | 0.095 | 0.140 | 0.80 | 2° 15´ | 4° 15´ | 14° 16´ | 8° 21´ | 25° |
| 40.0 | 0.085 | 0.125 | 0.80 | 2° 01´ | 4° 33´ | 12° 48´ | 7° 29´ | 25° |
| 50.0 | 0.085 | 0.125 | 0.80 | 2° 01´ | 4° 33´ | 12° 48´ | 7° 29´ | 25° |

The actual at the radial relief angle is normally kept within the range shown but may be varied to suit the cutter material, the work material and the operating conditions.
实际径向前角通常保持在所示的范围之内，但是他可能根据情况适合刀具的材质，被加工材料和加工条件
* Angle is calculated from the basic mean at the radical angle.
角度是在径向前角基础上算出来的





## 8 RESHARPENING END TEETH
## 底刃修磨

The three necessary operations and one option feature, along with setup suggestions are shown in Fig.5 A to D in each drawing, the shaded area indicates the surface being ground.

三个必须加工和一个选择性特征连同调式建议一起在
图 5种A到D的每一个图中显示出来，
阴影邪表示要修磨的面

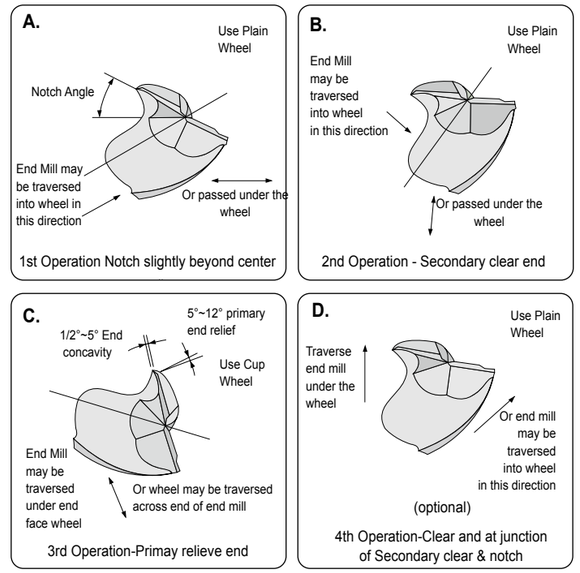



Fig 5. PROCEDURE FOR SHARPENING END OF 2 FLUTE SQUARE END MILLS

## 9 INSPECTION
## 检查

The inspection is caculated by using the formula shown in Table1.
Procedure To Check Radial Relief Angles With Indicators.

检查数值是通过表格1的公式计算出来的
使用指示器检查径向前角的过程

1. Mount the cutter to rotate freely with no end movement.
2. Adjust the sharp pointed indicator to bear at the very tip of the cutting edge, pointing in a radial line, shown in Fig.6
3. Roll the outter the tabuleted amount gives under “checking distance” using the second indicator as control.
4. Consult chart for amount of drop for the particular diameter and relief angle.

1. 把刀具按在可自由旋转无轴向移的装置上
2. 把千分表的探头调整在切削刃上，能显示出径向变化，
如图 6所示
3. 旋转刀具使第二个千分表指针变化，
变化的数据在“检测长度”种可以找到
4. 根据表格和变化的数据可以得出特定直径和前角度

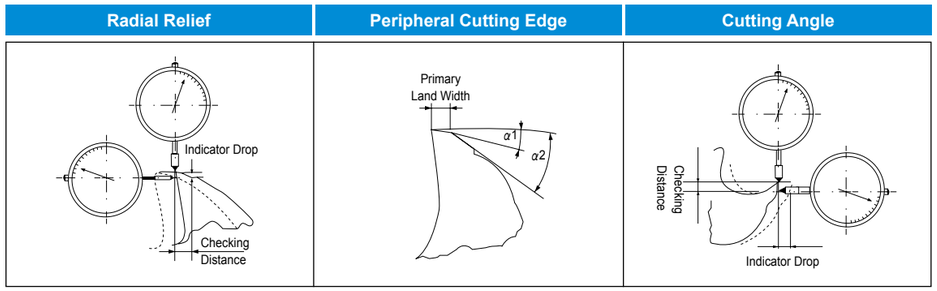



Fig. 6. Indicator Set-Up for Checking

## 10 TROUBLE SHOOTING IN MILLING
## PROBLEMLÖSUNG BEI FRÄSEN

| Trouble<br>问题 | Occurrences of trouble<br>发生 | Countermeasures<br>方案 |
|---|---|---|
| Breaking of tool<br>刀具破损 | ·At time of engaging with work material<br>与被加工材料接触时<br>·When ending cut<br>结束切削时 | 1. Decrease feed rate. / 降低进给量<br>2. Decrease projection amount / 减少发射次数<br>3. Shorten cutting edge length to required minimum limit<br>缩短切削刃长到所需的最小值极限 |
| | ·During normal cutting<br>结束切削时 | 1. Decrease feed rate / 降低进给量<br>2. Control wear → replace tool early<br>控制磨损→及早的替换刀具<br>3. Replace chuck or collet / 更换刀柄或夹头<br>4. Decrease projection amount / 减少发射次数<br>5. Carry out honing / 钝化处理<br>6. If 4 flute, reduce to 2 flute(clogging of chipping)<br>4刃改为2刃（切屑的堵塞）<br>7. If dry cutting change to wet cutting utilize cutting fluid. In case of wet cutting flow oil supplied from the front, change to from rear angle of side top. Use ample with rate.<br>把干切改为用切削油的湿切，冷却液从前面供给时，更改为顶部侧面角度，使用充足的速度 |
| | ·When changing direction of feed<br>变换进给方向时 | 1. Utilize circular interpolation(in case of NC machine) or temporarily stop feed(Dowelling)<br>使用环形内插法（数控设备）或临时停止进给（木钉）<br>2. Reduce feed rate before and after change of directions<br>改变方向前后降低进给速度<br>3. Replace chuck or collect / 更换刀柄或夹头 |
| Fracture of cutting edge<br>切削刃的破裂 | ·Fracture of corners<br>拐角破裂 | 1. Carry out chamfering or nose with hand lapper.<br>用手动移动来完成倒角或圆鼻<br>2. Down cut → Up cut / 顺铣 → 逆铣 |
| | ·Fracture at boundary of depth of cut<br>切削深度的边界破裂 | 1. Down cut → Up cut / 顺铣 → 逆铣<br>2. Reduce cutting speed / 降低切削速度 |
| | ·Chipping at center part or overall<br>中心部分或全面崩刃 | 1. Carry out honing. Or enlarge. / 钝化处理<br>2. Change number of rotation(in case machine vibrates)<br>改变转数（设备振动的情况）<br>3. Increase cutting speed / 增加切削速度<br>4. In ease of squeaking noise during cutting, increase feed.<br>切削时产生噪音，增加进给量<br>5. It dry cutting use cutting fluid or blow air.<br>干铣时，使用切削液或气流冷却<br>6. Replace chuck or collet / 更换刀柄或夹头<br>7. Reduce cutting speed / 降低切削速度 |
| | ·Large fracturing of cutting edge<br>切削刃巨大的破裂 | 1. Decrease feed rate / 降低进给量<br>2. If 4 flute reduce to 2 flute<br>4刃改为2刃<br>3. Carry out honing. Or enlarge / 钝化处理<br>4. Replace chuck or collet / 更换刀柄或夹头<br>5. Reduce cutting speed / 降低切削速度<br>6. If dry cutting, change to wet cutting. In case oil supply in wet cutting is from the front, change to rear at an angle or from side top. Use ample supply.<br>把干切改为用切削油的湿切，冷却液从前面供给时，更改为顶部侧面角度，使用充足的速度 |





| Trouble<br>问题 | Occurrences of trouble<br>发生 | Countermeasures<br>方案 |
|---|---|---|
| Rapid tool wear<br>刀具磨损过快 | | 1. Reduce cutting speed / 降低切削速度<br>2. Up cut → Down cut / 逆铣 → 顺铣<br>3. Increase feed / 增加进给<br>4. Utilize wet cutting or air / 利用湿切或气流<br>5. If reground tool, improve surface roughness of flank.<br>如果是修磨刀具，提高侧翼的表面粗糙度 |
| Inferior finished surface<br>表面粗糙度恶劣 | ·Surface is good but rough<br>表面好但是粗糙 | 1. Decrease feed / 降低进给量<br>2. In case using 2 flute, increse to 4 flute<br>2刃改为4刃 |
| | ·Small chip welding<br>小的冷焊 | 1. Increase cutting speed / 增加切削速度<br>2. Utilize wet cutting air blow(ample supply)<br>利用湿切或气流（充足供应）<br>3. Carry out fine honing / 钝化处理<br>4. Up cut → Down cut / 逆铣 → 顺铣<br>5. Increase feed or enlarge finish allowance<br>增加进给或放大表面允许范围 |
| | ·With transverse streaks<br>横断条纹 | 1. Carry out fine honing / 钝化处理<br>2. Use water insoluble cutting fluid<br>使用水溶性切削液<br>3. Down cut → Up cut / 顺铣 → 逆铣 |
| | ·Signs of excessive cutting<br>过量载切的迹象 | 1. Reduce finishing depth of cut / 减少切深<br>2. Increase cutting speed / 增加切削速度<br>3. Reduce feed / 降低进给量 |
| Poor machining accuracy<br>加工精度不好 | ·Finish dimensions are on minus side<br>最终尺寸是负值 | 1. Up cut → Down cut / 逆铣 → 顺铣<br>2. Reduce finishing depth of cut / 减少切削速度<br>3. Replace chuck or collet / 更换刀柄或夹头<br>4. Reduce projection amount / 减少发射次数<br>5. Increase cutting speed / 增加切削速度 |
| | ·Poor perpendicufarity<br>垂直度不好 | 1. Reduce finishing depth of cut / 减少切深<br>2. Replace chuck or collet / 更换刀柄或夹头<br>3. Reduce projection amont / 减少发射次数<br>4. Increase cutting speed / 增加切削速度<br>5. 2Flute → 4 Flute / 2刃 → 4刃<br>6. Reduce feed / 降低进给量<br>7. Check wear rate → Replace tool<br>检查磨损速度 → 更换刀具 |
| Chattering<br>震纹 | | 1. Increase feed rate(in case over 0.05 mm/Zahn, try reducing)<br>提高进给量（一旦超过0.05mm/Z，尽量降低）<br>2. Change cutting speed / 改变切削速度<br>3. Replace chuck or collet / 更换刀柄或夹头<br>4. Reduce projection amount / 减少发射次数<br>5. Use 2 flute cutter for rough cutting and 4 flute for finishing<br>使用2刃刀具粗加工以及4刃刀具精加工<br>6. Down cut → Up cut / 顺铣 → 逆铣 |

# TECHNICAL DATA SUPER CUTTING END MILLS

## COMPARISON CHART SCALE FOR HARDNESS
硬度对照图

| Rockwell Hardness C Scale 150kg Brale (HRc) | Diamond Pyramid Hardness Number. Vickers (HV) | Brinell Hardness Standard 10mm Ball 29.42kN (HB) | Rockwell Hardness A Scale 60kg Brale (HRA) | Shore Scleroscope Hardness Number (HS) | Approx. Tensile Strength N/mm$^2$ |
|---|---|---|---|---|---|
| 68 | 940 | - | 85.6 | 97 | - |
| 67 | 900 | - | 85.5 | 95 | - |
| 66 | 865 | - | 84.5 | 92 | - |
| 65 | 832 | - | 83.9 | 91 | - |
| 64 | 800 | - | 83.4 | 88 | - |
| 63 | 772 | - | 82.8 | 87 | - |
| 62 | 746 | - | 82.3 | 85 | - |
| 61 | 720 | - | 81.8 | 83 | - |
| 60 | 697 | - | 81.2 | 81 | - |
| 59 | 674 | - | 80.7 | 80 | - |
| 58 | 653 | - | 80.1 | 78 | - |
| 57 | 633 | - | 79.6 | 76 | - |
| 56 | 613 | - | 79.0 | 75 | - |
| 55 | 595 | - | 78.5 | 74 | 2079 |
| 54 | 577 | - | 78.0 | 72 | 2010 |
| 53 | 560 | - | 77.4 | 71 | 1952 |
| 52 | 544 | 500 | 76.8 | 69 | 1883 |
| 51 | 528 | 487 | 76.3 | 68 | 1824 |
| 50 | 513 | 475 | 75.9 | 67 | 1755 |
| 49 | 498 | 464 | 75.2 | 66 | 1687 |
| 48 | 484 | 451 | 74.7 | 64 | 1639 |
| 47 | 471 | 442 | 74.1 | 63 | 1578 |
| 46 | 458 | 432 | 73.6 | 62 | 1530 |
| 45 | 446 | 421 | 73.1 | 60 | 1481 |
| 44 | 434 | 409 | 72.5 | 58 | 1432 |
| 43 | 423 | 400 | 72.0 | 57 | 1383 |
| 42 | 412 | 390 | 71.5 | 56 | 1334 |
| 41 | 402 | 381 | 70.9 | 55 | 1294 |
| 40 | 392 | 371 | 70.4 | 54 | 1245 |
| 39 | 382 | 362 | 69.9 | 52 | 1216 |
| 38 | 372 | 353 | 69.4 | 51 | 1177 |
| 37 | 363 | 344 | 68.9 | 50 | 1157 |
| 36 | 354 | 336 | 68.4 | 49 | 1118 |
| 35 | 345 | 327 | 67.9 | 48 | 1079 |
| 34 | 336 | 319 | 67.4 | 47 | 1059 |
| 33 | 327 | 311 | 66.8 | 46 | 1030 |
| 32 | 318 | 301 | 66.3 | 44 | 1000 |
| 31 | 310 | 294 | 65.8 | 43 | 981 |
| 30 | 302 | 286 | 65.3 | 42 | 952 |
| 29 | 294 | 279 | 64.7 | 41 | 932 |
| 28 | 285 | 271 | 64.3 | 41 | 912 |
| 27 | 279 | 264 | 63.8 | 40 | 883 |
| 26 | 272 | 258 | 63.3 | 38 | 863 |
| 25 | 266 | 253 | 62.8 | 38 | 843 |
| 24 | 260 | 247 | 62.4 | 37 | 824 |
| 23 | 254 | 243 | 62.0 | 36 | 804 |
| 22 | 248 | 237 | 61.5 | 35 | 785 |
| 21 | 243 | 231 | 61.0 | 35 | 775 |
| 20 | 238 | 226 | 60.5 | 34 | 755 |
| (18) | 230 | 219 | - | 33 | 736 |
| (16) | 222 | 212 | - | 32 | 706 |
| (14) | 213 | 203 | - | 31 | 677 |
| (12) | 204 | 194 | - | 29 | 647 |
| (10) | 196 | 187 | - | 28 | 618 |
| (8) | 188 | 179 | - | 27 | 598 |
| (6) | 180 | 171 | - | 26 | 579 |
| (4) | 173 | 165 | - | 25 | 549 |
| (2) | 166 | 158 | - | 24 | 530 |
| (0) | 160 | 152 | - | 24 | 520 |



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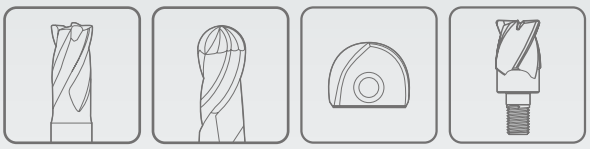
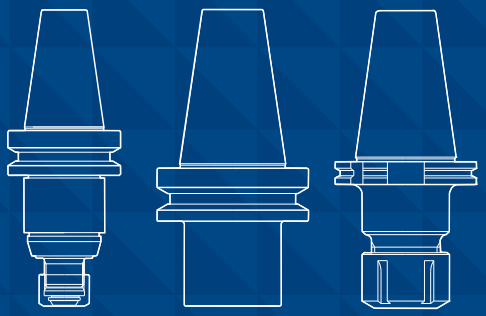
Global Cutting Tool Leader **YG-1**



# MILLING

CUTTING TOOLS



# TOOLING SYSTEM

YG-1 CO., LTD.

# HYDRAULIC CHUCK
# 液压刀柄

| Standard of Tools | DIN 69871-SK | DIN 69871-SK | DIN 69871-SK |
|---|---|---|---|
| Description | TOOL PRESETTING TYPE | POWER E HYDRO | SLIM |
| Page | D19 | D20 | D21 |
| | | NEW | |

| DIN 69871-SK | DIN 69871-SK | DIN 69893/ ISO 12164-1-HSK | DIN 69893/ ISO 12164-1-HSK | DIN 69893/ ISO 12164-1-HSK |
|---|---|---|---|---|
| ULTRA SHORT | MOLD & DIE | TOOL PRESETTING TYPE | POWER E HYDRO | SLIM |
| D22 | D23 | D24 | D25 | D26 - 28 |
| | | | NEW | |

| DIN 69893/ ISO 12164-1-HSK | JIS B6339/ MAS 403-BT&CBT | JIS B6339/ MAS 403-BT&CBT | JIS B6339/ MAS 403-BT&CBT | JIS B6339/ MAS 403-BT&CBT |
|---|---|---|---|---|
| MOLD & DIE | TOOL PRESETTING TYPE | SLIM | POWER E HYDRO | MOLD & DIE |
| D29 | D30 / D35 | D31 - 32 / D37 - 38 | D33, D36 | D34, D40 |
| | | | NEW | |

| JIS B6339/MAS 403-BT | DIN 69871-SK& DIN 228-MTB | HYDRAULIC CHUCK SET | TEST PIECE | COLLET |
|---|---|---|---|---|
| ULTRA SHORT | For GRINDER | | | REDUCTION SLEEVE |
| D39 | D41 | D42 | D42 | D43 - D46 |
| | | NEW | NEW | |

※Product design and technical data in the contents are subject to change for improving quality or performance of products without prior notice.

* 为了提高产品质量及性能，产品设计及具体技术数据日后若有改动时，将不会给予提前通知

## Guide Line to Icons

| Standard of Tools | Taper Accuracy | G Value | RPM | Run-Out | Coolant System |
|---|---|---|---|---|---|
| DIN 69871-SK / DIN 69893-HSK / JIS B6339-BT / CBT | AT3 | 2.5G 6.3G | 15,000 RPM / 20,000 RPM / 25,000 RPM / 30,000 RPM | (at 3D) ≤3㎛ | AD or AD/B / AD/B / AD / AD+C or AD/B+C |

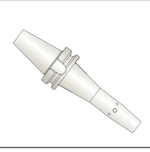
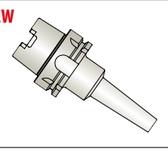
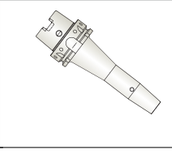
| Collet | Bolt | Spanner | TapAdapter | ER Nut | ER Spanner | Parts |
|---|---|---|---|---|---|---|
| | | | | | | |





# SHRINK FIT HOLDER
# 热缩刀柄

| Standard of Tools | DIN 69871-SK | DIN 69871-SK | DIN 69871-SK |
|---|---|---|---|
| Description | EXTRA SLIM | | COOLANT CHANNEL |
| Page | D50 | D51 - 52 | D53 |
| | NEW | | NEW |

| DIN 69871-SK | DIN 69893/ ISO 12164-1-HSK | DIN 69893/ ISO 12164-1-HSK | DIN 69893/ ISO 12164-1-HSK | DIN 69893/ ISO12164-1-HSK |
|---|---|---|---|---|
| REINFORCED | EXTRA SLIM | | COOLANT CHANNEL | REINFORCED |
| D54 | D55 | D56 - 58 | D59 | D60 |
| NEW  | NEW  | | NEW |  |

| JIS B6339/ MAS 403-BT&CBT | JIS B6339/ MAS 403-BT&CBT | JIS B6339/ MAS 403-BT&CBT | JIS B6339/MAS403-BT | ISO 25 |
|---|---|---|---|---|
| | COOLANT CHANNEL | EXTRA SLIM | REINFORCED | |
| D61 - 62 / D65 - 66 | D63 / D67 | D64 | D68 | D69 |
| | NEW | NEW | NEW | |

| EXTENSION | SHRINK FIT HEATING MACHINE |
|---|---|
| | |
| D70 - 71 | D72 |
| | |

※Product design and technical data in the contents are subject to change for improving quality or performance of products without prior notice.

* 为了提高产品质量及性能，产品设计及具体技术数据日后若有改动时，将不会给予提前通知

# ER COLLET CHUCK
## ER 夹头刀柄

| Standard of Tools | DIN 69871-SK | DIN 69893/ ISO 12164-1-HSK | JIS B6339/ MAS 403-BT&CBT |
|---|---|---|---|
| Description | | | |
| Page | D75 - 78 | D79 - 85 | D86 - 93 |
| | | | |

| ISO 20/25 | DIN 228-MTA | DIN 228-MTB | STRAIGHT-K | NC |
|---|---|---|---|---|
| SLIM | | | | CNC LATHE |
| D94 | D95 | D96 | D97 - 100 | D101 |
| | | | | |

| BRIDGEPORT-R8 | GOST 25827-93 | ER COLLET | SEALED ER COLLET | TAP ER COLLET | ER NUT, SEALING DISC&SPANNER |
|---|---|---|---|---|---|
| | | | | | |
| D101 | D102 | D103 - 105 | D106 - 107 | D108- 109 | D110 -115 |
| | | | NEW | | |

# END MILL HOLDER & SIDE LOCK ARBOR
## 立铣刀刀柄 & 侧固式刀柄

| Standard of Tools | DIN 69871-SK | DIN 69893/ ISO 12164-1-HSK | JIS B6339/ MAS 403-BT&CBT |
|---|---|---|---|
| Description | EMH | EMH | EMH & SLA |
| Page | D118 - 122 | D123 -126 | D127 -131 |
| | | | |

| DIN 69871-SK | JIS B6339/ MAS 403-BT | GOST 25827-93 | JIS B6339/ MAS 403-BT&CBT | JIS B6339/MAS 403-BT | PARTS |
|---|---|---|---|---|---|
| EMH | EMH | EMH | SLA | SLB | EMH & SLA |
| D132 | D132 | D133 | D134 - 135 | D136 | D137 |
| NEW | NEW | | | | |

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* 为了提高产品质量及性能，产品设计及具体技术数据日后若有改动时，将不会给予提前通知





# SHELL MILL ARBOR
## 端面铣刀刀柄

| Standard of Tools | DIN 69871-SK | DIN 69893/ ISO 12164-1-HSK | JIS B6339/ MAS 403-BT&CBT |
|---|---|---|---|
| Description | SMA | SMA | SMA |
| Page | D140 - 142 | D143 - 145 | D146 - 151 |
| | | | |

| GOST 25827-93 | PARTS | DIN 69871-SK | DIN69893/ ISO 12164-1-HSK | JIS B6339/ MAS 403-BT&CBT |
|---|---|---|---|---|
| SMA | | CMA | CMA | CMA |
| D152 | D153 -154 | D155 | D156 | D157 - 158 |
| | | | | |

| DIN 2080-ISO | PARTS |
|---|---|
| CMA | |
| D159 | D160 |
| | |

# POWER MILLING CHUCK
## 强力刀柄

| Standard of Tools | DIN 69871-SK | DIN 69893/ ISO 12164-1-HSK | JIS B6339/ MAS 403-BT&CBT |
|---|---|---|---|
| Description | | | |
| Page | D164 - 165 | D166 - 167 | D168 - 171 |
| | | | |

| DIN 228-MTA/MTB | BRIDGEPORT-R8 | STANDARD SET | Q.C SET | COLLET&SPANNER |
|---|---|---|---|---|
| | | | | |
| D172 | D173 | D174 | D175 | D176 |
| | | | | |

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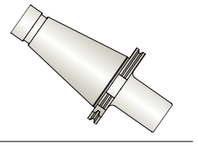
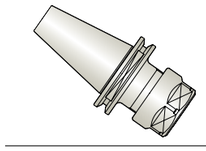
# MORSE TAPER ARBOR
## 莫式锥柄变换刀柄

| Standard of Tools | DIN 69871-SK | DIN 69893/ ISO 12164-1-HSK | JIS B6339/ MAS 403-BT |
|---|---|---|---|
| Description | | | MTA & MTB |
| Page | D178 | D178 | D179-180 |
| | | | |

| ANSI B5.18-NT | GOST 25827-93 |
|---|---|
| | MTA |
| D180 | D181 |
| |  |

# SK SLIM CHUCK
## 端面铣刀刀柄

| Standard of Tools | DIN 69871-SK | DIN 69893/ ISO 12164-1-HSK | JIS B6339/ MAS 403-BT&CBT |
|---|---|---|---|
| Description | | | |
| Page | D184 - 187 | D188 -190 | D191 - 196 |
| | | | |

| ISO 20/25 | STRAIGHT-K | COLLET&NUT |
|---|---|---|
| | | |
| D197 | D198 | D199 - 201 |
|  | | |

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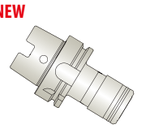
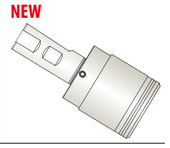
# SYNCHRO TAPPING CHUCK
## 端面铣刀刀柄

| Standard of Tools | DIN 69871-SK | DIN 69893/I SO 12164-1-HSK | JIS B6339/ MAS403-BT |
|---|---|---|---|
| Description | SYTER | SYTER | SYTER |
| Page | D204 | D205 | D206 |
| | | | |

| STRAIGHT-K | DIN 69871-SK | DIN 69893/ ISO 12164-1-HSK | STRAIGHT-K |
|---|---|---|---|
| SYTER | SYTC | SYTC | SYTC |
| D207 | D208 | D209 | D210 |
| | | | |

# ONE STEP TAPPING CHUCK
## 同步攻丝刀柄

| Standard of Tools | DIN 69871-SK | DIN 69893/ ISO 12164-1-HSK | JIS B6339/ MAS 403-BT | STRAIGHT-K |
|---|---|---|---|---|
| Description | | | | |
| Page | D212 | D212 | D213 | D213 |
| | NEW | NEW  | NEW | NEW  |

# TAPPING ER CHUCK
## 攻丝 ER 刀柄

| Standard of Tools | DIN 69871-SK | DIN 69893/ISO 12164-1-HSK | JIS B6339/MAS 403-BT&CBT |
|---|---|---|---|
| Description | | | |
| Page | D217 | D218 | D219 - 220 |
| | | | |

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# TAPPING CHUCK
## 攻丝刀柄

| Standard of Tools | DIN 69871-SK | DIN 69893/ISO 12164-1-HSK | JIS B6339/MAS 403-BT |
|---|---|---|---|
| Description | | | |
| Page | D222 | D223 | D224 |
| | | | |

| STRAIGHT-K | DIN 228-MTA | TAP ADAPTER |
|---|---|---|
| | | |
| D225 | D226 | D227 - 228 |
| | | |

# FACE MILL ARBOR
## 平面铣刀刀柄

| Standard of Tools | JIS B6339/ MAS 403-BT&CBT | DIN 69893/ ISO 12164-1-HSK | ANSI B5.18-NT |
|---|---|---|---|
| Description | FMA | FMA | FMA |
| Page | D230 - 231 | D232 | D233 |
| | | | |

| DIN 228-MTA | JIS B6339/ MAS 403-BT&CBT | JIS B6339/ MAS 403-BT&CBT | DIN 69893/ ISO 12164-1-HSK | PARTS |
|---|---|---|---|---|
| FMA | FMB | FMC | FMC | |
| D 233 | D234 - 235 | D236 - 237 | D238 | D239 |
| | | | | |

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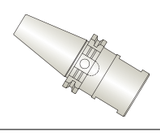
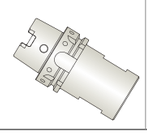
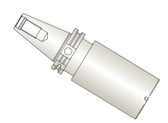
# COPY MILL ARBOR & INDEXABLE DRILL HOLDER
## 仿形铣刀柄& 可转位钻头刀柄

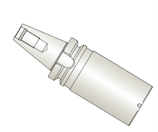
| Standard of Tools | DIN 69871-SK | DIN 69893/ ISO 12164-HSK | JIS B6339/MAS 403-BT |
|---|---|---|---|
| Description | | | |
| Page | D242 | D243 | D244 |
| | NEW | NEW | NEW |

| DIN 69871-SK | DIN 69893/ ISO 12164-HSK | JIS B6339/MAS 403-BT |
|---|---|---|
| | | |
| D245 | D245 | D246 |
| NEW  | NEW  | NEW |

# NC DRILL CHUCK & OTHER TOOL HOLDERS
## NC钻夹头刀柄 & 其他刀柄

| Standard of Tools | DIN69871-SK | JIS B6339/ MAS 403-BT&CBT | DIN 69893/ ISO 12164-1-HSK |
|---|---|---|---|
| Description | NPU | NPU | NPU |
| Page | D 249 | D 250 - 251 | D 252 |
| | NEW | | |

| STRAIGHT-K | JIS B6339/MAS 403-BT | JIS B6339/MAS 403-BT | DIN 69871-SK | DIN 69893/ ISO 12164-1-HSK |
|---|---|---|---|---|
| | SCA | JTA | BLANK BAR | BLANK BAR |
| D 252 | D 253 | D 254 | D 255 | D 255 |
| | | |  | |

| JIS B6339/MAS 403-BT | DIN 69871-SK | DIN 69893/ ISO 12164-1-HSK | JIS B6339/MAS 403-BT |
|---|---|---|---|
| BLANK BAR | TEST BAR | TEST BAR | TEST BAR |
| D 255 | D256 | D 256 | D256 |
|  | NEW | NEW | NEW |

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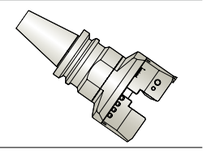
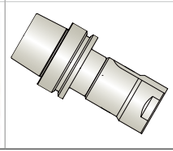
# BORING SYSTEM
## 镗孔刀柄系统

| Standard of Tools | DIN 69871-SK | DIN 69893/ ISO 12164-HSK | JIS B6339/ MAS 403-BT |
|---|---|---|---|
| Description | FINE SMALL : BAH | FINE SMALL : BAH | FINE SMALL : BAH |
| Page | D261 | D262 | D263 |
| | | | |

| FINE BORING HEAD | JIS B6339/ MAS 403-BT | DIN 69871-SK | EXTENSION & REDUCTION | JIS B6339/ MAS 403-BT |
|---|---|---|---|---|
| SMALL BORE | SMALL BORE : SAS | SMALL BORE : SAS | SMALL BORE | FINE BIG : FBH & PARTS |
| D264 | D265 | D266 | D267 - 268 | D269 - 270 |
| | | | |  |

| DIN 69871-SK | DIN 69893/ ISO 12164-HSK | JIS B6339/ MAS 403-BT | TWIN HEAD & INSERT HOLDER | STRAIGHT-ST | DIN 69871-SK |
|---|---|---|---|---|---|
| TWIN SMALL : TBH | TWIN SMALL : TBH | TWIN SMALL : TBH | SMALL BORE | TWIN TBH | TWIN BIG : TBH |
| D271 | D272 | D273 | D274 | D275 | D276 |
| |  | | | | |

| JIS B6339/ MAS 403-BT | JIS B6339-BT / DIN 69871-SK | JIS B6339/MAS 403-BT | STRAIGHT-ST | JIS B6339/ MAS 403-BT | SQUARE BITE |
|---|---|---|---|---|---|
| TWIN BIG : TBH | TWIN SAS & PARTS | MICRO BCA | MICRO BCA & PARTS | SQUARE BSA & BSB | |
| D277 | D278 - 279 | D280 - 281 | D282 - 285 | D286 - 287 | D288 |
| | | | | | |

# ACCESSORY & OTHERS
## 辅件 & 其他

| PULL STUD BOLT & SPANNER | TOOL CLAMP | HEIGHT PRESETTER | COOLANT TUBE & SPANNER |
|---|---|---|---|
| D290 - 291 | D292 | D292 | D293 |
| | | | |

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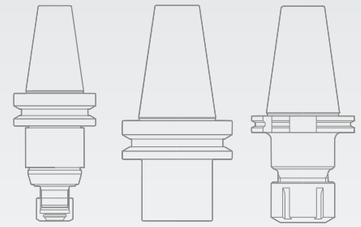
Global Cutting Tool Leader **YG-1**



# TOOLING SYSTEM

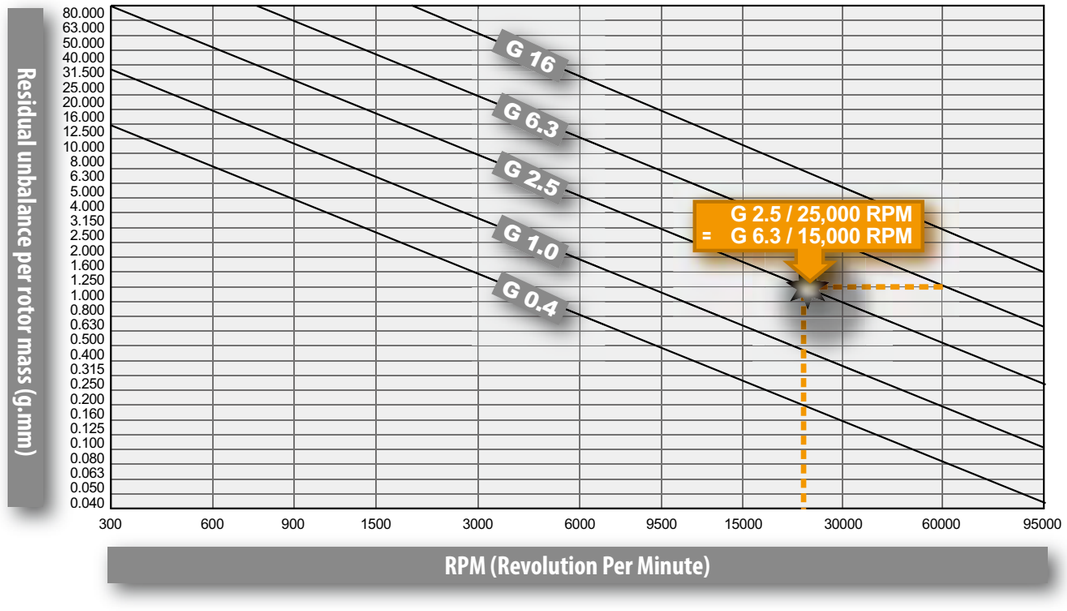
## Definition of Balancing and Unbalancing
### 动平衡及非动平衡定义

If the rotor(tool holder) is rotated around the axis, centrifugal forces generate in all parts. If these centrifugal forces are distributed symmetrically against the rotation axis, the centrifugal forces generating in the opposite direction are offset by one another, resulting in no forces to the rotation axis eventually. Therefore bearings are not vibrated. In this case tool holder is in the balanced state.
On the contrary, if centrifugal forces are distributed asymmetrically against the rotation axis, or if the force of one part is greater than that of the opposite part, the forces equivalent to differences are added to the rotation axis, causing the rotor(tool holder) to vibrate.
The imbalance of distribution of rotor mass is called "Unbalance". In other words, "Unbalance" is mass existing unevenly in the rotor(tool holder).

刀柄，以某轴为中心旋转时将会形成离心力 若分布在旋转轴上的刀柄各点离心力相互抵消
对旋转轴将无任何影响， 此时旋转轴不会震动，
刀柄应属平衡状态 相反分布在旋转轴上的刀柄各点离心力偏向某处 将会影响旋转轴，
使旋转轴产生震动 这种刀柄本体质量分布不均匀所产生的影响称非动态平衡状态
换句话说非动平衡就是刀柄本体上存在的质量不均匀所引起的缺陷。

## Balancing Grade Quality According To ISO 1940
### 动平衡等级标准 - 遵循ISO 1940标准

(DIN ISO 1940)




**Calculation of G** $\frac{G \times m}{RPM} \times 9549 = U$

**G** : Balancing grade or circumference speed
**m** : Rotor(Holder) weight ⇒ Unit : kg
**9549 :** Conversion constant
**U** : Degree of unbalance (Permissable unbalance) ⇒ Unit : g.mm
**RPM :** Revolutions Per Minute



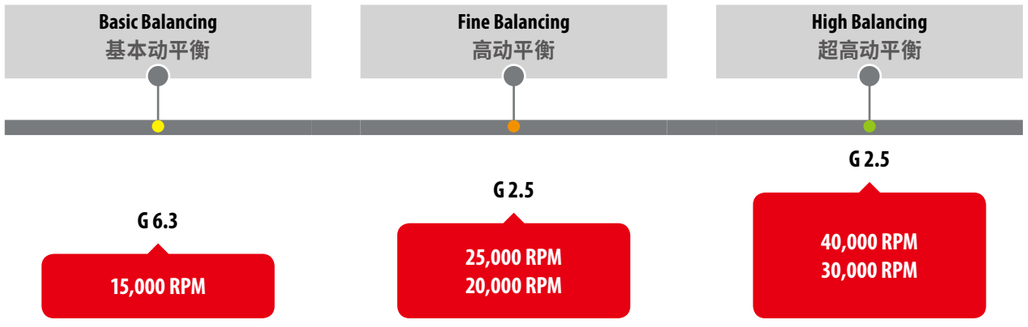


## Merits of Balanced Machining
### 动平衡加工长处

Recently, rotating machines are more sophisticated and operated at High-Speed with the technical advance. Also, they require more efficiency and more stable functions which are stricter conditions than ever before. In High-Speed machining, one of the largest factors which degrade performance of machines is chattering. It causes workers to suffer displeasure, noise, and fatigue which are main problems affecting productivity. Balancing of the rotor(tool holder) is the essential and effective factor in order to prevent vibration of the machine.
It is widely recognized as the indispensable process in manufacturing rotation machinery.
YG-1 manufactures tool holders with various balancing grades meeting the needs of users.

随着旋转机械技术的进步，市场更加需要高精密及高速化，进一步提高设备能力和性能稳定。
在高速加工中使设备降低性能的主要原因是震动所引起的不安及噪音以及老化。
动平衡力柄是防止设备震动的最基本因素，也是有效的措施以及不可分离的部分，因此广为人知。
YG-1为满足客户的要求及条件生产多种等级的动平衡刀柄。

## YG-1 Balancing Grade Standard
### YG-1 动平衡等级标准




## YG-1 Balancing Specification (for Balancing Design Products)
### YG-1 动平衡事项 (采用动平衡设计产品)

| PRODUCT<br>产品 | SHANK<br>柄部 | GRADE<br>等级 | RPM |
|---|---|---|---|
| HYDRAULIC CHUCK<br>液压刀柄 | BT/CBT 30/40/50<br>SK 30/40/50<br>HSK 32/40/50/63/80/100 | G 2.5 | 25,000 |
| SHRINK FIT HOLDER<br>热缩刀柄 | BT/CBT 30/40/50<br>SK 30/40/50<br>HSK 25/32/40/50/63/80/100<br>ISO 25 | G 2.5 | 25,000 |
| OTHER CHUCKS<br>& TOOL HOLDERS<br>其它刀柄 | BT/CBT 30/40/50<br>SK 30/40/50<br>HSK 25/32/40/50/63/80/100<br>ISO 20/25 | G 6.3<br>G 2.5 | 15,000<br>25,000 |

*HIGHER BALANCING GRADE PRODUCT COULD BE SUPPLIED UPON CUSTOMER'S REQUEST.
* 可以按照客户要求生产更高动平衡等级的产品

## Model Numbering System
产品编号说明

| BT | 40 | AD/B | ER | 16 | 70 |
|---|---|---|---|---|---|
| Shank type<br>柄部 | Shank size<br>锥度号 | Coolant Supplying System<br>冷却方式 | Product name<br>产品名称 | Tool Holder I.D = Tool Shank O.D<br>刀柄 I.D<br>(刀具柄径) | "Gauge Line" Length and Other Spec.<br>长度<br>(例: 70mm) |

## Surface Finish
表面处理

**Shot Peened**
(喷砂处理)

**Black Oxidized**
(发黑处理)

**Bright Finish**
(镜面抛光)

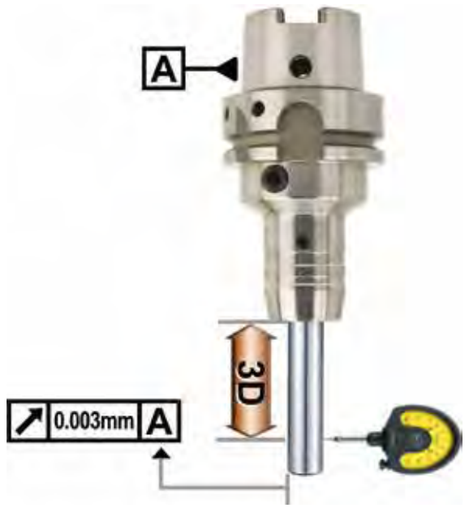
**Anti Rust Treated**
(防锈处理)

YG-1 TOOLING SYSTEM

# HYDRAULIC CHUCK
# 液压刀柄

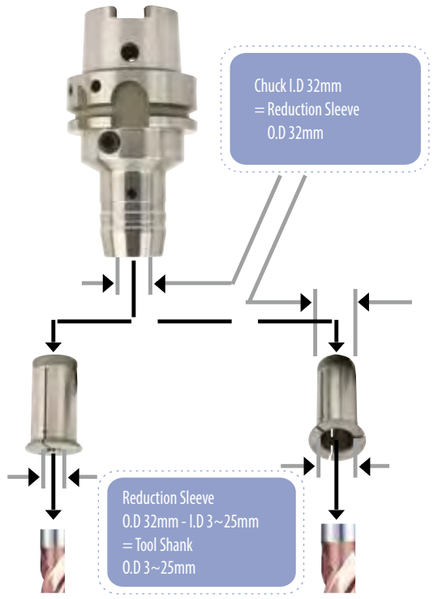
- DIN 69871-SK
- DIN 69893/ISO 12164-1-HSK
- CBT (BT DUAL CONTACT)
- JIS B6339/MAS 403-BT
- HYDRAULIC CHUCK (FOR GRINDER)
- HYDRAULIC CHUCK SET
- ACCESSORY

## High precision T.I.R :
**≤ 0.003mm (Without Reduction Sleeve)**
**高精度：**跳动公差(T.I.R)0.003mm以下

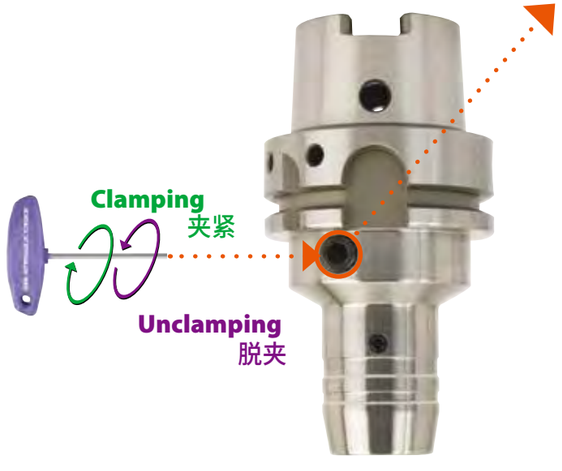


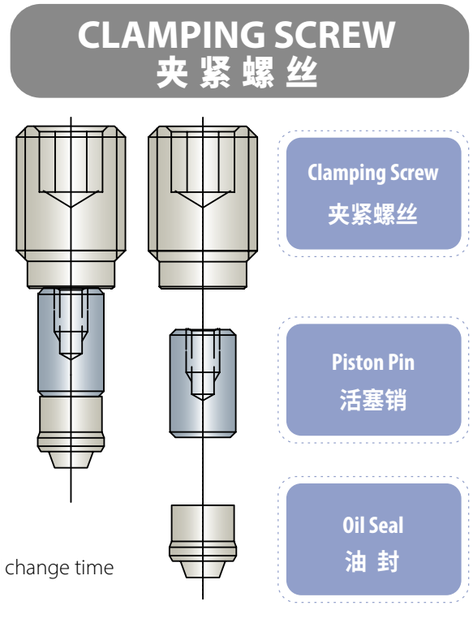

• Less than 0.003mm T.I.R =>
Suitable for High-Speed precision machining
跳动公差(T.I.R)0.003mm → 实现高速精密加工

## Flexible use of cutting tools by using of reduction sleeves
**适用多种规格的刀具**




## Easy Tool Change 便于刀具更换




• Easy clamping and unclamping by use of T wrench => Reducing tool change time
T型扳手便于夹紧，松开 → 便捷的刀具更换可节约时间





## Strong Torque Power 强劲的夹紧力

| Hydraulic Chuck 液压刀柄 I.D(mm) | Tool Shank 刀具柄径 O.D(mm) | Applicable 适用 RPM | Minimum Clamping Depth 最低夹紧深度 (mm) | | Min. Torque Power 最低夹紧力 (Nm) | |
|---|---|---|---|---|---|---|
| | | | Slim 细长型 | Power E Hydro 强力加紧型 | Slim 细长型 | Power E Hydro 强力加紧型 |
| 6 | 6 | 40,000 | 27 | | 16 | |
| 8 | 8 | 40,000 | 27 | | 23 | |
| 10 | 10 | 40,000 | 32 | | 45 | |
| 12 | 12 | 40,000 | 37 | 41 | 90 | 110 |
| 14 | 14 | 40,000 | 37 | | 110 | |
| 16 | 16 | 40,000 | 42 | | 185 | |
| 18 | 18 | 40,000 | 42 | | 240 | |
| 20 | 20 | 40,000 | 42 | 48 | 330 | 520 |
| 25 | 25 | 25,000 | 48 | | 400 | |
| 32 | 32 | 25,000 | 55 | 57 | 650 | 900 |

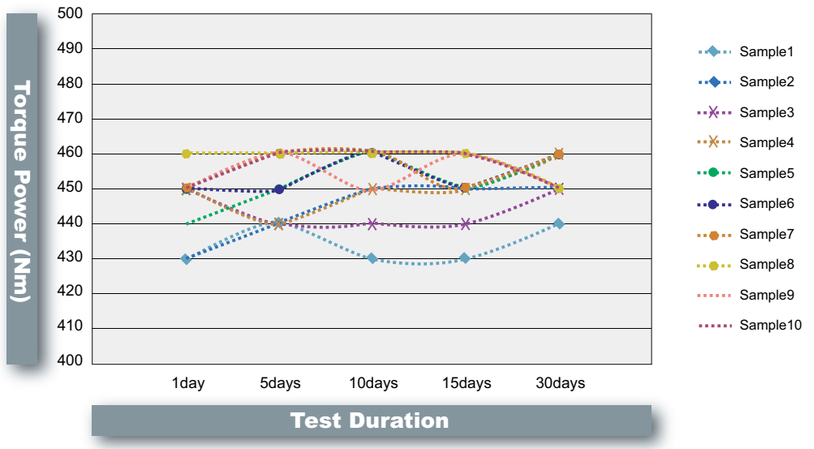
• Tool Holder I.D Tolerance : H6
刀柄 ID 公差 : H6

• Operating Temperature : 20~25℃
加工温度 : 20~50 °C

• Maximum pressure of coolant oil : 80bar
切削油最大压力 : 80 bar

**Vacuum Filling System 真空灌注系统** → Removing air and gas from hydraulic oil 液压油自身水份，杂质除去 → **Filling 100% pure hydraulic oil 液压刀柄内部注入100%液压油** → **Maintaining strong and stable torque power 维持高强劲且稳定的夹紧力**

## Test of Torque Power and Hydraulic Oil Leakage 夹紧力及液压油泄漏检测




• Test Model : BT40AD/B-HC20-90 检测型号 : BT40AD/B-HC20-90
• No oil leakage for long period ⇒ Maintaining stable torque power 长期无泄漏 → 维持稳定的夹紧力

# HYDRAULIC CHUCK (液压刀柄)

## Radial tool length pre-setting type 长度调节型

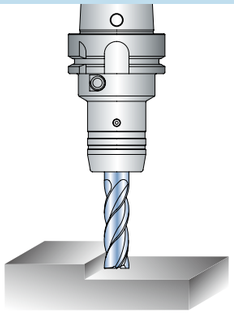
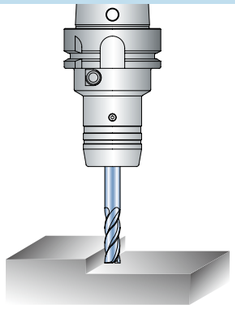
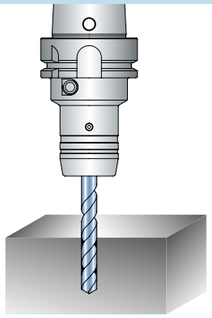
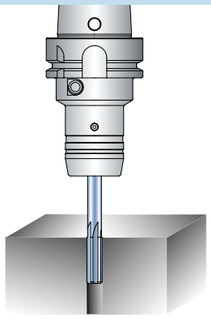
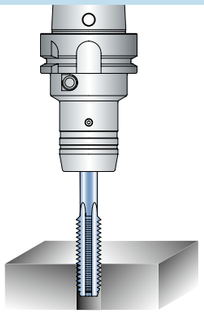
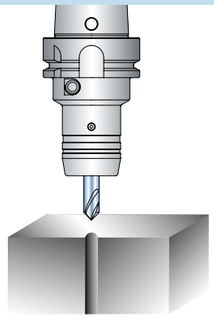
- Easy to adjust pre-setting length of cutting tool (Saving time to pre-set cutting tool to one fifth compared with conventional Hydraulic Chuck)
- Precise adjustment of cutting tool length
- Designed to separate tool length adjustment screw from clamping screw

- 安装刀具时，便于调节长度 (相对一般液压刀柄，节省一半以上的时间)
- 以微米 (Micron=um)单位，调节刀具长度
- 采用长度调节螺丝和夹紧螺丝分离设计.

Adjustable range of cutting tool length : 0~10mm

刀具长度调节范围 : 0~10 mm

## APPLICATION 应用

| Milling 铣削 | High-Speed Cutting 高速切削 | Fine Drilling 精细钻孔 |
|---|---|---|
|  |  |  |
| **Reaming 铰削** | **Tapping & Thread Milling 攻丝** | **Chamfering 倒角** |
|  |  |  |

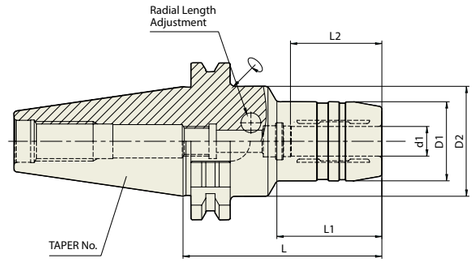


YG HYDRAULIC CHUCK

HCR

## HYDRAULIC CHUCK (Radial Tool Length Pre-Setting Type) DIN 69871-SK

## 液压刀柄 (长度调节型)




DIN 69871-SK | AT3 | 2.5G | 25,000 RPM | (at 3D) ≤3μm | AD or AD/B

Collet, Refer to page 43-46
变径套，请参阅43~46页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | d1 | D1 | D2 | L | L1 | L2 | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|
| 30 | SK30AD/B-HCR12-85 | P2770001 | 12 | 32 | 44.5 | 85 | 40 | 37 | 0.90 |
| | SK30AD/B-HCR20-85 | P2770003 | 20 | 44 | - | 85 | - | 42 | 1.00 |
| 40 | SK40AD/B-HCR12-80.5 | P2554018 | 12 | 32 | 49.5 | 80.5 | 31.5 | 37 | 1.50 |
| | SK40AD/B-HCR20-80.5 | P2554019 | 20 | 42 | 49.5 | 80.5 | 34 | 42 | 1.60 |
| | SK40AD/B-HCR32-110 | P2770004 | 32 | 63 | 80 | 110 | 50 | 55 | 2.20 |
| 50 | SK50AD/B-HCR12-80.5 | P2770005 | 12 | 32 | 49.5 | 80.5 | 35 | 37 | 3.90 |
| | SK50AD/B-HCR20-80.5 | P2770006 | 20 | 42 | 44.5 | 80.5 | 44 | 42 | 4.00 |
| | SK50AD/B-HCR32-100 | P2770002 | 32 | 60 | - | 100 | - | 55 | 4.70 |

▶CAT(ANSI B5.50) taper and Inch type products are available.
CAT(ANSI B5.50)锥柄及英制产品可供选择

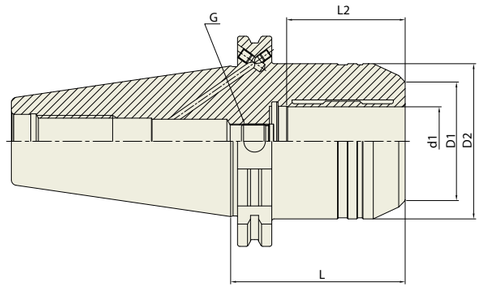
# HYDRAULIC CHUCK

**HCP**

## HYDRAULIC CHUCK (Power E Hydro)

DIN 69871-SK

## 液压刀柄 (Power E Hydro)




DIN 69871-SK | AT3 | 2.5G | 25,000 RPM | (at 3D) ≤3㎛ | AD/B

Collet, Refer to page 43-46
变径套，请参阅43~46页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | d1 | D1 | D2 | L | L2 | G | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|
| 40 | SK40AD/B-HC12P-50 | P2776651P | 12 | 32 | 42 | 50 | 41 | M8x1.0 | 1.00 |
| | SK40AD/B-HC20P-64.5 | P2534001P | 20 | 38 | 49.5 | 64.5 | 48 | M8x1.0 | 1.20 |
| 50 | SK50AD/B-HC20P-64.5 | P2756010P | 20 | 38 | 49.5 | 64.5 | 48 | M8x1.0 | 2.80 |
| | SK50AD/B-HC32P-81 | P2534002P | 32 | 58.5 | 72 | 81 | 57 | M8x1.0 | 3.90 |

▶CAT(ANSI B5.50) taper and Inch type products are available.
CAT(ANSI B5.50)锥柄及英制产品可供选择





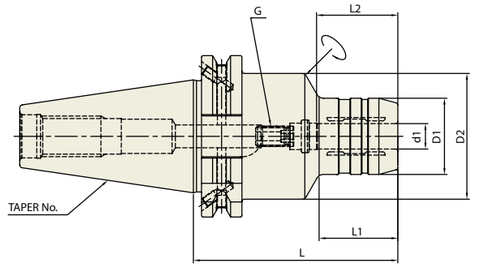
# HYDRAULIC CHUCK

**HC**

## HYDRAULIC CHUCK (SLIM)

DIN 69871-SK

## 液压刀柄 (细长型)




DIN 69871-SK | AT3 | 2.5G | 25,000 RPM | (at 3D) ≤3㎛ | AD or AD/B

Collet, Refer to page 43-46
变径套，请参阅43~46页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | d1 | D1 | D2 | L | L1 | L2 | G | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|---|
| 30 | SK30AD/B-HC6-70 | P2770101 | 6 | 26 | 45 | 70 | 20 | 27 | M5x0.8 | 0.65 |
| | SK30AD/B-HC8-70 | P2770110 | 8 | 28 | 45 | 70 | 20 | 27 | M6x1.0 | 0.65 |
| | SK30AD/B-HC10-75 | P2770102 | 10 | 30 | 45 | 75 | 21 | 32 | M8x1.0 | 0.73 |
| | SK30AD/B-HC12-85 | P2770111 | 12 | 32 | 45 | 85 | 40 | 37 | M10x1.0 | 0.80 |
| | SK30AD/B-HC14-85 | P2770112 | 14 | 34 | 45 | 85 | 22 | 37 | M10x1.0 | 0.80 |
| | SK30AD/B-HC16-90 | P2770113 | 16 | 38 | 45 | 90 | 50 | 42 | M6x1.0 | 0.90 |
| | SK30AD/B-HC18-90 | P2770114 | 18 | 40 | 45 | 90 | 50 | 42 | M10x1.0 | 0.90 |
| | SK30AD/B-HC20-90 | P2770115 | 20 | 42 | 45 | 90 | 50 | 42 | M6x1.0 | 0.90 |
| 40 | SK40AD/B-HC6-80.5 | P2554017 | 6 | 26 | 49.5 | 80.5 | 30 | 27 | M5x0.8 | 1.31 |
| | SK40AD/B-HC6-110 | P2554016 | 6 | 26 | 49.5 | 110 | 29.5 | 27 | M5x0.8 | 1.76 |
| | SK40AD/B-HC8-80.5 | P2554025 | 8 | 28 | 49.5 | 80.5 | 30 | 27 | M6x1.0 | 1.34 |
| | SK40AD/B-HC8-110 | P2770117 | 8 | 28 | 49.5 | 110 | 30 | 27 | M6x1.0 | 1.76 |
| | SK40AD/B-HC10-80.5 | P2554004 | 10 | 30 | 49.5 | 80.5 | 31 | 32 | M8x1.0 | 1.34 |
| | SK40AD/B-HC10-110 | P2554009 | 10 | 30 | 49.5 | 110 | 31 | 32 | M8x1.0 | 1.76 |
| | SK40AD/B-HC12-80.5 | P2554011 | 12 | 32 | 49.5 | 80.5 | 31.5 | 37 | M10x1.0 | 1.34 |
| | SK40AD/B-HC12-110 | P2554010 | 12 | 32 | 49.5 | 110 | 31.5 | 37 | M10x1.0 | 1.76 |
| | SK40AD/B-HC16-80.5 | P2554013 | 16 | 38 | 49.5 | 80.5 | 33 | 42 | M12x1.0 | 1.34 |
| | SK40AD/B-HC16-110 | P2554012 | 16 | 38 | 49.5 | 110 | 33 | 42 | M12x1.0 | 1.76 |
| | SK40AD/B-HC20-80.5 | P2554015 | 20 | 42 | 49.5 | 80.5 | 34 | 42 | M16x1.0 | 1.35 |
| | SK40AD/B-HC20-110 | P2554014 | 20 | 42 | 49.5 | 110 | 34 | 42 | M16x1.0 | 1.78 |
| | SK40AD/B-HC25-80.5 | P2770103 | 25 | 55 | 66 | 80.5 | 22 | 48 | M16x1.0 | 1.75 |
| | SK40AD/B-HC32-110 | P2770126 | 32 | 63 | 80 | 80.5 | 25.5 | 55 | M16x1.0 | 2.60 |
| 50 | SK50AD/B-HC6-80.5 | P2770104 | 6 | 26 | 49.5 | 80.5 | 30 | 27 | M5x0.8 | 3.00 |
| | SK50AD/B-HC8-80.5 | P2770116 | 8 | 28 | 49.5 | 80.5 | 30 | 27 | M6x1.0 | 3.00 |
| | SK50AD/B-HC10-80.5 | P2770106 | 10 | 30 | 49.5 | 80.5 | 32 | 32 | M8x1.0 | 3.00 |
| | SK50AD/B-HC12-80.5 | P2770118 | 12 | 32 | 49.5 | 80.5 | 35 | 37 | M10x1.0 | 3.05 |
| | SK50AD/B-HC16-80.5 | P2770108 | 16 | 38 | 49.5 | 80.5 | 40 | 42 | M12x1.0 | 3.10 |
| | SK50AD/B-HC20-80.5 | P2770119 | 20 | 42 | 49.5 | 80.5 | 40 | 42 | M16x1.0 | 3.15 |

▶CAT(ANSI B5.50) taper and Inch type products are available.
CAT(ANSI B5.50)锥柄及英制产品可供选择

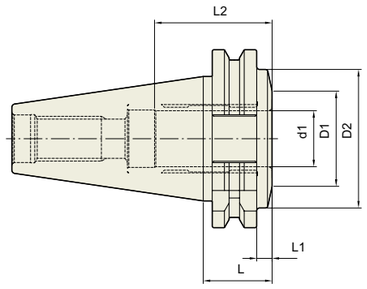
HYDRAULIC CHUCK

HC

## HYDRAULIC CHUCK (ULTRA SHORT)

DIN 69871-SK

# 液压刀柄 (超短型)




DIN 69871-SK | AT3 | 2.5G | 25,000 RPM | (at 3D) ≤3μm | AD

Collet, Refer to page 43-46
变径套，请参阅43~46页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | d1 | D1 | D2 | L | L1 | L2 | G | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|---|
| 40 | SK40-HC20-24.6 | P2770120 | 20 | 34 | 49.5 | 24.6 | 5.5 | 42 | - | 0.81 |
| 50 | SK50-HC32-30.9 | P2770121 | 32 | 44.5 | 70.5 | 30.9 | 11.85 | 55 | - | 2.63 |

▶CAT(ANSI B5.50) taper and Inch type products are available.
CAT(ANSI B5.50)锥柄及英制产品可供选择





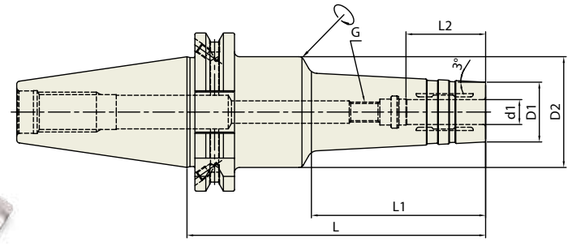
HYDRAULIC CHUCK

HMC

## HYDRAULIC CHUCK (For MOLD and DIE)

DIN 69871-SK

# 液压刀柄 (模具型)




DIN 69871-SK | AT3 | 2.5G | 25,000 RPM | (at 3D) ≤3μm | AD/B

Collet, Refer to page 43-46
变径套，请参阅43~46页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | d1 | D1 | D2 | L | L1 | L2 | G | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|---|
| 40 | SK40AD/B-HMC6-120 | P2770701 | 6 | 20 | 49.5 | 120 | 70 | 27 | M5×0.8 | 1.40 |
| | SK40AD/B-HMC6-150 | P2770702 | 6 | 20 | 49.5 | 150 | 100 | 27 | M5×0.8 | 1.65 |
| | SK40AD/B-HMC8-120 | P2770703 | 8 | 22 | 49.5 | 120 | 70 | 27 | M6×1.0 | 1.40 |
| | SK40AD/B-HMC8-150 | P2770704 | 8 | 22 | 49.5 | 150 | 100 | 27 | M6×1.0 | 1.65 |
| | SK40AD/B-HMC10-120 | P2770705 | 10 | 24 | 44.5 | 120 | 70 | 32 | M8×1.0 | 1.40 |
| | SK40AD/B-HMC10-150 | P2770706 | 10 | 24 | 44.5 | 150 | 100 | 32 | M8×1.0 | 1.65 |
| | SK40AD/B-HMC12-120 | P2770707 | 12 | 25 | 44.5 | 120 | 70 | 37 | M10×1.0 | 1.40 |
| | SK40AD/B-HMC12-150 | P2770708 | 12 | 25 | 44.5 | 150 | 100 | 37 | M10×1.0 | 1.65 |
| | SK40AD/B-HMC16-120 | P2770709 | 16 | 32 | 49.5 | 120 | 70 | 42 | M12×1.0 | 1.45 |
| | SK40AD/B-HMC16-150 | P2770710 | 16 | 32 | 49.5 | 150 | 100 | 42 | M12×1.0 | 1.70 |
| | SK40AD/B-HMC20-120 | P2770711 | 20 | 34 | 49.5 | 120 | 70 | 42 | M16×1.0 | 1.50 |
| | SK40AD/B-HMC20-150 | P2770712 | 20 | 34 | 49.5 | 150 | 100 | 42 | M16×1.0 | 1.70 |
| 50 | SK50AD/B-HMC6-150 | P2770713 | 6 | 20 | 44.5 | 150 | 100 | 27 | M5×0.8 | 4.50 |
| | SK50AD/B-HMC8-150 | P2770714 | 8 | 22 | 44.5 | 150 | 100 | 27 | M6×1.0 | 4.50 |
| | SK50AD/B-HMC10-150 | P2770715 | 10 | 24 | 44.5 | 150 | 100 | 32 | M8×1.0 | 4.50 |
| | SK50AD/B-HMC12-150 | P2770716 | 12 | 25 | 44.5 | 150 | 100 | 37 | M10×1.0 | 4.50 |
| | SK50AD/B-HMC16-150 | P2770717 | 16 | 32 | 44.5 | 150 | 100 | 42 | M12×1.0 | 4.70 |
| | SK50AD/B-HMC20-150 | P2770718 | 20 | 34 | 44.5 | 150 | 100 | 42 | M16×1.0 | 5.00 |

▶CAT(ANSI B5.50) taper and Inch type products are available.
CAT(AN SI B5.50)锥柄及英制产品可供选择

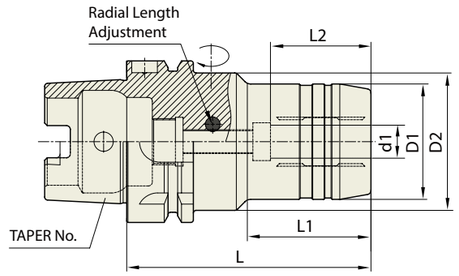
HYDRAULIC CHUCK

HCR

# HYDRAULIC CHUCK (Radial Tool Length Pre-Setting Type)

DIN 69893/
ISO 12164-1-HSK FORM A

## 液压刀柄 (长度调节型)




DIN 69893-HSK | AT3 | 2.5G | 25,000 RPM | (at 3D) ≤3μm | AD

Collet, Refer to page 43-46
变径套，请参阅43~46页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | d1 | D1 | D2 | L | L1 | L2 | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|
| 40A | HSK40A-HCR6-80 | P2770210 | 6 | 26 | 34 | 80 | 36 | 27 | 0.55 |
| | HSK40A-HCR8-80 | P2770211 | 8 | 28 | 34 | 80 | 36 | 27 | 0.55 |
| | HSK40A-HCR10-85 | P2770212 | 10 | 30 | 34 | 85 | 43 | 32 | 0.65 |
| | HSK40A-HCR12-90 | P2770213 | 12 | 32 | 34 | 90 | 48 | 37 | 0.70 |
| 50A | HSK50A-HCR6-80 | P2770214 | 6 | 26 | 40 | 80 | 35 | 27 | 0.70 |
| | HSK50A-HCR8-80 | P2770215 | 8 | 28 | 40 | 80 | 36 | 27 | 0.70 |
| | HSK50A-HCR10-85 | P2770216 | 10 | 30 | 40 | 85 | 38 | 32 | 0.73 |
| | HSK50A-HCR12-90 | P2770217 | 12 | 32 | 40 | 90 | 40 | 37 | 0.80 |
| | HSK50A-HCR14-90 | P2770218 | 14 | 34 | 40 | 90 | 40 | 37 | 0.80 |
| | HSK50A-HCR16-95 | P2770219 | 16 | 38 | 53 | 95 | 36.5 | 42 | 1.00 |
| | HSK50A-HCR18-95 | P2770220 | 18 | 40 | 57 | 95 | 36.5 | 42 | 1.00 |
| | HSK50A-HCR20-100 | P2770221 | 20 | 42 | 60 | 100 | 39 | 42 | 1.10 |
| 63A | HSK63A-HCR6-80 | P2770205 | 6 | 26 | 50 | 80 | 33 | 27 | 0.96 |
| | HSK63A-HCR8-80 | P2770206 | 8 | 28 | 50 | 80 | 33 | 27 | 0.98 |
| | HSK63A-HCR10-85 | P2770207 | 10 | 30 | 50 | 85 | 38 | 32 | 1.04 |
| | HSK63A-HCR12-90 | P2567011 | 12 | 32 | 50 | 90 | 40 | 37 | 1.06 |
| | HSK63A-HCR14-90 | P2770202 | 14 | 34 | 50 | 90 | 46 | 37 | 1.08 |
| | HSK63A-HCR16-95 | P2770209 | 16 | 38 | 50 | 95 | 51 | 42 | 1.18 |
| | HSK63A-HCR18-95 | P2770203 | 18 | 40 | 50 | 95 | 52 | 42 | 1.20 |
| | HSK63A-HCR20-100 | P2567012 | 20 | 42 | 50 | 100 | 51 | 42 | 1.22 |
| | HSK63A-HCR25-120 | P2770204 | 25 | 57 | 63 | 120 | 54.5 | 48 | 2.20 |
| | HSK63A-HCR32-125 | P2770201 | 32 | 64 | 75 | 125 | 57.5 | 55 | 2.60 |
| 100A | HSK100A-HCR6-85 | P2770222 | 6 | 26 | 63 | 85 | 33 | 27 | 3.60 |
| | HSK100A-HCR8-85 | P2770223 | 8 | 28 | 63 | 85 | 33 | 27 | 3.60 |
| | HSK100A-HCR10-90 | P2770224 | 10 | 30 | 63 | 90 | 36 | 32 | 3.80 |
| | HSK100A-HCR12-95 | P2770225 | 12 | 32 | 63 | 95 | 40 | 37 | 3.80 |
| | HSK100A-HCR14-95 | P2770226 | 14 | 34 | 63 | 95 | 41 | 37 | 3.80 |
| | HSK100A-HCR16-100 | P2770227 | 16 | 38 | 63 | 100 | 46 | 42 | 3.90 |
| | HSK100A-HCR18-100 | P2770228 | 18 | 40 | 63 | 100 | 46 | 42 | 3.90 |
| | HSK100A-HCR20-105 | P2770229 | 20 | 42 | 75 | 105 | 51 | 42 | 4.20 |
| | HSK100A-HCR25-115 | P2770230 | 25 | 57 | 75 | 115 | 55.5 | 48 | 4.40 |
| | HSK100A-HCR32-120 | P2770231 | 32 | 64 | 75 | 120 | 63.5 | 55 | 4.60 |



TOOLING SYSTEM

HYDRAULIC CHUCK
SHRINK FIT HOLDER
ER COLLET CHUCK
END MILL HOLDER & SIDE LOCK ARBOR
SHELL MILL ARBOR
POWER MILLING CHUCK
MORSE TAPER ARBOR
SK SLIM CHUCK
SYNCHRO TAPPING CHUCK
ONE STEP TAPPING CHUCK
TAPPING CHUCK
FACE MILL ARBOR
COPY MILL ARBOR & INDEXABLE DRILL HOLDER
NC DRILL CHUCK & OTHER TOOL HOLDERS
BORING SYSTEM
ACCESSORY & OTHERS

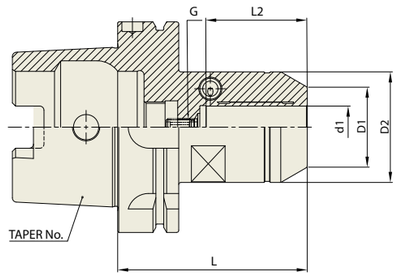
HYDRAULIC CHUCK

HCP

# HYDRAULIC CHUCK (POWER E HYDRO)

DIN 69893/
ISO 12164-1-HSK FORM A

## 液压刀柄 (强力夹紧型)




DIN 69893-HSK | AT3 | 2.5G | 25,000 RPM | (at 3D) ≤3μm | AD

Collet, Refer to page 43-46
变径套，请参阅43~46页

Unit (单位) : mm

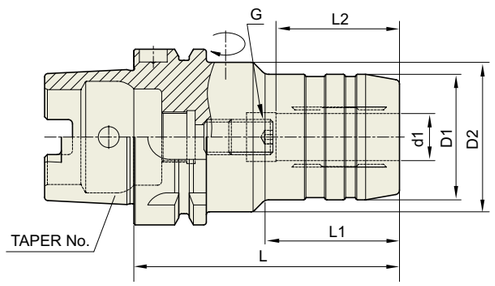
| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | d1 | D1 | D2 | L | L2 | G | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|
| 63A | HSK63A-HC12P-80 | P2770302P | 12 | 32 | 42 | 80 | 41 | M8x1.0 | 1.20 |
| | HSK63A-HC20P-80 | P2770301P | 20 | 38 | 52.5 | 80 | 48 | M8x1.0 | 1.30 |
| 100A | HSK100A-HC20P-90 | P2770303P | 20 | 38 | 52.5 | 90 | 48 | M8x1.0 | 2.80 |
| | HSK100A-HC32P-100 | P2770304P | 32 | 58.5 | 72 | 100 | 57 | M8x1.0 | 3.70 |

HYDRAULIC CHUCK

HC

# HYDRAULIC CHUCK (SLIM)
# 液压刀柄 (细长型)

DIN 69893/
ISO 12164-1-HSK FORM A




DIN 69893-HSK | AT3 | 2.5G | 25,000 RPM | (at 3D) ≤3μm | AD

Collet, Refer to page 43-46
变径套，请参阅43~46页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | d1 | D1 | D2 | L | L1 | L2 | G | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|---|
| 32A | HSK32A-HC6-80 | P2770413 | 6 | 26 | 40 | 80 | 29 | 27 | M5×0.8 | 0.30 |
| | HSK32A-HC8-80 | P2770414 | 8 | 28 | 40 | 80 | 29 | 27 | M6×1.0 | 0.30 |
| | HSK32A-HC10-85 | P2770415 | 10 | 30 | 40 | 85 | 35 | 32 | M6×1.0 | 0.30 |
| | HSK32A-HC12-90 | P2770416 | 12 | 32 | 40 | 90 | 40 | 37 | M6×1.0 | 0.30 |
| 40A | HSK40A-HC6-70 | P2770401 | 6 | 26 | 34 | 70 | 36 | 27 | M5×0.8 | 0.50 |
| | HSK40A-HC8-70 | P2770402 | 8 | 28 | 34 | 70 | 36 | 27 | M6×1.0 | 0.50 |
| | HSK40A-HC10-75 | P2770403 | 10 | 30 | 34 | 75 | 42 | 32 | M6×1.0 | 0.60 |
| | HSK40A-HC12-80 | P2770417 | 12 | 32 | 34 | 80 | 48 | 37 | M6×1.0 | 0.65 |
| 50A | HSK50A-HC6-70 | P2770404 | 6 | 26 | 40 | 70 | 28 | 27 | M5×0.8 | 0.65 |
| | HSK50A-HC8-70 | P2770405 | 8 | 28 | 40 | 70 | 28 | 27 | M6×1.0 | 0.65 |
| | HSK50A-HC10-75 | P2770406 | 10 | 30 | 40 | 75 | 34 | 32 | M8×1.0 | 0.70 |
| | HSK50A-HC12-85 | P2770407 | 12 | 32 | 40 | 85 | 44 | 37 | M10×1.0 | 0.75 |
| | HSK50A-HC14-85 | P2770408 | 14 | 34 | 40 | 85 | 43 | 37 | M10×1.0 | 0.75 |
| | HSK50A-HC16-90 | P2770409 | 16 | 38 | 53 | 90 | 30 | 42 | M12×1.0 | 0.90 |
| | HSK50A-HC18-90 | P2770418 | 18 | 40 | 57 | 90 | 30 | 42 | M12×1.0 | 0.90 |
| | HSK50A-HC20-90 | P2770419 | 20 | 42 | 60 | 90 | 29 | 42 | M16×1.0 | 1.00 |
| 63A | HSK63A-HC6-70 | P2567001 | 6 | 26 | 50 | 70 | 24 | 27 | M5×0.8 | 0.53 |
| | HSK63A-HC8-70 | P2567002 | 8 | 28 | 50 | 70 | 25 | 27 | M6×1.0 | 0.55 |
| | HSK63A-HC10-80 | P2567003 | 10 | 30 | 50 | 80 | 35 | 32 | M8×1.0 | 1.00 |
| | HSK63A-HC12-85 | P2567004 | 12 | 32 | 50 | 85 | 40 | 37 | M10×1.0 | 1.03 |
| | HSK63A-HC14-85 | P2567005 | 14 | 34 | 50 | 85 | 40 | 37 | M10×1.0 | 1.05 |
| | HSK63A-HC16-90 | P2567006 | 16 | 38 | 50 | 90 | 46 | 42 | M12×1.0 | 1.15 |
| | HSK63A-HC18-90 | P2567007 | 18 | 40 | 50 | 90 | 47 | 42 | M12×1.0 | 1.15 |
| | HSK63A-HC20-90 | P2567008 | 20 | 42 | 50 | 90 | 48 | 42 | M16×1.0 | 1.20 |
| | HSK63A-HC25-120 | P2567009 | 25 | 57 | 63 | 120 | 59 | 48 | M16×1.0 | 2.20 |
| | HSK63A-HC32-125 | P2567010 | 32 | 64 | 75 | 125 | 63 | 55 | M16×1.0 | 2.40 |
| 80A | HSK80A-HC12-85 | P2770462 | 12 | 32 | 50 | 85 | 40 | 37 | M10×1.0 | 1.60 |
| | HSK80A-HC20-95 | P2770463 | 20 | 42 | 50 | 95 | 52 | 42 | M16×1.0 | 1.80 |
| | HSK80A-HC32-125 | P2770464 | 32 | 64 | 75 | 125 | 63 | 55 | M16×1.0 | 3.30 |
| 100A | HSK100A-HC6-75 | P2770420 | 6 | 26 | 50 | 75 | 26 | 27 | M5×0.8 | 3.20 |
| | HSK100A-HC8-75 | P2770421 | 8 | 28 | 50 | 75 | 26 | 27 | M6×1.0 | 3.20 |
| | HSK100A-HC10-90 | P2770422 | 10 | 30 | 50 | 90 | 42 | 32 | M8×1.0 | 3.40 |
| | HSK100A-HC12-95 | P2770410 | 12 | 32 | 50 | 95 | 47 | 37 | M10×1.0 | 3.40 |
| | HSK100A-HC14-95 | P2770423 | 14 | 34 | 50 | 95 | 47 | 37 | M10×1.0 | 3.40 |
| | HSK100A-HC16-100 | P2770411 | 16 | 38 | 50 | 100 | 53 | 42 | M12×1.0 | 3.50 |
| | HSK100A-HC18-100 | P2770424 | 18 | 40 | 50 | 100 | 53 | 42 | M12×1.0 | 3.60 |
| | HSK100A-HC20-105 | P2757010 | 20 | 42 | 50 | 105 | 59 | 42 | M16×1.0 | 4.00 |
| | HSK100A-HC25-110 | P2770412 | 25 | 57 | 63 | 110 | 62 | 48 | M16×1.0 | 4.20 |
| | HSK100A-HC32-110 | P2757020 | 32 | 64 | 75 | 110 | 62 | 55 | M16×1.0 | 4.30 |



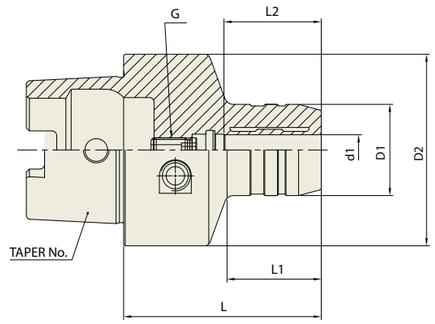
TOOLING SYSTEM
HYDRAULIC CHUCK
SHRINK FIT HOLDER
ER COLLET CHUCK
END MILL HOLDER & SIDE LOCK ARBOR
SHELL MILL ARBOR
POWER MILLING CHUCK
MORSE TAPER ARBOR
SK SLIM CHUCK
SYNCHRO TAPPING CHUCK
ONE STEP TAPPING CHUCK
TAPPING ER CHUCK
TAPPING CHUCK
FACE MILL ARBOR
COPY MILL ARBOR & INDEXABLE DRILL HOLDER
NC DRILL CHUCK & OTHER TOOL HOLDERS
BORING SYSTEM
ACCESSORY & OTHERS

HYDRAULIC CHUCK

HC

# HYDRAULIC CHUCK (SLIM)
# 液压刀柄 (细长型)

DIN 69893/
ISO 12164-1-HSK FORM C




DIN 69893-HSK | AT3 | 2.5G | 25,000 RPM | (at 3D) ≤3μm | AD

Collet, Refer to page 43-46
变径套，请参阅43~46页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | d1 | D1 | D2 | L | L1 | L2 | G | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|---|
| 32C | HSK32C-HC6-65 | P2770425 | 6 | 26 | 32 | 65 | 30 | 27 | M5x0.8 | 0.30 |
| | HSK32C-HC8-70 | P2770426 | 8 | 28 | 32 | 70 | 34 | 27 | M6x1.0 | 0.30 |
| | HSK32C-HC10-75 | P2770427 | 10 | 30 | 32 | 75 | 39 | 32 | M6x1.0 | 0.30 |
| | HSK32C-HC12-80 | P2770428 | 12 | 32 | 32 | 80 | - | 37 | M6x1.0 | 0.30 |
| 40C | HSK40C-HC6-60 | P2770429 | 6 | 26 | 40 | 60 | 36 | 27 | M5x0.8 | 0.55 |
| | HSK40C-HC8-60 | P2770430 | 8 | 28 | 40 | 60 | 36 | 27 | M6x1.0 | 0.55 |
| | HSK40C-HC10-65 | P2770431 | 10 | 30 | 40 | 65 | 41 | 32 | M6x1.0 | 0.65 |
| | HSK40C-HC12-70 | P2770432 | 12 | 32 | 40 | 70 | 47 | 37 | M6x1.0 | 0.70 |
| 50C | HSK50C-HC6-60 | P2770433 | 6 | 26 | 50 | 60 | 30 | 27 | M5x0.8 | 0.65 |
| | HSK50C-HC8-60 | P2770434 | 8 | 28 | 50 | 60 | 30 | 27 | M6x1.0 | 0.65 |
| | HSK50C-HC10-65 | P2770435 | 10 | 30 | 50 | 65 | 35 | 32 | M8x1.0 | 0.70 |
| | HSK50C-HC12-75 | P2770436 | 12 | 32 | 50 | 75 | 44 | 37 | M10x1.0 | 0.75 |
| | HSK50C-HC14-75 | P2770437 | 14 | 34 | 50 | 75 | 46 | 37 | M10x1.0 | 0.75 |
| | HSK50C-HC16-80 | P2770438 | 16 | 38 | 50 | 80 | 51 | 42 | M12x1.0 | 0.90 |
| | HSK50C-HC18-80 | P2770439 | 18 | 40 | 50 | 80 | 51 | 42 | M12x1.0 | 0.90 |
| | HSK50C-HC20-80 | P2770440 | 20 | 42 | 50 | 80 | 48 | 42 | M16x1.0 | 1.00 |
| 63C | HSK63C-HC6-60 | P2770441 | 6 | 26 | 63 | 60 | 25 | 27 | M5x0.8 | 0.96 |
| | HSK63C-HC8-60 | P2770442 | 8 | 28 | 63 | 60 | 25 | 27 | M6x1.0 | 0.98 |
| | HSK63C-HC10-65 | P2770443 | 10 | 30 | 63 | 65 | 31 | 32 | M8x1.0 | 1.04 |
| | HSK63C-HC12-75 | P2770444 | 12 | 32 | 63 | 75 | 41 | 37 | M10x1.0 | 1.06 |
| | HSK63C-HC14-75 | P2770445 | 14 | 34 | 63 | 75 | 40 | 37 | M10x1.0 | 1.08 |
| | HSK63C-HC16-80 | P2770446 | 16 | 38 | 63 | 80 | 48 | 42 | M12x1.0 | 1.18 |
| | HSK63C-HC18-80 | P2770447 | 18 | 40 | 63 | 80 | 47 | 42 | M12x1.0 | 1.20 |
| | HSK63C-HC20-80 | P2770448 | 20 | 42 | 63 | 80 | 49 | 42 | M16x1.0 | 1.22 |
| | HSK63C-HC25-95 | P2770449 | 25 | 57 | 63 | 95 | 63 | 48 | M16x1.0 | 2.20 |
| | HSK63C-HC32-100 | P2770450 | 32 | 63 | 63 | 100 | - | 55 | M16x1.0 | 2.60 |

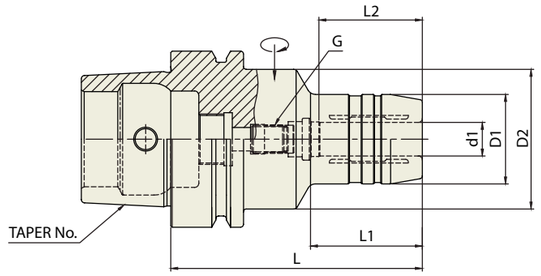
HYDRAULIC CHUCK

HC

## HYDRAULIC CHUCK (SLIM)

DIN 69893/
ISO 12164-1-HSK FORM E & F

# 液压刀柄 (细长型)




DIN 69893-HSK | AT3 | 2.5G | 25,000 RPM | (at 3D) ≤3μm | AD

Collet, Refer to page 43-46
变径套，请参阅43~46页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | d1 | D1 | D2 | L | L1 | L2 | G | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|---|
| 40E | HSK40E-HC6-70 | P2770451 | 6 | 26 | 34 | 70 | 36 | 27 | M5x0.8 | 0.55 |
| | HSK40E-HC8-70 | P2770452 | 8 | 28 | 34 | 70 | 36 | 27 | M6x1.0 | 0.55 |
| | HSK40E-HC10-75 | P2770453 | 10 | 30 | 34 | 75 | 42 | 32 | M6x1.0 | 0.65 |
| | HSK40E-HC12-80 | P2770454 | 12 | 32 | 34 | 80 | 48 | 37 | M6x1.0 | 0.70 |
| 50E | HSK50E-HC6-70 | P2770455 | 6 | 26 | 40 | 70 | 28 | 27 | M5x0.8 | 0.65 |
| | HSK50E-HC8-70 | P2770456 | 8 | 28 | 40 | 70 | 28 | 27 | M6x1.0 | 0.65 |
| | HSK50E-HC10-75 | P2770457 | 10 | 30 | 40 | 75 | 34 | 32 | M8x1.0 | 0.70 |
| | HSK50E-HC12-85 | P2770458 | 12 | 32 | 40 | 85 | 44 | 37 | M10x1.0 | 0.75 |
| | HSK50E-HC16-90 | P2770459 | 16 | 38 | 53 | 90 | 30 | 42 | M12x1.0 | 0.90 |
| | HSK50E-HC20-90 | P2770460 | 20 | 42 | 60 | 90 | 29 | 42 | M16x1.0 | 1.00 |
| 63F | HSK63F-HC20-85 | P2770461 | 20 | 42 | 50 | 85 | 46 | 42 | M12x1.0 | 1.20 |





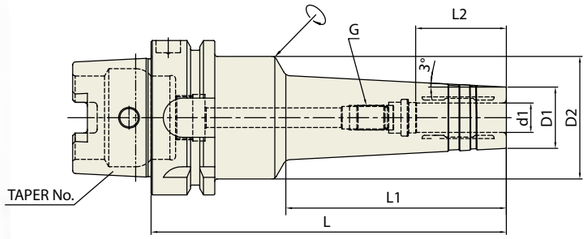
HYDRAULIC CHUCK

HMC

## HYDRAULIC CHUCK (For MOLD and DIE)

DIN 69893/
ISO 12164-1-HSK FORM A

# 液压刀柄 (模具型)




DIN 69893-HSK | AT3 | 2.5G | 25,000 RPM | (at 3D) ≤3μm | AD

Collet, Refer to page 43-46
变径套，请参阅43~46页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | d1 | D1 | D2 | L | L1 | L2 | G | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|---|
| 63A | HSK63A-HMC6-145 | P2770801 | 6 | 20 | 50 | 145 | 90 | 27 | M5×0.8 | 1.40 |
| | HSK63A-HMC8-145 | P2770802 | 8 | 22 | 50 | 145 | 90 | 27 | M6×1.0 | 1.40 |
| | HSK63A-HMC10-145 | P2770803 | 10 | 24 | 50 | 145 | 90 | 32 | M8×1.0 | 1.40 |
| | HSK63A-HMC12-145 | P2770804 | 12 | 25 | 50 | 145 | 90 | 37 | M10×1.0 | 1.40 |
| | HSK63A-HMC16-145 | P2770805 | 16 | 32 | 50 | 145 | 90 | 42 | M12×1.0 | 1.45 |
| | HSK63A-HMC20-145 | P2770806 | 20 | 34 | 50 | 145 | 90 | 42 | M16×1.0 | 1.50 |
| 100A | HSK100A-HMC6-150 | P2770812 | 6 | 20 | 50 | 150 | 90 | 27 | M5×0.8 | 4.50 |
| | HSK100A-HMC8-150 | P2770807 | 8 | 22 | 50 | 150 | 90 | 27 | M6×1.0 | 4.50 |
| | HSK100A-HMC10-150 | P2770808 | 10 | 24 | 50 | 150 | 90 | 32 | M8×1.0 | 4.50 |
| | HSK100A-HMC12-150 | P2770809 | 12 | 25 | 50 | 150 | 90 | 37 | M10×1.0 | 4.50 |
| | HSK100A-HMC16-150 | P2770810 | 16 | 32 | 50 | 150 | 90 | 42 | M12×1.0 | 4.70 |
| | HSK100A-HMC20-150 | P2770811 | 20 | 34 | 50 | 150 | 90 | 42 | M16×1.0 | 5.00 |

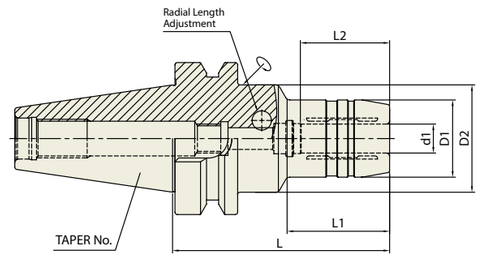
HYDRAULIC CHUCK

HCR

## HYDRAULIC CHUCK (Radial Tool Length Pre-Setting Type)

CBT (BT DUAL CONTACT)

# 液压刀柄 (长度调节型)




CBT | AT3 | 2.5G | 25,000 RPM | (at 3D) ≤3㎛ | AD

Collet, Refer to page 43-46
变径套，请参阅43~46页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | d1 | D1 | D2 | L | L1 | L2 | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|
| 30 | CBT30-HCR12-85 | P2770551 | 12 | 32 | 44.5 | 85 | 40 | 37 | 0.90 |
| | CBT30-HCR20-85 | P2770552 | 20 | 44 | 44 | 85 | - | 42 | 1.00 |
| 40 | CBT40-HCR12-90 | P2770553 | 12 | 32 | 44.5 | 90 | 42.5 | 37 | 1.50 |
| | CBT40-HCR20-90 | P2770554 | 20 | 42 | 44.5 | 90 | 47.5 | 42 | 1.60 |
| | CBT40-HCR32-105 | P2770555 | 32 | 60 | 60 | 105 | - | 55 | 2.20 |
| 50 | CBT50-HCR12-95 | P2770556 | 12 | 32 | 44.5 | 95 | 34 | 37 | 3.90 |
| | CBT50-HCR20-100 | P2770557 | 20 | 42 | 44.5 | 100 | 44 | 42 | 4.00 |
| | CBT50-HCR32-115 | P2770558 | 32 | 60 | 60 | 115 | - | 55 | 4.10 |



TOOLING SYSTEM
HYDRAULIC CHUCK
SHRINK FIT HOLDER
ER COLLET CHUCK
END MILL HOLDER & SIDE LOCK ARBOR
SHELL MILL ARBOR
POWER MILLING CHUCK
MORSE TAPER ARBOR
SK SLIM CHUCK
SYNCHRO TAPPING CHUCK
ONE STEP TAPPING CHUCK
TAPPING ER CHUCK
FACE MILL ARBOR
COPY MILL ARBOR & INDEXABLE DRILL HOLDER
NC DRILL CHUCK & OTHER TOOL HOLDERS
BORING SYSTEM
ACCESSORY & OTHERS

HYDRAULIC CHUCK

HC

## HYDRAULIC CHUCK (SLIM)

CBT (BT DUAL CONTACT)

# 液压刀柄 (细长型)

CBT | AT3 | 2.5G | 25,000 RPM | (at 3D) ≤3㎛ | AD

FIG.1

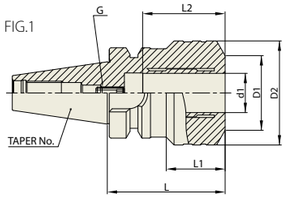
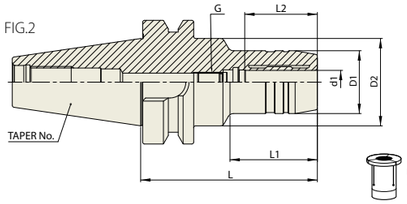



FIG.2




Collet, Refer to page 43-46
变径套，请参阅43~46页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | d1 | D1 | D2 | L | L1 | L2 | G | FIG. | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 30 | CBT30-HC6-45 | P2770559 | 6 | 46 | 46 | 45 | - | 27 | M5x0.8 | 1 | 1.50 |
| | CBT30-HC8-45 | P2770560 | 8 | 46 | 46 | 45 | - | 27 | M6x1.0 | 1 | 1.50 |
| | CBT30-HC10-45 | P2770561 | 10 | 46 | 46 | 45 | - | 32 | M8x1.0 | 1 | 1.50 |
| | CBT30-HC12-45 | P2770562 | 12 | 46 | 46 | 45 | - | 37 | M10x1.0 | 1 | 1.50 |
| | CBT30-HC16-45 | P2770563 | 16 | 46 | 46 | 45 | - | 42 | M10x1.0 | 1 | 1.50 |
| | CBT30-HC20-60 | P2770564 | 20 | 53 | 53 | 60 | - | 42 | M10x1.0 | 1 | 2.10 |
| | CBT30-HC6-70 | P2770503 | 6 | 26 | 44.5 | 70 | 29.5 | 27 | M5x0.8 | 2 | 0.65 |
| | CBT30-HC8-70 | P2770504 | 8 | 28 | 44.5 | 70 | 30 | 27 | M6x1.0 | 2 | 0.65 |
| | CBT30-HC10-75 | P2770505 | 10 | 30 | 44.5 | 75 | 31 | 32 | M8x1.0 | 2 | 0.73 |
| | CBT30-HC12-85 | P2770506 | 12 | 32 | 45 | 85 | 45 | 37 | M10x1.0 | 2 | 0.80 |
| | CBT30-HC14-85 | P2770507 | 14 | 34 | 45 | 85 | 45 | 37 | M10x1.0 | 2 | 0.80 |
| | CBT30-HC16-90 | P2770508 | 16 | 38 | 45 | 90 | 50 | 42 | M10x1.0 | 2 | 0.90 |
| | CBT30-HC18-90 | P2770509 | 18 | 40 | 45 | 90 | 50 | 42 | M10x1.0 | 2 | 0.90 |
| | CBT30-HC20-90 | P2770510 | 20 | 42 | 45 | 90 | 50 | 42 | M6x1.0 | 2 | 0.90 |
| 40 | CBT40-HC6-90 | P2770511 | 6 | 26 | 44.5 | 90 | 43 | 27 | M5x0.8 | 2 | 1.30 |
| | CBT40-HC8-90 | P2770512 | 8 | 28 | 44.5 | 90 | 44.5 | 27 | M6x1.0 | 2 | 1.30 |
| | CBT40-HC10-90 | P2770513 | 10 | 30 | 44.5 | 90 | 44.5 | 32 | M8x1.0 | 2 | 1.35 |
| | CBT40-HC12-90 | P2770501 | 12 | 32 | 44.5 | 90 | 44.5 | 37 | M10x1.0 | 2 | 1.35 |
| | CBT40-HC14-90 | P2770514 | 14 | 34 | 44.5 | 90 | 44.5 | 37 | M10x1.0 | 2 | 1.35 |
| | CBT40-HC16-90 | P2770515 | 16 | 38 | 44.5 | 90 | 47.5 | 42 | M12x1.0 | 2 | 1.40 |
| | CBT40-HC18-90 | P2770516 | 18 | 40 | 44.5 | 90 | 47.5 | 42 | M12x1.0 | 2 | 1.45 |
| | CBT40-HC20-90 | P2770502 | 20 | 42 | 44.5 | 90 | 47.5 | 42 | M16x1.0 | 2 | 1.50 |
| | CBT40-HC25-100 | P2770517 | 25 | 50 | 60 | 100 | 47.5 | 48 | M16x1.0 | 2 | 1.70 |
| | CBT40-HC32-105 | P2770518 | 32 | 60 | 60 | 105 | - | 55 | M16x1.0 | 2 | 2.10 |

▶ NEXT PAGE

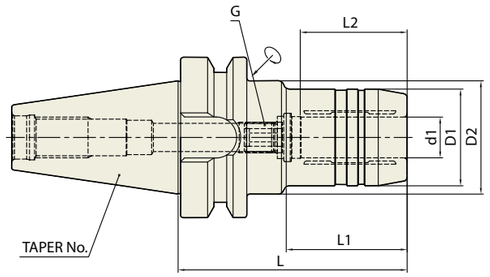
HYDRAULIC CHUCK

HC

## HYDRAULIC CHUCK (SLIM)

## 液压刀柄 (细长型)

CBT
(BT DUAL CONTACT)




CBT | AT3 | 2.5G | 25,000 RPM | (at 3D) ≤3μm | AD

Collet, Refer to page 43-46
变径套，请参阅43~46页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | d1 | D1 | D2 | L | L1 | L2 | G | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|---|
| 50 | CBT50-HC6-90 | P2770519 | 6 | 26 | 44.5 | 90 | 34 | 27 | M5×0.8 | 3.75 |
| | CBT50-HC6-120 | P2770520 | 6 | 26 | 44.5 | 120 | 34 | 27 | M5×0.8 | 4.10 |
| | CBT50-HC6-150 | P2770521 | 6 | 26 | 44.5 | 150 | 34 | 27 | M5×0.8 | 4.70 |
| | CBT50-HC8-90 | P2770522 | 8 | 28 | 44.5 | 90 | 34 | 27 | M6×1.0 | 3.75 |
| | CBT50-HC8-120 | P2770523 | 8 | 28 | 44.5 | 120 | 34 | 27 | M6×1.0 | 4.10 |
| | CBT50-HC8-150 | P2770524 | 8 | 28 | 44.5 | 150 | 34 | 27 | M6×1.0 | 4.10 |
| | CBT50-HC10-90 | P2770525 | 10 | 30 | 44.5 | 90 | 34 | 32 | M8×1.0 | 3.90 |
| | CBT50-HC10-120 | P2770526 | 10 | 30 | 44.5 | 120 | 34 | 32 | M8×1.0 | 4.30 |
| | CBT50-HC10-150 | P2770527 | 10 | 30 | 44.5 | 150 | 34 | 32 | M8×1.0 | 4.90 |
| | CBT50-HC12-90 | P2770528 | 12 | 32 | 44.5 | 90 | 34 | 37 | M10×1.0 | 3.90 |
| | CBT50-HC12-120 | P2770529 | 12 | 32 | 44.5 | 120 | 34 | 37 | M10×1.0 | 4.30 |
| | CBT50-HC12-150 | P2770530 | 12 | 32 | 44.5 | 150 | 34 | 37 | M10×1.0 | 4.90 |
| | CBT50-HC14-90 | P2770531 | 14 | 34 | 44.5 | 90 | 34 | 37 | M10×1.0 | 3.90 |
| | CBT50-HC14-120 | P2770532 | 14 | 34 | 44.5 | 120 | 34 | 37 | M10×1.0 | 4.30 |
| | CBT50-HC14-150 | P2770533 | 14 | 34 | 44.5 | 150 | 34 | 37 | M10×1.0 | 4.90 |
| | CBT50-HC16-90 | P2770534 | 16 | 38 | 44.5 | 90 | 34 | 42 | M12×1.0 | 4.00 |
| | CBT50-HC16-120 | P2770535 | 16 | 38 | 44.5 | 120 | 34 | 42 | M12×1.0 | 4.40 |
| | CBT50-HC16-150 | P2770536 | 16 | 38 | 44.5 | 150 | 34 | 42 | M12×1.0 | 5.00 |
| | CBT50-HC18-90 | P2770537 | 18 | 40 | 44.5 | 90 | 34 | 42 | M12×1.0 | 4.00 |
| | CBT50-HC18-120 | P2770538 | 18 | 40 | 44.5 | 120 | 34 | 42 | M12×1.0 | 4.40 |
| | CBT50-HC18-150 | P2770539 | 18 | 40 | 44.5 | 150 | 34 | 42 | M12×1.0 | 5.00 |
| | CBT50-HC20-90 | P2770540 | 20 | 42 | 44.5 | 90 | 34 | 42 | M16×1.0 | 4.00 |
| | CBT50-HC20-120 | P2770541 | 20 | 42 | 44.5 | 120 | 34 | 42 | M16×1.0 | 4.40 |
| | CBT50-HC20-150 | P2770542 | 20 | 42 | 44.5 | 150 | 34 | 42 | M16×1.0 | 5.00 |
| | CBT50-HC25-105 | P2770543 | 25 | 57 | 63 | 105 | 52 | 48 | M16×1.0 | 4.40 |
| | CBT50-HC25-150 | P2770544 | 25 | 57 | 63 | 150 | 97 | 48 | M16×1.0 | 5.60 |
| | CBT50-HC32-115 | P2770545 | 32 | 64 | 75 | 115 | 62 | 55 | M16×1.0 | 4.70 |
| | CBT50-HC32-150 | P2770546 | 32 | 64 | 75 | 150 | 97 | 55 | M16×1.0 | 6.00 |





HYDRAULIC CHUCK

HCP

## HYDRAULIC CHUCK (Power E Hydro)

## 液压刀柄 (Power E Hydro)

CBT
(BT DUAL CONTACT)

FIG.1

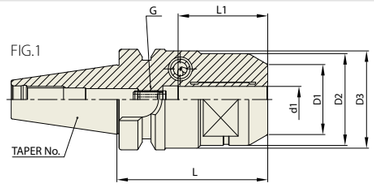
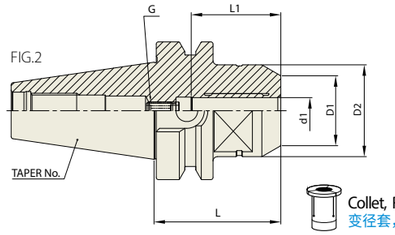



FIG.2




CBT | AT3 | 2.5G | 25,000 RPM | (at 3D) ≤3μm | AD

Collet, Refer to page 43-46
变径套，请参阅43~46页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | d1 | D1 | D2 | D3 | L | L2 | G | FIG. | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 30 | CBT30-HC12P-69 | P2776606P | 12 | 32 | 42 | 44.5 | 69 | 41 | M8x1.0 | 1 | 0.80 |
| | CBT30-HC20P-90 | P2776607P | 20 | 38 | 42 | 44.5 | 90 | 48 | M8x1.0 | 1 | 0.90 |
| 40 | CBT40-HC12P-58 | P2776608P | 12 | 32 | 42 | - | 58 | 41 | M8x1.0 | 2 | 1.10 |
| | CBT40-HC20P-72.5 | P2776609P | 20 | 38 | 49.25 | - | 72.5 | 48 | M8x1.0 | 2 | 1.40 |

HYDRAULIC CHUCK

HMC

# HYDRAULIC CHUCK (For MOLD and DIE)

CBT
(BT DUAL CONTACT)

## 液压刀柄 (模具型)

FIG.1

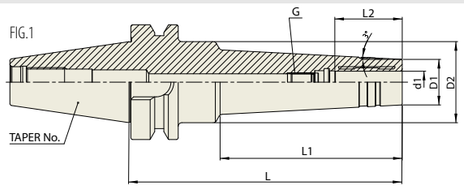
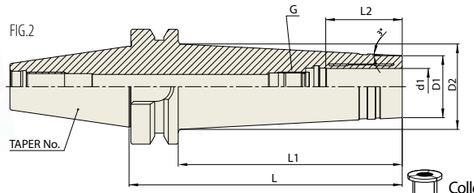



FIG.2




CBT | AT3 | 2.5G | 25,000 RPM | (at 3D) ≤3μm | AD

Collet, Refer to page 43-46
变径套，请参阅43~46页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | d1 | D1 | D2 | L | L1 | L2 | G | FIG. | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 40 | CBT40-HMC6-120 | P2770921 | 6 | 20 | 44.5 | 120 | 70 | 27 | M5×0.8 | 1 | 1.40 |
| | CBT40-HMC6-150 | P2770922 | 6 | 20 | 44.5 | 150 | 100 | 27 | M5×0.8 | 1 | 1.65 |
| | CBT40-HMC8-120 | P2770923 | 8 | 22 | 44.5 | 120 | 70 | 27 | M6×1.0 | 1 | 1.40 |
| | CBT40-HMC8-150 | P2770924 | 8 | 22 | 44.5 | 150 | 100 | 27 | M6×1.0 | 1 | 1.65 |
| | CBT40-HMC10-120 | P2770925 | 10 | 24 | 44.5 | 120 | 70 | 32 | M8×1.0 | 1 | 1.40 |
| | CBT40-HMC10-150 | P2770926 | 10 | 24 | 44.5 | 150 | 100 | 32 | M8×1.0 | 1 | 1.65 |
| | CBT40-HMC12-120 | P2770927 | 12 | 25 | 44.5 | 120 | 70 | 37 | M10×1.0 | 1 | 1.40 |
| | CBT40-HMC12-150 | P2770928 | 12 | 25 | 44.5 | 150 | 100 | 37 | M10×1.0 | 1 | 1.65 |
| | CBT40-HMC16-120 | P2770929 | 16 | 32 | 44.5 | 120 | 70 | 42 | M12×1.0 | 1 | 1.45 |
| | CBT40-HMC16-150 | P2770930 | 16 | 32 | 44.5 | 150 | 100 | 42 | M12×1.0 | 1 | 1.70 |
| | CBT40-HMC20-120 | P2770931 | 20 | 34 | 43.8 | 120 | 93 | 42 | M16×1.0 | 2 | 1.50 |
| | CBT40-HMC20-150 | P2770932 | 20 | 34 | 46.9 | 150 | 123 | 42 | M16×1.0 | 2 | 1.80 |
| 50 | CBT50-HMC6-150 | P2770933 | 6 | 20 | 50 | 150 | 90 | 27 | M5×0.8 | 1 | 4.70 |
| | CBT50-HMC8-150 | P2770934 | 8 | 22 | 50 | 150 | 90 | 27 | M6×1.0 | 1 | 4.70 |
| | CBT50-HMC10-150 | P2770935 | 10 | 24 | 50 | 150 | 90 | 32 | M8×1.0 | 1 | 4.70 |
| | CBT50-HMC12-150 | P2770936 | 12 | 25 | 50 | 150 | 90 | 37 | M10×1.0 | 1 | 4.70 |
| | CBT50-HMC16-150 | P2770937 | 16 | 32 | 50 | 150 | 90 | 42 | M12×1.0 | 1 | 4.90 |
| | CBT50-HMC20-150 | P2770938 | 20 | 34 | 50 | 150 | 90 | 42 | M16×1.0 | 1 | 5.00 |





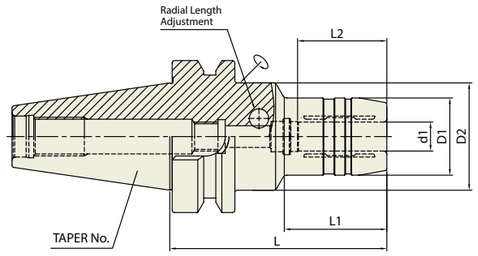
HYDRAULIC CHUCK

HCR

# HYDRAULIC CHUCK (Radial Tool Length Pre-Setting Type)

JIS B6339/
MAS 403-BT

## 液压刀柄 (长度调节型)




JIS B6339-BT | AT3 | 2.5G | 25,000 RPM | (at 3D) ≤3μm | AD or AD/B

Collet, Refer to page 43-46
变径套，请参阅43~46页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | d1 | D1 | D2 | L | L1 | L2 | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|
| 30 | BT30AD/B-HCR12-85 | P2777102 | 12 | 32 | 44.5 | 85 | 40 | 37 | 0.90 |
| | BT30AD/B-HCR20-85 | P2777103 | 20 | 44 | 44 | 85 | - | 42 | 1.00 |
| 40 | BT40AD/B-HCR12-90 | P2777104 | 12 | 32 | 44.5 | 90 | 42.5 | 37 | 1.50 |
| | BT40AD/B-HCR20-90 | P2554008 | 20 | 42 | 44.5 | 90 | 47.5 | 42 | 1.60 |
| | BT40AD/B-HCR32-105 | P2777105 | 32 | 60 | 60 | 105 | - | 55 | 2.20 |
| 50 | BT50AD/B-HCR12-95 | P2777106A | 12 | 32 | 44.5 | 95 | 34 | 37 | 3.90 |
| | BT50AD/B-HCR20-100 | P2777101 | 20 | 42 | 44.5 | 100 | 44 | 42 | 4.00 |
| | BT50AD/B-HCR32-115 | P2777107 | 32 | 60 | 60 | 115 | - | 55 | 4.10 |

▶CAT(ANSI B5.50) taper and Inch type products are available.
CAT(ANSI B5.50)锥柄及英制产品可供选择

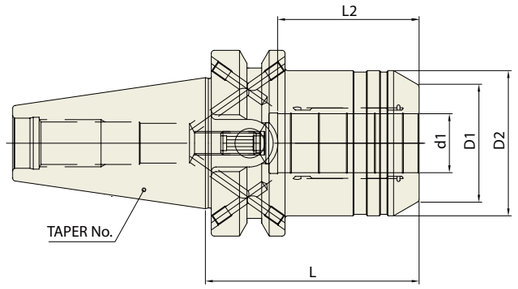
HYDRAULIC CHUCK

HCP

## HYDRAULIC CHUCK (Power E Hydro)

JIS B6339/
MAS 403-BT

# 液压刀柄 (Power E Hydro)




JIS B6339-BT | AT3 | 2.5G | 25,000 RPM | (at 3D) ≤3μm | AD or AD/B

Collet, Refer to page 43-46
变径套，请参阅43~46页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | d1 | D1 | D2 | L | L2 | G | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|
| 30 | BT30AD/B-HC12P-69 | P2776610P | 12 | 32 | 42 | 69 | 41 | M8x1.0 | 0.80 |
| | BT30AD/B-HC20P-90 | P2776611P | 20 | 38 | 42 | 90 | 48 | M8x1.0 | 0.90 |
| 40 | BT40AD/B-HC12P-58 | P2776601P | 12 | 32 | 42 | 58 | 41 | M8x1.0 | 1.10 |
| | BT40AD/B-HC20P-72.5 | P2554001P | 20 | 38 | 49.25 | 72.5 | 48 | M8x1.0 | 1.40 |
| 50 | BT50AD/B-HC20P-83.5 | P2755010P | 20 | 38 | 49.25 | 83.5 | 48 | M8x1.0 | 3.90 |
| | BT50AD/B-HC32P-90 | P2558001P | 32 | 58.5 | 72 | 90 | 57 | M8x1.0 | 4.60 |

▶CAT(ANSI B5.50) taper and Inch type products are available.
CAT(ANSI B5.50)锥柄及英制产品可供选择





HYDRAULIC CHUCK

HC

## HYDRAULIC CHUCK (SLIM)

JIS B6339/
MAS 403-BT

# 液压刀柄 (细长型)

FIG.1

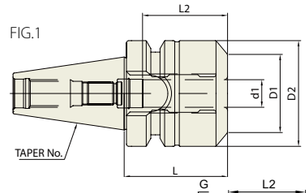
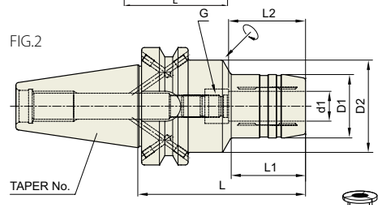



FIG.2




JIS B6339-BT | AT3 | 2.5G | 25,000 RPM | (at 3D) ≤3μm | AD or AD/B

Collet, Refer to page 43-46
变径套，请参阅43~46页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | d1 | D1 | D2 | L | L1 | L2 | G | FIG. | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 30 | BT30-HC6-45 | P2770643A | 6 | 46 | 46 | 45 | - | 27 | M5x0.8 | 1 | 1.50 |
| | BT30-HC8-45 | P2770644A | 8 | 46 | 46 | 45 | - | 27 | M6x1.0 | 1 | 1.50 |
| | BT30-HC10-45 | P2770645A | 10 | 46 | 46 | 45 | - | 32 | M8x1.0 | 1 | 1.50 |
| | BT30-HC12-45 | P2770646A | 12 | 46 | 46 | 45 | - | 37 | M10x1.0 | 1 | 1.50 |
| | BT30-HC16-45 | P2770647A | 16 | 46 | 46 | 45 | - | 42 | M10x1.0 | 1 | 1.50 |
| | BT30-HC20-60 | P2770648A | 20 | 53 | 53 | 60 | - | 42 | M10x1.0 | 1 | 2.10 |
| | BT30-HC6-70 | P2770604A | 6 | 26 | 44.5 | 70 | 29.5 | 27 | M5x0.8 | 2 | 0.65 |
| | BT30-HC8-70 | P2770605A | 8 | 28 | 44.5 | 70 | 30 | 27 | M6x1.0 | 2 | 0.65 |
| | BT30-HC10-75 | P2770606A | 10 | 30 | 44.5 | 75 | 31 | 32 | M8x1.0 | 2 | 0.73 |
| | BT30-HC12-85 | P2770607A | 12 | 32 | 45 | 85 | 45 | 37 | M10x1.0 | 2 | 0.80 |
| | BT30-HC14-85 | P2770608A | 14 | 34 | 45 | 85 | 45 | 37 | M10x1.0 | 2 | 0.80 |
| | BT30-HC16-90 | P2770601A | 16 | 38 | 45 | 90 | 50 | 42 | M10x1.0 | 2 | 0.90 |
| | BT30-HC18-90 | P2770609A | 18 | 40 | 45 | 90 | 50 | 42 | M10x1.0 | 2 | 0.90 |
| | BT30-HC20-90 | P2770602A | 20 | 42 | 45 | 90 | 50 | 42 | M6x1.0 | 2 | 0.90 |
| 40 | BT40AD/B-HC6-90 | P2554003 | 6 | 26 | 44.5 | 90 | 43 | 27 | M5x0.8 | 2 | 1.30 |
| | BT40AD/B-HC8-90 | P2554021 | 8 | 28 | 44.5 | 90 | 44.5 | 27 | M6x1.0 | 2 | 1.30 |
| | BT40AD/B-HC10-90 | P2554005 | 10 | 30 | 44.5 | 90 | 44.5 | 32 | M8x1.0 | 2 | 1.35 |
| | BT40AD/B-HC12-90 | P2554002 | 12 | 32 | 44.5 | 90 | 44.5 | 37 | M10x1.0 | 2 | 1.35 |
| | BT40AD/B-HC14-90 | P2770610 | 14 | 34 | 44.5 | 90 | 44.5 | 37 | M10x1.0 | 2 | 1.35 |
| | BT40AD/B-HC16-90 | P2554006 | 16 | 38 | 44.5 | 90 | 47.5 | 42 | M12x1.0 | 2 | 1.40 |
| | BT40AD/B-HC18-90 | P2770611 | 18 | 40 | 44.5 | 90 | 47.5 | 42 | M12x1.0 | 2 | 1.45 |
| | BT40AD/B-HC20-90 | P2554007 | 20 | 42 | 44.5 | 90 | 47.5 | 42 | M16x1.0 | 2 | 1.50 |
| | BT40AD/B-HC25-100 | P2770641 | 25 | 50 | 60 | 100 | 47.5 | 48 | M16x1.0 | 2 | 1.70 |
| | BT40AD/B-HC32-105 | P2770612 | 32 | 60 | - | 105 | - | 55 | M16x1.0 | 2 | 2.10 |

▶CAT(ANSI B5.50) taper and Inch type products are available.
CAT(ANSI B5.50)锥柄及英制产品可供选择

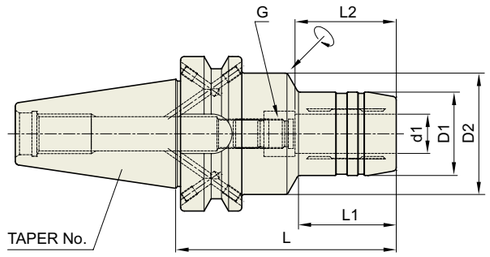
HYDRAULIC CHUCK

HC

## HYDRAULIC CHUCK (SLIM)

JIS B6339/
MAS 403-BT

# 液压刀柄 (细长型)




JIS B6339-BT | AT3 | 2.5G | 25,000 RPM | (at 3D) ≤3㎛ | AD/B

Collet, Refer to page 43-46
变径套，请参阅43~46页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | d1 | D1 | D2 | L | L1 | L2 | G | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|---|
| 50 | BT50AD/B-HC6-90 | P2770613 | 6 | 26 | 44.5 | 90 | 34 | 27 | M5×0.8 | 3.75 |
| | BT50AD/B-HC6-120 | P2770614 | 6 | 26 | 44.5 | 120 | 34 | 27 | M5×0.8 | 4.10 |
| | BT50AD/B-HC6-150 | P2770615 | 6 | 26 | 44.5 | 150 | 34 | 27 | M5×0.8 | 4.70 |
| | BT50AD/B-HC8-90 | P2770616 | 8 | 28 | 44.5 | 90 | 34 | 27 | M6×1.0 | 3.75 |
| | BT50AD/B-HC8-120 | P2770617 | 8 | 28 | 44.5 | 120 | 34 | 27 | M6×1.0 | 4.10 |
| | BT50AD/B-HC8-150 | P2770618 | 8 | 28 | 44.5 | 150 | 34 | 27 | M6×1.0 | 4.10 |
| | BT50AD/B-HC10-90 | P2770619 | 10 | 30 | 44.5 | 90 | 34 | 32 | M8×1.0 | 3.90 |
| | BT50AD/B-HC10-120 | P2770620 | 10 | 30 | 44.5 | 120 | 34 | 32 | M8×1.0 | 4.30 |
| | BT50AD/B-HC10-150 | P2770621 | 10 | 30 | 44.5 | 150 | 34 | 32 | M8×1.0 | 4.90 |
| | BT50AD/B-HC12-90 | P2770622 | 12 | 32 | 44.5 | 90 | 34 | 37 | M10×1.0 | 3.90 |
| | BT50AD/B-HC12-120 | P2770623 | 12 | 32 | 44.5 | 120 | 34 | 37 | M10×1.0 | 4.30 |
| | BT50AD/B-HC12-150 | P2770624 | 12 | 32 | 44.5 | 150 | 34 | 37 | M10×1.0 | 4.90 |
| | BT50AD/B-HC14-90 | P2770625 | 14 | 34 | 44.5 | 90 | 34 | 37 | M10×1.0 | 3.90 |
| | BT50AD/B-HC14-120 | P2770626 | 14 | 34 | 44.5 | 120 | 34 | 37 | M10×1.0 | 4.30 |
| | BT50AD/B-HC14-150 | P2770627 | 14 | 34 | 44.5 | 150 | 34 | 37 | M10×1.0 | 4.90 |
| | BT50AD/B-HC16-90 | P2770628 | 16 | 38 | 44.5 | 90 | 34 | 42 | M12×1.0 | 4.00 |
| | BT50AD/B-HC16-120 | P2770629 | 16 | 38 | 44.5 | 120 | 34 | 42 | M12×1.0 | 4.40 |
| | BT50AD/B-HC16-150 | P2770630 | 16 | 38 | 44.5 | 150 | 34 | 42 | M12×1.0 | 5.00 |
| | BT50AD/B-HC18-90 | P2770631 | 18 | 40 | 44.5 | 90 | 34 | 42 | M12×1.0 | 4.00 |
| | BT50AD/B-HC18-120 | P2770632 | 18 | 40 | 44.5 | 120 | 34 | 42 | M12×1.0 | 4.40 |
| | BT50AD/B-HC18-150 | P2770633 | 18 | 40 | 44.5 | 150 | 34 | 42 | M12×1.0 | 5.00 |
| | BT50AD/B-HC20-90 | P2770634 | 20 | 42 | 44.5 | 90 | 34 | 42 | M16×1.0 | 4.00 |
| | BT50AD/B-HC20-120 | P2770635 | 20 | 42 | 44.5 | 120 | 34 | 42 | M16×1.0 | 4.40 |
| | BT50AD/B-HC20-150 | P2770636 | 20 | 42 | 44.5 | 150 | 34 | 42 | M16×1.0 | 5.00 |
| | BT50AD/B-HC25-105 | P2770637 | 25 | 57 | 63 | 105 | 52 | 48 | M16×1.0 | 4.40 |
| | BT50AD/B-HC25-150 | P2770638 | 25 | 57 | 63 | 150 | 97 | 48 | M16×1.0 | 5.60 |
| | BT50AD/B-HC32-115 | P2770639 | 32 | 64 | 75 | 115 | 62 | 55 | M16×1.0 | 4.70 |
| | BT50AD/B-HC32-150 | P2770640 | 32 | 64 | 75 | 150 | 97 | 55 | M16×1.0 | 6.00 |

▶CAT(ANSI B5.50) taper and Inch type products are available.
CAT(ANSI B5.50)锥柄及英制产品可供选择





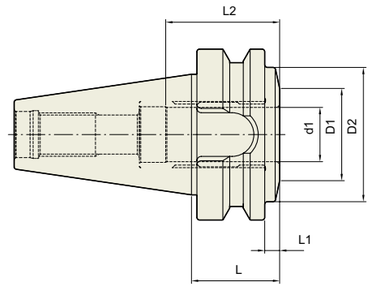
HYDRAULIC CHUCK

HC

## HYDRAULIC CHUCK (ULTRA SHORT)

JIS B6339/
MAS 403-BT

# 液压刀柄 (超短型)




JIS B6339-BT | AT3 | 2.5G | 25,000 RPM | (at 3D) ≤3㎛ | AD

Collet, Refer to page 43-46
变径套，请参阅43~46页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | d1 | D1 | D2 | L | L1 | L2 | G | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|---|
| 40 | BT40-HC20-32.5 | P2770642 | 20 | 34 | 49.5 | 32.5 | 5.5 | 42 | - | 0.99 |
| 50 | BT50-HC32-50 | P2770650 | 32 | 49 | 70.5 | 50 | 12 | 55 | - | 3.73 |

▶CAT(ANSI B5.50) taper and Inch type products are available.
CAT(ANSI B5.50)锥柄及英制产品可供选择

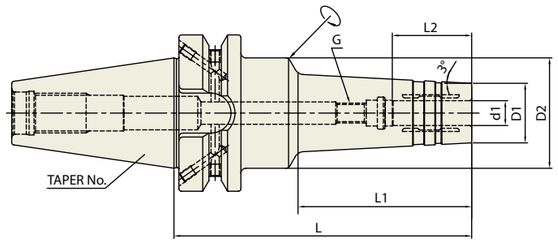
HYDRAULIC CHUCK

HMC

## HYDRAULIC CHUCK (For MOLD and DIE)

JIS B6339/
MAS 403-BT

# 液压刀柄 (模具型)




JIS B6339-BT | AT3 | 2.5G | 25,000 RPM | (at 3D) ≤3μm | AD/B

Collet, Refer to page 43-46
变径套，请参阅43~46页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | d1 | D1 | D2 | L | L1 | L2 | G | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|---|
| 40 | BT40AD/B-HMC6-120 | P2770903 | 6 | 20 | 44.5 | 120 | 70 | 27 | M5×0.8 | 1.40 |
| | BT40AD/B-HMC6-150 | P2770904 | 6 | 20 | 44.5 | 150 | 100 | 27 | M5×0.8 | 1.65 |
| | BT40AD/B-HMC8-120 | P2770905 | 8 | 22 | 44.5 | 120 | 70 | 27 | M6×1.0 | 1.40 |
| | BT40AD/B-HMC8-150 | P2770906 | 8 | 22 | 44.5 | 150 | 100 | 27 | M6×1.0 | 1.65 |
| | BT40AD/B-HMC10-120 | P2770907 | 10 | 24 | 44.5 | 120 | 70 | 32 | M8×1.0 | 1.40 |
| | BT40AD/B-HMC10-150 | P2770908 | 10 | 24 | 44.5 | 150 | 100 | 32 | M8×1.0 | 1.65 |
| | BT40AD/B-HMC12-120 | P2770901 | 12 | 25 | 44.5 | 120 | 70 | 37 | M10×1.0 | 1.40 |
| | BT40AD/B-HMC12-150 | P2770909 | 12 | 25 | 44.5 | 150 | 100 | 37 | M10×1.0 | 1.65 |
| | BT40AD/B-HMC16-120 | P2770910 | 16 | 32 | 44.5 | 120 | 70 | 42 | M12×1.0 | 1.45 |
| | BT40AD/B-HMC16-150 | P2770911 | 16 | 32 | 44.5 | 150 | 100 | 42 | M12×1.0 | 1.70 |
| | BT40AD/B-HMC20-120 | P2770902 | 20 | 34 | 43.8 | 120 | 93 | 42 | M16×1.0 | 1.50 |
| | BT40AD/B-HMC20-150 | P2770912 | 20 | 34 | 46.9 | 150 | 123 | 42 | M16×1.0 | 1.80 |
| 50 | BT50AD/B-HMC6-150 | P2770913 | 6 | 20 | 50 | 150 | 90 | 27 | M5×0.8 | 4.70 |
| | BT50AD/B-HMC8-150 | P2770914 | 8 | 22 | 50 | 150 | 90 | 27 | M6×1.0 | 4.70 |
| | BT50AD/B-HMC10-150 | P2770915 | 10 | 24 | 50 | 150 | 90 | 32 | M8×1.0 | 4.70 |
| | BT50AD/B-HMC12-150 | P2770916 | 12 | 25 | 50 | 150 | 90 | 37 | M10×1.0 | 4.70 |
| | BT50AD/B-HMC16-150 | P2770917 | 16 | 32 | 50 | 150 | 90 | 42 | M12×1.0 | 4.90 |
| | BT50AD/B-HMC20-150 | P2770918 | 20 | 34 | 50 | 150 | 90 | 42 | M16×1.0 | 5.00 |

▶CAT(ANSI B5.50) taper and Inch type products are available.
CAT(ANSI B5.50)锥柄及英制产品可供选择





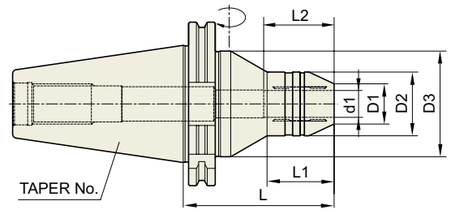
HYDRAULIC CHUCK

HC

## HYDRAULIC CHUCK (For GRINDER)

DIN 69871-SK

# 液压刀柄 (研磨机专用)

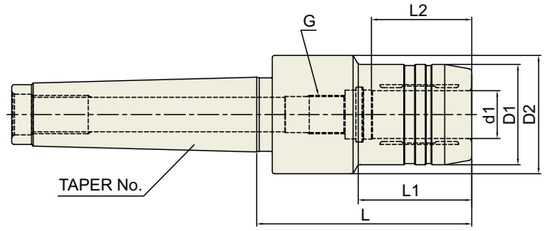



DIN 69871-SK | AT3 | (at 3D) ≤3μm | AD

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | d1 | D1 | D2 | D3 | L | L1 | L2 | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|---|
| 50 | SK50-HC6G-90 | P2770951 | 6 | 14 | 30 | 63 | 90 | 30 | 27 | 3.00 |
| | SK50-HC8G-90 | P2770952 | 8 | 16 | 30 | 63 | 90 | 30 | 27 | 3.00 |
| | SK50-HC10G-90 | P2770953 | 10 | 18 | 30 | 63 | 90 | 30 | 32 | 3.00 |
| | SK50-HC12G-90 | P2770954 | 12 | 21 | 33 | 63 | 90 | 35 | 37 | 3.05 |
| | SK50-HC14G-90 | P2770955 | 14 | 22 | 35 | 63 | 90 | 35 | 37 | 3.10 |
| | SK50-HC16G-90 | P2770956 | 16 | 24 | 38 | 63 | 90 | 40 | 42 | 3.10 |
| | SK50-HC18G-90 | P2770957 | 18 | 26 | 40 | 63 | 90 | 40 | 42 | 3.10 |
| | SK50-HC20G-110 | P2770958 | 20 | 29 | 42 | 63 | 110 | 40 | 42 | 3.30 |
| | SK50-HC25G-110 | P2770959 | 25 | 34 | 50 | 70 | 110 | 45 | 48 | 3.60 |
| | SK50-HC32G-110 | P2770960 | 32 | 42 | 56 | 80 | 110 | 50 | 55 | 4.20 |

## DIN 228-MTB




Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | d1 | D1 | D2 | L | L1 | L2 | G | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|---|
| 4 | MTB4-HC20-90 | P2770961 | 20 | 42 | 49.5 | 90 | 47.5 | 42 | M16×1.0 | 1.30 |
| | MTB4-HC32-90 | P2770962 | 32 | 72 | 72 | 90 | - | 55 | - | 1.40 |
| 5 | MTB5-HC20-90 | P2770963 | 20 | 42 | 49.5 | 90 | 47.5 | 42 | M16×1.0 | 2.20 |
| | MTB5-HC32-90 | P2770964 | 32 | 72 | 72 | 90 | - | 55 | - | 2.40 |

HYDRAULIC CHUCK

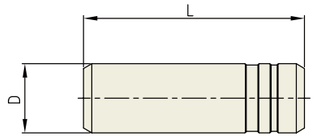
HCS

## HYDRAULIC CHUCK SET
# 液压刀柄套装

| MODEL No. 型号 | HYDRAULIC CHUCK 液压刀柄 | EDP No. | REDUCTION SLEEVE | WRENCH 扳手 |
|---|---|---|---|---|
| HCSS40-20 | **SK40AD/B-HC20P-64.5** | **P2770971** | HK20-6.8.10.12.16 (5pcs) | ϕ5mm |
| HCSB40-20 | **BT40AD/B-HC20P-72.5** | **P2770972** | HK20-6.8.10.12.16 (5pcs) | ϕ5mm |
| HCSH40-20 | **HSK63A-HC20P-80** | **P2770973** | HK20-6.8.10.12.16 (5pcs) | ϕ5mm |

TP

## TEST PIECE
# 测试棒




### · TECHNICAL DATA

Unit : mm

| DESCRIPTIONS | EDP No. | D | L |
|---|---|---|---|
| **TP6** | **P2801201** | 6 | 70 |
| **TP8** | **P2801202** | 8 | 70 |
| **TP10** | **P2801203** | 10 | 80 |
| **TP12** | **P2801204** | 12 | 80 |
| **TP14** | **P2801205** | 14 | 80 |
| **TP16** | **P2801206** | 16 | 90 |
| **TP18** | **P2801207** | 18 | 90 |
| **TP20** | **P2801208** | 20 | 100 |
| **TP25** | **P2801209** | 25 | 100 |
| **TP32** | **P2801210** | 32 | 100 |

### · POWER E HYDRO

Unit : mm

| DESCRIPTIONS | EDP No. | D | L |
|---|---|---|---|
| **TP12P** | **P2801211** | 12 | 80 |
| **TP20P** | **P2801212** | 20 | 100 |
| **TP32P** | **P2801213** | 32 | 100 |

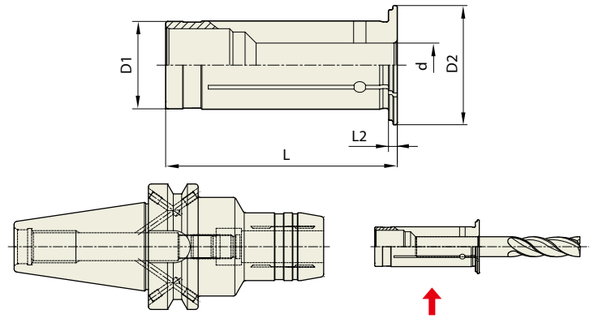




HYDRAULIC CHUCK

HK

## HYDRAULIC CHUCK COLLET (Reduction Sleeve : Open Type)
# 液压变径套 (开放型)




Hydraulic Chuck collet
液压刀柄筒夹

Unit (单位) : mm

| MODEL No. 型号 | | EDP No. | d | D1 | D2 | L | L2 |
|---|---|---|---|---|---|---|---|
| HK12 | **3** | **P2569022** | **3** | 12 | 19 | 47 | 2 |
| | **4** | **P2569023** | **4** | 12 | 19 | 47 | 2 |
| | **5** | **P2569024** | **5** | 12 | 19 | 47 | 2 |
| | **6** | **P2569025** | **6** | 12 | 19 | 47 | 2 |
| | **7** | **P2771001** | **7** | 12 | 19 | 47 | 2 |
| | **8** | **P2569026** | **8** | 12 | 19 | 47 | 2 |
| HK20 | **3** | **P2569001** | **3** | 20 | 27 | 52.5 | 2 |
| | **4** | **P2569002** | **4** | 20 | 27 | 52.5 | 2 |
| | **5** | **P2569003** | **5** | 20 | 27 | 52.5 | 2 |
| | **6** | **P2569004** | **6** | 20 | 27 | 52.5 | 2 |
| | **7** | **P2771002** | **7** | 20 | 27 | 52.5 | 2 |
| | **8** | **P2569005** | **8** | 20 | 27 | 52.5 | 2 |
| | **9** | **P2771003** | **9** | 20 | 27 | 52.5 | 2 |
| | **10** | **P2569006** | **10** | 20 | 27 | 52.5 | 2 |
| | **11** | **P2771004** | **11** | 20 | 27 | 52.5 | 2 |
| | **12** | **P2569007** | **12** | 20 | 27 | 52.5 | 2 |
| | **13** | **P2771005** | **13** | 20 | 27 | 52.5 | 2 |
| | **14** | **P2569008** | **14** | 20 | 27 | 52.5 | 2 |
| | **15** | **P2771006** | **15** | 20 | 27 | 52.5 | 2 |
| | **16** | **P2569009** | **16** | 20 | 27 | 52.5 | 2 |
| HK32 | **6** | **P2569010** | **6** | 32 | 39 | 63.5 | 3 |
| | **8** | **P2569011** | **8** | 32 | 39 | 63.5 | 3 |
| | **10** | **P2569012** | **10** | 32 | 39 | 63.5 | 3 |
| | **12** | **P2569013** | **12** | 32 | 39 | 63.5 | 3 |
| | **14** | **P2569014** | **14** | 32 | 39 | 63.5 | 3 |
| | **16** | **P2569015** | **16** | 32 | 39 | 63.5 | 3 |
| | **18** | **P2569016** | **18** | 32 | 39 | 63.5 | 3 |
| | **20** | **P2569017** | **20** | 32 | 39 | 63.5 | 3 |
| | **25** | **P2569018** | **25** | 32 | 39 | 63.5 | 3 |

▶Inch type products are available.
英制产品可供选

▶Other special sizes of Hydraulic Chuck collets could be produced and supplied.
可生产及供应非标准尺寸的液压刀柄

**Feature 特征**
HK Hydraulic Chuck collet (reduction sleeve) is cut into trisection by high precision cutting to guarantee precise I.D and strong clamping power.
HK液压刀柄夹套(变径套)采用高精度线切割加工保证精度及强劲的夹紧力

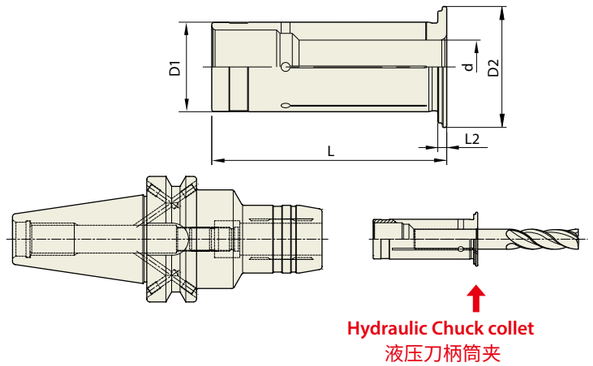
**Chucking Method 夹持方法**
Please assemble cutting tool with collet firstly, and then insert collet into Hydraulic Chuck.
装夹刀具时，请先用夹头装配刀具，然后将夹头插入液压刀柄中

# HYDRAULIC CHUCK

**HS**

## HYDRAULIC CHUCK COLLET (Reduction Sleeve : Closed Type)

## 液压变径套 (封闭型)




Hydraulic Chuck collet
液压刀柄筒夹

Unit (单位) : mm

| MODEL No. 型号 | | EDP No. | d | D1 | D2 | L | L2 |
|---|---|---|---|---|---|---|---|
| HS12 | 3 | P2771101 | 3 | 12 | 19 | 47 | 2 |
| | 4 | P2771102 | 4 | 12 | 19 | 47 | 2 |
| | 5 | P2771103 | 5 | 12 | 19 | 47 | 2 |
| | 6 | P2771104 | 6 | 12 | 19 | 47 | 2 |
| | 7 | P2771105 | 7 | 12 | 19 | 47 | 2 |
| | 8 | P2771106 | 8 | 12 | 19 | 47 | 2 |
| HS20 | 3 | P2771107 | 3 | 20 | 27 | 52.5 | 2 |
| | 4 | P2771108 | 4 | 20 | 27 | 52.5 | 2 |
| | 5 | P2771109 | 5 | 20 | 27 | 52.5 | 2 |
| | 6 | P2771110 | 6 | 20 | 27 | 52.5 | 2 |
| | 7 | P2771111 | 7 | 20 | 27 | 52.5 | 2 |
| | 8 | P2771112 | 8 | 20 | 27 | 52.5 | 2 |
| | 9 | P2771113 | 9 | 20 | 27 | 52.5 | 2 |
| | 10 | P2771114 | 10 | 20 | 27 | 52.5 | 2 |
| | 11 | P2771115 | 11 | 20 | 27 | 52.5 | 2 |
| | 12 | P2771116 | 12 | 20 | 27 | 52.5 | 2 |
| | 13 | P2771117 | 13 | 20 | 27 | 52.5 | 2 |
| | 14 | P2771118 | 14 | 20 | 27 | 52.5 | 2 |
| | 15 | P2771119 | 15 | 20 | 27 | 52.5 | 2 |
| | 16 | P2771120 | 16 | 20 | 27 | 52.5 | 2 |
| | 17 | P2771130 | 17 | 20 | 27 | 52.5 | 2 |
| HS32 | 6 | P2771121 | 6 | 32 | 39 | 63.5 | 3 |
| | 8 | P2771122 | 8 | 32 | 39 | 63.5 | 3 |
| | 10 | P2771123 | 10 | 32 | 39 | 63.5 | 3 |
| | 12 | P2771124 | 12 | 32 | 39 | 63.5 | 3 |
| | 14 | P2771125 | 14 | 32 | 39 | 63.5 | 3 |
| | 16 | P2771126 | 16 | 32 | 39 | 63.5 | 3 |
| | 18 | P2771127 | 18 | 32 | 39 | 63.5 | 3 |
| | 20 | P2771128 | 20 | 32 | 39 | 63.5 | 3 |
| | 25 | P2771129 | 25 | 32 | 39 | 63.5 | 3 |

▶Inch type products are available.
英制产品可供选

▶Other special sizes of Hydraulic Chuck collets could be produced and supplied.
可生产及供应非标准尺寸的液压刀柄

**Feature 特征**

HS Hydraulic Chuck collet (reduction sleeve) is cut by high precision wire-cutting to guarantee precise I.D and strong clamping power.
HS液压刀柄夹套(变径套)采用高精度线切割加工保证精度及强劲的夹紧力

**Chucking Method 夹持方法**

Please assemble cutting tool with collet firstly, and then insert collet into Hydraulic Chuck.
装夹刀具时，请先用夹头装配刀具，然后将夹头插入液压刀柄中



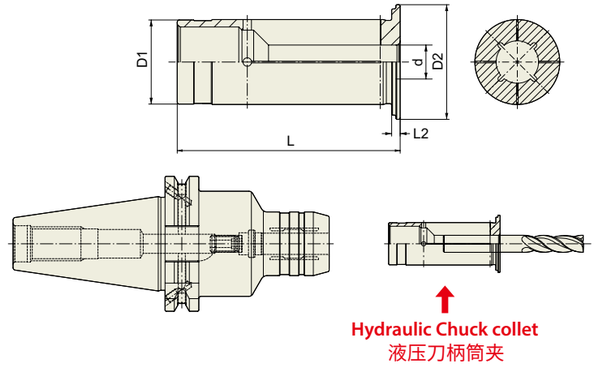


# HYDRAULIC CHUCK

**HF**

## HYDRAULIC CHUCK COLLET (Reduction Sleeve : Coolant Flush Type)

## 液压变径套 (冷却冲洗型)




Hydraulic Chuck collet
液压刀柄筒夹

Unit (单位) : mm

| MODEL No. 型号 | | EDP No. | d | D1 | D2 | L | L2 |
|---|---|---|---|---|---|---|---|
| HF12 | 3 | P2771201 | 3 | 12 | 19 | 47 | 2 |
| | 4 | P2771202 | 4 | 12 | 19 | 47 | 2 |
| | 5 | P2771203 | 5 | 12 | 19 | 47 | 2 |
| | 6 | P2771204 | 6 | 12 | 19 | 47 | 2 |
| | 7 | P2771205 | 7 | 12 | 19 | 47 | 2 |
| | 8 | P2771206 | 8 | 12 | 19 | 47 | 2 |
| HF20 | 3 | P2771207 | 3 | 20 | 27 | 52.5 | 2 |
| | 4 | P2771208 | 4 | 20 | 27 | 52.5 | 2 |
| | 5 | P2771209 | 5 | 20 | 27 | 52.5 | 2 |
| | 6 | P2771210 | 6 | 20 | 27 | 52.5 | 2 |
| | 7 | P2771211 | 7 | 20 | 27 | 52.5 | 2 |
| | 8 | P2771212 | 8 | 20 | 27 | 52.5 | 2 |
| | 9 | P2771213 | 9 | 20 | 27 | 52.5 | 2 |
| | 10 | P2771214 | 10 | 20 | 27 | 52.5 | 2 |
| | 11 | P2771215 | 11 | 20 | 27 | 52.5 | 2 |
| | 12 | P2771216 | 12 | 20 | 27 | 52.5 | 2 |
| | 13 | P2771217 | 13 | 20 | 27 | 52.5 | 2 |
| | 14 | P2771218 | 14 | 20 | 27 | 52.5 | 2 |
| | 15 | P2771219 | 15 | 20 | 27 | 52.5 | 2 |
| | 16 | P2771220 | 16 | 20 | 27 | 52.5 | 2 |
| HF32 | 6 | P2771221 | 6 | 32 | 39 | 63.5 | 3 |
| | 8 | P2771222 | 8 | 32 | 39 | 63.5 | 3 |
| | 10 | P2771223 | 10 | 32 | 39 | 63.5 | 3 |
| | 12 | P2771224 | 12 | 32 | 39 | 63.5 | 3 |
| | 14 | P2771225 | 14 | 32 | 39 | 63.5 | 3 |
| | 16 | P2771226 | 16 | 32 | 39 | 63.5 | 3 |
| | 18 | P2771227 | 18 | 32 | 39 | 63.5 | 3 |
| | 20 | P2771228 | 20 | 32 | 39 | 63.5 | 3 |
| | 25 | P2771229 | 25 | 32 | 39 | 63.5 | 3 |

▶Inch type products are available.
英制产品可供选

▶Other special sizes of Hydraulic Chuck collets could be produced and supplied.
可生产及供应非标准尺寸的液压刀柄

**Feature 特征**

HF Hydraulic Chuck collet (reduction sleeve) is for internal coolant flush.
HF 液压刀柄筒夹(变径套)用于内部冷却

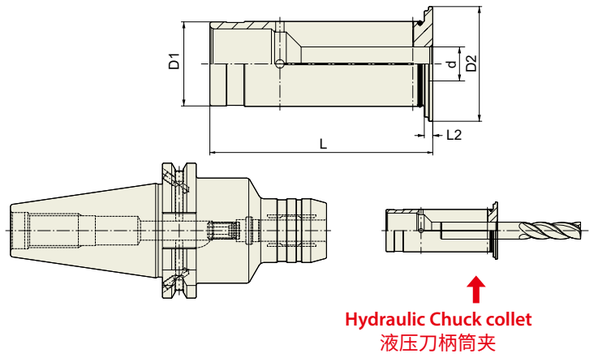
**Chucking Method 夹持方法**

Please assemble cutting tool with collet firstly, and then insert collet into Hydraulic Chuck.
装夹刀具时，请先用夹头装配刀具，然后将夹头插入液压刀柄中

# HYDRAULIC CHUCK

**HR**

## HYDRAULIC CHUCK COLLET (Reduction Sleeve : for High Pressure Coolant)
## 液压变径套 (高压冷却型)




Hydraulic Chuck collet
液压刀柄筒夹

Unit (单位) : mm

| MODEL No. 型号 | | EDP No. | d | D1 | D2 | L | L2 |
|---|---|---|---|---|---|---|---|
| HR12 | 3 | P2777601 | 3 | 12 | 19 | 47 | 2 |
| | 4 | P2777602 | 4 | 12 | 19 | 47 | 2 |
| | 5 | P2777603 | 5 | 12 | 19 | 47 | 2 |
| | 6 | P2777604 | 6 | 12 | 19 | 47 | 2 |
| | 7 | P2777605 | 7 | 12 | 19 | 47 | 2 |
| | 8 | P2777606 | 8 | 12 | 19 | 47 | 2 |
| HR20 | 3 | P2777607 | 3 | 20 | 27 | 52.5 | 2 |
| | 4 | P2777608 | 4 | 20 | 27 | 52.5 | 2 |
| | 5 | P2777609 | 5 | 20 | 27 | 52.5 | 2 |
| | 6 | P2777610 | 6 | 20 | 27 | 52.5 | 2 |
| | 7 | P2777611 | 7 | 20 | 27 | 52.5 | 2 |
| | 8 | P2777612 | 8 | 20 | 27 | 52.5 | 2 |
| | 9 | P2777613 | 9 | 20 | 27 | 52.5 | 2 |
| | 10 | P2777614 | 10 | 20 | 27 | 52.5 | 2 |
| | 11 | P2777615 | 11 | 20 | 27 | 52.5 | 2 |
| | 12 | P2777616 | 12 | 20 | 27 | 52.5 | 2 |
| | 13 | P2777617 | 13 | 20 | 27 | 52.5 | 2 |
| | 14 | P2777618 | 14 | 20 | 27 | 52.5 | 2 |
| | 15 | P2777619 | 15 | 20 | 27 | 52.5 | 2 |
| | 16 | P2777620 | 16 | 20 | 27 | 52.5 | 2 |
| HR32 | 6 | P2777621 | 6 | 32 | 39 | 63.5 | 3 |
| | 8 | P2777622 | 8 | 32 | 39 | 63.5 | 3 |
| | 10 | P2777623 | 10 | 32 | 39 | 63.5 | 3 |
| | 12 | P2777624 | 12 | 32 | 39 | 63.5 | 3 |
| | 14 | P2777625 | 14 | 32 | 39 | 63.5 | 3 |
| | 16 | P2777626 | 16 | 32 | 39 | 63.5 | 3 |
| | 18 | P2777627 | 18 | 32 | 39 | 63.5 | 3 |
| | 20 | P2777628 | 20 | 32 | 39 | 63.5 | 3 |
| | 25 | P2777629 | 25 | 32 | 39 | 63.5 | 3 |

▶Inch type products are available.
英制产品可供选

▶Other special sizes of Hydraulic Chuck collets could be produced and supplied.
可生产及供应非标准尺寸的液压刀柄

**Feature 特征**

HR Hydraulic Chuck collet (reduction sleeve) is for high pressure coolant supply.
HR 液压刀柄筒夹(变径套)用于内部冷却

**Chucking Method 夹持方法**

Please assemble cutting tool with collet firstly, and then insert collet into Hydraulic Chuck.
装夹刀具时，请先用夹头装配刀具，然后将夹头插入液压刀柄中



YG-1 TOOLING SYSTEM

# SHRINK FIT HOLDER

# 热缩刀柄

DIN 69871-SK

DIN 69893/ISO 12164-1-HSK

CBT (BT DUAL CONTACT)

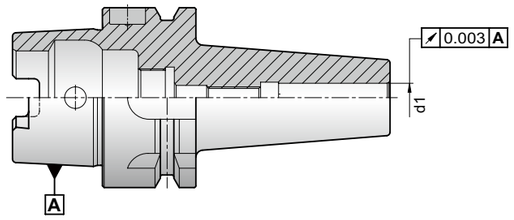
JIS B6339/MAS 403-BT

ISO 25

STRAIGHT (EXTENSION)

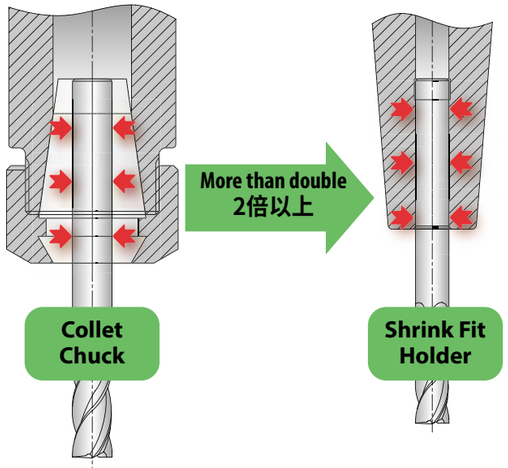
SHRINK FIT HEATING MACHINE

## High Precision I.D Run-out : ≤0.003mm
高精密跳动公差(T.I.R)0.003mm ≤以下



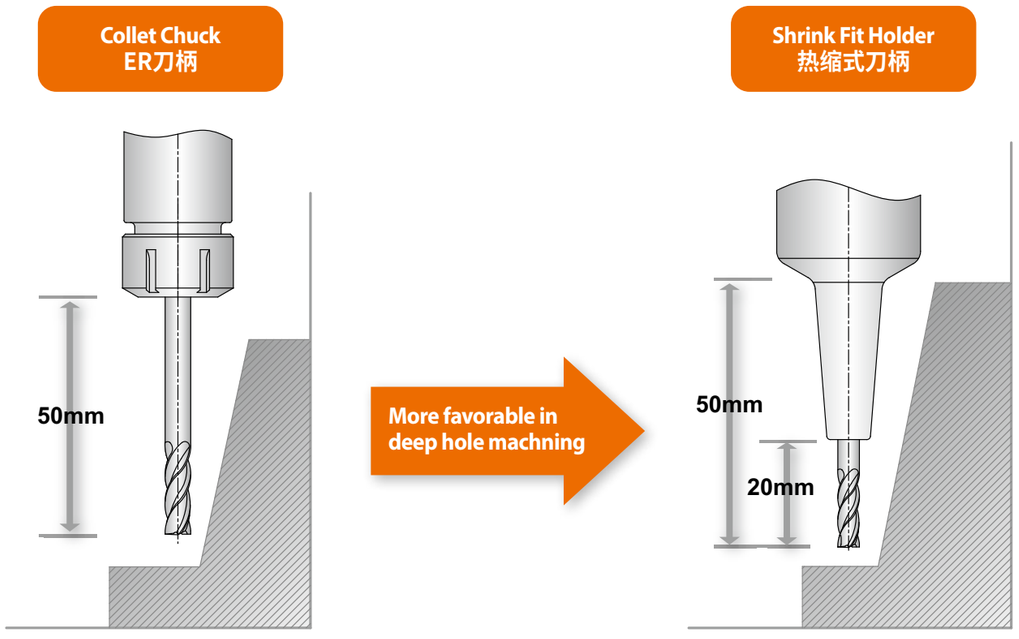

- Less than 0.003mm of Tool Holder accuracy at I.D
- 刀柄内径精密度达0.003mm以下
  适用于高速精密加工

## Strong and Consistent Torque Power
超强及均匀的夹紧力




- Achieving strong torque power by integration of chuck and tool
- 刀柄和刀具一体化实现强劲的夹紧力

## Deep hole Machining
深孔加工

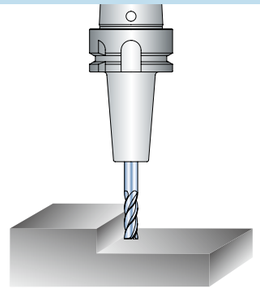
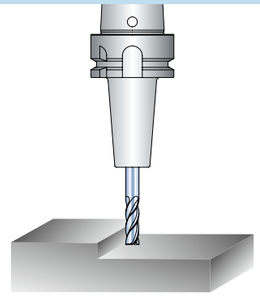
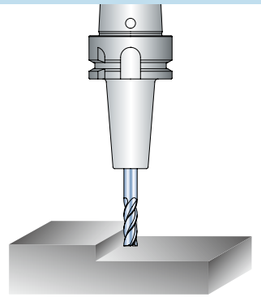
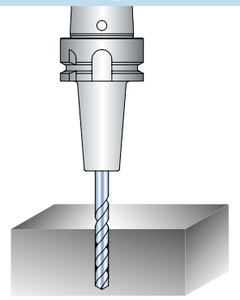
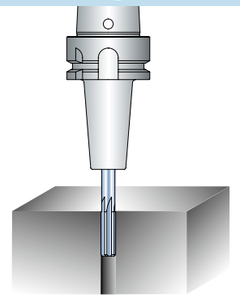
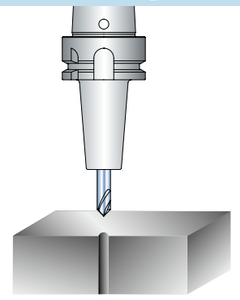



- Suitable for High-Speed precision deep hole machining
- 适合高速/精密深孔加工



TECHNICAL INFORMATION
SHRINK FIT HOLDER (热缩刀柄)

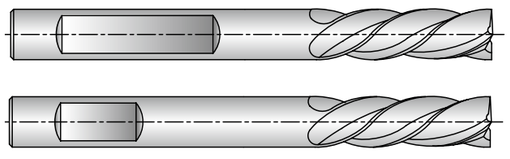
## APPLICATION 应用

| Rough Milling 粗铣 | Finish Milling 精铣 | High-Speed Cutting 高速切削 |
|---|---|---|
|  |  |  |
| **Drilling 钻孔** | **Reaming 铰削** | **Countersinking 倒角** |
|  |  |  |

## Shank Type of Cutting Tool
适用刀具的柄部类型

**Straight shank 直柄**

**One weldon flat shaft type 侧固式柄**



- One Weldon flat shaft type tool is usable, but there is a possibility that the I.D of shrink fit holder may be deformed.
- 可使用侧固式柄刀具但，可能引起侧固槽内径变形.

## Material of Cutting Tool
适用刀具材质

| CARBIDE TOOL 硬质合金刀具 | HSS TOOL 高速钢刀具 |
|---|---|
| OK | NO |

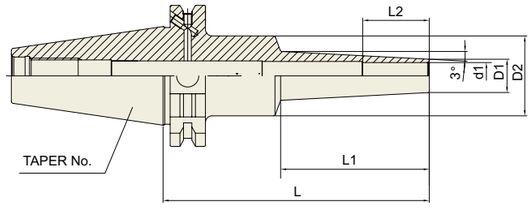
# SHRINK FIT HOLDER

**SFHS**

## SHRINK FIT HOLDER (EXTRA SLIM)

DIN 69871-SK

## 热缩刀柄 (超细型)




DIN 69871-SK | AT3 | 2.5G | 25,000 RPM | (at 3D) ≤3μm | AD or AD/B

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | d1 | D1 | D2 | L | L1 | L2 | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|
| 30 | SK30-SFHS3-60 | P2771332S | 3 | 6 | 20 | 60 | 22 | 9 | - |
| | SK30-SFHS3-80 | P2771333S | 3 | 6 | 20 | 80 | 42 | 9 | - |
| | SK30-SFHS4-60 | P2771334S | 4 | 7 | 20 | 60 | 22 | 12 | - |
| | SK30-SFHS4-80 | P2771335S | 4 | 7 | 20 | 80 | 42 | 12 | - |
| | SK30-SFHS6-60 | P2771336S | 6 | 9 | 20 | 60 | 22 | 18 | - |
| | SK30-SFHS6-80 | P2771337S | 6 | 9 | 20 | 80 | 42 | 18 | - |
| 40 | SK40AD/B-SFHS3-95 | P2771338S | 3 | 6 | 26 | 95 | 42 | 9 | 0.89 |
| | SK40AD/B-SFHS3-120 | P2771339S | 3 | 6 | 26 | 120 | 67 | 9 | 0.91 |
| | SK40AD/B-SFHS4-95 | P2771340S | 4 | 7 | 26 | 95 | 42 | 12 | 0.90 |
| | SK40AD/B-SFHS4-120 | P2771341S | 4 | 7 | 26 | 120 | 67 | 12 | 0.92 |
| | SK40AD/B-SFHS6-95 | P2771342S | 6 | 9 | 26 | 95 | 42 | 18 | 0.90 |
| | SK40AD/B-SFHS6-120 | P2771343S | 6 | 9 | 26 | 120 | 67 | 18 | 0.93 |
| | SK40AD/B-SFHS8-95 | P2771344S | 8 | 11 | 36 | 95 | 42 | 24 | 0.90 |
| | SK40AD/B-SFHS8-120 | P2771345S | 8 | 11 | 36 | 120 | 67 | 24 | 1.01 |
| | SK40AD/B-SFHS10-95 | P2771346S | 10 | 13 | 36 | 95 | 42 | 30 | 0.91 |
| | SK40AD/B-SFHS10-120 | P2771347S | 10 | 13 | 36 | 120 | 67 | 30 | 1.02 |
| | SK40AD/B-SFHS12-95 | P2771348S | 12 | 15 | 36 | 95 | 42 | 30 | 0.99 |
| | SK40AD/B-SFHS12-120 | P2771349S | 12 | 15 | 36 | 120 | 67 | 30 | 1.02 |
| 50 | SK50AD/B-SFHS3-110 | P2771350S | 3 | 6 | 26 | 110 | 42 | 9 | 2.77 |
| | SK50AD/B-SFHS3-160 | P2771351S | 3 | 6 | 26 | 160 | 97 | 9 | 2.79 |
| | SK50AD/B-SFHS4-110 | P2771352S | 4 | 7 | 26 | 110 | 42 | 12 | 2.75 |
| | SK50AD/B-SFHS4-160 | P2771353S | 4 | 7 | 26 | 160 | 97 | 12 | 2.80 |
| | SK50AD/B-SFHS6-110 | P2771354S | 6 | 9 | 26 | 110 | 42 | 18 | 2.74 |
| | SK50AD/B-SFHS6-160 | P2771355S | 6 | 9 | 26 | 160 | 97 | 18 | 2.85 |
| | SK50AD/B-SFHS8-110 | P2771356S | 8 | 11 | 36 | 110 | 42 | 24 | 2.84 |
| | SK50AD/B-SFHS8-160 | P2771357S | 8 | 11 | 36 | 160 | 97 | 24 | 2.92 |
| | SK50AD/B-SFHS10-110 | P2771358S | 10 | 13 | 36 | 110 | 42 | 30 | 2.85 |
| | SK50AD/B-SFHS10-160 | P2771359S | 10 | 13 | 36 | 160 | 97 | 30 | 2.93 |
| | SK50AD/B-SFHS12-110 | P2771360S | 12 | 15 | 36 | 110 | 42 | 30 | 2.85 |
| | SK50AD/B-SFHS12-160 | P2771361S | 12 | 15 | 36 | 160 | 97 | 30 | 2.96 |

▶CAT(ANSI B5.50) taper and Inch type products are available.
CAT(ANSI B5.50)锥柄及英制产品可供选择



# SHRINK FIT HOLDER

**SFH**

## SHRINK FIT HOLDER

DIN 69871-SK

## 热缩刀柄

FIG.1

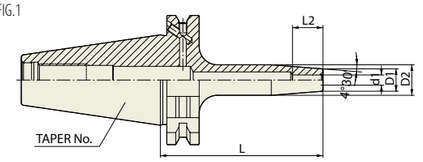
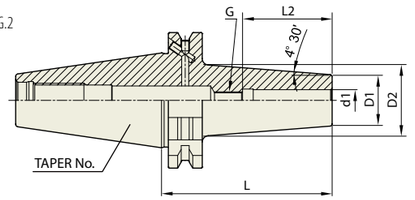



FIG.2




DIN 69871-SK | AT3 | 2.5G | 25,000 RPM | (at 3D) ≤3μm | AD or AD/B

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | d1 | D1 | D2 | L | L2 | G | FIG. | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|---|
| 30 | SK30AD/B-SFH3-60 | P2771308 | 3 | 11 | 15 | 60 | 10 | - | 1 | 0.40 |
| | SK30AD/B-SFH4-60 | P2771309 | 4 | 11 | 15 | 60 | 12 | - | 1 | 0.40 |
| | SK30AD/B-SFH5-60 | P2771310 | 5 | 11 | 15 | 60 | 15 | - | 1 | 0.40 |
| | SK30AD/B-SFH6-60 | P2771311 | 6 | 21 | 27 | 60 | 36 | M5×0.8 | 2 | 0.40 |
| | SK30AD/B-SFH8-60 | P2771312 | 8 | 21 | 27 | 60 | 36 | M6×1.0 | 2 | 0.40 |
| | SK30AD/B-SFH10-80 | P2771313 | 10 | 24 | 32 | 80 | 42 | M8×1.0 | 2 | 0.40 |
| | SK30AD/B-SFH12-80 | P2771314 | 12 | 24 | 32 | 80 | 47 | M10×1.0 | 2 | 0.42 |
| | SK30AD/B-SFH14-80 | P2771315 | 14 | 27 | 34 | 80 | 47 | M10×1.0 | 2 | - |
| | SK30AD/B-SFH16-80 | P2771316 | 16 | 27 | 34 | 80 | 50 | M12×1.0 | 2 | 0.42 |
| | SK30AD/B-SFH18-80 | P2771317 | 18 | 33 | 42 | 80 | 50 | M12×1.0 | 2 | - |
| | SK30AD/B-SFH20-90 | P2771318 | 20 | 33 | 42 | 90 | 52 | M16×1.0 | 2 | 0.44 |
| 40 | SK40AD/B-SFH3-80 | P2771301 | 3 | 11 | 15 | 80 | 10 | - | 1 | 1.00 |
| | SK40AD/B-SFH4-80 | P2771302 | 4 | 11 | 15 | 80 | 12 | - | 1 | 1.00 |
| | SK40AD/B-SFH5-80 | P2771303 | 5 | 11 | 15 | 80 | 15 | - | 1 | 1.00 |
| | SK40AD/B-SFH6-80 | P2554058 | 6 | 21 | 27 | 80 | 36 | M5×0.8 | 2 | 1.10 |
| | SK40AD/B-SFH6-160 | P2771304 | 6 | 21 | 27 | 160 | 36 | M5×0.8 | 2 | 1.15 |
| | SK40AD/B-SFH8-80 | P2600009 | 8 | 21 | 27 | 80 | 36 | M6×1.0 | 2 | 1.11 |
| | SK40AD/B-SFH8-160 | P2771305 | 8 | 21 | 27 | 160 | 36 | M6×1.0 | 2 | 1.15 |
| | SK40AD/B-SFH10-80 | P2554052 | 10 | 24 | 32 | 80 | 42 | M8×1.0 | 2 | 1.10 |
| | SK40AD/B-SFH10-160 | P2771306 | 10 | 24 | 32 | 160 | 42 | M8×1.0 | 2 | 1.15 |
| | SK40AD/B-SFH12-80 | P2600008 | 12 | 24 | 32 | 80 | 47 | M10×1.0 | 2 | 1.10 |
| | SK40AD/B-SFH12-160 | P2771307 | 12 | 24 | 32 | 160 | 47 | M10×1.0 | 2 | 1.15 |
| | SK40AD/B-SFH14-80 | P2771319 | 14 | 27 | 34 | 80 | 47 | M10×1.0 | 2 | 1.20 |
| | SK40AD/B-SFH14-160 | P2771320 | 14 | 27 | 34 | 160 | 47 | M10×1.0 | 2 | 1.50 |
| | SK40AD/B-SFH16-80 | P2554054 | 16 | 27 | 34 | 80 | 50 | M12×1.0 | 2 | 1.20 |
| | SK40AD/B-SFH16-160 | P2554053 | 16 | 27 | 34 | 160 | 50 | M12×1.0 | 2 | 1.50 |
| | SK40AD/B-SFH18-80 | P2771321 | 18 | 33 | 42 | 80 | 50 | M12×1.0 | 2 | 1.30 |
| | SK40AD/B-SFH18-160 | P2771322 | 18 | 33 | 42 | 160 | 50 | M12×1.0 | 2 | 1.60 |
| | SK40AD/B-SFH20-80 | P2554056 | 20 | 33 | 42 | 80 | 52 | M16×1.0 | 2 | 1.40 |
| | SK40AD/B-SFH20-160 | P2554055 | 20 | 33 | 42 | 160 | 52 | M16×1.0 | 2 | 1.70 |
| | SK40AD/B-SFH25-90 | P2771323 | 25 | 44 | 53 | 90 | 58 | M16×1.0 | 2 | 1.70 |
| | SK40AD/B-SFH25-160 | P2771324 | 25 | 44 | 53 | 160 | 58 | M16×1.0 | 2 | 2.00 |

▶CAT(ANSI B5.50) taper and Inch type products are available.
CAT(ANSI B5.50)锥柄及英制产品可供选择

▶Without balancing screw.
未组装动平衡螺钉



TOOLING SYSTEM
HYDRAULIC CHUCK
SHRINK FIT HOLDER
ER COLLET CHUCK
END MILL HOLDER & SIDE LOCK ARBOR
SHELL MILL ARBOR
POWER MILLING CHUCK
MORSE TAPER ARBOR
SK SLIM CHUCK
SYNCHRO TAPPING CHUCK
ONE STEP TAPPING CHUCK
TAPPING ER CHUCK
TAPPING CHUCK
FACE MILL ARBOR
COPY MILL ARBOR & INDEXABLE DRILL HOLDER
NC DRILL CHUCK & OTHER TOOL HOLDERS
BORING SYSTEM
ACCESSORY & OTHERS

# SHRINK FIT HOLDER

SFH

## SHRINK FIT HOLDER

DIN 69871-SK

## 热缩刀柄

DIN 69871-SK | AT3 | 2.5G | 25,000 RPM | (at 3D) ≤3μm | AD/B

FIG.1

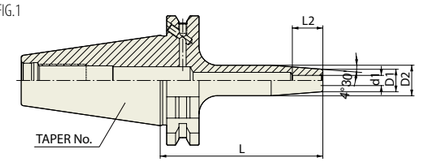
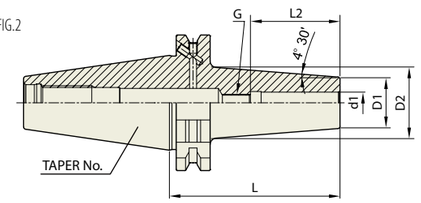



FIG.2




Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | d1 | D1 | D2 | L | L2 | G | FIG. | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|---|
| 50 | SK50AD/B-SFH3-80 | P2771325 | 3 | 11 | 15 | 100 | 10 | - | 1 | 1.50 |
| | SK50AD/B-SFH4-80 | P2771326 | 4 | 11 | 15 | 100 | 12 | - | 1 | 1.50 |
| | SK50AD/B-SFH5-80 | P2771327 | 5 | 11 | 15 | 100 | 15 | - | 1 | 1.50 |
| | SK50AD/B-SFH6-80 | P2771328 | 6 | 21 | 27 | 80 | 36 | M5×0.8 | 2 | 1.50 |
| | SK50AD/B-SFH6-160 | P2771329 | 6 | 21 | 27 | 160 | 36 | M5×0.8 | 2 | 2.00 |
| | SK50AD/B-SFH8-80 | P2760010 | 8 | 21 | 27 | 80 | 36 | M6×1.0 | 2 | 1.50 |
| | SK50AD/B-SFH8-160 | P2760015 | 8 | 21 | 27 | 160 | 36 | M6×1.0 | 2 | 2.00 |
| | SK50AD/B-SFH10-80 | P2761010 | 10 | 24 | 32 | 80 | 42 | M8×1.0 | 2 | 1.50 |
| | SK50AD/B-SFH10-160 | P2761015 | 10 | 24 | 32 | 160 | 42 | M8×1.0 | 2 | 2.00 |
| | SK50AD/B-SFH12-80 | P2762010 | 12 | 24 | 32 | 80 | 47 | M10×1.0 | 2 | 1.50 |
| | SK50AD/B-SFH12-160 | P2762015 | 12 | 24 | 32 | 160 | 47 | M10×1.0 | 2 | 2.00 |
| | SK50AD/B-SFH14-80 | P2763010 | 14 | 27 | 34 | 80 | 47 | M10×1.0 | 2 | 1.60 |
| | SK50AD/B-SFH14-160 | P2763015 | 14 | 27 | 34 | 160 | 47 | M10×1.0 | 2 | 2.10 |
| | SK50AD/B-SFH16-80 | P2764010 | 16 | 27 | 34 | 80 | 50 | M12×1.0 | 2 | 1.60 |
| | SK50AD/B-SFH16-160 | P2764015 | 16 | 27 | 34 | 160 | 50 | M12×1.0 | 2 | 2.10 |
| | SK50AD/B-SFH18-80 | P2765010 | 18 | 33 | 42 | 80 | 50 | M12×1.0 | 2 | 1.60 |
| | SK50AD/B-SFH18-160 | P2765015 | 18 | 33 | 42 | 160 | 50 | M12×1.0 | 2 | 2.00 |
| | SK50AD/B-SFH20-80 | P2766010 | 20 | 33 | 42 | 80 | 52 | M16×1.0 | 2 | 1.80 |
| | SK50AD/B-SFH20-160 | P2766015 | 20 | 33 | 42 | 160 | 52 | M16×1.0 | 2 | 2.20 |
| | SK50AD/B-SFH25-90 | P2771330 | 25 | 44 | 53 | 90 | 58 | M16×1.0 | 2 | 2.00 |
| | SK50AD/B-SFH25-160 | P2771331 | 25 | 44 | 53 | 160 | 58 | M16×1.0 | 2 | 2.40 |

▶CAT(ANSI B5.50) taper and Inch type products are available.
CAT(ANSI B5.50)锥柄及英制产品可供选择

▶Without balancing screw.
未组装动平衡螺钉





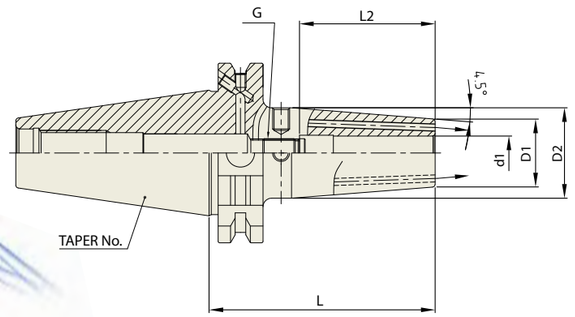
# SHRINK FIT HOLDER

SFH

## SHRINK FIT HOLDER (COOLANT CHANNEL)

DIN 69871-SK

## 热缩刀柄 (冷却液喷射型)




DIN 69871-SK | AT3 | 2.5G | 25,000 RPM | (at 3D) ≤3μm | AD/B+C

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | d1 | D1 | D2 | L | L2 | G | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|
| 40 | SK40AD/B-SFH6C-80 | P2801301C | 6 | 21 | 27 | 80 | 36 | M5x0.8 | 1.10 |
| | SK40AD/B-SFH6C-160 | P2801302C | 6 | 21 | 27 | 160 | 36 | M5x0.8 | 1.15 |
| | SK40AD/B-SFH8C-80 | P2801303C | 8 | 21 | 27 | 80 | 36 | M6x1.0 | 1.11 |
| | SK40AD/B-SFH8C-160 | P2801304C | 8 | 21 | 27 | 160 | 36 | M6x1.0 | 1.15 |
| | SK40AD/B-SFH10C-80 | P2801305C | 10 | 24 | 32 | 80 | 42 | M8x1.0 | 1.10 |
| | SK40AD/B-SFH10C-160 | P2801306C | 10 | 24 | 32 | 160 | 42 | M8x1.0 | 1.15 |
| | SK40AD/B-SFH12C-80 | P2801307C | 12 | 24 | 32 | 80 | 47 | M10x1.0 | 1.10 |
| | SK40AD/B-SFH12C-160 | P2801308C | 12 | 24 | 32 | 160 | 47 | M10x1.0 | 1.15 |
| | SK40AD/B-SFH14C-80 | P2801309C | 14 | 27 | 34 | 80 | 47 | M10x1.0 | 1.20 |
| | SK40AD/B-SFH14C-160 | P2801310C | 14 | 27 | 34 | 160 | 47 | M10x1.0 | 1.50 |
| | SK40AD/B-SFH16C-80 | P2801311C | 16 | 27 | 34 | 80 | 50 | M12x1.0 | 1.20 |
| | SK40AD/B-SFH16C-160 | P2801312C | 16 | 27 | 34 | 160 | 50 | M12x1.0 | 1.50 |
| | SK40AD/B-SFH18C-80 | P2801313C | 18 | 33 | 42 | 80 | 50 | M12x1.0 | 1.30 |
| | SK40AD/B-SFH18C-160 | P2801314C | 18 | 33 | 42 | 160 | 50 | M12x1.0 | 1.60 |
| | SK40AD/B-SFH20C-80 | P2801315C | 20 | 33 | 42 | 80 | 52 | M16x1.0 | 1.40 |
| | SK40AD/B-SFH20C-160 | P2801316C | 20 | 33 | 42 | 160 | 52 | M16x1.0 | 1.70 |
| | SK40AD/B-SFH25C-90 | P2801317C | 25 | 44 | 53 | 90 | 58 | M16x1.0 | 1.70 |
| | SK40AD/B-SFH25C-160 | P2801318C | 25 | 44 | 53 | 160 | 58 | M16x1.0 | 2.00 |
| 50 | SK50AD/B-SFH6C-80 | P2801319C | 6 | 21 | 27 | 80 | 36 | M5x0.8 | 1.50 |
| | SK50AD/B-SFH6C-160 | P2801320C | 6 | 21 | 27 | 160 | 36 | M5x0.8 | 2.00 |
| | SK50AD/B-SFH8C-80 | P2801321C | 8 | 21 | 27 | 80 | 36 | M6x1.0 | 1.50 |
| | SK50AD/B-SFH8C-160 | P2801322C | 8 | 21 | 27 | 160 | 36 | M6x1.0 | 2.00 |
| | SK50AD/B-SFH10C-80 | P2801323C | 10 | 24 | 32 | 80 | 42 | M8x1.0 | 1.50 |
| | SK50AD/B-SFH10C-160 | P2801324C | 10 | 24 | 32 | 160 | 42 | M8x1.0 | 2.00 |
| | SK50AD/B-SFH12C-80 | P2801325C | 12 | 24 | 32 | 80 | 47 | M10x1.0 | 1.60 |
| | SK50AD/B-SFH12C-160 | P2801326C | 12 | 24 | 32 | 160 | 47 | M10x1.0 | 2.10 |
| | SK50AD/B-SFH14C-80 | P2801327C | 14 | 27 | 34 | 80 | 47 | M10x1.0 | 1.60 |
| | SK50AD/B-SFH14C-160 | P2801328C | 14 | 27 | 34 | 160 | 47 | M10x1.0 | 2.10 |
| | SK50AD/B-SFH16C-80 | P2801329C | 16 | 27 | 34 | 80 | 50 | M12x1.0 | 1.60 |
| | SK50AD/B-SFH16C-160 | P2801330C | 16 | 27 | 34 | 160 | 50 | M12x1.0 | 2.10 |
| | SK50AD/B-SFH18C-80 | P2801331C | 18 | 33 | 42 | 80 | 50 | M12x1.0 | 1.60 |
| | SK50AD/B-SFH18C-160 | P2801332C | 18 | 33 | 42 | 160 | 50 | M12x1.0 | 2.00 |
| | SK50AD/B-SFH20C-80 | P2801333C | 20 | 33 | 42 | 80 | 52 | M16x1.0 | 1.80 |
| | SK50AD/B-SFH20C-160 | P2801334C | 20 | 33 | 42 | 160 | 52 | M16x1.0 | 2.20 |
| | SK50AD/B-SFH25C-90 | P2801335C | 25 | 44 | 53 | 90 | 58 | M16x1.0 | 2.00 |
| | SK50AD/B-SFH25C-160 | P2801336C | 25 | 44 | 53 | 160 | 58 | M16x1.0 | 2.40 |

▶CAT(ANSI B5.50) taper and Inch type products are available. CAT(ANSI B5.50)锥柄及英制产品可供选择
▶Without balancing screw. 未组装动平衡螺钉
▶Resealable Coolant Channel type is available upon request. 可重新密封的冷却剂通道类型可根据需要提供

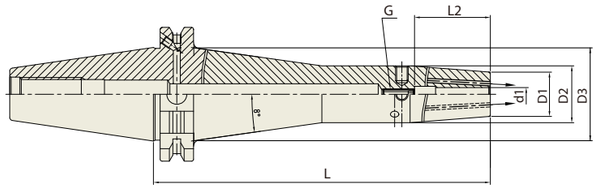
# SHRINK FIT HOLDER

**SFH**

## SHRINK FIT HOLDER (REINFORCED)

DIN 69871-SK

## 热缩刀柄 (加固)




DIN 69871-SK | AT3 | 2.5G | 25,000 RPM | (at 3D) ≤3μm | AD/B+C

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | d1 | D1 | D2 | D3 | L | L2 | G | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|---|
| 40 | SK40AD/B-SFH6C TW-160 | P2801401TW | 6 | 21 | 27 | 44.1 | 160 | 36 | M5x0.8 | 1.56 |
| | SK40AD/B-SFH8C TW-160 | P2801402TW | 8 | 21 | 27 | 44.1 | 160 | 36 | M6x1.0 | 1.56 |
| | SK40AD/B-SFH10C TW-160 | P2801403TW | 10 | 24 | 32 | 49.1 | 160 | 42 | M8x1.0 | 1.78 |
| | SK40AD/B-SFH12C TW-160 | P2801404TW | 12 | 24 | 32 | 49.1 | 160 | 47 | M10x1.0 | 1.77 |
| | SK40AD/B-SFH14C TW-160 | P2801405TW | 14 | 27 | 34 | 51.1 | 160 | 47 | M10x1.0 | 1.74 |
| | SK40AD/B-SFH16C TW-160 | P2801406TW | 16 | 27 | 34 | 51.1 | 160 | 50 | M12x1.0 | 1.72 |
| 50 | SK50AD/B-SFH6C TW-160 | P2801407TW | 6 | 21 | 27 | 44.1 | 160 | 36 | M5x0.8 | 3.32 |
| | SK50AD/B-SFH8C TW-160 | P2801408TW | 8 | 21 | 27 | 44.1 | 160 | 36 | M6x1.0 | 3.32 |
| | SK50AD/B-SFH10C TW-160 | P2801409TW | 10 | 24 | 32 | 49.1 | 160 | 42 | M8x1.0 | 3.54 |
| | SK50AD/B-SFH12C TW-160 | P2801410TW | 12 | 24 | 32 | 49.1 | 160 | 47 | M10x1.0 | 3.54 |
| | SK50AD/B-SFH14C TW-160 | P2801411TW | 14 | 27 | 34 | 51.1 | 160 | 47 | M10x1.0 | 3.50 |
| | SK50AD/B-SFH16C TW-160 | P2801412TW | 16 | 27 | 34 | 51.1 | 160 | 50 | M12x1.0 | 3.48 |
| | SK50AD/B-SFH20C TW-160 | P2801413TW | 20 | 33 | 42 | 59.1 | 160 | 52 | M16x1.0 | 3.88 |

▶CAT(ANSI B5.50) taper and Inch type products are available.
CAT(ANSI B5.50)锥柄及英制产品可供选择

▶Without balancing screw.
未组装动平衡螺钉



TOOLING SYSTEM
HYDRAULIC CHUCK
SHRINK FIT HOLDER
ER COLLET CHUCK
END MILL HOLDER & SIDE LOCK ARBOR
SHELL MILL ARBOR
POWER MILLING CHUCK
MORSE TAPER ARBOR
SK SLIM CHUCK
SYNCHRO TAPPING CHUCK
ONE STEP TAPPING CHUCK
TAPPING ER CHUCK
TAPPING CHUCK
FACE MILL ARBOR
COPY MILL ARBOR & INDEXABLE DRILL HOLDER
NC DRILL CHUCK & OTHER TOOL HOLDERS
BORING SYSTEM
ACCESSORY & OTHERS

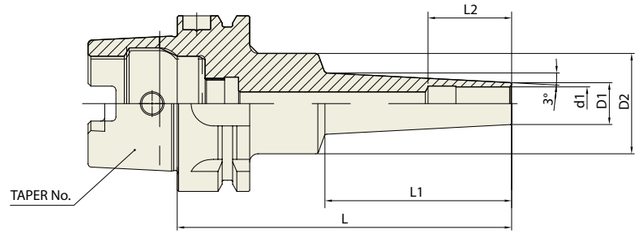
# SHRINK FIT HOLDER

**SFHS**

## SHRINK FIT HOLDER (EXTRA SLIM)

DIN 69893/
ISO 12164-1-HSK FORM A

## 热缩刀柄 (超细型)




DIN 69893-HSK | AT3 | 2.5G | 25,000 RPM | (at 3D) ≤3μm | AD

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | d1 | D1 | D2 | L | L1 | L2 | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|
| 40A | HSK40A-SFHS3-60 | P2779801S | 3 | 6 | 20 | 60 | 22 | 9 | - |
| | HSK40A-SFHS3-90 | P2779802S | 3 | 6 | 20 | 80 | 42 | 9 | - |
| | HSK40A-SFHS4-60 | P2779803S | 4 | 7 | 20 | 60 | 22 | 12 | - |
| | HSK40A-SFHS4-90 | P2779804S | 4 | 7 | 20 | 80 | 42 | 12 | - |
| | HSK40A-SFHS6-60 | P2779805S | 6 | 9 | 20 | 60 | 22 | 18 | - |
| | HSK40A-SFHS6-90 | P2779806S | 6 | 9 | 20 | 80 | 42 | 18 | - |
| 50A | HSK50A-SFHS3-95 | P2779807S | 3 | 6 | 26 | 95 | 42 | 9 | - |
| | HSK50A-SFHS3-120 | P2779808S | 3 | 6 | 26 | 120 | 67 | 9 | - |
| | HSK50A-SFHS4-95 | P2779809S | 4 | 7 | 26 | 95 | 42 | 12 | - |
| | HSK50A-SFHS4-120 | P2779810S | 4 | 7 | 26 | 120 | 67 | 12 | - |
| | HSK50A-SFHS6-95 | P2779811S | 6 | 9 | 26 | 95 | 42 | 18 | - |
| | HSK50A-SFHS6-120 | P2779812S | 6 | 9 | 26 | 120 | 67 | 18 | - |
| | HSK50A-SFHS8-95 | P2779813S | 8 | 11 | 36 | 95 | 42 | 24 | - |
| | HSK50A-SFHS8-120 | P2779814S | 8 | 11 | 36 | 120 | 67 | 24 | - |
| | HSK50A-SFHS10-95 | P2779815S | 10 | 13 | 36 | 95 | 42 | 30 | - |
| | HSK50A-SFHS10-120 | P2779816S | 10 | 13 | 36 | 120 | 67 | 30 | - |
| 63A | HSK63A-SFHS3-95 | P2779817S | 3 | 6 | 26 | 95 | 42 | 9 | 0.75 |
| | HSK63A-SFHS3-120 | P2779818S | 3 | 6 | 26 | 120 | 67 | 9 | 0.77 |
| | HSK63A-SFHS4-95 | P2779819S | 4 | 7 | 26 | 95 | 42 | 12 | 0.75 |
| | HSK63A-SFHS4-120 | P2779820S | 4 | 7 | 26 | 120 | 67 | 12 | 0.78 |
| | HSK63A-SFHS6-95 | P2779821S | 6 | 9 | 26 | 95 | 42 | 18 | 0.76 |
| | HSK63A-SFHS6-120 | P2779822S | 6 | 9 | 26 | 120 | 97 | 18 | 0.78 |
| | HSK63A-SFHS8-95 | P2779823S | 8 | 11 | 36 | 95 | 42 | 24 | 0.75 |
| | HSK63A-SFHS8-160 | P2779824S | 8 | 11 | 36 | 160 | 97 | 24 | 0.97 |
| | HSK63A-SFHS10-95 | P2779825S | 10 | 13 | 36 | 95 | 42 | 30 | 0.76 |
| | HSK63A-SFHS10-160 | P2779826S | 10 | 13 | 36 | 160 | 97 | 30 | 1.00 |
| | HSK63A-SFHS12-95 | P2779827S | 12 | 15 | 36 | 95 | 42 | 30 | 0.83 |
| | HSK63A-SFHS12-160 | P2779828S | 12 | 15 | 36 | 160 | 97 | 30 | 1.04 |
| 100A | HSK100A-SFHS3-95 | P2779829S | 3 | 6 | 26 | 95 | 42 | 9 | 2.12 |
| | HSK100A-SFHS3-120 | P2779830S | 3 | 6 | 26 | 120 | 67 | 9 | 2.14 |
| | HSK100A-SFHS4-95 | P2779831S | 4 | 7 | 26 | 95 | 42 | 12 | 2.12 |
| | HSK100A-SFHS4-120 | P2779832S | 4 | 7 | 26 | 120 | 67 | 12 | 2.14 |
| | HSK100A-SFHS6-95 | P2779833S | 6 | 9 | 26 | 95 | 42 | 18 | 2.12 |
| | HSK100A-SFHS6-120 | P2779834S | 6 | 9 | 26 | 120 | 67 | 18 | 2.15 |
| | HSK100A-SFHS8-95 | P2779835S | 8 | 11 | 36 | 95 | 42 | 24 | 2.18 |
| | HSK100A-SFHS8-160 | P2779836S | 8 | 11 | 36 | 160 | 97 | 24 | 2.33 |
| | HSK100A-SFHS10-95 | P2779837S | 10 | 13 | 36 | 95 | 42 | 30 | 2.19 |
| | HSK100A-SFHS10-160 | P2779838S | 10 | 13 | 36 | 160 | 97 | 30 | 2.34 |
| | HSK100A-SFHS12-95 | P2779839S | 12 | 15 | 36 | 95 | 42 | 30 | 2.20 |
| | HSK100A-SFHS12-160 | P2779840S | 12 | 15 | 36 | 160 | 97 | 30 | 2.38 |

▶CAT(ANSI B5.50) taper and Inch type products are available. CAT(ANSI B5.50)锥柄及英制产品可供选择

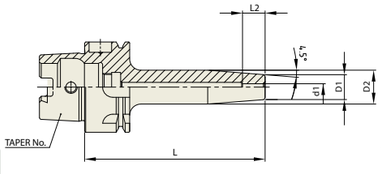
# SHRINK FIT HOLDER

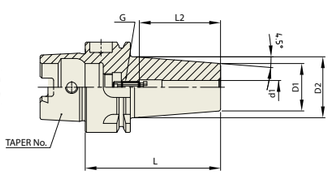
SFH

## SHRINK FIT HOLDER
## 热缩刀柄

DIN 69893/
ISO 12164-1-HSK FORM A

DIN 69893-HSK | 2.5G | 25,000 RPM | (at 3D) ≤3μm | AD




Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | d1 | D1 | D2 | L | L2 | G | FIG. | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|---|
| 40A | HSK40A-SFH3-60 | P2771408 | 3 | 11 | 15 | 60 | 10 | - | 1 | 0.30 |
| | HSK40A-SFH3-80 | P2771409 | 3 | 11 | 15 | 80 | 10 | - | 1 | 0.40 |
| | HSK40A-SFH4-60 | P2771410 | 4 | 11 | 15 | 60 | 12 | - | 1 | 0.30 |
| | HSK40A-SFH4-80 | P2771411 | 4 | 11 | 15 | 80 | 12 | - | 1 | 0.40 |
| | HSK40A-SFH5-60 | P2771412 | 5 | 11 | 15 | 60 | 15 | - | 1 | 0.30 |
| | HSK40A-SFH5-80 | P2771413 | 5 | 11 | 15 | 80 | 15 | - | 1 | 0.40 |
| | HSK40A-SFH6-60 | P2771414 | 6 | 21 | 27 | 60 | 36 | M5×0.8 | 2 | 0.40 |
| | HSK40A-SFH6-80 | P2771415 | 6 | 21 | 27 | 80 | 36 | M5×0.8 | 2 | 0.50 |
| | HSK40A-SFH8-70 | P2771416 | 8 | 21 | 27 | 70 | 36 | M6×1.0 | 2 | 0.40 |
| | HSK40A-SFH8-90 | P2771417 | 8 | 21 | 27 | 90 | 36 | M6×1.0 | 2 | 0.50 |
| | HSK40A-SFH10-70 | P2771418 | 10 | 24 | 32 | 70 | 42 | M8×1.0 | 2 | 0.50 |
| | HSK40A-SFH10-90 | P2771419 | 10 | 24 | 32 | 90 | 42 | M8×1.0 | 2 | 0.60 |

▶Without balancing screw. 未组装动平衡螺钉

## DIN 69893/
## ISO 12164-1-HSK FORM E

DIN 69893-HSK | 2.5G | 25,000 RPM | (at 3D) ≤3μm | AD

FIG.1

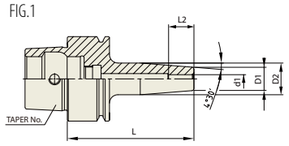
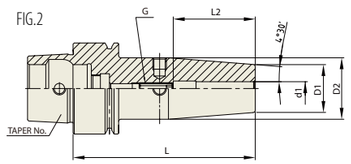



FIG.2




Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | d1 | D1 | D2 | L | L2 | G | FIG. | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|---|
| 25E | HSK25E-SFH3-45 | P2771420 | 3 | 11 | 15 | 45 | 10 | - | 1 | - |
| | HSK25E-SFH4-45 | P2771421 | 4 | 11 | 15 | 45 | 12 | - | 1 | - |
| | HSK25E-SFH5-45 | P2771422 | 5 | 11 | 15 | 45 | 15 | - | 1 | - |
| | HSK25E-SFH6-45 | P2771423 | 6 | 12 | 17 | 45 | 18 | - | 2 | - |
| | HSK25E-SFH8-45 | P2771424 | 8 | 14 | 18 | 45 | 30 | - | 2 | - |
| | HSK25E-SFH10-50 | P2771425 | 10 | 16 | 20 | 50 | 37 | - | 2 | - |
| 32E | HSK32E-SFH3-60 | P2771426 | 3 | 11 | 15 | 60 | 10 | - | 1 | - |
| | HSK32E-SFH4-60 | P2771427 | 4 | 11 | 15 | 60 | 12 | - | 1 | - |
| | HSK32E-SFH5-60 | P2771428 | 5 | 11 | 15 | 60 | 15 | - | 1 | - |
| | HSK32E-SFH6-70 | P2771429 | 6 | 12 | 17 | 70 | 18 | - | 2 | - |
| | HSK32E-SFH8-70 | P2771430 | 8 | 14 | 18 | 70 | 30 | - | 2 | - |
| | HSK32E-SFH10-80 | P2771431 | 10 | 16 | 20 | 80 | 37 | - | 2 | - |
| 40E | HSK40E-SFH3-60 | P2771432 | 3 | 11 | 15 | 60 | 10 | - | 1 | 0.30 |
| | HSK40E-SFH3-80 | P2771433 | 3 | 11 | 15 | 80 | 10 | - | 1 | 0.40 |
| | HSK40E-SFH4-60 | P2771434 | 4 | 11 | 15 | 60 | 12 | - | 1 | 0.30 |
| | HSK40E-SFH4-80 | P2771435 | 4 | 11 | 15 | 80 | 12 | - | 1 | 0.40 |
| | HSK40E-SFH5-60 | P2771436 | 5 | 11 | 15 | 60 | 15 | - | 1 | 0.30 |
| | HSK40E-SFH5-80 | P2771437 | 5 | 11 | 15 | 80 | 15 | - | 1 | 0.40 |
| | HSK40E-SFH6-60 | P2771438 | 6 | 21 | 27 | 60 | 36 | M5×0.8 | 2 | 0.40 |
| | HSK40E-SFH6-80 | P2771439 | 6 | 21 | 27 | 80 | 36 | M5×0.8 | 2 | 0.50 |
| | HSK40E-SFH8-70 | P2771440 | 8 | 21 | 27 | 70 | 36 | M6×1.0 | 2 | 0.40 |
| | HSK40E-SFH8-90 | P2771441 | 8 | 21 | 27 | 90 | 36 | M6×1.0 | 2 | 0.50 |
| | HSK40E-SFH10-70 | P2771442 | 10 | 24 | 32 | 70 | 42 | M8×1.0 | 2 | 0.50 |
| | HSK40E-SFH10-90 | P2771443 | 10 | 24 | 32 | 90 | 42 | M8×1.0 | 2 | 0.60 |

▶Without balancing screw. 未组装动平衡螺钉



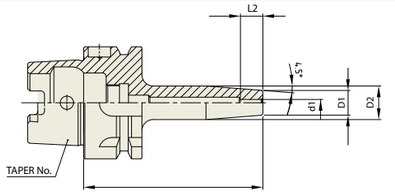
SHRINK FIT HOLDER

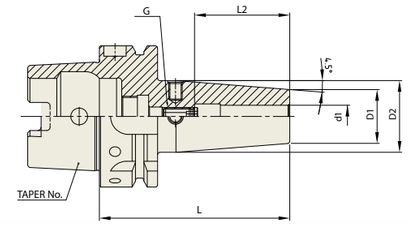
SFH

SHRINK FIT HOLDER
热缩刀柄

DIN 69893/
ISO 12164-1-HSK FORM A

DIN 69893-HSK | 2.5G | 25,000 RPM | (at 3D) ≤3μm | AD




Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | d1 | D1 | D2 | L | L2 | G | FIG. | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|---|
| 50A | HSK50A-SFH3-80 | P2771444 | 3 | 11 | 15 | 80 | 10 | - | 1 | 0.54 |
| | HSK50A-SFH4-80 | P2771445 | 4 | 11 | 15 | 80 | 12 | - | 1 | 0.55 |
| | HSK50A-SFH5-80 | P2771446 | 5 | 11 | 15 | 80 | 15 | - | 1 | 0.56 |
| | HSK50A-SFH6-80 | P2776901 | 6 | 21 | 27 | 80 | 36 | M5×0.8 | 2 | 0.57 |
| | HSK50A-SFH8-80 | P2771447 | 8 | 21 | 27 | 80 | 36 | M6×1.0 | 2 | 0.58 |
| | HSK50A-SFH10-85 | P2771448 | 10 | 24 | 32 | 85 | 42 | M8×1.0 | 2 | 0.65 |
| | HSK50A-SFH12-90 | P2771449 | 12 | 24 | 32 | 90 | 47 | M10×1.0 | 2 | 0.67 |
| | HSK50A-SFH14-90 | P2771450 | 14 | 27 | 34 | 90 | 47 | M10×1.0 | 2 | 0.72 |
| | HSK50A-SFH16-95 | P2771451 | 16 | 27 | 34 | 95 | 50 | M12×1.0 | 2 | 0.73 |
| | HSK50A-SFH18-95 | P2771452 | 18 | 33 | 42 | 95 | 50 | M12×1.0 | 2 | 0.90 |
| | HSK50A-SFH20-100 | P2771453 | 20 | 33 | 42 | 100 | 52 | M16×1.0 | 2 | 0.92 |
| 63A | HSK63A-SFH3-80 | P2771401 | 3 | 11 | 15 | 80 | 10 | - | 1 | 0.70 |
| | HSK63A-SFH4-80 | P2771402 | 4 | 11 | 15 | 80 | 12 | - | 1 | 0.70 |
| | HSK63A-SFH5-80 | P2771403 | 5 | 11 | 15 | 80 | 15 | - | 1 | 0.70 |
| | HSK63A-SFH6-80 | P2565057 | 6 | 21 | 27 | 80 | 36 | M5×0.8 | 2 | 0.83 |
| | HSK63A-SFH6-160 | P2771404 | 6 | 21 | 27 | 160 | 36 | M5×0.8 | 2 | 1.00 |
| | HSK63A-SFH8-80 | P2600007 | 8 | 21 | 27 | 80 | 36 | M6×1.0 | 2 | 0.83 |
| | HSK63A-SFH8-160 | P2771405 | 8 | 21 | 27 | 160 | 36 | M6×1.0 | 2 | 1.00 |
| | HSK63A-SFH10-85 | P2565052 | 10 | 24 | 32 | 85 | 42 | M8×1.0 | 2 | 0.83 |
| | HSK63A-SFH10-160 | P2771406 | 10 | 24 | 32 | 160 | 42 | M8×1.0 | 2 | 1.00 |
| | HSK63A-SFH12-90 | P2600003 | 12 | 24 | 32 | 90 | 47 | M10×1.0 | 2 | 0.83 |
| | HSK63A-SFH12-160 | P2771407 | 12 | 24 | 32 | 160 | 47 | M10×1.0 | 2 | 1.00 |
| | HSK63A-SFH14-90 | P2771454 | 14 | 27 | 34 | 90 | 47 | M10×1.0 | 2 | 0.91 |
| | HSK63A-SFH14-160 | P2771455 | 14 | 27 | 34 | 160 | 47 | M10×1.0 | 2 | 1.30 |
| | HSK63A-SFH16-95 | P2565054 | 16 | 27 | 34 | 95 | 50 | M12×1.0 | 2 | 0.98 |
| | HSK63A-SFH16-160 | P2565053 | 16 | 27 | 34 | 160 | 50 | M12×1.0 | 2 | 1.40 |
| | HSK63A-SFH18-95 | P2771456 | 18 | 33 | 42 | 95 | 50 | M12×1.0 | 2 | 0.98 |
| | HSK63A-SFH18-160 | P2771457 | 18 | 33 | 42 | 160 | 50 | M12×1.0 | 2 | 1.40 |
| | HSK63A-SFH20-100 | P2600005 | 20 | 33 | 42 | 100 | 52 | M16×1.0 | 2 | 1.00 |
| | HSK63A-SFH20-160 | P2565055 | 20 | 33 | 42 | 160 | 52 | M16×1.0 | 2 | 1.40 |
| | HSK63A-SFH25-115 | P2771458 | 25 | 44 | 53 | 115 | 58 | M16×1.0 | 2 | 1.40 |
| | HSK63A-SFH25-160 | P2771459 | 25 | 44 | 53 | 160 | 58 | M16×1.0 | 2 | 1.80 |

▶Without balancing screw.
未组装动平衡螺钉

## SHRINK FIT HOLDER
# 热缩刀柄

DIN 69893/
ISO 12164-1-HSK FORM A

FIG.1

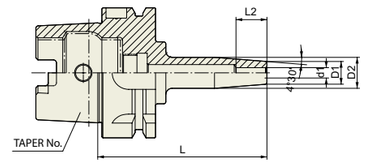
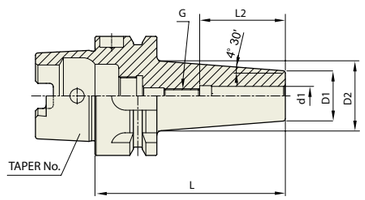



FIG.2




DIN 69893-HSK | 2.5G | 25,000 RPM | (at 3D) ≤3μm | AD

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | d1 | D1 | D2 | L | L2 | G | FIG. | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|---|
| 80A | HSK80A-SFH6-85 | P2771460 | 6 | 21 | 27 | 85 | 36 | M5x0.8 | 1 | |
| | HSK80A-SFH8-85 | P2771461 | 8 | 21 | 27 | 85 | 36 | M6x1.0 | 1 | |
| | HSK80A-SFH10-90 | P2771462 | 10 | 24 | 32 | 90 | 41 | M8x1.0 | 2 | |
| | HSK80A-SFH12-95 | P2771463 | 12 | 24 | 32 | 95 | 46 | M10x1.0 | 2 | |
| | HSK80A-SFH14-95 | P2771464 | 14 | 27 | 34 | 95 | 46 | M10x1.0 | 2 | |
| | HSK80A-SFH16-100 | P2771465 | 16 | 27 | 34 | 100 | 49 | M12x1.0 | 2 | |
| | HSK80A-SFH18-100 | P2771466 | 18 | 33 | 42 | 100 | 49 | M12x1.0 | 2 | |
| | HSK80A-SFH20-105 | P2771467 | 20 | 33 | 42 | 105 | 51 | M16x1.0 | 2 | |
| | HSK80A-SFH25-115 | P2771468 | 25 | 44 | 53 | 115 | 57 | M16x1.0 | 2 | |
| 100A | HSK100A-SFH3-85 | P2771469 | 3 | 11 | 15 | 85 | 10 | - | 1 | 1.30 |
| | HSK100A-SFH4-85 | P2771470 | 4 | 11 | 15 | 85 | 12 | - | 1 | 1.30 |
| | HSK100A-SFH5-85 | P2771471 | 5 | 11 | 15 | 85 | 15 | - | 1 | 1.30 |
| | HSK100A-SFH6-85 | P2777301 | 6 | 21 | 27 | 85 | 36 | M5×0.8 | 1 | 1.30 |
| | HSK100A-SFH6-160 | P2771472 | 6 | 21 | 27 | 160 | 36 | M5×0.8 | 1 | 1.80 |
| | HSK100A-SFH8-85 | P2777302 | 8 | 21 | 27 | 85 | 36 | M6×1.0 | 1 | 1.30 |
| | HSK100A-SFH8-160 | P2771473 | 8 | 21 | 27 | 160 | 36 | M6×1.0 | 1 | 1.80 |
| | HSK100A-SFH10-90 | P2777303 | 10 | 24 | 32 | 90 | 42 | M8×1.0 | 1 | 1.30 |
| | HSK100A-SFH10-160 | P2771474 | 10 | 24 | 32 | 160 | 42 | M8×1.0 | 1 | 1.80 |
| | HSK100A-SFH12-95 | P2777304 | 12 | 24 | 32 | 95 | 47 | M10×1.0 | 1 | 1.30 |
| | HSK100A-SFH12-160 | P2771475 | 12 | 24 | 32 | 160 | 47 | M10×1.0 | 1 | 1.80 |
| | HSK100A-SFH14-95 | P2771476 | 14 | 27 | 34 | 95 | 47 | M10×1.0 | 1 | 1.40 |
| | HSK100A-SFH14-160 | P2771477 | 14 | 27 | 34 | 160 | 47 | M10×1.0 | 1 | 1.90 |
| | HSK100A-SFH16-100 | P2771478 | 16 | 27 | 34 | 100 | 50 | M12×1.0 | 1 | 1.40 |
| | HSK100A-SFH16-160 | P2771479 | 16 | 27 | 34 | 160 | 50 | M12×1.0 | 1 | 1.90 |
| | HSK100A-SFH18-100 | P2771480 | 18 | 33 | 42 | 100 | 50 | M12×1.0 | 2 | 1.50 |
| | HSK100A-SFH18-160 | P2771481 | 18 | 33 | 42 | 160 | 50 | M12×1.0 | 2 | 2.00 |
| | HSK100A-SFH20-100 | P2771482 | 20 | 33 | 42 | 100 | 52 | M16×1.0 | 2 | 1.50 |
| | HSK100A-SFH20-160 | P2771483 | 20 | 33 | 42 | 160 | 52 | M16×1.0 | 2 | 2.00 |
| | HSK100A-SFH25-115 | P2771484 | 25 | 44 | 53 | 115 | 58 | M16×1.0 | 2 | 1.80 |
| | HSK100A-SFH25-160 | P2771485 | 25 | 44 | 53 | 160 | 58 | M16×1.0 | 2 | 2.30 |

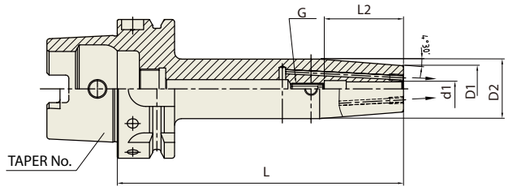
▶Without balancing screw.
未组装动平衡螺钉





## SHRINK FIT HOLDER (COOLANT CHANNEL)
# 热缩刀柄 (冷却液喷射型)

DIN 69893/
ISO 12164-1-HSK FORM A




DIN 69893-HSK | 2.5G | 25,000 RPM | (at 3D) ≤3μm | AD+C

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | d1 | D1 | D2 | L | L2 | G | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|
| 63A | HSK63A-SFH6C-80 | P2862013C | 6 | 21 | 27 | 80 | 36 | M5x0.8 | 0.83 |
| | HSK63A-SFH6C-160 | P2862014C | 6 | 21 | 27 | 160 | 36 | M5x0.8 | 1.00 |
| | HSK63A-SFH8C-80 | P2862015C | 8 | 21 | 27 | 80 | 36 | M6x1.0 | 0.83 |
| | HSK63A-SFH8C-160 | P2862016C | 8 | 21 | 27 | 160 | 36 | M6x1.0 | 1.00 |
| | HSK63A-SFH10C-85 | P2862017C | 10 | 24 | 32 | 85 | 42 | M8x1.0 | 0.83 |
| | HSK63A-SFH10C-160 | P2862018C | 10 | 24 | 32 | 160 | 42 | M8x1.0 | 1.00 |
| | HSK63A-SFH12C-90 | P2862019C | 12 | 24 | 32 | 90 | 47 | M10x1.0 | 0.83 |
| | HSK63A-SFH12C-160 | P2862020C | 12 | 24 | 32 | 160 | 47 | M10x1.0 | 1.00 |
| | HSK63A-SFH14C-90 | P2862021C | 14 | 27 | 34 | 90 | 47 | M10x1.0 | 0.91 |
| | HSK63A-SFH14C-160 | P2862022C | 14 | 27 | 34 | 160 | 47 | M10x1.0 | 1.30 |
| | HSK63A-SFH16C-95 | P2862023C | 16 | 27 | 34 | 95 | 50 | M12x1.0 | 0.98 |
| | HSK63A-SFH16C-160 | P2862024C | 16 | 27 | 34 | 160 | 50 | M12x1.0 | 1.40 |
| | HSK63A-SFH18C-95 | P2862025C | 18 | 33 | 42 | 95 | 50 | M12x1.0 | 0.98 |
| | HSK63A-SFH18C-160 | P2862026C | 18 | 33 | 42 | 160 | 50 | M12x1.0 | 1.40 |
| | HSK63A-SFH20C-100 | P2862027C | 20 | 33 | 42 | 100 | 52 | M16x1.0 | 1.00 |
| | HSK63A-SFH20C-160 | P2862028C | 20 | 33 | 42 | 160 | 52 | M16x1.0 | 1.40 |
| | HSK63A-SFH25C-115 | P2862029C | 25 | 44 | 53 | 115 | 58 | M16x1.0 | 1.40 |
| | HSK63A-SFH25C-160 | P2862030C | 25 | 44 | 53 | 160 | 58 | M16x1.0 | 1.80 |
| 100A | HSK100A-SFH6C-85 | P2862031C | 6 | 21 | 27 | 85 | 36 | M5x0.8 | 1.30 |
| | HSK100A-SFH6C-160 | P2862032C | 6 | 21 | 27 | 160 | 36 | M5x0.8 | 1.80 |
| | HSK100A-SFH8C-85 | P2862033C | 8 | 21 | 27 | 85 | 36 | M6x1.0 | 1.30 |
| | HSK100A-SFH8C-160 | P2862034C | 8 | 21 | 27 | 160 | 36 | M6x1.0 | 1.80 |
| | HSK100A-SFH10C-90 | P2862035C | 10 | 24 | 32 | 90 | 42 | M8x1.0 | 1.30 |
| | HSK100A-SFH10C-160 | P2862036C | 10 | 24 | 32 | 160 | 42 | M8x1.0 | 1.80 |
| | HSK100A-SFH12C-95 | P2862037C | 12 | 24 | 32 | 95 | 47 | M10x1.0 | 1.30 |
| | HSK100A-SFH12C-160 | P2862038C | 12 | 24 | 32 | 160 | 47 | M10x1.0 | 1.80 |
| | HSK100A-SFH14C-95 | P2862039C | 14 | 27 | 34 | 95 | 47 | M10x1.0 | 1.40 |
| | HSK100A-SFH14C-160 | P2862040C | 14 | 27 | 34 | 160 | 47 | M10x1.0 | 1.90 |
| | HSK100A-SFH16C-100 | P2862041C | 16 | 27 | 34 | 100 | 50 | M12x1.0 | 1.40 |
| | HSK100A-SFH16C-160 | P2862042C | 16 | 27 | 34 | 160 | 50 | M12x1.0 | 1.90 |
| | HSK100A-SFH18C-100 | P2862043C | 18 | 33 | 42 | 100 | 50 | M12x1.0 | 1.50 |
| | HSK100A-SFH18C-160 | P2862044C | 18 | 33 | 42 | 160 | 50 | M12x1.0 | 2.00 |
| | HSK100A-SFH20C-100 | P2862045C | 20 | 33 | 42 | 100 | 52 | M16x1.0 | 1.50 |
| | HSK100A-SFH20C-160 | P2862046C | 20 | 33 | 42 | 160 | 52 | M16x1.0 | 2.00 |
| | HSK100A-SFH25C-115 | P2862047C | 25 | 44 | 53 | 115 | 58 | M16x1.0 | 1.80 |
| | HSK100A-SFH25C-160 | P2862048C | 25 | 44 | 53 | 160 | 58 | M16x1.0 | 2.30 |

▶CAT(ANSI B5.50) taper and Inch type products are available. CAT(ANSI B5.50)锥柄及英制产品可供选择
▶Without balancing screw. 未组装动平衡螺钉
▶Resealable Coolant Channel type is available upon request. 可重新密封的冷却剂通道类型可根据需要提供

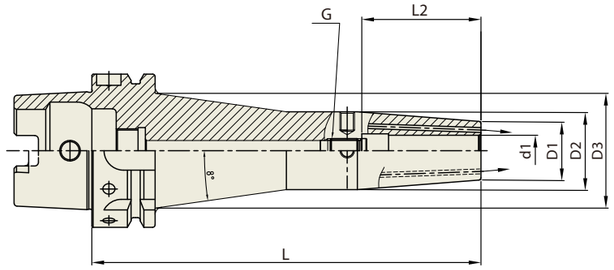
SHRINK FIT HOLDER

SFH

## SHRINK FIT HOLDER (REINFORCED)

DIN 69893/
ISO 12164-1-HSK FORM A

# 热缩刀柄 (加固)




DIN 69893-HSK | AT3 | 2.5G | 25,000 RPM | (at 3D) ≤3μm | AD+C

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | d1 | D1 | D2 | D3 | L | L2 | G | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|---|
| 63A | HSK63A-SFH6C TW-160 | P2801501TW | 6 | 21 | 27 | 42.2 | 160 | 36 | M5x0.8 | 1.36 |
| | HSK63A-SFH8C TW-160 | P2801502TW | 8 | 21 | 27 | 42.2 | 160 | 36 | M6x1.0 | 1.35 |
| | HSK63A-SFH10C TW-160 | P2801503TW | 10 | 24 | 32 | 47.2 | 160 | 42 | M8x1.0 | 1.56 |
| | HSK63A-SFH12C TW-160 | P2801504TW | 12 | 24 | 32 | 47.2 | 160 | 47 | M10x1.0 | 1.55 |
| | HSK63A-SFH14C TW-160 | P2801505TW | 14 | 27 | 34 | 49.2 | 160 | 47 | M10x1.0 | 1.52 |
| | HSK63A-SFH16C TW-160 | P2801506TW | 16 | 27 | 34 | 49.2 | 160 | 50 | M12x1.0 | 1.64 |
| 100A | HSK100A-SFH6C TW-160 | P2801507TW | 6 | 21 | 27 | 41.3 | 160 | 36 | M5x0.8 | 2.73 |
| | HSK100A-SFH8C TW-160 | P2801508TW | 8 | 21 | 27 | 41.3 | 160 | 36 | M6x1.0 | 2.72 |
| | HSK100A-SFH10C TW-160 | P2801509TW | 10 | 24 | 32 | 46.3 | 160 | 42 | M8x1.0 | 2.92 |
| | HSK100A-SFH12C TW-160 | P2801510TW | 12 | 24 | 32 | 46.3 | 160 | 47 | M10x1.0 | 2.90 |
| | HSK100A-SFH14C TW-160 | P2801511TW | 14 | 27 | 34 | 48.3 | 160 | 47 | M10x1.0 | 3.05 |
| | HSK100A-SFH16C TW-160 | P2801512TW | 16 | 27 | 34 | 48.3 | 160 | 50 | M12x1.0 | 3.03 |
| | HSK100A-SFH18C TW-160 | P2801513TW | 18 | 33 | 42 | 56.3 | 160 | 50 | M12x1.0 | 3.39 |
| | HSK100A-SFH20C TW-160 | P2801514TW | 20 | 33 | 42 | 56.3 | 160 | 52 | M16x1.0 | 3.36 |

▶CAT(ANSI B5.50) taper and Inch type products are available.
CAT(ANSI B5.50)锥柄及英制产品可供选择

▶Without balancing screw.
未组装动平衡螺钉



SHRINK FIT HOLDER

SFH

## SHRINK FIT HOLDER

CBT
(BT DUAL CONTACT)

# 热缩刀柄

FIG.1

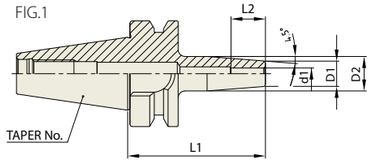
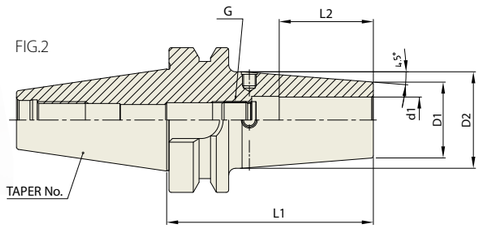



FIG.2




CBT | AT3 | 2.5G | 25,000 RPM | (at 3D) ≤3μm | AD

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | d1 | D1 | D2 | L | L2 | G | FIG. | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|---|
| 30 | CBT30-SFH3-60 | P2771505 | 3 | 11 | 15 | 60 | 10 | - | 1 | 0.40 |
| | CBT30-SFH4-60 | P2771506 | 4 | 11 | 15 | 60 | 12 | - | 1 | 0.40 |
| | CBT30-SFH5-60 | P2771507 | 5 | 11 | 15 | 60 | 15 | - | 1 | 0.40 |
| | CBT30-SFH6-60 | P2771508 | 6 | 21 | 27 | 60 | 36 | M5×0.8 | 2 | 0.40 |
| | CBT30-SFH8-60 | P2771509 | 8 | 21 | 27 | 60 | 36 | M6×1.0 | 2 | 0.40 |
| | CBT30-SFH10-80 | P2771510 | 10 | 24 | 32 | 80 | 41 | M8×1.0 | 2 | 0.40 |
| | CBT30-SFH12-80 | P2771511 | 12 | 24 | 32 | 80 | 48 | M10×1.0 | 2 | 0.42 |
| | CBT30-SFH14-80 | P2771512 | 14 | 27 | 34 | 80 | 48 | M10×1.0 | 2 | |
| | CBT30-SFH16-80 | P2771513 | 16 | 27 | 34 | 80 | 51 | M12×1.0 | 2 | 0.42 |
| | CBT30-SFH18-80 | P2771514 | 18 | 27 | 34 | 80 | 51 | M12×1.0 | 2 | |
| | CBT30-SFH20-90 | P2771515 | 20 | 33 | 42 | 90 | 53 | M16×1.0 | 2 | 0.44 |
| 40 | CBT40-SFH3-90 | P2771516 | 3 | 11 | 15 | 90 | 10 | - | 1 | 1.00 |
| | CBT40-SFH4-90 | P2771517 | 4 | 11 | 15 | 90 | 12 | - | 1 | 1.00 |
| | CBT40-SFH5-90 | P2771518 | 5 | 11 | 15 | 90 | 23 | - | 1 | 1.00 |
| | CBT40-SFH6-90 | P2771519 | 6 | 21 | 27 | 90 | 36 | M5×0.8 | 2 | 1.10 |
| | CBT40-SFH6-160 | P2771520 | 6 | 21 | 27 | 160 | 36 | M5×0.8 | 2 | 1.15 |
| | CBT40-SFH8-90 | P2771501 | 8 | 21 | 27 | 90 | 36 | M6×1.0 | 2 | 1.11 |
| | CBT40-SFH8-160 | P2771521 | 8 | 21 | 27 | 160 | 36 | M6×1.0 | 2 | 1.15 |
| | CBT40-SFH10-90 | P2771502 | 10 | 24 | 32 | 90 | 41 | M8×1.0 | 2 | 1.10 |
| | CBT40-SFH10-160 | P2771522 | 10 | 24 | 32 | 160 | 41 | M8×1.0 | 2 | 1.15 |
| | CBT40-SFH12-90 | P2771503 | 12 | 24 | 32 | 90 | 47 | M10×1.0 | 2 | 1.10 |
| | CBT40-SFH12-160 | P2771523 | 12 | 24 | 32 | 160 | 47 | M10×1.0 | 2 | 1.15 |
| | CBT40-SFH14-90 | P2771524 | 14 | 27 | 34 | 90 | 47 | M10×1.0 | 2 | 1.20 |
| | CBT40-SFH14-160 | P2771525 | 14 | 27 | 34 | 160 | 47 | M10×1.0 | 2 | 1.50 |
| | CBT40-SFH16-90 | P2771526 | 16 | 27 | 34 | 90 | 50 | M12×1.0 | 2 | 1.20 |
| | CBT40-SFH16-160 | P2771527 | 16 | 27 | 34 | 160 | 50 | M12×1.0 | 2 | 1.50 |
| | CBT40-SFH18-90 | P2771528 | 18 | 33 | 42 | 90 | 50 | M12×1.0 | 2 | 1.30 |
| | CBT40-SFH18-160 | P2771529 | 18 | 33 | 42 | 160 | 50 | M12×1.0 | 2 | 1.60 |
| | CBT40-SFH20-90 | P2771504 | 20 | 33 | 42 | 90 | 52 | M16×1.0 | 2 | 1.40 |
| | CBT40-SFH20-160 | P2771530 | 20 | 33 | 42 | 160 | 52 | M16×1.0 | 2 | 1.70 |
| | CBT40-SFH25-100 | P2771531 | 25 | 44 | 53 | 100 | 58 | M16×1.0 | 2 | 1.70 |
| | CBT40-SFH25-160 | P2771532 | 25 | 44 | 53 | 160 | 58 | M16×1.0 | 2 | 2.00 |

▶Without balancing screw.
未组装动平衡螺钉

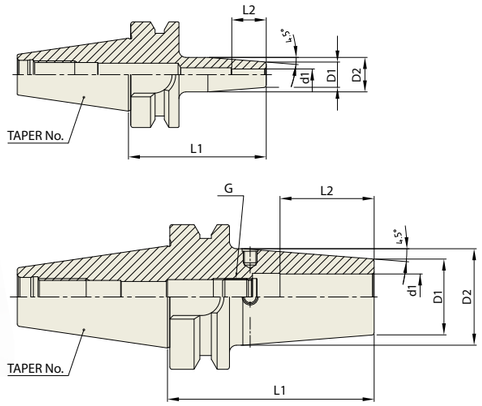
SHRINK FIT HOLDER

SFH

## SHRINK FIT HOLDER

CBT
(BT DUAL CONTACT)

# 热缩刀柄




CBT | AT3 | 2.5G | 25,000 RPM | (at 3D) ≤3μm | AD

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | d1 | D1 | D2 | L | L2 | G | FIG. | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|---|
| 50 | CBT50-SFH3-100 | P2771533 | 3 | 11 | 15 | 100 | 10 | - | 1 | 1.50 |
| | CBT50-SFH4-100 | P2771534 | 4 | 11 | 15 | 100 | 12 | - | 1 | 1.50 |
| | CBT50-SFH5-100 | P2771535 | 5 | 11 | 15 | 100 | 15 | - | 1 | 1.50 |
| | CBT50-SFH6-100 | P2771536 | 6 | 21 | 27 | 100 | 36 | M5×0.8 | 2 | 1.50 |
| | CBT50-SFH6-160 | P2771537 | 6 | 21 | 27 | 160 | 36 | M5×0.8 | 2 | 2.00 |
| | CBT50-SFH8-100 | P2771538 | 8 | 21 | 27 | 100 | 36 | M6×1.0 | 2 | 1.50 |
| | CBT50-SFH8-160 | P2771539 | 8 | 21 | 27 | 160 | 36 | M6×1.0 | 2 | 2.00 |
| | CBT50-SFH10-100 | P2771540 | 10 | 24 | 32 | 100 | 42 | M8×1.0 | 2 | 1.50 |
| | CBT50-SFH10-160 | P2771541 | 10 | 24 | 32 | 160 | 42 | M8×1.0 | 2 | 2.00 |
| | CBT50-SFH12-100 | P2771542 | 12 | 24 | 32 | 100 | 47 | M10×1.0 | 2 | 1.50 |
| | CBT50-SFH12-160 | P2771543 | 12 | 24 | 32 | 160 | 47 | M10×1.0 | 2 | 2.00 |
| | CBT50-SFH14-100 | P2771544 | 14 | 27 | 34 | 100 | 47 | M10×1.0 | 2 | 1.60 |
| | CBT50-SFH14-160 | P2771545 | 14 | 27 | 34 | 160 | 47 | M10×1.0 | 2 | 2.10 |
| | CBT50-SFH16-100 | P2771546 | 16 | 27 | 34 | 100 | 50 | M12×1.0 | 2 | 1.60 |
| | CBT50-SFH16-160 | P2771547 | 16 | 27 | 34 | 160 | 50 | M12×1.0 | 2 | 2.10 |
| | CBT50-SFH18-100 | P2771548 | 18 | 33 | 42 | 100 | 50 | M12×1.0 | 2 | 1.60 |
| | CBT50-SFH18-160 | P2771549 | 18 | 33 | 42 | 160 | 50 | M12×1.0 | 2 | 2.00 |
| | CBT50-SFH20-100 | P2771550 | 20 | 33 | 42 | 100 | 52 | M16×1.0 | 2 | 1.80 |
| | CBT50-SFH20-160 | P2771551 | 20 | 33 | 42 | 160 | 52 | M16×1.0 | 2 | 2.20 |
| | CBT50-SFH25-100 | P2771552 | 25 | 44 | 53 | 100 | 58 | M16×1.0 | 2 | 2.00 |
| | CBT50-SFH25-160 | P2771553 | 25 | 44 | 53 | 160 | 58 | M16×1.0 | 2 | 2.40 |

▶Without balancing screw.
未组装动平衡螺钉



TOOLING SYSTEM
HYDRAULIC CHUCK
SHRINK FIT HOLDER
ER COLLET CHUCK
END MILL HOLDER & SIDE LOCK ARBOR
SHELL MILL ARBOR
POWER MILLING CHUCK
MORSE TAPER ARBOR
SK SLIM CHUCK
SYNCHRO TAPPING CHUCK
ONE STEP TAPPING CHUCK
TAPPING ER CHUCK
TAPPING CHUCK
FACE MILL ARBOR
COPY MILL ARBOR & INDEXABLE DRILL HOLDER
NC DRILL CHUCK & OTHER TOOL HOLDERS
BORING SYSTEM
ACCESSORY & OTHERS

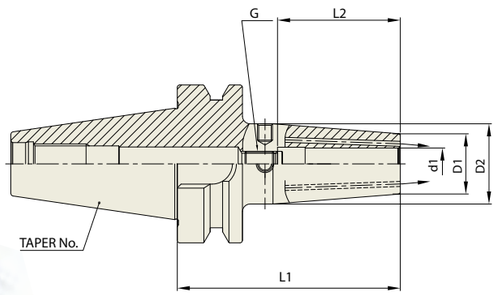
SHRINK FIT HOLDER

SFH

## SHRINK FIT HOLDER (COOLANT CHANNEL)

CBT
(BT DUAL CONTACT)

# 热缩刀柄 (冷却液喷射型)




CBT | AT3 | 2.5G | 25,000 RPM | (at 3D) ≤3μm | AD+C

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | d1 | D1 | D2 | L | L2 | G | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|
| 40 | CBT40-SFH6C-90 | P2862049C | 6 | 21 | 27 | 90 | 36 | M5x0.8 | 1.10 |
| | CBT40-SFH6C-160 | P2862050C | 6 | 21 | 27 | 160 | 36 | M5x0.8 | 1.15 |
| | CBT40-SFH8C-90 | P2862051C | 8 | 21 | 27 | 90 | 36 | M6x1.0 | 1.11 |
| | CBT40-SFH8C-160 | P2862052C | 8 | 21 | 27 | 160 | 36 | M6x1.0 | 1.15 |
| | CBT40-SFH10C-90 | P2862053C | 10 | 24 | 32 | 90 | 41 | M8x1.0 | 1.10 |
| | CBT40-SFH10C-160 | P2862054C | 10 | 24 | 32 | 160 | 41 | M8x1.0 | 1.15 |
| | CBT40-SFH12C-90 | P2862055C | 12 | 24 | 32 | 90 | 47 | M10x1.0 | 1.10 |
| | CBT40-SFH12C-160 | P2862056C | 12 | 24 | 32 | 160 | 47 | M10x1.0 | 1.15 |
| | CBT40-SFH14C-90 | P2862057C | 14 | 27 | 34 | 90 | 47 | M10x1.0 | 1.20 |
| | CBT40-SFH14C-160 | P2862058C | 14 | 27 | 34 | 160 | 47 | M10x1.0 | 1.50 |
| | CBT40-SFH16C-90 | P2862059C | 16 | 27 | 34 | 90 | 50 | M12x1.0 | 1.20 |
| | CBT40-SFH16C-160 | P2862060C | 16 | 27 | 34 | 160 | 50 | M12x1.0 | 1.50 |
| | CBT40-SFH18C-90 | P2862061C | 18 | 33 | 42 | 90 | 50 | M12x1.0 | 1.30 |
| | CBT40-SFH18C-160 | P2862062C | 18 | 33 | 42 | 160 | 50 | M12x1.0 | 1.60 |
| | CBT40-SFH20C-90 | P2862063C | 20 | 33 | 42 | 90 | 52 | M16x1.0 | 1.40 |
| | CBT40-SFH20C-160 | P2862064C | 20 | 33 | 42 | 160 | 52 | M16x1.0 | 1.70 |
| | CBT40-SFH25C-100 | P2862065C | 25 | 44 | 53 | 100 | 58 | M16x1.0 | 1.70 |
| | CBT40-SFH25C-160 | P2862066C | 25 | 44 | 53 | 160 | 58 | M16x1.0 | 2.00 |
| 50 | CBT50-SFH6C-100 | P2862067C | 6 | 21 | 27 | 100 | 36 | M5x0.8 | 1.50 |
| | CBT50-SFH6C-160 | P2862068C | 6 | 21 | 27 | 160 | 36 | M5x0.8 | 2.00 |
| | CBT50-SFH8C-100 | P2862069C | 8 | 21 | 27 | 100 | 36 | M6x1.0 | 1.50 |
| | CBT50-SFH8C-160 | P2862070C | 8 | 21 | 27 | 160 | 36 | M6x1.0 | 2.00 |
| | CBT50-SFH10C-100 | P2862071C | 10 | 24 | 32 | 100 | 42 | M8x1.0 | 1.10 |
| | CBT50-SFH10C-160 | P2862072C | 10 | 24 | 32 | 160 | 42 | M8x1.0 | 1.15 |
| | CBT50-SFH12C-100 | P2862073C | 12 | 24 | 32 | 100 | 47 | M10x1.0 | 1.60 |
| | CBT50-SFH12C-160 | P2862074C | 12 | 24 | 32 | 160 | 47 | M10x1.0 | 2.10 |
| | CBT50-SFH14C-100 | P2862075C | 14 | 27 | 34 | 100 | 47 | M10x1.0 | 1.60 |
| | CBT50-SFH14C-160 | P2862076C | 14 | 27 | 34 | 160 | 47 | M10x1.0 | 2.10 |
| | CBT50-SFH16C-100 | P2862077C | 16 | 27 | 34 | 100 | 50 | M12x1.0 | 1.60 |
| | CBT50-SFH16C-160 | P2862078C | 16 | 27 | 34 | 160 | 50 | M12x1.0 | 2.10 |
| | CBT50-SFH18C-100 | P2862079C | 18 | 33 | 42 | 100 | 50 | M12x1.0 | 1.60 |
| | CBT50-SFH18C-160 | P2862080C | 18 | 33 | 42 | 160 | 50 | M12x1.0 | 2.00 |
| | CBT50-SFH20C-100 | P2862081C | 20 | 33 | 42 | 100 | 52 | M16x1.0 | 1.80 |
| | CBT50-SFH20C-160 | P2862082C | 20 | 33 | 42 | 160 | 52 | M16x1.0 | 2.20 |
| | CBT50-SFH25C-100 | P2862083C | 25 | 44 | 53 | 100 | 58 | M16x1.0 | 2.00 |
| | CBT50-SFH25C-160 | P2862084C | 25 | 44 | 53 | 160 | 58 | M16x1.0 | 2.40 |

▶Without balancing screw. 未组装动平衡螺钉
▶Two Coolant Bores are a standard design for Coolant Channel type. 两个冷却孔是冷却通道ty的标准设计
▶Resealable Coolant Channel type is available upon request. 可重新密封的冷却剂通道类型可根据需要提供

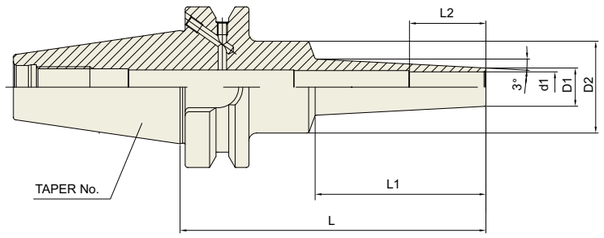
# SHRINK FIT HOLDER

SFHS

## SHRINK FIT HOLDER (EXTRA SLIM)

JIS B6339/
MAS 403-BT

## 热缩刀柄 (超细型)




DIN 69893-HSK | 2.5G | 25,000 RPM | (at 3D) ≤3μm | AD or AD/B

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | d1 | D1 | D2 | L | L1 | L2 | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|
| 30 | BT30-SFHS3-60 | P2779851S | 3 | 6 | 20 | 60 | 22 | 9 | |
| | BT30-SFHS3-80 | P2779852S | 3 | 6 | 20 | 80 | 42 | 9 | |
| | BT30-SFHS3-120 | P2779853S | 3 | 6 | 20 | 120 | 67 | 9 | |
| | BT30-SFHS4-60 | P2779854S | 4 | 7 | 20 | 60 | 22 | 12 | |
| | BT30-SFHS4-80 | P2779855S | 4 | 7 | 20 | 80 | 42 | 12 | |
| | BT30-SFHS4-120 | P2779856S | 4 | 7 | 20 | 120 | 67 | 12 | |
| | BT30-SFHS6-60 | P2779857S | 6 | 9 | 20 | 60 | 22 | 18 | |
| | BT30-SFHS6-80 | P2779858S | 6 | 9 | 20 | 80 | 42 | 18 | |
| | BT30-SFHS6-120 | P2779859S | 6 | 9 | 20 | 120 | 67 | 18 | |
| 40 | BT40AD/B-SFHS3-95 | P2779860S | 3 | 6 | 26 | 95 | 42 | 9 | |
| | BT40AD/B-SFHS3-120 | P2779861S | 3 | 6 | 26 | 120 | 67 | 9 | |
| | BT40AD/B-SFHS3-160 | P2779862S | 3 | 6 | 26 | 160 | 97 | 9 | |
| | BT40AD/B-SFHS4-95 | P2779863S | 4 | 7 | 26 | 95 | 42 | 12 | |
| | BT40AD/B-SFHS4-120 | P2779864S | 4 | 7 | 26 | 120 | 67 | 12 | |
| | BT40AD/B-SFHS4-160 | P2779865S | 4 | 7 | 26 | 160 | 97 | 12 | |
| | BT40AD/B-SFHS6-95 | P2779866S | 6 | 9 | 26 | 95 | 42 | 18 | |
| | BT40AD/B-SFHS6-120 | P2779867S | 6 | 9 | 26 | 120 | 67 | 18 | |
| | BT40AD/B-SFHS6-160 | P2779868S | 6 | 9 | 26 | 160 | 97 | 18 | |
| | BT40AD/B-SFHS8-95 | P2779869S | 8 | 11 | 36 | 95 | 42 | 24 | |
| | BT40AD/B-SFHS8-120 | P2779870S | 8 | 11 | 36 | 120 | 67 | 24 | |
| | BT40AD/B-SFHS8-160 | P2779871S | 8 | 11 | 36 | 160 | 97 | 24 | |
| | BT40AD/B-SFHS10-95 | P2779872S | 10 | 13 | 36 | 95 | 42 | 30 | |
| | BT40AD/B-SFHS10-120 | P2779873S | 10 | 13 | 36 | 120 | 67 | 30 | |
| | BT40AD/B-SFHS10-160 | P2779874S | 10 | 13 | 36 | 160 | 97 | 30 | |
| | BT40AD/B-SFHS12-95 | P2779875S | 12 | 15 | 36 | 95 | 42 | 30 | |
| | BT40AD/B-SFHS12-120 | P2779876S | 12 | 15 | 36 | 120 | 67 | 30 | |
| | BT40AD/B-SFHS12-160 | P2779877S | 12 | 15 | 36 | 160 | 97 | 30 | |
| 50 | BT50AD/B-SFHS3-110 | P2779878S | 3 | 6 | 26 | 110 | 42 | 9 | |
| | BT50AD/B-SFHS3-160 | P2779879S | 3 | 6 | 26 | 160 | 97 | 9 | |
| | BT50AD/B-SFHS4-110 | P2779880S | 4 | 7 | 26 | 110 | 42 | 12 | |
| | BT50AD/B-SFHS4-160 | P2779881S | 4 | 7 | 26 | 160 | 97 | 12 | |
| | BT50AD/B-SFHS6-110 | P2779882S | 6 | 9 | 26 | 110 | 42 | 18 | |
| | BT50AD/B-SFHS6-160 | P2779883S | 6 | 9 | 26 | 160 | 97 | 18 | |
| | BT50AD/B-SFHS8-110 | P2779884S | 8 | 11 | 36 | 110 | 42 | 24 | |
| | BT50AD/B-SFHS8-160 | P2779885S | 8 | 11 | 36 | 160 | 97 | 24 | |
| | BT50AD/B-SFHS10-110 | P2779886S | 10 | 13 | 36 | 110 | 42 | 30 | |
| | BT50AD/B-SFHS10-160 | P2779887S | 10 | 13 | 36 | 160 | 97 | 30 | |
| | BT50AD/B-SFHS12-110 | P2779888S | 12 | 15 | 36 | 110 | 42 | 30 | |
| | BT50AD/B-SFHS12-160 | P2779889S | 12 | 15 | 36 | 160 | 97 | 30 | |

▶ CBT(BT DUAL CONTACT) Holder available.
CBT(BT 两面接触)刀柄 可用

▶CAT(ANSI B5.50) taper and Inch type products are available.
CAT(ANSI B5.50)锥柄及英制产品可供选择





# SHRINK FIT HOLDER

SFH

## SHRINK FIT HOLDER

JIS B6339/
MAS 403-BT

## 热缩刀柄

FIG.1

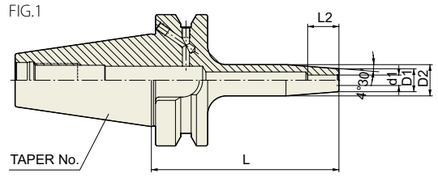
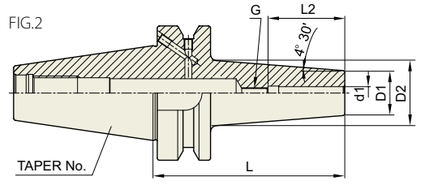



FIG.2




JIS B6339-BT | AT3 | 2.5G | 25,000 RPM | (at 3D) ≤3μm | AD/B

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | d1 | D1 | D2 | L | L2 | G | FIG. | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|---|
| 30 | BT30AD/B-SFH3-60 | P2776703 | 3 | 11 | 15 | 60 | 10 | - | 1 | 0.40 |
| | BT30AD/B-SFH4-60 | P2776702 | 4 | 11 | 15 | 60 | 12 | - | 1 | 0.40 |
| | BT30AD/B-SFH5-60 | P2776704 | 5 | 11 | 15 | 60 | 15 | - | 1 | 0.40 |
| | BT30AD/B-SFH6-60 | P2776701 | 6 | 21 | 27 | 60 | 36 | M5×0.8 | 2 | 0.40 |
| | BT30AD/B-SFH8-60 | P2776705 | 8 | 21 | 27 | 60 | 36 | M6×1.0 | 2 | 0.40 |
| | BT30AD/B-SFH10-80 | P2776706 | 10 | 24 | 32 | 80 | 42 | M8×1.0 | 2 | 0.40 |
| | BT30AD/B-SFH12-80 | P2776707 | 12 | 24 | 32 | 80 | 47 | M10×1.0 | 2 | 0.42 |
| | BT30AD/B-SFH14-80 | P2776708 | 14 | 27 | 34 | 80 | 47 | M10×1.0 | 2 | |
| | BT30AD/B-SFH16-80 | P2776709 | 16 | 27 | 34 | 80 | 50 | M12×1.0 | 2 | 0.42 |
| | BT30AD/B-SFH18-80 | P2776710 | 18 | 33 | 42 | 80 | 50 | M12×1.0 | 2 | |
| | BT30AD/B-SFH20-90 | P2776711 | 20 | 33 | 42 | 90 | 52 | M16×1.0 | 2 | 0.44 |
| 40 | BT40AD/B-SFH3-90 | P2776712 | 3 | 11 | 15 | 90 | 10 | - | 1 | 1.00 |
| | BT40AD/B-SFH4-90 | P2776713 | 4 | 11 | 15 | 90 | 12 | - | 1 | 1.00 |
| | BT40AD/B-SFH5-90 | P2776714 | 5 | 11 | 15 | 90 | 15 | - | 1 | 1.00 |
| | BT40AD/B-SFH6-90 | P2771601 | 6 | 21 | 27 | 90 | 36 | M5×0.8 | 2 | 1.10 |
| | BT40AD/B-SFH6-160 | P2771602 | 6 | 21 | 27 | 160 | 36 | M5×0.8 | 2 | 1.15 |
| | BT40AD/B-SFH8-90 | P2771603 | 8 | 21 | 27 | 90 | 36 | M6×1.0 | 2 | 1.11 |
| | BT40AD/B-SFH8-160 | P2771604 | 8 | 21 | 27 | 160 | 36 | M6×1.0 | 2 | 1.15 |
| | BT40AD/B-SFH10-90 | P2771605 | 10 | 24 | 32 | 90 | 42 | M8×1.0 | 2 | 1.10 |
| | BT40AD/B-SFH10-160 | P2771606 | 10 | 24 | 32 | 160 | 42 | M8×1.0 | 2 | 1.15 |
| | BT40AD/B-SFH12-90 | P2771607 | 12 | 24 | 32 | 90 | 47 | M10×1.0 | 2 | 1.10 |
| | BT40AD/B-SFH12-160 | P2771608 | 12 | 24 | 32 | 160 | 47 | M10×1.0 | 2 | 1.15 |
| | BT40AD/B-SFH14-90 | P2771611 | 14 | 27 | 34 | 90 | 47 | M10×1.0 | 2 | 1.20 |
| | BT40AD/B-SFH14-160 | P2771612 | 14 | 27 | 34 | 160 | 47 | M10×1.0 | 2 | 1.50 |
| | BT40AD/B-SFH16-90 | P2771609 | 16 | 27 | 34 | 90 | 50 | M12×1.0 | 2 | 1.20 |
| | BT40AD/B-SFH16-160 | P2771610 | 16 | 27 | 34 | 160 | 50 | M12×1.0 | 2 | 1.50 |
| | BT40AD/B-SFH18-90 | P2771613 | 18 | 33 | 42 | 90 | 50 | M12×1.0 | 2 | 1.30 |
| | BT40AD/B-SFH18-160 | P2771614 | 18 | 33 | 42 | 160 | 50 | M12×1.0 | 2 | 1.60 |
| | BT40AD/B-SFH20-90 | P2771615 | 20 | 33 | 42 | 90 | 52 | M16×1.0 | 2 | 1.40 |
| | BT40AD/B-SFH20-160 | P2771616 | 20 | 33 | 42 | 160 | 52 | M16×1.0 | 2 | 1.70 |
| | BT40AD/B-SFH25-100 | P2771617 | 25 | 44 | 53 | 100 | 58 | M16×1.0 | 2 | 1.70 |
| | BT40AD/B-SFH25-160 | P2771618 | 25 | 44 | 53 | 160 | 58 | M16×1.0 | 2 | 2.00 |

▶CAT(ANSI B5.50) taper and Inch type products are available.
CAT(ANSI B5.50)锥柄及英制产品可供选择

▶Without balancing screw.
未组装动平衡螺钉

SHRINK FIT HOLDER

SFH

# SHRINK FIT HOLDER
# 热缩刀柄

JIS B6339/
MAS 403-BT

JIS B6339-BT | AT3 | 2.5G | 25,000 RPM | (at 3D) ≤3μm | AD/B

FIG.1

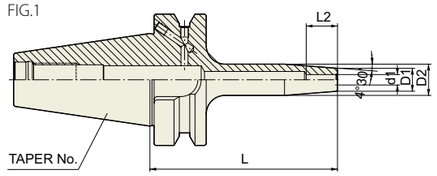
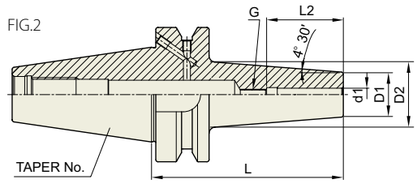



FIG.2




Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | d1 | D1 | D2 | L | L2 | G | FIG. | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|---|
| 50 | BT50AD/B-SFH3-100 | P2771619 | 3 | 11 | 15 | 100 | 10 | - | 1 | 1.50 |
| | BT50AD/B-SFH4-100 | P2771620 | 4 | 11 | 15 | 100 | 12 | - | 1 | 1.50 |
| | BT50AD/B-SFH5-100 | P2771621 | 5 | 11 | 15 | 100 | 15 | - | 1 | 1.50 |
| | BT50AD/B-SFH6-100 | P2771622 | 6 | 21 | 27 | 100 | 36 | M5×0.8 | 2 | 1.50 |
| | BT50AD/B-SFH6-160 | P2771623 | 6 | 21 | 27 | 160 | 36 | M5×0.8 | 2 | 2.00 |
| | BT50AD/B-SFH8-100 | P2771624 | 8 | 21 | 27 | 100 | 36 | M6×1.0 | 2 | 1.50 |
| | BT50AD/B-SFH8-160 | P2771625 | 8 | 21 | 27 | 160 | 36 | M6×1.0 | 2 | 2.00 |
| | BT50AD/B-SFH10-100 | P2771626 | 10 | 24 | 32 | 100 | 42 | M8×1.0 | 2 | 1.50 |
| | BT50AD/B-SFH10-160 | P2771627 | 10 | 24 | 32 | 160 | 42 | M8×1.0 | 2 | 2.00 |
| | BT50AD/B-SFH12-100 | P2771628 | 12 | 24 | 32 | 100 | 47 | M10×1.0 | 2 | 1.50 |
| | BT50AD/B-SFH12-160 | P2771629 | 12 | 24 | 32 | 160 | 47 | M10×1.0 | 2 | 2.00 |
| | BT50AD/B-SFH14-100 | P2771630 | 14 | 27 | 34 | 100 | 47 | M10×1.0 | 2 | 1.60 |
| | BT50AD/B-SFH14-160 | P2771631 | 14 | 27 | 34 | 160 | 47 | M10×1.0 | 2 | 2.10 |
| | BT50AD/B-SFH16-100 | P2771632 | 16 | 27 | 34 | 100 | 50 | M12×1.0 | 2 | 1.60 |
| | BT50AD/B-SFH16-160 | P2771633 | 16 | 27 | 34 | 160 | 50 | M12×1.0 | 2 | 2.10 |
| | BT50AD/B-SFH18-100 | P2771634 | 18 | 33 | 42 | 100 | 50 | M12×1.0 | 2 | 1.60 |
| | BT50AD/B-SFH18-160 | P2771635 | 18 | 33 | 42 | 160 | 50 | M12×1.0 | 2 | 2.00 |
| | BT50AD/B-SFH20-100 | P2771636 | 20 | 33 | 42 | 100 | 52 | M16×1.0 | 2 | 1.80 |
| | BT50AD/B-SFH20-160 | P2771637 | 20 | 33 | 42 | 160 | 52 | M16×1.0 | 2 | 2.20 |
| | BT50AD/B-SFH25-100 | P2771638 | 25 | 44 | 53 | 100 | 58 | M16×1.0 | 2 | 2.00 |
| | BT50AD/B-SFH25-160 | P2771639 | 25 | 44 | 53 | 160 | 58 | M16×1.0 | 2 | 2.40 |

▶CAT(ANSI B5.50) taper and Inch type products are available.
CAT(ANSI B5.50)锥柄及英制产品可供选择

▶Without balancing screw.
未组装动平衡螺钉



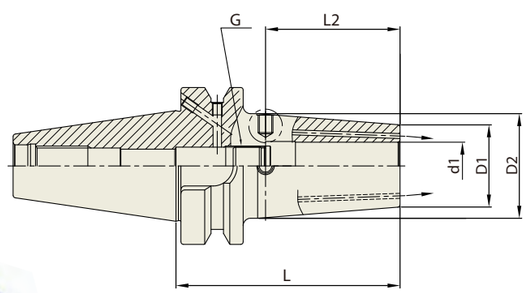
TOOLING SYSTEM
HYDRAULIC CHUCK
SHRINK FIT HOLDER
ER COLLET CHUCK
END MILL HOLDER & SIDE LOCK ARBOR
SHELL MILL ARBOR
POWER MILLING CHUCK
MORSE TAPER ARBOR
SK SLIM CHUCK
SYNCHRO TAPPING CHUCK
ONE STEP TAPPING CHUCK
TAPPING ER CHUCK
TAPPING CHUCK
FACE MILL ARBOR
COPY MILL ARBOR & INDEXABLE DRILL HOLDER
NC DRILL CHUCK & OTHER TOOL HOLDERS
BORING SYSTEM
ACCESSORY & OTHERS

SHRINK FIT HOLDER

SFH

# SHRINK FIT HOLDER (COOLANT CHANNEL)
# 热缩刀柄 (冷却液喷射型)

JIS B6339/
MAS 403-BT




JIS B6339-BT | AT3 | 2.5G | 25,000 RPM | (at 3D) ≤3μm | AD/B+C

Unit (单位) : mm

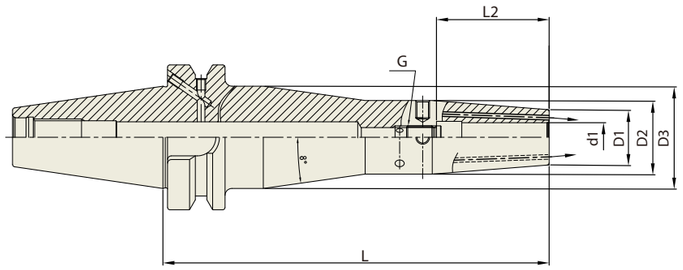
| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | d1 | D1 | D2 | L | L2 | G | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|
| 40 | BT40AD/B-SFH6C-90 | P2862085C | 6 | 21 | 27 | 90 | 36 | M5x0.8 | 1.10 |
| | BT40AD/B-SFH6C-160 | P2862086C | 6 | 21 | 27 | 160 | 36 | M5x0.8 | 1.15 |
| | BT40AD/B-SFH8C-90 | P2862087C | 8 | 21 | 27 | 90 | 36 | M6x1.0 | 1.11 |
| | BT40AD/B-SFH8C-160 | P2862088C | 8 | 21 | 27 | 160 | 36 | M6x1.0 | 1.15 |
| | BT40AD/B-SFH10C-90 | P2862089C | 10 | 24 | 32 | 90 | 41 | M8x1.0 | 1.10 |
| | BT40AD/B-SFH10C-160 | P2862090C | 10 | 24 | 32 | 160 | 41 | M8x1.0 | 1.15 |
| | BT40AD/B-SFH12C-90 | P2862091C | 12 | 24 | 32 | 90 | 47 | M10x1.0 | 1.10 |
| | BT40AD/B-SFH12C-160 | P2862092C | 12 | 24 | 32 | 160 | 47 | M10x1.0 | 1.15 |
| | BT40AD/B-SFH14C-90 | P2862093C | 14 | 27 | 34 | 90 | 47 | M10x1.0 | 1.20 |
| | BT40AD/B-SFH14C-160 | P2862094C | 14 | 27 | 34 | 160 | 47 | M10x1.0 | 1.50 |
| | BT40AD/B-SFH16C-90 | P2862095C | 16 | 27 | 34 | 90 | 50 | M12x1.0 | 1.20 |
| | BT40AD/B-SFH16C-160 | P2862096C | 16 | 27 | 34 | 160 | 50 | M12x1.0 | 1.50 |
| | BT40AD/B-SFH18C-90 | P2862097C | 18 | 33 | 42 | 90 | 50 | M12x1.0 | 1.30 |
| | BT40AD/B-SFH18C-160 | P2862098C | 18 | 33 | 42 | 160 | 50 | M12x1.0 | 1.60 |
| | BT40AD/B-SFH20C-90 | P2862099C | 20 | 33 | 42 | 90 | 52 | M16x1.0 | 1.40 |
| | BT40AD/B-SFH20C-160 | P2862100C | 20 | 33 | 42 | 160 | 52 | M16x1.0 | 1.70 |
| | BT40AD/B-SFH25C-100 | P2862101C | 25 | 44 | 53 | 100 | 58 | M16x1.0 | 1.70 |
| | BT40AD/B-SFH25C-160 | P2862102C | 25 | 44 | 53 | 160 | 58 | M16x1.0 | 2.00 |
| 50 | BT50AD/B-SFH6C-100 | P2862103C | 6 | 21 | 27 | 100 | 36 | M5x0.8 | 1.50 |
| | BT50AD/B-SFH6C-160 | P2862104C | 6 | 21 | 27 | 160 | 36 | M5x0.8 | 2.00 |
| | BT50AD/B-SFH8C-100 | P2862105C | 8 | 21 | 27 | 100 | 36 | M6x1.0 | 1.50 |
| | BT50AD/B-SFH8C-160 | P2862106C | 8 | 21 | 27 | 160 | 36 | M6x1.0 | 2.00 |
| | BT50AD/B-SFH10C-100 | P2862107C | 10 | 24 | 32 | 100 | 42 | M8x1.0 | 1.10 |
| | BT50AD/B-SFH10C-160 | P2862108C | 10 | 24 | 32 | 160 | 42 | M8x1.0 | 1.15 |
| | BT50AD/B-SFH12C-100 | P2862109C | 12 | 24 | 32 | 100 | 47 | M10x1.0 | 1.60 |
| | BT50AD/B-SFH12C-160 | P2862110C | 12 | 24 | 32 | 160 | 47 | M10x1.0 | 2.10 |
| | BT50AD/B-SFH14C-100 | P2862111C | 14 | 27 | 34 | 100 | 47 | M10x1.0 | 1.60 |
| | BT50AD/B-SFH14C-160 | P2862112C | 14 | 27 | 34 | 160 | 47 | M10x1.0 | 2.10 |
| | BT50AD/B-SFH16C-100 | P2862113C | 16 | 27 | 34 | 100 | 50 | M12x1.0 | 1.60 |
| | BT50AD/B-SFH16C-160 | P2862114C | 16 | 27 | 34 | 160 | 50 | M12x1.0 | 2.10 |
| | BT50AD/B-SFH18C-100 | P2862115C | 18 | 33 | 42 | 100 | 50 | M12x1.0 | 1.60 |
| | BT50AD/B-SFH18C-160 | P2862116C | 18 | 33 | 42 | 160 | 50 | M12x1.0 | 2.00 |
| | BT50AD/B-SFH20C-100 | P2862117C | 20 | 33 | 42 | 100 | 52 | M16x1.0 | 1.80 |
| | BT50AD/B-SFH20C-160 | P2862118C | 20 | 33 | 42 | 160 | 52 | M16x1.0 | 2.20 |
| | BT50AD/B-SFH25C-100 | P2862119C | 25 | 44 | 53 | 100 | 58 | M16x1.0 | 2.00 |
| | BT50AD/B-SFH25C-160 | P2862120C | 25 | 44 | 53 | 160 | 58 | M16x1.0 | 2.40 |

▶CAT(ANSI B5.50) taper and Inch type products are available. CAT(ANSI B5.50)锥柄及英制产品可供选择
▶Without balancing screw. 未组装动平衡螺钉
▶Resealable Coolant Channel type is available upon request. 可重新密封的冷却剂通道类型可根据需要提供

## SHRINK FIT HOLDER (REINFORCED)

JIS B6339/
MAS 403-BT

# 热缩刀柄 (加固)




JIS B6339-BT | AT3 | 2.5G | 25,000 RPM | (at 3D) ≤3μm | AD/B+C

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | d1 | D1 | D2 | D3 | L | L2 | G | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|---|
| 40 | BT40AD/B-SFH6C TW-160 | P2801601TW | 6 | 21 | 27 | 41.9 | 160 | 36 | M5x0.8 | 1.64 |
| | BT40AD/B-SFH8C TW-160 | P2801602TW | 8 | 21 | 27 | 41.9 | 160 | 36 | M6x1.0 | 1.63 |
| | BT40AD/B-SFH10C TW-160 | P2801603TW | 10 | 24 | 32 | 46.9 | 160 | 42 | M8x1.0 | 1.84 |
| | BT40AD/B-SFH12C TW-160 | P2801604TW | 12 | 24 | 32 | 46.9 | 160 | 47 | M10x1.0 | 1.83 |
| | BT40AD/B-SFH14C TW-160 | P2801605TW | 14 | 27 | 34 | 48.9 | 160 | 47 | M10x1.0 | 1.80 |
| | BT40AD/B-SFH16C TW-160 | P2801606TW | 16 | 27 | 34 | 48.9 | 160 | 50 | M12x1.0 | 1.92 |
| 50 | BT50AD/B-SFH6C TW-160 | P2801607TW | 6 | 21 | 27 | 38.8 | 160 | 36 | M5x0.8 | 4.12 |
| | BT50AD/B-SFH8C TW-160 | P2801608TW | 8 | 21 | 27 | 38.8 | 160 | 36 | M6x1.0 | 4.57 |
| | BT50AD/B-SFH10C TW-160 | P2801609TW | 10 | 24 | 32 | 43.8 | 160 | 42 | M8x1.0 | 4.76 |
| | BT50AD/B-SFH12C TW-160 | P2801610TW | 12 | 24 | 32 | 43.8 | 160 | 47 | M10x1.0 | 4.74 |
| | BT50AD/B-SFH14C TW-160 | P2801611TW | 14 | 27 | 34 | 45.8 | 160 | 47 | M10x1.0 | 4.70 |
| | BT50AD/B-SFH16C TW-160 | P2801612TW | 16 | 27 | 34 | 45.8 | 160 | 50 | M12x1.0 | 4.69 |
| | BT50AD/B-SFH20C TW-160 | P2801613TW | 20 | 33 | 42 | 53.8 | 160 | 52 | M16x1.0 | 5.17 |

▶CAT(ANSI B5.50) taper and Inch type products are available.
CAT(ANSI B5.50)锥柄及英制产品可供选择

▶Without balancing screw.
未组装动平衡螺钉





## SHRINK FIT HOLDER

ISO 25

# 热缩刀柄

FIG.1

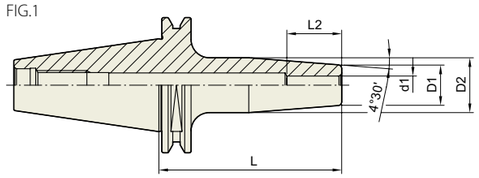
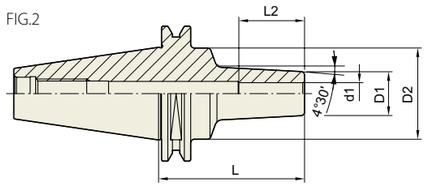



FIG.2




ISO 25 | AT3 | 2.5G | 30,000 RPM | (at 3D) ≤3μm | AD

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | d1 | D1 | D2 | L | L2 | FIG. | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|
| 25 | ISO25-SFH3-50 | P2771651 | 3 | 11 | 15 | 50 | 10 | 1 | |
| | ISO25-SFH4-50 | P2771652 | 4 | 11 | 15 | 50 | 12 | 1 | |
| | ISO25-SFH5-50 | P2771653 | 5 | 11 | 15 | 50 | 15 | 1 | |
| | ISO25-SFH6-40 | P2771654 | 6 | 12 | 17 | 40 | 18 | 2 | |
| | ISO25-SFH8-50 | P2771655 | 8 | 14 | 18 | 50 | 30 | 2 | |
| | ISO25-SFH10-50 | P2771656 | 10 | 16 | 20 | 50 | 37 | 2 | |

▶Higher balancing grade is available upon request.
可根据要求提供高动平衡等级

▶To be supplied with assembling of pull stud bolt.
可供应拉丁组装型产品

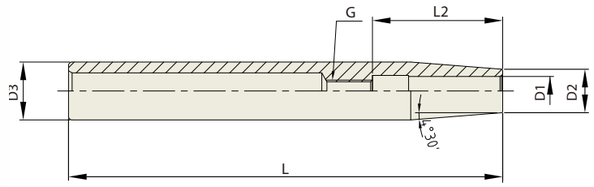
# SHRINK FIT HOLDER

SFH

## SHRINK FIT HOLDER (EXTENSION)

STRAIGHT

## 热缩刀柄 (延长杆)




Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | D1 | D2 | D3 | L | L1 | G | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|
| 12 | ST12-SFH3-120 | P2767010 | 3 | 8 | 12 | 120 | 10 | - | 0.05 |
| | ST12-SFH4-120 | P2767015 | 4 | 8 | 12 | 120 | 12 | - | 0.05 |
| | ST12-SFH5-120 | P2771701 | 5 | 10 | 12 | 120 | 15 | - | 0.08 |
| | ST12-SFH6-120 | P2771709 | 6 | 10 | 12 | 120 | 36 | M5×0.8 | 0.07 |
| 16 | ST16-SFH3-120 | P2767110 | 3 | 10 | 16 | 120 | 10 | - | 0.14 |
| | ST16-SFH4-120 | P2767115 | 4 | 10 | 16 | 120 | 12 | - | 0.14 |
| | ST16-SFH5-120 | P2771702 | 5 | 10 | 16 | 120 | 15 | - | 0.14 |
| | ST16-SFH6-120 | P2771710 | 6 | 10 | 16 | 120 | 36 | M5×0.8 | 0.14 |
| | ST16-SFH8-120 | P2771711 | 8 | 12 | 16 | 120 | 36 | M6×1.0 | 0.12 |
| 20 | ST20-SFH3-120 | P2771703 | 3 | 10 | 20 | 120 | 10 | - | 0.21 |
| | ST20-SFH4-120 | P2771704 | 4 | 10 | 20 | 120 | 12 | - | 0.21 |
| | ST20-SFH5-120 | P2771705 | 5 | 10 | 20 | 120 | 15 | - | 0.20 |
| | ST20-SFH6-120 | P2771712 | 6 | 10 | 20 | 120 | 36 | M5×0.8 | 0.20 |
| | ST20-SFH8-120 | P2771713 | 8 | 12 | 20 | 120 | 36 | M6×1.0 | 0.19 |
| | ST20-SFH10-120 | P2771714 | 10 | 14 | 20 | 120 | 43 | M8×1.0 | 0.20 |
| | ST20-SFH12-120 | P2771715 | 12 | 16 | 20 | 120 | 48 | M10×1.0 | 0.18 |

▶Inch type products are available.
可供应英制产品



TOOLING SYSTEM

HYDRAULIC CHUCK
SHRINK FIT HOLDER
ER COLLET CHUCK
END MILL HOLDER & SIDE LOCK ARBOR
SHELL MILL ARBOR
POWER MILLING CHUCK
MORSE TAPER ARBOR
SK SLIM CHUCK
SYNCHRO TAPPING CHUCK
ONE STEP TAPPING CHUCK
TAPPING ER CHUCK
TAPPING CHUCK
FACE MILL ARBOR
COPY MILL ARBOR & INDEXABLE DRILL HOLDER
NC DRILL CHUCK & OTHER TOOL HOLDERS
BORING SYSTEM
ACCESSORY & OTHERS

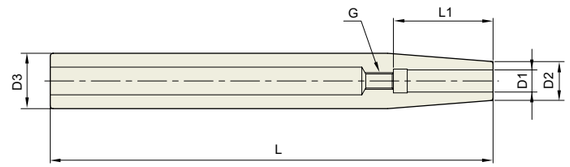
SHRINK FIT HOLDER

SFH

SHRINK FIT HOLDER (EXTENSION)

STRAIGHT

热缩刀柄 (延长杆)




Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | D1 | D2 | D3 | L | L1 | G | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|
| 12 | ST12-SFH3-160 | P2767020 | 3 | 8 | 12 | 160 | 10 | - | 0.07 |
| | ST12-SFH4-160 | P2767025 | 4 | 8 | 12 | 160 | 12 | - | 0.07 |
| | ST12-SFH5-160 | P2771706 | 5 | 10 | 12 | 160 | 15 | - | 0.10 |
| | ST12-SFH6-160 | P2767030 | 6 | 10 | 12 | 160 | 36 | M5×0.8 | 0.13 |
| 16 | ST16-SFH3-160 | P2767120 | 3 | 10 | 16 | 160 | 10 | - | 0.20 |
| | ST16-SFH4-160 | P2767125 | 4 | 10 | 16 | 160 | 12 | - | 0.20 |
| | ST16-SFH5-160 | P2771707 | 5 | 10 | 16 | 160 | 15 | - | 0.20 |
| | ST16-SFH6-160 | P2767130 | 6 | 10 | 16 | 160 | 36 | M5×0.8 | 0.19 |
| | ST16-SFH8-160 | P2767135 | 8 | 12 | 16 | 160 | 36 | M6×1.0 | 0.16 |
| 20 | ST20-SFH3-160 | P2767210 | 3 | 10 | 20 | 160 | 10 | - | 0.30 |
| | ST20-SFH4-160 | P2767215 | 4 | 10 | 20 | 160 | 12 | - | 0.30 |
| | ST20-SFH5-160 | P2771708 | 5 | 10 | 20 | 160 | 15 | - | 0.29 |
| | ST20-SFH6-160 | P2767220 | 6 | 10 | 20 | 160 | 36 | M5×0.8 | 0.29 |
| | ST20-SFH8-160 | P2767225 | 8 | 12 | 20 | 160 | 36 | M6×1.0 | 0.27 |
| | ST20-SFH10-160 | P2767230 | 10 | 14 | 20 | 160 | 43 | M8×1.0 | 0.27 |
| | ST20-SFH12-160 | P2767235 | 12 | 16 | 20 | 160 | 48 | M10×1.0 | 0.23 |
| 25 | ST25-SFH3-160 | P2771716 | 3 | 10 | 25 | 160 | 10 | - | 0.41 |
| | ST25-SFH4-160 | P2771717 | 4 | 10 | 25 | 160 | 12 | - | 0.39 |
| | ST25-SFH5-160 | P2771718 | 5 | 15 | 25 | 160 | 15 | - | 0.50 |
| | ST25-SFH6-160 | P2771719 | 6 | 20 | 25 | 160 | 36 | M5×0.8 | 0.55 |
| | ST25-SFH8-160 | P2771720 | 8 | 20 | 25 | 160 | 36 | M6×1.0 | 0.51 |
| | ST25-SFH10-160 | P2771721 | 10 | 20 | 25 | 160 | 43 | M8×1.0 | 0.50 |
| | ST25-SFH12-160 | P2771722 | 12 | 20 | 25 | 160 | 48 | M10×1.0 | 0.44 |
| | ST25-SFH14-160 | P2771723 | 14 | 20 | 25 | 160 | 48 | M10×1.0 | 0.40 |
| | ST25-SFH16-160 | P2771724 | 16 | 22 | 25 | 160 | 51 | M12×1.0 | 0.39 |
| 32 | ST32-SFH6-160 | P2771725 | 6 | 20 | 32 | 160 | 36 | M5×0.8 | 0.92 |
| | ST32-SFH8-160 | P2771726 | 8 | 20 | 32 | 160 | 36 | M6×1.0 | 0.88 |
| | ST32-SFH10-160 | P2771727 | 10 | 24 | 32 | 160 | 43 | M8×1.0 | 0.83 |
| | ST32-SFH12-160 | P2771728 | 12 | 24 | 32 | 160 | 48 | M10×1.0 | 0.78 |
| | ST32-SFH14-160 | P2771729 | 14 | 27 | 32 | 160 | 48 | M10×1.0 | 0.78 |
| | ST32-SFH16-160 | P2771730 | 16 | 27 | 32 | 160 | 51 | M12×1.0 | 0.76 |
| | ST32-SFH18-160 | P2771731 | 18 | 27 | 32 | 160 | 51 | M12×1.0 | 0.63 |
| | ST32-SFH20-160 | P2771732 | 20 | 27 | 32 | 160 | 53 | M16×1.0 | 0.60 |

▶Inch type products are available.
可供应英制产品

# SHRINK FIT HOLDER

SFH

## SHRINK FIT HEATING MACHINE
## 热缩刀柄加热器

## TECHINCAL INFORMATION
## 技术信息

### FEATURE

- ▶ Electromagnetic induction heating system
- ▶ Automatic voltage adjustment : AC 100V~240V
- ▶ Small size and light weight
- ▶ Easy to operate

### 特征&优点

- ▶ 电磁感应加热系统
- ▶ 对应AC100V~240V电压
- ▶ 体积小及重量轻
- ▶ 便于操作

### SPECIFICATION

| CHARACTERISTICS 特点 | SPECFICATION 主要配置 |
|---|---|
| MODEL No. 型号 | SF-3300 |
| EDP No. | P2781003 |
| Power 电源 | 100V~240V AC, 50/60Hz, Max. 3.6KW |
| Dimension 大小 | 380(W) x 350(D) x 720(H)mm |
| Weight 重量 | 22Kg |
| Holder Support 刀柄柄部 | SK, HSK, BT |

## YG-1 TOOLING SYSTEM

# ER COLLET CHUCK

# ER夹头刀柄

**DIN 69871-SK**

**DIN 69893/ISO 12164-1-HSK**

**CBT (BT DUAL CONTACT)**

**JIS B6339/MAS 403-BT**

**ISO 20/25**

**DIN 228-MTA/MTB**

**STRAIGHT-K**

**NC AND BRIDGEPORT-R8**

**GOST 25827-93**

**ACCESSORY & PART**

ER COLLET / TAP ER COLLET / ER NUT & SEALING DISK / SPANNER

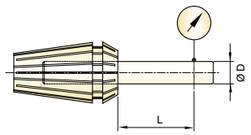
# ER COLLET CHUCK (ER夹头刀柄)

## FEATURE 特征

- Powerful chucking, high precision and easy operation
- Precise machining is stably maintained without chattering in High-Speed rotation.
- Due to nut designed with small bore, interference with work piece can be minimized and it enables speedy operation.
- Various nuts can be selected and used according to usage.
- Unlike single taper, double taper has long chucking part providing excellent torque power.

- 强劲的夹持力，高精密度，简便的操作性.
- 高速旋转，无振动，实现稳定的精密加工.
- 螺母小径设计，降低干涉，在高速加工时更加稳定.
- 多种规格的螺母，方便客户选用.
- 双锥，相对单锥夹持部位较长， 加持力更加优秀.

## HIGH PRECISION 高精密度




- By using high precision collet, excellent T.I.R can be achievable.
- With fine cutting of 16 sections, it has excellent contractile force, which makes higher precision can be achieved.

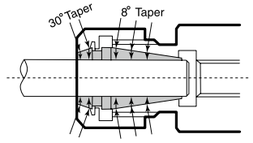
- 使用超精密筒夹降低振动(ER-UF)
- 微切16等分提高夹持伸缩力，更加提高精密度.

| D | L | Max.T.I.R(STD.) 最大.T.I.R(标准) |
|---|---|---|
| Ø1 ~ Ø1.6 | 6 | 0.015 |
| Ø1.6 ~ Ø3 | 10 | 0.015 |
| Ø3 ~ Ø6 | 16 | 0.015 |
| Ø6 ~ Ø10 | 25 | 0.015 |
| Ø10 ~ Ø18 | 40 | 0.020 |
| Ø18 ~ Ø26 | 50 | 0.020 |
| Ø26 ~ Ø34 | 60 | 0.020 |

## STRONG TORQUE POWER 强劲的夹持力

- Longer clamping part of double taper collet provides stronger torque power.
- Stronger torque power can be achieved if ball bearing nut is used.

- 双锥筒夹比单锥筒夹夹持面更广，故此夹持力更加优秀.
- 另外，使用滚珠轴承螺母进一步提高夹持力.



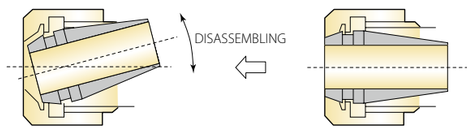

## EASY ASSEMBLING AND DISASSEMBLING 简便的操作性

- For assembling or disassembling of collet, first gently insert groove part of collet into eccentrical portion inside nut, and fasten it to same direction as screw or loosen it reversely.

- 首先，从螺母的偏心部位把筒夹卡住，之后螺母和筒夹一体根据螺纹的方向在刀柄上组装.

- Notice : In case of Ø12.2mm tool, don't use Ø12~11mm collet. But use collet with Ø12.5~11.5mm. (In case of general cutting process, Ø13~12mm collet is usable)

注意 : Ø 12.2mm钻头,绝不能使用在Ø12~11mm筒夹应使用 Ø12.5~11.5mm筒夹(若不进行精密加工可使用 Ø13~12mm筒夹)

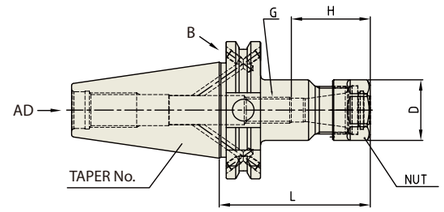







## ER COLLET CHUCK
## ER夹头刀柄

DIN 69871-SK




DIN 69871-SK | AT3 | 2.5G | 25,000 RPM | AD/B

ER Collet, Refer to page 103-109
ER 变径套，请参阅 103页～109页

ER nut, Sealing disk and Spanner refer to page 110-115
ER螺帽，密封圈，扳手 请参考110～115页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | CLAMPING RANGE 夹持范围 | L | D | G | H | NUT / COLLET 螺母 / 筒夹 | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|
| 40 | SK40AD/B-ER11-70 | P2774812 | 0.5 - 7.0 | 70 | 19 | M6 | 45 | ER11 | 0.90 |
| | SK40AD/B-ER11-100 | P2774826 | 0.5 - 7.0 | 100 | 19 | M6 | 45 | ER11 | 0.95 |
| | SK40AD/B-ER16-70 | P2774801 | 0.5 - 10.0 | 70 | 28 | M12 | 36 | ER16 | 0.44 |
| | SK40AD/B-ER16-100 | P2774804 | 0.5 - 10.0 | 100 | 28 | M12 | 36 | ER16 | 0.56 |
| | SK40AD/B-ER16-130 | P2774827 | 0.5 - 10.0 | 130 | 28 | M12 | 36 | ER16 | 0.69 |
| | SK40AD/B-ER16-160 | P2774828 | 0.5 - 10.0 | 160 | 28 | M12 | 36 | ER16 | 0.81 |
| | SK40AD/B-ER20-70 | P2774813 | 0.5 - 13.0 | 70 | 34 | M12 | 44.5 | ER20 | 0.47 |
| | SK40AD/B-ER20-100 | P2774820 | 0.5 - 13.0 | 100 | 34 | M12 | 44.5 | ER20 | 0.64 |
| | SK40AD/B-ER20-130 | P2774829 | 0.5 - 13.0 | 130 | 34 | M12 | 44.5 | ER20 | 0.80 |
| | SK40AD/B-ER20-160 | P2774830 | 0.5 - 13.0 | 160 | 34 | M12 | 44.5 | ER20 | 1.00 |
| | SK40AD/B-ER25-70 | P2774802 | 1.0 - 16.0 | 70 | 42 | M12 | 52 | ER25 | 0.56 |
| | SK40AD/B-ER25-100 | P2774805 | 1.0 - 16.0 | 100 | 42 | M12 | 52 | ER25 | 0.84 |
| | SK40AD/B-ER25-130 | P2774831 | 1.0 - 16.0 | 130 | 42 | M12 | 52 | ER25 | 1.14 |
| | SK40AD/B-ER25-160 | P2774832 | 1.0 - 16.0 | 160 | 42 | M12 | 52 | ER25 | 1.44 |
| | SK40AD/B-ER32-70 | P2774803 | 1.0 - 20.0 | 70 | 50 | M12 | 60 | ER32 | 0.51 |
| | SK40AD/B-ER32-100 | P2774806 | 1.0 - 20.0 | 100 | 50 | M12 | 60 | ER32 | 0.88 |
| | SK40AD/B-ER32-130 | P2774833 | 1.0 - 20.0 | 130 | 50 | M12 | 60 | ER32 | 1.21 |
| | SK40AD/B-ER32-160 | P2774834 | 1.0 - 20.0 | 160 | 50 | M12 | 60 | ER32 | 1.54 |
| | SK40AD/B-ER40-80 | P2774814 | 2.0 - 30.0 | 80 | 63 | M12 | 53 | ER40 | 0.65 |
| | SK40AD/B-ER40-100 | P2774835 | 2.0 - 30.0 | 100 | 63 | M12 | 75 | ER40 | 0.90 |
| | SK40AD/B-ER40-130 | P2774836 | 2.0 - 30.0 | 130 | 63 | M12 | 75 | ER40 | 1.34 |
| | SK40AD/B-ER40-160 | P2774837 | 2.0 - 30.0 | 160 | 63 | M12 | 75 | ER40 | 1.77 |
| 50 | SK50AD/B-ER16-70 | P2774815 | 0.5 - 10.0 | 70 | 28 | M12 | 36 | ER16 | 2.71 |
| | SK50AD/B-ER16-100 | P2774821 | 0.5 - 10.0 | 100 | 28 | M12 | 45 | ER16 | 2.82 |
| | SK50AD/B-ER16-130 | P2774838 | 0.5 - 10.0 | 130 | 28 | M12 | 36 | ER16 | 2.92 |
| | SK50AD/B-ER16-160 | P2774839 | 0.5 - 10.0 | 160 | 28 | M12 | 36 | ER16 | 3.01 |
| | SK50AD/B-ER20-70 | P2774816 | 0.5 - 13.0 | 70 | 34 | M12 | 44.5 | ER20 | 2.78 |
| | SK50AD/B-ER20-100 | P2774822 | 0.5 - 13.0 | 100 | 34 | M12 | 50 | ER20 | 2.88 |
| | SK50AD/B-ER20-130 | P2774840 | 0.5 - 13.0 | 130 | 34 | M12 | 50 | ER20 | 3.02 |
| | SK50AD/B-ER20-160 | P2774841 | 0.5 - 13.0 | 160 | 34 | M12 | 50 | ER20 | 3.16 |
| | SK50AD/B-ER25-70 | P2774817 | 1.0 - 16.0 | 70 | 42 | M12 | 65 | ER25 | 2.75 |
| | SK50AD/B-ER25-100 | P2774823 | 1.0 - 16.0 | 100 | 42 | M12 | 52 | ER25 | 3.06 |
| | SK50AD/B-ER25-130 | P2774842 | 1.0 - 16.0 | 130 | 42 | M12 | 42 | ER25 | 3.32 |
| | SK50AD/B-ER25-160 | P2774843 | 1.0 - 16.0 | 160 | 42 | M12 | 42 | ER25 | 3.57 |
| | SK50AD/B-ER32-70 | P2774818 | 1.0 - 20.0 | 70 | 50 | M12 | 60 | ER32 | 2.84 |
| | SK50AD/B-ER32-100 | P2774824 | 1.0 - 20.0 | 100 | 50 | M12 | 60 | ER32 | 3.29 |
| | SK50AD/B-ER32-130 | P2774844 | 1.0 - 20.0 | 130 | 50 | M12 | 73 | ER32 | 3.67 |
| | SK50AD/B-ER32-160 | P2774845 | 1.0 - 20.0 | 160 | 50 | M12 | 73 | ER32 | 4.06 |
| | SK50AD/B-ER40-80 | P2774819 | 2.0 - 30.0 | 80 | 63 | M12 | 69 | ER40 | 3.10 |
| | SK50AD/B-ER40-100 | P2774825 | 2.0 - 30.0 | 100 | 63 | M12 | 75 | ER40 | 3.56 |
| | SK50AD/B-ER40-130 | P2774846 | 2.0 - 30.0 | 130 | 63 | M12 | 75 | ER40 | 4.22 |
| | SK50AD/B-ER40-160 | P2774847 | 2.0 - 30.0 | 160 | 63 | M12 | 75 | ER40 | 4.88 |

▶ CAT(ANSI B5.50) taper and Inch type products are available.
CAT(ANSI B5.50)锥柄及英制产品可供选择

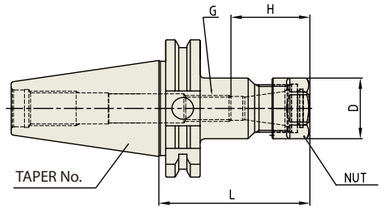
# ER COLLET CHUCK

ER

## ER COLLET CHUCK

DIN 69871-SK

## ER夹头刀柄




DIN 69871-SK | AT3 | 6.3G | 15,000 RPM | AD

ER Collet, Refer to page 103-109
ER 变径套，请参阅 103页～109页

ER nut, Sealing disk and Spanner refer to page 110-115
ER螺帽，密封圈，扳手 请参考110～115页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | CLAMPING RANGE 夹持范围 | L | D | G | H | NUT / COLLET 螺母 / 筒夹 | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|
| 30 | SK30-ER11-55 | P2527001 | 0.5 - 7.0 | 55 | 19 | M6 | 45 | ER11 | 0.43 |
| | SK30-ER16-55 | P2527002 | 0.5 - 10.0 | 55 | 28 | M12 | 45 | ER16 | 0.44 |
| | SK30-ER20-55 | P2527003 | 0.5 - 13.0 | 55 | 34 | M12 | 50 | ER20 | 0.44 |
| | SK30-ER25-55 | P2527004 | 1.0 - 16.0 | 55 | 42 | M12 | 65 | ER25 | 0.42 |
| | SK30-ER32-60 | P2527005 | 1.0 - 20.0 | 60 | 50 | M12 | 65 | ER32 | 0.46 |
| 40 | SK40-ER11-70 | P2527006 | 0.5 - 7.0 | 70 | 19 | M6 | 45 | ER11 | 0.90 |
| | SK40-ER11-100 | P2527027 | 0.5 - 7.0 | 100 | 19 | M6 | 45 | ER11 | 0.95 |
| | SK40-ER16-70 | P2776417 | 0.5 - 10.0 | 70 | 28 | M12 | 45 | ER16 | 0.44 |
| | SK40-ER16-100 | P2527018 | 0.5 - 10.0 | 100 | 28 | M12 | 45 | ER16 | 0.56 |
| | SK40-ER16-130 | P2527028 | 0.5 - 10.0 | 130 | 28 | M12 | 45 | ER16 | 0.69 |
| | SK40-ER16-160 | P2527029 | 0.5 - 10.0 | 160 | 28 | M12 | 45 | ER16 | 0.81 |
| | SK40-ER20-70 | P2776418 | 0.5 - 13.0 | 70 | 34 | M12 | 50 | ER20 | 0.47 |
| | SK40-ER20-100 | P2527019 | 0.5 - 13.0 | 100 | 34 | M12 | 50 | ER20 | 0.64 |
| | SK40-ER20-130 | P2527030 | 0.5 - 13.0 | 130 | 34 | M12 | 50 | ER20 | 0.80 |
| | SK40-ER20-160 | P2527031 | 0.5 - 13.0 | 160 | 34 | M12 | 50 | ER20 | 1.00 |
| | SK40-ER25-70 | P2776419 | 1.0 - 16.0 | 70 | 42 | M12 | 65 | ER25 | 0.56 |
| | SK40-ER25-100 | P2776429 | 1.0 - 16.0 | 100 | 42 | M12 | 65 | ER25 | 0.84 |
| | SK40-ER25-130 | P2527032 | 1.0 - 16.0 | 130 | 42 | M12 | 65 | ER25 | 1.14 |
| | SK40-ER25-160 | P2527033 | 1.0 - 16.0 | 160 | 42 | M12 | 65 | ER25 | 1.44 |
| | SK40-ER32-70 | P2776420 | 1.0 - 20.0 | 70 | 50 | M12 | 65 | ER32 | 0.51 |
| | SK40-ER32-100 | P2776430 | 1.0 - 20.0 | 100 | 50 | M12 | 65 | ER32 | 0.88 |
| | SK40-ER32-130 | P2527034 | 1.0 - 20.0 | 130 | 50 | M12 | 65 | ER32 | 1.21 |
| | SK40-ER32-160 | P2527035 | 1.0 - 20.0 | 160 | 50 | M12 | 65 | ER32 | 1.54 |
| | SK40-ER40-80 | P2527011 | 2.0 - 30.0 | 80 | 63 | M12 | 69 | ER40 | 0.65 |
| | SK40-ER40-100 | P2527036 | 2.0 - 30.0 | 100 | 63 | M12 | 69 | ER40 | 0.90 |
| | SK40-ER40-130 | P2527037 | 2.0 - 30.0 | 130 | 63 | M12 | 69 | ER40 | 1.34 |
| | SK40-ER40-160 | P2527038 | 2.0 - 30.0 | 160 | 63 | M12 | 69 | ER40 | 1.77 |

▶CAT(ANSI B5.50) taper and Inch type products are available.
CAT(ANSI B5.50)锥柄及英制产品可供选择



TOOLING SYSTEM

HYDRAULIC CHUCK
SHRINK FIT HOLDER
ER COLLET CHUCK
END MILL HOLDER & SIDE LOCK ARBOR
SHELL MILL ARBOR
POWER MILLING CHUCK
MORSE TAPER ARBOR
SK SLIM CHUCK
SYNCHRO TAPPING CHUCK
ONE STEP TAPPING CHUCK
TAPPING ER CHUCK
TAPPING CHUCK
FACE MILL ARBOR
COPY MILL ARBOR & INDEXABLE DRILL HOLDER
NC DRILL CHUCK & OTHER TOOL HOLDERS
BORING SYSTEM
ACCESSORY & OTHERS

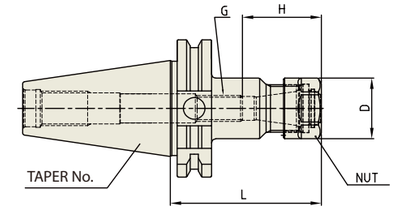
# ER COLLET CHUCK

ER

## ER COLLET CHUCK

DIN 69871-SK

## ER夹头刀柄




DIN 69871-SK | AT3 | 6.3G | 15,000 RPM | AD

ER Collet, Refer to page 103-109
ER 变径套，请参阅 103页～109页

ER nut, Sealing disk and Spanner refer to page 110-115
ER螺帽，密封圈，扳手 请参考110～115页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | CLAMPING RANGE 夹持范围 | L | D | G | H | NUT / COLLET 螺母 / 筒夹 | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|
| 50 | SK50-ER16-70 | P2527012 | 0.5 - 10.0 | 70 | 28 | M12 | 45 | ER16 | 2.71 |
| | SK50-ER16-100 | P2527022 | 0.5 - 10.0 | 100 | 28 | M12 | 45 | ER16 | 2.82 |
| | SK50-ER16-130 | P2527039 | 0.5 - 10.0 | 130 | 28 | M12 | 45 | ER16 | 2.92 |
| | SK50-ER16-160 | P2527040 | 0.5 - 10.0 | 160 | 28 | M12 | 45 | ER16 | 3.01 |
| | SK50-ER20-70 | P2776423 | 0.5 - 13.0 | 70 | 34 | M12 | 50 | ER20 | 2.78 |
| | SK50-ER20-100 | P2527023 | 0.5 - 13.0 | 100 | 34 | M12 | 40.5 | ER20 | 2.88 |
| | SK50-ER20-130 | P2527041 | 0.5 - 13.0 | 130 | 34 | M12 | 50 | ER20 | 3.02 |
| | SK50-ER20-160 | P2527042 | 0.5 - 13.0 | 160 | 34 | M12 | 50 | ER20 | 3.16 |
| | SK50-ER25-70 | P2776424 | 1.0 - 16.0 | 70 | 42 | M12 | 65 | ER25 | 2.75 |
| | SK50-ER25-100 | P2527024 | 1.0 - 16.0 | 100 | 42 | M12 | 65 | ER25 | 3.06 |
| | SK50-ER25-130 | P2527043 | 1.0 - 16.0 | 130 | 42 | M12 | 65 | ER25 | 3.32 |
| | SK50-ER25-160 | P2527044 | 1.0 - 16.0 | 160 | 42 | M12 | 65 | ER25 | 3.57 |
| | SK50-ER32-70 | P2776425 | 1.0 - 20.0 | 70 | 50 | M12 | 65 | ER32 | 2.84 |
| | SK50-ER32-100 | P2527025 | 1.0 - 20.0 | 100 | 50 | M12 | 65 | ER32 | 3.29 |
| | SK50-ER32-130 | P2527045 | 1.0 - 20.0 | 130 | 50 | M12 | 65 | ER32 | 3.67 |
| | SK50-ER32-160 | P2527046 | 1.0 - 20.0 | 160 | 50 | M12 | 65 | ER32 | 4.06 |
| | SK50-ER40-80 | P2527016 | 2.0 - 30.0 | 80 | 63 | M12 | 75 | ER40 | 3.10 |
| | SK50-ER40-100 | P2527026 | 2.0 - 30.0 | 100 | 63 | M12 | 75 | ER40 | 3.56 |
| | SK50-ER40-130 | P2527047 | 2.0 - 30.0 | 130 | 63 | M12 | 75 | ER40 | 4.22 |
| | SK50-ER40-160 | P2527048 | 2.0 - 30.0 | 160 | 63 | M12 | 75 | ER40 | 4.88 |

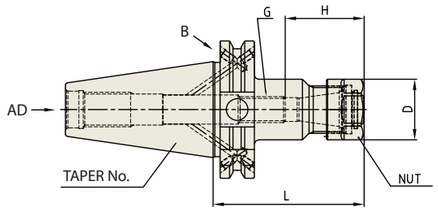
▶CAT(ANSI B5.50) taper and Inch type products are available.
CAT(ANSI B5.50)锥柄及英制产品可供选择

# ER COLLET CHUCK

ER

## ER COLLET CHUCK
## ER夹头刀柄

DIN 69871-SK




DIN 69871-SK | AT3 | 6.3G | 15,000 RPM | AD/B

ER Collet, Refer to page 103-109
ER 变径套，请参阅 103页～109页

ER nut, Sealing disk and Spanner refer to page 110-115
ER螺帽，密封圈，扳手 请参考110～115页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | CLAMPING RANGE 夹持范围 | L | D | G | H | NUT / COLLET 螺母 / 筒夹 | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|
| 40 | SK40AD/B-ER11-70 | P2537006 | 0.5 - 7.0 | 70 | 19 | M6 | 45 | ER11 | 0.90 |
| | SK40AD/B-ER11-100 | P2771802 | 0.5 - 7.0 | 100 | 19 | M6 | 45 | ER11 | 0.95 |
| | SK40AD/B-ER16-70 | P2537033 | 0.5 - 10.0 | 70 | 28 | M12 | 36 | ER16 | 0.44 |
| | SK40AD/B-ER16-100 | P2537017 | 0.5 - 10.0 | 100 | 28 | M12 | 36 | ER16 | 0.56 |
| | SK40AD/B-ER16-130 | P2771803 | 0.5 - 10.0 | 130 | 28 | M12 | 36 | ER16 | 0.69 |
| | SK40AD/B-ER16-160 | P2771804 | 0.5 - 10.0 | 160 | 28 | M12 | 36 | ER16 | 0.81 |
| | SK40AD/B-ER20-70 | P2537034 | 0.5 - 13.0 | 70 | 34 | M12 | 44.5 | ER20 | 0.47 |
| | SK40AD/B-ER20-100 | P2537018 | 0.5 - 13.0 | 100 | 34 | M12 | 44.5 | ER20 | 0.64 |
| | SK40AD/B-ER20-130 | P2771805 | 0.5 - 13.0 | 130 | 34 | M12 | 44.5 | ER20 | 0.80 |
| | SK40AD/B-ER20-160 | P2771806 | 0.5 - 13.0 | 160 | 34 | M12 | 44.5 | ER20 | 1.00 |
| | SK40AD/B-ER25-70 | P2537009 | 1.0 - 16.0 | 70 | 42 | M12 | 52 | ER25 | 0.56 |
| | SK40AD/B-ER25-100 | P2537019 | 1.0 - 16.0 | 100 | 42 | M12 | 52 | ER25 | 0.84 |
| | SK40AD/B-ER25-130 | P2771807 | 1.0 - 16.0 | 130 | 42 | M12 | 52 | ER25 | 1.14 |
| | SK40AD/B-ER25-160 | P2771808 | 1.0 - 16.0 | 160 | 42 | M12 | 52 | ER25 | 1.44 |
| | SK40AD/B-ER32-70 | P2537032 | 1.0 - 20.0 | 70 | 50 | M12 | 60 | ER32 | 0.51 |
| | SK40AD/B-ER32-100 | P2537020 | 1.0 - 20.0 | 100 | 50 | M12 | 60 | ER32 | 0.88 |
| | SK40AD/B-ER32-130 | P2771809 | 1.0 - 20.0 | 130 | 50 | M12 | 60 | ER32 | 1.21 |
| | SK40AD/B-ER32-160 | P2771810 | 1.0 - 20.0 | 160 | 50 | M12 | 60 | ER32 | 1.54 |
| | SK40AD/B-ER40-80 | P2537011 | 2.0 - 30.0 | 80 | 63 | M12 | 53 | ER40 | 0.65 |
| | SK40AD/B-ER40-100 | P2771811 | 2.0 - 30.0 | 100 | 63 | M12 | 75 | ER40 | 0.90 |
| | SK40AD/B-ER40-130 | P2771812 | 2.0 - 30.0 | 130 | 63 | M12 | 75 | ER40 | 1.34 |
| | SK40AD/B-ER40-160 | P2771813 | 2.0 - 30.0 | 160 | 63 | M12 | 75 | ER40 | 1.77 |
| 50 | SK50AD/B-ER16-70 | P2537012 | 0.5 - 10.0 | 70 | 28 | M12 | 36 | ER16 | 2.71 |
| | SK50AD/B-ER16-100 | P2537021 | 0.5 - 10.0 | 100 | 28 | M12 | 45 | ER16 | 2.82 |
| | SK50AD/B-ER16-130 | P2771814 | 0.5 - 10.0 | 130 | 28 | M12 | 36 | ER16 | 2.92 |
| | SK50AD/B-ER16-160 | P2771815 | 0.5 - 10.0 | 160 | 28 | M12 | 36 | ER16 | 3.01 |
| | SK50AD/B-ER20-70 | P2771801 | 0.5 - 13.0 | 70 | 34 | M12 | 44.5 | ER20 | 2.78 |
| | SK50AD/B-ER20-100 | P2537022 | 0.5 - 13.0 | 100 | 34 | M12 | 50 | ER20 | 2.88 |
| | SK50AD/B-ER20-130 | P2771816 | 0.5 - 13.0 | 130 | 34 | M12 | 50 | ER20 | 3.02 |
| | SK50AD/B-ER20-160 | P2771817 | 0.5 - 13.0 | 160 | 34 | M12 | 50 | ER20 | 3.16 |
| | SK50AD/B-ER25-70 | P2600030 | 1.0 - 16.0 | 70 | 42 | M12 | 65 | ER25 | 2.75 |
| | SK50AD/B-ER25-100 | P2537023 | 1.0 - 16.0 | 100 | 42 | M12 | 52 | ER25 | 3.06 |
| | SK50AD/B-ER25-130 | P2771818 | 1.0 - 16.0 | 130 | 42 | M12 | 42 | ER25 | 3.32 |
| | SK50AD/B-ER25-160 | P2771819 | 1.0 - 16.0 | 160 | 42 | M12 | 42 | ER25 | 3.57 |
| | SK50AD/B-ER32-70 | P2537035 | 1.0 - 20.0 | 70 | 50 | M12 | 60 | ER32 | 2.84 |
| | SK50AD/B-ER32-100 | P2537024 | 1.0 - 20.0 | 100 | 50 | M12 | 60 | ER32 | 3.29 |
| | SK50AD/B-ER32-130 | P2771820 | 1.0 - 20.0 | 130 | 50 | M12 | 73 | ER32 | 3.67 |
| | SK50AD/B-ER32-160 | P2771821 | 1.0 - 20.0 | 160 | 50 | M12 | 73 | ER32 | 4.06 |
| | SK50AD/B-ER40-80 | P2537016 | 2.0 - 30.0 | 80 | 63 | M12 | 69 | ER40 | 3.10 |
| | SK50AD/B-ER40-100 | P2537025 | 2.0 - 30.0 | 100 | 63 | M12 | 75 | ER40 | 3.56 |
| | SK50AD/B-ER40-130 | P2771822 | 2.0 - 30.0 | 130 | 63 | M12 | 75 | ER40 | 4.22 |
| | SK50AD/B-ER40-160 | P2771823 | 2.0 - 30.0 | 160 | 63 | M12 | 75 | ER40 | 4.88 |

▶CAT(ANSI B5.50) taper and Inch type products are available.
CAT(ANSI B5.50)锥柄及英制产品可供选择



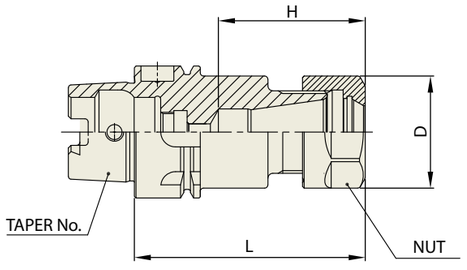
TOOLING SYSTEM
HYDRAULIC CHUCK
SHRINK FIT HOLDER
ER COLLET CHUCK
END MILL HOLDER & SIDE LOCK ARBOR
SHELL MILL ARBOR
POWER MILLING CHUCK
MORSE TAPER ARBOR
SK SLIM CHUCK
SYNCHRO TAPPING CHUCK
ONE STEP TAPPING CHUCK
TAPPING ER CHUCK
FACE MILL ARBOR
COPY MILL ARBOR & INDEXABLE DRILL HOLDER
NC DRILL CHUCK & OTHER TOOL HOLDERS
BORING SYSTEM
ACCESSORY & OTHERS

# ER COLLET CHUCK

ER

## ER COLLET CHUCK
## ER夹头刀柄

DIN 69893/
ISO 12164-1-HSK FORM A




DIN 69893-HSK | 2.5G | 25,000 RPM | AD

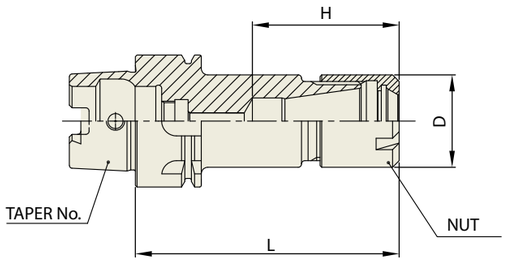
ER Collet, Refer to page 103-109
ER 变径套，请参阅 103页～109页

ER nut, Sealing disk and Spanner refer to page 110-115
ER螺帽，密封圈，扳手 请参考110～115页

### ◆ Standard Type

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | CLAMPING RANGE 夹持范围 | L | D | H | NUT / COLLET 螺母 / 筒夹 | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|
| 32A | HSK32A-ER11-50 | P2774908 | 0.5 - 7.0 | 50 | 19 | 28.6 | ER11 | 0.18 |
| | HSK32A-ER16-60 | P2774909 | 0.5 -10.0 | 60 | 28 | 36.6 | ER16 | 0.21 |
| 40A | HSK40A-ER11-60 | P2774910 | 0.5 - 7.0 | 60 | 19 | 28.6 | ER11 | 0.40 |
| | HSK40A-ER16-60 | P2774911 | 0.5 - 10.0 | 60 | 28 | 36.6 | ER16 | 0.50 |
| | HSK40A-ER20-70 | P2774912 | 0.5 - 13.0 | 70 | 34 | 44.5 | ER20 | 0.80 |




### ◆ Slim Type

Unit (单位) : mm

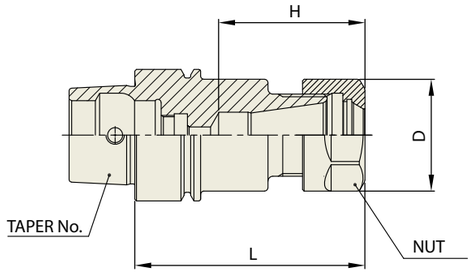
| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | CLAMPING RANGE 夹持范围 | L | D | H | NUT / COLLET 螺母 / 筒夹 | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|
| 32A | HSK32A-ER8M-40 | P2774913 | 0.5 - 5.0 | 40 | 12 | 21 | ER8M/ER8 | 0.18 |
| | HSK32A-ER11M-40 | P2774914 | 0.5 - 7.0 | 40 | 16 | 23 | ER11M/ER11 | 0.18 |
| | HSK32A-ER16M-60 | P2774915 | 0.5 - 10.0 | 60 | 22 | 38 | ER16M/ER16 | 0.21 |
| | HSK32A-ER20M-60 | P2774916 | 0.5 - 13.0 | 60 | 28 | 39.5 | ER20M/ER20 | 0.21 |
| 40A | HSK40A-ER11M-75 | P2774917 | 0.5 - 7.0 | 75 | 16 | 29.5 | ER11M/ER11 | 0.40 |
| | HSK40A-ER16M-80 | P2774918 | 0.5 - 10.0 | 80 | 22 | 38 | ER16M/ER16 | 0.50 |
| | HSK40A-ER20M-80 | P2774919 | 0.5 - 13.0 | 80 | 28 | 44.5 | ER20M/ER20 | 0.70 |
| | HSK40A-ER25M-80 | P2774920 | 1.0 - 16.0 | 80 | 35 | 52 | ER25M/ER25 | 0.80 |

# ER COLLET CHUCK



## ER COLLET CHUCK
## ER夹头刀柄

DIN 69893/
ISO 12164-1-HSK FORM E




DIN 69893-HSK | 2.5G | 25,000 RPM | AD

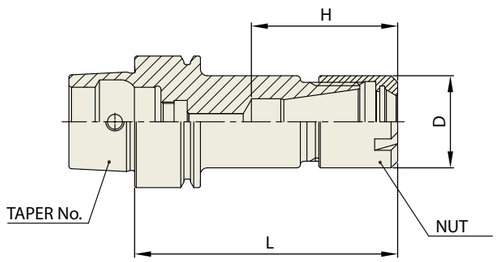
ER Collet, Refer to page 103-109
ER 变径套，请参阅 103页～109页

ER nut, Sealing disk and Spanner refer to page 110-115
ER螺帽，密封圈，扳手 请参考110～115页

### ◆ Standard Type

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | CLAMPING RANGE 夹持范围 | L | D | H | NUT / COLLET 螺母 / 筒夹 | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|
| 25E | HSK25E-ER11-40 | P2774921 | 0.5 - 7.0 | 40 | 19 | 23.5 | ER11 | 0.15 |
| | HSK25E-ER16-50 | P2774922 | 0.5 - 10.0 | 50 | 28 | 32.5 | ER16 | 0.18 |
| 32E | HSK32E-ER11-50 | P2774923 | 0.5 - 7.0 | 50 | 19 | 28.6 | ER11 | 0.18 |
| | HSK32E-ER16-60 | P2774924 | 0.5 - 10.0 | 60 | 28 | 36.6 | ER16 | 0.21 |
| 40E | HSK40E-ER11-60 | P2774925 | 0.5 - 7.0 | 60 | 19 | 28.6 | ER11 | 0.40 |
| | HSK40E-ER16-60 | P2774926 | 0.5 - 10.0 | 60 | 28 | 36.6 | ER16 | 0.50 |
| | HSK40E-ER20-70 | P2774927 | 0.5 - 13.0 | 70 | 34 | 44.5 | ER20 | 0.80 |




### ◆ Slim Type

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | CLAMPING RANGE 夹持范围 | L | D | H | NUT / COLLET 螺母 / 筒夹 | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|
| 25E | HSK25E-ER8M-35 | P2774928 | 0.5 - 5.0 | 35 | 12 | 21 | ER8M / ER8 | 0.15 |
| | HSK25E-ER11M-40 | P2774929 | 0.5 - 7.0 | 40 | 16 | 24.5 | ER11M / ER11 | 0.18 |
| 32E | HSK32E-ER8M-40 | P2774930 | 0.5 - 5.0 | 40 | 12 | 21 | ER8M / ER8 | 0.15 |
| | HSK32E-ER11M-40 | P2774931 | 0.5 - 7.0 | 40 | 16 | 23 | ER11M / ER11 | 0.18 |
| | HSK32E-ER16M-60 | P2774932 | 0.5 - 10.0 | 60 | 22 | 38 | ER16M / ER16 | 0.21 |
| | HSK32E-ER20M-60 | P2774933 | 0.5 - 13.0 | 60 | 28 | 39.5 | ER20M / ER20 | 0.21 |
| 40E | HSK40E-ER11M-75 | P2774934 | 0.5 - 7.0 | 75 | 16 | 29.5 | ER11M / ER11 | 0.40 |
| | HSK40E-ER16M-80 | P2774935 | 0.5 - 10.0 | 80 | 22 | 38 | ER16M / ER16 | 0.50 |
| | HSK40E-ER20M-80 | P2774936 | 0.5 - 13.0 | 80 | 28 | 44.5 | ER20M / ER20 | 0.70 |
| | HSK40E-ER25M-80 | P2774937 | 1.0 - 16.0 | 80 | 35 | 52 | ER25M / ER25 | 0.80 |



TOOLING SYSTEM

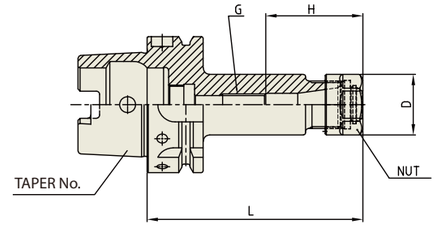
HYDRAULIC CHUCK
SHRINK FIT HOLDER
ER COLLET CHUCK
END MILL HOLDER & SIDE LOCK ARBOR
SHELL MILL ARBOR
POWER MILLING CHUCK
MORSE TAPER ARBOR
SK SLIM CHUCK
SYNCHRO TAPPING CHUCK
ONE STEP TAPPING CHUCK
TAPPING ER CHUCK
TAPPING CHUCK
FACE MILL ARBOR
COPY MILL ARBOR & INDEXABLE DRILL HOLDER
NC DRILL CHUCK & OTHER TOOL HOLDERS
BORING SYSTEM
ACCESSORY & OTHERS

# ER COLLET CHUCK

ER

## ER COLLET CHUCK
## ER夹头刀柄

DIN 69893/
ISO 12164-1-HSK FORM A




DIN 69893-HSK | 2.5G | 25,000 RPM | AD

ER Collet, Refer to page 103-109
ER 变径套，请参阅 103页～109页

ER nut, Sealing disk and Spanner refer to page 110-115
ER螺帽，密封圈，扳手 请参考110～115页

### ◆ Standard Type

Unit (单位) : mm

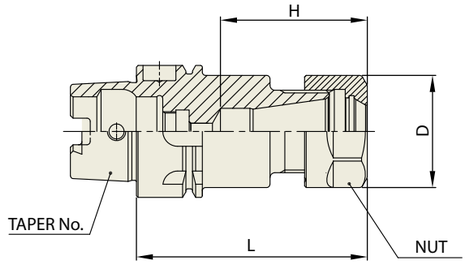
| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | CLAMPING RANGE 夹持范围 | L | D | G | H | NUT / COLLET 螺母 / 筒夹 | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|
| 50A | **HSK50A-ER16-100** | **P2774938** | 0.5 - 10.0 | 100 | 28 | M12 | 45 | ER16 | 0.70 |
| | **HSK50A-ER20-100** | **P2774939** | 0.5 - 13.0 | 100 | 35 | M12 | 50 | ER20 | 0.90 |
| | **HSK50A-ER25-100** | **P2774940** | 1.0 - 16.0 | 100 | 42 | M12 | 50 | ER25 | 1.20 |
| | **HSK50A-ER32-100** | **P2774941** | 1.0 - 20.0 | 100 | 50 | M12 | 47 | ER32 | 1.50 |
| 63A | **HSK63A-ER16-100** | **P2774901** | 0.5 - 10.0 | 100 | 28 | M12 | 45 | ER16 | 1.20 |
| | **HSK63A-ER20-100** | **P2774942** | 0.5 - 13.0 | 100 | 35 | M12 | 50 | ER20 | 1.50 |
| | **HSK63A-ER25-100** | **P2774902** | 1.0 - 16.0 | 100 | 42 | M12 | 57 | ER25 | 1.80 |
| | **HSK63A-ER32-100** | **P2774903** | 1.0 - 20.0 | 100 | 50 | M12 | 47 | ER32 | 2.00 |
| | **HSK63A-ER40-120** | **P2774904** | 2.0 - 30.0 | 120 | 63 | M12 | 69 | ER40 | 2.30 |
| 80A | **HSK80A-ER16-100** | **P2774943** | 0.5 - 10.0 | 100 | 28 | M12 | 45 | ER16 | 1.77 |
| | **HSK80A-ER25-100** | **P2774944** | 1.0 - 16.0 | 100 | 42 | M12 | 47 | ER20 | 1.79 |
| | **HSK80A-ER32-100** | **P2774945** | 1.0 - 20.0 | 100 | 50 | M12 | 53 | ER25 | 1.95 |
| 100A | **HSK100A-ER16-100** | **P2774905** | 0.5 - 10.0 | 100 | 28 | M12 | 45 | ER16 | 2.60 |
| | **HSK100A-ER20-100** | **P2774946** | 0.5 - 13.0 | 100 | 35 | M12 | 50 | ER20 | 2.70 |
| | **HSK100A-ER25-100** | **P2774906** | 1.0 - 16.0 | 100 | 42 | M12 | 57 | ER25 | 2.90 |
| | **HSK100A-ER32-100** | **P2774907** | 1.0 - 20.0 | 100 | 50 | M12 | 56.5 | ER32 | 3.10 |
| | **HSK100A-ER40-120** | **P2774947** | 2.0 - 30.0 | 120 | 63 | M12 | 69 | ER40 | 3.30 |

# ER COLLET CHUCK



## ER COLLET CHUCK
## ER夹头刀柄

DIN 69893/
ISO 12164-1-HSK FORM A




DIN 69893-HSK | 6.3G | 15,000 RPM | AD

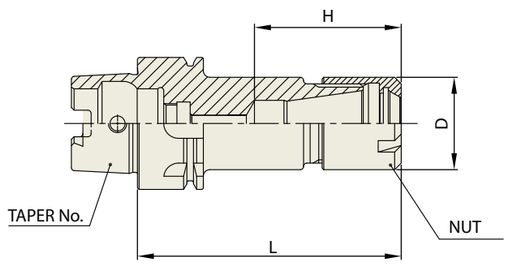
ER Collet, Refer to page 103-109
ER 变径套，请参阅 103页～109页

ER nut, Sealing disk and Spanner refer to page 110-115
ER螺帽，密封圈，扳手 请参考110～115页

### ◆ Standard Type

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | CLAMPING RANGE 夹持范围 | L | D | H | NUT / COLLET 螺母 / 筒夹 | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|
| 32A | HSK32A-ER11-50 | P2771908 | 0.5 - 7.0 | 50 | 19 | 28.6 | ER11 | 0.81 |
| | HSK32A-ER16-60 | P2771909 | 0.5 - 10.0 | 60 | 28 | 36.6 | ER16 | 0.21 |
| 40A | HSK40A-ER11-60 | P2771901 | 0.5 - 7.0 | 60 | 19 | 28.6 | ER11 | 0.40 |
| | HSK40A-ER16-60 | P2771902 | 0.5 - 10.0 | 60 | 28 | 36.6 | ER16 | 0.50 |
| | HSK40A-ER20-70 | P2771903 | 0.5 - 13.0 | 70 | 34 | 44.5 | ER20 | 0.80 |




### ◆ Slim Type

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | CLAMPING RANGE 夹持范围 | L | D | H | NUT / COLLET 螺母 / 筒夹 | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|
| 32A | HSK32A-ER8M-40 | P2771910 | 0.5 - 5.0 | 40 | 12 | 21 | ER8M/ER8 | 0.15 |
| | HSK32A-ER11M-40 | P2771911 | 0.5 - 7.0 | 40 | 16 | 23 | ER11M/ER11 | 0.15 |
| | HSK32A-ER16M-60 | P2771912 | 0.5 - 10.0 | 60 | 22 | 38 | ER16M/ER16 | 0.21 |
| | HSK32A-ER20M-60 | P2771913 | 0.5 - 13.0 | 60 | 28 | 39.5 | ER20M/ER20 | 0.20 |
| 40A | HSK40A-ER11M-75 | P2771914 | 0.5 - 7.0 | 75 | 16 | 29.5 | ER11M/ER11 | 0.40 |
| | HSK40A-ER16M-80 | P2771915 | 0.5 - 10.0 | 80 | 22 | 38 | ER16M/ER16 | 0.50 |
| | HSK40A-ER20M-80 | P2771916 | 0.5 - 13.0 | 80 | 28 | 44.5 | ER20M/ER20 | 0.70 |
| | HSK40A-ER25M-80 | P2771917 | 1.0 - 16.0 | 80 | 35 | 52 | ER25M/ER25 | 0.80 |



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SK SLIM CHUCK
SYNCHRO TAPPING CHUCK
ONE STEP TAPPING CHUCK
TAPPING ER CHUCK
TAPPING CHUCK
FACE MILL ARBOR
COPY MILL ARBOR & INDEXABLE DRILL HOLDER
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BORING SYSTEM
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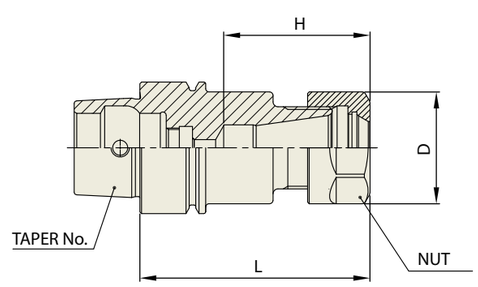
# ER COLLET CHUCK

ER

## ER COLLET CHUCK
## ER夹头刀柄

DIN 69893/
ISO 12164-1-HSK FORM E




DIN 69893-HSK | 6.3G | 15,000 RPM | AD

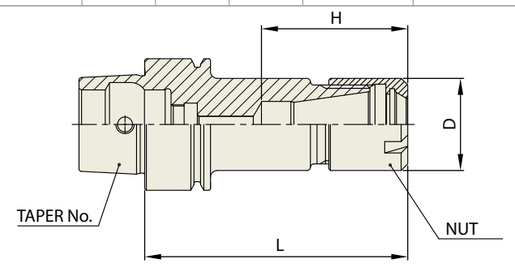
ER Collet, Refer to page 103-109
ER 变径套，请参阅 103页～109页

ER nut, Sealing disk and Spanner refer to page 110-115
ER螺帽，密封圈，扳手 请参考110～115页

### ◆ Standard Type

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | CLAMPING RANGE 夹持范围 | L | D | H | NUT / COLLET 螺母 / 筒夹 | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|
| 25E | HSK25E-ER11-40 | P2771935 | 0.5 - 7.0 | 40 | 19 | 23.5 | ER11 | 0.16 |
| | HSK25E-ER16-50 | P2771936 | 0.5 - 10.0 | 50 | 28 | 32.5 | ER16 | 0.16 |
| 32E | HSK32E-ER11-50 | P2771918 | 0.5 - 7.0 | 50 | 19 | 28.6 | ER11 | 0.18 |
| | HSK32E-ER16-60 | P2771919 | 0.5 - 10.0 | 60 | 28 | 36.6 | ER16 | 0.21 |
| 40E | HSK40E-ER11-60 | P2771920 | 0.5 - 7.0 | 60 | 19 | 28.6 | ER11 | 0.40 |
| | HSK40E-ER16-60 | P2771921 | 0.5 - 10.0 | 60 | 28 | 36.6 | ER16 | 0.50 |
| | HSK40E-ER20-70 | P2771922 | 0.5 - 13.0 | 70 | 34 | 44.5 | ER20 | 0.80 |




### ◆ Slim Type

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | CLAMPING RANGE 夹持范围 | L | D | H | NUT / COLLET 螺母 / 筒夹 | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|
| 25E | HSK25E-ER8M-35 | P2771937 | 0.5 - 5.0 | 35 | 12 | 21 | ER8M / ER8 | 0.10 |
| | HSK25E-ER11M-40 | P2771938 | 0.5 - 7.0 | 40 | 16 | 24.5 | ER11M / ER11 | 0.10 |
| 32E | HSK32E-ER8M-40 | P2774948 | 0.5 - 5.0 | 40 | 12 | 21 | ER8M / ER8 | 0.15 |
| | HSK32E-ER11M-40 | P2774949 | 0.5 - 7.0 | 40 | 16 | 23 | ER11M / ER11 | 0.15 |
| | HSK32E-ER16M-60 | P2774950 | 0.5 - 10.0 | 60 | 22 | 38 | ER16M / ER16 | 0.21 |
| | HSK32E-ER20M-60 | P2774951 | 0.5 - 13.0 | 60 | 28 | 39.5 | ER20M / ER20 | 0.20 |
| 40E | HSK40E-ER11M-75 | P2771904 | 0.5 - 7.0 | 75 | 16 | 29.5 | ER11M / ER11 | 0.40 |
| | HSK40E-ER16M-80 | P2771905 | 0.5 - 10.0 | 80 | 22 | 38 | ER16M / ER16 | 0.50 |
| | HSK40E-ER20M-80 | P2771906 | 0.5 - 13.0 | 80 | 28 | 44.5 | ER20M / ER20 | 0.70 |
| | HSK40E-ER25M-80 | P2771907 | 1.0 - 16.0 | 80 | 35 | 52 | ER25M / ER25 | 0.80 |

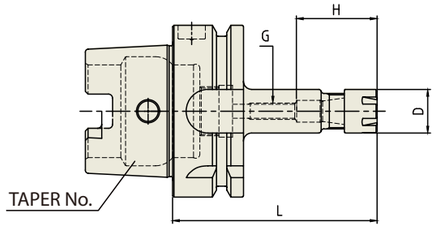
# ER COLLET CHUCK

ER

## ER COLLET CHUCK (SLIM)

DIN 69893/
ISO 12164-1-HSK FORM A

## ER夹头刀柄 (细长型)




DIN 69871-SK | AT3 | 6.3G | 15,000 RPM | AD

ER Collet, Refer to page 103-109
ER 变径套，请参阅 103页～109页

ER nut, Sealing disk and Spanner refer to page 110-115
ER螺帽，密封圈，扳手 请参考110～115页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | CLAMPING RANGE 夹持范围 | L | D | G | H | NUT / COLLET 螺母 / 筒夹 | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|
| 50A | HSK50A-ER11M-75 | P2802501 | 0.5 - 7.0 | 75 | 16 | M6 | 29.5 | XSQ-R11M / ER11 | 0.30 |
| | HSK50A-ER16M-85 | P2802502 | 0.5 - 10.0 | 85 | 22 | M10 | 38 | XSQ-R16M / ER16 | 0.40 |
| | HSK50A-ER20M-90 | P2802503 | 0.5 - 13.0 | 90 | 28 | M12 | 44.5 | XSQ-R20M / ER20 | 0.80 |
| | HSK50A-ER25M-105 | P2802504 | 1.0 - 16.0 | 105 | 35 | M12 | 52 | XSQ-R25M / ER25 | 1.20 |
| 63A | HSK63A-ER11M-75 | P2802505 | 0.5 - 7.0 | 75 | 16 | M6 | 29.5 | XSQ-R11M / ER11 | 0.80 |
| | HSK63A-ER16M-85 | P2802506 | 0.5 - 10.0 | 85 | 22 | M10 | 38 | XSQ-R16M / ER16 | 1.00 |
| | HSK63A-ER20M-95 | P2802507 | 0.5 - 13.0 | 95 | 28 | M12 | 44.5 | XSQ-R20M / ER20 | 1.20 |
| | HSK63A-ER25M-105 | P2802508 | 1.0 - 16.0 | 105 | 35 | M12 | 52 | XSQ-R25M / ER25 | 1.40 |
| 100A | HSK100A-ER11M-85 | P2802509 | 0.5 - 7.0 | 85 | 16 | M6 | 29.5 | XSQ-R11M / ER11 | 2.40 |
| | HSK100A-ER16M-95 | P2802510 | 0.5 - 10.0 | 95 | 22 | M10 | 38 | XSQ-R16M / ER16 | 2.70 |
| | HSK100A-ER20M-100 | P2802511 | 0.5 - 13.0 | 100 | 28 | M12 | 44.5 | XSQ-R20M / ER20 | 3.00 |
| | HSK100A-ER25M-120 | P2802512 | 1.0 - 16.0 | 120 | 35 | M12 | 52 | XSQ-R25M / ER25 | 3.20 |



TOOLING SYSTEM

HYDRAULIC CHUCK
SHRINK FIT HOLDER
ER COLLET CHUCK
END MILL HOLDER & SIDE LOCK ARBOR
SHELL MILL ARBOR
POWER MILLING CHUCK
MORSE TAPER ARBOR
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FACE MILL ARBOR
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NC DRILL CHUCK & OTHER TOOL HOLDERS
BORING SYSTEM
ACCESSORY & OTHERS

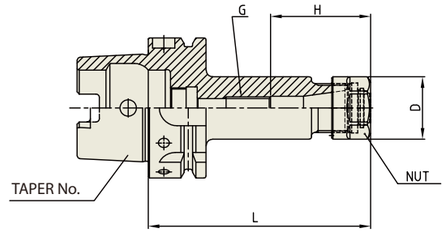
ER COLLET CHUCK

ER

## ER COLLET CHUCK

DIN 69893/
ISO 12164-1-HSK FORM A

## ER夹头刀柄




DIN 69893-HSK | 6.3G | 15,000 RPM | AD

ER Collet, Refer to page 103-109
ER 变径套，请参阅 103页～109页

ER nut, Sealing disk and Spanner refer to page 110-115
ER螺帽，密封圈，扳手 请参考110～115页

◆ **Standard Type**

Unit (单位) : mm

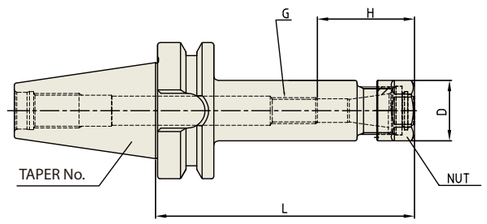
| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | CLAMPING RANGE 夹持范围 | L | D | G | H | NUT / COLLET 螺母 / 筒夹 | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|
| 50A | HSK50A-ER16-100 | P2771927 | 0.5 - 10.0 | 100 | 28 | M12 | 45 | ER16 | 0.70 |
| | HSK50A-ER20-100 | P2771928 | 0.5 - 13.0 | 100 | 35 | M12 | 50 | ER20 | 0.90 |
| | HSK50A-ER25-100 | P2771929 | 1.0 - 16.0 | 100 | 42 | M12 | 50 | ER25 | 1.20 |
| | HSK50A-ER32-100 | P2771930 | 1.0 - 20.0 | 100 | 50 | M12 | 47 | ER32 | 1.50 |
| 63A | HSK63A-ER16-100 | P2564001 | 0.5 - 10.0 | 100 | 28 | M12 | 45 | ER16 | 1.20 |
| | HSK63A-ER20-100 | P2564005 | 0.5 - 13.0 | 100 | 35 | M12 | 50 | ER20 | 1.50 |
| | HSK63A-ER25-100 | P2564002 | 1.0 - 16.0 | 100 | 42 | M12 | 57 | ER25 | 1.80 |
| | HSK63A-ER32-100 | P2564003 | 1.0 - 20.0 | 100 | 50 | M12 | 47 | ER32 | 2.00 |
| | HSK63A-ER40-120 | P2564004 | 2.0 - 30.0 | 120 | 63 | M12 | 69 | ER40 | 2.30 |
| 80A | HSK80A-ER16-100 | P2771932 | 0.5 - 10.0 | 100 | 28 | M12 | 45 | ER16 | 1.77 |
| | HSK80A-ER25-100 | P2771933 | 1.0 - 16.0 | 100 | 42 | M12 | 47 | ER20 | 1.79 |
| | HSK80A-ER32-100 | P2771934 | 1.0 - 20.0 | 100 | 50 | M12 | 53 | ER25 | 1.95 |
| 100A | HSK100A-ER16-100 | P2564011 | 0.5 - 10.0 | 100 | 28 | M12 | 45 | ER16 | 2.60 |
| | HSK100A-ER20-100 | P2564015 | 0.5 - 13.0 | 100 | 35 | M12 | 50 | ER20 | 2.70 |
| | HSK100A-ER25-100 | P2564012 | 1.0 - 16.0 | 100 | 42 | M12 | 57 | ER25 | 2.90 |
| | HSK100A-ER32-100 | P2564013 | 1.0 - 20.0 | 100 | 50 | M12 | 56.5 | ER32 | 3.10 |
| | HSK100A-ER40-120 | P2564014 | 2.0 - 30.0 | 120 | 63 | M12 | 69 | ER40 | 3.30 |

# ER COLLET CHUCK

ER

## ER COLLET CHUCK
## ER夹头刀柄

CBT
(BT DUAL CONTACT)




CBT | AT3 | 2.5G | 25,000 RPM | AD

ER Collet, Refer to page 103-109
ER 变径套，请参阅 103页～109页

ER nut, Sealing disk and Spanner refer to page 110-115
ER螺帽，密封圈，扳手 请参考110～115页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | CLAMPING RANGE 夹持范围 | L | D | G | H | NUT / COLLET 螺母 / 筒夹 | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|
| 30 | CBT30-ER11-70 | P2776802 | 0.5 - 7.0 | 70 | 19 | M6 | 45 | ER11 | 0.50 |
| | CBT30-ER11-100 | P2776803 | 0.5 - 7.0 | 100 | 19 | M6 | 45 | ER11 | 0.50 |
| | CBT30-ER16-70 | P2776804 | 0.5 - 10.0 | 70 | 28 | M12 | 45 | ER16 | 1.00 |
| | CBT30-ER16-100 | P2776805 | 0.5 - 10.0 | 100 | 28 | M12 | 45 | ER16 | 1.10 |
| | CBT30-ER20-80 | P2776806 | 0.5 - 13.0 | 80 | 34 | M12 | 50 | ER20 | 1.20 |
| | CBT30-ER20-100 | P2776807 | 0.5 - 13.0 | 100 | 34 | M12 | 50 | ER20 | 1.30 |
| | CBT30-ER25-70 | P2776808 | 1.0 - 16.0 | 70 | 42 | M12 | 65 | ER25 | 1.20 |
| | CBT30-ER25-100 | P2776809 | 1.0 - 16.0 | 100 | 42 | M12 | 65 | ER25 | 1.30 |
| | CBT30-ER32-60 | P2776801 | 1.0 - 20.0 | 60 | 50 | M12 | 65 | ER32 | 1.40 |
| | CBT30-ER32-90 | P2776810 | 1.0 - 20.0 | 90 | 50 | M12 | 65 | ER32 | 1.90 |
| 40 | CBT40-ER11-75 | P2772004 | 0.5 - 7.0 | 75 | 19 | M6 | 45 | ER11 | 1.00 |
| | CBT40-ER11-100 | P2772005 | 0.5 - 7.0 | 100 | 19 | M6 | 45 | ER11 | 1.10 |
| | CBT40-ER16-75 | P2772006 | 0.5 - 10.0 | 75 | 28 | M12 | 45 | ER16 | 1.10 |
| | CBT40-ER16-100 | P2772001 | 0.5 - 10.0 | 100 | 28 | M12 | 45 | ER16 | 1.20 |
| | CBT40-ER16-120 | P2772007 | 0.5 - 10.0 | 120 | 28 | M12 | 45 | ER16 | 1.40 |
| | CBT40-ER20-75 | P2772008 | 0.5 - 13.0 | 75 | 34 | M12 | 50 | ER20 | 1.40 |
| | CBT40-ER20-100 | P2772009 | 0.5 - 13.0 | 100 | 34 | M12 | 50 | ER20 | 1.80 |
| | CBT40-ER20-135 | P2772010 | 0.5 - 13.0 | 135 | 34 | M12 | 50 | ER20 | 2.20 |
| | CBT40-ER25-75 | P2772011 | 1.0 - 16.0 | 75 | 42 | M12 | 65 | ER25 | 1.40 |
| | CBT40-ER25-100 | P2772002 | 1.0 - 16.0 | 100 | 42 | M12 | 65 | ER25 | 1.80 |
| | CBT40-ER25-135 | P2772012 | 1.0 - 16.0 | 135 | 42 | M12 | 65 | ER25 | 2.20 |
| | CBT40-ER25-150 | P2772013 | 1.0 - 16.0 | 150 | 42 | M12 | 65 | ER25 | 2.40 |
| | CBT40-ER32-60 | P2772014 | 1.0 - 20.0 | 60 | 50 | M12 | 65 | ER32 | 1.80 |
| | CBT40-ER32-100 | P2772003 | 1.0 - 20.0 | 100 | 50 | M12 | 65 | ER32 | 2.20 |
| | CBT40-ER32-120 | P2772015 | 1.0 - 20.0 | 120 | 50 | M12 | 65 | ER32 | 2.40 |
| | CBT40-ER32-150 | P2772016 | 1.0 - 20.0 | 150 | 50 | M12 | 65 | ER32 | 2.60 |
| | CBT40-ER40-80 | P2772017 | 2.0 - 30.0 | 80 | 63 | M12 | 75 | ER40 | 1.50 |

▶ NEXT PAGE



TOOLING SYSTEM

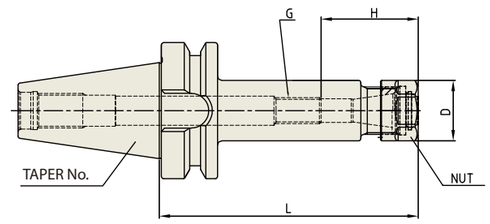
HYDRAULIC CHUCK
SHRINK FIT HOLDER
ER COLLET CHUCK
END MILL HOLDER & SIDE LOCK ARBOR
SHELL MILL ARBOR
POWER MILLING CHUCK
MORSE TAPER ARBOR
SK SLIM CHUCK
SYNCHRO TAPPING CHUCK
ONE STEP TAPPING CHUCK
TAPPING ER CHUCK
FACE MILL ARBOR
COPY MILL ARBOR & INDEXABLE DRILL HOLDER
NC DRILL CHUCK & OTHER TOOL HOLDERS
BORING SYSTEM
ACCESSORY & OTHERS

ER COLLET CHUCK

ER

ER COLLET CHUCK
ER夹头刀柄

CBT
(BT DUAL CONTACT)




CBT | AT3 | 2.5G | 25,000 RPM | AD

ER Collet, Refer to page 103-109
ER 变径套，请参阅 103页～109页

ER nut, Sealing disk and Spanner refer to page 110-115
ER螺帽，密封圈，扳手 请参考110～115页

Unit (单位) : mm

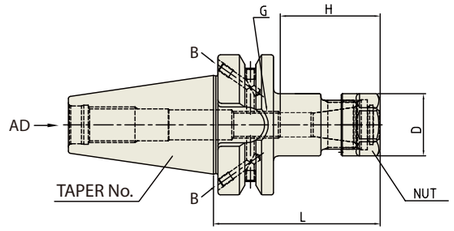
| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | CLAMPING RANGE 夹持范围 | L | D | G | H | NUT / COLLET 螺母 / 筒夹 | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|
| 50 | CBT50-ER16-100 | P2772018 | 0.5 - 10.0 | 100 | 28 | M12 | 45 | ER16 | 4.20 |
| | CBT50-ER16-120 | P2772019 | 0.5 - 10.0 | 120 | 28 | M12 | 45 | ER16 | 4.40 |
| | CBT50-ER16-165 | P2772020 | 0.5 - 10.0 | 165 | 28 | M12 | 45 | ER16 | 4.60 |
| | CBT50-ER20-100 | P2772021 | 0.5 - 13.0 | 100 | 34 | M12 | 50 | ER20 | 4.60 |
| | CBT50-ER20-135 | P2772022 | 0.5 - 13.0 | 135 | 34 | M12 | 50 | ER20 | 4.80 |
| | CBT50-ER20-165 | P2772023 | 0.5 - 13.0 | 165 | 34 | M12 | 50 | ER20 | 5.00 |
| | CBT50-ER25-100 | P2772024 | 1.0 - 16.0 | 100 | 42 | M12 | 65 | ER25 | 4.70 |
| | CBT50-ER25-135 | P2772025 | 1.0 - 16.0 | 135 | 42 | M12 | 65 | ER25 | 4.80 |
| | CBT50-ER25-165 | P2772026 | 1.0 - 16.0 | 165 | 42 | M12 | 65 | ER25 | 5.00 |
| | CBT50-ER32-100 | P2772027 | 1.0 - 20.0 | 100 | 50 | M12 | 65 | ER32 | 5.20 |
| | CBT50-ER32-135 | P2772028 | 1.0 - 20.0 | 135 | 50 | M12 | 65 | ER32 | 5.70 |
| | CBT50-ER32-165 | P2772029 | 1.0 - 20.0 | 165 | 50 | M12 | 65 | ER32 | 5.80 |
| | CBT50-ER40-100 | P2772030 | 2.0 - 30.0 | 100 | 63 | M12 | 75 | ER40 | 5.60 |
| | CBT50-ER40-150 | P2772031 | 2.0 - 30.0 | 150 | 63 | M12 | 75 | ER40 | 6.10 |
| | CBT50-ER50-100 | P2772032 | 4.0 - 34.0 | 100 | 78 | M16 | 85 | ER50 | 5.80 |
| | CBT50-ER50-150 | P2772033 | 4.0 - 34.0 | 150 | 78 | M16 | 85 | ER50 | 6.30 |

ER COLLET CHUCK

ER

## ER COLLET CHUCK
## ER夹头刀柄

JIS B6339/
MAS 403-BT




JIS B6339-BT | AT3 | 2.5G | 25,000 RPM | AD or AD/B

ER Collet, Refer to page 103-109
ER 变径套，请参阅 103页～109页

ER nut, Sealing disk and Spanner refer to page 110-115
ER螺帽，密封圈，扳手 请参考110～115页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | CLAMPING RANGE 夹持范围 | L | D | G | H | NUT / COLLET 螺母 / 筒夹 | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|
| 30 | BT30-ER11-70 | P2776501A | 0.5 - 7.0 | 70 | 19 | M6 | 45 | ER11 | 0.50 |
| | BT30-ER11-100 | P2776502A | 0.5 - 7.0 | 100 | 19 | M6 | 45 | ER11 | 0.50 |
| | BT30-ER16-70 | P2776503A | 0.5 - 10.0 | 70 | 28 | M12 | 45 | ER16 | 1.00 |
| | BT30-ER16-100 | P2776506A | 0.5 - 10.0 | 100 | 28 | M12 | 45 | ER16 | 1.10 |
| | BT30-ER20-80 | P2776507A | 0.5 - 13.0 | 80 | 34 | M12 | 50 | ER20 | 1.20 |
| | BT30-ER20-100 | P2776508A | 0.5 - 13.0 | 100 | 34 | M12 | 50 | ER20 | 1.30 |
| | BT30-ER25-70 | P2776509A | 1.0 - 16.0 | 70 | 42 | M12 | 65 | ER25 | 1.20 |
| | BT30-ER25-100 | P2776510A | 1.0 - 16.0 | 100 | 42 | M12 | 65 | ER25 | 1.30 |
| | BT30-ER32-60 | P2776511A | 1.0 - 20.0 | 60 | 50 | M12 | 65 | ER32 | 1.40 |
| | BT30-ER32-90 | P2776512A | 1.0 - 20.0 | 90 | 50 | M12 | 65 | ER32 | 1.90 |
| 40 | BT40AD/B-ER11-75 | P2776513 | 0.5 - 7.0 | 75 | 19 | M6 | 45 | ER11 | 1.00 |
| | BT40AD/B-ER11-100 | P2776514 | 0.5 - 7.0 | 100 | 19 | M6 | 45 | ER11 | 1.10 |
| | BT40AD/B-ER16-75 | P2776504 | 0.5 - 10.0 | 75 | 28 | M12 | 45 | ER16 | 1.10 |
| | BT40AD/B-ER16-100 | P2553021 | 0.5 - 10.0 | 100 | 28 | M12 | 45 | ER16 | 1.20 |
| | BT40AD/B-ER16-120 | P2776515 | 0.5 - 10.0 | 120 | 28 | M12 | 45 | ER16 | 1.40 |
| | BT40AD/B-ER20-75 | P2776516 | 0.5 - 13.0 | 75 | 34 | M12 | 50 | ER20 | 1.40 |
| | BT40AD/B-ER20-100 | P2553017 | 0.5 - 13.0 | 100 | 34 | M12 | 50 | ER20 | 1.80 |
| | BT40AD/B-ER20-135 | P2776517 | 0.5 - 13.0 | 135 | 34 | M12 | 50 | ER20 | 2.20 |
| | BT40AD/B-ER25-75 | P2600012 | 1.0 - 16.0 | 75 | 42 | M12 | 65 | ER25 | 1.40 |
| | BT40AD/B-ER25-100 | P2553018 | 1.0 - 16.0 | 100 | 42 | M12 | 65 | ER25 | 1.80 |
| | BT40AD/B-ER25-135 | P2776518 | 1.0 - 16.0 | 135 | 42 | M12 | 65 | ER25 | 2.20 |
| | BT40AD/B-ER25-150 | P2776519 | 1.0 - 16.0 | 150 | 42 | M12 | 65 | ER25 | 2.40 |
| | BT40AD/B-ER32-60 | P2553501 | 1.0 - 20.0 | 60 | 50 | M12 | 65 | ER32 | 1.80 |
| | BT40AD/B-ER32-100 | P2776505 | 1.0 - 20.0 | 100 | 50 | M12 | 65 | ER32 | 2.20 |

▶ CAT(ANSI B5.50) taper and Inch type products are available.
CAT(ANSI B5.50)锥柄及英制产品可供选择

▶ NEXT PAGE



TOOLING SYSTEM

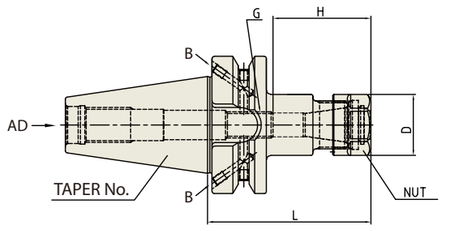
HYDRAULIC CHUCK
SHRINK FIT HOLDER
ER COLLET CHUCK
END MILL HOLDER & SIDE LOCK ARBOR
SHELL MILL ARBOR
POWER MILLING CHUCK
MORSE TAPER ARBOR
SK SLIM CHUCK
SYNCHRO TAPPING CHUCK
ONE STEP TAPPING CHUCK
TAPPING ER CHUCK
FACE MILL ARBOR
COPY MILL ARBOR & INDEXABLE DRILL HOLDER
NC DRILL CHUCK & OTHER TOOL HOLDERS
BORING SYSTEM
ACCESSORY & OTHERS

ER COLLET CHUCK

ER

ER COLLET CHUCK
ER夹头刀柄

JIS B6339/
MAS 403-BT




JIS B6339-BT | AT3 | 2.5G | 25,000 RPM | AD/B

ER Collet, Refer to page 103-109
ER 变径套，请参阅 103页～109页

ER nut, Sealing disk and Spanner refer to page 110-115
ER螺帽，密封圈，扳手 请参考110～115页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | CLAMPING RANGE 夹持范围 | L | D | G | H | NUT / COLLET 螺母 / 筒夹 | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|
| 50 | BT50AD/B-ER16-100 | P2776522 | 0.5 - 10.0 | 100 | 28 | M12 | 45 | ER16 | 4.20 |
| | BT50AD/B-ER16-120 | P2776523 | 0.5 - 10.0 | 120 | 28 | M12 | 45 | ER16 | 4.40 |
| | BT50AD/B-ER16-165 | P2776524 | 0.5 - 10.0 | 165 | 28 | M12 | 45 | ER16 | 4.60 |
| | BT50AD/B-ER20-100 | P2776525 | 0.5 - 13.0 | 100 | 34 | M12 | 50 | ER20 | 4.60 |
| | BT50AD/B-ER20-135 | P2776526 | 0.5 - 13.0 | 135 | 34 | M12 | 50 | ER20 | 4.80 |
| | BT50AD/B-ER20-165 | P2776527 | 0.5 - 13.0 | 165 | 34 | M12 | 50 | ER20 | 5.00 |
| | BT50AD/B-ER25-100 | P2776528 | 1.0 - 16.0 | 100 | 42 | M12 | 65 | ER25 | 4.70 |
| | BT50AD/B-ER25-135 | P2776529 | 1.0 - 16.0 | 135 | 42 | M12 | 65 | ER25 | 4.80 |
| | BT50AD/B-ER25-165 | P2776530 | 1.0 - 16.0 | 165 | 42 | M12 | 65 | ER25 | 5.00 |
| | BT50AD/B-ER32-100 | P2600026 | 1.0 - 20.0 | 100 | 50 | M12 | 65 | ER32 | 5.20 |
| | BT50AD/B-ER32-135 | P2776531 | 1.0 - 20.0 | 135 | 50 | M12 | 65 | ER32 | 5.70 |
| | BT50AD/B-ER32-165 | P2776532 | 1.0 - 20.0 | 165 | 50 | M12 | 65 | ER32 | 5.80 |
| | BT50AD/B-ER40-100 | P2600027 | 2.0 - 30.0 | 100 | 63 | M12 | 75 | ER40 | 5.60 |
| | BT50AD/B-ER40-150 | P2776533 | 2.0 - 30.0 | 150 | 63 | M12 | 75 | ER40 | 6.10 |
| | BT50AD/B-ER50-100 | P2776534 | 4.0 - 34.0 | 100 | 78 | M16 | 85 | ER50 | 5.80 |
| | BT50AD/B-ER50-150 | P2776535 | 4.0 - 34.0 | 150 | 78 | M16 | 85 | ER50 | 6.30 |

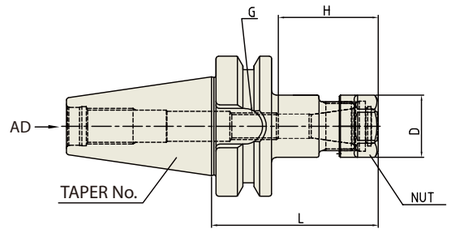
▶ CAT(ANSI B5.50) taper and Inch type products are available.
CAT(ANSI B5.50)锥柄及英制产品可供选择

# ER COLLET CHUCK

ER

## ER COLLET CHUCK
## ER夹头刀柄

JIS B6339/
MAS 403-BT




JIS B6339-BT | AT3 | 6.3G | 15,000 RPM | AD

ER Collet, Refer to page 103-109
ER 变径套，请参阅 103页～109页

ER nut, Sealing disk and Spanner refer to page 110-115
ER螺帽，密封圈，扳手 请参考110～115页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | CLAMPING RANGE 夹持范围 | L | D | G | H | NUT / COLLET 螺母 / 筒夹 | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|
| 30 | **BT30-ER11-70** | **P2772107** | 0.5 - 7.0 | 70 | 19 | M6 | 45 | ER11 | 0.50 |
| | **BT30-ER11-100** | **P2772108** | 0.5 - 7.0 | 100 | 19 | M6 | 45 | ER11 | 0.50 |
| | **BT30-ER16-70** | **P2772109** | 0.5 - 10.0 | 70 | 28 | M12 | 45 | ER16 | 1.00 |
| | **BT30-ER16-100** | **P2772110** | 0.5 - 10.0 | 100 | 28 | M12 | 45 | ER16 | 1.10 |
| | **BT30-ER20-80** | **P2772111** | 0.5 - 13.0 | 80 | 34 | M12 | 50 | ER20 | 1.20 |
| | **BT30-ER20-100** | **P2772112** | 0.5 - 13.0 | 100 | 34 | M12 | 50 | ER20 | 1.30 |
| | **BT30-ER25-70** | **P2772106** | 1.0 - 16.0 | 70 | 42 | M12 | 65 | ER25 | 1.20 |
| | **BT30-ER25-100** | **P2772113** | 1.0 - 16.0 | 100 | 42 | M12 | 65 | ER25 | 1.30 |
| | **BT30-ER32-60** | **P2772144** | 1.0 - 20.0 | 60 | 50 | M12 | 65 | ER32 | 1.40 |
| | **BT30-ER32-90** | **P2772115** | 1.0 - 20.0 | 90 | 50 | M12 | 65 | ER32 | 1.90 |
| 40 | **BT40-ER11-75** | **P2772116** | 0.5 - 7.0 | 75 | 19 | M6 | 45 | ER11 | 1.00 |
| | **BT40-ER11-100** | **P2772117** | 0.5 - 7.0 | 100 | 19 | M6 | 45 | ER11 | 1.10 |
| | **BT40-ER16-75** | **P2772101** | 0.5 - 10.0 | 75 | 28 | M12 | 45 | ER16 | 1.10 |
| | **BT40-ER16-100** | **P2772118** | 0.5 - 10.0 | 100 | 28 | M12 | 45 | ER16 | 1.20 |
| | **BT40-ER16-120** | **P2772119** | 0.5 - 10.0 | 120 | 28 | M12 | 45 | ER16 | 1.40 |
| | **BT40-ER20-75** | **P2772102** | 0.5 - 13.0 | 75 | 34 | M12 | 50 | ER20 | 1.40 |
| | **BT40-ER20-100** | **P2772120** | 0.5 - 13.0 | 100 | 34 | M12 | 50 | ER20 | 1.80 |
| | **BT40-ER20-135** | **P2772121** | 0.5 - 13.0 | 135 | 34 | M12 | 50 | ER20 | 2.20 |
| | **BT40-ER25-75** | **P2772103** | 1.0 - 16.0 | 75 | 42 | M12 | 65 | ER25 | 1.40 |
| | **BT40-ER25-100** | **P2772122** | 1.0 - 16.0 | 100 | 42 | M12 | 65 | ER25 | 1.80 |
| | **BT40-ER25-135** | **P2772123** | 1.0 - 16.0 | 135 | 42 | M12 | 65 | ER25 | 2.20 |
| | **BT40-ER25-150** | **P2772124** | 1.0 - 16.0 | 150 | 42 | M12 | 65 | ER25 | 2.40 |
| | **BT40-ER32-60** | **P2772104** | 1.0 - 20.0 | 60 | 50 | M12 | 65 | ER32 | 1.80 |
| | **BT40-ER32-100** | **P2772125** | 1.0 - 20.0 | 100 | 50 | M12 | 65 | ER32 | 2.20 |
| | **BT40-ER32-120** | **P2772105** | 1.0 - 20.0 | 120 | 50 | M12 | 65 | ER32 | 2.40 |
| | **BT40-ER32-150** | **P2772126** | 1.0 - 20.0 | 150 | 50 | M12 | 65 | ER32 | 2.60 |
| | **BT40-ER40-80** | **P2772127** | 2.0 - 30.0 | 80 | 63 | M12 | 75 | ER40 | 1.50 |

▶ CAT(ANSI B5.50) taper and Inch type products are available.
CAT(ANSI B5.50)锥柄及英制产品可供选择

▶ NEXT PAGE



TOOLING SYSTEM

HYDRAULIC CHUCK
SHRINK FIT HOLDER
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END MILL HOLDER & SIDE LOCK ARBOR
SHELL MILL ARBOR
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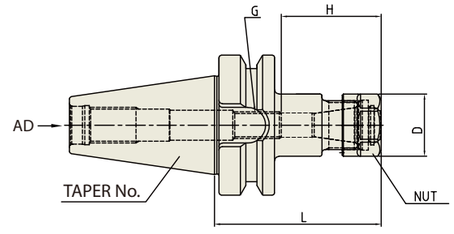
SK SLIM CHUCK
SYNCHRO TAPPING CHUCK
ONE STEP TAPPING CHUCK
TAPPING ER CHUCK
FACE MILL ARBOR
COPY MILL ARBOR & INDEXABLE DRILL HOLDER
NC DRILL CHUCK & OTHER TOOL HOLDERS
BORING SYSTEM
ACCESSORY & OTHERS

ER COLLET CHUCK

ER

ER COLLET CHUCK
ER夹头刀柄

JIS B6339/
MAS 403-BT




JIS B6339-BT | AT3 | 6.3G | 15,000 RPM | AD

ER Collet, Refer to page 103-109
ER 变径套，请参阅 103页～109页

ER nut, Sealing disk and Spanner refer to page 110-115
ER螺帽，密封圈，扳手 请参考110～115页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | CLAMPING RANGE 夹持范围 | L | D | G | H | NUT / COLLET 螺母 / 筒夹 | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|
| 50 | **BT50-ER16-100** | **P2772128** | 0.5 - 10.0 | 100 | 28 | M12 | 45 | ER16 | 4.20 |
| | **BT50-ER16-120** | **P2772129** | 0.5 - 10.0 | 120 | 28 | M12 | 45 | ER16 | 4.40 |
| | **BT50-ER16-165** | **P2772130** | 0.5 - 10.0 | 165 | 28 | M12 | 45 | ER16 | 4.60 |
| | **BT50-ER20-100** | **P2772131** | 0.5 - 13.0 | 100 | 34 | M12 | 50 | ER20 | 4.60 |
| | **BT50-ER20-135** | **P2772132** | 0.5 - 13.0 | 135 | 34 | M12 | 50 | ER20 | 4.80 |
| | **BT50-ER20-165** | **P2772133** | 0.5 - 13.0 | 165 | 34 | M12 | 50 | ER20 | 5.00 |
| | **BT50-ER25-100** | **P2772134** | 1.0 - 16.0 | 100 | 42 | M12 | 65 | ER25 | 4.70 |
| | **BT50-ER25-135** | **P2772135** | 1.0 - 16.0 | 135 | 42 | M12 | 65 | ER25 | 4.80 |
| | **BT50-ER25-165** | **P2772136** | 1.0 - 16.0 | 165 | 42 | M12 | 65 | ER25 | 5.00 |
| | **BT50-ER32-100** | **P2772137** | 1.0 - 20.0 | 100 | 50 | M12 | 65 | ER32 | 5.20 |
| | **BT50-ER32-135** | **P2772138** | 1.0 - 20.0 | 135 | 50 | M12 | 65 | ER32 | 5.70 |
| | **BT50-ER32-165** | **P2772139** | 1.0 - 20.0 | 165 | 50 | M12 | 65 | ER32 | 5.80 |
| | **BT50-ER40-100** | **P2772140** | 2.0 - 30.0 | 100 | 63 | M12 | 75 | ER40 | 5.60 |
| | **BT50-ER40-150** | **P2772141** | 2.0 - 30.0 | 150 | 63 | M12 | 75 | ER40 | 6.10 |
| | **BT50-ER50-100** | **P2772142** | 4.0 - 34.0 | 100 | 78 | M16 | 85 | ER50 | 5.80 |
| | **BT50-ER50-150** | **P2772143** | 4.0 - 34.0 | 150 | 78 | M16 | 85 | ER50 | 6.30 |

▶ CAT(ANSI B5.50) taper and Inch type products are available.
CAT(ANSI B5.50)锥柄及英制产品可供选择

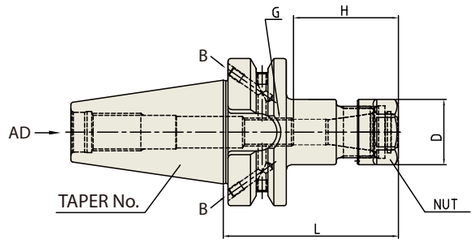
ER COLLET CHUCK

ER

## ER COLLET CHUCK

JIS B6339/
MAS 403-BT

# ER夹头刀柄




JIS B6339-BT | AT3 | 6.3G | 15,000 RPM | AD/B

ER Collet, Refer to page 103-109
ER 变径套，请参阅 103页～109页

ER nut, Sealing disk and Spanner refer to page 110-115
ER螺帽，密封圈，扳手 请参考110～115页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | CLAMPING RANGE 夹持范围 | L | D | G | H | NUT / COLLET 螺母 / 筒夹 | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|
| 40 | BT40AD/B-ER11-75 | P2776551 | 0.5 - 7.0 | 75 | 19 | M6 | 45 | ER11 | 1.00 |
| | BT40AD/B-ER11-100 | P2776552 | 0.5 - 7.0 | 100 | 19 | M6 | 45 | ER11 | 1.10 |
| | BT40AD/B-ER16-75 | P2776553 | 0.5 - 10.0 | 75 | 28 | M12 | 45 | ER16 | 1.10 |
| | BT40AD/B-ER16-100 | P2776554 | 0.5 - 10.0 | 100 | 28 | M12 | 45 | ER16 | 1.20 |
| | BT40AD/B-ER16-120 | P2776555 | 0.5 - 10.0 | 120 | 28 | M12 | 45 | ER16 | 1.40 |
| | BT40AD/B-ER20-75 | P2776556 | 0.5 - 13.0 | 75 | 34 | M12 | 50 | ER20 | 1.40 |
| | BT40AD/B-ER20-100 | P2776557 | 0.5 - 13.0 | 100 | 34 | M12 | 50 | ER20 | 1.80 |
| | BT40AD/B-ER20-135 | P2776558 | 0.5 - 13.0 | 135 | 34 | M12 | 50 | ER20 | 2.20 |
| | BT40AD/B-ER25-75 | P2776559 | 1.0 - 16.0 | 75 | 42 | M12 | 65 | ER25 | 1.40 |
| | BT40AD/B-ER25-100 | P2776560 | 1.0 - 16.0 | 100 | 42 | M12 | 65 | ER25 | 1.80 |
| | BT40AD/B-ER25-135 | P2776561 | 1.0 - 16.0 | 135 | 42 | M12 | 65 | ER25 | 2.20 |
| | BT40AD/B-ER25-150 | P2776562 | 1.0 - 16.0 | 150 | 42 | M12 | 65 | ER25 | 2.40 |
| | BT40AD/B-ER32-60 | P2776563 | 1.0 - 20.0 | 60 | 50 | M12 | 65 | ER32 | 1.80 |
| | BT40AD/B-ER32-100 | P2776564 | 1.0 - 20.0 | 100 | 50 | M12 | 65 | ER32 | 2.20 |
| 50 | BT50AD/B-ER16-100 | P2776565 | 0.5 - 10.0 | 100 | 28 | M12 | 45 | ER16 | 4.20 |
| | BT50AD/B-ER16-120 | P2776566 | 0.5 - 10.0 | 120 | 28 | M12 | 45 | ER16 | 4.40 |
| | BT50AD/B-ER16-165 | P2776567 | 0.5 - 10.0 | 165 | 28 | M12 | 45 | ER16 | 4.60 |
| | BT50AD/B-ER20-100 | P2776568 | 0.5 - 13.0 | 100 | 34 | M12 | 50 | ER20 | 4.60 |
| | BT50AD/B-ER20-135 | P2776569 | 0.5 - 13.0 | 135 | 34 | M12 | 50 | ER20 | 4.80 |
| | BT50AD/B-ER20-165 | P2776570 | 0.5 - 13.0 | 165 | 34 | M12 | 50 | ER20 | 5.00 |
| | BT50AD/B-ER25-100 | P2776571 | 1.0 - 16.0 | 100 | 42 | M12 | 65 | ER25 | 4.70 |
| | BT50AD/B-ER25-135 | P2776572 | 1.0 - 16.0 | 135 | 42 | M12 | 65 | ER25 | 4.80 |
| | BT50AD/B-ER25-165 | P2776573 | 1.0 - 16.0 | 165 | 42 | M12 | 65 | ER25 | 5.00 |
| | BT50AD/B-ER32-100 | P2776574 | 1.0 - 20.0 | 100 | 50 | M12 | 65 | ER32 | 5.20 |
| | BT50AD/B-ER32-135 | P2776575 | 1.0 - 20.0 | 135 | 50 | M12 | 65 | ER32 | 5.70 |
| | BT50AD/B-ER32-165 | P2776576 | 1.0 - 20.0 | 165 | 50 | M12 | 65 | ER32 | 5.80 |
| | BT50AD/B-ER40-100 | P2776577 | 2.0 - 30.0 | 100 | 63 | M12 | 75 | ER40 | 5.60 |
| | BT50AD/B-ER40-150 | P2776578 | 2.0 - 30.0 | 150 | 63 | M12 | 75 | ER40 | 6.10 |
| | BT50AD/B-ER50-100 | P2776579 | 4.0 - 34.0 | 100 | 78 | M16 | 85 | ER50 | 5.80 |
| | BT50AD/B-ER50-150 | P2776580 | 4.0 - 34.0 | 150 | 78 | M16 | 85 | ER50 | 6.30 |

▶CAT(ANSI B5.50) taper and Inch type products are available.
CAT(ANSI B5.50)锥柄及英制产品可供选择



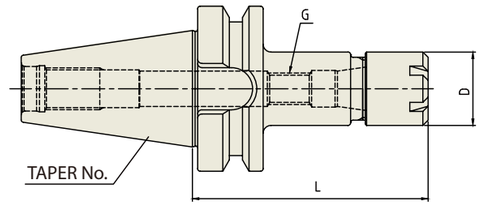
ER COLLET CHUCK

ER

## ER COLLET CHUCK

JIS B6339/
MAS 403-BT

# ER夹头刀柄




JIS B6339-BT | AT3 | 6.3G | 15,000 RPM | AD

ER Collet, Refer to page 103-109
ER 变径套，请参阅 103页～109页

ER nut, Sealing disk and Spanner refer to page 110-115
ER螺帽，密封圈，扳手 请参考110～115页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | CLAMPING RANGE 夹持范围 | L | D | G | H | NUT / COLLET 螺母 / 筒夹 | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|
| 30 | BT30-ER11M-50 | P2802601 | 0.5 - 7.0 | 50 | 16 | M6 | 29.5 | XSQ-R11M / ER11 | 0.50 |
| | BT30-ER11M-75 | P2802602 | 0.5 - 7.0 | 75 | 16 | M6 | 29.5 | XSQ-R11M / ER11 | 0.50 |
| | BT30-ER11M-100 | P2802603 | 0.5 - 7.0 | 100 | 16 | M6 | 29.5 | XSQ-R11M / ER11 | 0.60 |
| | BT30-ER16M-50 | P2802604 | 0.5 - 10.0 | 50 | 22 | M10 | 38 | XSQ-R16M / ER16 | 0.50 |
| | BT30-ER16M-75 | P2802605 | 0.5 - 10.0 | 75 | 22 | M10 | 38 | XSQ-R16M / ER16 | 0.50 |
| | BT30-ER16M-100 | P2802606 | 0.5 - 10.0 | 100 | 22 | M10 | 38 | XSQ-R16M / ER16 | 0.60 |
| | BT30-ER20M-50 | P2802607 | 0.5 - 13.0 | 50 | 28 | M12 | 44.5 | XSQ-R20M / ER20 | 0.50 |
| | BT30-ER20M-75 | P2802608 | 0.5 - 13.0 | 75 | 28 | M12 | 44.5 | XSQ-R20M / ER20 | 0.60 |
| | BT30-ER20M-100 | P2802609 | 0.5 - 13.0 | 100 | 28 | M12 | 44.5 | XSQ-R20M / ER20 | 0.70 |
| | BT30-ER25M-50 | P2802610 | 1.0 - 16.0 | 50 | 35 | M12 | 52 | XSQ-R25M / ER25 | 0.60 |
| | BT30-ER25M-75 | P2802611 | 1.0 - 16.0 | 75 | 35 | M12 | 52 | XSQ-R25M / ER25 | 0.70 |
| | BT30-ER25M-100 | P2802612 | 1.0 - 16.0 | 100 | 35 | M12 | 52 | XSQ-R25M / ER25 | 0.80 |
| 40 | BT40-ER11M-60 | P2802613 | 0.5 - 7.0 | 60 | 16 | M6 | 29.5 | XSQ-R11M / ER11 | 1.00 |
| | BT40-ER11M-90 | P2802614 | 0.5 - 7.0 | 90 | 16 | M6 | 29.5 | XSQ-R11M / ER11 | 1.10 |
| | BT40-ER11M-135 | P2802615 | 0.5 - 7.0 | 135 | 16 | M6 | 29.5 | XSQ-R11M / ER11 | 1.20 |
| | BT40-ER16M-60 | P2802616 | 0.5 - 10.0 | 60 | 22 | M10 | 38 | XSQ-R16M / ER16 | 1.10 |
| | BT40-ER16M-90 | P2802617 | 0.5 - 10.0 | 90 | 22 | M10 | 38 | XSQ-R16M / ER16 | 1.20 |
| | BT40-ER16M-135 | P2802618 | 0.5 - 10.0 | 135 | 22 | M10 | 38 | XSQ-R16M / ER16 | 1.40 |
| | BT40-ER20M-60 | P2802619 | 0.5 - 13.0 | 60 | 28 | M12 | 44.5 | XSQ-R20M / ER20 | 1.10 |
| | BT40-ER20M-90 | P2802620 | 0.5 - 13.0 | 90 | 28 | M12 | 44.5 | XSQ-R20M / ER20 | 1.50 |
| | BT40-ER20M-150 | P2802621 | 0.5 - 13.0 | 150 | 28 | M12 | 44.5 | XSQ-R20M / ER20 | 1.80 |
| | BT40-ER25M-60 | P2802622 | 1.0 - 16.0 | 60 | 35 | M12 | 52 | XSQ-R25M / ER25 | 1.20 |
| | BT40-ER25M-90 | P2802623 | 1.0 - 16.0 | 90 | 35 | M12 | 52 | XSQ-R25M / ER25 | 1.40 |
| | BT40-ER25M-150 | P2802624 | 1.0 - 16.0 | 150 | 35 | M12 | 52 | XSQ-R25M / ER25 | 1.80 |
| 50 | BT50-ER11M-90 | P2802625 | 0.5 - 7.0 | 90 | 16 | M6 | 29.5 | XSQ-R11M / ER11 | 3.80 |
| | BT50-ER11M-120 | P2802626 | 0.5 - 7.0 | 120 | 16 | M6 | 29.5 | XSQ-R11M / ER11 | 3.90 |
| | BT50-ER11M-165 | P2802627 | 0.5 - 7.0 | 165 | 16 | M6 | 29.5 | XSQ-R11M / ER11 | 4.00 |
| | BT50-ER16M-90 | P2802628 | 0.5 - 10.0 | 90 | 22 | M10 | 38 | XSQ-R16M / ER16 | 3.80 |
| | BT50-ER16M-120 | P2802629 | 0.5 - 10.0 | 120 | 22 | M10 | 38 | XSQ-R16M / ER16 | 4.00 |
| | BT50-ER16M-165 | P2802630 | 0.5 - 10.0 | 165 | 22 | M10 | 38 | XSQ-R16M / ER16 | 4.20 |
| | BT50-ER20M-75 | P2802631 | 0.5 - 13.0 | 75 | 28 | M12 | 44.5 | XSQ-R20M / ER20 | 3.80 |
| | BT50-ER20M-105 | P2802632 | 0.5 - 13.0 | 105 | 28 | M12 | 44.5 | XSQ-R20M / ER20 | 3.90 |
| | BT50-ER20M-165 | P2802633 | 0.5 - 13.0 | 165 | 28 | M12 | 44.5 | XSQ-R20M / ER20 | 4.50 |
| | BT50-ER25M-75 | P2802634 | 1.0 - 16.0 | 75 | 35 | M12 | 52 | XSQ-R25M / ER25 | 3.90 |
| | BT50-ER25M-105 | P2802635 | 1.0 - 16.0 | 105 | 35 | M12 | 52 | XSQ-R25M / ER25 | 4.10 |
| | BT50-ER25M-165 | P2802636 | 1.0 - 16.0 | 165 | 35 | M12 | 52 | XSQ-R25M / ER25 | 4.40 |

▶CAT(ANSI B5.50) taper and Inch type products are available.
CAT(ANSI B5.50)锥柄及英制产品可供选择



TOOLING SYSTEM

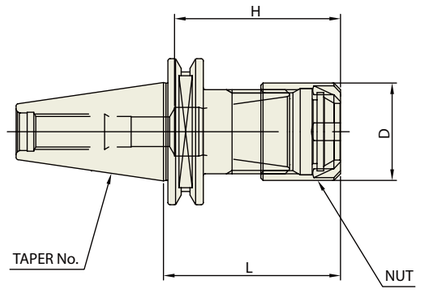
HYDRAULIC CHUCK
SHRINK FIT HOLDER
ER COLLET CHUCK
END MILL HOLDER & SIDE LOCK ARBOR
SHELL MILL ARBOR
POWER MILLING CHUCK
MORSE TAPER ARBOR
SK SLIM CHUCK
SYNCHRO TAPPING CHUCK
ONE STEP TAPPING CHUCK
TAPPING ER CHUCK
TAPPING CHUCK
FACE MILL ARBOR
COPY MILL ARBOR & INDEXABLE DRILL HOLDER
NC DRILL CHUCK & OTHER TOOL HOLDERS
BORING SYSTEM
ACCESSORY & OTHERS

# ER COLLET CHUCK



## ER COLLET CHUCK
## ER夹头刀柄

**ISO 20/25 (SLIM TYPE)**




ISO 20/25 | AT3 | 2.5G | 30,000 RPM | AD

ER Collet, Refer to page 103-109
ER 变径套，请参阅 103页～109页

ER nut, Sealing disk and Spanner refer to page 110-115
ER螺帽，密封圈，扳手 请参考110～115页

Unit (单位) : mm

| TAPER No.<br>锥度号 | MODEL No.<br>型号 | EDP No. | CLAMPING RANGE<br>夹持范围 | L | D | H | NUT / COLLET<br>螺母 / 筒夹 | WEIGHT<br>重量(Kg) |
|---|---|---|---|---|---|---|---|---|
| 20 | **ISO20-ER16M-35** | **P2776541** | 0.5 - 10.0 | 35 | 22 | 37.5 | ER16M / ER16 | - |
| 25 | **ISO25-ER16M-35** | **P2776542** | 0.5 - 10.0 | 35 | 22 | 37.5 | ER16M / ER16 | - |
| | **ISO25-ER20M-36** | **P2776543** | 0.5 - 13.0 | 36 | 28 | - | ER20M / ER20 | - |

▶ Higher balancing grade is available upon request.
可根据要求提供高动平衡等级

▶ To be supplied with assembling of pull stud bolt.
可供应拉丁组装型产品



TOOLING SYSTEM

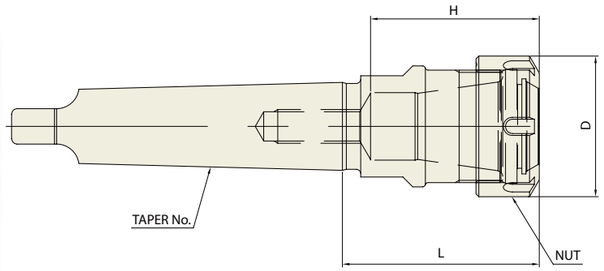
HYDRAULIC CHUCK
SHRINK FIT HOLDER
ER COLLET CHUCK
END MILL HOLDER & SIDE LOCK ARBOR
SHELL MILL ARBOR
POWER MILLING CHUCK
MORSE TAPER ARBOR
SK SLIM CHUCK
SYNCHRO TAPPING CHUCK
ONE STEP TAPPING CHUCK
TAPPING ER CHUCK
TAPPING CHUCK
FACE MILL ARBOR
COPY MILL ARBOR & INDEXABLE DRILL HOLDER
NC DRILL CHUCK & OTHER TOOL HOLDERS
BORING SYSTEM
ACCESSORY & OTHERS

# ER COLLET CHUCK

ER

## ER COLLET CHUCK
## ER夹头刀柄

**DIN 228-MTA**




ER Collet, Refer to page 103-109
ER 变径套，请参阅 103页～109页

ER nut, Sealing disk and Spanner refer to page 110-115
ER螺帽，密封圈，扳手 请参考110～115页

Unit (单位) : mm

| TAPER No.<br>锥度号 | MODEL No.<br>型号 | EDP No. | CLAMPING RANGE<br>夹持范围 | L | D | H | NUT / COLLET<br>螺母 / 筒夹 | WEIGHT<br>重量(Kg) |
|---|---|---|---|---|---|---|---|---|
| 1 | **MTA1-ER11** | **P2772241** | 0.5 - 7.0 | 42.1 | 19 | 28.6 | ER11 | 0.30 |
| | **MTA1-ER16** | **P2772242** | 0.5 - 10.0 | 43.9 | 28 | 36.6 | ER16 | 0.35 |
| 2 | **MTA2-ER20** | **P2772243** | 0.5 - 13.0 | 50 | 34 | 40.5 | ER20 | 0.50 |
| | **MTA2-ER25** | **P2772244** | 1.0 - 16.0 | 50 | 42 | 41 | ER25 | 0.60 |
| 3 | **MTA3-ER25** | **P2772245** | 1.0 - 16.0 | 60 | 42 | 52 | ER25 | 0.60 |
| | **MTA3-ER32** | **P2772246** | 1.0 - 20.0 | 70 | 50 | 47 | ER32 | 0.65 |
| 4 | **MTA4-ER20** | **P2772247** | 0.5 - 13.0 | 60 | 34 | 50 | ER20 | 1.00 |
| | **MTA4-ER25** | **P2772248** | 1.0 - 16.0 | 60 | 42 | 52 | ER25 | 1.10 |
| | **MTA4-ER32** | **P2772249** | 1.0 - 20.0 | 65 | 50 | 48 | ER32 | 1.30 |
| | **MTA4-ER40** | **P2772250** | 2.0 - 30.0 | 80 | 63 | 69 | ER40 | 1.50 |
| 5 | **MTA5-ER32** | **P2772251** | 1.0 - 20.0 | 70 | 50 | 60 | ER32 | 2.20 |
| | **MTA5-ER40** | **P2772252** | 2.0 - 30.0 | 80 | 63 | 69 | ER40 | 2.40 |
| | **MTA5-ER50** | **P2772253** | 4.0 - 34.0 | 80 | 78 | 69 | ER50 | 2.80 |

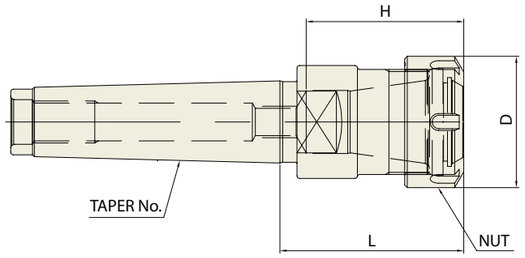
# ER COLLET CHUCK

ER

## ER COLLET CHUCK

DIN 228-MTB

## ER夹头刀柄




ER Collet, Refer to page 103-109
ER 变径套，请参阅 103页～109页

ER nut, Sealing disk and Spanner refer to page 110-115
ER螺帽，密封圈，扳手 请参考110～115页

Unit (单位) : mm

| TAPER No.<br>锥度号 | MODEL No.<br>型号 | EDP No. | CLAMPING RANGE<br>夹持范围 | L | D | H | NUT / COLLET<br>螺母 / 筒夹 | WEIGHT<br>重量(Kg) |
|---|---|---|---|---|---|---|---|---|
| 1 | **MTB1-ER16** | **P2772254** | 0.5 - 10.0 | 43.9 | 28 | 36.6 | ER16 | 0.35 |
| 2 | **MTB2-ER20** | **P2772255** | 0.5 - 13.0 | 50 | 34 | 40.5 | ER20 | 0.50 |
| | **MTB2-ER25** | **P2772256** | 1.0 - 16.0 | 50 | 42 | 41 | ER25 | 0.60 |
| 3 | **MTB3-ER25** | **P2772257** | 1.0 - 16.0 | 60 | 42 | 52 | ER25 | 0.60 |
| | **MTB3-ER32** | **P2772258** | 1.0 - 20.0 | 70 | 50 | 47 | ER32 | 0.65 |
| 4 | **MTB4-ER32** | **P2772259** | 1.0 - 20.0 | 65 | 50 | 48 | ER32 | 1.10 |
| | **MTB4-ER40** | **P2772260** | 2.0 - 30.0 | 80 | 63 | 69 | ER40 | 1.30 |
| 5 | **MTB5-ER32** | **P2772261** | 1.0 - 20.0 | 70 | 50 | 60 | ER32 | 2.00 |
| | **MTB5-ER40** | **P2772262** | 2.0 - 30.0 | 80 | 63 | 69 | ER40 | 2.20 |
| | **MTB5-ER50** | **P2772263** | 4.0 - 34.0 | 80 | 78 | 69 | ER50 | 2.60 |





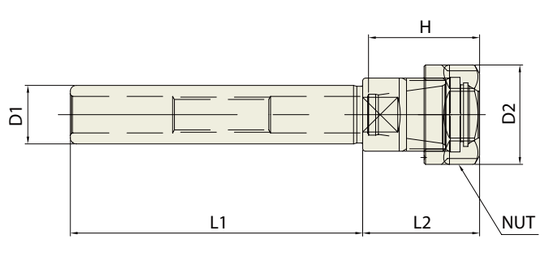
# ER COLLET CHUCK

ER

## ER COLLET CHUCK

STRAIGHT-K

## ER夹头刀柄




ER Collet, Refer to page 103-109
ER 变径套，请参阅 103页～109页

ER nut, Sealing disk and Spanner refer to page 110-115
ER螺帽，密封圈，扳手 请参考110～115页

Unit (单位) : mm

| TAPER No.<br>锥度号 | MODEL No.<br>型号 | EDP No. | CLAMPING RANGE<br>夹持范围 | D1 | D2 | L1 | L2 | H | NUT / COLLET<br>螺母 / 筒夹 | WEIGHT<br>重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|---|
| 16 | **K16-ER11-100** | **P2772201** | 0.5 - 7.0 | 16 | 19 | 100 | 32 | 27 | ER11 | 0.15 |
| | **K16-ER16-100** | **P2772219** | 0.5 - 10.0 | 16 | 28 | 100 | 36 | 32.6 | ER16 | 0.18 |
| 20 | **K20-ER16-100** | **P2772202** | 0.5 - 10.0 | 20 | 28 | 100 | 36 | 35.6 | ER16 | 0.25 |
| | **K20-ER20-100** | **P2772203** | 0.5 - 13.0 | 20 | 34 | 100 | 40 | 38 | ER20 | 0.29 |
| | **K20-ER25-100** | **P2772220** | 1.0 - 16.0 | 20 | 42 | 100 | 50 | 44 | ER25 | 0.35 |
| 25 | **K25-ER20-100** | **P2772221** | 0.5 - 13.0 | 25 | 34 | 100 | 40 | 71.6 | ER20 | 0.40 |
| | **K25-ER25-100** | **P2772204** | 1.0 - 16.0 | 25 | 42 | 100 | 50 | 43.1 | ER25 | 0.45 |
| 32 | **K32-ER16-100** | **P2772222** | 0.5 - 10.0 | 32 | 28 | 100 | 36 | - | ER16 | 0.50 |
| | **K32-ER20-100** | **P2772223** | 0.5 - 13.0 | 32 | 34 | 100 | 40 | 71.6 | ER20 | 0.66 |
| | **K32-ER25-100** | **P2772224** | 1.0 - 16.0 | 32 | 42 | 100 | 50 | 71.1 | ER25 | 0.75 |
| | **K32-ER32-100** | **P2772225** | 1.0 - 20.0 | 32 | 50 | 100 | 58 | 78 | ER32 | 1.00 |

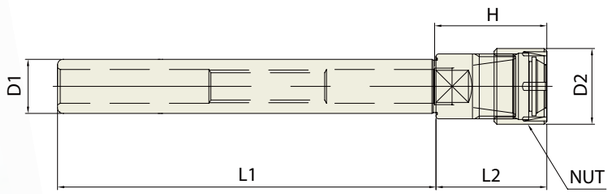
# ER COLLET CHUCK

ER

## EXTENSION ER COLLET CHUCK

STRAIGHT-K (SLIM TYPE)

## ER夹头刀柄 (细长型)




ER Collet, Refer to page 103-109
ER 变径套，请参阅 103页～109页

ER nut, Sealing disk and Spanner refer to page 110-115
ER螺帽，密封圈，扳手 请参考110～115页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | CLAMPING RANGE 夹持范围 | D1 | D2 | L1 | L2 | H | NUT / COLLET 螺母 / 筒夹 | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|---|
| 12 | K12-ER8M-70 | P2772205 | 0.5 - 5.0 | 12 | 12 | 70 | 25 | 38 | ER8M / ER8 | 0.10 |
| | K12-ER8M-100 | P2780001 | 0.5 - 5.0 | 12 | 12 | 100 | 25 | 38 | ER8M / ER8 | 0.13 |
| | K12-ER8M-150 | P2780002 | 0.5 - 5.0 | 12 | 12 | 150 | 25 | 38 | ER8M / ER8 | 0.17 |
| | K12-ER8M-200 | P2780003 | 0.5 - 5.0 | 12 | 12 | 200 | 25 | 38 | ER8M / ER8 | 0.21 |
| | K12-ER8M-250 | P2780004 | 0.5 - 5.0 | 12 | 12 | 250 | 25 | 38 | ER8M / ER8 | 0.26 |
| | K12-ER8M-300 | P2780005 | 0.5 - 5.0 | 12 | 12 | 300 | 25 | 38 | ER8M / ER8 | 0.3 |
| 16 | K16-ER11M-100 | P2780006 | 0.5 - 7.0 | 16 | 16 | 100 | 32 | 29.5 | ER11M / ER11 | 0.18 |
| | K16-ER11M-140 | P2772206 | 0.5 - 7.0 | 16 | 16 | 140 | 32 | 29.5 | ER11M / ER11 | 0.23 |
| | K16-ER11M-200 | P2780007 | 0.5 - 7.0 | 16 | 16 | 200 | 32 | 29.5 | ER11M / ER11 | 0.37 |
| | K16-ER11M-250 | P2780008 | 0.5 - 7.0 | 16 | 16 | 250 | 32 | 29.5 | ER11M / ER11 | 0.45 |
| | K16-ER11M-300 | P2780009 | 0.5 - 7.0 | 16 | 16 | 300 | 32 | 29.5 | ER11M / ER11 | 0.52 |
| | K16-ER16M-100 | P2780010 | 0.5 - 10.0 | 16 | 22 | 100 | 32 | 38 | ER16M / ER16 | 0.18 |
| | K16-ER16M-140 | P2780011 | 0.5 - 10.0 | 16 | 22 | 140 | 32 | 38 | ER16M / ER16 | 0.23 |
| | K16-ER16M-200 | P2780012 | 0.5 - 10.0 | 16 | 22 | 200 | 32 | 38 | ER16M / ER16 | 0.37 |
| | K16-ER16M-250 | P2780013 | 0.5 - 10.0 | 16 | 22 | 250 | 32 | 38 | ER16M / ER16 | 0.45 |
| | K16-ER16M-300 | P2780014 | 0.5 - 10.0 | 16 | 22 | 300 | 32 | 38 | ER16M / ER16 | 0.52 |
| 20 | K20-ER16M-100 | P2780015 | 0.5 - 10.0 | 20 | 22 | 100 | 41 | - | ER16M / ER16 | 0.22 |
| | K20-ER16M-140 | P2772207 | 0.5 - 10.0 | 20 | 22 | 140 | 41 | - | ER16M / ER16 | 0.28 |
| | K20-ER16M-200 | P2780016 | 0.5 - 10.0 | 20 | 22 | 200 | 41 | - | ER16M / ER16 | 0.54 |
| | K20-ER16M-250 | P2780017 | 0.5 - 10.0 | 20 | 22 | 250 | 41 | - | ER16M / ER16 | 0.66 |
| | K20-ER16M-300 | P2780018 | 0.5 - 10.0 | 20 | 22 | 300 | 41 | - | ER16M / ER16 | 0.78 |
| | K20-ER20M-100 | P2780019 | 0.5 - 13.0 | 20 | 28 | 100 | 41 | 41.5 | ER20M / ER20 | 0.25 |
| | K20-ER20M-140 | P2772208 | 0.5 - 13.0 | 20 | 28 | 140 | 41 | 41.5 | ER20M / ER20 | 0.32 |
| | K20-ER20M-200 | P2780020 | 0.5 - 13.0 | 20 | 28 | 200 | 41 | 41.5 | ER20M / ER20 | 0.54 |
| | K20-ER20M-250 | P2780021 | 0.5 - 13.0 | 20 | 28 | 250 | 41 | 41.5 | ER20M / ER20 | 0.66 |
| | K20-ER20M-300 | P2780022 | 0.5 - 13.0 | 20 | 28 | 300 | 41 | 41.5 | ER20M / ER20 | 0.78 |



TOOLING SYSTEM

HYDRAULIC CHUCK
SHRINK FIT HOLDER
ER COLLET CHUCK
END MILL HOLDER & SIDE LOCK ARBOR
SHELL MILL ARBOR
POWER MILLING CHUCK
MORSE TAPER ARBOR
SK SLIM CHUCK
SYNCHRO TAPPING CHUCK
ONE STEP TAPPING CHUCK
TAPPING ER CHUCK
TAPPING CHUCK
FACE MILL ARBOR
COPY MILL ARBOR & INDEXABLE DRILL HOLDER
NC DRILL CHUCK & OTHER TOOL HOLDERS
BORING SYSTEM
ACCESSORY & OTHERS

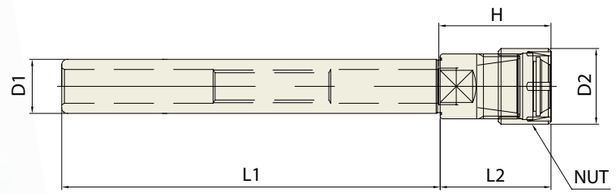
# ER COLLET CHUCK

ER

## EXTENSION ER COLLET CHUCK

STRAIGHT-K (SLIM TYPE)

## ER夹头刀柄 (细长型 )




ER Collet, Refer to page 103-109
ER 变径套，请参阅 103页～109页

ER nut, Sealing disk and Spanner refer to page 110-115
ER螺帽，密封圈，扳手 请参考110～115页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | CLAMPING RANGE 夹持范围 | D1 | D2 | L1 | L2 | H | NUT / COLLET 螺母 / 筒夹 | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|---|
| 25 | K25-ER16M-100 | P2780023 | 0.5 - 10.0 | 25 | 22 | 100 | 41 | - | ER16M / ER16 | 0.38 |
| | K25-ER16M-140 | P2772209 | 0.5 - 10.0 | 25 | 22 | 140 | 41 | - | ER16M / ER16 | 0.50 |
| | K25-ER16M-200 | P2780024 | 0.5 - 10.0 | 25 | 22 | 200 | 41 | - | ER16M / ER16 | 0.80 |
| | K25-ER16M-250 | P2780025 | 0.5 - 10.0 | 25 | 22 | 250 | 41 | - | ER16M / ER16 | 1.00 |
| | K25-ER16M-300 | P2780026 | 0.5 - 10.0 | 25 | 22 | 300 | 41 | - | ER16M / ER16 | 1.19 |
| | K25-ER20M-140 | P2772210 | 0.5 - 13.0 | 25 | 28 | 140 | 41 | 79 | ER20M / ER20 | 0.52 |
| | K25-ER20M-200 | P2780027 | 0.5 - 13.0 | 25 | 28 | 200 | 41 | 79 | ER20M / ER20 | 0.84 |
| | K25-ER20M-250 | P2780028 | 0.5 - 13.0 | 25 | 28 | 250 | 41 | 79 | ER20M / ER20 | 1.03 |
| | K25-ER20M-300 | P2780029 | 0.5 - 13.0 | 25 | 28 | 300 | 41 | 79 | ER20M / ER20 | 1.23 |
| | K25-ER25M-140 | P2772211 | 1.0 - 16.0 | 25 | 35 | 140 | 45 | 82 | ER25M / ER25 | 0.50 |
| | K25-ER25M-200 | P2780030 | 1.0 - 16.0 | 25 | 35 | 200 | 45 | 82 | ER25M / ER25 | 0.84 |
| | K25-ER25M-250 | P2780031 | 1.0 - 16.0 | 25 | 35 | 250 | 45 | 82 | ER25M / ER25 | 1.04 |
| | K25-ER25M-300 | P2780032 | 1.0 - 16.0 | 25 | 35 | 300 | 45 | 82 | ER25M / ER25 | 1.23 |
| 32 | K32-ER20M-150 | P2780033 | 0.5 - 13.0 | 32 | 28 | 150 | 41 | 41.5 | ER20M / ER25 | 0.84 |
| | K32-ER20M-200 | P2780034 | 0.5 - 13.0 | 32 | 28 | 200 | 41 | 41.5 | ER20M / ER25 | 1.31 |
| | K32-ER20M-250 | P2780035 | 0.5 - 13.0 | 32 | 28 | 250 | 41 | 41.5 | ER20M / ER25 | 1.62 |
| | K32-ER20M-300 | P2780036 | 0.5 - 13.0 | 32 | 28 | 300 | 41 | 41.5 | ER20M / ER25 | 1.94 |
| | K32-ER25M-150 | P2780037 | 1.0 - 16.0 | 32 | 35 | 150 | 41 | 41.5 | ER25M / ER25 | 1.01 |
| | K32-ER25M-200 | P2780038 | 1.0 - 16.0 | 32 | 35 | 200 | 41 | 41.5 | ER25M / ER25 | 1.32 |
| | K32-ER25M-250 | P2780039 | 1.0 - 16.0 | 32 | 35 | 250 | 41 | 41.5 | ER25M / ER25 | 1.64 |
| | K32-ER25M-300 | P2780040 | 1.0 - 16.0 | 32 | 35 | 300 | 41 | 41.5 | ER25M / ER25 | 1.95 |
| | K32-ER25M-350 | P2780041 | 1.0 - 16.0 | 32 | 35 | 350 | 41 | 41.5 | ER25M / ER25 | 2.27 |

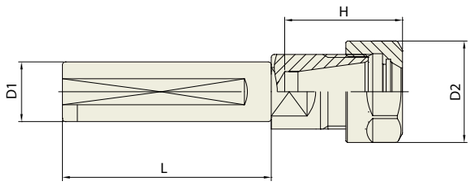
# ER COLLET CHUCK

**ERT**

## TENSION ER CHUCK (For TAPPING)

**STRAIGHT-K**

## 伸缩式ER夹头刀柄 (攻丝用)




ER Collet, Refer to page 103-109
ER 变径套，请参阅 103页～109页

ER nut, Sealing disk and Spanner refer to page 110-115
ER螺帽，密封圈，扳手 请参考110～115页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | CLAMPING RANGE 夹持范围 | D1 | D2 | L | H | NUT / COLLET 螺母 / 筒夹 | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|
| 20 | **K20-ERT16-70** | **P2772212** | 0.5 - 10.0 | 20 | 28 | 70 | 31.7 | ER16 | 0.40 |
| 25 | **K25-ERT16-80** | **P2772213** | 0.5 - 10.0 | 25 | 28 | 80 | 31.7 | ER16 | 0.45 |
| | **K25-ERT20-80** | **P2772214** | 0.5 - 13.0 | 25 | 34 | 80 | 35.5 | ER20 | 0.50 |
| 32 | **K32-ERT16-80** | **P2772215** | 0.5 - 10.0 | 32 | 28 | 80 | 31.7 | ER16 | 0.70 |
| | **K32-ERT20-80** | **P2772216** | 0.5 - 13.0 | 32 | 34 | 80 | 35.5 | ER20 | 0.80 |
| | **K32-ERT25-80** | **P2772217** | 1.0 - 16.0 | 32 | 42 | 80 | 42 | ER25 | 1.00 |
| | **K32-ERT32-80** | **P2772218** | 1.0 - 20.0 | 32 | 50 | 80 | 48 | ER32 | 1.20 |



TOOLING SYSTEM

HYDRAULIC CHUCK
SHRINK FIT HOLDER
ER COLLET CHUCK
END MILL HOLDER & SIDE LOCK ARBOR
SHELL MILL ARBOR
POWER MILLING CHUCK
MORSE TAPER ARBOR
SK SLIM CHUCK
SYNCHRO TAPPING CHUCK
ONE STEP TAPPING CHUCK
TAPPING ER CHUCK
TAPPING CHUCK
FACE MILL ARBOR
COPY MILL ARBOR & INDEXABLE DRILL HOLDER
NC DRILL CHUCK & OTHER TOOL HOLDERS
BORING SYSTEM
ACCESSORY & OTHERS

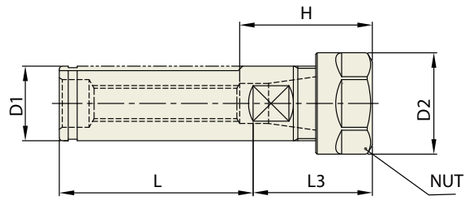
# ER COLLET CHUCK

**ER**

## ER COLLET CHUCK

**NC- for CNC LATHE**

## ER夹头刀柄



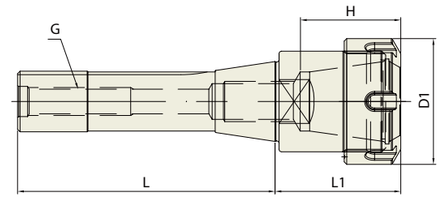

ER Collet, Refer to page 103-109
ER 变径套，请参阅 103页～109页

ER nut, Sealing disk and Spanner refer to page 110-115
ER螺帽，密封圈，扳手 请参考110～115页

### ◆ STANDARD

Unit : mm

| TAPER No. | MODEL No. | EDP No. | CLAMPING RANGE | D1 | D2 | L | L1 | H | NUT / COLLET | WEIGHT (kg) |
|---|---|---|---|---|---|---|---|---|---|---|
| 25 | **NC25-ER11** | **P2772310** | 0.5 - 7.0 | 25 | 19 | 65 | 32 | 28.6 | ER11 | 0.30 |
| | **NC25-ER16** | **P2772311** | 0.5 - 10.0 | 25 | 28 | 65 | 36 | 35.6 | ER16 | 0.45 |
| | **NC25-ER20** | **P2772301** | 0.5 - 13.0 | 25 | 34 | 65 | 40 | 44.5 | ER20 | 0.50 |
| | **NC25-ER25** | **P2772302** | 1.0 - 16.0 | 25 | 42 | 65 | 40 | 41 | ER25 | 0.55 |
| 32 | **NC32-ER20** | **P2772303** | 0.5 - 13.0 | 32 | 34 | 60 | 39.5 | 44.5 | ER20 | 0.60 |
| | **NC32-ER25** | **P2772304** | 1.0 - 16.0 | 32 | 42 | 70 | 40 | 41 | ER25 | 0.70 |
| | **NC32-ER32** | **P2772305** | 1.0 - 20.0 | 32 | 50 | 70 | 45 | 47 | ER32 | 0.75 |
| 40 | **NC40-ER32** | **P2772306** | 1.0 - 20.0 | 40 | 50 | 75 | 45 | 60 | ER32 | 1.25 |
| | **NC40-ER40** | **P2772307** | 2.0 - 30.0 | 40 | 63 | 75 | 55 | 53 | ER40 | 1.30 |




### ■ BRIDGEPORT-R8

ER Collet, Refer to page 103-109
ER 变径套，请参阅 103页～109页

ER nut, Sealing disk and Spanner refer to page 110-115
ER螺帽，密封圈，扳手 请参考110～115页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | CLAMPING RANGE 夹持范围 | G | D1 | L | L1 | H | NUT / COLLET 螺母 / 筒夹 | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|---|
| R8 | R8-ER32 | P2772308 | 1.0 - 20.0 | U7/16 | 50 | 102.4 | 50 | 40 | ER32 | 1.00 |
| | R8-ER40 | P2772309 | 2.0 - 30.0 | U7/16 | 63 | 102.4 | 75 | 51 | ER40 | 1.20 |

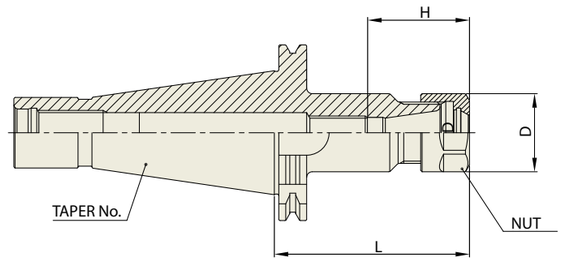
ER COLLET CHUCK

ER

## ER COLLET CHUCK

GOST 25827-93

# ER夹头刀柄




GOST 25827-93 | AT3 | A

ER Collet, Refer to page 103-109
ER 变径套，请参阅 103页～109页

ER nut, Sealing disk and Spanner refer to page 110-115
ER螺帽，密封圈，扳手 请参考110～115页

Unit : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | CLAMPING RANGE 夹持范围 | D | L | H | NUT / COLLET 螺母 / 筒夹 | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|
| 40 | GOST40-ER16-70 | P2780101 | 0.5 - 10.0 | 28 | 70 | 45 | ER16 | |
| | GOST40-ER16-100 | P2780102 | 0.5 - 10.0 | 28 | 100 | 45 | ER16 | |
| | GOST40-ER25-70 | P2780103 | 1.0 - 16.0 | 42 | 70 | 65 | ER25 | |
| | GOST40-ER25-100 | P2780104 | 1.0 - 16.0 | 42 | 120 | 65 | ER25 | |
| | GOST40-ER32-70 | P2780105 | 1.0 - 20.0 | 50 | 70 | 65 | ER32 | |
| | GOST40-ER32-100 | P2780106 | 1.0 - 20.0 | 50 | 100 | 65 | ER32 | |
| 50 | GOST50-ER16-90 | P2780107 | 0.5 - 10.0 | 28 | 90 | 45 | ER16 | |
| | GOST50-ER16-150 | P2780108 | 0.5 - 10.0 | 28 | 150 | 45 | ER16 | |
| | GOST50-ER25-90 | P2780109 | 1.0 - 16.0 | 42 | 90 | 65 | ER25 | |
| | GOST50-ER25-150 | P2780110 | 1.0 - 16.0 | 42 | 150 | 65 | ER25 | |
| | GOST50-ER32-90 | P2780111 | 1.0 - 20.0 | 50 | 90 | 65 | ER32 | |
| | GOST50-ER32-150 | P2780112 | 1.0 - 20.0 | 50 | 15 | 65 | ER32 | |
| | GOST50-ER40-90 | P2780113 | 2.0 - 30.0 | 63 | 90 | 65 | ER40 | |



TOOLING SYSTEM

HYDRAULIC CHUCK
SHRINK FIT HOLDER
ER COLLET CHUCK
END MILL HOLDER & SIDE LOCK ARBOR
SHELL MILL ARBOR
POWER MILLING CHUCK
MORSE TAPER ARBOR
SK SLIM CHUCK
SYNCHRO TAPPING CHUCK
ONE STEP TAPPING CHUCK
TAPPING ER CHUCK
TAPPING CHUCK
FACE MILL ARBOR
COPY MILL ARBOR & INDEXABLE DRILL HOLDER
NC DRILL CHUCK & OTHER TOOL HOLDERS
BORING SYSTEM
ACCESSORY & OTHERS

ER COLLET CHUCK

GER

## ER COLLET - GER (High Presicion)

# ER筒夹 - GER (高精密)

* T.I.R : ≤0.005mm at 3D

Unit (单位) : mm

**GER 8**

| CLAMPING RANGE 夹持范围 | CODE No. 编号 | EDP No. |
|---|---|---|
| 1.0 - 0.5 | 108010 | P2772557 |
| 1.5 - 1.0 | 108015 | P2772558 |
| 2.0 - 1.5 | 108020 | P2772559 |
| 2.5 - 2.0 | 108025 | P2772560 |
| 3.0 - 2.5 | 108030 | P2772561 |
| 3.5 - 3.0 | 108035 | P2772562 |
| 4.0 - 3.5 | 108040 | P2772563 |
| 4.5 - 4.0 | 108045 | P2772564 |
| 5.0 - 4.5 | 108050 | P2772565 |

**GER 11**

| CLAMPING RANGE 夹持范围 | CODE No. 编号 | EDP No. |
|---|---|---|
| 1.0 - 0.5 | 111010 | P2772401 |
| 1.5 - 1.0 | 111015 | P2772402 |
| 2.0 - 1.5 | 111020 | P2772403 |
| 2.5 - 2.0 | 111025 | P2772404 |
| 3.0 - 2.5 | 111030 | P2772405 |
| 3.5 - 3.0 | 111035 | P2772406 |
| 4.0 - 3.5 | 111040 | P2772407 |
| 4.5 - 4.0 | 111045 | P2772408 |
| 5.0 - 4.5 | 111050 | P2772409 |
| 5.5 - 5.0 | 111055 | P2772410 |
| 6.0 - 5.5 | 111060 | P2772411 |
| 6.5 - 6.0 | 111065 | P2772412 |
| 7.0 - 6.5 | 111070 | P2772413 |

**GER 16**

| CLAMPING RANGE 夹持范围 | CODE No. 编号 | EDP No. |
|---|---|---|
| 1.0 - 0.5 | 116010 | P2772414 |
| 2.0 - 1.0 | 116020 | P2772415 |
| 3.0 - 2.0 | 116030 | P2772416 |
| 4.0 - 3.0 | 116040 | P2772417 |
| 5.0 - 4.0 | 116050 | P2772418 |
| 6.0 - 5.0 | 116060 | P2772419 |
| 7.0 - 6.0 | 116070 | P2772420 |
| 8.0 - 7.0 | 116080 | P2772421 |
| 9.0 - 8.0 | 116090 | P2772422 |
| 10.0 - 9.0 | 116100 | P2772423 |
| 1.5 - 1.0 | 116015 | P2772424 |
| 2.5 - 2.0 | 116025 | P2772425 |

**GER 20**

| CLAMPING RANGE 夹持范围 | CODE No. 编号 | EDP No. |
|---|---|---|
| 2.0 - 1.0 | 120020 | P2772426 |
| 3.0 - 2.0 | 120030 | P2772427 |
| 4.0 - 3.0 | 120040 | P2772428 |
| 5.0 - 4.0 | 120050 | P2772429 |
| 6.0 - 5.0 | 120060 | P2772430 |
| 7.0 - 6.0 | 120070 | P2772431 |
| 8.0 - 7.0 | 120080 | P2772432 |
| 9.0 - 8.0 | 120090 | P2772433 |
| 10.0 - 9.0 | 120100 | P2772434 |
| 11.0 - 10.0 | 120110 | P2772435 |
| 12.0 - 11.0 | 120120 | P2772436 |
| 13.0 - 12.0 | 120130 | P2772437 |
| 1.0 - 0.5 | 120010 | P2772438 |
| 1.5 - 1.0 | 120015 | P2772439 |
| 2.5 - 2.0 | 120025 | P2772440 |

**GER 25**

| CLAMPING RANGE 夹持范围 | CODE No. 编号 | EDP No. |
|---|---|---|
| 2.0 - 1.0 | 125020 | P2772441 |
| 3.0 - 2.0 | 125030 | P2772442 |
| 4.0 - 3.0 | 125040 | P2772443 |
| 5.0 - 4.0 | 125050 | P2772444 |
| 6.0 - 5.0 | 125060 | P2772445 |
| 7.0 - 6.0 | 125070 | P2772446 |
| 8.0 - 7.0 | 125080 | P2772447 |
| 9.0 - 8.0 | 125090 | P2772448 |
| 10.0 - 9.0 | 125100 | P2772449 |
| 11.0 - 10.0 | 125110 | P2772450 |
| 12.0 - 11.0 | 125120 | P2772451 |
| 13.0 - 12.0 | 125130 | P2772452 |
| 14.0 - 13.0 | 125140 | P2772453 |
| 15.0 - 14.0 | 125150 | P2772454 |
| 16.0 - 15.0 | 125160 | P2772455 |
| 1.0 - 1.5 | 125010 | P2772456 |
| 1.5 - 1.0 | 125015 | P2772457 |
| 2.5 - 2.0 | 125025 | P2772458 |

**GER 32**

| CLAMPING RANGE 夹持范围 | CODE No. 编号 | EDP No. |
|---|---|---|
| 3.0 - 2.0 | 132030 | P2772459 |
| 4.0 - 3.0 | 132040 | P2772460 |
| 5.0 - 4.0 | 132050 | P2772461 |
| 6.0 - 5.0 | 132060 | P2772462 |
| 7.0 - 6.0 | 132070 | P2772463 |
| 8.0 - 7.0 | 132080 | P2772464 |
| 9.0 - 8.0 | 132090 | P2772465 |
| 10.0 - 9.0 | 132100 | P2772466 |
| 11.0 - 10.0 | 132110 | P2772467 |
| 12.0 - 11.0 | 132120 | P2772468 |
| 13.0 - 12.0 | 132130 | P2772469 |
| 14.0 - 13.0 | 132140 | P2772470 |
| 15.0 - 14.0 | 132150 | P2772471 |
| 16.0 - 15.0 | 132160 | P2772472 |
| 17.0 - 16.0 | 132170 | P2772473 |
| 18.0 - 17.0 | 132180 | P2772474 |
| 19.0 - 18.0 | 132190 | P2772475 |
| 20.0 - 19.0 | 132200 | P2772476 |
| 2.0 - 1.0 | 132020 | P2772477 |
| 2.5 - 2.0 | 132025 | P2772478 |

**GER 40**

| CLAMPING RANGE 夹持范围 | CODE No. 编号 | EDP No. |
|---|---|---|
| 4.0 - 3.0 | 140040 | P2772479 |
| 5.0 - 4.0 | 140050 | P2772480 |
| 6.0 - 5.0 | 140060 | P2772481 |
| 7.0 - 6.0 | 140070 | P2772482 |
| 8.0 - 7.0 | 140080 | P2772483 |
| 9.0 - 8.0 | 140090 | P2772484 |
| 10.0 - 9.0 | 140100 | P2772485 |
| 11.0 - 10.0 | 140110 | P2772486 |
| 12.0 - 11.0 | 140120 | P2772487 |
| 13.0 - 12.0 | 140130 | P2772488 |
| 14.0 - 13.0 | 140140 | P2772489 |
| 15.0 - 14.0 | 140150 | P2772490 |
| 16.0 - 15.0 | 140160 | P2772491 |
| 17.0 - 16.0 | 140170 | P2772492 |
| 18.0 - 17.0 | 140180 | P2772493 |
| 19.0 - 18.0 | 140190 | P2772494 |
| 20.0 - 19.0 | 140200 | P2772495 |
| 21.0 - 20.0 | 140210 | P2772496 |
| 22.0 - 21.0 | 140220 | P2772497 |
| 23.0 - 22.0 | 140230 | P2772498 |
| 24.0 - 23.0 | 140240 | P2772499 |
| 25.0 - 24.0 | 140250 | P2772500 |
| 26.0 - 25.0 | 140260 | P2772551 |
| 3.0 - 2.0 | 140030 | P2772552 |
| 27.0 - 26.0 | 140270 | P2772553 |
| 28.0 - 27.0 | 140280 | P2772554 |
| 29.0 - 28.0 | 140290 | P2772555 |
| 30.0 - 29.0 | 140300 | P2772556 |

# ER COLLET CHUCK

UF

## ER COLLET - UF
## ER筒夹-UF

Unit (单位) : mm

| ER 8 | | | ER 11 | | | ER 16 | | | ER 20 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| CLAMPING RANGE 夹持范围 | CODE No. 编号 | EDP No. | CLAMPING RANGE 夹持范围 | CODE No. 编号 | EDP No. | CLAMPING RANGE 夹持范围 | CODE No. 编号 | EDP No. | CLAMPING RANGE 夹持范围 | CODE No. 编号 | EDP No. |
| 1.0 - 0.5 | 208010 | P2506292 | 1.0 - 0.5 | 211010 | P2506311 | 1.0 - 0.5 | 216010 | P2506201 | 2.0 - 1.0 | 220020 | P2506332 |
| 1.5 - 1.0 | 208015 | P2506293 | 1.5 - 1.0 | 211015 | P2506312 | 2.0 - 1.0 | 216020 | P2506202 | 3.0 - 2.0 | 220030 | P2506333 |
| 2.0 - 1.5 | 208020 | P2506294 | 2.0 - 1.5 | 211020 | P2506313 | 3.0 - 2.0 | 216030 | P2506203 | 4.0 - 3.0 | 220040 | P2506334 |
| 2.5 - 2.0 | 208025 | P2506295 | 2.5 - 2.0 | 211025 | P2506314 | 4.0 - 3.0 | 216040 | P2506204 | 5.0 - 4.0 | 220050 | P2506335 |
| 3.0 - 2.5 | 208030 | P2506296 | 3.0 - 2.5 | 211030 | P2506315 | 5.0 - 4.0 | 216050 | P2506205 | 6.0 - 5.0 | 220060 | P2506336 |
| 3.5 - 3.0 | 208035 | P2506297 | 3.5 - 3.0 | 211035 | P2506316 | 6.0 - 5.0 | 216060 | P2506206 | 7.0 - 6.0 | 220070 | P2506337 |
| 4.0 - 3.5 | 208040 | P2506298 | 4.0 - 3.5 | 211040 | P2506317 | 7.0 - 6.0 | 216070 | P2506207 | 8.0 - 7.0 | 220080 | P2506338 |
| 4.5 - 4.0 | 208045 | P2506299 | 4.5 - 4.0 | 211045 | P2506318 | 8.0 - 7.0 | 216080 | P2506208 | 9.0 - 8.0 | 220090 | P2506339 |
| 5.0 - 4.5 | 208050 | P2506300 | 5.0 - 4.5 | 211050 | P2506319 | 9.0 - 8.0 | 216090 | P2506209 | 10.0 - 9.0 | 220100 | P2506340 |
| | | | 5.5 - 5.0 | 211055 | P2506320 | 10.0 - 9.0 | 216100 | P2506210 | 11.0 - 10.0 | 220120 | P2506341 |
| | | | 6.0 - 5.5 | 211060 | P2506321 | 1.5 - 1.0 | 216015 | P2778506 | 12.0 - 11.0 | 220130 | P2506342 |
| | | | 6.5 - 6.0 | 211065 | P2506322 | 2.5 - 2.0 | 216025 | P2778507 | 13.0 - 12.0 | 220140 | P2506343 |
| | | | 7.0 - 6.5 | 211070 | P2506323 | | | | 1.0 - 0.5 | 220010 | P2506344 |
| | | | | | | | | | 1.5 - 1.0 | 220015 | P2506345 |
| | | | | | | | | | 2.5 - 2.0 | 220025 | P2506346 |
| STANDARD SET | 208000 | P2506301 | STANDARD SET | 211000 | P2506302 | STANDARD SET | 216000 | P2506303 | STANDARD SET | 220000 | P2506304 |
| Ø1.0 - 5.0mm | | | Ø1.0 - 7.0mm | | | Ø1.0 - 10.0mm | | | Ø2.0 - 13.0mm | | |
| 9pcs | | | 13pcs | | | 10pcs | | | 12pcs | | |
| WOODEN TRAY ZWT 8 | 108110 | | WOODEN TRAY ZWT 11 | 011110 | | WOODEN TRAY ZWT 16 | 016110 | | WOODEN TRAY ZWT 20 | 020110 | |

▶Inch type collets available.
可供应英制产品



ER COLLET CHUCK

UF

ER COLLET - UF
ER筒夹-UF

Unit (单位) : mm

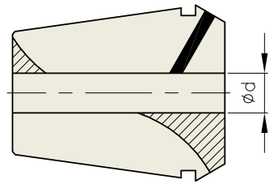
| ER 25 | | | ER 32 | | | ER 40 | | | ER 50 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| CLAMPING RANGE 夹持范围 | CODE No. 编号 | EDP No. | CLAMPING RANGE 夹持范围 | CODE No. 编号 | EDP No. | CLAMPING RANGE 夹持范围 | CODE No. 编号 | EDP No. | CLAMPING RANGE 夹持范围 | CODE No. 编号 | EDP No. |
| 2.0 - 1.0 | 225020 | P2506212 | 3.0 - 2.0 | 232030 | P2506233 | 4.0 - 3.0 | 240040 | P2506264 | 12.0 - 10.0 | 250120 | P2506352 |
| 3.0 - 2.0 | 225030 | P2506213 | 4.0 - 3.0 | 232040 | P2506234 | 5.0 - 4.0 | 240050 | P2506265 | 14.0 - 12.0 | 250140 | P2506354 |
| 4.0 - 3.0 | 225040 | P2506214 | 5.0 - 4.0 | 232050 | P2506235 | 6.0 - 5.0 | 240060 | P2506266 | 16.0 - 14.0 | 250160 | P2506356 |
| 5.0 - 4.0 | 225050 | P2506215 | 6.0 - 5.0 | 232060 | P2506236 | 7.0 - 6.0 | 240070 | P2506267 | 18.0 - 16.0 | 250180 | P2506358 |
| 6.0 - 5.0 | 225060 | P2506216 | 7.0 - 6.0 | 232070 | P2506237 | 8.0 - 7.0 | 240080 | P2506268 | 20.0 - 18.0 | 250200 | P2506360 |
| 7.0 - 6.0 | 225070 | P2506217 | 8.0 - 7.0 | 232080 | P2506238 | 9.0 - 8.0 | 240090 | P2506269 | 22.0 - 20.0 | 250220 | P2506362 |
| 8.0 - 7.0 | 225080 | P2506218 | 9.0 - 8.0 | 232090 | P2506239 | 10.0 - 9.0 | 240100 | P2506270 | 24.0 - 22.0 | 250240 | P2506364 |
| 9.0 - 8.0 | 225090 | P2506219 | 10.0 - 9.0 | 232100 | P2506240 | 11.0 - 10.0 | 240110 | P2506271 | 26.0 - 24.0 | 250260 | P2506366 |
| 10.0 - 9.0 | 225100 | P2506220 | 11.0 - 10.0 | 232110 | P2506241 | 12.0 - 11.0 | 240120 | P2506272 | 28.0 - 26.0 | 250280 | P2506368 |
| 11.0 - 10.0 | 225110 | P2506221 | 12.0 - 11.0 | 232120 | P2506242 | 13.0 - 12.0 | 240130 | P2506273 | 30.0 - 28.0 | 250300 | P2506370 |
| 12.0 - 11.0 | 225120 | P2506222 | 13.0 - 12.0 | 232130 | P2506243 | 14.0 - 13.0 | 240140 | P2506274 | 32.0 - 30.0 | 250320 | P2506372 |
| 13.0 - 12.0 | 225130 | P2506223 | 14.0 - 13.0 | 232140 | P2506244 | 15.0 - 14.0 | 240150 | P2506275 | 34.0 - 32.0 | 250340 | P2506374 |
| 14.0 - 13.0 | 225140 | P2506224 | 15.0 - 14.0 | 232150 | P2506245 | 16.0 - 15.0 | 240160 | P2506276 | 6.0 - 4.0 | 250060 | P2778515 |
| 15.0 - 14.0 | 225150 | P2506225 | 16.0 - 15.0 | 232160 | P2506246 | 17.0 - 16.0 | 240170 | P2506277 | 8.0 - 6.0 | 250080 | P2778516 |
| 16.0 - 15.0 | 225160 | P2506226 | 17.0 - 16.0 | 232170 | P2506247 | 18.0 - 17.0 | 240180 | P2506278 | 10.0 - 8.0 | 250100 | P2778517 |
| 1.0 - 0.5 | 225010 | P2506227 | 18.0 - 17.0 | 232180 | P2506248 | 19.0 - 18.0 | 240190 | P2506279 | 25.0 - 23.0 | 250250 | P2778518 |
| 1.5 - 1.0 | 225015 | P2506228 | 19.0 - 18.0 | 232190 | P2506249 | 20.0 - 19.0 | 240200 | P2506280 | | | |
| 2.5 - 2.0 | 225025 | P2506229 | 20.0 - 19.0 | 232200 | P2506250 | 21.0 - 20.0 | 240210 | P2506281 | | | |
| | | | 2.0 - 1.0 | 232020 | P2506251 | 22.0 - 21.0 | 240220 | P2506282 | | | |
| | | | 2.5 - 2.0 | 232025 | P2506252 | 23.0 - 22.0 | 240230 | P2506283 | | | |
| | | | | | | 24.0 - 23.0 | 240240 | P2506284 | | | |
| | | | | | | 25.0 - 24.0 | 240250 | P2506285 | | | |
| | | | | | | 26.0 - 25.0 | 240260 | P2506286 | | | |
| | | | | | | 3.0 - 2.0 | 240030 | P2506287 | | | |
| | | | | | | 27.0 - 26.0 | 240270 | P2506288 | | | |
| | | | | | | 28.0 - 27.0 | 240280 | P2506289 | | | |
| | | | | | | 29.0 - 28.0 | 240290 | P2506290 | | | |
| | | | | | | 30.0 - 29.0 | 240300 | P2506291 | | | |
| STANDARD SET | 225000 | P2506305 | STANDARD SET | 232000 | P2506306 | STANDARD SET | 240000 | P2506307 | STANDARD SET | 250000 | P2506308 |
| Ø2.0 - 16.0mm | | | Ø3.0 - 20.0mm | | | Ø4.0 - 26.0mm | | | Ø12.0 - 34.0mm | | |
| 15pcs | | | 18pcs | | | 23pcs | | | 12pcs | | |
| WOODEN TRAY ZWT 25 | 025110 | | WOODEN TRAY ZWT 32 | 032110 | | WOODEN TRAY ZWT 40 | 040110 | | WOODEN TRAY ZWT 50 | 050110 | |

▶Inch type collets available.
可供应英制产品

# ER COLLET CHUCK

**ERS**

## SEALED ER COLLET




◇ Rubber Sealed

Unit (单位) : mm

| ER 11S | | ER 16S | | ER 20S | |
|---|---|---|---|---|---|
| CLAMPING RANGE 夹持范围 | EDP No. | CLAMPING RANGE 夹持范围 | EDP No. | CLAMPING RANGE 夹持范围 | EDP No. |
| 3.0 | P2506315S | 3.0 | P2506203S | 3.0 | P2506333S |
| 3.5 | P2506316S | 4.0 | P2506204S | 4.0 | P2506334S |
| 4.0 | P2506317S | 5.0 | P2506205S | 5.0 | P2506335S |
| 4.5 | P2506318S | 6.0 | P2506206S | 6.0 | P2506336S |
| 5.0 | P2506319S | 7.0 | P2506207S | 7.0 | P2506337S |
| 5.5 | P2506320S | 8.0 | P2506208S | 8.0 | P2506338S |
| 6.0 | P2506321S | 9.0 | P2506209S | 9.0 | P2506339S |
| 6.5 | P2506322S | 10.0 | P2506210S | 10.0 | P2506340S |
| 7.0 | P2506323S | - | | 11.0 | P2506341S |
| - | | - | | 12.0 | P2506342S |
| - | | - | | 13.0 | P2506343S |
| - | | - | | - | |
| - | | - | | - | |
| STANDARD SET | P2506302S | STANDARD SET | P2506303S | STANDARD SET | P2506304S |
| Ø3.0 - 7.0mm | | Ø3.0 - 10.0mm | | Ø3.0 - 13.0mm | |
| 9pcs | | 8pcs | | 11pcs | |
| WOODEN TRAY ZWT 11 | | WOODEN TRAY ZWT 16 | | WOODEN TRAY ZWT 20 | |

▶Inch type collets available.
可供应英制产品

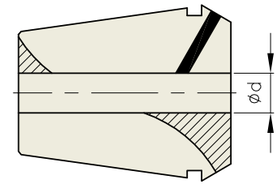


TOOLING SYSTEM
HYDRAULIC CHUCK
SHRINK FIT HOLDER
ER COLLET CHUCK
END MILL HOLDER & SIDE LOCK ARBOR
SHELL MILL ARBOR
POWER MILLING CHUCK
MORSE TAPER ARBOR
SK SLIM CHUCK
SYNCHRO TAPPING CHUCK
ONE STEP TAPPING CHUCK
TAPPING ER CHUCK
FACE MILL ARBOR
COPY MILL ARBOR & INDEXABLE DRILL HOLDER
NC DRILL CHUCK & OTHER TOOL HOLDERS
BORING SYSTEM
ACCESSORY & OTHERS

# ER COLLET CHUCK

**ERS**

## SEALED ER COLLET




◇ Rubber Sealed

Unit (单位) : mm

| ER 25S | | ER 32S | | ER 40S | | ER 50S | |
|---|---|---|---|---|---|---|---|
| CLAMPING RANGE 夹持范围 | EDP No. | CLAMPING RANGE 夹持范围 | EDP No. | CLAMPING RANGE 夹持范围 | EDP No. | CLAMPING RANGE 夹持范围 | EDP No. |
| 3.0 | P2506213S | 3.0 | P2506233S | 3.0 | P2506287S | 6.0 | P2778515S |
| 4.0 | P2506214S | 4.0 | P2506234S | 4.0 | P2506264S | 8.0 | P2778516S |
| 5.0 | P2506215S | 5.0 | P2506235S | 5.0 | P2506265S | 10.0 | P2778517S |
| 6.0 | P2506216S | 6.0 | P2506236S | 6.0 | P2506266S | 12.0 | P2506352S |
| 7.0 | P2506217S | 7.0 | P2506237S | 7.0 | P2506267S | 14.0 | P2506354S |
| 8.0 | P2506218S | 8.0 | P2506238S | 8.0 | P2506268S | 16.0 | P2506356S |
| 9.0 | P2506219S | 9.0 | P2506239S | 9.0 | P2506269S | 18.0 | P2506358S |
| 10.0 | P2506220S | 10.0 | P2506240S | 10.0 | P2506270S | 20.0 | P2506360S |
| 11.0 | P2506221S | 11.0 | P2506241S | 11.0 | P2506271S | 22.0 | P2506362S |
| 12.0 | P2506222S | 12.0 | P2506242S | 12.0 | P2506272S | 24.0 | P2506364S |
| 13.0 | P2506223S | 13.0 | P2506243S | 13.0 | P2506273S | 25.0 | P2778518S |
| 14.0 | P2506224S | 14.0 | P2506244S | 14.0 | P2506274S | 26.0 | P2506366S |
| 15.0 | P2506225S | 15.0 | P2506245S | 15.0 | P2506275S | 28.0 | P2506368S |
| 16.0 | P2506226S | 16.0 | P2506246S | 16.0 | P2506276S | 30.0 | P2506370S |
| - | | 17.0 | P2506247S | 18.0 | P2506277S | 32.0 | P2506372S |
| - | | 18.0 | P2506248S | 19.0 | P2506278S | 34.0 | P2506374S |
| - | | 19.0 | P2506249S | 20.0 | P2506279S | - | |
| - | | 20.0 | P2506250S | 21.0 | P2506280S | - | |
| - | | - | | 22.0 | P2506281S | - | |
| - | | - | | 23.0 | P2506282S | - | |
| - | | - | | 24.0 | P2506283S | - | |
| - | | - | | 17.0 | P2506284S | - | |
| - | | - | | 25.0 | P2506285S | - | |
| - | | - | | 26.0 | P2506286S | - | |
| - | | - | | - | | - | |
| STANDARD SET | P2506305S | STANDARD SET | P2506306S | STANDARD SET | P2506307S | STANDARD SET | P2506308S |
| Ø3.0 - 16.0mm | | Ø3.0 - 20.0mm | | Ø4.0 - 26.0mm | | Ø12.0 - 34.0mm | |
| 14pcs | | 18pcs | | 24pcs | | 16pcs | |
| WOODEN TRAY ZWT 25 | | WOODEN TRAY ZWT 32 | | WOODEN TRAY ZWT 40 | | WOODEN TRAY ZWT 50 | |

▶Inch type collets available.
可供应英制产品

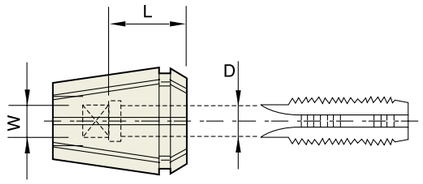
# ER COLLET CHUCK

**RDT**

## TAP ER COLLET (JIS)

## 丝锥ER筒夹(JIS)

Below standard
Tap ER Collet conforms to **JIS**




Unit (单位) : mm

| | RDT 16 | | | | RDT 20 | | | | RDT 25 | | | | RDT 32 | | | | RDT 40 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TAP | D (Ø) | W (□) | L | EDP No. | D (Ø) | W (□) | L | EDP No. | D (Ø) | W (□) | L | EDP No. | D (Ø) | W (□) | L | EDP No. | D (Ø) | W (□) | L | EDP No. |
| M2 | 3.0 | 2.5 | 15 | P2772501 | | | | | | | | | | | | | | | | |
| M3 | 4.0 | 3.2 | 15 | P2772502 | 4.0 | 3.2 | 15 | P2772507 | 4.0 | 3.2 | 15 | P2772513 | | | | | | | | |
| M4 | 5.0 | 4.0 | 15 | P2772503 | 5.0 | 4.0 | 15 | P2772508 | 5.0 | 4.0 | 15 | P2772514 | 5.0 | 4.0 | 15 | P2772521 | | | | |
| M5 | 5.5 | 4.5 | 15 | P2772504 | 5.5 | 4.5 | 15 | P2772509 | 5.5 | 4.5 | 15 | P2772515 | 5.5 | 4.5 | 15 | P2772522 | | | | |
| M6 | 6.0 | 4.5 | 15 | P2772505 | 6.0 | 4.5 | 15 | P2772510 | 6.0 | 4.5 | 15 | P2772516 | 6.0 | 4.5 | 15 | P2772523 | | | | |
| M8 | 6.2 | 5.0 | 15 | P2772506 | 6.2 | 5.0 | 20 | P2772511 | 6.2 | 5.0 | 20 | P2772517 | 6.2 | 5.0 | 20 | P2772524 | 6.2 | 5.0 | 20 | P2772530 |
| M10 | | | | | 7.0 | 5.5 | 20 | P2772512 | 7.0 | 5.5 | 20 | P2772518 | 7.0 | 5.5 | 20 | P2772525 | 7.0 | 5.5 | 20 | P2772531 |
| M12 | | | | | | | | | 8.5 | 6.5 | 20 | P2772519 | 8.5 | 6.5 | 20 | P2772526 | 8.5 | 6.5 | 25 | P2772532 |
| M14 | | | | | | | | | 10.5 | 8.0 | 20 | P2772520 | 10.5 | 8.0 | 20 | P2772527 | 10.5 | 8.0 | 25 | P2772533 |
| M16 | | | | | | | | | | | | | 12.5 | 10.0 | 20 | P2772528 | 12.5 | 10.0 | 25 | P2772534 |
| M18 | | | | | | | | | | | | | 14.0 | 11.0 | 20 | P2772529 | 14.0 | 11.0 | 25 | P2772535 |
| M20 | | | | | | | | | | | | | | | | | 15.0 | 12.0 | 28 | P2772536 |
| M22 | | | | | | | | | | | | | | | | | 17.0 | 13.0 | 28 | P2772537 |
| M24 | | | | | | | | | | | | | | | | | 19.0 | 15.0 | 28 | P2772538 |

▶Inch type collets available.
可供应英制产品





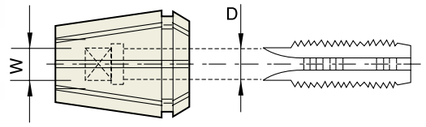
# ER COLLET CHUCK

**RDTC**

## TAP ER COLLET (DIN)

## 丝锥ER筒夹(DIN)

Below standard
Tap ER Collet conforms to **DIN**




Unit (单位) : mm

| DIN STANDARD | | | RD 11TC | | | RD 16TC | | | RD 20TC | | | RD 25TC | | | RD 32TC | | | RD 40TC | | | RD 50TC | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DIN 374/376 | DIN 352/2181 | DIN 371 | D (Ø) | W (□) | EDP No. | D (Ø) | W (□) | EDP No. | D (Ø) | W (□) | EDP No. | D (Ø) | W (□) | EDP No. | D (Ø) | W (□) | EDP No. | D (Ø) | W (□) | EDP No. | D (Ø) | W (□) | EDP No. |
| M5 | M3 | M3 | 3.5 | 2.7 | P2772501D | 3.5 | 2.7 | P2772507D | 3.5 | 2.7 | P2772514D | 3.5 | 2.7 | P2772524D | 3.5 | 2.7 | P2772538D | 3.5 | 2.7 | P2772552D | | | |
| M5.5 | M3.5 | M3.5 | 4.0 | 3.0 | P2772502D | 4.0 | 3.0 | P2772508D | 4.0 | 3.0 | P2772515D | 4.0 | 3.0 | P2772525D | 4.0 | 3.0 | P2772539D | 4.0 | 3.0 | P2772553D | | | |
| M6 | M4 | M4 | 4.5 | 3.4 | P2772503D | 4.5 | 3.4 | P2772509D | 4.5 | 3.4 | P2772516D | 4.5 | 3.4 | P2772526D | 4.5 | 3.4 | P2772540D | 4.5 | 3.4 | P2772554D | | | |
| M5 | - | - | 5.0 | 4.0 | P2772504D | 5.0 | 4.0 | P2772510D | 5.0 | 4.0 | P2772517D | 5.0 | 4.0 | P2772527D | 5.0 | 4.0 | P2772541D | 5.0 | 4.0 | P2772555D | | | |
| M7 | - | - | 5.5 | 4.3 | P2772505D | 5.5 | 4.3 | P2772511D | 5.5 | 4.3 | P2772518D | 5.5 | 4.3 | P2772528D | 5.5 | 4.3 | P2772542D | 5.5 | 4.3 | P2772556D | | | |
| M8 | M4.5-M8 | M4.5-M8 | 6.0 | 4.9 | P2772506D | 6.0 | 4.9 | P2772512D | 6.0 | 4.9 | P2772519D | 6.0 | 4.9 | P2772529D | 6.0 | 4.9 | P2772543D | 6.0 | 4.9 | P2772557D | | | |
| M9+M10 | M9+M10 | M7 | | | | 7.0 | 5.5 | P2772513D | 7.0 | 5.5 | P2772520D | 7.0 | 5.5 | P2772530D | 7.0 | 5.5 | P2772544D | 7.0 | 5.5 | P2772558D | | | |
| M11 | M11 | M8 | | | | | | | 8.0 | 6.2 | P2772521D | 8.0 | 6.2 | P2772531D | 8.0 | 6.2 | P2772545D | 8.0 | 6.2 | P2772559D | 8.0 | 6.2 | P2772569D |
| M12 | M12 | M9 | | | | | | | 9.0 | 7.0 | P2772522D | 9.0 | 7.0 | P2772532D | 9.0 | 7.0 | P2772546D | 9.0 | 7.0 | P2772560D | 9.0 | 7.0 | P2772570D |
| - | - | M10 | | | | | | | 10.0 | 8.0 | P2772523D | 10.0 | 8.0 | P2772533D | 10.0 | 8.0 | P2772547D | 10.0 | 8.0 | P2772561D | 10.0 | 8.0 | P2772571D |
| M13+M14 | M13+M14 | - | | | | | | | | | | 11.0 | 9.0 | P2772534D | 11.0 | 9.0 | P2772548D | 11.0 | 9.0 | P2772562D | 11.0 | 9.0 | P2772572D |
| M15-M17 | M15-M17 | - | | | | | | | | | | 12.0 | 9.0 | P2772535D | 12.0 | 9.0 | P2772549D | 12.0 | 9.0 | P2772563D | 12.0 | 9.0 | P2772573D |
| M18+M19 | M18+M19 | - | | | | | | | | | | 14.0 | 11.0 | P2772536D | 14.0 | 11.0 | P2772550D | 14.0 | 11.0 | P2772564D | 14.0 | 11.0 | P2772574D |
| M20+M21 | M20+M21 | - | | | | | | | | | | 16.0 | 12.0 | P2772537D | 16.0 | 12.0 | P2772551D | 16.0 | 12.0 | P2772565D | 16.0 | 12.0 | P2772575D |
| M22-M26 | M22-M26 | - | | | | | | | | | | | | | | | | 18.0 | 14.5 | P2772566D | 18.0 | 14.5 | P2772576D |
| M27+M28 | M27+M28 | - | | | | | | | | | | | | | | | | 20.0 | 16.0 | P2772567D | 20.0 | 16.0 | P2772577D |
| M29-M32 | M29-M32 | - | | | | | | | | | | | | | | | | 22.0 | 18.0 | P2772568D | 22.0 | 18.0 | P2772578D |
| M33 | M33 | - | | | | | | | | | | | | | | | | | | | 25.0 | 20.0 | P2772579D |
| M34-M38 | M34-M38 | - | | | | | | | | | | | | | | | | | | | 28.0 | 22.0 | P2772580D |
| M39-M42 | M39-M42 | - | | | | | | | | | | | | | | | | | | | 32.0 | 24.0 | P2772581D |

▶Inch type collets available.
可供应英制产品

# ER COLLET CHUCK

PART

## ER NUT
## ER 螺母

### DIN 6499/ISO 15488

■ SQ-ER (Standard 标准型 : Hex. 六角形)

Unit (单位) : mm

| MODEL No. 型号 | EDP No. | THREAD | Dia. 直径 | LENGTH |
|---|---|---|---|---|
| SQ-ER11 | P2700006 | M14×0.75 | 19.0 | 12.0 |
| SQ-ER16 | P2700001 | M22×1.50 | 28.0 | 18.0 |
| SQ-ER20 | P2700002 | M25×1.50 | 34.0 | 19.5 |

■ SQ-ER (Standard 标准型 : Round 圆型)

Unit (单位) : mm

| MODEL No. 型号 | EDP No. | THREAD | Dia. 直径 | LENGTH |
|---|---|---|---|---|
| SQ-ER25 | P2700003 | M32×1.50 | 42.0 | 20.5 |
| SQ-ER32 | P2700004 | M40×1.50 | 50.0 | 23.0 |
| SQ-ER40 | P2700005 | M50×1.50 | 63.0 | 26.0 |
| SQ-ER50 | P2700007 | M64×2.00 | 78.0 | 35.0 |

■ XSQ-R (Standard 标准型 : Hex. 六角形)

Unit (单位) : mm

| MODEL No. 型号 | EDP No. | THREAD | Dia. 直径 | LENGTH |
|---|---|---|---|---|
| XSQ -R11 | P2777002 | M14×0.75 | 19.0 | 12.0 |
| XSQ -R16 | P2777003 | M22×1.50 | 28.0 | 18.0 |
| XSQ -R20 | P2777004 | M25×1.50 | 34.0 | 19.5 |

■ XSQ-RU (Standard 标准型 : Round 圆型)

Unit (单位) : mm

| MODEL No. 型号 | EDP No. | THREAD | Dia. 直径 | LENGTH |
|---|---|---|---|---|
| XSQ-RU25 | P2777005 | M32×1.50 | 42.0 | 20.5 |
| XSQ-RU32 | P2777006 | M40×1.50 | 50.0 | 23.0 |
| XSQ-RU40 | P2777007 | M50×1.50 | 63.0 | 26.0 |
| XSQ-RU50 | P2777008 | M64×2.00 | 78.0 | 35.0 |



TOOLING SYSTEM

HYDRAULIC CHUCK
SHRINK FIT HOLDER
ER COLLET CHUCK
END MILL HOLDER & SIDE LOCK ARBOR
SHELL MILL ARBOR
POWER MILLING CHUCK
MORSE TAPER ARBOR
SK SLIM CHUCK
SYNCHRO TAPPING CHUCK
ONE STEP TAPPING CHUCK
TAPPING ER CHUCK
TAPPING CHUCK
FACE MILL ARBOR
COPY MILL ARBOR & INDEXABLE DRILL HOLDER
NC DRILL CHUCK & OTHER TOOL HOLDERS
BORING SYSTEM
ACCESSORY & OTHERS

# ER COLLET CHUCK

PART

## ER NUT
## ER 螺母

### DIN 6499/ISO 15488

■ XSQ-RT (Sealing Disk Type 密封型 : Hex. 六角形)

Unit (单位) : mm

| MODEL No. 型号 | EDP No. | THREAD | Dia. 直径 | LENGTH |
|---|---|---|---|---|
| XSQ-RT16 | P2777009 | M22×1.50 | 28.0 | 22.5 |
| XSQ-RT20 | P2777010 | M25×1.50 | 34.0 | 24.0 |

■ XSQ-RUT (Sealing Disk Type 密封型 : Round 圆型)

Unit (单位) : mm

| MODEL No. 型号 | EDP No. | THREAD | Dia. 直径 | LENGTH |
|---|---|---|---|---|
| XSQ-RUT16 | P2777011 | M22×1.50 | 32.0 | 22.5 |
| XSQ-RUT20 | P2777012 | M25×1.50 | 35.0 | 24.0 |
| XSQ-RUT25 | P2777013 | M32×1.50 | 42.0 | 25.0 |
| XSQ-RUT32 | P2777014 | M40×1.50 | 50.0 | 27.5 |
| XSQ-RUT40 | P2777015 | M50×1.50 | 63.0 | 30.5 |

■ XSQ-RSU (Sleeve Bearing Type 套筒轴承型)

Unit (单位) : mm

| MODEL No. 型号 | EDP No. | THREAD | Dia. 直径 | LENGTH |
|---|---|---|---|---|
| XSQ-RSU16 | P2777016 | M22×1.50 | 32.0 | 18.0 |
| XSQ-RSU20 | P2777017 | M25×1.50 | 35.0 | 20.0 |
| XSQ-RSU25 | P2777018 | M32×1.50 | 42.0 | 20.5 |
| XSQ-RSU32 | P2777019 | M40×1.50 | 50.0 | 23.0 |
| XSQ-RSU40 | P2777020 | M50×1.50 | 63.0 | 26.0 |

■ XSQ-RST (Sleeve Bearing 套筒轴承型 / Sealing Disk Type 密封型 : Hex. 六角形)

Unit (单位) : mm

| MODEL No. 型号 | EDP No. | THREAD | Dia. 直径 | LENGTH |
|---|---|---|---|---|
| XSQ-RST16 | P2777021 | M22×1.50 | 28.0 | 22.5 |
| XSQ-RST20 | P2777022 | M25×1.50 | 34.0 | 24.5 |

■ XSQ-RSUT (Sleeve Bearing套筒轴承型 / Sealing Disk Type 密封型 : Round 圆型)

Unit (单位) : mm

| MODEL No. 型号 | EDP No. | THREAD | Dia. 直径 | LENGTH |
|---|---|---|---|---|
| XSQ-RSUT16 | P2777023 | M22×1.50 | 32.0 | 22.5 |
| XSQ-RSUT20 | P2777024 | M25×1.50 | 35.0 | 24.5 |
| XSQ-RSUT25 | P2777025 | M32×1.50 | 42.0 | 25.0 |
| XSQ-RSUT32 | P2777026 | M40×1.50 | 50.0 | 27.5 |
| XSQ-RSUT40 | P2777027 | M50×1.50 | 63.0 | 30.5 |

# ER COLLET CHUCK

PART

## ER NUT
## ER 螺母

■ XSQ-RKU (Ball Bearing Type 球轴承类型 )

Unit (单位) : mm

| MODEL No. 型号 | EDP No. | THREAD | Dia. 直径 | LENGTH |
|---|---|---|---|---|
| XSQ-RKU16 | P2777028 | M22×1.50 | 32.0 | 18.0 |
| XSQ-RKU20 | P2777029 | M25×1.50 | 35.0 | 20.0 |
| XSQ-RKU25 | P2777030 | M32×1.50 | 42.0 | 21.5 |
| XSQ-RKU32 | P2777031 | M40×1.50 | 50.0 | 23.0 |
| XSQ-RKU40 | P2777032 | M50×1.50 | 63.0 | 26.0 |

■ XSQ-RKUT (Ball Bearing / Sealing Disk Type 密封型 )

Unit (单位) : mm

| MODEL No. 型号 | EDP No. | THREAD | Dia. 直径 | LENGTH |
|---|---|---|---|---|
| XSQ-RKUT16 | P2777033 | M22×1.50 | 32.0 | 22.5 |
| XSQ-RKUT20 | P2777034 | M25×1.50 | 35.0 | 24.5 |
| XSQ-RKUT25 | P2777035 | M32×1.50 | 42.0 | 25.0 |
| XSQ-RKUT32 | P2777036 | M40×1.50 | 50.0 | 27.5 |
| XSQ-RKUT40 | P2777037 | M50×1.50 | 63.0 | 30.5 |

■ XSQ-RM (Mini Nut : Standard Type Mini螺母:标准型)

Unit (单位) : mm

| MODEL No. 型号 | EDP No. | THREAD | Dia. 直径 | LENGTH |
|---|---|---|---|---|
| XSQ-R08M | P2777038 | M10×0.75 | 12.0 | 11.0 |
| XSQ-R11M | P2777039 | M13×0.75 | 16.0 | 12.0 |
| XSQ-R16M | P2777040 | M19×1.00 | 22.0 | 18.0 |
| XSQ-R20M | P2777041 | M24×1.00 | 28.0 | 19.5 |
| XSQ-R25M | P2777042 | M30×1.00 | 35.0 | 20.5 |

■ XSQ-RTM (Mini Nut : Sealing Disk Type Mini螺母:密封型)

Unit (单位) : mm

| MODEL No. 型号 | EDP No. | THREAD | Dia. 直径 | LENGTH |
|---|---|---|---|---|
| XSQ-RT16M | P2777043 | M19×1.00 | 22.0 | 22.5 |
| XSQ-RT20M | P2777044 | M24×1.00 | 28.0 | 24.0 |
| XSQ-RT25M | P2777045 | M30×1.00 | 35.0 | 25.0 |





# ER COLLET CHUCK

PART/DS

## ER NUT & SEALING DISK SET
## ER 螺母 & 密封型套装

■ XSQ-RA (External Thread Type 外螺纹类型)

Unit (单位) : mm

| MODEL No. 型号 | EDP No. | THREAD | Dia. 直径 | LENGTH |
|---|---|---|---|---|
| XSQ-RA11 | P2777046 | M18×1.00 | 18.0 | 6.0 |
| XSQ-RA16 | P2777047 | M24×1.00 | 24.0 | 8.0 |
| XSQ-RA20 | P2777048 | M28×1.50 | 28.0 | 11.0 |
| XSQ-RA25 | P2777049 | M32×1.50 | 32.0 | 12.5 |
| XSQ-RA32 | P2777050 | M40×1.50 | 40.0 | 14.0 |

■ XSQ-RAT (External Thread 外螺纹密封型/ Sealing Disk Type 密封型 )

Unit (单位) : mm

| MODEL No. 型号 | EDP No. | THREAD | Dia. 直径 | LENGTH |
|---|---|---|---|---|
| XSQ-RA11S* | P2777051 | M18×1.00 | 18.0 | 8.0 |
| XSQ-RAT16 | P2777052 | M24×1.00 | 24.0 | 11.0 |
| XSQ-RAT20 | P2777053 | M28×1.50 | 28.0 | 12.5 |
| XSQ-RAT25 | P2777054 | M32×1.50 | 32.0 | 14.0 |
| XSQ-RAT32 | P2777001 | M40×1.50 | 40.0 | 17.5 |

* Without sealing disk 无密封

■ SEALING DISK SET 密封型套装

Unit (单位) : mm

| MODEL No. 型号 | EDP No. | Dia. 直径 | THICKNESS 厚度 | SEALING DISKS/SET 密封盘/套装 |
|---|---|---|---|---|
| DS16S2 | P2777061 | 13.0 | 4.0 | 7pcs / set |
| DS20S2 | P2777062 | 16.0 | 4.0 | 10pcs / set |
| DS25S2 | P2777063 | 21.0 | 4.0 | 13pcs / set |
| DS32S2 | P2777064 | 27.0 | 4.0 | 17pcs / set |
| DS40S2 | P2777065 | 33.5 | 4.0 | 23pcs / set |
| DS50S2 | P2777066 | 31.0 | 4.0 | 22pcs / set |

# ER COLLET CHUCK

DS

## SEALING DISK
## 密封圈

■ SEALING DISK 密封型

Unit (单位) : mm

| MODEL No. 型号 | EDP No. | Dia. 直径 | INNER DIA. 内径 (Step : 0.5mm) | THICKNESS 厚度 |
|---|---|---|---|---|
| DS/ER16-3 | P2780501 | 13.0 | 3.0 | 4.0 |
| DS/ER16-3.5 | P2780502 | 13.0 | 3.5 | 4.0 |
| DS/ER16-4 | P2780503 | 13.0 | 4.0 | 4.0 |
| DS/ER16-4.5 | P2780504 | 13.0 | 4.5 | 4.0 |
| DS/ER16-5 | P2780505 | 13.0 | 5.0 | 4.0 |
| DS/ER16-6 | P2780506 | 13.0 | 6.0 | 4.0 |
| DS/ER16-6.5 | P2780507 | 13.0 | 6.5 | 4.0 |
| DS/ER16-7 | P2780508 | 13.0 | 7.0 | 4.0 |
| DS/ER16-8 | P2780509 | 13.0 | 8.0 | 4.0 |
| DS/ER16-9 | P2780510 | 13.0 | 9.0 | 4.0 |
| DS/ER16-10 | P2780511 | 13.0 | 10.0 | 4.0 |
| DS/ER20-3 | P2780512 | 16.0 | 3.0 | 4.0 |
| DS/ER20-4 | P2780513 | 16.0 | 4.0 | 4.0 |
| DS/ER20-4.5 | P2780514 | 16.0 | 4.5 | 4.0 |
| DS/ER20-5 | P2780515 | 16.0 | 5.0 | 4.0 |
| DS/ER20-5.5 | P2780516 | 16.0 | 5.5 | 4.0 |
| DS/ER20-6 | P2780517 | 16.0 | 6.0 | 4.0 |
| DS/ER20-6.5 | P2780518 | 16.0 | 6.5 | 4.0 |
| DS/ER20-7 | P2780519 | 16.0 | 7.0 | 4.0 |
| DS/ER20-7.5 | P2780520 | 16.0 | 7.5 | 4.0 |
| DS/ER20-8 | P2780521 | 16.0 | 8.0 | 4.0 |
| DS/ER20-8.5 | P2780522 | 16.0 | 8.5 | 4.0 |
| DS/ER20-9 | P2780523 | 16.0 | 9.0 | 4.0 |
| DS/ER20-10 | P2780524 | 16.0 | 10.0 | 4.0 |
| DS/ER20-11 | P2780525 | 16.0 | 11.0 | 4.0 |
| DS/ER20-12 | P2780526 | 16.0 | 12.0 | 4.0 |
| DS/ER20-13 | P2780527 | 16.0 | 13.0 | 4.0 |
| DS/ER25-3 | P2780528 | 21.0 | 3.0 | 4.0 |
| DS/ER25-3.5 | P2780529 | 21.0 | 3.5 | 4.0 |
| DS/ER25-4 | P2780530 | 21.0 | 4.0 | 4.0 |
| DS/ER25-4.5 | P2780531 | 21.0 | 4.5 | 4.0 |
| DS/ER25-5 | P2780532 | 21.0 | 5.0 | 4.0 |
| DS/ER25-5.5 | P2780533 | 21.0 | 5.5 | 4.0 |
| DS/ER25-6 | P2780534 | 21.0 | 6.0 | 4.0 |
| DS/ER25-6.5 | P2780535 | 21.0 | 6.5 | 4.0 |
| DS/ER25-7 | P2780536 | 21.0 | 7.0 | 4.0 |
| DS/ER25-7.5 | P2780537 | 21.0 | 7.5 | 4.0 |
| DS/ER25-8 | P2780538 | 21.0 | 8.0 | 4.0 |
| DS/ER25-8.5 | P2780539 | 21.0 | 8.5 | 4.0 |
| DS/ER25-9 | P2780540 | 21.0 | 9.0 | 4.0 |
| DS/ER25-9.5 | P2780541 | 21.0 | 9.5 | 4.0 |
| DS/ER25-10 | P2780542 | 21.0 | 10.0 | 4.0 |
| DS/ER25-10.5 | P2780543 | 21.0 | 10.5 | 4.0 |
| DS/ER25-11 | P2780544 | 21.0 | 11.0 | 4.0 |
| DS/ER25-11.5 | P2780545 | 21.0 | 11.5 | 4.0 |
| DS/ER25-12 | P2780546 | 21.0 | 12.0 | 4.0 |
| DS/ER25-12.5 | P2780547 | 21.0 | 12.5 | 4.0 |
| DS/ER25-13 | P2780548 | 21.0 | 13.0 | 4.0 |
| DS/ER25-13.5 | P2780549 | 21.0 | 13.5 | 4.0 |
| DS/ER25-14 | P2780550 | 21.0 | 14.0 | 4.0 |
| DS/ER25-14.5 | P2780551 | 21.0 | 14.5 | 4.0 |

| MODEL No. 型号 | EDP No. | Dia. 直径 | INNER DIA. 内径 (Step : 0.5mm) | THICKNESS 厚度 |
|---|---|---|---|---|
| DS/ER25-15 | P2780552 | 21.0 | 15.0 | 4.0 |
| DS/ER25-15.5 | P2780553 | 21.0 | 15.5 | 4.0 |
| DS/ER25-16 | P2780554 | 21.0 | 16.0 | 4.0 |
| DS/ER32-3 | P2780555 | 27.0 | 3.0 | 4.0 |
| DS/ER32-4 | P2780556 | 27.0 | 4.0 | 4.0 |
| DS/ER32-5 | P2780557 | 27.0 | 5.0 | 4.0 |
| DS/ER32-6 | P2780558 | 27.0 | 6.0 | 4.0 |
| DS/ER32-7 | P2780559 | 27.0 | 7.0 | 4.0 |
| DS/ER32-8 | P2780560 | 27.0 | 8.0 | 4.0 |
| DS/ER32-9 | P2780561 | 27.0 | 9.0 | 4.0 |
| DS/ER32-10 | P2780562 | 27.0 | 10.0 | 4.0 |
| DS/ER32-10.5 | P2780563 | 27.0 | 10.5 | 4.0 |
| DS/ER32-11 | P2780564 | 27.0 | 11.0 | 4.0 |
| DS/ER32-11.5 | P2780565 | 27.0 | 11.5 | 4.0 |
| DS/ER32-12 | P2780566 | 27.0 | 12.0 | 4.0 |
| DS/ER32-12.5 | P2780567 | 27.0 | 12.5 | 4.0 |
| DS/ER32-13 | P2780568 | 27.0 | 13.0 | 4.0 |
| DS/ER32-13.5 | P2780569 | 27.0 | 13.5 | 4.0 |
| DS/ER32-14 | P2780570 | 27.0 | 14.0 | 4.0 |
| DS/ER32-14.5 | P2780571 | 27.0 | 14.5 | 4.0 |
| DS/ER32-15 | P2780572 | 27.0 | 15.0 | 4.0 |
| DS/ER32-16 | P2780573 | 27.0 | 16.0 | 4.0 |
| DS/ER32-17 | P2780574 | 27.0 | 17.0 | 4.0 |
| DS/ER32-18 | P2780575 | 27.0 | 18.0 | 4.0 |
| DS/ER32-19 | P2780576 | 27.0 | 19.0 | 4.0 |
| DS/ER32-20 | P2780577 | 27.0 | 20.0 | 4.0 |
| DS/ER40-3 | P2780578 | 33.5 | 3.0 | 4.0 |
| DS/ER40-4 | P2780579 | 33.5 | 4.0 | 4.0 |
| DS/ER40-5 | P2780580 | 33.5 | 5.0 | 4.0 |
| DS/ER40-6 | P2780581 | 33.5 | 6.0 | 4.0 |
| DS/ER40-7 | P2780582 | 33.5 | 7.0 | 4.0 |
| DS/ER40-8 | P2780583 | 33.5 | 8.0 | 4.0 |
| DS/ER40-9 | P2780584 | 33.5 | 9.0 | 4.0 |
| DS/ER40-10 | P2780585 | 33.5 | 10.0 | 4.0 |
| DS/ER40-11 | P2780586 | 33.5 | 11.0 | 4.0 |
| DS/ER40-12 | P2780587 | 33.5 | 12.0 | 4.0 |
| DS/ER40-13 | P2780588 | 33.5 | 13.0 | 4.0 |
| DS/ER40-14 | P2780589 | 33.5 | 14.0 | 4.0 |
| DS/ER40-15 | P2780590 | 33.5 | 15.0 | 4.0 |
| DS/ER40-16 | P2780591 | 33.5 | 16.0 | 4.0 |
| DS/ER40-17 | P2780592 | 33.5 | 17.0 | 4.0 |
| DS/ER40-18 | P2780593 | 33.5 | 18.0 | 4.0 |
| DS/ER40-19 | P2780594 | 33.5 | 19.0 | 4.0 |
| DS/ER40-20 | P2780595 | 33.5 | 20.0 | 4.0 |
| DS/ER40-21 | P2780596 | 33.5 | 21.0 | 4.0 |
| DS/ER40-22 | P2780597 | 33.5 | 22.0 | 4.0 |
| DS/ER40-23 | P2780598 | 33.5 | 23.0 | 4.0 |
| DS/ER40-24 | P2780599 | 33.5 | 24.0 | 4.0 |
| DS/ER40-25 | P2780600 | 33.5 | 25.0 | 4.0 |
| DS/ER40-26 | P2780601 | 33.5 | 26.0 | 4.0 |





# ER COLLET CHUCK

SP

## ER SPANNER/WRENCH
## ER扳手

FIG.1

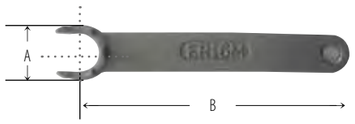
FIG.2

■ FOR ER / SKN NUT 适用于 ER/SKN 螺母

Unit (单位) : mm

| MODEL No. 型号 | EDP No. | A | B | APPLICABLE NUT 适用螺母 |
|---|---|---|---|---|
| ER11SP | P2772601 | - | - | ER11, SKN6 (FIG.1) |
| ER16SP | P2772602 | 50 | 160 | ER16, SKN10 (FIG.1) |
| ER20SP | P2772603 | 55 | 180 | ER20 (FIG.1) |
| ER25SP | P2772604 | 65 | 210 | ER25, SKN16 (FIG.2) |
| ER32SP | P2772605 | 75 | 250 | ER32 (FIG.2) |
| ER40SP | P2772606 | 90 | 290 | ER40 (FIG.2) |
| ER50SP | P2772612 | 110 | 350 | ER50 (FIG.2) |

▶Design and shape could be changed without prior notice.
设计及形状变更时不给于提前通知



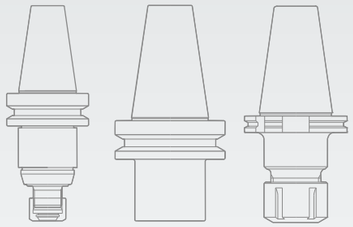

■ FOR ER Mini NUT 适用于 ER Mini 螺母

Unit (单位) : mm

| MODEL No. 型号 | EDP No. | A | B | APPLICABLE NUT 适用螺母 |
|---|---|---|---|---|
| GE8M | P2772608 | 12.4 | 70 | ER8M |
| GE11M | P2772609 | 16.8 | 90 | ER11M |
| GE16M | P2772610 | 22.5 | 110 | ER16M |
| GE20M | P2772611 | 29.0 | 120 | ER20M |
| GE25M | P2772607 | 36.0 | 130 | ER25M |

▶Design and shape could be changed without prior notice.
设计及形状变更时不给于提前通知

Global Cutting Tool Leader **YG-1**



# TOOLING SYSTEM

YG-1 TOOLING SYSTEM

# END MILL HOLDER & SIDE LOCK ARBOR

# 立铣刀刀柄 & 侧固式刀柄

## END MILL HOLDER

DIN 69871-SK
DIN 69893/ISO 12164-1-HSK
JIS B6339/MAS 403-BT
SHORT TYPE (SK&BT)
GOST 25827-93

## SIDE LOCK ARBOR

CBT (BT DUAL CONTACT)
JIS B6339/MAS 403-BT

## PART

# END MILL HOLDER & SIDE LOCK ARBOR

EMH

## END MILL HOLDER

DIN 69871-SK

## 立铣刀刀柄

FIG.1

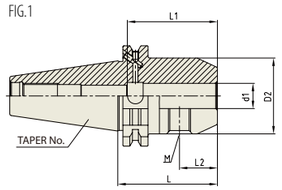
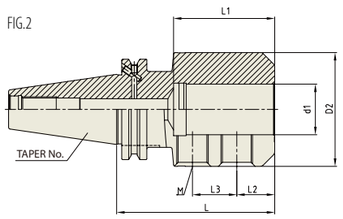



FIG.2




DIN 69871-SK | AT3 | 2.5G | 25,000 RPM | AD or AD/B

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | d1 | D2 | L | L1 | L2 | L3 | M | FIG. | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 30 | SK30-EMH6-50 | P2779025A | 6 | 25 | 50 | 35 | 18 | - | M6 | 1 | 0.73 |
| | SK30-EMH8-50 | P2779026A | 8 | 28 | 50 | 35 | 18 | - | M8 | 1 | 0.83 |
| | SK30-EMH10-50 | P2779027A | 10 | 35 | 50 | 42 | 20 | - | M10 | 1 | 0.90 |
| | SK30-EMH12-50 | P2779028A | 12 | 42 | 50 | 47 | 22.5 | - | M12 | 1 | 0.90 |
| | SK30-EMH16-63 | P2779029A | 16 | 48 | 63 | 50 | 24 | - | M14 | 1 | 1.10 |
| 40 | SK40AD/B-EMH6-50 | P2779030 | 6 | 25 | 50 | 35 | 18 | - | M6 | 1 | 0.86 |
| | SK40AD/B-EMH8-50 | P2779031 | 8 | 28 | 50 | 35 | 18 | - | M8 | 1 | 0.89 |
| | SK40AD/B-EMH10-50 | P2779032 | 10 | 35 | 50 | 39 | 20 | - | M10 | 1 | 0.95 |
| | SK40AD/B-EMH12-50 | P2779033 | 12 | 42 | 50 | 46 | 22.5 | - | M12 | 1 | 1.03 |
| | SK40AD/B-EMH16-63 | P2779034 | 16 | 48 | 63 | 57 | 24 | - | M14 | 1 | 1.26 |
| | SK40AD/B-EMH20-63 | P2779035 | 20 | 52 | 63 | 54 | 25 | - | M16 | 1 | 1.28 |
| | SK40AD/B-EMH25-100 | P2779036 | 25 | 65 | 100 | 60 | 24 | 25 | M18 | 2 | 2.28 |
| | SK40AD/B-EMH32-100 | P2779037 | 32 | 72 | 100 | 64 | 24 | 28 | M20 | 2 | 2.50 |
| 50 | SK50AD/B-EMH6-63 | P2779038 | 6 | 25 | 50 | 35 | 18 | - | M6 | 1 | 2.70 |
| | SK50AD/B-EMH8-63 | P2779039 | 8 | 28 | 50 | 35 | 18 | - | M8 | 1 | 2.70 |
| | SK50AD/B-EMH10-63 | P2779040 | 10 | 35 | 50 | 39 | 20 | - | M10 | 1 | 2.90 |
| | SK50AD/B-EMH12-63 | P2779041 | 12 | 42 | 63 | 46 | 22.5 | - | M12 | 1 | 2.90 |
| | SK50AD/B-EMH16-63 | P2779042 | 16 | 48 | 63 | 49 | 24 | - | M14 | 1 | 3.00 |
| | SK50AD/B-EMH20-63 | P2779043 | 20 | 52 | 63 | 52 | 25 | - | M16 | 1 | 3.05 |
| | SK50AD/B-EMH25-80 | P2779044 | 25 | 65 | 80 | 60 | 24 | 25 | M18 | 2 | 3.73 |
| | SK50AD/B-EMH32-100 | P2779045 | 32 | 72 | 100 | 64 | 24 | 28 | M20 | 2 | 4.53 |
| | SK50AD/B-EMH40-100 | P2779046 | 40 | 80 | 100 | 74 | 30 | 32 | M20 | 2 | 4.77 |
| | SK50AD/B-EMH50-125 | P2779047 | 50 | 100 | 125 | 84 | 35 | 35 | M24 | 2 | 7.03 |

▶CAT(ANSI B5.50) taper and Inch type products are available.
CAT(ANSI B5.50)锥柄及英制产品可供选择

▶Standard End Mill Holder is for a cutting tool with Weldon shank and End Mill Holder for a cutting tool with Whistle notch is available upon request.
标准立铣刀座适用于带Weldon刀柄的刀具，立铣刀座适用于带哨子切口的刀具，可根据客户要求提供

▶Combi-style holder with ball jointed clamping screw which can be used with cutting tools with Weldon and Whistle notch shank is available.
Weldon和 斜度侧固式切削刀具可兼用 ball 及 夹紧螺丝 组装的 Combi 形状的刀柄 可供应



TOOLING SYSTEM

HYDRAULIC CHUCK
SHRINK FIT HOLDER
ER COLLET CHUCK
END MILL HOLDER & SIDE LOCK ARBOR
SHELL MILL ARBOR
POWER MILLING CHUCK
MORSE TAPER ARBOR
SK SLIM CHUCK
SYNCHRO TAPPING CHUCK
ONE STEP TAPPING CHUCK
TAPPING ER CHUCK
TAPPING CHUCK
FACE MILL ARBOR
COPY MILL ARBOR & INDEXABLE DRILL HOLDER
NC DRILL CHUCK & OTHER TOOL HOLDERS
BORING SYSTEM
ACCESSORY & OTHERS

# END MILL HOLDER & SIDE LOCK ARBOR

EMH

## END MILL HOLDER (COOLANT CHANNEL)

DIN 69871-SK

## 立铣刀刀柄 (冷却液喷射型)

FIG.1

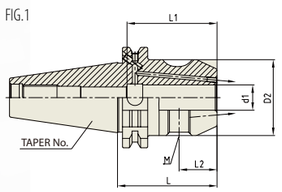
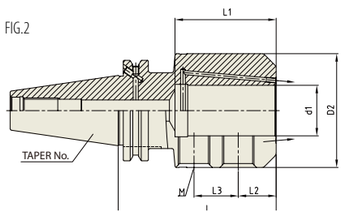



FIG.2




DIN 69871-SK | AT3 | 2.5G | 25,000 RPM | AD/B+C

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | d1 | D2 | L | L1 | L2 | L3 | M | FIG. | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 40 | SK40AD/B-EMH6C-50 | P2779048 | 6 | 25 | 50 | 35 | 18 | - | M6 | 1 | 0.86 |
| | SK40AD/B-EMH8C-50 | P2779049 | 8 | 28 | 50 | 35 | 18 | - | M8 | 1 | 0.89 |
| | SK40AD/B-EMH10C-50 | P2779050 | 10 | 35 | 50 | 39 | 20 | - | M10 | 1 | 0.95 |
| | SK40AD/B-EMH12C-50 | P2779051 | 12 | 42 | 50 | 46 | 22.5 | - | M12 | 1 | 1.03 |
| | SK40AD/B-EMH14C-50 | P2779052 | 14 | 44 | 50 | 48 | 22.5 | - | M12 | 1 | 1.26 |
| | SK40AD/B-EMH16C-63 | P2779053 | 16 | 48 | 63 | 57 | 24 | - | M14 | 1 | 1.28 |
| | SK40AD/B-EMH18C-63 | P2779054 | 18 | 50 | 63 | 54 | 24 | - | M14 | 1 | 1.35 |
| | SK40AD/B-EMH20C-63 | P2779055 | 20 | 52 | 63 | 54 | 25 | - | M16 | 1 | 1.28 |
| | SK40AD/B-EMH25C-100 | P2779056 | 25 | 65 | 100 | 60 | 24 | 25 | M18 | 2 | 2.28 |
| | SK40AD/B-EMH32C-100 | P2779057 | 32 | 72 | 100 | 64 | 24 | 28 | M20 | 2 | 2.50 |
| 50 | SK50AD/B-EMH6C-63 | P2779058 | 6 | 25 | 50 | 35 | 18 | - | M6 | 1 | 2.70 |
| | SK50AD/B-EMH8C-63 | P2779059 | 8 | 28 | 50 | 35 | 18 | - | M8 | 1 | 2.70 |
| | SK50AD/B-EMH10C-63 | P2779060 | 10 | 35 | 50 | 39 | 20 | - | M10 | 1 | 2.90 |
| | SK50AD/B-EMH12C-63 | P2779061 | 12 | 42 | 63 | 46 | 22.5 | - | M12 | 1 | 2.90 |
| | SK50AD/B-EMH14C-63 | P2779062 | 14 | 44 | 63 | 45 | 22.5 | - | M12 | 1 | 2.90 |
| | SK50AD/B-EMH16C-63 | P2779063 | 16 | 48 | 63 | 49 | 24 | - | M14 | 1 | 3.00 |
| | SK50AD/B-EMH18C-63 | P2779064 | 18 | 50 | 63 | 46 | 24 | - | M14 | 1 | 3.00 |
| | SK50AD/B-EMH20C-63 | P2779065 | 20 | 52 | 63 | 52 | 25 | - | M16 | 1 | 3.05 |
| | SK50AD/B-EMH25C-80 | P2779066 | 25 | 65 | 80 | 60 | 24 | 25 | M18 | 2 | 3.73 |
| | SK50AD/B-EMH32C-100 | P2779067 | 32 | 72 | 100 | 64 | 24 | 28 | M20 | 2 | 4.53 |
| | SK50AD/B-EMH40C-120 | P2779068 | 40 | 80 | 100 | 74 | 30 | 32 | M20 | 2 | 4.77 |
| | SK50AD/B-EMH50C-125 | P2779069 | 50 | 100 | 125 | 84 | 35 | 35 | M24 | 2 | 7.03 |

▶CAT(ANSI B5.50) taper and Inch type products are available.
CAT(ANSI B5.50)锥柄及英制产品可供选择

▶Standard End Mill Holder is for a cutting tool with Weldon shank and End Mill Holder for a cutting tool with Whistle notch is available upon request.
标准立铣刀座适用于带Weldon刀柄的刀具，立铣刀座适用于带哨子切口的刀具，可根据客户要求提供

▶Combi-style holder with ball jointed clamping screw which can be used with cutting tools with Weldon and Whistle notch shank is available.
Weldon和 斜度侧固式切削刀具可兼用 ball 及 夹紧螺丝 组装的 Combi 形状的刀柄 可供应

# END MILL HOLDER & SIDE LOCK ARBOR

EMH

## END MILL HOLDER

DIN 69871-SK

## 立铣刀刀柄

FIG.1

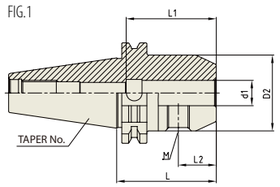
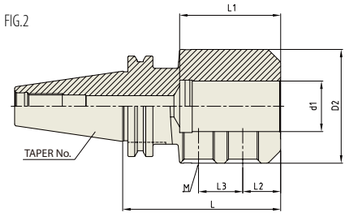



FIG.2




DIN 69871-SK | AT3 | 6.3G | 15,000 RPM | AD

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | d1 | D2 | L | L1 | L2 | L3 | M | FIG. | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 30 | SK30-EMH6-50 | P2521004 | 6 | 25 | 50 | 35 | 18 | - | M6 | 1 | 0.73 |
| | SK30-EMH8-50 | P2521005 | 8 | 28 | 50 | 35 | 18 | - | M8 | 1 | 0.83 |
| | SK30-EMH10-50 | P2521006 | 10 | 35 | 50 | 42 | 20 | - | M10 | 1 | 0.90 |
| | SK30-EMH12-50 | P2521007 | 12 | 42 | 50 | 47 | 22.5 | - | M12 | 1 | 0.90 |
| | SK30-EMH16-63 | P2521008 | 16 | 48 | 63 | 50 | 24 | - | M14 | 1 | 1.10 |
| 40 | SK40-EMH6-50 | P2521009 | 6 | 25 | 50 | 35 | 18 | - | M6 | 1 | 0.86 |
| | SK40-EMH8-50 | P2521010 | 8 | 28 | 50 | 35 | 18 | - | M8 | 1 | 0.89 |
| | SK40-EMH10-50 | P2521011 | 10 | 35 | 50 | 39 | 20 | - | M10 | 1 | 0.95 |
| | SK40-EMH12-50 | P2521012 | 12 | 42 | 50 | 46 | 22.5 | - | M12 | 1 | 1.03 |
| | SK40-EMH16-63 | P2521013 | 16 | 48 | 63 | 57 | 24 | - | M14 | 1 | 1.26 |
| | SK40-EMH20-63 | P2521014 | 20 | 52 | 63 | 54 | 25 | - | M16 | 1 | 1.28 |
| | SK40-EMH25-100 | P2521015 | 25 | 65 | 100 | 60 | 24 | 25 | M18 | 2 | 2.28 |
| | SK40-EMH32-100 | P2521016 | 32 | 72 | 100 | 64 | 24 | 28 | M20 | 2 | 2.50 |
| 50 | SK50-EMH6-63 | P2521017 | 6 | 25 | 50 | 35 | 18 | - | M6 | 1 | 2.70 |
| | SK50-EMH8-63 | P2521018 | 8 | 28 | 50 | 35 | 18 | - | M8 | 1 | 2.70 |
| | SK50-EMH10-63 | P2521019 | 10 | 35 | 50 | 39 | 20 | - | M10 | 1 | 2.90 |
| | SK50-EMH12-63 | P2521020 | 12 | 42 | 63 | 46 | 22.5 | - | M12 | 1 | 2.90 |
| | SK50-EMH16-63 | P2521021 | 16 | 48 | 63 | 49 | 24 | - | M14 | 1 | 3.00 |
| | SK50-EMH20-63 | P2521022 | 20 | 52 | 63 | 52 | 25 | - | M16 | 1 | 3.05 |
| | SK50-EMH25-80 | P2521023 | 25 | 65 | 80 | 60 | 24 | 25 | M18 | 2 | 3.73 |
| | SK50-EMH32-100 | P2521024 | 32 | 72 | 100 | 64 | 24 | 28 | M20 | 2 | 4.53 |
| | SK50-EMH40-100 | P2521025 | 40 | 80 | 100 | 74 | 30 | 32 | M20 | 2 | 4.77 |
| | SK50-EMH50-125 | P2521026 | 50 | 100 | 125 | 84 | 35 | 35 | M24 | 2 | 7.03 |

▶CAT(ANSI B5.50) taper and Inch type products are available.
CAT(ANSI B5.50)锥柄及英制产品可供选择

▶Standard End Mill Holder is for a cutting tool with Weldon shank and End Mill Holder for a cutting tool with Whistle notch is available upon request.
标准立铣刀座适用于带Weldon刀柄的刀具，立铣刀座适用于带哨子切口的刀具，可根据客户要求提供

▶Combi-style holder with ball jointed clamping screw which can be used with cutting tools with Weldon and Whistle notch shank is available.
Weldon和 斜度侧固式切削刀具可兼用 ball 及 夹紧螺丝 组装的 Combi 形状的刀柄 可供应



TOOLING SYSTEM

HYDRAULIC CHUCK
SHRINK FIT HOLDER
ER COLLET CHUCK
END MILL HOLDER & SIDE LOCK ARBOR
SHELL MILL ARBOR
POWER MILLING CHUCK
MORSE TAPER ARBOR
SK SLIM CHUCK
SYNCHRO TAPPING CHUCK
ONE STEP TAPPING CHUCK
TAPPING ER CHUCK
TAPPING CHUCK
FACE MILL ARBOR
COPY MILL ARBOR & INDEXABLE DRILL HOLDER
NC DRILL CHUCK & OTHER TOOL HOLDERS
BORING SYSTEM
ACCESSORY & OTHERS

END MILL HOLDER & SIDE LOCK ARBOR

EMH

END MILL HOLDER

DIN 69871-SK

立铣刀刀柄

FIG.1

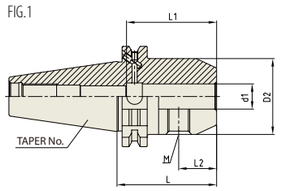
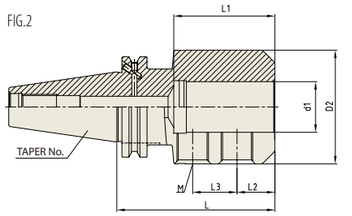



FIG.2




DIN 69871-SK | AT3 | 6.3G | 15,000 RPM | AD/B

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | d1 | D2 | L | L1 | L2 | L3 | M | FIG. | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 40 | SK40AD/B-EMH6-50 | P2531009 | 6 | 25 | 50 | 35 | 18 | - | M6 | 1 | 0.86 |
| | SK40AD/B-EMH8-50 | P2531010 | 8 | 28 | 50 | 35 | 18 | - | M8 | 1 | 0.89 |
| | SK40AD/B-EMH10-50 | P2531011 | 10 | 35 | 50 | 39 | 20 | - | M10 | 1 | 0.95 |
| | SK40AD/B-EMH12-50 | P2531012 | 12 | 42 | 50 | 46 | 22.5 | - | M12 | 1 | 1.03 |
| | SK40AD/B-EMH16-63 | P2531013 | 16 | 48 | 63 | 57 | 24 | - | M14 | 1 | 1.28 |
| | SK40AD/B-EMH20-63 | P2531014 | 20 | 52 | 63 | 54 | 25 | - | M16 | 1 | 1.28 |
| | SK40AD/B-EMH25-100 | P2531015 | 25 | 65 | 100 | 60 | 24 | 25 | M18 | 2 | 2.28 |
| | SK40AD/B-EMH32-100 | P2531016 | 32 | 72 | 100 | 64 | 24 | 28 | M20 | 2 | 2.50 |
| 50 | SK50AD/B-EMH6-63 | P2531017 | 6 | 25 | 50 | 35 | 18 | - | M6 | 1 | 2.70 |
| | SK50AD/B-EMH8-63 | P2531018 | 8 | 28 | 50 | 35 | 18 | - | M8 | 1 | 2.70 |
| | SK50AD/B-EMH10-63 | P2531019 | 10 | 35 | 50 | 39 | 20 | - | M10 | 1 | 2.90 |
| | SK50AD/B-EMH12-63 | P2531020 | 12 | 42 | 63 | 46 | 22.5 | - | M12 | 1 | 2.90 |
| | SK50AD/B-EMH16-63 | P2531021 | 16 | 48 | 63 | 49 | 24 | - | M14 | 1 | 3.00 |
| | SK50AD/B-EMH20-63 | P2531022 | 20 | 52 | 63 | 52 | 25 | - | M16 | 1 | 3.05 |
| | SK50AD/B-EMH25-80 | P2531023 | 25 | 65 | 80 | 60 | 24 | 25 | M18 | 2 | 3.73 |
| | SK50AD/B-EMH32-100 | P2531024 | 32 | 72 | 100 | 64 | 24 | 28 | M20 | 2 | 4.53 |
| | SK50AD/B-EMH40-100 | P2531025 | 40 | 80 | 100 | 74 | 30 | 32 | M20 | 2 | 4.77 |
| | SK50AD/B-EMH50-125 | P2531026 | 50 | 100 | 125 | 84 | 35 | 35 | M24 | 2 | 7.03 |

▶CAT(ANSI B5.50) taper and Inch type products are available.
CAT(ANSI B5.50)锥柄及英制产品可供选择

▶Standard End Mill Holder is for a cutting tool with Weldon shank and End Mill Holder for a cutting tool with Whistle notch is available upon request.
标准立铣刀座适用于带Weldon刀柄的刀具，立铣刀座适用于带哨子切口的刀具，可根据客户要求提供

▶Combi-style holder with ball jointed clamping screw which can be used with cutting tools with Weldon and Whistle notch shank is available.
Weldon和 斜度侧固式切削刀具可兼用 ball 及 夹紧螺丝 组装的 Combi 形状的刀柄 可供应

# END MILL HOLDER & SIDE LOCK ARBOR

EMH

## END MILL HOLDER (COOLANT CHANNEL)

DIN 69871-SK

## 立铣刀刀柄 (冷却液喷射型)

FIG.1

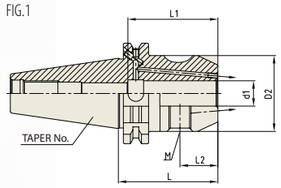
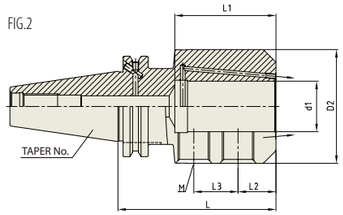



FIG.2




DIN 69871-SK | AT3 | 6.3G | 15,000 RPM | AD/B+C

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | d1 | D2 | L | L1 | L2 | L3 | M | FIG. | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 40 | SK40AD/B-EMH6C-50 | P2779001 | 6 | 25 | 50 | 35 | 18 | - | M6 | 1 | 0.86 |
| | SK40AD/B-EMH8C-50 | P2779002 | 8 | 28 | 50 | 35 | 18 | - | M8 | 1 | 0.89 |
| | SK40AD/B-EMH10C-50 | P2779003 | 10 | 35 | 50 | 39 | 20 | - | M10 | 1 | 0.95 |
| | SK40AD/B-EMH12C-50 | P2779004 | 12 | 42 | 50 | 46 | 22.5 | - | M12 | 1 | 1.03 |
| | SK40AD/B-EMH14C-50 | P2779005 | 14 | 44 | 50 | 48 | 22.5 | - | M12 | 1 | 1.26 |
| | SK40AD/B-EMH16C-63 | P2779006 | 16 | 48 | 63 | 57 | 24 | - | M14 | 1 | 1.28 |
| | SK40AD/B-EMH18C-63 | P2779007 | 18 | 50 | 63 | 54 | 24 | - | M14 | 1 | 1.35 |
| | SK40AD/B-EMH20C-63 | P2779008 | 20 | 52 | 63 | 54 | 25 | - | M16 | 1 | 1.28 |
| | SK40AD/B-EMH25C-100 | P2779009 | 25 | 65 | 100 | 60 | 24 | 25 | M18 | 2 | 2.28 |
| | SK40AD/B-EMH32C-100 | P2779010 | 32 | 72 | 100 | 64 | 24 | 28 | M20 | 2 | 2.50 |
| 50 | SK50AD/B-EMH6C-63 | P2779011 | 6 | 25 | 50 | 35 | 18 | - | M6 | 1 | 2.70 |
| | SK50AD/B-EMH8C-63 | P2779012 | 8 | 28 | 50 | 35 | 18 | - | M8 | 1 | 2.70 |
| | SK50AD/B-EMH10C-63 | P2779013 | 10 | 35 | 50 | 39 | 20 | - | M10 | 1 | 2.90 |
| | SK50AD/B-EMH12C-63 | P2779014 | 12 | 42 | 63 | 46 | 22.5 | - | M12 | 1 | 2.90 |
| | SK50AD/B-EMH14C-63 | P2779015 | 14 | 44 | 63 | 45 | 22.5 | - | M12 | 1 | 2.90 |
| | SK50AD/B-EMH16C-63 | P2779016 | 16 | 48 | 63 | 49 | 24 | - | M14 | 1 | 3.00 |
| | SK50AD/B-EMH18C-63 | P2779017 | 18 | 50 | 63 | 46 | 24 | - | M14 | 1 | 3.00 |
| | SK50AD/B-EMH20C-63 | P2779018 | 20 | 52 | 63 | 52 | 25 | - | M16 | 1 | 3.05 |
| | SK50AD/B-EMH25C-80 | P2779019 | 25 | 65 | 80 | 60 | 24 | 25 | M18 | 2 | 3.73 |
| | SK50AD/B-EMH32C-100 | P2779020 | 32 | 72 | 100 | 64 | 24 | 28 | M20 | 2 | 4.53 |
| | SK50AD/B-EMH40C-120 | P2779021 | 40 | 80 | 100 | 74 | 30 | 32 | M20 | 2 | 4.77 |
| | SK50AD/B-EMH50C-125 | P2779022 | 50 | 100 | 125 | 84 | 35 | 35 | M24 | 2 | 7.03 |

▶CAT(ANSI B5.50) taper and Inch type products are available.
CAT(ANSI B5.50)锥柄及英制产品可供选择

▶Standard End Mill Holder is for a cutting tool with Weldon shank and End Mill Holder for a cutting tool with Whistle notch is available upon request.
标准立铣刀座适用于带Weldon刀柄的刀具，立铣刀座适用于带哨子切口的刀具，可根据客户要求提供

▶Combi-style holder with ball jointed clamping screw which can be used with cutting tools with Weldon and Whistle notch shank is available.
Weldon和 斜度侧固式切削刀具可兼用 ball 及 夹紧螺丝 组装的 Combi 形状的刀柄 可供应



TOOLING SYSTEM

HYDRAULIC CHUCK
SHRINK FIT HOLDER
ER COLLET CHUCK
END MILL HOLDER & SIDE LOCK ARBOR
SHELL MILL ARBOR
POWER MILLING CHUCK
MORSE TAPER ARBOR
SK SLIM CHUCK
SYNCHRO TAPPING CHUCK
ONE STEP TAPPING CHUCK
TAPPING ER CHUCK
TAPPING CHUCK
FACE MILL ARBOR
COPY MILL ARBOR & INDEXABLE DRILL HOLDER
NC DRILL CHUCK & OTHER TOOL HOLDERS
BORING SYSTEM
ACCESSORY & OTHERS

# END MILL HOLDER & SIDE LOCK ARBOR

EMH

## END MILL HOLDER

DIN 69893/ ISO 12164-1-HSK FORM A

## 立铣刀刀柄

FIG.1

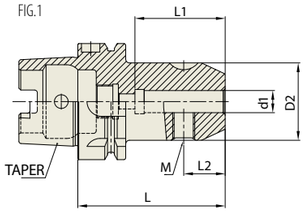
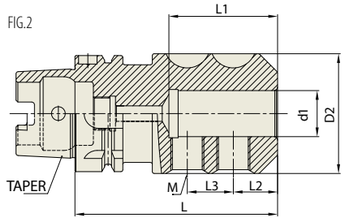



FIG.2




DIN 69893-HSK | AT3 | 2.5G | 25,000 RPM | AD

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | d1 | D2 | L | L1 | L2 | L3 | M | FIG. | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 40A | HSK40A-EMH6-60 | P2775522 | 6 | 25 | 60 | 38 | 18 | - | M6 | 1 | 0.30 |
| | HSK40A-EMH8-60 | P2775523 | 8 | 28 | 60 | 38 | 18 | - | M8 | 1 | 0.30 |
| | HSK40A-EMH10-60 | P2775524 | 10 | 35 | 60 | 42 | 20 | - | M10 | 1 | 0.30 |
| | HSK40A-EMH12-70 | P2775525 | 12 | 42 | 70 | 47 | 22.5 | - | M12 | 1 | 0.40 |
| | HSK40A-EMH14-70 | P2775526 | 14 | 44 | 70 | 47 | 22.5 | - | M12 | 1 | 0.40 |
| | HSK40A-EMH16-80 | P2775527 | 16 | 48 | 80 | 50 | 24 | - | M14 | 1 | 0.60 |
| 50A | HSK50A-EMH6-65 | P2775528 | 6 | 25 | 65 | 38 | 18 | - | M6 | 1 | 0.70 |
| | HSK50A-EMH8-65 | P2775529 | 8 | 28 | 65 | 38 | 18 | - | M8 | 1 | 0.80 |
| | HSK50A-EMH10-65 | P2775530 | 10 | 35 | 65 | 42 | 20 | - | M10 | 1 | 0.80 |
| | HSK50A-EMH12-80 | P2775531 | 12 | 42 | 80 | 47 | 22.5 | - | M12 | 1 | 1.20 |
| | HSK50A-EMH14-80 | P2775532 | 14 | 44 | 80 | 47 | 22.5 | - | M12 | 1 | 1.30 |
| | HSK50A-EMH16-80 | P2775533 | 16 | 48 | 80 | 50 | 24 | - | M14 | 1 | 1.30 |
| | HSK50A-EMH18-80 | P2775534 | 18 | 50 | 80 | 50 | 24 | - | M14 | 1 | 1.40 |
| | HSK50A-EMH20-80 | P2775535 | 20 | 52 | 80 | 52 | 25 | - | M16 | 1 | 1.50 |
| 63A | HSK63A-EMH6-65 | P2775501 | 6 | 25 | 65 | 35 | 18 | - | M6 | 1 | 0.80 |
| | HSK63A-EMH8-65 | P2775502 | 8 | 28 | 65 | 38 | 18 | - | M8 | 1 | 0.80 |
| | HSK63A-EMH10-65 | P2775503 | 10 | 35 | 65 | 42 | 20 | - | M10 | 1 | 0.90 |
| | HSK63A-EMH12-80 | P2775504 | 12 | 42 | 80 | 47 | 22.5 | - | M12 | 1 | 1.10 |
| | HSK63A-EMH14-80 | P2775505 | 14 | 44 | 80 | 47 | 22.5 | - | M12 | 1 | 1.20 |
| | HSK63A-EMH16-80 | P2775506 | 16 | 48 | 80 | 50 | 24 | - | M14 | 1 | 1.30 |
| | HSK63A-EMH18-80 | P2775507 | 18 | 50 | 80 | 50 | 24 | - | M14 | 1 | 1.40 |
| | HSK63A-EMH20-80 | P2775508 | 20 | 52 | 80 | 52 | 25 | - | M16 | 1 | 1.50 |
| | HSK63A-EMH25-110 | P2775509 | 25 | 65 | 110 | 60 | 24 | 25 | M16 | 2 | 2.30 |
| | HSK63A-EMH32-110 | P2775510 | 32 | 72 | 110 | 64 | 24 | 28 | M16 | 2 | 2.60 |
| 100A | HSK100A-EMH6-80 | P2775511 | 6 | 25 | 80 | 35 | 18 | - | M6 | 1 | 0.80 |
| | HSK100A-EMH8-80 | P2775512 | 8 | 28 | 80 | 35 | 18 | - | M8 | 1 | 0.80 |
| | HSK100A-EMH10-80 | P2775513 | 10 | 35 | 80 | 39 | 20 | - | M10 | 1 | 0.90 |
| | HSK100A-EMH12-80 | P2775514 | 12 | 42 | 80 | 47 | 22.5 | - | M12 | 1 | 1.10 |
| | HSK100A-EMH14-80 | P2775515 | 14 | 44 | 80 | 47 | 22.5 | - | M12 | 1 | 1.20 |
| | HSK100A-EMH16-100 | P2775516 | 16 | 48 | 80 | 50 | 24 | - | M14 | 1 | 1.30 |
| | HSK100A-EMH18-100 | P2775517 | 18 | 50 | 80 | 50 | 24 | - | M14 | 1 | 1.40 |
| | HSK100A-EMH20-100 | P2775518 | 20 | 52 | 80 | 52 | 25 | - | M16 | 1 | 1.50 |
| | HSK100A-EMH25-100 | P2775519 | 25 | 65 | 110 | 60 | 24 | 25 | M16 | 2 | 2.30 |
| | HSK100A-EMH32-100 | P2775520 | 32 | 72 | 110 | 64 | 24 | 28 | M16 | 2 | 2.60 |
| | HSK100A-EMH40-120 | P2775521 | 40 | 80 | 120 | 74 | 30 | 32 | M16 | 2 | 2.60 |

▶Standard End Mill Holder is for a cutting tool with Weldon shank and End Mill Holder for a cutting tool with Whistle notch is available upon request.
标准立铣刀座适用于带Weldon刀柄的刀具，立铣刀座适用于带哨子切口的刀具，可根据客户要求提供

▶Combi-style holder with ball jointed clamping screw which can be used with cutting tools with Weldon and Whistle notch shank is available.
Weldon和 斜度侧固式切削刀具可兼用 ball 及 夹紧螺丝 组装的 Combi 形状的刀柄 可供应

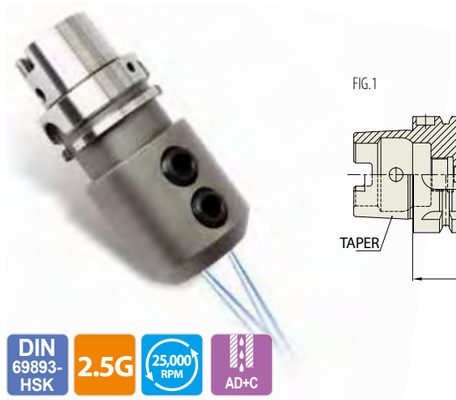
# END MILL HOLDER & SIDE LOCK ARBOR

EMH

## END MILL HOLDER (COOLANT CHANNEL)

DIN 69893/
ISO 12164-1-HSK FORM A

## 立铣刀刀柄 (冷却液喷射型)



DIN 69893-HSK | 2.5G | 25,000 RPM | AD+C

FIG.1

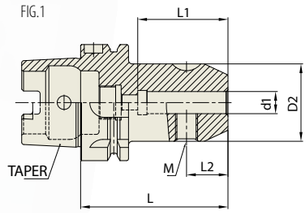
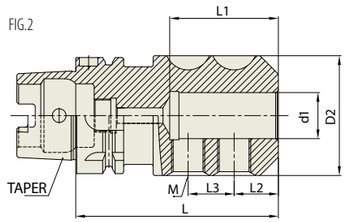



FIG.2




Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | d1 | D2 | L | L1 | L2 | L3 | M | FIG. | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 40A | HSK40A-EMH6C-60 | P2777222 | 6 | 25 | 60 | 38 | 18 | - | M6 | 1 | 0.30 |
| | HSK40A-EMH8C-60 | P2777223 | 8 | 28 | 60 | 40 | 18 | - | M8 | 1 | 0.30 |
| | HSK40A-EMH10C-60 | P2777224 | 10 | 35 | 60 | 42 | 20 | - | M10 | 1 | 0.30 |
| | HSK40A-EMH12C-70 | P2777225 | 12 | 42 | 70 | 47 | 22.5 | - | M12 | 1 | 0.40 |
| | HSK40A-EMH14C-70 | P2777226 | 14 | 44 | 70 | 47 | 22.5 | - | M12 | 1 | 0.40 |
| | HSK40A-EMH16C-80 | P2777227 | 16 | 48 | 80 | 50 | 24 | - | M14 | 1 | 0.60 |
| 50A | HSK50A-EMH6C-65 | P2777228 | 6 | 25 | 65 | 38 | 18 | - | M6 | 1 | 0.70 |
| | HSK50A-EMH8C-65 | P2777229 | 8 | 28 | 65 | 38 | 18 | - | M8 | 1 | 0.80 |
| | HSK50A-EMH10C-65 | P2777230 | 10 | 35 | 65 | 42 | 20 | - | M10 | 1 | 0.80 |
| | HSK50A-EMH12C-80 | P2777231 | 12 | 42 | 80 | 47 | 22.5 | - | M12 | 1 | 1.20 |
| | HSK50A-EMH14C-80 | P2777232 | 14 | 44 | 80 | 47 | 22.5 | - | M12 | 1 | 1.30 |
| | HSK50A-EMH16C-80 | P2777233 | 16 | 48 | 80 | 50 | 24 | - | M14 | 1 | 1.30 |
| | HSK50A-EMH18C-80 | P2777234 | 18 | 50 | 80 | 50 | 24 | - | M14 | 1 | 1.40 |
| | HSK50A-EMH20C-80 | P2777235 | 20 | 52 | 80 | 52 | 25 | - | M16 | 1 | 1.50 |
| 63A | HSK63A-EMH6C-65 | P2777201 | 6 | 25 | 65 | 35 | 18 | - | M6 | 1 | 0.80 |
| | HSK63A-EMH8C-65 | P2777202 | 8 | 28 | 65 | 40 | 18 | - | M8 | 1 | 0.80 |
| | HSK63A-EMH10C-65 | P2777203 | 10 | 35 | 65 | 40.5 | 20 | - | M10 | 1 | 0.90 |
| | HSK63A-EMH12C-80 | P2777204 | 12 | 42 | 80 | 49 | 22.5 | - | M12 | 1 | 1.10 |
| | HSK63A-EMH14C-80 | P2777206 | 14 | 44 | 80 | 49 | 22.5 | - | M12 | 1 | 1.20 |
| | HSK63A-EMH16C-80 | P2777205 | 16 | 48 | 80 | 52 | 24 | - | M14 | 1 | 1.30 |
| | HSK63A-EMH18C-80 | P2777207 | 18 | 50 | 80 | 52 | 24 | - | M14 | 1 | 1.40 |
| | HSK63A-EMH20C-80 | P2777208 | 20 | 52 | 80 | 53 | 25 | - | M16 | 1 | 1.50 |
| | HSK63A-EMH25C-110 | P2777209 | 25 | 65 | 110 | 59 | 24 | 25 | M16 | 2 | 2.30 |
| | HSK63A-EMH32C-110 | P2777210 | 32 | 72 | 110 | 63 | 24 | 28 | M16 | 2 | 2.60 |
| 100A | HSK100A-EMH6C-80 | P2777211 | 6 | 25 | 80 | 35 | 18 | - | M6 | 1 | 0.80 |
| | HSK100A-EMH8C-80 | P2777212 | 8 | 28 | 80 | 35 | 18 | - | M8 | 1 | 0.80 |
| | HSK100A-EMH10C-80 | P2777213 | 10 | 35 | 80 | 35.5 | 20 | - | M10 | 1 | 0.90 |
| | HSK100A-EMH12C-80 | P2777214 | 12 | 42 | 80 | 49 | 22.5 | - | M12 | 1 | 1.10 |
| | HSK100A-EMH14C-80 | P2777215 | 14 | 44 | 80 | 49 | 22.5 | - | M12 | 1 | 1.20 |
| | HSK100A-EMH16C-100 | P2777216 | 16 | 48 | 80 | 52 | 24 | - | M14 | 1 | 1.30 |
| | HSK100A-EMH18C-100 | P2777217 | 18 | 50 | 80 | 52 | 24 | - | M14 | 1 | 1.40 |
| | HSK100A-EMH20C-100 | P2777218 | 20 | 52 | 80 | 53 | 25 | - | M16 | 1 | 1.50 |
| | HSK100A-EMH25C-100 | P2777219 | 25 | 65 | 110 | 59 | 24 | 25 | M16 | 2 | 2.30 |
| | HSK100A-EMH32C-100 | P2777220 | 32 | 72 | 110 | 63 | 24 | 28 | M16 | 2 | 2.60 |
| | HSK100A-EMH40C-120 | P2777221 | 40 | 80 | 120 | 73 | 30 | 32 | M16 | 2 | 2.60 |

▶Standard End Mill Holder is for a cutting tool with Weldon shank and End Mill Holder for a cutting tool with Whistle notch is available upon request.
标准立铣刀座适用于带Weldon刀柄的刀具，立铣刀座适用于带哨子切口的刀具，可根据客户要求提供

▶Combi-style holder with ball jointed clamping screw which can be used with cutting tools with Weldon and Whistle notch shank is available.
Weldon和 斜度侧固式切削刀具可兼用 ball 及 夹紧螺丝 组装的 Combi 形状的刀柄 可供应



TOOLING SYSTEM

HYDRAULIC CHUCK
SHRINK FIT HOLDER
ER COLLET CHUCK
END MILL HOLDER & SIDE LOCK ARBOR
SHELL MILL ARBOR
POWER MILLING CHUCK
MORSE TAPER ARBOR
SK SLIM CHUCK
SYNCHRO TAPPING CHUCK
ONE STEP TAPPING CHUCK
TAPPING ER CHUCK
TAPPING CHUCK
FACE MILL ARBOR
COPY MILL ARBOR & INDEXABLE DRILL HOLDER
NC DRILL CHUCK & OTHER TOOL HOLDERS
BORING SYSTEM
ACCESSORY & OTHERS

# END MILL HOLDER & SIDE LOCK ARBOR

EMH

## END MILL HOLDER

DIN 69893/
ISO 12164-1-HSK FORM A

## 立铣刀刀柄

DIN 69893-HSK | 6.3G | 15,000 RPM | AD

FIG.1

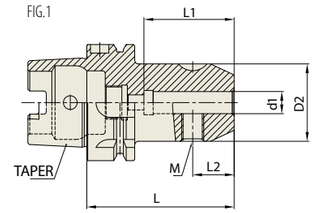
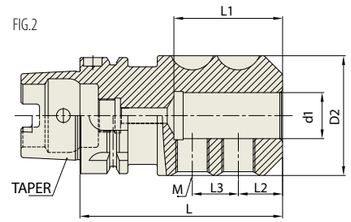



FIG.2




Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | d1 | D2 | L | L1 | L2 | L3 | M | FIG. | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 40A | HSK40A-EMH6-60 | P2563011 | 6 | 25 | 60 | 38 | 18 | - | M6 | 1 | 0.30 |
| | HSK40A-EMH8-60 | P2563012 | 8 | 28 | 60 | 38 | 18 | - | M8 | 1 | 0.30 |
| | HSK40A-EMH10-60 | P2563013 | 10 | 35 | 60 | 42 | 20 | - | M10 | 1 | 0.30 |
| | HSK40A-EMH12-70 | P2563014 | 12 | 42 | 70 | 47 | 22.5 | - | M12 | 1 | 0.40 |
| | HSK40A-EMH14-70 | P2563015 | 14 | 44 | 70 | 47 | 22.5 | - | M12 | 1 | 0.40 |
| | HSK40A-EMH16-80 | P2563016 | 16 | 48 | 80 | 50 | 24 | - | M14 | 1 | 0.60 |
| 50A | HSK50A-EMH6-65 | P2563017 | 6 | 25 | 65 | 38 | 18 | - | M6 | 1 | 0.70 |
| | HSK50A-EMH8-65 | P2563018 | 8 | 28 | 65 | 38 | 18 | - | M8 | 1 | 0.80 |
| | HSK50A-EMH10-65 | P2563019 | 10 | 35 | 65 | 42 | 20 | - | M10 | 1 | 0.80 |
| | HSK50A-EMH12-80 | P2563020 | 12 | 42 | 80 | 47 | 22.5 | - | M12 | 1 | 1.20 |
| | HSK50A-EMH14-80 | P2563031 | 14 | 44 | 80 | 47 | 22.5 | - | M12 | 1 | 1.30 |
| | HSK50A-EMH16-80 | P2563032 | 16 | 48 | 80 | 50 | 24 | - | M14 | 1 | 1.30 |
| | HSK50A-EMH18-80 | P2563033 | 18 | 50 | 80 | 50 | 24 | - | M14 | 1 | 1.40 |
| | HSK50A-EMH20-80 | P2563034 | 20 | 52 | 80 | 52 | 25 | - | M16 | 1 | 1.50 |
| 63A | HSK63A-EMH6-65 | P2563001 | 6 | 25 | 65 | 35 | 18 | - | M6 | 1 | 0.80 |
| | HSK63A-EMH8-65 | P2563002 | 8 | 28 | 65 | 38 | 18 | - | M8 | 1 | 0.80 |
| | HSK63A-EMH10-65 | P2563003 | 10 | 35 | 65 | 42 | 20 | - | M10 | 1 | 0.90 |
| | HSK63A-EMH12-80 | P2563004 | 12 | 42 | 80 | 47 | 22.5 | - | M12 | 1 | 1.10 |
| | HSK63A-EMH14-80 | P2563005 | 14 | 44 | 80 | 47 | 22.5 | - | M12 | 1 | 1.20 |
| | HSK63A-EMH16-80 | P2563006 | 16 | 48 | 80 | 50 | 24 | - | M14 | 1 | 1.30 |
| | HSK63A-EMH18-80 | P2563007 | 18 | 50 | 80 | 50 | 24 | - | M14 | 1 | 1.40 |
| | HSK63A-EMH20-80 | P2563008 | 20 | 52 | 80 | 52 | 25 | - | M16 | 1 | 1.50 |
| | HSK63A-EMH25-110 | P2563009 | 25 | 65 | 110 | 60 | 24 | 25 | M16 | 2 | 2.30 |
| | HSK63A-EMH32-110 | P2563010 | 32 | 72 | 110 | 64 | 24 | 28 | M16 | 2 | 2.60 |
| 100A | HSK100A-EMH6-80 | P2563041 | 6 | 25 | 80 | 35 | 18 | - | M6 | 1 | 0.80 |
| | HSK100A-EMH8-80 | P2563042 | 8 | 28 | 80 | 35 | 18 | - | M8 | 1 | 0.80 |
| | HSK100A-EMH10-80 | P2563043 | 10 | 35 | 80 | 39 | 20 | - | M10 | 1 | 0.90 |
| | HSK100A-EMH12-80 | P2563044 | 12 | 42 | 80 | 47 | 22.5 | - | M12 | 1 | 1.10 |
| | HSK100A-EMH14-80 | P2563045 | 14 | 44 | 80 | 47 | 22.5 | - | M12 | 1 | 1.20 |
| | HSK100A-EMH16-100 | P2563046 | 16 | 48 | 80 | 50 | 24 | - | M14 | 1 | 1.30 |
| | HSK100A-EMH18-100 | P2563047 | 18 | 50 | 80 | 50 | 24 | - | M14 | 1 | 1.40 |
| | HSK100A-EMH20-100 | P2563048 | 20 | 52 | 80 | 52 | 25 | - | M16 | 1 | 1.50 |
| | HSK100A-EMH25-100 | P2563049 | 25 | 65 | 110 | 60 | 24 | 25 | M16 | 2 | 2.30 |
| | HSK100A-EMH32-100 | P2563050 | 32 | 72 | 110 | 64 | 24 | 28 | M16 | 2 | 2.60 |
| | HSK100A-EMH40-120 | P2563051 | 40 | 80 | 120 | 74 | 30 | 32 | M16 | 2 | 2.60 |

▶Standard End Mill Holder is for a cutting tool with Weldon shank and End Mill Holder for a cutting tool with Whistle notch is available upon request.
标准立铣刀座适用于带Weldon刀柄的刀具，立铣刀座适用于带哨子切口的刀具，可根据客户要求提供

▶Combi-style holder with ball jointed clamping screw which can be used with cutting tools with Weldon and Whistle notch shank is available.
Weldon和 斜度侧固式切削刀具可兼用 ball 及 夹紧螺丝 组装的 Combi 形状的刀柄 可供应

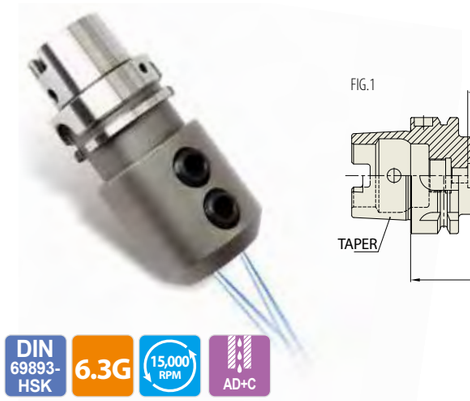
# END MILL HOLDER & SIDE LOCK ARBOR

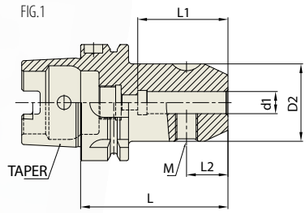
EMH

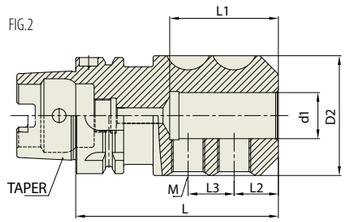
## END MILL HOLDER (COOLANT CHANNEL)

DIN 69893/
ISO 12164-1-HSK FORM A

## 立铣刀刀柄 (冷却液喷射型)






DIN 69893-HSK | 6.3G | 15,000 RPM | AD+C

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | d1 | D2 | L | L1 | L2 | L3 | M | FIG. | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 40A | HSK40A-EMH6C-60 | P2563061 | 6 | 25 | 60 | 38 | 18 | - | M6 | 1 | 0.30 |
| | HSK40A-EMH8C-60 | P2563062 | 8 | 28 | 60 | 40 | 18 | - | M8 | 1 | 0.30 |
| | HSK40A-EMH10C-60 | P2563063 | 10 | 35 | 60 | 42 | 20 | - | M10 | 1 | 0.30 |
| | HSK40A-EMH12C-70 | P2563064 | 12 | 42 | 70 | 47 | 22.5 | - | M12 | 1 | 0.40 |
| | HSK40A-EMH14C-70 | P2563065 | 14 | 44 | 70 | 47 | 22.5 | - | M12 | 1 | 0.40 |
| | HSK40A-EMH16C-80 | P2563066 | 16 | 48 | 80 | 50 | 24 | - | M14 | 1 | 0.60 |
| 50A | HSK50A-EMH6C-65 | P2563067 | 6 | 25 | 65 | 38 | 18 | - | M6 | 1 | 0.70 |
| | HSK50A-EMH8C-65 | P2563068 | 8 | 28 | 65 | 38 | 18 | - | M8 | 1 | 0.80 |
| | HSK50A-EMH10C-65 | P2563069 | 10 | 35 | 65 | 42 | 20 | - | M10 | 1 | 0.80 |
| | HSK50A-EMH12C-80 | P2563070 | 12 | 42 | 80 | 47 | 22.5 | - | M12 | 1 | 1.20 |
| | HSK50A-EMH14C-80 | P2563071 | 14 | 44 | 80 | 47 | 22.5 | - | M12 | 1 | 1.30 |
| | HSK50A-EMH16C-80 | P2563072 | 16 | 48 | 80 | 50 | 24 | - | M14 | 1 | 1.30 |
| | HSK50A-EMH18C-80 | P2563073 | 18 | 50 | 80 | 50 | 24 | - | M14 | 1 | 1.40 |
| | HSK50A-EMH20C-80 | P2563074 | 20 | 52 | 80 | 52 | 25 | - | M16 | 1 | 1.50 |
| 63A | HSK63A-EMH6C-65 | P2563021 | 6 | 25 | 65 | 35 | 18 | - | M6 | 1 | 0.80 |
| | HSK63A-EMH8C-65 | P2563022 | 8 | 28 | 65 | 40 | 18 | - | M8 | 1 | 0.80 |
| | HSK63A-EMH10C-65 | P2563023 | 10 | 35 | 65 | 40.5 | 20 | - | M10 | 1 | 0.90 |
| | HSK63A-EMH12C-80 | P2563024 | 12 | 42 | 80 | 49 | 22.5 | - | M12 | 1 | 1.10 |
| | HSK63A-EMH14C-80 | P2563025 | 14 | 44 | 80 | 49 | 22.5 | - | M12 | 1 | 1.20 |
| | HSK63A-EMH16C-80 | P2563026 | 16 | 48 | 80 | 52 | 24 | - | M14 | 1 | 1.30 |
| | HSK63A-EMH18C-80 | P2563027 | 18 | 50 | 80 | 52 | 24 | - | M14 | 1 | 1.40 |
| | HSK63A-EMH20C-80 | P2563028 | 20 | 52 | 80 | 53 | 25 | - | M16 | 1 | 1.50 |
| | HSK63A-EMH25C-110 | P2563029 | 25 | 65 | 110 | 59 | 24 | 25 | M16 | 2 | 2.30 |
| | HSK63A-EMH32C-110 | P2563030 | 32 | 72 | 110 | 63 | 24 | 28 | M16 | 2 | 2.60 |
| 100A | HSK100A-EMH6C-80 | P2563059 | 6 | 25 | 80 | 35 | 18 | - | M6 | 1 | 0.80 |
| | HSK100A-EMH8C-80 | P2563060 | 8 | 28 | 80 | 35 | 18 | - | M8 | 1 | 0.80 |
| | HSK100A-EMH10C-80 | P2563052 | 10 | 35 | 80 | 35.5 | 20 | - | M10 | 1 | 0.90 |
| | HSK100A-EMH12C-80 | P2563053 | 12 | 42 | 80 | 49 | 22.5 | - | M12 | 1 | 1.10 |
| | HSK100A-EMH14C-80 | P2563054 | 14 | 44 | 80 | 49 | 22.5 | - | M12 | 1 | 1.20 |
| | HSK100A-EMH16C-100 | P2563055 | 16 | 48 | 80 | 52 | 24 | - | M14 | 1 | 1.30 |
| | HSK100A-EMH18C-100 | P2563056 | 18 | 50 | 80 | 52 | 24 | - | M14 | 1 | 1.40 |
| | HSK100A-EMH20C-100 | P2563057 | 20 | 52 | 80 | 53 | 25 | - | M16 | 1 | 1.50 |
| | HSK100A-EMH25C-100 | P2563058 | 25 | 65 | 110 | 59 | 24 | 25 | M16 | 2 | 2.30 |
| | HSK100A-EMH32C-100 | P2772801 | 32 | 72 | 110 | 63 | 24 | 28 | M16 | 2 | 2.60 |
| | HSK100A-EMH40C-120 | P2772802 | 40 | 80 | 120 | 73 | 30 | 32 | M16 | 2 | 2.60 |

▶Standard End Mill Holder is for a cutting tool with Weldon shank and End Mill Holder for a cutting tool with Whistle notch is available upon request.
标准立铣刀座适用于带Weldon刀柄的刀具，立铣刀座适用于带哨子切口的刀具，可根据客户要求提供

▶Combi-style holder with ball jointed clamping screw which can be used with cutting tools with Weldon and Whistle notch shank is available.
Weldon和 斜度侧固式切削刀具可兼用 ball 及 夹紧螺丝 组装的 Combi 形状的刀柄 可供应



TOOLING SYSTEM

HYDRAULIC CHUCK
SHRINK FIT HOLDER
ER COLLET CHUCK
END MILL HOLDER & SIDE LOCK ARBOR
SHELL MILL ARBOR
POWER MILLING CHUCK
MORSE TAPER ARBOR
SK SLIM CHUCK
SYNCHRO TAPPING CHUCK
ONE STEP TAPPING CHUCK
TAPPING ER CHUCK
TAPPING CHUCK
FACE MILL ARBOR
COPY MILL ARBOR & INDEXABLE DRILL HOLDER
NC DRILL CHUCK & OTHER TOOL HOLDERS
BORING SYSTEM
ACCESSORY & OTHERS

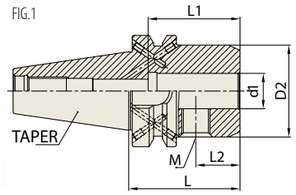
# END MILL HOLDER & SIDE LOCK ARBOR

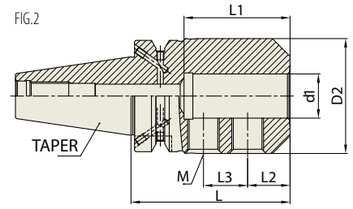
EMH

## END MILL HOLDER

JIS B6339/
MAS 403-BT

## 立铣刀刀柄




JIS B6339-BT | AT3 | 2.5G | 25,000 RPM | AD or AD/B

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | d1 | D2 | L | L1 | L2 | L3 | M | FIG. | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 30 | BT30-EMH6-50 | P2772951A | 6 | 25 | 50 | 35 | 18 | - | M6 | 1 | 0.47 |
| | BT30-EMH8-50 | P2772952A | 8 | 28 | 50 | 35 | 18 | - | M8 | 1 | 0.49 |
| | BT30-EMH10-50 | P2772953A | 10 | 35 | 50 | 35.5 | 20 | - | M10 | 1 | 0.55 |
| | BT30-EMH12-55 | P2772954A | 12 | 42 | 50 | 36 | 22.5 | - | M12 | 1 | 0.67 |
| | BT30-EMH14-55 | P2772955A | 14 | 44 | 55 | 36 | 22.5 | - | M12 | 1 | 0.68 |
| | BT30-EMH16-63 | P2772956A | 16 | 48 | 63 | 46 | 24 | - | M14 | 1 | 0.83 |
| | BT30-EMH18-63 | P2772958A | 18 | 50 | 63 | 46 | 24 | - | M14 | 1 | 0.85 |
| | BT30-EMH20-70 | P2772957A | 20 | 52 | 70 | 48 | 25 | - | M16 | 1 | 0.98 |
| 40 | BT40AD/B-EMH6-50 | P2773031 | 6 | 25 | 50 | 35 | 18 | - | M6 | 1 | 1.00 |
| | BT40AD/B-EMH8-50 | P2773032 | 8 | 28 | 50 | 35 | 18 | - | M8 | 1 | 1.00 |
| | BT40AD/B-EMH10-63 | P2773033 | 10 | 35 | 63 | 39 | 20 | - | M10 | 1 | 1.10 |
| | BT40AD/B-EMH12-63 | P2773034 | 12 | 42 | 63 | 44 | 22.5 | - | M12 | 1 | 1.30 |
| | BT40AD/B-EMH14-63 | P2773035 | 14 | 44 | 63 | 49 | 22.5 | - | M12 | 1 | 1.40 |
| | BT40AD/B-EMH16-63 | P2773036 | 16 | 48 | 63 | 52 | 24 | - | M14 | 1 | 1.70 |
| | BT40AD/B-EMH18-63 | P2773037 | 18 | 50 | 63 | 50 | 24 | | M14 | 1 | 1.70 |
| | BT40AD/B-EMH20-63 | P2773038 | 20 | 52 | 63 | 52 | 25 | - | M16 | 1 | 1.80 |
| | BT40AD/B-EMH25-90 | P2773039 | 25 | 65 | 90 | 60 | 24 | 25 | M18 | 2 | 1.80 |
| | BT40AD/B-EMH32-100 | P2773040 | 32 | 72 | 100 | 64 | 24 | 28 | M20 | 2 | 2.00 |
| 50 | BT50AD/B-EMH6-63 | P2773041 | 6 | 25 | 63 | 35 | 18 | - | M6 | 1 | 3.30 |
| | BT50AD/B-EMH8-63 | P2773042 | 8 | 28 | 63 | 35 | 18 | - | M8 | 1 | 3.60 |
| | BT50AD/B-EMH10-65 | P2773043 | 10 | 35 | 65 | 39 | 20 | - | M10 | 1 | 3.80 |
| | BT50AD/B-EMH12-80 | P2773044 | 12 | 42 | 80 | 46 | 22.5 | - | M12 | 1 | 3.80 |
| | BT40AD/B-EMH14-80 | P2773045 | 14 | 44 | 80 | 46 | 22.5 | - | M12 | 1 | 4.00 |
| | BT50AD/B-EMH16-80 | P2773046 | 16 | 48 | 80 | 49 | 24 | - | M14 | 1 | 4.00 |
| | BT50AD/B-EMH18-80 | P2773047 | 18 | 50 | 80 | 49 | 24 | - | M14 | 1 | 4.20 |
| | BT50AD/B-EMH20-80 | P2773048 | 20 | 52 | 80 | 52 | 25 | - | M16 | 1 | 4.20 |
| | BT50AD/B-EMH25-100 | P2773049 | 25 | 65 | 100 | 60 | 24 | 25 | M18 | 2 | 4.60 |
| | BT50AD/B-EMH32-105 | P2773050 | 32 | 72 | 105 | 64 | 24 | 28 | M20 | 2 | 4.70 |
| | BT50AD/B-EMH40-120 | P2773051 | 40 | 80 | 120 | 73 | 30 | 32 | M20 | 2 | 4.90 |

▶CAT(ANSI B5.50) taper and Inch type products are available.
CAT(ANSI B5.50)锥柄及英制产品可供选择

▶Standard End Mill Holder is for a cutting tool with Weldon shank and End Mill Holder for a cutting tool with Whistle notch is available upon request.
标准立铣刀座适用于带Weldon刀柄的刀具，立铣刀座适用于带哨子切口的刀具，可根据客户要求提供

▶Combi-style holder with ball jointed clamping screw which can be used with cutting tools with Weldon and Whistle notch shank is available.
Weldon和 斜度侧固式切削刀具可兼用 ball 及 夹紧螺丝 组装的 Combi 形状的刀柄 可供应

# END MILL HOLDER & SIDE LOCK ARBOR

EMH

## END MILL HOLDER (COOLANT CHANNEL)

JIS B6339/ MAS 403-BT

## 立铣刀刀柄 (冷却液喷射型)

FIG.1

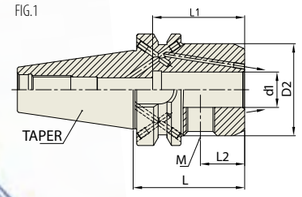
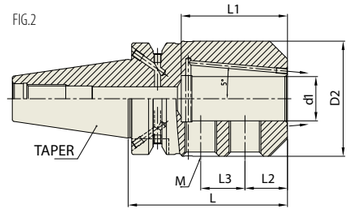



FIG.2




JIS B6339-BT | AT3 | 2.5G | 25,000 RPM | AD/B+C

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | d1 | D2 | L | L1 | L2 | L3 | M | FIG. | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 40 | BT40AD/B-EMH6C-50 | P2772991 | 6 | 25 | 50 | 35 | 18 | - | M6 | 1 | 1.00 |
| | BT40AD/B-EMH8C-50 | P2772992 | 8 | 28 | 50 | 35 | 18 | - | M8 | 1 | 1.00 |
| | BT40AD/B-EMH10C-63 | P2772993 | 10 | 35 | 63 | 39 | 20 | - | M10 | 1 | 1.10 |
| | BT40AD/B-EMH12C-63 | P2772994 | 12 | 42 | 63 | 44 | 22.5 | - | M12 | 1 | 1.30 |
| | BT40AD/B-EMH14C-63 | P2772995 | 14 | 44 | 63 | 49 | 22.5 | - | M12 | 1 | 1.40 |
| | BT40AD/B-EMH16C-63 | P2772996 | 16 | 48 | 63 | 52 | 24 | - | M14 | 1 | 1.70 |
| | BT40AD/B-EMH18C-63 | P2772997 | 18 | 50 | 63 | 50 | 24 | | M14 | 1 | 1.70 |
| | BT40AD/B-EMH20C-63 | P2772998 | 20 | 52 | 63 | 52 | 25 | - | M16 | 1 | 1.80 |
| | BT40AD/B-EMH25C-90 | P2772999 | 25 | 65 | 90 | 60 | 24 | 25 | M18 | 2 | 1.80 |
| | BT40AD/B-EMH32C-100 | P2773000 | 32 | 72 | 100 | 64 | 24 | 28 | M20 | 2 | 2.00 |
| 50 | BT50AD/B-EMH6C-63 | P2773012 | 6 | 25 | 63 | 35 | 18 | - | M6 | 1 | 3.30 |
| | BT50AD/B-EMH8C-63 | P2773013 | 8 | 28 | 63 | 35 | 18 | - | M8 | 1 | 3.60 |
| | BT50AD/B-EMH10C-65 | P2773014 | 10 | 35 | 65 | 39 | 20 | - | M10 | 1 | 3.80 |
| | BT50AD/B-EMH12C-80 | P2773015 | 12 | 42 | 80 | 46 | 22.5 | - | M12 | 1 | 3.80 |
| | BT40AD/B-EMH14C-80 | P2773016 | 14 | 44 | 80 | 46 | 22.5 | - | M12 | 1 | 4.00 |
| | BT50AD/B-EMH16C-80 | P2773017 | 16 | 48 | 80 | 49 | 24 | - | M14 | 1 | 4.00 |
| | BT50AD/B-EMH18C-80 | P2773018 | 18 | 50 | 80 | 49 | 24 | - | M14 | 1 | 4.20 |
| | BT50AD/B-EMH20C-80 | P2773019 | 20 | 52 | 80 | 52 | 25 | - | M16 | 1 | 4.20 |
| | BT50AD/B-EMH25C-100 | P2773020 | 25 | 65 | 100 | 60 | 24 | 25 | M18 | 2 | 4.60 |
| | BT50AD/B-EMH32C-105 | P2773021 | 32 | 72 | 105 | 64 | 24 | 28 | M20 | 2 | 4.70 |
| | BT50AD/B-EMH40C-120 | P2773022 | 40 | 80 | 120 | 73 | 30 | 32 | M20 | 2 | 4.90 |

▶CAT(ANSI B5.50) taper and Inch type products are available.
CAT(ANSI B5.50)锥柄及英制产品可供选择

▶Standard End Mill Holder is for a cutting tool with Weldon shank and End Mill Holder for a cutting tool with Whistle notch is available upon request.
标准立铣刀座适用于带Weldon刀柄的刀具，立铣刀座适用于带哨子切口的刀具，可根据客户要求提供

▶Combi-style holder with ball jointed clamping screw which can be used with cutting tools with Weldon and Whistle notch shank is available.
Weldon和 斜度侧固式切削刀具可兼用 ball 及 夹紧螺丝 组装的 Combi 形状的刀柄 可供应



TOOLING SYSTEM

HYDRAULIC CHUCK
SHRINK FIT HOLDER
ER COLLET CHUCK
END MILL HOLDER & SIDE LOCK ARBOR
SHELL MILL ARBOR
POWER MILLING CHUCK
MORSE TAPER ARBOR
SK SLIM CHUCK
SYNCHRO TAPPING CHUCK
ONE STEP TAPPING CHUCK
TAPPING ER CHUCK
TAPPING CHUCK
FACE MILL ARBOR
COPY MILL ARBOR & INDEXABLE DRILL HOLDER
NC DRILL CHUCK & OTHER TOOL HOLDERS
BORING SYSTEM
ACCESSORY & OTHERS

# END MILL HOLDER & SIDE LOCK ARBOR

EMH

## END MILL HOLDER

JIS B6339/ MAS 403-BT

## 立铣刀刀柄

FIG.1

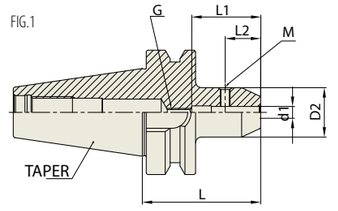
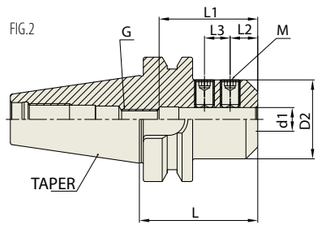



FIG.2




JIS B6339-BT | AT3 | 6.3G | 15,000 RPM | AD

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | d1 | D2 | L | L1 | L2 | L3 | M | FIG. | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 30 | BT30-EMH6-50 | P2776227A | 6 | 25 | 50 | 35 | 18 | - | M6 | 1 | 0.47 |
| | BT30-EMH8-50 | P2776228A | 8 | 28 | 50 | 35 | 18 | - | M8 | 1 | 0.49 |
| | BT30-EMH10-50 | P2776229A | 10 | 35 | 50 | 35.5 | 20 | - | M10 | 1 | 0.55 |
| | BT30-EMH12-55 | P2776230A | 12 | 42 | 50 | 36 | 22.5 | - | M12 | 1 | 0.67 |
| | BT30-EMH14-55 | P2776231A | 14 | 44 | 55 | 36 | 22.5 | - | M12 | 1 | 0.68 |
| | BT30-EMH16-63 | P2776201A | 16 | 48 | 63 | 46 | 24 | - | M14 | 1 | 0.83 |
| | BT30-EMH18-63 | P2776232A | 18 | 50 | 63 | 46 | 24 | - | M14 | 1 | 0.85 |
| | BT30-EMH20-70 | P2776202A | 20 | 52 | 70 | 48 | 25 | - | M16 | 1 | 0.98 |
| 40 | BT40-EMH6-50 | P2773061 | 6 | 25 | 50 | 35 | 18 | - | M6 | 1 | 1.00 |
| | BT40-EMH8-50 | P2773062 | 8 | 28 | 50 | 35 | 18 | - | M8 | 1 | 1.00 |
| | BT40-EMH10-63 | P2773063 | 10 | 35 | 63 | 39 | 20 | - | M10 | 1 | 1.10 |
| | BT40-EMH12-63 | P2773064 | 12 | 42 | 63 | 44 | 22.5 | - | M12 | 1 | 1.30 |
| | BT40-EMH14-63 | P2773065 | 14 | 44 | 63 | 49 | 22.5 | - | M12 | 1 | 1.40 |
| | BT40-EMH16-63 | P2773066 | 16 | 48 | 63 | 52 | 24 | - | M14 | 1 | 1.70 |
| | BT40-EMH18-63 | P2773067 | 18 | 50 | 63 | 50 | 24 | | M14 | 1 | 1.70 |
| | BT40-EMH20-63 | P2773068 | 20 | 52 | 63 | 52 | 25 | - | M16 | 1 | 1.80 |
| | BT40-EMH25-90 | P2773069 | 25 | 65 | 90 | 60 | 24 | 25 | M18 | 2 | 1.80 |
| | BT40-EMH32-100 | P2773070 | 32 | 72 | 100 | 64 | 24 | 28 | M20 | 2 | 2.00 |
| 50 | BT50-EMH6-63 | P2773071 | 6 | 25 | 63 | 35 | 18 | - | M6 | 1 | 3.30 |
| | BT50-EMH8-63 | P2773072 | 8 | 28 | 63 | 35 | 18 | - | M8 | 1 | 3.60 |
| | BT50-EMH10-65 | P2773073 | 10 | 35 | 65 | 39 | 20 | - | M10 | 1 | 3.80 |
| | BT50-EMH12-80 | P2773074 | 12 | 42 | 80 | 46 | 22.5 | - | M12 | 1 | 3.80 |
| | BT50-EMH14-80 | P2773075 | 14 | 44 | 80 | 46 | 22.5 | - | M12 | 1 | 4.00 |
| | BT50-EMH16-80 | P2773076 | 16 | 48 | 80 | 49 | 24 | - | M14 | 1 | 4.00 |
| | BT50-EMH18-80 | P2773077 | 18 | 50 | 80 | 49 | 24 | - | M14 | 1 | 4.20 |
| | BT50-EMH20-80 | P2773078 | 20 | 52 | 80 | 52 | 25 | - | M16 | 1 | 4.20 |
| | BT50-EMH25-100 | P2773079 | 25 | 65 | 100 | 60 | 24 | 25 | M18 | 2 | 4.60 |
| | BT50-EMH32-105 | P2773080 | 32 | 72 | 105 | 64 | 24 | 28 | M20 | 2 | 4.70 |
| | BT50-EMH40-120 | P2773081 | 40 | 80 | 120 | 73 | 30 | 32 | M20 | 2 | 4.90 |

▶CAT(ANSI B5.50) taper and Inch type products are available.
CAT(ANSI B5.50)锥柄及英制产品可供选择

▶Standard End Mill Holder is for a cutting tool with Weldon shank and End Mill Holder for a cutting tool with Whistle notch is available upon request.
标准立铣刀座适用于带Weldon刀柄的刀具，立铣刀座适用于带哨子切口的刀具，可根据客户要求提供

▶Combi-style holder with ball jointed clamping screw which can be used with cutting tools with Weldon and Whistle notch shank is available.
Weldon和 斜度侧固式切削刀具可兼用 ball 及 夹紧螺丝 组装的 Combi 形状的刀柄 可供应

# END MILL HOLDER & SIDE LOCK ARBOR

EMH

## END MILL HOLDER
JIS B6339/ MAS 403-BT

## 立铣刀刀柄

FIG.1

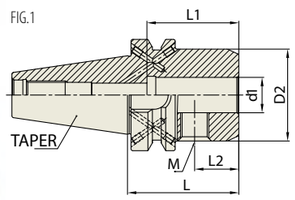
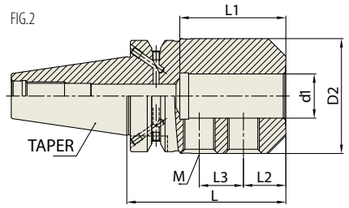



FIG.2




JIS B6339-BT | AT3 | 6.3G | 15,000 RPM | AD/B

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | d1 | D2 | L | L1 | L2 | L3 | M | FIG. | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 40 | BT40AD/B-EMH6-50 | P2780301 | 6 | 25 | 50 | 35 | 18 | - | M6 | 1 | 1.00 |
| | BT40AD/B-EMH8-50 | P2780302 | 8 | 28 | 50 | 35 | 18 | - | M8 | 1 | 1.00 |
| | BT40AD/B-EMH10-63 | P2780303 | 10 | 35 | 63 | 39 | 20 | - | M10 | 1 | 1.10 |
| | BT40AD/B-EMH12-63 | P2780304 | 12 | 42 | 63 | 44 | 22.5 | - | M12 | 1 | 1.30 |
| | BT40AD/B-EMH14-63 | P2780305 | 14 | 44 | 63 | 49 | 22.5 | - | M12 | 1 | 1.40 |
| | BT40AD/B-EMH16-63 | P2780306 | 16 | 48 | 63 | 52 | 24 | - | M14 | 1 | 1.70 |
| | BT40AD/B-EMH18-63 | P2780307 | 18 | 50 | 63 | 50 | 24 | | M14 | 1 | 1.70 |
| | BT40AD/B-EMH20-63 | P2780308 | 20 | 52 | 63 | 52 | 25 | - | M16 | 1 | 1.80 |
| | BT40AD/B-EMH25-90 | P2780309 | 25 | 65 | 90 | 60 | 24 | 25 | M18 | 2 | 1.80 |
| | BT40AD/B-EMH32-100 | P2780310 | 32 | 72 | 100 | 64 | 24 | 28 | M20 | 2 | 2.00 |
| 50 | BT50AD/B-EMH6-63 | P2780311 | 6 | 25 | 63 | 35 | 18 | - | M6 | 1 | 3.30 |
| | BT50AD/B-EMH8-63 | P2780312 | 8 | 28 | 63 | 35 | 18 | - | M8 | 1 | 3.60 |
| | BT50AD/B-EMH10-65 | P2780313 | 10 | 35 | 65 | 39 | 20 | - | M10 | 1 | 3.80 |
| | BT50AD/B-EMH12-80 | P2780314 | 12 | 42 | 80 | 46 | 22.5 | - | M12 | 1 | 3.80 |
| | BT50AD/B-EMH14-80 | P2780315 | 14 | 44 | 80 | 46 | 22.5 | - | M12 | 1 | 4.00 |
| | BT50AD/B-EMH16-80 | P2780316 | 16 | 48 | 80 | 49 | 24 | - | M14 | 1 | 4.00 |
| | BT50AD/B-EMH18-80 | P2780317 | 18 | 50 | 80 | 49 | 24 | - | M14 | 1 | 4.20 |
| | BT50AD/B-EMH20-80 | P2780318 | 20 | 52 | 80 | 52 | 25 | - | M16 | 1 | 4.20 |
| | BT50AD/B-EMH25-100 | P2780319 | 25 | 65 | 100 | 60 | 24 | 25 | M18 | 2 | 4.60 |
| | BT50AD/B-EMH32-105 | P2780320 | 32 | 72 | 105 | 64 | 24 | 28 | M20 | 2 | 4.70 |
| | BT50AD/B-EMH40-120 | P2780321 | 40 | 80 | 120 | 73 | 30 | 32 | M20 | 2 | 4.90 |

▶CAT(ANSI B5.50) taper and Inch type products are available.
CAT(ANSI B5.50)锥柄及英制产品可供选择

▶Standard End Mill Holder is for a cutting tool with Weldon shank and End Mill Holder for a cutting tool with Whistle notch is available upon request.
标准立铣刀座适用于带Weldon刀柄的刀具，立铣刀座适用于带哨子切口的刀具，可根据客户要求提供

▶Combi-style holder with ball jointed clamping screw which can be used with cutting tools with Weldon and Whistle notch shank is available.
Weldon和 斜度侧固式切削刀具可兼用 ball 及 夹紧螺丝 组装的 Combi 形状的刀柄 可供应



TOOLING SYSTEM

HYDRAULIC CHUCK
SHRINK FIT HOLDER
ER COLLET CHUCK
END MILL HOLDER & SIDE LOCK ARBOR
SHELL MILL ARBOR
POWER MILLING CHUCK
MORSE TAPER ARBOR
SK SLIM CHUCK
SYNCHRO TAPPING CHUCK
ONE STEP TAPPING CHUCK
TAPPING ER CHUCK
TAPPING CHUCK
FACE MILL ARBOR
COPY MILL ARBOR & INDEXABLE DRILL HOLDER
NC DRILL CHUCK & OTHER TOOL HOLDERS
BORING SYSTEM
ACCESSORY & OTHERS

# END MILL HOLDER & SIDE LOCK ARBOR

EMH

## END MILL HOLDER (COOLANT CHANNEL)
JIS B6339/ MAS 403-BT

## 立铣刀刀柄 (冷却液喷射型)

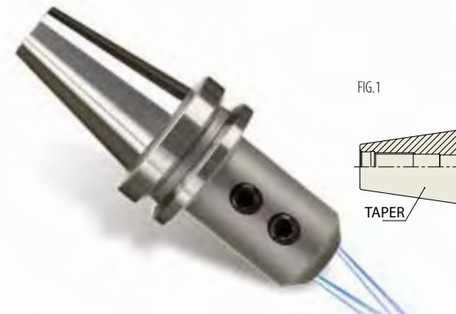


FIG.1

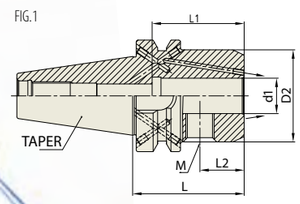
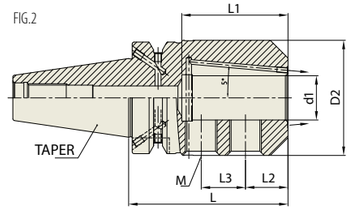



FIG.2




JIS B6339-BT | AT3 | 6.3G | 15,000 RPM | AD/B+C

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | d1 | D2 | L | L1 | L2 | L3 | M | FIG. | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 40 | BT40AD/B-EMH6C-50 | P2778001 | 6 | 25 | 50 | 35 | 18 | - | M6 | 1 | 1.00 |
| | BT40AD/B-EMH8C-50 | P2778002 | 8 | 28 | 50 | 35 | 18 | - | M8 | 1 | 1.00 |
| | BT40AD/B-EMH10C-63 | P2778003 | 10 | 35 | 63 | 39 | 20 | - | M10 | 1 | 1.10 |
| | BT40AD/B-EMH12C-63 | P2778004 | 12 | 42 | 63 | 44 | 22.5 | - | M12 | 1 | 1.30 |
| | BT40AD/B-EMH14C-63 | P2778005 | 14 | 44 | 63 | 49 | 22.5 | - | M12 | 1 | 1.40 |
| | BT40AD/B-EMH16C-63 | P2778006 | 16 | 48 | 63 | 52 | 24 | - | M14 | 1 | 1.70 |
| | BT40AD/B-EMH18C-63 | P2778007 | 18 | 50 | 63 | 50 | 24 | | M14 | 1 | 1.70 |
| | BT40AD/B-EMH20C-63 | P2778008 | 20 | 52 | 63 | 52 | 25 | - | M16 | 1 | 1.80 |
| | BT40AD/B-EMH25C-90 | P2778009 | 25 | 65 | 90 | 60 | 24 | 25 | M18 | 2 | 1.80 |
| | BT40AD/B-EMH32C-100 | P2778010 | 32 | 72 | 100 | 64 | 24 | 28 | M20 | 2 | 2.00 |
| 50 | BT50AD/B-EMH6C-63 | P2778011 | 6 | 25 | 63 | 35 | 18 | - | M6 | 1 | 3.30 |
| | BT50AD/B-EMH8C-63 | P2778012 | 8 | 28 | 63 | 35 | 18 | - | M8 | 1 | 3.60 |
| | BT50AD/B-EMH10C-65 | P2778013 | 10 | 35 | 65 | 39 | 20 | - | M10 | 1 | 3.80 |
| | BT50AD/B-EMH12C-80 | P2778014 | 12 | 42 | 80 | 46 | 22.5 | - | M12 | 1 | 3.80 |
| | BT50AD/B-EMH14C-80 | P2778015 | 14 | 44 | 80 | 46 | 22.5 | - | M12 | 1 | 4.00 |
| | BT50AD/B-EMH16C-80 | P2778016 | 16 | 48 | 80 | 49 | 24 | - | M14 | 1 | 4.00 |
| | BT50AD/B-EMH18C-80 | P2778017 | 18 | 50 | 80 | 49 | 24 | - | M14 | 1 | 4.20 |
| | BT50AD/B-EMH20C-80 | P2778018 | 20 | 52 | 80 | 52 | 25 | - | M16 | 1 | 4.20 |
| | BT50AD/B-EMH25C-100 | P2778019 | 25 | 65 | 100 | 60 | 24 | 25 | M18 | 2 | 4.60 |
| | BT50AD/B-EMH32C-105 | P2778020 | 32 | 72 | 105 | 64 | 24 | 28 | M20 | 2 | 4.70 |
| | BT50AD/B-EMH40C-120 | P2778021 | 40 | 80 | 120 | 73 | 30 | 32 | M20 | 2 | 4.90 |

▶CAT(ANSI B5.50) taper and Inch type products are available.
CAT(ANSI B5.50)锥柄及英制产品可供选择

▶Standard End Mill Holder is for a cutting tool with Weldon shank and End Mill Holder for a cutting tool with Whistle notch is available upon request.
标准立铣刀座适用于带Weldon刀柄的刀具，立铣刀座适用于带哨子切口的刀具，可根据客户要求提供

▶Combi-style holder with ball jointed clamping screw which can be used with cutting tools with Weldon and Whistle notch shank is available.
Weldon和 斜度侧固式切削刀具可兼用 ball 及 夹紧螺丝 组装的 Combi 形状的刀柄 可供应

# END MILL HOLDER & SIDE LOCK ARBOR

EMH

## END MILL HOLDER (SHORT TYPE)

DIN 69871-SK

## 立铣刀刀柄 (短型)

FIG.1

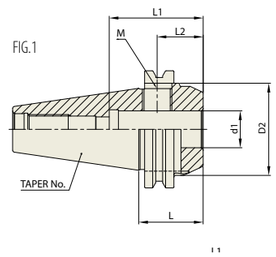
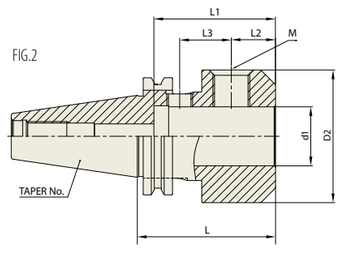



FIG.2




JIS B6339-BT | AT3 | 6.3G | 15,000 RPM | AD

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | d1 | D2 | L | L1 | L2 | L3 | M | FIG. | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 40 | SK40-EMH16-35 | P2521001 | 16 | 48 | 35 | 51 | 24 | - | M14 | 1 | 0.80 |
| | SK40-EMH20-35 | P2521027 | 20 | 50 | 35 | 51 | 25 | - | M16 | 1 | 0.90 |
| | SK40-EMH25-60 | P2521003 | 25 | 50 | 60 | 59 | 24 | 25 | M18/M14 | 2 | 1.20 |
| | SK40-EMH32-75 | P2521030 | 32 | 72 | 75 | 66 | 24 | 28 | M20/M14 | 2 | 1.80 |
| 50 | SK50-EMH25-60 | P2521031 | 25 | 65 | 60 | 60 | 23.5 | 25.4 | M18/M14 | 2 | 3.35 |
| | SK50-EMH32-60 | P2521032 | 32 | 72 | 60 | 63 | 24 | 24.9 | M20/M14 | 2 | 3.50 |

## JIS B6339/MAS 403-BT

FIG.1

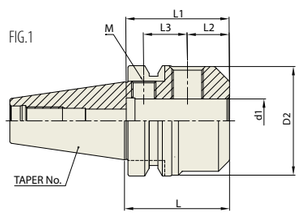
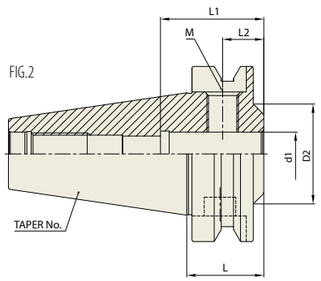



FIG.2




JIS B6339-BT | AT3 | 6.3G | 15,000 RPM | AD

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | d1 | D2 | L | L1 | L2 | L3 | M | FIG. | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 40 | BT40-EMH25-60 | P2773085 | 25 | 62 | 60 | 59 | 24 | 25 | M18 | 1 | 1.50 |
| | BT40-EMH32-65 | P2773086 | 32 | 62 | 65 | 63 | 24 | 28 | M20 | 1 | 1.45 |
| 50 | BT50-EMH25-44 | P2773087 | 25 | 57 | 44 | 59 | 24 | - | M18 | 2 | 3.30 |
| | BT50-EMH32-60 | P2773088 | 32 | 72 | 60 | 63 | 24 | 28 | M20/M14 | 1 | 3.60 |

▶Standard End Mill Holder is for a cutting tool with Weldon shank and End Mill Holder for a cutting tool with Whistle notch is available upon request.
标准立铣刀座适用于带Weldon刀柄的刀具，立铣刀座适用于带哨子切口的刀具，可根据客户要求提供



TOOLING SYSTEM

# END MILL HOLDER & SIDE LOCK ARBOR

EMH

## END MILL HOLDER

GOST 25827-93

## 立铣刀刀柄

FIG.1

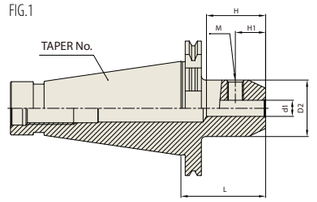
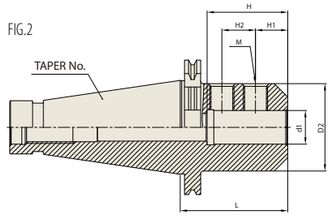



FIG.2




GOST 25827-93 | AT3 | A

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | d1 | D2 | L | H | H1 | H2 | M | FIG. | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 40 | GOST40-EMH6-50 | P2780361 | 6 | 25 | 50 | 35 | 18 | - | M6 | 1 | |
| | GOST40-EMH8-50 | P2780362 | 8 | 28 | 50 | 35 | 18 | - | M8 | 1 | |
| | GOST40-EMH10-50 | P2780363 | 10 | 35 | 50 | 35.5 | 20 | - | M10 | 1 | |
| | GOST40-EMH12-50 | P2780364 | 12 | 42 | 50 | 36 | 22.5 | - | M12 | 1 | |
| | GOST40-EMH14-63 | P2780365 | 14 | 44 | 63 | 36 | 22.5 | - | M12 | 1 | |
| | GOST40-EMH16-63 | P2780366 | 16 | 48 | 63 | 46 | 24 | - | M14 | 1 | |
| | GOST40-EMH18-63 | P2780367 | 18 | 50 | 63 | 46 | 24 | - | M14 | 1 | |
| | GOST40-EMH20-63 | P2780368 | 20 | 52 | 63 | 48 | 25 | - | M16 | 1 | |
| | GOST40-EMH25-80 | P2780369 | 25 | 65 | 80 | 55 | 24 | 25 | M18 | 2 | |
| | GOST40-EMH32-80 | P2780370 | 32 | 72 | 80 | 57 | 24 | 28 | M20 | 2 | |
| 50 | GOST50-EMH6-63 | P2780371 | 6 | 25 | 63 | 35 | 18 | - | M6 | 1 | |
| | GOST50-EMH8-63 | P2780372 | 8 | 28 | 63 | 35 | 18 | - | M8 | 1 | |
| | GOST50-EMH10-63 | P2780373 | 10 | 35 | 63 | 35.5 | 20 | - | M10 | 1 | |
| | GOST50-EMH12-63 | P2780374 | 12 | 42 | 63 | 36 | 22.5 | - | M12 | 1 | |
| | GOST50-EMH14-63 | P2780375 | 14 | 44 | 63 | 36 | 22.5 | - | M12 | 1 | |
| | GOST50-EMH16-63 | P2780376 | 16 | 48 | 63 | 46 | 24 | - | M14 | 1 | |
| | GOST50-EMH18-63 | P2780377 | 18 | 50 | 63 | 46 | 24 | - | M14 | 1 | |
| | GOST50-EMH20-63 | P2780378 | 20 | 52 | 63 | 48 | 25 | - | M16 | 1 | |
| | GOST50-EMH25-80 | P2780379 | 25 | 65 | 80 | 55 | 24 | 25 | M18 | 2 | |
| | GOST50-EMH32-80 | P2780380 | 32 | 72 | 80 | 63 | 24 | 28 | M20 | 2 | |
| | GOST50-EMH40-90 | P2780381 | 40 | 80 | 90 | 68 | 30 | 32 | M20 | 2 | |

# END MILL HOLDER & SIDE LOCK ARBOR

SLA

## SIDE LOCK ARBOR
## 侧固式刀柄

CBT
(BT DUAL CONTACT)

FIG.1

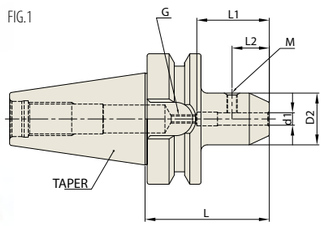
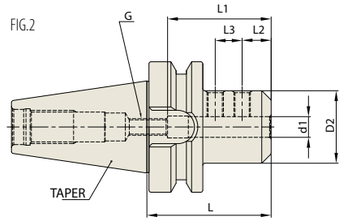



FIG.2




CBT | AT3 | AD

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | d1 | D2 | L | L1 | L2 | L3 | M | FIG. | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 30 | CBT30-SLA6-60 | P2772918 | 6 | 25 | 60 | 35 | 18 | - | M5 | 1 | 0.70 |
| | CBT30-SLA8-60 | P2772919 | 8 | 28 | 60 | 35 | 18 | - | M6 | 1 | 0.80 |
| | CBT30-SLA10-60 | P2772920 | 10 | 35 | 60 | 40 | 14 | 13 | M8 | 2 | 0.90 |
| | CBT30-SLA12-60 | P2772921 | 12 | 40 | 60 | 50 | 14 | 13 | M10 | 2 | 1.10 |
| | CBT30-SLA14-60 | P2772922 | 14 | 40 | 60 | 50 | 14 | 13 | M10 | 2 | 1.20 |
| | CBT30-SLA16-75 | P2772923 | 16 | 40 | 75 | 70 | 25 | 20 | M12 | 2 | 1.30 |
| | CBT30-SLA20-75 | P2772924 | 20 | 50 | 75 | 70 | 25 | 20 | M12 | 2 | 1.40 |
| | CBT30-SLA25-75 | P2772925 | 25 | 50 | 75 | 70 | 25 | 20 | M14 | 2 | 1.50 |
| | CBT30-SLA32-105 | P2772926 | 32 | 60 | 105 | 80 | 25 | 25 | M16 | 2 | 1.60 |
| 40 | CBT40-SLA6-60 | P2772927 | 6 | 25 | 60 | 35 | 18 | - | M5 | 1 | 1.10 |
| | CBT40-SLA8-60 | P2772928 | 8 | 28 | 60 | 35 | 18 | - | M6 | 1 | 1.10 |
| | CBT40-SLA10-60 | P2772929 | 10 | 35 | 60 | 50 | 14 | 13 | M8 | 2 | 1.20 |
| | CBT40-SLA12-60 | P2772930 | 12 | 40 | 60 | 50 | 14 | 13 | M10 | 2 | 1.40 |
| | CBT40-SLA16-90 | P2772931 | 16 | 40 | 90 | 70 | 25 | 20 | M12 | 2 | 1.50 |
| | CBT40-SLA20-90 | P2772901 | 20 | 50 | 90 | 70 | 25 | 20 | M12 | 2 | 1.80 |
| | CBT40-SLA25-90 | P2772902 | 25 | 50 | 90 | 70 | 25 | 20 | M14 | 2 | 1.70 |
| | CBT40-SLA32-90 | P2772903 | 32 | 60 | 90 | 80 | 25 | 25 | M16 | 2 | 1.90 |
| | CBT40-SLA40-90 | P2772904 | 40 | 63 | 90 | 80 | 25 | 25 | M16 | 2 | 1.80 |
| | CBT40-SLA42-90 | P2772905 | 42 | 63 | 90 | 80 | 25 | 25 | M16 | 2 | 1.80 |
| 50 | CBT50-SLA6-90 | P2772906 | 6 | 25 | 90 | 40 | 18 | - | M5 | 1 | 3.70 |
| | CBT50-SLA8-90 | P2772907 | 8 | 28 | 90 | 40 | 18 | - | M6 | 1 | 3.90 |
| | CBT50-SLA10-90 | P2772908 | 10 | 35 | 90 | 50 | 15 | 15 | M8 | 2 | 4.10 |
| | CBT50-SLA12-90 | P2772909 | 12 | 40 | 90 | 55 | 15 | 15 | M10 | 2 | 4.30 |
| | CBT50-SLA14-90 | P2772910 | 14 | 40 | 90 | 55 | 15 | 15 | M10 | 2 | 4.30 |
| | CBT50-SLA16-105 | P2772911 | 16 | 40 | 105 | 70 | 25 | 20 | M12 | 2 | 4.40 |
| | CBT50-SLA20-105 | P2772912 | 20 | 50 | 105 | 70 | 25 | 20 | M12 | 2 | 4.80 |
| | CBT50-SLA25-105 | P2772913 | 25 | 50 | 105 | 70 | 25 | 20 | M14 | 2 | 4.70 |
| | CBT50-SLA32-105 | P2772914 | 32 | 60 | 105 | 80 | 25 | 25 | M14 | 2 | 4.00 |
| | CBT50-SLA40-105 | P2772915 | 40 | 63 | 105 | 80 | 25 | 25 | M16 | 2 | 4.50 |
| | CBT50-SLA42-105 | P2772916 | 42 | 63 | 105 | 80 | 25 | 25 | M16 | 2 | 4.70 |
| | CBT50-SLA50.8-121 | P2772917 | 50.8 | 95 | 121 | 87 | 33.9 | 35.8 | M20 | 2 | 5.00 |

▶Standard End Mill Holder is for a cutting tool with Weldon shank and End Mill Holder for a cutting tool with Whistle notch is available upon request.
标准立铣刀座适用于带Weldon刀柄的刀具，立铣刀座适用于带哨子切口的刀具，可根据客户要求提供

▶Side Lock Arbor is Non-Balancing.
侧固式刀柄不带动平衡



TOOLING SYSTEM

HYDRAULIC CHUCK
SHRINK FIT HOLDER
ER COLLET CHUCK
END MILL HOLDER & SIDE LOCK ARBOR
SHELL MILL ARBOR
POWER MILLING CHUCK
MORSE TAPER ARBOR
SK SLIM CHUCK
SYNCHRO TAPPING CHUCK
ONE STEP TAPPING CHUCK
TAPPING ER CHUCK
TAPPING CHUCK
FACE MILL ARBOR
COPY MILL ARBOR & INDEXABLE DRILL HOLDER
NC DRILL CHUCK & OTHER TOOL HOLDERS
BORING SYSTEM
ACCESSORY & OTHERS

# END MILL HOLDER & SIDE LOCK ARBOR

SLA

## SIDE LOCK ARBOR
## 侧固式刀柄

JIS B6339/
MAS 403-BT

FIG.1

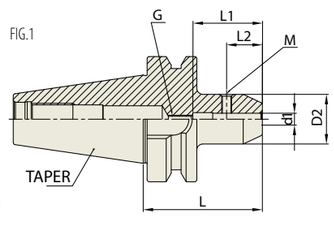
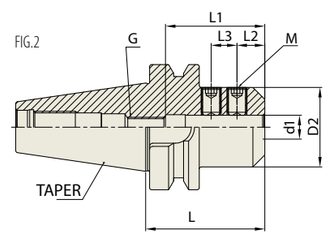



FIG.2




JIS B6339-BT | AT3 | AD

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | d1 | D2 | L | L1 | L2 | L3 | M | G | FIG. | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 30 | BT30-SLA 6-60 | P2780201 | 6 | 25 | 60 | 35 | 18 | - | M5 | M5 | 1 | 0.70 |
| | BT30-SLA 8-60 | P2780202 | 8 | 28 | 60 | 35 | 18 | - | M6 | M6 | 1 | 0.80 |
| | BT30-SLA10-60 | P2780203 | 10 | 35 | 60 | 40 | 14 | 13 | M8 | M8 | 2 | 0.90 |
| | BT30-SLA12-60 | P2780204 | 12 | 40 | 60 | 50 | 14 | 13 | M10 | M10 | 2 | 1.10 |
| | BT30-SLA14-60 | P2780205 | 14 | 40 | 60 | 50 | 14 | 13 | M10 | M10 | 2 | 1.20 |
| | BT30-SLA16-75 | P2780206 | 16 | 40 | 75 | 70 | 25 | 20 | M12 | M12 | 2 | 1.30 |
| | BT30-SLA20-75 | P2780207 | 20 | 50 | 75 | 70 | 25 | 20 | M12 | M12 | 2 | 1.40 |
| | BT30-SLA25-75 | P2780208 | 25 | 50 | 75 | 70 | 25 | 20 | M14 | M12 | 2 | 1.50 |
| | BT30-SLA32-105 | P2780209 | 32 | 60 | 105 | 80 | 25 | 25 | M16 | M12 | 2 | 1.60 |
| 40 | BT40-SLA6-60 | P2780210 | 6 | 25 | 60 | 35 | 18 | - | M5 | M5 | 1 | 1.10 |
| | BT40-SLA8-60 | P2780211 | 8 | 28 | 60 | 35 | 18 | - | M6 | M6 | 1 | 1.10 |
| | BT40-SLA10-60 | P2780212 | 10 | 35 | 60 | 50 | 14 | 13 | M8 | M8 | 2 | 1.20 |
| | BT40-SLA12-60 | P2780213 | 12 | 40 | 60 | 50 | 14 | 13 | M10 | M10 | 2 | 1.40 |
| | BT40-SLA16-90 | P2780214 | 16 | 40 | 90 | 70 | 25 | 20 | M12 | M12 | 2 | 1.50 |
| | BT40-SLA20-90 | P2780215 | 20 | 50 | 90 | 70 | 25 | 20 | M12 | M12 | 2 | 1.80 |
| | BT40-SLA25-90 | P2780216 | 25 | 50 | 90 | 70 | 25 | 20 | M14 | M12 | 2 | 1.70 |
| | BT40-SLA32-90 | P2780217 | 32 | 60 | 90 | 80 | 25 | 25 | M16 | M12 | 2 | 1.90 |
| | BT40-SLA40-90 | P2780218 | 40 | 63 | 90 | 80 | 25 | 25 | M16 | M12 | 2 | 1.80 |
| | BT40-SLA42-90 | P2780219 | 42 | 63 | 90 | 80 | 25 | 25 | M16 | M12 | 2 | 1.80 |
| 50 | BT50-SLA6-90 | P2780220 | 6 | 25 | 90 | 40 | 18 | - | M5 | M5 | 1 | 3.70 |
| | BT50-SLA8-90 | P2780221 | 8 | 28 | 90 | 40 | 18 | - | M6 | M6 | 1 | 3.90 |
| | BT50-SLA10-90 | P2780222 | 10 | 35 | 90 | 50 | 15 | 15 | M8 | M8 | 2 | 4.10 |
| | BT50-SLA12-90 | P2780223 | 12 | 40 | 90 | 55 | 15 | 15 | M10 | M10 | 2 | 4.30 |
| | BT50-SLA14-90 | P2780224 | 14 | 40 | 90 | 55 | 15 | 15 | M10 | M12 | 2 | 4.30 |
| | BT50-SLA16-105 | P2780225 | 16 | 40 | 105 | 70 | 25 | 20 | M12 | M12 | 2 | 4.40 |
| | BT50-SLA20-105 | P2780226 | 20 | 50 | 105 | 70 | 25 | 20 | M12 | M12 | 2 | 4.80 |
| | BT50-SLA25-105 | P2780227 | 25 | 50 | 105 | 70 | 25 | 20 | M14 | M12 | 2 | 4.70 |
| | BT50-SLA32-105 | P2780228 | 32 | 60 | 105 | 80 | 25 | 25 | M16 | M12 | 2 | 4.00 |
| | BT50-SLA40-105 | P2780229 | 40 | 63 | 105 | 80 | 25 | 25 | M16 | M12 | 2 | 4.50 |
| | BT50-SLA42-105 | P2780230 | 42 | 63 | 105 | 80 | 25 | 25 | M16 | M12 | 2 | 4.70 |
| | BT50-SLA50.8-121 | P2780231 | 50.8 | 95 | 121 | 87 | 33.9 | 35.8 | M20 | - | 2 | 5.00 |

▶CAT(ANSI B5.50) taper and Inch type products are available.
CAT(ANSI B5.50)锥柄及英制产品可供选择

▶Standard End Mill Holder is for a cutting tool with Weldon shank and End Mill Holder for a cutting tool with Whistle notch is available upon request.
标准立铣刀座适用于带Weldon刀柄的刀具，立铣刀座适用于带哨子切口的刀具，可根据客户要求提供

▶Side Lock Arbor is Non-Balancing.
侧固式刀柄不带动平衡

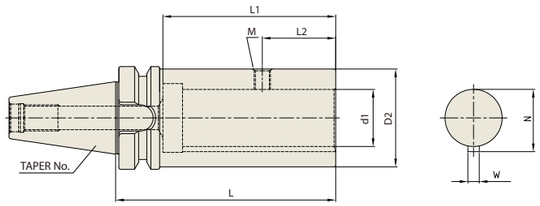
# END MILL HOLDER & SIDE LOCK ARBOR

SLB

## SIDE LOCK ARBOR

JIS B6339/
MAS 403-BT

## 侧固式刀柄




JIS B6339-BT | AT3 | A

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | d1 | D2 | L | L1 | L2 | M | N | W | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 40 | BT40-SLB26-105 | P2778051 | 26 | 50 | 105 | 85 | 40 | M10 | 28.2 | 5 | 1.30 |
| | BT40-SLB35-135 | P2778052 | 35 | 60 | 135 | 105 | 55 | M10 | 37.6 | 6 | 2.20 |
| | BT40-SLB35T-135 | P2778053 | 35 | 60 | 135 | 105 | 55 | M10 | 38.2 | 7 | 2.20 |
| 50 | BT50-SLB26-105 | P2778054 | 26 | 50 | 105 | 85 | 40 | M10 | 28.2 | 5 | 1.30 |
| | BT50-SLB35-135 | P2778055 | 35 | 60 | 135 | 106 | 55 | M10 | 37.6 | 6 | 2.20 |
| | BT50-SLB35T-135 | P2778056 | 35 | 60 | 135 | 106 | 55 | M10 | 38.2 | 7 | 2.20 |
| | BT50-SLB48-165 | P2778057 | 12 | 42 | 80 | 129 | 65 | M10 | 51 | 8 | 3.80 |

▶Standard design of side lock arbor is for cutting tools with straight shank having flat face.
标准侧固式刀柄设计 可使用带有平面的 直柄切削刀具

▶Side Lock Arbor is Non-Balancing.
侧固式刀柄不带动平衡



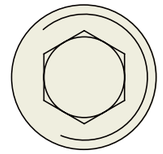


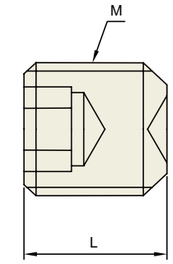
# END MILL HOLDER & SIDE LOCK ARBOR

PART

## SIDE LOCK BOLT (for END MILL HOLDER & SIDE LOCK ARBOR)

## 侧固螺丝 (立铣刀刀柄&侧固式刀柄用)

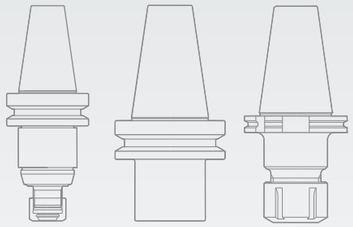





Unit (单位) : mm

| SLA & EMH ID | EMH | | | SLA | | |
|---|---|---|---|---|---|---|
| | M | L | EDP No. | M | L | EDP No. |
| **6** | M6 x 1.0 | 10.5 | **P2778088** | M5 x 0.8 | 8 | **P2778079** |
| **8** | M8 x 1.25 | 10.5 | **P2778089** | M6 x 1.0 | 10 | **P2778080** |
| **10** | M10 x 1.5 | 12.5 | **P2778090** | M8 x 1.25 | 12 | **P2778081** |
| **12** | M12 x 1.75 | 16.5 | **P2778091** | M10 x 1.5 | 14 | **P2778082** |
| **14** | M12 x 1.75 | 15.0 | **P2778092** | M10 x 1.5 | 14 | **P2778082** |
| **16** | M14 x 2.0 | 16.5 | **P2778093** | M12 x 1.75 | 12 | **P2778083** |
| **18** | M14 x 2.0 | 16.5 | **P2778093** | - | - | - |
| **20** | M16 x 2.0 | 16.5 | **P2778094** | M12 x 1.75 | 16 | **P2778084** |
| **25** | M18 x 2.0 | 20.5 | **P2778095** | M14 x 2.0 | 14 | **P2778085** |
| **32** | M20 x 2.0 | 20.5 | **P2778096** | M16 x 2.0 | 16 | **P2778086** |
| **40** | M20 x 2.0 | 20.5 | **P2778096** | M16 x 2.0 | 16 | **P2778086** |
| **42** | - | - | - | M16 x 2.0 | 16 | **P2778086** |
| **50** | M24 x 2.0 | 25.5 | **P2778098** | - | - | - |
| **50.8** | - | - | - | M20 x 2.5 | 25 | **P2778087** |

Global Cutting Tool Leader **YG-1**



# TOOLING SYSTEM

YG-1 TOOLING SYSTEM

# SHELL MILL ARBOR

# 端面铣刀刀柄

## SHELL MILL ARBOR

DIN 69871-SK

DIN 69893/ISO 12164-1-HSK

CBT (BT DUAL CONTACT)

JIS B6339/MAS 403-BT

GOST 25827-93

PARTS

## COMBI SHELL MILL ARBOR

DIN 69871-SK

DIN 69893/ISO 12164-1-HSK

CBT (BT DUAL CONTACT)

JIS B6339/MAS 403-BT

DIN 2080-ISO

PARTS

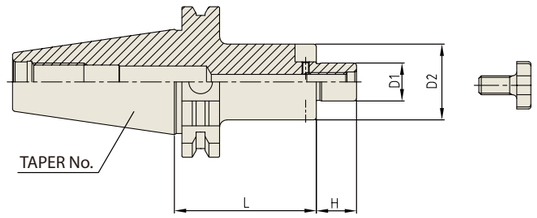
# SHELL MILL ARBOR

SMA

## SHELL MILL ARBOR

DIN 69871-SK

## 端面铣刀刀柄




DIN 69871-SK | AT3 | 6.3G | 15,000 RPM | A

Parts, Refer to page 153-154
配件，请参阅第153-154页

◆ STANDARD

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | D1 | D2 | L | H | BOLT | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|
| 30 | SK30-SMA16-50 | P2778901 | 16 | 32 | 50 | 17 | M8x16L | 0.85 |
| | SK30-SMA22-50 | P2778902 | 22 | 40 | 50 | 19 | M10x18L | 0.90 |
| | SK30-SMA27-50 | P2778903 | 27 | 48 | 50 | 21 | M12x22L | 1.03 |
| 40 | SK40-SMA16-60 | P2778904 | 16 | 32 | 60 | 17 | M8x16L | 0.35 |
| | SK40-SMA22-60 | P2778905 | 22 | 40 | 60 | 19 | M10x18L | 1.45 |
| | SK40-SMA27-60 | P2778906 | 27 | 48 | 60 | 21 | M12x22L | 1.70 |
| | SK40-SMA32-60 | P2778907 | 32 | 58 | 60 | 24 | M16x26L | 1.80 |
| | SK40-SMA40-60 | P2778908 | 40 | 70 | 60 | 27 | M20x30L | 3.10 |
| 50 | SK50-SMA16-75 | P2778909 | 16 | 32 | 75 | 17 | M8x16L | 2.80 |
| | SK50-SMA22-75 | P2778910 | 22 | 40 | 75 | 19 | M10x18L | 3.10 |
| | SK50-SMA27-75 | P2778911 | 27 | 48 | 75 | 21 | M12x22L | 3.40 |
| | SK50-SMA32-75 | P2778912 | 32 | 58 | 75 | 24 | M16x26L | 3.80 |
| | SK50-SMA40-75 | P2778913 | 40 | 70 | 75 | 27 | M20x30L | 4.50 |
| | SK50-SMA50-75 | P2778914 | 50 | 90 | 75 | 30 | M24x36L | 5.90 |

◆ EXTENDED

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | D1 | D2 | L | H | BOLT | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|
| 40 | SK40-SMA16-120 | P2778915 | 16 | 32 | 120 | 17 | M8x16L | 1.70 |
| | SK40-SMA22-120 | P2778916 | 22 | 40 | 120 | 19 | M10x18L | 1.80 |
| | SK40-SMA27-120 | P2778917 | 27 | 48 | 120 | 21 | M12x22L | 2.40 |
| | SK40-SMA32-120 | P2778918 | 32 | 58 | 120 | 24 | M16x26L | 3.70 |
| 50 | SK50-SMA16-120 | P2778919 | 16 | 32 | 120 | 17 | M8x16L | 3.90 |
| | SK50-SMA22-120 | P2778920 | 22 | 40 | 120 | 19 | M10x18L | 4.40 |
| | SK50-SMA27-120 | P2778921 | 27 | 48 | 120 | 21 | M12x22L | 4.70 |
| | SK50-SMA32-120 | P2778922 | 32 | 58 | 120 | 24 | M16x26L | 5.00 |
| | SK50-SMA40-120 | P2778923 | 40 | 70 | 120 | 27 | M20x30L | 6.05 |

▶Without "Coolant Through".
没有“冷却剂”

▶CAT(ANSI B5.50) taper and Inch type products are available.
CAT(ANSI B5.50)锥柄及英制产品可供选择



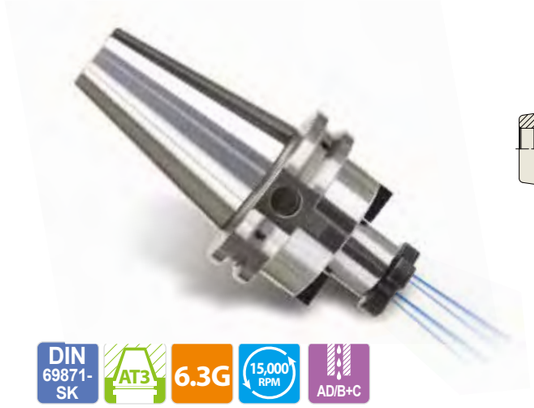
SHELL MILL ARBOR

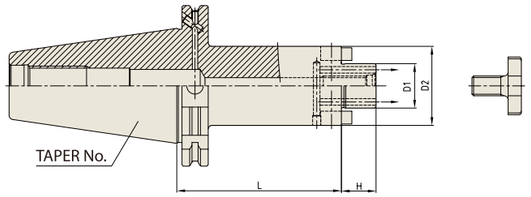
SMA

## SHELL MILL ARBOR (COOLANT CHANNEL)

DIN 69871-SK

## 端面铣刀刀柄 (冷却液喷射型)






DIN 69871-SK | AT3 | 6.3G | 15,000 RPM | AD/B+C

Parts, Refer to page 153-154
配件，请参阅第153-154页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | D1 | D2 | L | H | BOLT | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|
| 40 | SK40AD/B-SMA16C-60 | P2801004C | 16 | 32 | 60 | 17 | M8x16L | 0.35 |
| | SK40AD/B-SMA16C-120 | P2801015C | 16 | 32 | 120 | 17 | M8x16L | 0.70 |
| | SK40AD/B-SMA22C-44 | P2803003C | 22 | 40 | 44 | 19 | M10x18L | 1.03 |
| | SK40AD/B-SMA22C-100 | P2803004C | 22 | 40 | 100 | 19 | M10x18L | 1.60 |
| | SK40AD/B-SMA22C-120 | P2801016C | 22 | 40 | 120 | 19 | M10x18L | 1.90 |
| | SK40AD/B-SMA27C-44 | P2803006C | 27 | 48 | 44 | 21 | M12x22L | 1.16 |
| | SK40AD/B-SMA27C-100 | P2803007C | 27 | 48 | 100 | 21 | M12x22L | 1.97 |
| | SK40AD/B-SMA27C-120 | P2801017C | 27 | 48 | 120 | 21 | M12x22L | 2.23 |
| | SK40AD/B-SMA32C-60 | P2801007C | 32 | 58 | 60 | 24 | M16x26L | 1.64 |
| | SK40AD/B-SMA32C-120 | P2801018C | 32 | 58 | 120 | 24 | M16x26L | 2.00 |
| | SK40AD/B-SMA40C-60 | P2803011C | 40 | 70 | 60 | 27 | M20x30L | 1.83 |
| | SK40AD/B-SMA40C-120 | P2803012C | 40 | 70 | 120 | 27 | M20x30L | 2.10 |
| 50 | SK50AD/B-SMA16C-75 | P2801009C | 16 | 32 | 75 | 17 | M8x16L | 2.20 |
| | SK50AD/B-SMA16C-120 | P2801019C | 16 | 32 | 120 | 17 | M8x16L | 2.50 |
| | SK50AD/B-SMA22C-44 | P2803015C | 22 | 40 | 44 | 19 | M10x18L | 2.84 |
| | SK50AD/B-SMA22C-75 | P2801010C | 22 | 40 | 75 | 19 | M10x18L | 3.10 |
| | SK50AD/B-SMA22C-100 | P2803017C | 22 | 40 | 100 | 19 | M10x18L | 3.37 |
| | SK50AD/B-SMA22C-120 | P2801020C | 22 | 40 | 120 | 19 | M10x18L | 3.60 |
| | SK50AD/B-SMA22C-160 | P2803019C | 22 | 40 | 160 | 19 | M10x18L | 3.93 |
| | SK50AD/B-SMA27C-75 | P2801011C | 27 | 48 | 75 | 21 | M12x22L | 3.40 |
| | SK50AD/B-SMA27C-100 | P2803021C | 27 | 48 | 100 | 21 | M12x22L | 3.74 |
| | SK50AD/B-SMA27C-120 | P2801021C | 27 | 48 | 120 | 21 | M12x22L | 4.00 |
| | SK50AD/B-SMA27C-160 | P2803023C | 27 | 48 | 160 | 21 | M12x22L | 4.42 |
| | SK50AD/B-SMA32C-75 | P2801012C | 32 | 58 | 75 | 24 | M16x26L | 3.80 |
| | SK50AD/B-SMA32C-100 | P2803025C | 32 | 58 | 100 | 24 | M16x26L | 4.28 |
| | SK50AD/B-SMA32C-120 | P2801022C | 32 | 58 | 120 | 24 | M16x26L | 4.40 |
| | SK50AD/B-SMA32C-160 | P2803027C | 32 | 58 | 160 | 24 | M16x26L | 5.45 |
| | SK50AD/B-SMA40C-75 | P2801013C | 40 | 70 | 75 | 27 | M20x30L | 4.50 |
| | SK50AD/B-SMA40C-100 | P2803029C | 40 | 70 | 100 | 27 | M20x30L | 5.11 |
| | SK50AD/B-SMA40C-120 | P2801023C | 40 | 70 | 100 | 27 | M20x30L | 5.30 |
| | SK50AD/B-SMA40C-160 | P2803031C | 40 | 70 | 160 | 27 | M20x30L | 6.78 |

▶With "Coolant Through" by coolant channels.
与“冷却剂通过”由冷却剂通道

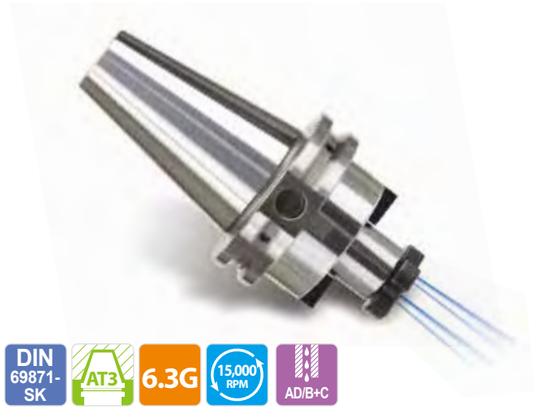
▶CAT(ANSI B5.50) taper and Inch type products are available.
CAT(ANSI B5.50)锥柄及英制产品可供选择

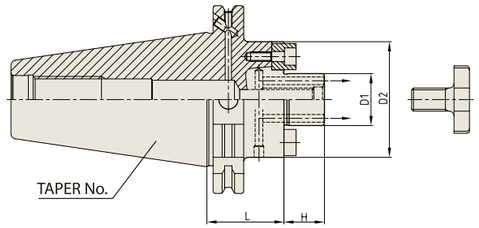
# SHELL MILL ARBOR

SMA

## SHELL MILL ARBOR (COOLANT CHANNEL & LARGE FACE)
## 端面铣刀刀柄 (冷却液喷射型 & LARGE FACE)

DIN 69893/
ISO 12164-1-HSK FORM A






DIN 69871-SK | AT3 | 6.3G | 15,000 RPM | AD/B+C

Parts, Refer to page 153-154
配件，请参阅第153-154页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | D1 | D2 | L | H | BOLT | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|
| 40 | SK40AD/B-SMA16CE-35 | P2803101CE | 16 | 38 | 35 | 17 | M8x16L | 0.94 |
| | SK40AD/B-SMA16CE-100 | P2803102CE | 16 | 38 | 100 | 17 | M8x16L | 1.50 |
| | SK40AD/B-SMA22CE-35 | P2803103CE | 22 | 48 | 35 | 19 | M10x18L | 1.05 |
| | SK40AD/B-SMA22CE-100 | P2803104CE | 22 | 48 | 100 | 19 | M10x18L | 1.95 |
| | SK40AD/B-SMA27CE-45 | P2803105CE | 27 | 60 | 45 | 21 | M12x22L | 1.33 |
| | SK40AD/B-SMA27CE-100 | P2803106CE | 27 | 60 | 100 | 21 | M12x22L | 2.59 |
| | SK40AD/B-SMA32CE-50 | P2803107CE | 32 | 78 | 50 | 24 | M16x26L | 1.72 |
| | SK40AD/B-SMA40CE-50 | P2803108CE | 40 | 89 | 50 | 27 | M20x30L | 1.99 |
| 50 | SK50AD/B-SMA16CE-100 | P2803109CE | 16 | 38 | 100 | 17 | M8x16L | 3.27 |
| | SK50AD/B-SMA22CE-35 | P2803110CE | 22 | 48 | 35 | 19 | M10x18L | 2.83 |
| | SK50AD/B-SMA22CE-100 | P2803111CE | 22 | 48 | 100 | 19 | M10x18L | 3.72 |
| | SK50AD/B-SMA22CE-160 | P2803112CE | 22 | 48 | 160 | 19 | M10x18L | 4.54 |
| | SK50AD/B-SMA27CE-40 | P2803113CE | 27 | 60 | 40 | 21 | M12x22L | 3.09 |
| | SK50AD/B-SMA27CE-100 | P2803114CE | 27 | 60 | 100 | 21 | M12x22L | 4.35 |
| | SK50AD/B-SMA27CE-160 | P2803115CE | 27 | 60 | 160 | 21 | M12x22L | 5.62 |
| | SK50AD/B-SMA32CE-50 | P2803116CE | 32 | 78 | 50 | 24 | M16x26L | 3.82 |
| | SK50AD/B-SMA32CE-100 | P2803117CE | 32 | 78 | 100 | 24 | M16x26L | 5.64 |
| | SK50AD/B-SMA32CE-160 | P2803118CE | 32 | 78 | 160 | 24 | M16x26L | 7.81 |
| | SK50AD/B-SMA40CE-50 | P2803119CE | 40 | 89 | 50 | 27 | M20x30L | 4.27 |
| | SK50AD/B-SMA40CE-100 | P2803120CE | 40 | 89 | 100 | 27 | M20x30L | 6.61 |
| | SK50AD/B-SMA40CE-160 | P2803121CE | 40 | 89 | 160 | 27 | M20x30L | 9.43 |

▶With "Coolant Through" by coolant channels.
与“冷却剂通过”由冷却剂通道

▶CAT(ANSI B5.50) taper and Inch type products are available.
CAT(ANSI B5.50)锥柄及英制产品可供选择



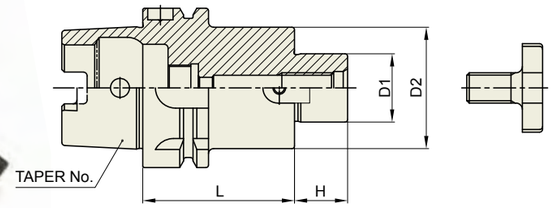
TOOLING SYSTEM
HYDRAULIC CHUCK
SHRINK FIT HOLDER
ER COLLET CHUCK
END MILL HOLDER & SIDE LOCK ARBOR
SHELL MILL ARBOR
POWER MILLING CHUCK
MORSE TAPER ARBOR
SK SLIM CHUCK
SYNCHRO TAPPING CHUCK
ONE STEP TAPPING CHUCK
TAPPING ER CHUCK
TAPPING CHUCK
FACE MILL ARBOR
COPY MILL ARBOR & INDEXABLE DRILL HOLDER
NC DRILL CHUCK & OTHER TOOL HOLDERS
BORING SYSTEM
ACCESSORY & OTHERS

# SHELL MILL ARBOR

SMA

## SHELL MILL ARBOR
## 端面铣刀刀柄

DIN 69893/
ISO 12164-1-HSK FORM A




DIN 69893-HSK | 6.3G | 15,000 RPM | A

Parts, Refer to page 153-154
配件，请参阅第153-154页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | D1 | D2 | L | H | BOLT | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|
| 40A | HSK40A-SMA16-50 | P2778201 | 16 | 32 | 50 | 17 | M8x16L | 0.40 |
| | HSK40A-SMA22-50 | P2778202 | 22 | 40 | 50 | 19 | M10x18L | 0.50 |
| | HSK40A-SMA27-60 | P2778203 | 27 | 48 | 60 | 21 | M12x22L | 0.60 |
| 50A | HSK50A-SMA16-50 | P2778204 | 16 | 32 | 50 | 17 | M8x16L | 0.50 |
| | HSK50A-SMA22-60 | P2778205 | 22 | 40 | 60 | 19 | M10x18L | 0.57 |
| | HSK50A-SMA27-60 | P2778206 | 27 | 48 | 60 | 21 | M12x22L | 0.75 |
| | HSK50A-SMA32-60 | P2778207 | 32 | 58 | 60 | 24 | M16x26L | 0.90 |
| 63A | HSK63A-SMA16-50 | P2566001 | 16 | 32 | 50 | 17 | M8x16L | 0.81 |
| | HSK63A-SMA22-50 | P2566002 | 22 | 40 | 50 | 19 | M10x18L | 0.93 |
| | HSK63A-SMA27-60 | P2566003 | 27 | 48 | 60 | 21 | M12x22L | 1.22 |
| | HSK63A-SMA32-60 | P2566004 | 32 | 58 | 60 | 24 | M16x26L | 1.46 |
| | HSK63A-SMA40-60 | P2566005 | 40 | 70 | 60 | 27 | M20x30L | 1.80 |
| 100A | HSK100A-SMA16-50 | P2566011 | 16 | 32 | 50 | 17 | M8x16L | 2.14 |
| | HSK100A-SMA22-50 | P2566012 | 22 | 40 | 50 | 19 | M10x18L | 2.25 |
| | HSK100A-SMA27-50 | P2566013 | 27 | 48 | 50 | 21 | M12x22L | 2.40 |
| | HSK100A-SMA32-50 | P2566014 | 32 | 58 | 50 | 24 | M16x26L | 2.60 |
| | HSK100A-SMA40-60 | P2566015 | 40 | 70 | 60 | 27 | M20x30L | 3.25 |
| | HSK100A-SMA50-70 | P2778209 | 50 | 90 | 70 | 30 | M24x36L | 5.40 |

▶Without "Coolant Through".
没有“冷却剂”

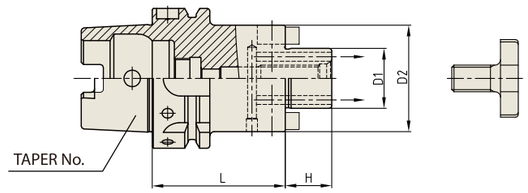
# SHELL MILL ARBOR

SMA

## SHELL MILL ARBOR (COOLANT CHANNEL)

DIN 69893/
ISO 12164-1-HSK FORM A

## 端面铣刀刀柄 (冷却液喷射型)




DIN 69893-HSK | 6.3G | 15,000 RPM | A

Parts, Refer to page 153-154
配件，请参阅第153-154页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | D1 | D2 | L | H | BOLT | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|
| 63A | HSK63A-SMA16C-50 | P2566001C | 16 | 32 | 50 | 17 | M8x16L | 0.80 |
| | HSK63A-SMA22C-50 | P2566002C | 22 | 40 | 50 | 19 | M10x18L | 0.92 |
| | HSK63A-SMA22C-100 | P2801101C | 22 | 40 | 100 | 19 | M10x18L | 1.40 |
| | HSK63A-SMA22C-160 | P2803202C | 22 | 40 | 160 | 19 | M10x18L | 1.97 |
| | HSK63A-SMA27C-60 | P2566003C | 27 | 48 | 60 | 21 | M12x22L | 1.19 |
| | HSK63A-SMA27C-100 | P2801102C | 27 | 48 | 100 | 21 | M12x22L | 1.74 |
| | HSK63A-SMA27C-160 | P2803204C | 27 | 48 | 160 | 21 | M12x22L | 2.55 |
| | HSK63A-SMA32C-60 | P2566004C | 32 | 58 | 63 | 24 | M16x26L | 1.50 |
| | HSK63A-SMA32C-100 | P2801103C | 32 | 58 | 100 | 24 | M16x26L | 2.72 |
| | HSK63A-SMA40C-60 | P2566005C | 40 | 70 | 60 | 27 | M20x30L | 1.66 |
| 100A | HSK100A-SMA16C-50 | P2566011C | 16 | 32 | 50 | 17 | M8x16L | 2.25 |
| | HSK100A-SMA22C-50 | P2566012C | 22 | 40 | 50 | 19 | M10x18L | 2.25 |
| | HSK100A-SMA22C-100 | P2801105C | 22 | 40 | 100 | 19 | M10x18L | 2.72 |
| | HSK100A-SMA22C-160 | P2803206C | 22 | 40 | 160 | 19 | M10x18L | 3.28 |
| | HSK100A-SMA27C-50 | P2566013C | 27 | 48 | 50 | 21 | M12x22L | 2.40 |
| | HSK100A-SMA27C-100 | P2801106C | 27 | 48 | 100 | 21 | M12x22L | 3.12 |
| | HSK100A-SMA27C-160 | P2803207C | 27 | 48 | 160 | 21 | M12x22L | 4.01 |
| | HSK100A-SMA32C-50 | P2566014C | 32 | 58 | 50 | 24 | M16x26L | 2.55 |
| | HSK100A-SMA32C-100 | P2801107C | 32 | 58 | 100 | 24 | M16x26L | 3.49 |
| | HSK100A-SMA32C-160 | P2803208C | 32 | 58 | 160 | 24 | M16x26L | 4.66 |
| | HSK100A-SMA40C-60 | P2566015C | 40 | 70 | 60 | 27 | M20x30L | 3.10 |
| | HSK100A-SMA40C-100 | P2801108C | 40 | 70 | 100 | 27 | M20x30L | 4.19 |
| | HSK100A-SMA40C-160 | P2803209C | 40 | 70 | 160 | 27 | M20x30L | 5.88 |

▶With "Coolant Through" by coolant channels.
与“冷却剂通过”由冷却剂通道



TOOLING SYSTEM
HYDRAULIC CHUCK
SHRINK FIT HOLDER
ER COLLET CHUCK
END MILL HOLDER & SIDE LOCK ARBOR
SHELL MILL ARBOR
POWER MILLING CHUCK
MORSE TAPER ARBOR
SK SLIM CHUCK
SYNCHRO TAPPING CHUCK
ONE STEP TAPPING CHUCK
TAPPING ER CHUCK
TAPPING CHUCK
FACE MILL ARBOR
COPY MILL ARBOR & INDEXABLE DRILL HOLDER
NC DRILL CHUCK & OTHER TOOL HOLDERS
BORING SYSTEM
ACCESSORY & OTHERS

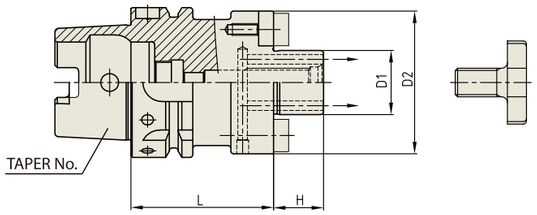
# SHELL MILL ARBOR

SMA

## SHELL MILL ARBOR (COOLANT CHANNEL & LARGE FACE)

DIN 69893/
ISO 12164-1-HSK FORM A

## 端面铣刀刀柄 (冷却液喷射型 & LARGE FACE)




DIN 69893-HSK | 6.3G | 15,000 RPM | A

Parts, Refer to page 153-154
配件，请参阅第153-154页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | D1 | D2 | L | H | BOLT | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|
| 63A | HSK63A-SMA16CE-50 | P2803301CE | 16 | 38 | 50 | 17 | M8x16L | 0.86 |
| | HSK63A-SMA16CE-100 | P2803302CE | 16 | 38 | 100 | 17 | M8x16L | 1.29 |
| | HSK63A-SMA16CE-145 | P2803303CE | 16 | 38 | 145 | 17 | M8x16L | 1.68 |
| | HSK63A-SMA22CE-50 | P2803304CE | 22 | 48 | 50 | 19 | M10x18L | 1.02 |
| | HSK63A-SMA22CE-100 | P2803305CE | 22 | 48 | 100 | 19 | M10x18L | 1.71 |
| | HSK63A-SMA22CE-160 | P2803306CE | 22 | 48 | 160 | 19 | M10x18L | 2.54 |
| | HSK63A-SMA27CE-60 | P2803307CE | 27 | 60 | 60 | 21 | M12x22L | 1.39 |
| | HSK63A-SMA27CE-100 | P2803308CE | 27 | 60 | 100 | 21 | M12x22L | 2.25 |
| | HSK63A-SMA27CE-160 | P2803309CE | 27 | 60 | 160 | 21 | M12x22L | 3.54 |
| | HSK63A-SMA32CE-60 | P2803310CE | 32 | 78 | 63 | 24 | M16x26L | 1.70 |
| | HSK63A-SMA32CE-100 | P2803311CE | 32 | 78 | 100 | 24 | M16x26L | 3.40 |
| | HSK63A-SMA40CE-60 | P2803312CE | 40 | 89 | 60 | 27 | M20x30L | 1.99 |
| 100A | HSK100A-SMA16CE-100 | P2803313CE | 16 | 38 | 100 | 17 | M8x16L | 2.63 |
| | HSK100A-SMA22CE-50 | P2803314CE | 22 | 48 | 50 | 19 | M10x18L | 2.34 |
| | HSK100A-SMA22CE-100 | P2803315CE | 22 | 48 | 100 | 19 | M10x18L | 3.02 |
| | HSK100A-SMA22CE-160 | P2803316CE | 22 | 48 | 160 | 19 | M10x18L | 3.85 |
| | HSK100A-SMA27CE-50 | P2803317CE | 27 | 60 | 50 | 21 | M12x22L | 2.54 |
| | HSK100A-SMA27CE-100 | P2803318CE | 27 | 60 | 100 | 21 | M12x22L | 3.60 |
| | HSK100A-SMA27CE-160 | P2803319CE | 27 | 60 | 160 | 21 | M12x22L | 4.90 |
| | HSK100A-SMA32CE-50 | P2803320CE | 32 | 78 | 50 | 24 | M16x26L | 2.90 |
| | HSK100A-SMA32CE-100 | P2803321CE | 32 | 78 | 100 | 24 | M16x26L | 4.68 |
| | HSK100A-SMA32CE-160 | P2803322CE | 32 | 78 | 160 | 24 | M16x26L | 6.86 |
| | HSK100A-SMA40CE-60 | P2803323CE | 40 | 89 | 60 | 27 | M20x30L | 3.68 |
| | HSK100A-SMA40CE-100 | P2803324CE | 40 | 89 | 100 | 27 | M20x30L | 5.51 |
| | HSK100A-SMA40CE-160 | P2803325CE | 40 | 89 | 160 | 27 | M20x30L | 8.32 |

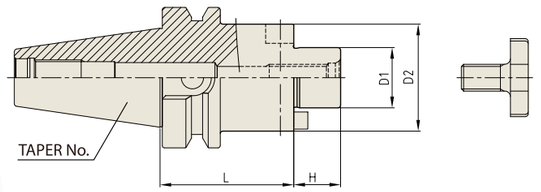
▶With "Coolant Through" by coolant channels.
与“冷却剂通过”由冷却剂通道

# SHELL MILL ARBOR

SMA

## SHELL MILL ARBOR
## 端面铣刀刀柄

CBT
(BT DUAL CONTACT)




CBT | AT3 | 2.5G | 25,000 RPM | A

Parts, Refer to page 153-154
配件，请参阅第153-154页

◆ STANDARD

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | D1 | D2 | L | H | BOLT | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|
| 30 | CBT30-SMA16-50 | P2778701 | 16 | 32 | 30 | 17 | M8x16L | 0.58 |
| | CBT30-SMA22-50 | P2778702 | 22 | 40 | 30 | 19 | M10x18L | 0.70 |
| | CBT30-SMA27-50 | P2778703 | 27 | 48 | 30 | 21 | M12x22L | 0.85 |
| 40 | CBT40-SMA16-60 | P2778704 | 16 | 32 | 60 | 17 | M8x16L | 1.17 |
| | CBT40-SMA22-60 | P2778705 | 22 | 40 | 60 | 19 | M10x18L | 1.31 |
| | CBT40-SMA27-60 | P2778706 | 27 | 48 | 60 | 21 | M12x22L | 1.48 |
| | CBT40-SMA32-60 | P2778707 | 32 | 58 | 60 | 24 | M16x26L | 1.72 |
| | CBT40-SMA40-60 | P2778708 | 40 | 70 | 60 | 27 | M20x30L | 2.00 |
| 50 | CBT50-SMA16-75 | P2778709 | 16 | 32 | 75 | 17 | M8x16L | 3.75 |
| | CBT50-SMA22-75 | P2778710 | 22 | 40 | 75 | 19 | M10x18L | 3.90 |
| | CBT50-SMA27-75 | P2778711 | 27 | 48 | 75 | 21 | M12x22L | 4.09 |
| | CBT50-SMA32-75 | P2778712 | 32 | 58 | 75 | 24 | M16x26L | 4.35 |
| | CBT50-SMA40-75 | P2778713 | 40 | 70 | 75 | 27 | M20x30L | 4.77 |
| | CBT50-SMA50-75 | P2778714 | 50 | 90 | 75 | 30 | M24x36L | 5.63 |

◆ EXTENDED

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | D1 | D2 | L | H | BOLT | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|
| 40 | CBT40-SMA16-120 | P2778715 | 16 | 32 | 120 | 17 | M8x16L | 1.50 |
| | CBT40-SMA22-120 | P2778716 | 22 | 40 | 120 | 19 | M10x18L | 1.85 |
| | CBT40-SMA27-120 | P2778717 | 27 | 48 | 120 | 21 | M12x22L | 2.27 |
| | CBT40-SMA32-120 | P2778718 | 32 | 58 | 120 | 24 | M16x26L | 2.90 |
| 50 | CBT50-SMA16-120 | P2778719 | 16 | 32 | 120 | 17 | M8x16L | 4.03 |
| | CBT50-SMA22-120 | P2778720 | 22 | 40 | 120 | 19 | M10x18L | 4.25 |
| | CBT50-SMA27-120 | P2778721 | 27 | 48 | 120 | 21 | M12x22L | 4.56 |
| | CBT50-SMA32-120 | P2778722 | 32 | 58 | 120 | 24 | M16x26L | 5.22 |
| | CBT50-SMA40-120 | P2778723 | 40 | 70 | 120 | 27 | M20x30L | 6.04 |

▶ Without "Coolant Through".
没有“冷却剂”



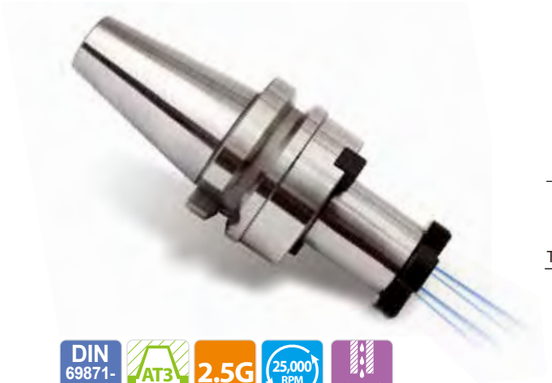
TOOLING SYSTEM
HYDRAULIC CHUCK
SHRINK FIT HOLDER
ER COLLET CHUCK
END MILL HOLDER & SIDE LOCK ARBOR
SHELL MILL ARBOR
POWER MILLING CHUCK
MORSE TAPER ARBOR
SK SLIM CHUCK
SYNCHRO TAPPING CHUCK
ONE STEP TAPPING CHUCK
TAPPING ER CHUCK
TAPPING CHUCK
FACE MILL ARBOR
COPY MILL ARBOR & INDEXABLE DRILL HOLDER
NC DRILL CHUCK & OTHER TOOL HOLDERS
BORING SYSTEM
ACCESSORY & OTHERS

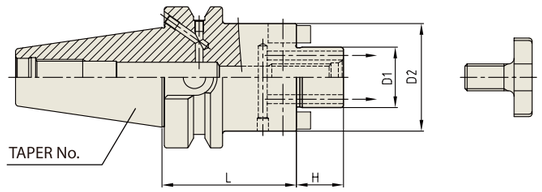
# SHELL MILL ARBOR

SMA

## SHELL MILL ARBOR (COOLANT CHANNEL)
## 端面铣刀刀柄 (冷却液喷射型)

CBT
(BT DUAL CONTACT)






DIN 69871-SK | AT3 | 2.5G | 25,000 RPM | AD/B+C

Parts, Refer to page 153-154
配件，请参阅第153-154页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | D1 | D2 | L | H | BOLT | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|
| 40 | CBT40AD/B-SMA16C-60 | P2801047C | 16 | 32 | 60 | 17 | M8x16L | 1.20 |
| | CBT40AD/B-SMA16C-120 | P2801058C | 16 | 32 | 120 | 17 | M8x16L | 1.20 |
| | CBT40AD/B-SMA22C-60 | P2801048C | 22 | 40 | 60 | 19 | M10x18L | 1.27 |
| | CBT40AD/B-SMA22C-120 | P2801059C | 22 | 40 | 120 | 19 | M10x18L | 1.84 |
| | CBT40AD/B-SMA27C-60 | P2801049C | 27 | 48 | 60 | 21 | M12x22L | 1.44 |
| | CBT40AD/B-SMA27C-120 | P2801060C | 27 | 48 | 120 | 21 | M12x22L | 2.26 |
| 50 | CBT50AD/B-SMA16C-60 | P2803407C | 16 | 32 | 60 | 17 | M8x16L | 3.00 |
| | CBT50AD/B-SMA16C-120 | P2801062C | 16 | 32 | 120 | 17 | M8x16L | 3.30 |
| | CBT50AD/B-SMA22C-75 | P2801053C | 22 | 40 | 75 | 19 | M10x18L | 3.83 |
| | CBT50AD/B-SMA22C-120 | P2801063C | 22 | 40 | 120 | 19 | M10x18L | 4.24 |
| | CBT50AD/B-SMA27C-75 | P2801054C | 27 | 48 | 75 | 21 | M12x22L | 4.03 |
| | CBT50AD/B-SMA27C-120 | P2801064C | 27 | 48 | 120 | 21 | M12x22L | 4.64 |
| | CBT50AD/B-SMA32C-75 | P2801055C | 32 | 58 | 75 | 24 | M16x26L | 4.31 |
| | CBT50AD/B-SMA32C-120 | P2801065C | 32 | 58 | 120 | 24 | M16x26L | 5.19 |
| | CBT50AD/B-SMA40C-75 | P2801056C | 40 | 70 | 75 | 27 | M20x30L | 4.75 |
| | CBT50AD/B-SMA40C-120 | P2801066C | 40 | 70 | 120 | 27 | M20x30L | 6.02 |

▶ With "Coolant Through" by coolant channels.
与“冷却剂通过”由冷却剂通道

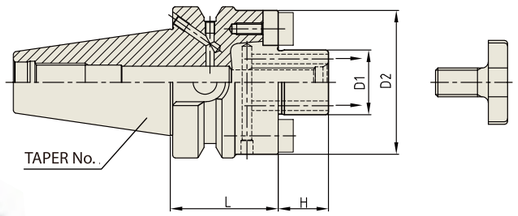
# SHELL MILL ARBOR

SMA

## SHELL MILL ARBOR (COOLANT CHANNEL & LARGE FACE)

CBT
(BT DUAL CONTACT)

## 端面铣刀刀柄 (冷却液喷射型 & LARGE FACE)




DIN 69871-SK | AT3 | 2.5G | 25,000 RPM | AD+C or AD/B+C

Parts, Refer to page 153-154
配件，请参阅第153-154页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | D1 | D2 | L | H | BOLT | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|
| 30 | CBT30-SMA16CE-40 | P2803501CE | 16 | 38 | 40 | 17 | M8x16L | 0.55 |
| | CBT30-SMA22CE-40 | P2803502CE | 22 | 48 | 40 | 19 | M10x18L | 0.69 |
| | CBT30-SMA27CE-40 | P2803503CE | 27 | 60 | 40 | 21 | M12x22L | 0.85 |
| | CBT30-SMA32CE-45 | P2803504CE | 32 | 78 | 45 | 24 | M16x26L | 1.32 |
| 40 | CBT40AD/B-SMA16CE-50 | P2803505CE | 22 | 38 | 50 | 17 | M10x18L | 1.14 |
| | CBT40AD/B-SMA22CE-45 | P2803506CE | 22 | 48 | 45 | 19 | M10x18L | 1.22 |
| | CBT40AD/B-SMA27CE-45 | P2803507CE | 27 | 60 | 45 | 21 | M12x22L | 1.39 |
| | CBT40AD/B-SMA32CE-50 | P2803508CE | 32 | 78 | 50 | 24 | M16x26L | 1.80 |
| | CBT40AD/B-SMA40CE-50 | P2803509CE | 40 | 89 | 50 | 27 | M20x30L | 2.05 |
| 50 | CBT50AD/B-SMA22CE-55 | P2803510CE | 22 | 48 | 55 | 19 | M10x18L | 3.72 |
| | CBT50AD/B-SMA27CE-55 | P2803511CE | 27 | 60 | 55 | 21 | M12x22L | 3.89 |
| | CBT50AD/B-SMA32CE-55 | P2803512CE | 32 | 78 | 55 | 24 | M16x26L | 4.21 |
| | CBT50AD/B-SMA40CE-55 | P2803513CE | 40 | 89 | 55 | 27 | M20x30L | 4.52 |

▶With "Coolant Through" by coolant channels.
与“冷却剂通过”由冷却剂通道

▶CAT(ANSI B5.50) taper and Inch type products are available.
CAT(ANSI B5.50)锥柄及英制产品可供选择



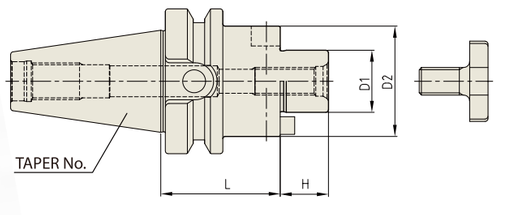
SHELL MILL ARBOR

SMA

## SHELL MILL ARBOR

JIS B6339/
MAS 403-BT

## 端面铣刀刀柄




JIS B6339-BT | 6.3G | 15,000 RPM | A

Parts, Refer to page 153-154
配件，请参阅第153-154页

### ◆ STANDARD

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | D1 | D2 | L | H | BOLT | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|
| 30 | BT30-SMA16-50 | P2778801 | 16 | 32 | 50 | 17 | M8x16L | 0.58 |
| | BT30-SMA22-50 | P2778802 | 22 | 40 | 50 | 19 | M10x18L | 0.70 |
| | BT30-SMA27-50 | P2778803 | 27 | 48 | 50 | 21 | M12x22L | 0.85 |
| 40 | BT40-SMA16-60 | P2778804 | 16 | 32 | 60 | 17 | M8x16L | 1.17 |
| | BT40-SMA22-60 | P2778805 | 22 | 40 | 60 | 19 | M10x18L | 1.31 |
| | BT40-SMA27-60 | P2778806 | 27 | 48 | 60 | 21 | M12x22L | 1.48 |
| | BT40-SMA32-60 | P2778807 | 32 | 58 | 60 | 24 | M16x26L | 1.72 |
| | BT40-SMA40-60 | P2778808 | 40 | 70 | 60 | 27 | M20x30L | 2.00 |
| 50 | BT50-SMA16-75 | P2778809 | 16 | 32 | 75 | 17 | M8x16L | 3.75 |
| | BT50-SMA22-75 | P2778810 | 22 | 40 | 75 | 19 | M10x18L | 3.90 |
| | BT50-SMA27-75 | P2778811 | 27 | 48 | 75 | 21 | M12x22L | 4.09 |
| | BT50-SMA32-75 | P2778812 | 32 | 58 | 75 | 24 | M16x26L | 4.35 |
| | BT50-SMA40-75 | P2778813 | 40 | 70 | 75 | 27 | M20x30L | 4.77 |
| | BT50-SMA50-75 | P2778814 | 50 | 90 | 75 | 30 | M24x36L | 5.63 |

### ◆ EXTENDED

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | D1 | D2 | L | H | BOLT | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|
| 40 | BT40-SMA16-120 | P2778815 | 16 | 32 | 120 | 17 | M8x16L | 1.50 |
| | BT40-SMA22-120 | P2778816 | 22 | 40 | 120 | 19 | M10x18L | 1.85 |
| | BT40-SMA27-120 | P2778817 | 27 | 48 | 120 | 21 | M12x22L | 2.27 |
| | BT40-SMA32-120 | P2778818 | 32 | 58 | 120 | 24 | M16x26L | 2.90 |
| 50 | BT50-SMA16-120 | P2778819 | 16 | 32 | 120 | 17 | M8x16L | 4.03 |
| | BT50-SMA22-120 | P2778820 | 22 | 40 | 120 | 19 | M10x18L | 4.25 |
| | BT50-SMA27-120 | P2778821 | 27 | 48 | 120 | 21 | M12x22L | 4.56 |
| | BT50-SMA32-120 | P2778822 | 32 | 58 | 120 | 24 | M16x26L | 5.22 |
| | BT50-SMA40-120 | P2778823 | 40 | 70 | 120 | 27 | M20x30L | 6.04 |

▶Without "Coolant Through".
没有“冷却剂”

▶CAT(ANSI B5.50) taper and Inch type products are available.
CAT(ANSI B5.50)锥柄及英制产品可供选择

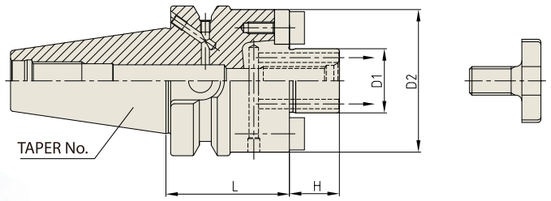
# SHELL MILL ARBOR

SMA

## SHELL MILL ARBOR (COOLANT CHANNEL)

JIS B6339/
MAS 403-BT

## 端面铣刀刀柄 (冷却液喷射型)




JIS B6339-BT | AT3 | 6.3G | 15,000 RPM | AD+C or AD/B+C

Parts, Refer to page 153-154
配件，请参阅第153-154页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | D1 | D2 | L | H | BOLT | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|
| 30 | BT30-SMA16C-40 | P2803601C | 16 | 32 | 40 | 17 | M8x16L | 0.55 |
| | BT30-SMA22C-40 | P2803602C | 22 | 40 | 40 | 19 | M10x18L | 0.61 |
| | BT30-SMA22C-100 | P2803603C | 22 | 40 | 100 | 19 | M10x18L | 1.18 |
| | BT30-SMA27C-40 | P2803604C | 27 | 48 | 40 | 21 | M12x22L | 0.86 |
| | BT30-SMA27C-100 | P2803605C | 27 | 48 | 100 | 21 | M12x22L | 1.67 |
| 40 | BT40AD/B-SMA16C-60 | P2801024C | 16 | 32 | 60 | 17 | M8x16L | 1.00 |
| | BT40AD/B-SMA22C-60 | P2801025C | 22 | 40 | 60 | 19 | M10x18L | 1.20 |
| | BT40AD/B-SMA22C-100 | P2803607C | 22 | 40 | 100 | 19 | M10x18L | 1.65 |
| | BT40AD/B-SMA27C-60 | P2801026C | 27 | 48 | 60 | 21 | M12x22L | 1.34 |
| | BT40AD/B-SMA27C-100 | P2803608C | 27 | 48 | 100 | 21 | M12x22L | 1.99 |
| | BT40AD/B-SMA32C-60 | P2801027C | 32 | 58 | 60 | 24 | M16x26L | 1.55 |
| | BT40AD/B-SMA40C-70 | P2803610C | 40 | 70 | 60 | 27 | M20x30L | 1.97 |
| 50 | BT50AD/B-SMA16C-75 | P2801029C | 16 | 32 | 75 | 17 | M8x16L | 3.00 |
| | BT50AD/B-SMA16C-120 | P2801039C | 16 | 32 | 120 | 17 | M8x16L | 3.40 |
| | BT50AD/B-SMA22C-75 | P2801030C | 22 | 40 | 75 | 19 | M10x18L | 3.72 |
| | BT50AD/B-SMA22C-100 | P2803614C | 22 | 40 | 100 | 19 | M10x18L | 4.06 |
| | BT50AD/B-SMA22C-120 | P2801040C | 22 | 40 | 120 | 19 | M10x18L | 4.40 |
| | BT50AD/B-SMA22C-160 | P2803616C | 22 | 40 | 160 | 19 | M10x18L | 4.61 |
| | BT50AD/B-SMA27C-75 | P2801031C | 27 | 48 | 75 | 21 | M12x22L | 3.87 |
| | BT50AD/B-SMA27C-100 | P2803618C | 27 | 48 | 100 | 21 | M12x22L | 4.37 |
| | BT50AD/B-SMA27C-120 | P2801041C | 27 | 48 | 120 | 21 | M12x22L | 4.68 |
| | BT50AD/B-SMA27C-160 | P2803620C | 27 | 48 | 160 | 21 | M12x22L | 5.18 |
| | BT50AD/B-SMA32C-75 | P2801032C | 32 | 58 | 75 | 24 | M16x26L | 4.08 |
| | BT50AD/B-SMA32C-100 | P2803622C | 32 | 58 | 100 | 24 | M16x26L | 4.80 |
| | BT50AD/B-SMA32C-120 | P2801042C | 32 | 58 | 120 | 24 | M16x26L | 5.40 |
| | BT50AD/B-SMA32C-160 | P2803624C | 32 | 58 | 160 | 24 | M16x26L | 5.98 |
| | BT50AD/B-SMA40C-75 | P2801033C | 40 | 70 | 75 | 27 | M20x30L | 4.41 |
| | BT50AD/B-SMA40C-100 | P2803626C | 40 | 70 | 100 | 27 | M20x30L | 5.45 |
| | BT50AD/B-SMA40C-120 | P2801043C | 40 | 70 | 120 | 27 | M20x30L | 6.00 |
| | BT50AD/B-SMA40C-160 | P2803628C | 40 | 70 | 160 | 27 | M20x30L | 7.15 |

▶With "Coolant Through" by coolant channels.
与“冷却剂通过”由冷却剂通道

▶CAT(ANSI B5.50) taper and Inch type products are available.
CAT(ANSI B5.50)锥柄及英制产品可供选择



TOOLING SYSTEM
HYDRAULIC CHUCK
SHRINK FIT HOLDER
ER COLLET CHUCK
END MILL HOLDER & SIDE LOCK ARBOR
SHELL MILL ARBOR
POWER MILLING CHUCK
MORSE TAPER ARBOR
SK SLIM CHUCK
SYNCHRO TAPPING CHUCK
ONE STEP TAPPING CHUCK
TAPPING ER CHUCK
TAPPING CHUCK
FACE MILL ARBOR
COPY MILL ARBOR & INDEXABLE DRILL HOLDER
NC DRILL CHUCK & OTHER TOOL HOLDERS
BORING SYSTEM
ACCESSORY & OTHERS

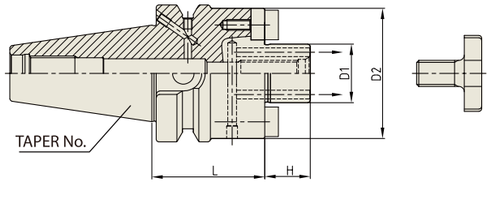
# SHELL MILL ARBOR

SMA

## SHELL MILL ARBOR (COOLANT CHANNEL & LARGE FACE)

JIS B6339/
MAS 403-BT

## 端面铣刀刀柄 (冷却液喷射型 & LARGE FACE)




JIS B6339-BT | AT3 | 6.3G | 15,000 RPM | AD/B+C

Parts, Refer to page 153-154
配件，请参阅第153-154页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | D1 | D2 | L | H | BOLT | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|
| 40 | BT40AD/B-SMA16CE-45 | P2803701CE | 16 | 38 | 45 | 17 | M8x16L | 1.09 |
| | BT40AD/B-SMA16CE-100 | P2803702CE | 16 | 38 | 100 | 17 | M8x16L | 1.57 |
| | BT40AD/B-SMA22CE-45 | P2803703CE | 22 | 48 | 45 | 19 | M10x18L | 1.22 |
| | BT40AD/B-SMA22CE-100 | P2803704CE | 22 | 48 | 100 | 19 | M10x18L | 1.97 |
| | BT40AD/B-SMA27CE-45 | P2803705CE | 27 | 60 | 45 | 21 | M12x22L | 1.39 |
| | BT40AD/B-SMA27CE-100 | P2803706CE | 27 | 60 | 100 | 21 | M12x22L | 2.58 |
| | BT40AD/B-SMA32CE-50 | P2803707CE | 32 | 78 | 50 | 24 | M16x26L | 1.80 |
| | BT40AD/B-SMA40CE-50 | P2803708CE | 40 | 89 | 50 | 27 | M20x30L | 2.05 |
| 50 | BT50AD/B-SMA22CE-55 | P2803709CE | 22 | 48 | 55 | 19 | M10x18L | 3.72 |
| | BT50AD/B-SMA22CE-100 | P2803710CE | 22 | 48 | 100 | 19 | M10x18L | 4.33 |
| | BT50AD/B-SMA22CE-160 | P2803711CE | 22 | 48 | 160 | 19 | M10x18L | 5.14 |
| | BT50AD/B-SMA27CE-55 | P2803712CE | 27 | 60 | 55 | 21 | M12x22L | 3.89 |
| | BT50AD/B-SMA27CE-100 | P2803713CE | 27 | 60 | 100 | 21 | M12x22L | 4.86 |
| | BT50AD/B-SMA27CE-160 | P2803714CE | 27 | 60 | 160 | 21 | M12x22L | 6.15 |
| | BT50AD/B-SMA32CE-55 | P2803715CE | 32 | 78 | 63 | 24 | M16x26L | 4.21 |
| | BT50AD/B-SMA32CE-100 | P2803716CE | 32 | 78 | 100 | 24 | M16x26L | 5.87 |
| | BT50AD/B-SMA32CE-160 | P2803717CE | 32 | 78 | 160 | 24 | M16x26L | 8.08 |
| | BT50AD/B-SMA40CE-55 | P2803718CE | 40 | 89 | 63 | 27 | M20x30L | 4.52 |
| | BT50AD/B-SMA40CE-100 | P2803719CE | 40 | 89 | 100 | 27 | M20x30L | 6.68 |
| | BT50AD/B-SMA40CE-160 | P2803720CE | 40 | 89 | 160 | 27 | M20x30L | 9.57 |

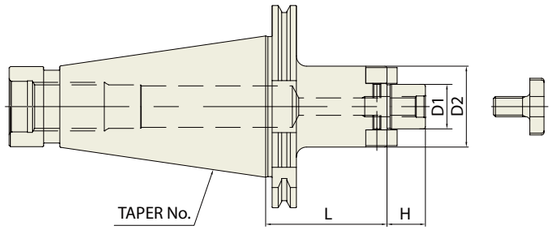
▶With "Coolant Through" by coolant channels.
与“冷却剂通过”由冷却剂通道

# SHELL MILL ARBOR

SMA

## SHELL MILL ARBOR
GOST 25827-93

## 端面铣刀刀柄




GOST 25827-93 | AT3 | A

Parts, Refer to page 153-154
配件，请参阅第153-154页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | D1 | D2 | L | H | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|
| 40 | GOST40-SMA16-40 | P2780401 | 16 | 32 | 40 | 17 | |
| | GOST40-SMA16-100 | P2780402 | 16 | 32 | 100 | 17 | |
| | GOST40-SMA22-40 | P2780403 | 22 | 40 | 40 | 19 | |
| | GOST40-SMA22-100 | P2780404 | 22 | 40 | 100 | 19 | |
| | GOST40-SMA27-45 | P2780405 | 27 | 48 | 45 | 21 | |
| | GOST40-SMA32-45 | P2780406 | 32 | 58 | 45 | 24 | |
| 50 | GOST50-SMA16-40 | P2780407 | 16 | 32 | 40 | 17 | |
| | GOST50-SMA16-100 | P2780408 | 16 | 32 | 100 | 17 | |
| | GOST40-SMA22-40 | P2780409 | 22 | 40 | 40 | 19 | |
| | GOST40-SMA22-100 | P2780410 | 22 | 40 | 100 | 19 | |
| | GOST40-SMA27-45 | P2780411 | 27 | 48 | 45 | 21 | |
| | GOST40-SMA27-120 | P2780412 | 27 | 48 | 120 | 21 | |
| | GOST40-SMA32-45 | P2780413 | 32 | 58 | 45 | 24 | |
| | GOST40-SMA32-130 | P2780414 | 32 | 58 | 130 | 24 | |
| | GOST40-SMA40-55 | P2780415 | 40 | 70 | 55 | 27 | |
| | GOST40-SMA40-150 | P2780416 | 40 | 70 | 150 | 27 | |
| | GOST40-SMA50-60 | P2780417 | 50 | 90 | 60 | 30 | |

▶Without "Coolant Through".
没有“冷却剂”



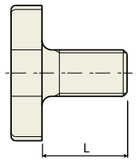


# SHELL MILL ARBOR

PART

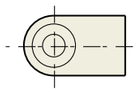
## BOLT & KEY (For SHELL MILL ARBOR)

## 螺丝&传动销 (端面铣刀刀柄用)



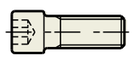

### ■ COLLAR BOLT 安装十字螺丝

| M (COLLAR BOLT) 安装十字螺丝 | EDP No. | L (Length) | SMA SPIGOT Dia. |
|---|---|---|---|
| M8x1.25 | P2514051 | 16 | 16 |
| M10x1.5 | P2514052 | 18 | 22 |
| M12x1.75 | P2514053 | 22 | 27 |
| M16x2.0 | P2514054 | 26 | 32 |
| M20x2.5 | P2514055 | 30 | 40 |
| M24x3.0 | P2514056 | 36 | 50 |



### ■ DRIVE KEY 传动销

| DRIVE KEY 传动销 | EDP No. | SMA SPIGOT Dia. |
|---|---|---|
| 8x7x2.8 | P2778857 | 16 |
| 10x7.8x15.5 | P2778858 | 22 |
| 12x9x18.5 | P2778859 | 27 |
| 14x11.5x20.5 | P2778860 | 32 |
| 16x13.5x23.5 | P2778861 | 40 |
| 18x18x28.5 | P2778862 | 50 |



### ■ KEY BOLT 传动销安装螺丝

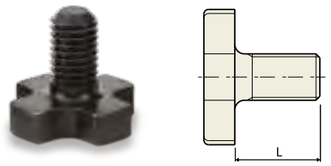
| KEY BOLT 传动销安装螺丝 | EDP No. | SMA SPIGOT Dia. |
|---|---|---|
| M3×0.5×10L | P2778875 | 16 |
| M4×0.7×10L | P2778864 | 22 |
| M5×0.8×12L | P2778865 | 27 |
| M6×1.0×15L | P2778866 | 32 |
| M6×1.0×15L | P2778866 | 40 |
| M6×1.0×20L | P2778868 | 50 |

# SHELL MILL ARBOR

PART

## BOLT & KEY (For SHELL MILL ARBOR - ENLARGED)

## 螺丝&传动销 (端面铣刀刀柄用)



### ■ COLLAR BOLT 安装十字螺丝

| M (COLLAR BOLT) 安装十字螺丝 | EDP No. | L (Length) | SMA SPIGOT Dia. |
|---|---|---|---|
| M8 x 1.25 | P2514051 | 16 | 16 |
| M10 x 1.5 | P2514052 | 18 | 22 |
| M12 x 1.75 | P2514053 | 22 | 27 |
| M16 x 2.0 | P2514054 | 26 | 32 |
| M20 x 2.5 | P2514055 | 30 | 40 |
| M24 x 3.0 | P2514056 | 36 | 50 |

### ■ DRIVE KEY 传动销

| DRIVE KEY 传动销 | EDP No. | SMA SPIGOT Dia. |
|---|---|---|
| 8 x 10 x 9.7 | P2778876 | 16 |
| 10 x 11.2 x 10.8 | P2778877 | 22 |
| 12 x 12.6 x 13.6 | P2778878 | 27 |
| 14 x 14 x 21 | P2778879 | 32 |
| 16 x 16 x 21 | P2778880 | 40 |

### ■ KEY BOLT 传动销安装螺丝

| KEY BOLT 传动销安装螺丝 | EDP No. | SMA SPIGOT Dia. |
|---|---|---|
| M3 x 0.5 x 12L | P2778881 | 16 |
| M4 x 0.7 x 12L | P2778882 | 22 |
| M5 x 0.8 x 15L | P2778883 | 27 |
| M6 x 1.0 x 15L | P2778866 | 32 |
| M6 x 1.0 x 15L | P2778866 | 40 |



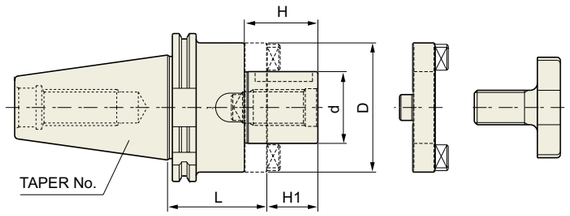
# SHELL MILL ARBOR

CMA

## COMBI-SHELL MILL ARBOR

DIN 69871-SK

## COMBI-端面铣刀刀柄




DIN 69871-SK | AT3 | 6.3G | 15,000 RPM | A

parts, Refer to page 160
配件，请参阅第160页

### ◆ STANDARD

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | d | L | D | H1 | H | PART No. | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|
| 30 | SK30-CMA16-50 | P2524001 | 16 | 50 | 32 | 17 | 27 | 27, 33, 39 | 0.58 |
| | SK30-CMA22-50 | P2524002 | 22 | 50 | 40 | 19 | 31 | 28, 34, 40 | 0.71 |
| | SK30-CMA27-55 | P2524003 | 27 | 55 | 48 | 21 | 33 | 29, 35, 41 | 0.78 |
| 40 | SK40-CMA16-55 | P2524004 | 16 | 55 | 32 | 17 | 27 | 27, 33, 39 | 1.03 |
| | SK40-CMA22-55 | P2524005 | 22 | 55 | 40 | 19 | 31 | 28, 34, 40 | 1.17 |
| | SK40-CMA27-55 | P2524006 | 27 | 55 | 48 | 21 | 33 | 29, 35, 41 | 1.37 |
| | SK40-CMA32-60 | P2524007 | 32 | 60 | 58 | 24 | 38 | 30, 36, 42 | 1.60 |
| | SK40-CMA40-60 | P2524008 | 40 | 60 | 70 | 27 | 41 | 31, 37, 43 | 2.31 |
| 50 | SK50-CMA16-55 | P2524009 | 16 | 55 | 32 | 17 | 27 | 27, 33, 39 | 2.81 |
| | SK50-CMA22-55 | P2524010 | 22 | 55 | 40 | 19 | 31 | 28, 34, 40 | 2.91 |
| | SK50-CMA27-55 | P2524011 | 27 | 55 | 48 | 21 | 33 | 29, 35, 41 | 3.15 |
| | SK50-CMA32-55 | P2524012 | 32 | 55 | 58 | 24 | 38 | 30, 36, 42 | 3.41 |
| | SK50-CMA40-55 | P2524013 | 40 | 55 | 70 | 27 | 41 | 31, 37, 43 | 3.78 |
| | SK50-CMA50-70 | P2524014 | 50 | 70 | 90 | 30 | 46 | 32, 38, 44 | 5.35 |

### ◆ EXTENDED

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | d | L | D | H1 | H | PART No. | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|
| 40 | SK40-CMA16-100 | P2524015 | 16 | 100 | 32 | 17 | 27 | 27, 33, 39 | 1.27 |
| | SK40-CMA22-100 | P2524016 | 22 | 100 | 40 | 19 | 31 | 28, 34, 40 | 1.59 |
| | SK40-CMA27-100 | P2524017 | 27 | 100 | 48 | 21 | 33 | 29, 35, 41 | 1.94 |
| | SK40-CMA32-100 | P2524018 | 32 | 100 | 58 | 24 | 38 | 30, 36, 42 | 2.40 |
| 50 | SK50-CMA16-100 | P2524019 | 16 | 100 | 32 | 17 | 27 | 27, 33, 39 | 3.07 |
| | SK50-CMA22-100 | P2524020 | 22 | 100 | 40 | 19 | 31 | 28, 34, 40 | 3.38 |
| | SK50-CMA27-100 | P2524021 | 27 | 100 | 48 | 21 | 33 | 29, 35, 41 | 3.76 |
| | SK50-CMA32-100 | P2524022 | 32 | 100 | 58 | 24 | 38 | 30, 36, 42 | 4.23 |
| | SK50-CMA40-100 | P2524023 | 40 | 100 | 70 | 27 | 41 | 31, 37, 43 | 5.06 |

▶Without "Coolant Through".
没有“冷却剂”



TOOLING SYSTEM
HYDRAULIC CHUCK
SHRINK FIT HOLDER
ER COLLET CHUCK
END MILL HOLDER & SIDE LOCK ARBOR
SHELL MILL ARBOR
POWER MILLING CHUCK
MORSE TAPER ARBOR
SK SLIM CHUCK
SYNCHRO TAPPING CHUCK
ONE STEP TAPPING CHUCK
TAPPING ER CHUCK
TAPPING CHUCK
FACE MILL ARBOR
COPY MILL ARBOR & INDEXABLE DRILL HOLDER
NC DRILL CHUCK & OTHER TOOL HOLDERS
BORING SYSTEM
ACCESSORY & OTHERS

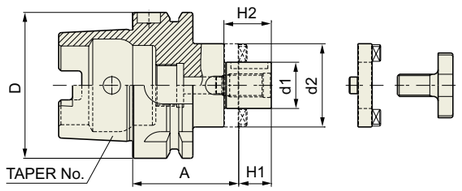
# SHELL MILL ARBOR

CMA

## COMBI-SHELL MILL ARBOR

DIN 69893/
ISO 12164-1-HSK FORM A

## COMBI-端面铣刀刀柄




DIN 69893-HSK | 6.3G | 15,000 RPM | A

parts, Refer to page 160
配件，请参阅第160页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | D | d1 | d2 | A | H1 | H2 | PART No. | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|---|
| 50A | HSK50A-CMA16-50 | P2562006 | 50 | 16 | 32 | 50 | 17 | 27 | 27, 33, 39 | 0.56 |
| | HSK50A-CMA22-50 | P2562007 | 50 | 22 | 40 | 50 | 19 | 31 | 28, 34, 40 | 0.66 |
| | HSK50A-CMA27-65 | P2562008 | 50 | 27 | 48 | 65 | 21 | 33 | 29, 35, 41 | 0.96 |
| | HSK50A-CMA32-65 | P2562009 | 50 | 32 | 58 | 65 | 24 | 38 | 30, 36, 42 | 1.15 |
| 63A | HSK63A-CMA16-60 | P2562001 | 63 | 16 | 32 | 60 | 17 | 27 | 27, 33, 39 | 0.88 |
| | HSK63A-CMA22-60 | P2562002 | 63 | 22 | 40 | 60 | 19 | 31 | 28, 34, 40 | 1.02 |
| | HSK63A-CMA27-60 | P2562003 | 63 | 27 | 48 | 60 | 21 | 33 | 29, 35, 41 | 1.20 |
| | HSK63A-CMA32-60 | P2562004 | 63 | 32 | 53 | 60 | 24 | 38 | 30, 36, 42 | 1.43 |
| | HSK63A-CMA40-70 | P2562005 | 63 | 40 | 70 | 70 | 27 | 41 | 31, 37, 43 | 1.93 |
| 100A | HSK100A-CMA16-60 | P2562011 | 100 | 16 | 32 | 60 | 17 | 27 | 27, 33, 39 | 2.22 |
| | HSK100A-CMA22-60 | P2562012 | 100 | 22 | 40 | 60 | 19 | 31 | 28, 34, 40 | 2.34 |
| | HSK100A-CMA27-60 | P2562013 | 100 | 27 | 48 | 60 | 21 | 33 | 29, 35, 41 | 2.56 |
| | HSK100A-CMA32-60 | P2562014 | 100 | 32 | 58 | 60 | 24 | 38 | 30, 36, 42 | 2.69 |
| | HSK100A-CMA40-70 | P2562015 | 100 | 40 | 70 | 70 | 27 | 41 | 31, 37, 43 | 3.39 |
| | HSK100A-CMA50-80 | P2562010 | 100 | 50 | 90 | 80 | 30 | 46 | 32, 38, 44 | 4.50 |

▶Without "Coolant Through".
没有“冷却剂”





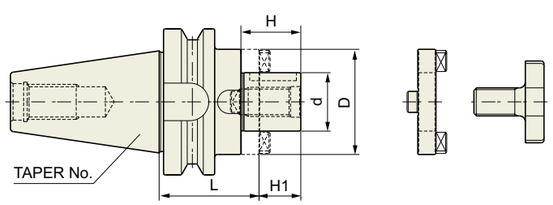
# SHELL MILL ARBOR

CMA

## COMBI-SHELL MILL ARBOR

CBT
(BT DUAL CONTACT)

## COMBI-端面铣刀刀柄




CBT | AT3 | 2.5G | 25,000 RPM | A

parts, Refer to page 160
配件，请参阅第160页

### ◆ STANDARD

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | d | L | D | H1 | H | PART No. | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|
| 30 | CBT30-CMA16-50 | P2775601 | 16 | 50 | 32 | 17 | 27 | 27, 33, 39 | 0.61 |
| | CBT30-CMA22-50 | P2775602 | 22 | 50 | 40 | 19 | 31 | 28, 34, 40 | 0.70 |
| | CBT30-CMA27-55 | P2775624 | 27 | 55 | 48 | 21 | 33 | 29, 35, 41 | 0.92 |
| 40 | CBT40-CMA16-55 | P2775604 | 16 | 55 | 32 | 17 | 27 | 27, 33, 39 | 1.14 |
| | CBT40-CMA22-55 | P2775605 | 22 | 55 | 40 | 19 | 31 | 28, 34, 40 | 1.26 |
| | CBT40-CMA27-55 | P2775606 | 27 | 55 | 48 | 21 | 33 | 29, 35, 41 | 1.42 |
| | CBT40-CMA32-60 | P2775607 | 32 | 60 | 58 | 24 | 38 | 30, 36, 42 | 1.72 |
| | CBT40-CMA40-70 | P2775625 | 40 | 70 | 70 | 27 | 41 | 31, 37, 43 | 2.46 |
| 50 | CBT50-CMA16-70 | P2775609 | 16 | 70 | 32 | 17 | 27 | 27, 33, 39 | 3.74 |
| | CBT50-CMA22-70 | P2775610 | 22 | 70 | 40 | 19 | 31 | 28, 34, 40 | 3.86 |
| | CBT50-CMA27-70 | P2775611 | 27 | 70 | 48 | 21 | 33 | 29, 35, 41 | 4.04 |
| | CBT50-CMA32-70 | P2775612 | 32 | 70 | 58 | 24 | 38 | 30, 36, 42 | 4.28 |
| | CBT50-CMA40-70 | P2775613 | 40 | 70 | 70 | 27 | 41 | 31, 37, 43 | 4.62 |
| | CBT50-CMA50-70 | P2775614 | 50 | 70 | 90 | 30 | 46 | 32, 38, 44 | 5.48 |

### ◆ EXTENDED

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | d | L | D | H1 | H | PART No. | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|
| 40 | CBT40-CMA16-100 | P2775615 | 16 | 100 | 32 | 17 | 27 | 27, 33, 39 | 1.41 |
| | CBT40-CMA22-100 | P2775616 | 22 | 100 | 40 | 19 | 31 | 28, 34, 40 | 1.68 |
| | CBT40-CMA27-100 | P2775617 | 27 | 100 | 48 | 21 | 33 | 29, 35, 41 | 2.02 |
| | CBT40-CMA32-100 | P2775618 | 32 | 100 | 58 | 24 | 38 | 30, 36, 42 | 2.51 |
| 50 | CBT50-CMA16-100 | P2775619 | 16 | 100 | 32 | 17 | 27 | 27, 33, 39 | 3.92 |
| | CBT50-CMA22-100 | P2775620 | 22 | 100 | 40 | 19 | 31 | 28, 34, 40 | 4.15 |
| | CBT50-CMA27-100 | P2775621 | 27 | 100 | 48 | 21 | 33 | 29, 35, 41 | 4.45 |
| | CBT50-CMA32-100 | P2775622 | 32 | 100 | 58 | 24 | 38 | 30, 36, 42 | 4.86 |
| | CBT50-CMA40-100 | P2775623 | 40 | 100 | 70 | 27 | 41 | 31, 37, 43 | 5.47 |

▶Without "Coolant Through".
没有“冷却剂”

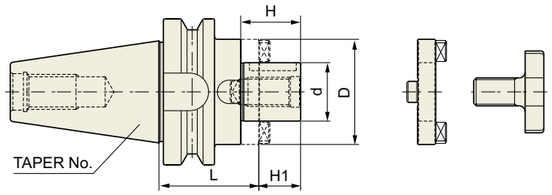
# SHELL MILL ARBOR

CMA

## COMBI-SHELL MILL ARBOR

JIS B6339/
MAS 403-BT

## COMBI-端面铣刀刀柄




JIS B6339-BT | AT3 | 6.3G | 15,000 RPM | A

parts, Refer to page 160
配件，请参阅第160页

### ◆ STANDARD

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | d | L | D | H1 | H | PART No. | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|
| 30 | BT30-CMA16-50 | P2544001 | 16 | 50 | 32 | 17 | 27 | 27, 33, 39 | 0.61 |
| | BT30-CMA22-50 | P2544002 | 22 | 50 | 40 | 19 | 31 | 28, 34, 40 | 0.70 |
| | BT30-CMA27-55 | P2544003 | 27 | 55 | 48 | 21 | 33 | 29, 35, 41 | 0.92 |
| 40 | BT40-CMA16-55 | P2544004 | 16 | 55 | 32 | 17 | 27 | 27, 33, 39 | 1.14 |
| | BT40-CMA22-55 | P2544005 | 22 | 55 | 40 | 19 | 31 | 28, 34, 40 | 1.26 |
| | BT40-CMA27-55 | P2544006 | 27 | 55 | 48 | 21 | 33 | 29, 35, 41 | 1.42 |
| | BT40-CMA32-60 | P2544007 | 32 | 60 | 58 | 24 | 38 | 30, 36, 42 | 1.72 |
| | BT40-CMA40-70 | P2544024 | 40 | 70 | 70 | 27 | 41 | 31, 37, 43 | 2.46 |
| 50 | BT50-CMA16-70 | P2544009 | 16 | 70 | 32 | 17 | 27 | 27, 33, 39 | 3.74 |
| | BT50-CMA22-70 | P2544010 | 22 | 70 | 40 | 19 | 31 | 28, 34, 40 | 3.86 |
| | BT50-CMA27-70 | P2544011 | 27 | 70 | 48 | 21 | 33 | 29, 35, 41 | 4.04 |
| | BT50-CMA32-70 | P2544012 | 32 | 70 | 58 | 24 | 38 | 30, 36, 42 | 4.28 |
| | BT50-CMA40-70 | P2544013 | 40 | 70 | 70 | 27 | 41 | 31, 37, 43 | 4.62 |
| | BT50-CMA50-70 | P2544014 | 50 | 70 | 90 | 30 | 46 | 32, 38, 44 | 5.48 |

### ◆ EXTENDED

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | d | L | D | H1 | H | PART No. | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|
| 40 | BT40-CMA16-100 | P2544015 | 16 | 100 | 32 | 17 | 27 | 27, 33, 39 | 1.41 |
| | BT40-CMA22-100 | P2544016 | 22 | 100 | 40 | 19 | 31 | 28, 34, 40 | 1.68 |
| | BT40-CMA27-100 | P2544017 | 27 | 100 | 48 | 21 | 33 | 29, 35, 41 | 2.02 |
| | BT40-CMA32-100 | P2544018 | 32 | 100 | 58 | 24 | 38 | 30, 36, 42 | 2.51 |
| 50 | BT50-CMA16-100 | P2544019 | 16 | 100 | 32 | 17 | 27 | 27, 33, 39 | 3.92 |
| | BT50-CMA22-100 | P2544020 | 22 | 100 | 40 | 19 | 31 | 28, 34, 40 | 4.15 |
| | BT50-CMA27-100 | P2544021 | 27 | 100 | 48 | 21 | 33 | 29, 35, 41 | 4.45 |
| | BT50-CMA32-100 | P2544022 | 32 | 100 | 58 | 24 | 38 | 30, 36, 42 | 4.86 |
| | BT50-CMA40-100 | P2544023 | 40 | 100 | 70 | 27 | 41 | 31, 37, 43 | 5.47 |

▶Without "Coolant Through".
没有“冷却剂”



TOOLING SYSTEM

HYDRAULIC CHUCK
SHRINK FIT HOLDER
ER COLLET CHUCK
END MILL HOLDER & SIDE LOCK ARBOR
SHELL MILL ARBOR
POWER MILLING CHUCK
MORSE TAPER ARBOR
SK SLIM CHUCK
SYNCHRO TAPPING CHUCK
ONE STEP TAPPING CHUCK
TAPPING ER CHUCK
TAPPING CHUCK
FACE MILL ARBOR
COPY MILL ARBOR & INDEXABLE DRILL HOLDER
NC DRILL CHUCK & OTHER TOOL HOLDERS
BORING SYSTEM
ACCESSORY & OTHERS

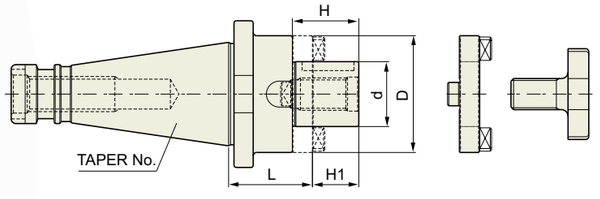
# SHELL MILL ARBOR

CMA

## COMBI-SHELL MILL ARBOR

DIN 2080-ISO

## COMBI-端面铣刀刀柄




DIN 2080-ISO | AT3 | A

parts, Refer to page 160
配件，请参阅第160页

### ◆ STANDARD

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | d | L | D | H1 | H | PART No. | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|
| 30 | ISO30-CMA16-35 | P2514001 | 16 | 35 | 32 | 17 | 27 | 27, 33, 39 | 0.52 |
| | ISO30-CMA22-35 | P2514002 | 22 | 35 | 40 | 19 | 31 | 28, 34, 40 | 0.63 |
| | ISO30-CMA27-35 | P2514003 | 27 | 35 | 48 | 21 | 33 | 29, 35, 41 | 0.72 |
| 40 | ISO40-CMA16-52 | P2514004 | 16 | 52 | 32 | 17 | 27 | 27, 33, 39 | 0.99 |
| | ISO40-CMA22-52 | P2514005 | 22 | 52 | 40 | 19 | 31 | 28, 34, 40 | 1.15 |
| | ISO40-CMA27-52 | P2514006 | 27 | 52 | 48 | 21 | 33 | 29, 35, 41 | 1.37 |
| | ISO40-CMA32-52 | P2514007 | 32 | 52 | 58 | 24 | 38 | 30, 36, 42 | 1.65 |
| | ISO40-CMA40-52 | P2514008 | 40 | 52 | 70 | 27 | 41 | 31, 37, 43 | 1.94 |
| 50 | ISO50-CMA16-55 | P2514009 | 16 | 55 | 32 | 17 | 27 | 27, 33, 39 | 2.79 |
| | ISO50-CMA22-55 | P2514010 | 22 | 55 | 40 | 19 | 31 | 28, 34, 40 | 2.95 |
| | ISO50-CMA27-55 | P2514011 | 27 | 55 | 48 | 21 | 33 | 29, 35, 41 | 3.17 |
| | ISO50-CMA32-55 | P2514012 | 32 | 55 | 58 | 24 | 38 | 30, 36, 42 | 3.49 |
| | ISO50-CMA40-55 | P2514013 | 40 | 55 | 70 | 27 | 41 | 31, 37, 43 | 3.85 |
| | ISO50-CMA50-55 | P2514014 | 50 | 55 | 90 | 30 | 46 | 32, 38, 44 | 4.88 |

### ◆ EXTENDED

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | d | L | D | H1 | H | PART No. | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|
| 40 | ISO40-CMA16-125 | P2514015 | 16 | 125 | 32 | 17 | 27 | 27, 33, 39 | 1.41 |
| | ISO40-CMA22-125 | P2514016 | 22 | 125 | 40 | 19 | 31 | 28, 34, 40 | 1.78 |
| | ISO40-CMA27-125 | P2514017 | 27 | 125 | 48 | 21 | 33 | 29, 35, 41 | 2.35 |
| | ISO40-CMA32-125 | P2514018 | 32 | 125 | 58 | 24 | 38 | 30, 36, 42 | 3.07 |
| 50 | ISO50-CMA16-125 | P2514019 | 16 | 125 | 32 | 17 | 27 | 27, 33, 39 | 3.21 |
| | ISO50-CMA22-125 | P2514020 | 22 | 125 | 40 | 19 | 31 | 28, 34, 40 | 3.60 |
| | ISO50-CMA27-125 | P2514021 | 27 | 125 | 48 | 21 | 33 | 29, 35, 41 | 4.11 |
| | ISO50-CMA32-125 | P2514022 | 32 | 125 | 58 | 24 | 38 | 30, 36, 42 | 4.85 |
| | ISO50-CMA40-125 | P2514023 | 40 | 125 | 70 | 27 | 41 | 31, 37, 43 | 5.26 |

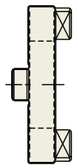
▶Without "Coolant Through".
没有“冷却剂”

# SHELL MILL ARBOR

PART

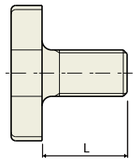
## DRIVE RING, BOLT & KEY (For COMBI-SHELL MILL ARBOR)

## DRIVE RING, 螺丝&传动销 (COMBI-端面铣刀刀柄用)



### ■ CLUTCH DRIVE RING 传动环

| No. | CLUTCH DRIVE RING 传动环 | EDP No. | CMA SPIGOT Dia. |
|---|---|---|---|
| 27 | #16 | P2514063 | 16 |
| 28 | #22 | P2514064 | 22 |
| 29 | #27 | P2514065 | 27 |
| 30 | #32 | P2514066 | 32 |
| 31 | #40 | P2514067 | 40 |
| 32 | #50 | P2514068 | 50 |




### ■ COLLAR BOLT 十字螺丝

| No. | COLLAR BOLT 十字螺丝 | EDP No. | L (Length) | CMA SPIGOT Dia. |
|---|---|---|---|---|
| 33 | M8×1.25 | P2514051 | 16 | 16 |
| 34 | M10×1.5 | P2514052 | 18 | 22 |
| 35 | M12×1.75 | P2514053 | 22 | 27 |
| 36 | M16×2.0 | P2514054 | 26 | 32 |
| 37 | M20×2.5 | P2514055 | 30 | 40 |
| 38 | M24×3.0 | P2514056 | 36 | 50 |

### ■ KEY 传动销

| No. | KEY 传动销 | EDP No. | CMA SPIGOT Dia. |
|---|---|---|---|
| 39 | 4×4×20 | P2514057 | 16 |
| 40 | 6×6×25 | P2514058 | 22 |
| 41 | 7×7×25 | P2514059 | 27 |
| 42 | 8×7×28 | P2514060 | 32 |
| 43 | 10×8×32 | P2514061 | 40 |
| 44 | 12×8×36 | P2514062 | 50 |



YG-1 TOOLING SYSTEM

# POWER MILLING CHUCK

# 强力刀柄

**DIN 69871-SK**
HIGH-SPEED TYPE / STANDARD TYPE

**DIN 69893/ISO 12164-1-HSK**
HIGH-SPEED TYPE / STANDARD TYPE

**CBT (BT DUAL CONTACT)**

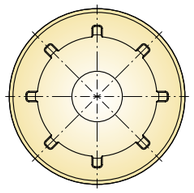
**JIS B6339/MAS 403-BT**
HIGH-SPEED TYPE / STANDARD TYPE

**DIN 228-MTA/MTB, R8**

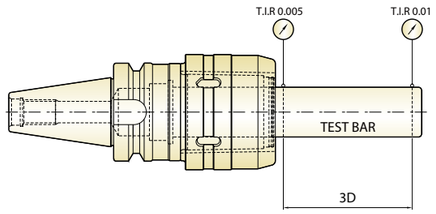
**MILLING CHUCK SET**
STANDARD MILLING CHUCK SET
Q.C MILLING CHUCK SET

**ACCESSORY**
END MILL COLLET (K, CK, MT, JT), SPANNER

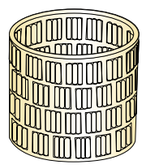
- Rigidity is strengthened through slot made at inside milling chuck, which prevents deformation of milling chuck. Smooth cutting is achieved by maximizing end mill clamping power.
- Enough thickness of clamping part prevents chattering and ensures durability.
- 在强力刀柄内孔加工内槽，且保持刀柄本体的刚性.
  切削加工时强力刀柄无变形并实现强劲的夹持力，实现舒畅的切削.
- 充分把握夹持部位的厚度，防止震动保障内固性.



- High precision can be achieved through accurate roundness of clamping part, deburred surface and rigidity
  (deviation of concentricity : below 2, roughness : below RZ B1.0~1.5)
- Maintaining T.I.R not exceeding 0.01mm at 3D from nose part
- 加工部位真圆度及表面震动和刚性实现高精密加工.
  (真圆度2以内，光照度RZ B1.0～1.5以内)
- 3D T.I.R 跳动 不超过 0.01mm




- 160% more of bearings are used in needle roller than other make's chucks, which provides strong clamping power and high durability by dispersing surface pressure even in case strong load is applied.
- 滚针套上使用的滚针比其它公司多160%故此夹紧时，滚针套利于分散强力的面压，从而体现强劲的缔结力和优秀的内固性.



- In order to improve durability, YG-1 milling chuck is passed through following processes.
  - "Normalizing" treatment for unifying material composition and removal internal stress.
  - Ultralow temperature (-90°C) treatmemt called “Sub-Zero treatment”after carburizing heat treatment for prior removal of any deformation of milling chuck after use for long periods of time.
- 新世纪的强力刀柄为了提高耐久性进行以下工序
  - 为了材质结构的均匀化及内部应力去除 进行正火处理
  - 为了长时间使用后 去除变形 进行超低温-90°(SUB-ZERO)处理





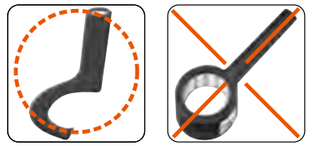


# High-Speed POWER MILLING CHUCK
# 高速强力刀柄

- Achieving optimum cutting for High-Speed heavy duty cutting and finishing with strong torque power
- Perfect clamping from 3mm depth of I.D entrance
- Achieving stability when exchanging and setting tools by stable fastening and unfastening torque

- 强劲的夹紧力实现高速重切削及最佳的精切削
- 内径入口部3mm以下完美夹持
- 稳定的螺母夹紧及脱紧扭矩，
  在更换安装刀具时实现稳定性能

**To use ordinary spanner**
**使用经济型扳手**



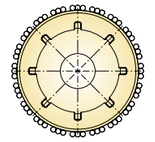
- No need for expensive Ratchet spanner
  => Using ordinary spanner
- 无需使用高价棘轮扳手，
  使用一般常用扳手.

**Balancing grade 动平衡等级**

- G 6.3 / 20,000 RPM
  => Optimizing cutting effect during
  High-Speed heavy duty cutting and finishing
- G6.3 20,000rpm
  => 高速重切削及最佳的精切削

**Lots of needle bearings**
**大量滚针轴承**

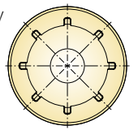
- Strong load during clamping
- Dispersing surface pressure through needle bearing



- 夹紧时通过大量滚针群分散强力的负荷
- 使用开放式滚针套筒，夹紧时分散定压

**Slot design at inside milling chuck**
**强力刀柄内部槽设计**

- Strengthening body rigidity
- Preventing deformation during cutting
- Maximizing torque power
- Preventing chattering and ensuring durability



- 保证本体刚性
- 切削时防止变形
- 夹紧力最大化
- 防止震动及耐久性保障

## Strong Torque Power 强劲的夹紧力

| Milling chuck 强力刀柄规格 (I.D) | Standard 公差(锥柄) | Tolerance 公差标准 (Taper shank) | Run-out(跳动) (3 x D) | Clamping torque 夹紧力矩 |
|---|---|---|---|---|
| C20 | AT3 | ISO 30 (0~+0.002)<br>ISO 40 (0~+0.003)<br>ISO 50 (0~+0.004) | 0.01mm at 3D | 980Nm |
| C25 | | | | 1,760Nm |
| C32 | | | | 3,430Nm |
| C42 | | | | 4,900Nm |

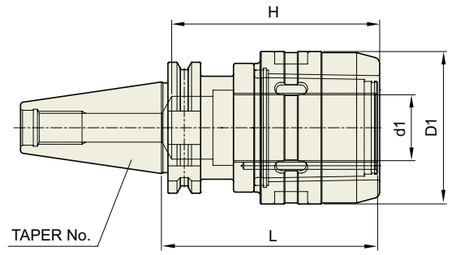
# POWER MILLING CHUCK

C

## HIGH-SPEED POWER MILLING CHUCK

DIN 69871-SK

## 高速强力刀柄




DIN 69871-SK | AT3 | 6.3G | 20,000 RPM | AD

Collet, spanner, refer to page 176
筒夹及扳手，请参阅第176页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | d1 | D1 | L | H | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|
| 30 | **SK30-C20-80HS** | **P2773005** | 20 | 54 | 80 | 70 | 1.15 |
| | **SK30-C25-80HS** | **P2773006** | 25 | 62.5 | 70 | 80 | 1.48 |
| 40 | **SK40-C20-105HS** | **P2526022** | 20 | 54 | 105 | 70 | 1.77 |
| | **SK40-C25-105HS** | **P2773001** | 25 | 62.5 | 105 | 80 | 2.10 |
| | **SK40-C32-105HS** | **P2526023** | 32 | 74 | 105 | 100 | 2.40 |
| | **SK40-C32-135HS** | **P2773007** | 32 | 74 | 135 | 100 | 3.10 |
| 50 | **SK50-C20-105HS** | **P2773002** | 20 | 54 | 105 | 70 | 3.40 |
| | **SK50-C25-105HS** | **P2773003** | 25 | 62.5 | 105 | 80 | 3.80 |
| | **SK50-C32-105HS** | **P2773004** | 32 | 74 | 105 | 100 | 4.30 |
| | **SK50-C32-135HS** | **P2526024** | 32 | 74 | 135 | 100 | 4.90 |
| | **SK50-C32-165HS** | **P2526025** | 32 | 74 | 165 | 100 | 5.60 |
| | **SK50-C42-115HS** | **P2773008** | 42 | 92 | 115 | 110 | 4.60 |
| | **SK50-C42-135HS** | **P2773009** | 42 | 92 | 135 | 110 | 5.60 |
| | **SK50-C42-165HS** | **P2773010** | 42 | 92 | 165 | 110 | 6.10 |

▶CAT(ANSI B5.50) taper and Inch type products are available.
CAT(ANSI B5.50)锥柄及英制产品可供选择



TOOLING SYSTEM

HYDRAULIC CHUCK
SHRINK FIT HOLDER
ER COLLET CHUCK
END MILL HOLDER & SIDE LOCK ARBOR
SHELL MILL ARBOR
POWER MILLING CHUCK
MORSE TAPER ARBOR
SK SLIM CHUCK
SYNCHRO TAPPING CHUCK
ONE STEP TAPPING CHUCK
TAPPING ER CHUCK
TAPPING CHUCK
FACE MILL ARBOR
COPY MILL ARBOR & INDEXABLE DRILL HOLDER
NC DRILL CHUCK & OTHER TOOL HOLDERS
BORING SYSTEM
ACCESSORY & OTHERS

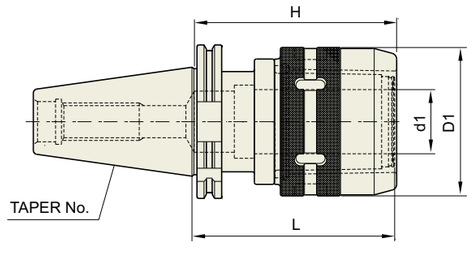
# POWER MILLING CHUCK

C

## POWER MILLING CHUCK

DIN 69871-SK

## 强力刀柄




DIN 69871-SK | AT3 | AD

Collet, spanner, refer to page 176
筒夹及扳手，请参阅第176页

◆ **STUB**

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | d1 | D1 | L | H | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|
| 30 | SK30-C20-80 | P2526001 | 20 | 54 | 80 | 70 | 1.15 |
| | SK30-C25-80 | P2526002 | 25 | 62.5 | 70 | 80 | 1.48 |
| 40 | SK40-C20-90 | P2526003 | 20 | 54 | 90 | 70 | 1.60 |
| | SK40-C32-90 | P2526004 | 32 | 72 | 90 | 100 | 2.00 |
| 50 | SK50-C20-80 | P2526005 | 20 | 54 | 80 | 70 | 3.22 |
| | SK50-C25-90 | P2526006 | 25 | 62.5 | 90 | 80 | 3.61 |
| | SK50-C32-90 | P2526007 | 32 | 72 | 90 | 100 | 3.87 |

◆ **STANDARD**

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | d1 | D1 | L | H | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|
| 40 | SK40-C20-105 | P2526008 | 20 | 54 | 105 | 70 | 1.77 |
| | SK40-C25-105 | P2526009 | 25 | 62.5 | 105 | 80 | 2.01 |
| | SK40-C32-105 | P2526010 | 32 | 72 | 105 | 100 | 2.42 |
| 50 | SK50-C20-105 | P2526011 | 20 | 54 | 105 | 70 | 3.39 |
| | SK50-C25-105 | P2526012 | 25 | 62.5 | 105 | 80 | 3.78 |
| | SK50-C32-105 | P2526013 | 32 | 72 | 105 | 100 | 4.31 |
| | SK50-C42-115 | P2526014 | 42 | 92 | 115 | 110 | 4.53 |

◆ **EXTENDED**

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | d1 | D1 | L | H | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|
| 40 | SK40-C32-135 | P2526015 | 32 | 72 | 135 | 100 | 3.11 |
| 50 | SK50-C32-135 | P2526018 | 32 | 72 | 135 | 100 | 4.94 |
| | SK50-C42-135 | P2526017 | 42 | 92 | 135 | 110 | 5.62 |

◆ **EXTRA EXTENDED**

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | d1 | D1 | L | H | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|
| 50 | SK50-C32-165 | P2526020 | 32 | 72 | 165 | 100 | 5.59 |
| | SK50-C42-165 | P2526016 | 42 | 92 | 165 | 110 | 6.10 |

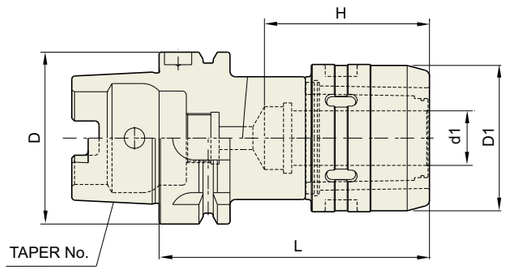
▶CAT(ANSI B5.50) taper and Inch type products are available.
CAT(ANSI B5.50)锥柄及英制产品可供选择

# POWER MILLING CHUCK

C

## HIGH-SPEED POWER MILLING CHUCK
## 高速强力刀柄

DIN 69893/
ISO 12164-1-HSK FORM A




DIN 69893-HSK | 6.3G | 20,000 RPM | AD

Collet, spanner, refer to page 176
筒夹及扳手，请参阅第176页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | d1 | D1 | L | H | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|
| 50A | **HSK50A-C20-100HS** | **P2773102** | 20 | 54 | 100 | 70 | 1.30 |
| 63A | **HSK63A-C20-105HS** | **P2562016** | 20 | 54 | 105 | 70 | 1.50 |
| | **HSK63A-C25-120HS** | **P2773103** | 25 | 62.5 | 120 | 80 | 2.20 |
| | **HSK63A-C32-130HS** | **P2562017** | 32 | 74 | 130 | 100 | 2.70 |
| 100A | **HSK100A-C20-110HS** | **P2773104** | 20 | 54 | 110 | 70 | 3.50 |
| | **HSK100A-C25-130HS** | **P2773105** | 25 | 62.5 | 130 | 80 | 3.80 |
| | **HSK100A-C32-135HS** | **P2773101** | 32 | 74 | 135 | 100 | 4.20 |
| | **HSK100A-C42-135HS** | **P2773106** | 42 | 74 | 135 | 100 | 5.30 |

▶CAT(ANSI B5.50) taper and Inch type products are available.
CAT(ANSI B5.50)锥柄及英制产品可供选择



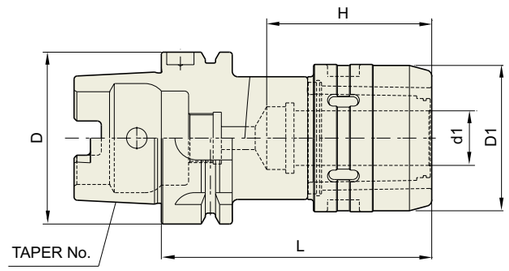
TOOLING SYSTEM
HYDRAULIC CHUCK
SHRINK FIT HOLDER
ER COLLET CHUCK
END MILL HOLDER & SIDE LOCK ARBOR
SHELL MILL ARBOR
POWER MILLING CHUCK
MORSE TAPER ARBOR
SK SLIM CHUCK
SYNCHRO TAPPING CHUCK
ONE STEP TAPPING CHUCK
TAPPING ER CHUCK
TAPPING CHUCK
FACE MILL ARBOR
COPY MILL ARBOR & INDEXABLE DRILL HOLDER
NC DRILL CHUCK & OTHER TOOL HOLDERS
BORING SYSTEM
ACCESSORY & OTHERS

# POWER MILLING CHUCK

C

## POWER MILLING CHUCK
## 强力刀柄

DIN 69893/
ISO 12164-1-HSK FORM A




DIN 69893-HSK | AD

Collet, spanner, refer to page 176
筒夹及扳手，请参阅第176页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | d1 | D | D1 | L | H | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|
| 50A | **HSK50A-C20-100** | **P2773151** | 20 | 50 | 54 | 100 | 70 | 1.30 |
| 63A | **HSK63A-C20-105** | **P2773152** | 20 | 63 | 54 | 105 | 70 | 1.50 |
| | **HSK63A-C32-130** | **P2600032** | 32 | 63 | 72 | 130 | 100 | 2.70 |
| 100A | **HSK100A-C20-110** | **P2773153** | 20 | 100 | 54 | 110 | 70 | 3.50 |
| | **HSK100A-C32-135** | **P2773154** | 32 | 100 | 72 | 135 | 100 | 4.20 |
| | **HSK100A-C42-135** | **P2773155** | 42 | 100 | 92 | 135 | 100 | 5.30 |

### ◆ ACCESSORY 配件

| END MILL COLLET | MODEL No. 型号 |
|---|---|
| | K20-6, 8, 10, 12, 16 |
| | K32-6, 8, 10, 12, 16, 20, 25 |
| | K42-6, 8, 10, 12, 16, 20, 25, 32 |

▶Special size of Ø3, Ø4 or Ø5 can be produced and supplied upon request.
特殊尺寸 Ø3， Ø4 or Ø5 可定制

| END MILL COLLET | MODEL No. 型号 |
|---|---|
| | CK20-6, 8, 10, 12, 16 |
| | CK25-6, 8, 10, 12, 16, 20 |
| | CK32-6, 8, 10, 12, 16, 20, 25 |
| | CK42-6, 8, 10, 12, 16, 20, 25, 32 |

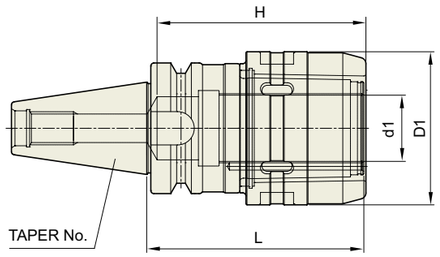
| SPANNER | MODEL No. 型号 |
|---|---|
| | C20 SP |
| | C25 SP |
| | C32 SP |
| | C42 SP |

# POWER MILLING CHUCK

C

## HIGH-SPEED POWER MILLING CHUCK
## 高速强力刀柄

CBT
(BT DUAL CONTACT)




CBT AT3 6.3G 20,000 RPM AD

Collet, spanner, refer to page 176
筒夹及扳手，请参阅第176页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | d1 | D1 | L | H | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|
| 30 | **CBT30-C20-75HS** | **P2773251** | 20 | 54 | 75 | 70 | 1.50 |
| | **CBT30-C25-80HS** | **P2773252** | 25 | 62.5 | 80 | 70 | 2.00 |
| 40 | **CBT40-C20-80HS** | **P2773253** | 20 | 54 | 80 | 70 | 2.00 |
| | **CBT40-C20-105HS** | **P2773254** | 20 | 54 | 105 | 70 | 2.10 |
| | **CBT40-C25-105HS** | **P2773255** | 25 | 62.5 | 105 | 80 | 2.50 |
| | **CBT40-C32-90HS** | **P2773256** | 32 | 74 | 90 | 100 | 3.00 |
| | **CBT40-C32-105HS** | **P2773257** | 32 | 74 | 105 | 100 | 3.10 |
| | **CBT40-C32-135HS** | **P2773258** | 32 | 74 | 135 | 100 | 3.30 |
| 50 | **CBT50-C20-105HS** | **P2773259** | 20 | 54 | 105 | 70 | 4.50 |
| | **CBT50-C20-135HS** | **P2773260** | 20 | 54 | 135 | 70 | 4.90 |
| | **CBT50-C20-165HS** | **P2773261** | 20 | 54 | 165 | 70 | 5.40 |
| | **CBT50-C25-105HS** | **P2773262** | 25 | 62.5 | 105 | 80 | 5.20 |
| | **CBT50-C25-135HS** | **P2773263** | 25 | 62.5 | 135 | 80 | 5.80 |
| | **CBT50-C25-165HS** | **P2773264** | 25 | 62.5 | 165 | 80 | 6.20 |
| | **CBT50-C32-105HS** | **P2773265** | 32 | 74 | 105 | 100 | 6.00 |
| | **CBT50-C32-135HS** | **P2773266** | 32 | 74 | 135 | 100 | 6.70 |
| | **CBT50-C32-165HS** | **P2773267** | 32 | 74 | 165 | 100 | 7.40 |
| | **CBT50-C42-115HS** | **P2773268** | 42 | 92 | 115 | 110 | 6.70 |
| | **CBT50-C42-135HS** | **P2773269** | 42 | 92 | 135 | 110 | 7.60 |
| | **CBT50-C42-165HS** | **P2773270** | 42 | 92 | 165 | 110 | 8.30 |

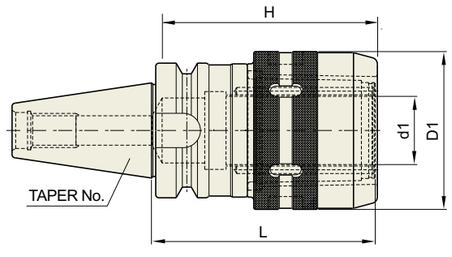


POWER MILLING CHUCK

C

## POWER MILLING CHUCK
## 强力刀柄

CBT
(BT DUAL CONTACT)




CBT AT3 AD

Collet, spanner, refer to page 176
筒夹及扳手，请参阅第176页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | d1 | D1 | L | H | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|
| 30 | **CBT30-C20-75** | **P2773204** | 20 | 54 | 75 | 70 | 1.50 |
| | **CBT30-C25-80** | **P2773205** | 25 | 62.5 | 80 | 70 | 2.00 |
| 40 | **CBT40-C20-80** | **P2773201** | 20 | 54 | 80 | 70 | 2.00 |
| | **CBT40-C20-105** | **P2773206** | 20 | 54 | 105 | 70 | 2.10 |
| | **CBT40-C25-105** | **P2773207** | 25 | 62.5 | 105 | 80 | 2.50 |
| | **CBT40-C32-90** | **P2773202** | 32 | 72 | 90 | 100 | 3.00 |
| | **CBT40-C32-105** | **P2773203** | 32 | 72 | 105 | 100 | 3.10 |
| | **CBT40-C32-135** | **P2773208** | 32 | 72 | 135 | 100 | 3.30 |
| 50 | **CBT50-C20-105** | **P2773209** | 20 | 54 | 105 | 70 | 4.50 |
| | **CBT50-C20-135** | **P2773210** | 20 | 54 | 135 | 70 | 4.90 |
| | **CBT50-C20-165** | **P2773211** | 20 | 54 | 165 | 70 | 5.40 |
| | **CBT50-C25-105** | **P2773212** | 25 | 62.5 | 105 | 80 | 5.20 |
| | **CBT50-C25-135** | **P2773213** | 25 | 62.5 | 135 | 80 | 5.80 |
| | **CBT50-C25-165** | **P2773214** | 25 | 62.5 | 165 | 80 | 6.20 |
| | **CBT50-C32-105** | **P2773215** | 32 | 72 | 105 | 100 | 6.00 |
| | **CBT50-C32-115** | **P2773216** | 32 | 72 | 115 | 100 | 6.20 |
| | **CBT50-C32-135** | **P2773217** | 32 | 72 | 135 | 100 | 6.70 |
| | **CBT50-C32-165** | **P2773218** | 32 | 72 | 165 | 100 | 7.40 |
| | **CBT50-C42-115** | **P2773219** | 42 | 92 | 115 | 110 | 6.70 |
| | **CBT50-C42-135** | **P2773220** | 42 | 92 | 135 | 110 | 7.60 |
| | **CBT50-C42-165** | **P2773221** | 42 | 92 | 165 | 110 | 8.30 |

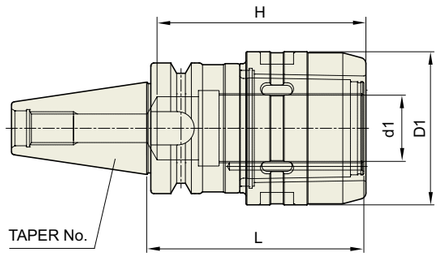
# POWER MILLING CHUCK

C

## HIGH-SPEED POWER MILLING CHUCK

JIS B6339/MAS 403-BT

## 高速强力刀柄




JIS B6339-BT | AT3 | 6.3G | 20,000 RPM | AD

Collet, spanner, refer to page 176
筒夹及扳手，请参阅第176页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | d1 | D1 | L | H | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|
| 30 | BT30-C20-75HS | P2546101 | 20 | 54 | 75 | 70 | 1.50 |
| | BT30-C25-80HS | P2546102 | 25 | 62.5 | 80 | 70 | 2.00 |
| 40 | BT40-C20-80HS | P2546103 | 20 | 54 | 80 | 70 | 2.00 |
| | BT40-C20-105HS | P2546104 | 20 | 54 | 105 | 70 | 2.10 |
| | BT40-C25-105HS | P2546105 | 25 | 62.5 | 105 | 80 | 2.50 |
| | BT40-C32-90HS | P2546106 | 32 | 74 | 90 | 100 | 3.00 |
| | BT40-C32-105HS | P2546107 | 32 | 74 | 105 | 100 | 3.10 |
| | BT40-C32-135HS | P2546108 | 32 | 74 | 135 | 100 | 3.30 |
| 50 | BT50-C20-105HS | P2546109 | 20 | 54 | 105 | 70 | 4.50 |
| | BT50-C20-135HS | P2546110 | 20 | 54 | 135 | 70 | 4.90 |
| | BT50-C20-165HS | P2546111 | 20 | 54 | 165 | 70 | 5.40 |
| | BT50-C25-105HS | P2546112 | 25 | 62.5 | 105 | 80 | 5.20 |
| | BT50-C25-135HS | P2546113 | 25 | 62.5 | 135 | 80 | 5.80 |
| | BT50-C25-165HS | P2546114 | 25 | 62.5 | 165 | 80 | 6.20 |
| | BT50-C32-105HS | P2546115 | 32 | 74 | 105 | 100 | 6.00 |
| | BT50-C32-135HS | P2546116 | 32 | 74 | 135 | 100 | 6.70 |
| | BT50-C32-165HS | P2546117 | 32 | 74 | 165 | 100 | 7.40 |
| | BT50-C42-115HS | P2546118 | 42 | 92 | 115 | 110 | 6.70 |
| | BT50-C42-135HS | P2546119 | 42 | 92 | 135 | 110 | 7.60 |
| | BT50-C42-165HS | P2546120 | 42 | 92 | 165 | 110 | 8.30 |

▶CAT(ANSI B5.50) taper and Inch type products are available.
CAT(ANSI B5.50)锥柄及英制产品可供选择



TOOLING SYSTEM

HYDRAULIC CHUCK
SHRINK FIT HOLDER
ER COLLET CHUCK
END MILL HOLDER & SIDE LOCK ARBOR
SHELL MILL ARBOR
POWER MILLING CHUCK
MORSE TAPER ARBOR
SK SLIM CHUCK
SYNCHRO TAPPING CHUCK
ONE STEP TAPPING CHUCK
TAPPING ER CHUCK
TAPPING CHUCK
FACE MILL ARBOR
COPY MILL ARBOR & INDEXABLE DRILL HOLDER
NC DRILL CHUCK & OTHER TOOL HOLDERS
BORING SYSTEM
ACCESSORY & OTHERS

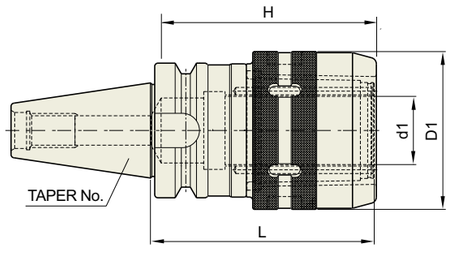
# POWER MILLING CHUCK

C

## POWER MILLING CHUCK

JIS B6339/MAS 403-BT

## 强力刀柄




JIS B6339-BT | AT3 | AD

Collet, spanner, refer to page 176
筒夹及扳手，请参阅第176页

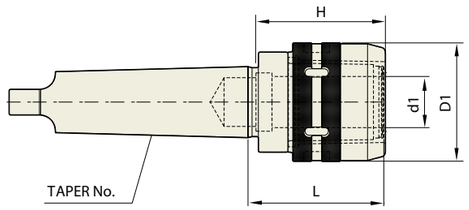
Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | d1 | D1 | L | H | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|
| 30 | BT30-C20-75 | P2546001 | 20 | 54 | 75 | 70 | 1.50 |
| | BT30-C25-80 | P2546002 | 25 | 62.5 | 80 | 70 | 2.00 |
| 40 | BT40-C20-80 | P2546003 | 20 | 54 | 80 | 70 | 2.00 |
| | BT40-C20-105 | P2546004 | 20 | 54 | 105 | 70 | 2.10 |
| | BT40-C25-105 | P2546005 | 25 | 62.5 | 105 | 80 | 2.50 |
| | BT40-C32-90 | P2546006 | 32 | 72 | 90 | 100 | 3.00 |
| | BT40-C32-105 | P2546007 | 32 | 72 | 105 | 100 | 3.10 |
| | BT40-C32-135 | P2546008 | 32 | 72 | 135 | 100 | 3.30 |
| 50 | BT50-C20-105 | P2546009 | 20 | 54 | 105 | 70 | 4.50 |
| | BT50-C20-135 | P2546010 | 20 | 54 | 135 | 70 | 4.90 |
| | BT50-C20-165 | P2546011 | 20 | 54 | 165 | 70 | 5.40 |
| | BT50-C25-105 | P2546012 | 25 | 62.5 | 105 | 80 | 5.20 |
| | BT50-C25-135 | P2546013 | 25 | 62.5 | 135 | 80 | 5.80 |
| | BT50-C25-165 | P2546014 | 25 | 62.5 | 165 | 80 | 6.20 |
| | BT50-C32-105 | P2546015 | 32 | 72 | 105 | 100 | 6.00 |
| | BT50-C32-115 | P2546016 | 32 | 72 | 115 | 100 | 6.20 |
| | BT50-C32-135 | P2546017 | 32 | 72 | 135 | 100 | 6.70 |
| | BT50-C32-165 | P2546018 | 32 | 72 | 165 | 100 | 7.40 |
| | BT50-C42-115 | P2546019 | 42 | 92 | 115 | 110 | 6.70 |
| | BT50-C42-135 | P2546020 | 42 | 92 | 135 | 110 | 7.60 |
| | BT50-C42-165 | P2546121 | 42 | 92 | 165 | 110 | 8.30 |

▶CAT(ANSI B5.50) taper and Inch type products are available.
CAT(ANSI B5.50)锥柄及英制产品可供选择

## POWER MILLING CHUCK
## 强力刀柄

DIN 228-MTA



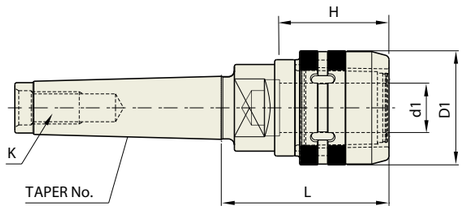
Collet, spanner, refer to page 176
筒夹及扳手，请参阅第176页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | d1 | D1 | L | H | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|
| 4 | **MTA4-C32** | **P2546122** | 32 | 72 | 98 | 85 | 2.57 |
| 5 | **MTA5-C32** | **P2546123** | 32 | 72 | 85 | 100 | 3.06 |
| | **MTA5-C42** | **P2546124** | 42 | 92 | 114 | 100 | 3.45 |
| 6 | **MTA6-C42** | **P2546125** | 42 | 92 | 99 | 110 | 4.14 |

▶In case of MT6, it is required to inform machine model number and company name for selection of cutter groove.
在MT6的情况下，需要通知机床型号和公司名称来选择切屑槽

DIN 228-MTB



Collet, spanner, refer to page 176
筒夹及扳手，请参阅第176页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | d1 | D1 | L | H | K | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|
| 3 | **MTB3-C20** | **P2546126** | 20 | 54 | 74 | 65 | M12 | 2.10 |
| 4 | **MTB4-C32** | **P2546127** | 32 | 72 | 98 | 80 | M16 | 2.57 |
| 5 | **MTB5-C32** | **P2546128** | 32 | 72 | 85 | 100 | M20 | 3.06 |
| | **MTB5-C42** | **P2546129** | 42 | 92 | 114 | 100 | M20 | 3.45 |



TOOLING SYSTEM

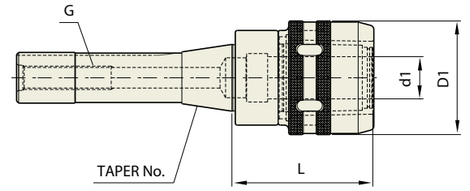
HYDRAULIC CHUCK
SHRINK FIT HOLDER
ER COLLET CHUCK
END MILL HOLDER & SIDE LOCK ARBOR
SHELL MILL ARBOR
POWER MILLING CHUCK
MORSE TAPER ARBOR
SK SLIM CHUCK
SYNCHRO TAPPING CHUCK
ONE STEP TAPPING CHUCK
TAPPING ER CHUCK
TAPPING CHUCK
FACE MILL ARBOR
COPY MILL ARBOR & INDEXABLE DRILL HOLDER
NC DRILL CHUCK & OTHER TOOL HOLDERS
BORING SYSTEM
ACCESSORY & OTHERS

YG POWER MILLING CHUCK

C

## POWER MILLING CHUCK
## 强力刀柄

BRIDGEPORT-R8



Collet, spanner, refer to page 176
筒夹及扳手，请参阅第176页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | d1 | D1 | L | G | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|
| R8 | R8-C20 | P2546130 | 20 | 54 | 69 | U7/16-20 | 1.40 |

# POWER MILLING CHUCK

C

## MILLING CHUCK STANDARD SET
## 强力刀柄套装

| TAPER 锥度号 | STANDARD SET MODEL No. 标准套装型号 | EDP No. | MILLING CHUCK 强力刀柄 | END MILL COLLET 铣刀筒夹 | SPANNER |
|---|---|---|---|---|---|
| SK | **SSK40-C20** | **P2526031** | SK40-C20-105 | K20-6, 8, 10, 12, 16 (5pcs) | C20 SP |
| | **SSK40-C32** | **P2773301** | SK40-C32-105 | K32-6, 8, 10, 12, 16, 20, 25 (7pcs) | C32 SP |
| | **SSK50-C32** | **P2773302** | SK50-C32-105 | K32-6, 8, 10, 12, 16, 20, 25 (7pcs) | C32 SP |
| | **SSK50-C42** | **P2773303** | SK50-C42-115 | K42-6, 8, 10, 12, 16, 20, 25, 32 (8pcs) | C42 SP |
| BT | **SBT40-C20** | **P2546021** | BT40-C20-105 | K20-6, 8, 10, 12, 16 (5pcs) | C20 SP |
| | **SBT40-C32** | **P2546022** | BT40-C32-105 | K32-6, 8, 10, 12, 16, 20, 25 (7pcs) | C32 SP |
| | **SBT50-C32** | **P2546023** | BT50-C32-105 | K32-6, 8, 10, 12, 16, 20, 25 (7pcs) | C32 SP |
| | **SBT50-C42** | **P2546024** | BT50-C42-115 | K42-6, 8, 10, 12, 16, 20, 25, 32 (8pcs) | C42 SP |
| ISO | **SISO40-C20** | **P2516021** | ISO40-C20-78 | K20-6, 8, 10, 12, 16 (5pcs) | C20 SP |
| | **SISO40-C32** | **P2516022** | ISO40-C32-78 | K32-6, 8, 10, 12, 16, 20, 25 (7pcs) | C32 SP |
| | **SISO50-C32** | **P2516023** | ISO50-C32-85 | K32-6, 8, 10, 12, 16, 20, 25 (7pcs) | C32 SP |
| | **SISO50-C42** | **P2516024** | ISO50-C42-102 | K42-6, 8, 10, 12, 16, 20, 25, 32 (8pcs) | C42 SP |
| NT | **SNT40-C32** | **P2773304** | NT40-C32 | K32-6, 8, 10, 12, 16, 20, 25 (7pcs) | C32 SP |
| | **SNT50-C32** | **P2773305** | NT50-C32 | K32-6, 8, 10, 12, 16, 20, 25 (7pcs) | C32 SP |
| | **SNT50-C42** | **P2773306** | NT50-C42 | K42-6, 8, 10, 12, 16, 20, 25, 32 (8pcs) | C42 SP |



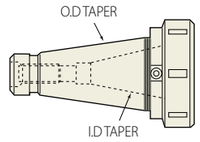


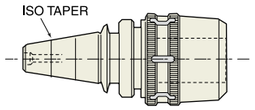
# POWER MILLING CHUCK

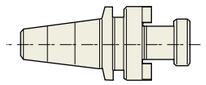
MH

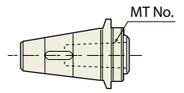
## QUICK CHANGE MILLING CHUCK SET
## 快速更换 强力刀柄套装

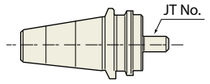
| TAPER 锥度号 | Q.C MILLING HOLDER SET MODEL No. Q.C强力刀柄套装型号 | EDP No. | Q.C MASTER HOLDER Q.C基础刀柄 | Q.C MILLING CHUCK Q.C强力刀柄 | END MILL COLLETS 铣刀筒夹 | Q.C FACE MILL ARBOR Q.C面铣刀杆 | Q.C DRILL CHUCK BAR Q.C钻夹头 | DRILL CHUCK ARBOR 钻夹头 | Q.C TAPER SLEEVE Q.C锥柄套 | SPANNER 扳手 |
|---|---|---|---|---|---|---|---|---|---|---|
| NT40 | **SMH40-T35-32A** | **P2773307** | MH40-T35 | QT35-32 | K32-(6-25)(7pcs) | QT35-4R | - | K32-J6 | - | MH40 SP |
| | **SMH40-T35-32B** | **P2773308** | MH40-T35 | QT35-32 | K32-(6-25)(7pcs) | QT35-4R | QT35-J6 | - | QT35-MT2, 3, 4 | MH40 SP |
| NT50 | **SMH50-T45-32A** | **P2773309** | MH50-T45 | QT45-32 | K32-(6-25)(7pcs) | QT45-5R | - | K32-J6 | - | MH50 SP |
| | **SMH50-T45-32B** | **P2773310** | MH50-T45 | QT45-32 | K32-(6-25)(7pcs) | QT45-5R | QT45-J6 | - | QT45-MT2, 3, 4 | MH50 SP |
| | **SMH50-T45-42A** | **P2773311** | MH50-T45 | QT45-42 | K42-(6-32)(8pcs) | QT45-5R | - | K42-J6 | - | MH50 SP |
| | **SMH50-T45-42B** | **P2773312** | MH50-T45 | QT45-42 | K42-(6-32)(8pcs) | QT45-5R | QT45-J6 | - | QT45-MT2, 3, 4 | MH50 SP |






### ◆ Q.C MASTER HOLDER

| MODEL No. 型号 | EDP No. | O.D TAPER 外径锥度 | I.D TAPER 内径锥度 | DRAW THREADS |
|---|---|---|---|---|
| **MH40-T35** | **P2773313** | NT40 | NT35 | U5/8-11(M16-2) |
| **MH50-T45** | **P2773314** | NT50 | NT45 | U1-8 (M24-3) |

### ◆ Q.C MILLING CHUCK

| Q.C MASTER HOLDER Q.C基础刀柄 | MODEL No. 型号 | EDP No. |
|---|---|---|
| MH40 | **QT35-C32** | **P2773315** |
| MH50 | **QT45-C32** | **P2773316** |
| MH50 | **QT45-C42** | **P2773317** |

### ◆ Q.C FACE MILL ARBOR

| Q.C MASTER HOLDER Q.C基础刀柄 | MODEL No. 型号 | EDP No. |
|---|---|---|
| MH40 | **QT35-3R** | **P2773318** |
| | **QT35-4R** | **P2773319** |
| | **QT35-5R** | **P2773320** |
| MH50 | **QT45-3R** | **P2773321** |
| | **QT45-4R** | **P2773322** |
| | **QT45-5R** | **P2773323** |
| | **QT45-6R** | **P2773324** |

### ◆ Q.C TAPER SLEEVE

| Q.C MASTER HOLDER Q.C基础刀柄 | MODEL No. 型号 | EDP No. |
|---|---|---|
| MH40 | **QT35-MT1** | **P2773325** |
| | **QT35-MT2** | **P2773326** |
| | **QT35-MT3** | **P2773327** |
| MH50 | **QT45-MT1** | **P2773328** |
| | **QT45-MT2** | **P2773329** |
| | **QT45-MT3** | **P2773330** |
| | **QT45-MT4** | **P2773331** |

### ◆ Q.C DRILL CHUCK ARBOR

| Q.C MASTER HOLDER Q.C基础刀柄 | MODEL No. 型号 | EDP No. | DRILL (Ø) 钻头 (Ø) |
|---|---|---|---|
| MH40 | **QT35-J6** | **P2773332** | 1-13mm |
| MH50 | **QT45-J6** | **P2773333** | 1-13mm |

# POWER MILLING CHUCK

K/CK/MT/SP

## COLLET & SPANNER
## 筒夹&扳手

■ END MILL COLLET (K TYPE) 铣刀筒夹(K型)

| MODEL No. 型号 | EDP No. |
|---|---|
| K20-6 | P2506401 |
| K20-8 | P2506402 |
| K20-10 | P2506403 |
| K20-12 | P2506404 |
| K20-16 | P2506405 |
| K25-6 | P2506601 |
| K25-8 | P2506602 |
| K25-10 | P2506603 |
| K25-12 | P2506604 |
| K25-16 | P2506605 |
| K25-20 | P2506606 |
| K32-6 | P2506411 |
| K32-8 | P2506412 |
| K32-10 | P2506413 |
| K32-12 | P2506414 |
| K32-16 | P2506415 |
| K32-20 | P2506416 |
| K32-25 | P2506417 |
| K42-6 | P2506511 |
| K42-8 | P2506512 |
| K42-10 | P2506513 |
| K42-12 | P2506514 |
| K42-16 | P2506515 |
| K42-20 | P2506516 |
| K42-25 | P2506517 |
| K42-32 | P2506518 |

■ END MILL COLLET (CK TYPE) 铣刀筒夹(CK型)

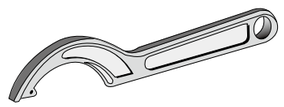
| MODEL No. 型号 | EDP No. |
|---|---|
| CK20-6 | P2506731 |
| CK20-8 | P2506732 |
| CK20-10 | P2506733 |
| CK20-12 | P2506734 |
| CK20-16 | P2506735 |
| CK25-6 | P2506736 |
| CK25-8 | P2506737 |
| CK25-10 | P2506738 |
| CK25-12 | P2506739 |
| CK25-16 | P2506740 |
| CK25-20 | P2506741 |
| CK32-6 | P2506742 |
| CK32-8 | P2506743 |
| CK32-10 | P2506744 |
| CK32-12 | P2506745 |
| CK32-16 | P2506746 |
| CK32-20 | P2506747 |
| CK32-25 | P2506748 |
| CK42-6 | P2506749 |
| CK42-8 | P2506750 |
| CK42-10 | P2506751 |
| CK42-12 | P2506752 |
| CK42-16 | P2506753 |
| CK42-20 | P2506754 |
| CK42-25 | P2506755 |
| CK42-32 | P2506756 |

■ MT COLLET MT式筒夹

| MODEL No. 型号 | EDP No. |
|---|---|
| K20-MT1 | P2506519 |
| K20-MT2 | P2506520 |
| K25-MT1 | P2506521 |
| K25-MT2 | P2506522 |
| K25-MT3 | P2506534 |
| K32-MT1 | P2506523 |
| K32-MT2 | P2506524 |
| K32-MT3 | P2506525 |
| K42-MT1 | P2506526 |
| K42-MT2 | P2506527 |
| K42-MT3 | P2506528 |
| K42-MT4 | P2506529 |

■ DRILL CHUCK ARBOR 钻头夹式

| MODEL No. 型号 | EDP No. |
|---|---|
| K20-JTA6 | P2506530 |
| K25-JTA6 | P2506531 |
| K32-JTA6 | P2506532 |
| K42-JTA6 | P2506533 |



■ SPANNER 扳手

| MODEL No. 型号 | EDP No. |
|---|---|
| C20 SP | P2773401 |
| C25 SP | P2773402 |
| C32 SP | P2600033 |
| C42 SP | P2773403 |



YG-1 TOOLING SYSTEM

# MORSE TAPER ARBOR
# 莫氏锥柄变换刀

DIN 69871-SK

DIN 69893/ISO 12164-1-HSK

JIS B6339/MAS 403-BT

ANSI B5.18-NT

GOST 25827-93

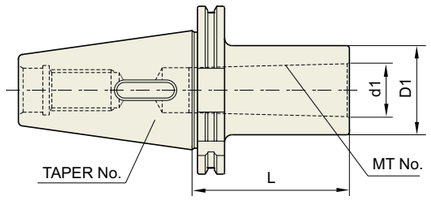
MORSE TAPER ARBOR

MTA

## MORSE TAPER ARBOR

DIN 69871-SK

# 莫氏锥柄变换刀柄



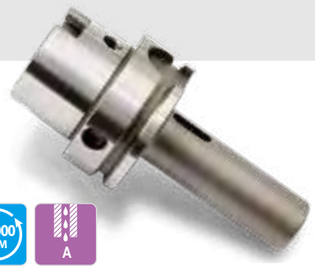

DIN 69871-SK | AT3 | 6.3G | 15,000 RPM | A

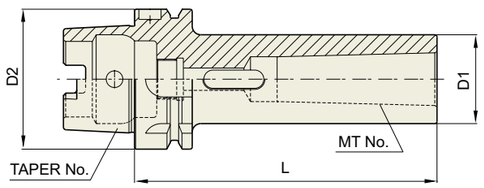
◆ STANDARD

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | MT No. | d1 | D1 | L | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|
| 30 | SK30-MTA1-50 | P2522001 | 1 | 12.065 | 25 | 50 | 0.72 |
| | SK30-MTA2-60 | P2522002 | 2 | 17.78 | 32 | 60 | 0.87 |
| | SK30-MTA3-80 | P2522003 | 3 | 23.825 | 40 | 80 | 1.02 |
| 40 | SK40-MTA1-50 | P2522004 | 1 | 12.065 | 25 | 50 | 1.49 |
| | SK40-MTA2-50 | P2522005 | 2 | 17.78 | 32 | 50 | 1.62 |
| | SK40-MTA3-70 | P2522006 | 3 | 23.825 | 40 | 70 | 1.65 |
| | SK40-MTA4-95 | P2522007 | 4 | 31.267 | 48 | 95 | 1.90 |
| 50 | SK50-MTA1-45 | P2522008 | 1 | 12.065 | 25 | 45 | 2.60 |
| | SK50-MTA2-60 | P2522009 | 2 | 17.78 | 32 | 60 | 2.66 |
| | SK50-MTA3-65 | P2522010 | 3 | 23.825 | 40 | 65 | 2.75 |
| | SK50-MTA4-95 | P2522011 | 4 | 31.267 | 48 | 95 | 3.00 |
| | SK50-MTA5-105 | P2522012 | 5 | 44.399 | 63 | 105 | 3.30 |

## DIN 69893/ ISO 12164-1-HSK FORM A






DIN 69893-HSK | 6.3G | 15,000 RPM | A

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | MT No. | D1 | D2 | L | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|
| 50A | HSK50A-MTA1-100 | P2565005 | 1 | 25 | 50 | 100 | 0.67 |
| | HSK50A-MTA2-120 | P2565006 | 2 | 32 | 50 | 120 | 0.78 |
| | HSK50A-MTA3-140 | P2565007 | 3 | 40 | 50 | 140 | 0.91 |
| 63A | HSK63A-MTA1-100 | P2565001 | 1 | 25 | 63 | 100 | 0.87 |
| | HSK63A-MTA2-120 | P2565002 | 2 | 32 | 63 | 120 | 1.28 |
| | HSK63A-MTA3-140 | P2565003 | 3 | 40 | 63 | 140 | 1.44 |
| | HSK63A-MTA4-160 | P2565004 | 4 | 48 | 63 | 160 | 1.86 |
| 100A | HSK100A-MTA1-110 | P2565011 | 1 | 25 | 100 | 110 | 2.12 |
| | HSK100A-MTA2-120 | P2565012 | 2 | 32 | 100 | 120 | 2.41 |
| | HSK100A-MTA3-150 | P2565013 | 3 | 40 | 100 | 150 | 2.82 |
| | HSK100A-MTA4-170 | P2565014 | 4 | 48 | 100 | 170 | 3.63 |
| | HSK100A-MTA5-200 | P2565015 | 5 | 63 | 100 | 200 | 4.80 |

▶CAT(ANSI B5.50) taper and Inch type products are available. CAT(ANSI B5.50)锥柄及英制产品可供选择



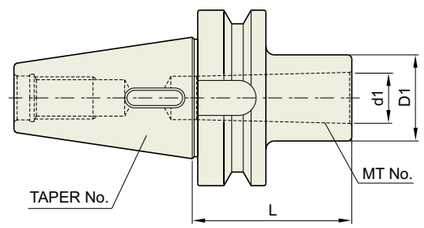
MORSE TAPER ARBOR

MTA

## MORSE TAPER ARBOR

JIS B6339/ MAS 403-BT

# 莫氏锥柄变换刀柄




JIS B6339-BT | AT3 | 6.3G | 15,000 RPM | A

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | MT No. | L | d1 | D1 | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|
| 30 | BT30-MTA1-45 | P2542001 | 1 | 45 | 12.065 | 25 | 0.40 |
| | BT30-MTA2-60 | P2542002 | 2 | 60 | 17.780 | 32 | 0.50 |
| | BT30-MTA2-120 | P2542003 | 2 | 120 | 17.780 | 32 | 0.60 |
| | BT30-MTA3-75 | P2542004 | 3 | 75 | 23.825 | 40 | 0.70 |
| 40 | BT40-MTA1-45 | P2542005 | 1 | 45 | 12.065 | 25 | 1.00 |
| | BT40-MTA1-120 | P2542006 | 1 | 120 | 12.065 | 25 | 1.30 |
| | BT40-MTA2-60 | P2542013 | 2 | 60 | 17.780 | 32 | 1.00 |
| | BT40-MTA2-120 | P2542009 | 2 | 120 | 17.780 | 32 | 1.40 |
| | BT40-MTA3-75 | P2542014 | 3 | 75 | 23.825 | 40 | 1.20 |
| | BT40-MTA3-135 | P2542010 | 3 | 135 | 23.825 | 40 | 1.80 |
| | BT40-MTA4-95 | P2542007 | 4 | 95 | 31.267 | 50 | 1.10 |
| | BT40-MTA4-165 | P2542011 | 4 | 165 | 31.267 | 50 | 2.40 |
| 50 | BT50-MTA1-45 | P2542008 | 1 | 45 | 12.065 | 25 | 4.00 |
| | BT50-MTA1-120 | P2542017 | 1 | 120 | 12.065 | 25 | 4.30 |
| | BT50-MTA1-180 | P2542018 | 1 | 180 | 12.065 | 25 | 4.30 |
| | BT50-MTA2-45 | P2542015 | 2 | 45 | 17.780 | 32 | 4.00 |
| | BT50-MTA2-135 | P2542019 | 2 | 135 | 17.780 | 32 | 4.40 |
| | BT50-MTA2-180 | P2542020 | 2 | 180 | 17.780 | 32 | 4.60 |
| | BT50-MTA3-45 | P2542021 | 3 | 45 | 23.825 | 40 | 3.90 |
| | BT50-MTA3-150 | P2542022 | 3 | 150 | 23.825 | 40 | 4.70 |
| | BT50-MTA3-180 | P2542016 | 3 | 180 | 23.825 | 40 | 4.90 |
| | BT50-MTA4-75 | P2542023 | 4 | 75 | 31.267 | 50 | 4.00 |
| | BT50-MTA4-105 | P2542024 | 4 | 105 | 31.267 | 50 | 4.50 |
| | BT50-MTA4-180 | P2542025 | 4 | 180 | 31.267 | 50 | 5.40 |
| | BT50-MTA5-105 | P2542012 | 5 | 105 | 44.399 | 65 | 4.50 |
| | BT50-MTA5-210 | P2542026 | 5 | 210 | 44.399 | 65 | 7.20 |
| | BT50-MTA5-270 | P2542027 | 5 | 270 | 44.399 | 65 | 7.50 |

▶CAT(ANSI B5.50) taper and Inch type products are available.
CAT(ANSI B5.50)锥柄及英制产品可供选择



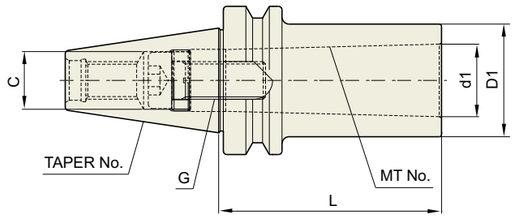
TOOLING SYSTEM

HYDRAULIC CHUCK
SHRINK FIT HOLDER
ER COLLET CHUCK
END MILL HOLDER & SIDE LOCK ARBOR
SHELL MILL ARBOR
POWER MILLING CHUCK
MORSE TAPER ARBOR
SK SLIM CHUCK
SYNCHRO TAPPING CHUCK
ONE STEP TAPPING CHUCK
TAPPING ER CHUCK
TAPPING CHUCK
FACE MILL ARBOR
COPY MILL ARBOR & INDEXABLE DRILL HOLDER
NC DRILL CHUCK & OTHER TOOL HOLDERS
BORING SYSTEM
ACCESSORY & OTHERS

## MORSE TAPER ARBOR

JIS B6339/
MAS 403-BT

# 莫氏锥柄变换刀柄

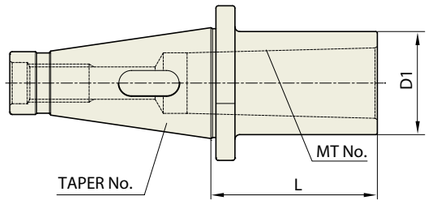



JIS B6339-BT · AT3 · 6.3G · 15,000 RPM · A

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | MT No. | L | d1 | D1 | C | G | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|
| 30 | BT30-MTB1-45 | P2542028 | 1 | 45 | 12.065 | 25 | 10 | M6×1.0 | 0.80 |
| | BT30-MTB2-45 | P2542029 | 2 | 45 | 17.780 | 32 | - | M10×1.5 | 0.80 |
| 40 | BT40-MTB1-45 | P2600019 | 1 | 45 | 12.065 | 25 | 10 | M6×1.0 | 1.00 |
| | BT40-MTB2-45 | P2600020 | 2 | 45 | 17.780 | 32 | 13.5 | M10×1.5 | 1.10 |
| | BT40-MTB3-60 | P2543016 | 3 | 60 | 23.825 | 40 | - | M12×1.75 | 1.10 |
| | BT40-MTB4-85 | P2600021 | 4 | 85 | 31.267 | 50 | - | M16×2.0 | 1.30 |
| 50 | BT50-MTB1-45 | P2543008 | 1 | 45 | 12.065 | 25 | 10 | M6×1.0 | 3.90 |
| | BT50-MTB2-45 | P2542030 | 2 | 45 | 17.780 | 32 | 16 | M10×1.5 | 3.90 |
| | BT50-MTB3-60 | P2542031 | 3 | 60 | 23.825 | 40 | 18 | M12×1.75 | 3.90 |
| | BT50-MTB4-75 | P2542032 | 4 | 75 | 31.267 | 50 | 20.5 | M16×2.0 | 3.90 |

## ANSI B5.18-NT




AT3 · A

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | MT No. | RANGE OF DRILL Min. 最小 | RANGE OF DRILL Max. 最大 | D1 | L | DRAW THREAD | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|
| 40 | NT40-MTA1-30 | P2542051 | 1 | 2.0 | 14.0 | 25 | 30 | U5/8-11(M16×2) | 0.90 |
| | NT40-MTA2-30 | P2542052 | 2 | 14.1 | 23.0 | 32 | 30 | U5/8-11(M16×2) | 1.00 |
| | NT40-MTA3-35 | P2542053 | 3 | 23.1 | 32.0 | 40 | 45 | U5/8-11(M16×2) | 1.00 |
| | NT40-MTA4-90 | P2542054 | 4 | 32.1 | 50.0 | 50 | 90 | U5/8-11(M16×2) | 1.20 |
| 50 | NT50-MTA1-30 | P2542055 | 1 | 2.0 | 14.0 | 25 | 30 | U1-8(M24×3) | 3.50 |
| | NT50-MTA2-30 | P2542056 | 2 | 14.1 | 23.0 | 32 | 30 | U1-8(M24×3) | 3.50 |
| | NT50-MTA3-30 | P2542057 | 3 | 23.1 | 32.0 | 40 | 30 | U1-8(M24×3) | 3.50 |
| | NT50-MTA4-45 | P2542058 | 4 | 32.1 | 50.0 | 50 | 45 | U1-8(M24×3) | 3.50 |
| | NT50-MTA5-105 | P2542059 | 5 | 50.1 | 75.0 | 60 | 105 | U1-8(M24×3) | 4.00 |

▶CAT(ANSI B5.50) taper and Inch type products are available.
CAT(ANSI B5.50)锥柄及英制产品可供选择

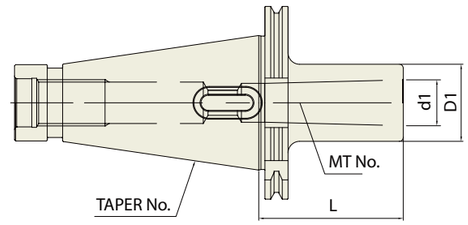




## MORSE TAPER ARBOR

GOST 25827-93

# 莫氏锥柄变换刀柄

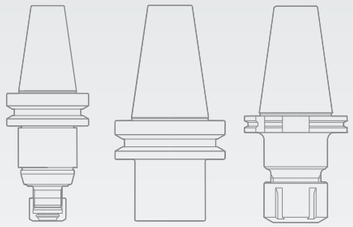



GOST 25827-93 · AT3 · A

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | MT No. | d1 | D1 | L | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|
| 40 | GOST40-MTA1-115 | P2780451 | 1 | 12.065 | 25 | 115 | |
| | GOST40-MTA2-125 | P2780452 | 2 | 17.78 | 32 | 125 | |
| | GOST40-MTA3-145 | P2780453 | 3 | 23.825 | 40 | 145 | |
| | GOST40-MTA4-165 | P2780454 | 4 | 31.267 | 48 | 165 | |
| 50 | GOST50-MTA2-135 | P2780455 | 2 | 17.78 | 32 | 135 | |
| | GOST50-MTA3-155 | P2780456 | 3 | 23.825 | 40 | 155 | |
| | GOST50-MTA4-180 | P2780457 | 4 | 31.267 | 48 | 180 | |
| | GOST50-MTA5-215 | P2780458 | 5 | 44.399 | 63 | 215 | |

Global Cutting Tool Leader **YG-1**



# TOOLING SYSTEM

YG-1 TOOLING SYSTEM

# SK SLIM CHUCK

# SK刀柄

**DIN 69871-SK**

**DIN 69893/ISO 12164-1-HSK**

**CBT (BT DUAL CONTACT)**

**JIS B6339/MAS 403-BT**

**ISO 20/25**

**STRAIGHT K (EXTENSION)**

**ACCESSORY & PARTS**
SK COLLET / SK NUT / SPANNER

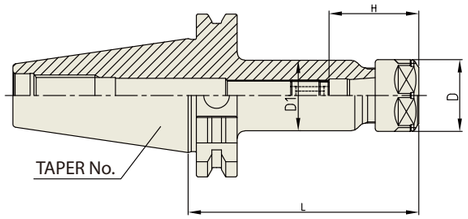
# SK SLIM CHUCK

**SKA**

## SK SLIM CHUCK

DIN 69871-SK

## SK刀柄




DIN 69871-SK | AT3 | 6.3G | 15,000 RPM | AD

Collet, Nut and spanner, refer to page 199-201
筒夹及扳手，螺帽, 请参阅第199-201页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | CLAMPING RANGE 夹持范围 | L | D | D1 | H | COLLET | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|
| 30 | SK30-SKA06-60 | P2802801 | 1.8 ~ 6.0 | 60 | 20 | 19.5 | 31 | SKC6 | - |
| | SK30-SKA06-90 | P2802802 | 1.8 ~ 6.0 | 90 | 20 | 19.5 | 31 | SKC6 | - |
| | SK30-SKA10-60 | P2802803 | 1.75 ~ 10.0 | 60 | 28 | 27.5 | 35 | SKC10 | - |
| | SK30-SKA10-90 | P2802804 | 1.75 ~ 10.0 | 90 | 28 | 27.5 | 35 | SKC10 | - |
| | SK30-SKA13-60 | P2802805 | 2.75 ~ 13.0 | 60 | 33 | 33 | 43.6 | SKC13 | - |
| | SK30-SKA13-90 | P2802806 | 2.75 ~ 13.0 | 90 | 33 | 33 | 43.6 | SKC13 | - |
| | SK30-SKA16-60 | P2802807 | 2.75 ~ 16.0 | 60 | 40 | 40 | 52 | SKC16 | - |
| | SK30-SKA16-90 | P2802808 | 2.75 ~ 16.0 | 90 | 40 | 40 | 52 | SKC16 | - |
| | SK30-SKA20-60 | P2802809 | 3.5 ~ 20.0 | 60 | 48.5 | 48.5 | 59.6 | SKC20 | - |
| | SK30-SKA20-90 | P2802810 | 3.5 ~ 20.0 | 90 | 48.5 | 48.5 | 59.6 | SKC20 | - |
| | SK30-SKA25-90 | P2802811 | 16.0 ~ 25.4 | 90 | 55 | 55 | 63.4 | SKC25 | - |
| 40 | SK40-SKA06-90 | P2802812 | 1.8 ~ 6.0 | 90 | 20 | 19.5 | 31 | SKC6 | - |
| | SK40-SKA06-120 | P2802813 | 1.8 ~ 6.0 | 120 | 20 | 19.5 | 31 | SKC6 | - |
| | SK40-SKA06-150 | P2802814 | 1.8 ~ 6.0 | 150 | 20 | 19.5 | 31 | SKC6 | - |
| | SK40-SKA10-90 | P2802815 | 1.75 ~ 10.0 | 90 | 28 | 27.5 | 35 | SKC10 | - |
| | SK40-SKA10-120 | P2802816 | 1.75 ~ 10.0 | 120 | 28 | 27.5 | 35 | SKC10 | - |
| | SK40-SKA10-150 | P2802817 | 1.75 ~ 10.0 | 150 | 28 | 27.5 | 35 | SKC10 | - |
| | SK40-SKA13-90 | P2802818 | 2.75 ~ 13.0 | 90 | 33 | 33 | 43.6 | SKC13 | - |
| | SK40-SKA13-120 | P2802819 | 2.75 ~ 13.0 | 120 | 33 | 33 | 43.6 | SKC13 | - |
| | SK40-SKA13-150 | P2802820 | 2.75 ~ 13.0 | 150 | 33 | 33 | 43.6 | SKC13 | - |
| | SK40-SKA16-90 | P2802821 | 2.75 ~ 16.0 | 90 | 40 | 40 | 52 | SKC16 | - |
| | SK40-SKA16-120 | P2802822 | 2.75 ~ 16.0 | 120 | 40 | 40 | 52 | SKC16 | - |
| | SK40-SKA16-150 | P2802823 | 2.75 ~ 16.0 | 150 | 40 | 40 | 52 | SKC16 | - |
| | SK40-SKA20-90 | P2802824 | 3.5 ~ 20.0 | 90 | 48.5 | 48.5 | 59.6 | SKC20 | - |
| | SK40-SKA20-120 | P2802825 | 3.5 ~ 20.0 | 120 | 48.5 | 48.5 | 59.6 | SKC20 | - |
| | SK40-SKA20-150 | P2802826 | 3.5 ~ 20.0 | 150 | 48.5 | 48.5 | 59.6 | SKC20 | - |
| | SK40-SKA25-90 | P2802827 | 16.0 ~ 25.4 | 90 | 55 | 55 | 63.4 | SKC25 | - |
| | SK40-SKA25-120 | P2802828 | 16.0 ~ 25.4 | 120 | 55 | 55 | 63.4 | SKC25 | - |
| | SK40-SKA25-150 | P2802829 | 16.0 ~ 25.4 | 150 | 55 | 55 | 63.4 | SKC25 | - |

▶CAT(ANSI B5.50) taper and Inch type products are available.
CAT(ANSI B5.50)锥柄及英制产品可供选择

▶ NEXT PAGE



TOOLING SYSTEM

HYDRAULIC CHUCK
SHRINK FIT HOLDER
ER COLLET CHUCK
END MILL HOLDER & SIDE LOCK ARBOR
SHELL MILL ARBOR
POWER MILLING CHUCK
MORSE TAPER ARBOR
SK SLIM CHUCK
SYNCHRO TAPPING CHUCK
ONE STEP TAPPING CHUCK
TAPPING ER CHUCK
TAPPING CHUCK
FACE MILL ARBOR
COPY MILL ARBOR & INDEXABLE DRILL HOLDER
NC DRILL CHUCK & OTHER TOOL HOLDERS
BORING SYSTEM
ACCESSORY & OTHERS

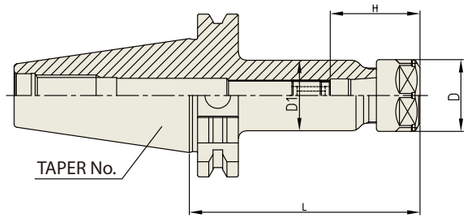
# SK SLIM CHUCK

**SKA**

## SK SLIM CHUCK

DIN 69871-SK

## SK刀柄




DIN 69871-SK | AT3 | 6.3G | 15,000 RPM | AD

Collet, Nut and spanner, refer to page 199-201
筒夹及扳手，螺帽, 请参阅第199-201页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | CLAMPING RANGE 夹持范围 | L | D | D1 | H | COLLET | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|
| 50 | SK50-SKA06-105 | P2802830 | 1.8 ~ 6.0 | 105 | 20 | 19.5 | 31 | SKC6 | - |
| | SK50-SKA06-135 | P2802831 | 1.8 ~ 6.0 | 135 | 20 | 19.5 | 31 | SKC6 | - |
| | SK50-SKA06-165 | P2802832 | 1.8 ~ 6.0 | 165 | 20 | 19.5 | 31 | SKC6 | - |
| | SK50-SKA06-195 | P2802833 | 1.8 ~ 6.0 | 195 | 20 | 19.5 | 31 | SKC6 | - |
| | SK50-SKA10-105 | P2802834 | 1.75 ~ 10.0 | 105 | 28 | 27.5 | 35 | SKC10 | - |
| | SK50-SKA10-135 | P2802835 | 1.75 ~ 10.0 | 135 | 28 | 27.5 | 35 | SKC10 | - |
| | SK50-SKA10-165 | P2802836 | 1.75 ~ 10.0 | 165 | 28 | 27.5 | 35 | SKC10 | - |
| | SK50-SKA10-195 | P2802837 | 1.75 ~ 10.0 | 195 | 28 | 27.5 | 35 | SKC10 | - |
| | SK50-SKA13-105 | P2802838 | 2.75 ~ 13.0 | 105 | 33 | 33 | 43.6 | SKC13 | - |
| | SK50-SKA13-135 | P2802839 | 2.75 ~ 13.0 | 135 | 33 | 33 | 43.6 | SKC13 | - |
| | SK50-SKA13-165 | P2802840 | 2.75 ~ 13.0 | 165 | 33 | 33 | 43.6 | SKC13 | - |
| | SK50-SKA13-195 | P2802841 | 2.75 ~ 13.0 | 195 | 33 | 33 | 43.6 | SKC13 | - |
| | SK50-SKA16-105 | P2802842 | 2.75 ~ 16.0 | 105 | 40 | 40 | 52 | SKC16 | - |
| | SK50-SKA16-135 | P2802843 | 2.75 ~ 16.0 | 135 | 40 | 40 | 52 | SKC16 | - |
| | SK50-SKA16-165 | P2802844 | 2.75 ~ 16.0 | 165 | 40 | 40 | 52 | SKC16 | - |
| | SK50-SKA16-195 | P2802845 | 2.75 ~ 16.0 | 195 | 40 | 40 | 52 | SKC16 | - |
| | SK50-SKA20-105 | P2802846 | 3.5 ~ 20.0 | 105 | 48.5 | 48.5 | 59.6 | SKC20 | - |
| | SK50-SKA20-135 | P2802847 | 3.5 ~ 20.0 | 135 | 48.5 | 48.5 | 59.6 | SKC20 | - |
| | SK50-SKA20-165 | P2802848 | 3.5 ~ 20.0 | 165 | 48.5 | 48.5 | 59.6 | SKC20 | - |
| | SK50-SKA20-195 | P2802849 | 3.5 ~ 20.0 | 195 | 48.5 | 48.5 | 59.6 | SKC20 | - |
| | SK50-SKA25-105 | P2802850 | 16.0 ~ 25.4 | 105 | 55 | 55 | 63.4 | SKC25 | - |
| | SK50-SKA25-135 | P2802851 | 16.0 ~ 25.4 | 135 | 55 | 55 | 63.4 | SKC25 | - |
| | SK50-SKA25-165 | P2802852 | 16.0 ~ 25.4 | 165 | 55 | 55 | 63.4 | SKC25 | - |
| | SK50-SKA25-195 | P2802853 | 16.0 ~ 25.4 | 195 | 55 | 55 | 63.4 | SKC25 | - |

▶CAT(ANSI B5.50) taper and Inch type products are available.
CAT(ANSI B5.50)锥柄及英制产品可供选择

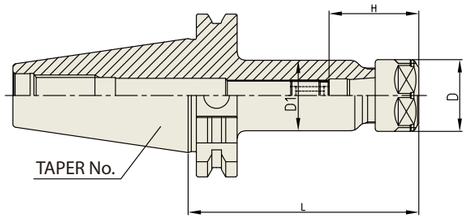
SK SLIM CHUCK

SKA

## SK SLIM CHUCK

DIN 69871-SK

# SK刀柄




DIN 69871-SK | AT3 | 2.5G | 25,000 RPM | AD/B

Collet, Nut and spanner, refer to page 199-201
筒夹及扳手，螺帽, 请参阅第199-201页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | CLAMPING RANGE 夹持范围 | L | D | D1 | H | COLLET | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|
| 40 | SK40AD/B-SKA06-60 | P2802901 | 1.8 - 6.0 | 60 | 20 | 19.5 | 31 | SKC6 | - |
| | SK40AD/B-SKA06-90 | P2802902 | 1.8 - 6.0 | 90 | 20 | 19.5 | 31 | SKC6 | - |
| | SK40AD/B-SKA06-120 | P2802903 | 1.8 - 6.0 | 120 | 20 | 19.5 | 31 | SKC6 | - |
| | SK40AD/B-SKA06-150 | P2802904 | 1.8 - 6.0 | 150 | 20 | 19.5 | 31 | SKC6 | - |
| | SK40AD/B-SKA10-90 | P2802905 | 1.8 - 10.0 | 90 | 28 | 27.5 | 35 | SKC10 | - |
| | SK40AD/B-SKA10-120 | P2802906 | 1.8 - 10.0 | 120 | 28 | 27.5 | 35 | SKC10 | - |
| | SK40AD/B-SKA10-150 | P2802907 | 1.8 - 10.0 | 150 | 28 | 27.5 | 35 | SKC10 | - |
| | SK40AD/B-SKA13-90 | P2802908 | 2.75 - 13.0 | 90 | 33 | 33 | 43.6 | SKC13 | - |
| | SK40AD/B-SKA13-120 | P2802909 | 2.75 - 13.0 | 120 | 33 | 33 | 43.6 | SKC13 | - |
| | SK40AD/B-SKA13-150 | P2802910 | 2.75 - 13.0 | 150 | 33 | 33 | 43.6 | SKC13 | - |
| | SK40AD/B-SKA16-90 | P2802911 | 2.75 - 16.0 | 90 | 40 | 40 | 52 | SKC16 | - |
| | SK40AD/B-SKA16-120 | P2802912 | 2.75 - 16.0 | 120 | 40 | 40 | 52 | SKC16 | - |
| | SK40AD/B-SKA16-150 | P2802913 | 2.75 - 16.0 | 150 | 40 | 40 | 52 | SKC16 | - |
| | SK40AD/B-SKA20-90 | P2802914 | 3.5 - 20.0 | 90 | 48.5 | 48.5 | 59.6 | SKC20 | - |
| | SK40AD/B-SKA20-120 | P2802915 | 3.5 - 20.0 | 120 | 48.5 | 48.5 | 59.6 | SKC20 | - |
| | SK40AD/B-SKA20-150 | P2802916 | 3.5 - 20.0 | 150 | 48.5 | 48.5 | 59.6 | SKC20 | - |
| | SK40AD/B-SKA25-90 | P2802917 | 16.0 - 25.4 | 90 | 55 | 55 | 63.4 | SKC25 | - |
| | SK40AD/B-SKA25-120 | P2802918 | 16.0 - 25.4 | 120 | 55 | 55 | 63.4 | SKC25 | - |
| | SK40AD/B-SKA25-150 | P2802919 | 16.0 - 25.4 | 150 | 55 | 55 | 63.4 | SKC25 | - |

▶CAT(ANSI B5.50) taper and Inch type products are available.
CAT(ANSI B5.50)锥柄及英制产品可供选择

▶ NEXT PAGE



TOOLING SYSTEM

HYDRAULIC CHUCK
SHRINK FIT HOLDER
ER COLLET CHUCK
END MILL HOLDER & SIDE LOCK ARBOR
SHELL MILL ARBOR
POWER MILLING CHUCK
MORSE TAPER ARBOR
SK SLIM CHUCK
SYNCHRO TAPPING CHUCK
ONE STEP TAPPING CHUCK
TAPPING ER CHUCK
TAPPING CHUCK
FACE MILL ARBOR
COPY MILL ARBOR & INDEXABLE DRILL HOLDER
NC DRILL CHUCK & OTHER TOOL HOLDERS
BORING SYSTEM
ACCESSORY & OTHERS

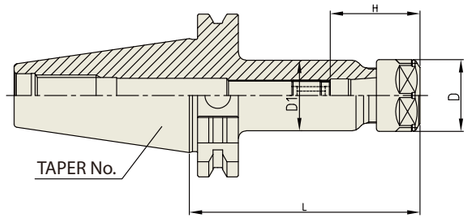
SK SLIM CHUCK

SKA

## SK SLIM CHUCK

DIN 69871-SK

# SK刀柄




DIN 69871-SK | AT3 | 2.5G | 25,000 RPM | AD/B

Collet, Nut and spanner, refer to page 199-201
筒夹及扳手，螺帽, 请参阅第199-201页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | CLAMPING RANGE 夹持范围 | L | D | D1 | H | COLLET | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|
| 50 | SK50AD/B-SKA06-105 | P2802920 | 1.8 - 6.0 | 105 | 20 | 19.5 | 31 | SKC6 | - |
| | SK50AD/B-SKA06-135 | P2802921 | 1.8 - 6.0 | 135 | 20 | 19.5 | 31 | SKC6 | - |
| | SK50AD/B-SKA06-165 | P2802922 | 1.8 - 6.0 | 165 | 20 | 19.5 | 31 | SKC6 | - |
| | SK50AD/B-SKA06-195 | P2802923 | 1.8 - 6.0 | 195 | 20 | 19.5 | 31 | SKC6 | - |
| | SK50AD/B-SKA10-105 | P2802924 | 1.75 - 10.0 | 105 | 28 | 27.5 | 35 | SKC10 | - |
| | SK50AD/B-SKA10-135 | P2802925 | 1.75 - 10.0 | 135 | 28 | 27.5 | 35 | SKC10 | - |
| | SK50AD/B-SKA10-165 | P2802926 | 1.75 - 10.0 | 165 | 28 | 27.5 | 35 | SKC10 | - |
| | SK50AD/B-SKA10-195 | P2802927 | 1.75 - 10.0 | 195 | 28 | 27.5 | 35 | SKC10 | - |
| | SK50AD/B-SKA13-105 | P2802928 | 2.75 - 13.0 | 105 | 33 | 33 | 43.6 | SKC13 | - |
| | SK50AD/B-SKA13-135 | P2802929 | 2.75 - 13.0 | 135 | 33 | 33 | 43.6 | SKC13 | - |
| | SK50AD/B-SKA13-165 | P2802930 | 2.75 - 13.0 | 165 | 33 | 33 | 43.6 | SKC13 | - |
| | SK50AD/B-SKA13-195 | P2802931 | 2.75 - 13.0 | 195 | 33 | 33 | 43.6 | SKC13 | - |
| | SK50AD/B-SKA16-105 | P2802932 | 2.75 - 13.0 | 105 | 40 | 40 | 52 | SKC16 | - |
| | SK50AD/B-SKA16-135 | P2802933 | 2.75 - 13.0 | 135 | 40 | 40 | 52 | SKC16 | - |
| | SK50AD/B-SKA16-165 | P2802934 | 2.75 - 13.0 | 165 | 40 | 40 | 52 | SKC16 | - |
| | SK50AD/B-SKA16-195 | P2802935 | 2.75 - 13.0 | 195 | 40 | 40 | 52 | SKC16 | - |
| | SK50AD/B-SKA20-105 | P2802936 | 3.5 - 20.0 | 105 | 48.5 | 48.5 | 59.6 | SKC20 | - |
| | SK50AD/B-SKA20-135 | P2802937 | 3.5 - 20.0 | 135 | 48.5 | 48.5 | 59.6 | SKC20 | - |
| | SK50AD/B-SKA20-165 | P2802938 | 3.5 - 20.0 | 165 | 48.5 | 48.5 | 59.6 | SKC20 | - |
| | SK50AD/B-SKA20-195 | P2802939 | 3.5 - 20.0 | 195 | 48.5 | 48.5 | 59.6 | SKC20 | - |
| | SK50AD/B-SKA25-105 | P2802940 | 16.0 - 25.4 | 105 | 55 | 55 | 63.4 | SKC25 | - |
| | SK50AD/B-SKA25-135 | P2802941 | 16.0 - 25.4 | 135 | 55 | 55 | 63.4 | SKC25 | - |
| | SK50AD/B-SKA25-165 | P2802942 | 16.0 - 25.4 | 165 | 55 | 55 | 63.4 | SKC25 | - |
| | SK50AD/B-SKA25-195 | P2802943 | 16.0 - 25.4 | 195 | 55 | 55 | 63.4 | SKC25 | - |

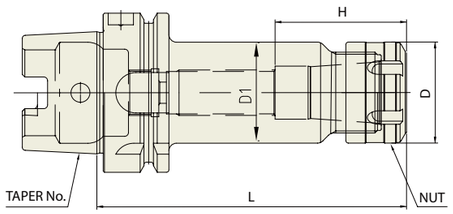
▶CAT(ANSI B5.50) taper and Inch type products are available.
CAT(ANSI B5.50)锥柄及英制产品可供选择

SK SLIM CHUCK

SKA

## SK SLIM CHUCK
## SK刀柄

DIN 69893/
ISO 12164-1-HSK FORM A




DIN 69893-HSK | 2.5G | 25,000 RPM | AD

Collet, Nut and spanner, refer to page 199-201
筒夹及扳手，螺帽, 请参阅第199-201页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | CLAMPING RANGE 夹持范围 | L | D | D1 | H | COLLET | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|
| 32A | HSK32A-SKA06-50 | P2775860 | 1.8 - 6.0 | 50 | 20 | 19.5 | 31 | SKC6 | 0.50 |
| | HSK32A-SKA10-60 | P2775861 | 1.75 - 10.0 | 60 | 28 | 26 | 35 | SKC10 | 0.70 |
| 40A | HSK40A-SKA06-60 | P2775862 | 1.8 - 6.0 | 60 | 20 | 19.5 | 31 | SKC6 | 0.70 |
| | HSK40A-SKA10-60 | P2775863 | 1.75 - 10.0 | 60 | 28 | 27.5 | 35 | SKC10 | 0.90 |
| | HSK40A-SKA13-80 | P2775864 | 2.75 - 13.0 | 80 | 33 | 33 | 43.6 | SKC13 | 1.00 |
| 50A | HSK50A-SKA06-80 | P2775865 | 1.8 - 6.0 | 80 | 20 | 19.5 | 31 | SKC6 | 0.90 |
| | HSK50A-SKA10-100 | P2775866 | 1.75 - 10.0 | 100 | 28 | 27.5 | 35 | SKC10 | 1.10 |
| | HSK50A-SKA13-100 | P2775867 | 2.75 - 13.0 | 100 | 33 | 33 | 43.6 | SKC13 | 1.20 |
| 63A | HSK63A-SKA06-100 | P2775868 | 1.8 - 6.0 | 100 | 20 | 19.5 | 31 | SKC6 | 1.40 |
| | HSK63A-SKA10-100 | P2775869 | 1.75 - 10.0 | 100 | 28 | 27.5 | 35 | SKC10 | 1.60 |
| | HSK63A-SKA13-100 | P2775870 | 2.75 - 13.0 | 100 | 33 | 33 | 43.6 | SKC13 | 1.70 |
| | HSK63A-SKA16-120 | P2775871 | 2.75 - 16.0 | 120 | 40 | 40 | 52 | SKC16 | 1.70 |
| | HSK63A-SKA20-120 | P2775872 | 3.5 - 20.0 | 120 | 48.5 | 48.5 | 59.6 | SKC20 | 2.10 |
| | HSK63A-SKA25-150 | P2775873 | 16.0 - 25.4 | 150 | 55 | 55 | 63.4 | SKC25 | 2.40 |
| 80A | HSK80A-SKA06-120 | P2775893 | 1.8 - 6.0 | 120 | 20 | 19.5 | 31 | SKC6 | 1.60 |
| | HSK80A-SKA10-120 | P2775875 | 1.75 - 10.0 | 120 | 28 | 27.5 | 35 | SKC10 | 1.72 |
| | HSK80A-SKA13-120 | P2775876 | 2.75 - 13.0 | 120 | 33 | 33 | 43.6 | SKC13 | 1.79 |
| | HSK80A-SKA16-120 | P2775877 | 2.75 - 16.0 | 120 | 40 | 40 | 52 | SKC16 | 1.96 |
| | HSK80A-SKA20-130 | P2775878 | 3.5 - 20.0 | 130 | 48.5 | 48.5 | 59.6 | SKC20 | 2.39 |
| | HSK80A-SKA25-150 | P2775879 | 16.0 - 25.4 | 150 | 55 | 55 | 63.4 | SKC25 | 2.82 |
| 100A | HSK100A-SKA06-120 | P2775880 | 1.8 - 6.0 | 120 | 20 | 19.5 | 31 | SKC6 | 4.00 |
| | HSK100A-SKA10-150 | P2775881 | 1.75 - 10.0 | 150 | 28 | 27.5 | 35 | SKC10 | 4.50 |
| | HSK100A-SKA13-150 | P2775882 | 2.75 - 13.0 | 150 | 33 | 33 | 43.6 | SKC13 | 4.60 |
| | HSK100A-SKA16-150 | P2775883 | 2.75 - 16.0 | 150 | 40 | 40 | 52 | SKC16 | 5.10 |
| | HSK100A-SKA20-150 | P2775884 | 3.5 - 20.0 | 150 | 48.5 | 48.5 | 59.6 | SKC20 | 5.40 |
| | HSK100A-SKA25-160 | P2775885 | 16.0 - 25.4 | 160 | 55 | 55 | 63.4 | SKC25 | 5.50 |

## DIN 69893/
## ISO 12164-1-HSK FORM E

Collet, Nut and spanner, refer to page 199-201
筒夹及扳手，螺帽, 请参阅第199-201页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | CLAMPING RANGE 夹持范围 | L | D | D1 | H | COLLET | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|
| 25E | HSK25E-SKA06-45 | P2775886 | 1.8 - 6.0 | 45 | 20 | 19.5 | 31 | SKC6 | - |
| | HSK25E-SKA10-50 | P2775887 | 1.75 - 10.0 | 50 | 28 | 21.5 | 35 | SKC10 | - |
| 32E | HSK32E-SKA06-50 | P2775888 | 1.8 - 6.0 | 50 | 20 | 19.5 | 31 | SKC6 | 0.50 |
| | HSK32E-SKA10-60 | P2775889 | 1.75 - 10.0 | 60 | 28 | 26 | 35 | SKC10 | 0.70 |
| 40E | HSK40E-SKA06-60 | P2775890 | 1.8 - 6.0 | 60 | 20 | 19.5 | 31 | SKC6 | 0.70 |
| | HSK40E-SKA10-60 | P2775891 | 1.75 - 10.0 | 60 | 28 | 27.5 | 35 | SKC10 | 0.90 |
| | HSK40E-SKA13-80 | P2775892 | 2.75 - 13.0 | 80 | 33 | 33 | 43.6 | SKC13 | 1.00 |

▶CAT(ANSI B5.50) taper and Inch type products are available. CAT(ANSI B5.50)锥柄及英制产品可供选择

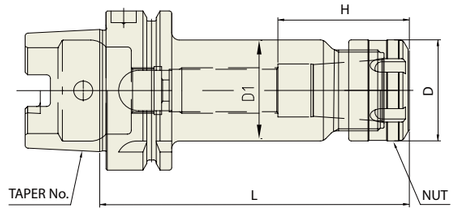


SK SLIM CHUCK

SKA

## SK SLIM CHUCK
## SK刀柄

DIN 69893/
ISO 12164-1-HSK FORM A




DIN 69893-HSK | 6.3G | 15,000 RPM | AD

Collet, Nut and spanner, refer to page 199-201
筒夹及扳手，螺帽, 请参阅第199-201页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | CLAMPING RANGE 夹持范围 | L | D | D1 | H | COLLET | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|
| 32A | HSK32A-SKA06-50 | P2773502 | 1.8 - 6.0 | 50 | 20 | 19.5 | 31 | SKC6 | 0.50 |
| | HSK32A-SKA10-60 | P2773503 | 1.75 - 10.0 | 60 | 28 | 26 | 35 | SKC10 | 0.70 |
| 40A | HSK40A-SKA06-60 | P2773504 | 1.8 - 6.0 | 60 | 20 | 19.5 | 31 | SKC6 | 0.70 |
| | HSK40A-SKA10-60 | P2773505 | 1.75 - 10.0 | 60 | 28 | 27.5 | 35 | SKC10 | 0.90 |
| | HSK40A-SKA13-80 | P2773506 | 2.75 - 13.0 | 80 | 33 | 33 | 43.6 | SKC13 | 1.00 |
| 50A | HSK50A-SKA06-80 | P2773507 | 1.8 - 6.0 | 80 | 20 | 19.5 | 31 | SKC6 | 0.90 |
| | HSK50A-SKA10-100 | P2773508 | 1.75 - 10.0 | 100 | 28 | 27.5 | 35 | SKC10 | 1.10 |
| | HSK50A-SKA13-100 | P2773509 | 2.75 - 13.0 | 100 | 33 | 33 | 43.6 | SKC13 | 1.20 |
| 63A | HSK63A-SKA06-100 | P2730492 | 1.8 - 6.0 | 100 | 20 | 19.5 | 31 | SKC6 | 1.40 |
| | HSK63A-SKA10-100 | P2730494 | 1.75 - 10.0 | 100 | 28 | 27.5 | 35 | SKC10 | 1.60 |
| | HSK63A-SKA13-100 | P2773510 | 2.75 - 13.0 | 100 | 33 | 33 | 43.6 | SKC13 | 1.70 |
| | HSK63A-SKA16-120 | P2730510 | 2.75 - 16.0 | 120 | 40 | 40 | 52 | SKC16 | 1.70 |
| | HSK63A-SKA20-120 | P2730515 | 3.5 - 20.0 | 120 | 48.5 | 48.5 | 59.6 | SKC20 | 2.10 |
| | HSK63A-SKA25-150 | P2773501 | 16.0 - 25.4 | 150 | 55 | 55 | 63.4 | SKC25 | 2.40 |
| 80A | HSK80A-SKA06-120 | P2773550 | 1.8 - 6.0 | 120 | 20 | 19.5 | 31 | SKC6 | - |
| | HSK80A-SKA10-120 | P2773512 | 1.75 - 10.0 | 120 | 28 | 27.5 | 35 | SKC10 | - |
| | HSK80A-SKA13-120 | P2773513 | 2.75 - 13.0 | 120 | 33 | 33 | 43.6 | SKC13 | - |
| | HSK80A-SKA16-120 | P2773514 | 2.75 - 16.0 | 120 | 40 | 40 | 52 | SKC16 | - |
| | HSK80A-SKA20-130 | P2773515 | 3.5 - 20.0 | 130 | 48.5 | 48.5 | 59.6 | SKC20 | - |
| | HSK80A-SKA25-150 | P2773516 | 16.0 - 25.4 | 150 | 55 | 55 | 63.4 | SKC25 | - |
| 100A | HSK100A-SKA06-120 | P2773517 | 1.8 - 6.0 | 120 | 20 | 19.5 | 31 | SKC6 | 4.00 |
| | HSK100A-SKA10-150 | P2773518 | 1.75 - 10.0 | 150 | 28 | 27.5 | 35 | SKC10 | 4.50 |
| | HSK100A-SKA13-150 | P2773519 | 2.75 - 13.0 | 150 | 33 | 33 | 43.6 | SKC13 | 4.60 |
| | HSK100A-SKA16-150 | P2773520 | 2.75 - 16.0 | 150 | 40 | 40 | 52 | SKC16 | 5.10 |
| | HSK100A-SKA20-150 | P2773521 | 3.5 - 20.0 | 150 | 48.5 | 48.5 | 59.6 | SKC20 | 5.40 |
| | HSK100A-SKA25-160 | P2773522 | 16.0 - 25.4 | 160 | 55 | 55 | 63.4 | SKC25 | 5.50 |

▶CAT(ANSI B5.50) taper and Inch type products are available.
CAT(ANSI B5.50)锥柄及英制产品可供选择



TOOLING SYSTEM

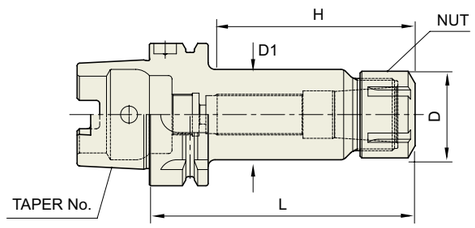
HYDRAULIC CHUCK
SHRINK FIT HOLDER
ER COLLET CHUCK
END MILL HOLDER & SIDE LOCK ARBOR
SHELL MILL ARBOR
POWER MILLING CHUCK
MORSE TAPER ARBOR
SK SLIM CHUCK
SYNCHRO TAPPING CHUCK
ONE STEP TAPPING CHUCK
TAPPING ER CHUCK
TAPPING CHUCK
FACE MILL ARBOR
COPY MILL ARBOR & INDEXABLE DRILL HOLDER
NC DRILL CHUCK & OTHER TOOL HOLDERS
BORING SYSTEM
ACCESSORY & OTHERS

SK SLIM CHUCK

SKA

## SK SLIM CHUCK
# SK刀柄

DIN 69893/
ISO 12164-1-HSK FORM E




DIN 69893-HSK | 6.3G | 15,000 RPM | AD

Collet, Nut and spanner, refer to page 199-201
筒夹及扳手，螺帽, 请参阅第199-201页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | CLAMPING RANGE 夹持范围 | L | D | D1 | H | COLLET | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|
| 25E | HSK25E-SKA06-45 | P2773523 | 1.8 - 6.0 | 45 | 20 | 19.5 | 31 | SKC6 | - |
| | HSK25E-SKA10-50 | P2773524 | 1.75 - 10.0 | 50 | 28 | 21.5 | 35 | SKC10 | - |
| 32E | HSK32E-SKA06-50 | P2773525 | 1.8 - 6.0 | 50 | 20 | 19.5 | 31 | SKC6 | 0.50 |
| | HSK32E-SKA10-60 | P2773526 | 1.75 - 10.0 | 60 | 28 | 26 | 35 | SKC10 | 0.70 |
| 40E | HSK40E-SKA06-60 | P2773527 | 1.8 - 6.0 | 60 | 20 | 19.5 | 31 | SKC6 | 0.70 |
| | HSK40E-SKA10-60 | P2773528 | 1.75 - 10.0 | 60 | 28 | 27.5 | 35 | SKC10 | 0.90 |
| | HSK40E-SKA13-80 | P2773529 | 2.75 - 13.0 | 80 | 33 | 33 | 43.6 | SKC13 | 1.00 |

▶CAT(ANSI B5.50) taper and Inch type products are available.
CAT(ANSI B5.50)锥柄及英制产品可供选择

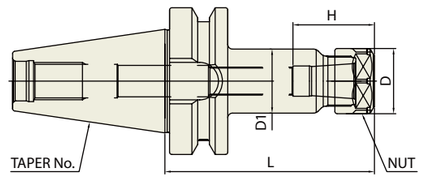


SK SLIM CHUCK

SKA

## SK SLIM CHUCK
# SK刀柄

CBT
(BT DUAL CONTACT)




CBT | AT3 | 2.5G | 25,000 RPM | AD

Collet, Nut and spanner, refer to page 199-201
筒夹及扳手，螺帽, 请参阅第199-201页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | CLAMPING RANGE 夹持范围 | L | D | D1 | H | COLLET | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|
| 30 | CBT30-SKA06-60 | P2775701 | 1.8 - 6.0 | 60 | 20 | 19.5 | 31 | SKC6 | 0.70 |
| | CBT30-SKA06-90 | P2775702 | 1.8 - 6.0 | 90 | 20 | 19.5 | 31 | SKC6 | 0.80 |
| | CBT30-SKA10-60 | P2775703 | 1.75 - 10.0 | 60 | 28 | 27.5 | 35 | SKC10 | 0.90 |
| | CBT30-SKA10-90 | P2775704 | 1.75 - 10.0 | 90 | 28 | 27.5 | 35 | SKC10 | 1.00 |
| | CBT30-SKA13-60 | P2775705 | 2.75 - 13.0 | 60 | 33 | 33 | 43.6 | SKC13 | 1.00 |
| | CBT30-SKA13-90 | P2775706 | 2.75 - 13.0 | 90 | 33 | 33 | 43.6 | SKC13 | 1.10 |
| | CBT30-SKA16-60 | P2775707 | 2.75 - 16.0 | 60 | 40 | 40 | 52 | SKC16 | 1.10 |
| | CBT30-SKA16-90 | P2775708 | 2.75 - 16.0 | 90 | 40 | 40 | 52 | SKC16 | 1.20 |
| | CBT30-SKA20-60 | P2775709 | 3.5 - 20.0 | 60 | 48.5 | 40 | 59.6 | SKC20 | 1.30 |
| | CBT30-SKA20-90 | P2775710 | 3.5 - 20.0 | 90 | 48.5 | 40 | 59.6 | SKC20 | 1.40 |
| | CBT30-SKA25-90 | P2775711 | 16.0 - 25.4 | 90 | 55 | 45 | 63.4 | SKC25 | 1.50 |
| 40 | CBT40-SKA06-90 | P2775712 | 1.8 - 6.0 | 90 | 20 | 19.5 | 31 | SKC6 | 1.10 |
| | CBT40-SKA06-120 | P2775713 | 1.8 - 6.0 | 120 | 20 | 19.5 | 31 | SKC6 | 1.40 |
| | CBT40-SKA06-150 | P2775714 | 1.8 - 6.0 | 150 | 20 | 19.5 | 31 | SKC6 | 1.50 |
| | CBT40-SKA10-90 | P2775715 | 1.75 - 10.0 | 90 | 28 | 27.5 | 35 | SKC10 | 1.20 |
| | CBT40-SKA10-120 | P2775716 | 1.75 - 10.0 | 120 | 28 | 27.5 | 35 | SKC10 | 1.40 |
| | CBT40-SKA10-150 | P2775717 | 1.75 - 10.0 | 150 | 28 | 27.5 | 35 | SKC10 | 1.60 |
| | CBT40-SKA13-90 | P2775718 | 2.75 - 13.0 | 90 | 33 | 33 | 43.6 | SKC13 | 1.40 |
| | CBT40-SKA13-120 | P2775719 | 2.75 - 13.0 | 120 | 33 | 33 | 43.6 | SKC13 | 1.60 |
| | CBT40-SKA13-150 | P2775720 | 2.75 - 13.0 | 150 | 33 | 33 | 43.6 | SKC13 | 1.80 |
| | CBT40-SKA16-90 | P2775721 | 2.75 - 16.0 | 90 | 40 | 40 | 52 | SKC16 | 1.50 |
| | CBT40-SKA16-120 | P2775722 | 2.75 - 16.0 | 120 | 40 | 40 | 52 | SKC16 | 1.70 |
| | CBT40-SKA16-150 | P2775723 | 2.75 - 16.0 | 150 | 40 | 40 | 52 | SKC16 | 1.90 |
| | CBT40-SKA20-90 | P2775724 | 3.5 - 20.0 | 90 | 48.5 | 48.5 | 59.6 | SKC20 | 1.60 |
| | CBT40-SKA20-120 | P2775725 | 3.5 - 20.0 | 120 | 48.5 | 48.5 | 59.6 | SKC20 | 2.00 |
| | CBT40-SKA20-150 | P2775726 | 3.5 - 20.0 | 150 | 48.5 | 48.5 | 59.6 | SKC20 | 2.40 |
| | CBT40-SKA25-90 | P2775727 | 16.0 - 25.4 | 90 | 55 | 55 | 63.4 | SKC25 | 1.80 |
| | CBT40-SKA25-120 | P2775728 | 16.0 - 25.4 | 120 | 55 | 55 | 63.4 | SKC25 | 2.00 |
| | CBT40-SKA25-150 | P2775729 | 16.0 - 25.4 | 150 | 55 | 55 | 63.4 | SKC25 | 2.30 |

▶CAT(ANSI B5.50) taper and Inch type products are available.
CAT(ANSI B5.50)锥柄及英制产品可供选择



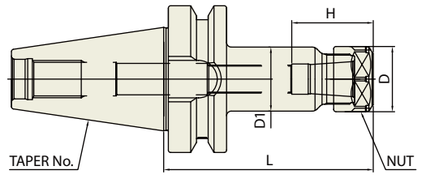
TOOLING SYSTEM
HYDRAULIC CHUCK
SHRINK FIT HOLDER
ER COLLET CHUCK
END MILL HOLDER & SIDE LOCK ARBOR
SHELL MILL ARBOR
POWER MILLING CHUCK
MORSE TAPER ARBOR
SK SLIM CHUCK
SYNCHRO TAPPING CHUCK
ONE STEP TAPPING CHUCK
TAPPING ER CHUCK
TAPPING CHUCK
FACE MILL ARBOR
COPY MILL ARBOR & INDEXABLE DRILL HOLDER
NC DRILL CHUCK & OTHER TOOL HOLDERS
BORING SYSTEM
ACCESSORY & OTHERS

SK SLIM CHUCK

SKA

## SK SLIM CHUCK
## SK刀柄

CBT
(BT DUAL CONTACT)




CBT | AT3 | 2.5G | 25,000 RPM | AD

Collet, Nut and spanner, refer to page 199-201
筒夹及扳手，螺帽, 请参阅第199-201页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | CLAMPING RANGE 夹持范围 | L | D | D1 | H | COLLET | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|
| 50 | CBT50-SKA06-105 | P2775730 | 1.8 - 6.0 | 105 | 20 | 19.5 | 31 | SKC6 | 3.80 |
| | CBT50-SKA06-135 | P2775731 | 1.8 - 6.0 | 135 | 20 | 19.5 | 31 | SKC6 | 3.90 |
| | CBT50-SKA06-165 | P2775732 | 1.8 - 6.0 | 165 | 20 | 19.5 | 31 | SKC6 | 4.00 |
| | CBT50-SKA06-195 | P2775733 | 1.8 - 6.0 | 195 | 20 | 19.5 | 31 | SKC6 | 4.20 |
| | CBT50-SKA10-105 | P2775734 | 1.75 - 10.0 | 105 | 28 | 27.5 | 35 | SKC10 | 4.20 |
| | CBT50-SKA10-135 | P2775735 | 1.75 - 10.0 | 135 | 28 | 27.5 | 35 | SKC10 | 4.40 |
| | CBT50-SKA10-165 | P2775736 | 1.75 - 10.0 | 165 | 28 | 27.5 | 35 | SKC10 | 4.60 |
| | CBT50-SKA10-195 | P2775737 | 1.75 - 10.0 | 195 | 28 | 27.5 | 35 | SKC10 | 4.80 |
| | CBT50-SKA13-105 | P2775738 | 2.75 - 13.0 | 105 | 33 | 33 | 43.6 | SKC13 | 4.50 |
| | CBT50-SKA13-135 | P2775739 | 2.75 - 13.0 | 135 | 33 | 33 | 43.6 | SKC13 | 4.70 |
| | CBT50-SKA13-165 | P2775740 | 2.75 - 13.0 | 165 | 33 | 33 | 43.6 | SKC13 | 4.90 |
| | CBT50-SKA13-195 | P2775741 | 2.75 - 13.0 | 195 | 33 | 33 | 43.6 | SKC13 | 5.20 |
| | CBT50-SKA16-105 | P2775742 | 2.75 - 16.0 | 105 | 40 | 40 | 52 | SKC16 | 4.70 |
| | CBT50-SKA16-135 | P2775743 | 2.75 - 16.0 | 135 | 40 | 40 | 52 | SKC16 | 4.90 |
| | CBT50-SKA16-165 | P2775744 | 2.75 - 16.0 | 165 | 40 | 40 | 52 | SKC16 | 5.10 |
| | CBT50-SKA16-195 | P2775745 | 2.75 - 16.0 | 195 | 40 | 40 | 52 | SKC16 | 5.50 |
| | CBT50-SKA20-105 | P2775746 | 3.5 - 20.0 | 105 | 48.5 | 48.5 | 59.6 | SKC20 | 4.30 |
| | CBT50-SKA20-135 | P2775747 | 3.5 - 20.0 | 135 | 48.5 | 48.5 | 59.6 | SKC20 | 4.60 |
| | CBT50-SKA20-165 | P2775748 | 3.5 - 20.0 | 165 | 48.5 | 48.5 | 59.6 | SKC20 | 5.00 |
| | CBT50-SKA20-195 | P2775749 | 3.5 - 20.0 | 195 | 48.5 | 48.5 | 59.6 | SKC20 | 5.40 |
| | CBT50-SKA25-105 | P2775750 | 16.0 - 25.4 | 105 | 55 | 55 | 63.4 | SKC25 | 5.20 |
| | CBT50-SKA25-135 | P2775751 | 16.0 - 25.4 | 135 | 55 | 55 | 63.4 | SKC25 | 5.40 |
| | CBT50-SKA25-165 | P2775752 | 16.0 - 25.4 | 165 | 55 | 55 | 63.4 | SKC25 | 5.60 |
| | CBT50-SKA25-195 | P2775753 | 16.0 - 25.4 | 195 | 55 | 55 | 63.4 | SKC25 | 6.00 |

▶CAT(ANSI B5.50) taper and Inch type products are available.
CAT(ANSI B5.50)锥柄及英制产品可供选择



TOOLING SYSTEM

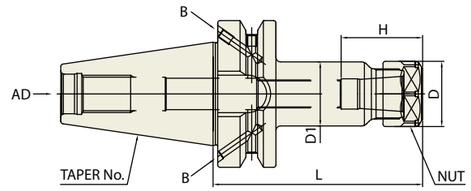
HYDRAULIC CHUCK
SHRINK FIT HOLDER
ER COLLET CHUCK
END MILL HOLDER & SIDE LOCK ARBOR
SHELL MILL ARBOR
POWER MILLING CHUCK
MORSE TAPER ARBOR
SK SLIM CHUCK
SYNCHRO TAPPING CHUCK
ONE STEP TAPPING CHUCK
TAPPING ER CHUCK
TAPPING CHUCK
FACE MILL ARBOR
COPY MILL ARBOR & INDEXABLE DRILL HOLDER
NC DRILL CHUCK & OTHER TOOL HOLDERS
BORING SYSTEM
ACCESSORY & OTHERS

SK SLIM CHUCK

SKA

## SK SLIM CHUCK
## SK刀柄

JIS B6339/
MAS 403-BT




JIS B6339-BT | AT3 | 2.5G | 25,000 RPM | AD or AD/B

Collet, Nut and spanner, refer to page 199-201
筒夹及扳手，螺帽, 请参阅第199-201页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | CLAMPING RANGE 夹持范围 | L | D | D1 | H | COLLET | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|
| 30 | BT30-SKA06-60 | P2775754A | 1.8 - 6.0 | 60 | 20 | 19.5 | 31 | SKC6 | 0.70 |
| | BT30-SKA06-90 | P2775755A | 1.8 - 6.0 | 90 | 20 | 19.5 | 31 | SKC6 | 0.80 |
| | BT30-SKA10-60 | P2775756A | 1.75 - 10.0 | 60 | 28 | 27.5 | 35 | SKC10 | 0.90 |
| | BT30-SKA10-90 | P2775757A | 1.75 - 10.0 | 90 | 28 | 27.5 | 35 | SKC10 | 1.00 |
| | BT30-SKA13-60 | P2775758A | 2.75 - 13.0 | 60 | 33 | 33 | 43.6 | SKC13 | 1.00 |
| | BT30-SKA13-90 | P2775759A | 2.75 - 13.0 | 90 | 33 | 33 | 43.6 | SKC13 | 1.10 |
| | BT30-SKA16-60 | P2775760A | 2.75 - 16.0 | 60 | 40 | 40 | 52 | SKC16 | 1.10 |
| | BT30-SKA16-90 | P2775761A | 2.75 - 16.0 | 90 | 40 | 40 | 52 | SKC16 | 1.20 |
| | BT30-SKA20-60 | P2775762A | 3.5 - 20.0 | 60 | 40 | 48.5 | 59.6 | SKC20 | 1.30 |
| | BT30-SKA20-90 | P2775763A | 3.5 - 20.0 | 90 | 40 | 48.5 | 59.6 | SKC20 | 1.40 |
| | BT30-SKA25-90 | P2775764A | 16.0 - 25.4 | 90 | 45 | 55 | 63.4 | SKC25 | 1.50 |
| 40 | BT40AD/B-SKA06-90 | P2775765 | 1.8 - 6.0 | 90 | 20 | 19.5 | 31 | SKC6 | 1.10 |
| | BT40AD/B-SKA06-120 | P2775766 | 1.8 - 6.0 | 120 | 20 | 19.5 | 31 | SKC6 | 1.40 |
| | BT40AD/B-SKA06-150 | P2775767 | 1.8 - 6.0 | 150 | 20 | 19.5 | 31 | SKC6 | 1.50 |
| | BT40AD/B-SKA10-90 | P2775768 | 1.75 - 10.0 | 90 | 28 | 27.5 | 35 | SKC10 | 1.20 |
| | BT40AD/B-SKA10-120 | P2775769 | 1.75 - 10.0 | 120 | 28 | 27.5 | 35 | SKC10 | 1.40 |
| | BT40AD/B-SKA10-150 | P2775770 | 1.75 - 10.0 | 150 | 28 | 27.5 | 35 | SKC10 | 1.60 |
| | BT40AD/B-SKA13-90 | P2775771 | 2.75 - 13.0 | 90 | 33 | 33 | 43.6 | SKC13 | 1.40 |
| | BT40AD/B-SKA13-120 | P2775772 | 2.75 - 13.0 | 120 | 33 | 33 | 43.6 | SKC13 | 1.60 |
| | BT40AD/B-SKA13-150 | P2775773 | 2.75 - 13.0 | 150 | 33 | 33 | 43.6 | SKC13 | 1.80 |
| | BT40AD/B-SKA16-90 | P2775774 | 2.75 - 16.0 | 90 | 40 | 40 | 52 | SKC16 | 1.50 |
| | BT40AD/B-SKA16-120 | P2775775 | 2.75 - 16.0 | 120 | 40 | 40 | 52 | SKC16 | 1.70 |
| | BT40AD/B-SKA16-150 | P2775776 | 2.75 - 16.0 | 150 | 40 | 40 | 52 | SKC16 | 1.90 |
| | BT40AD/B-SKA20-90 | P2775777 | 3.5 - 20.0 | 90 | 48.5 | 48.5 | 59.6 | SKC20 | 1.60 |
| | BT40AD/B-SKA20-120 | P2775778 | 3.5 - 20.0 | 120 | 48.5 | 48.5 | 59.6 | SKC20 | 2.00 |
| | BT40AD/B-SKA20-150 | P2775779 | 3.5 - 20.0 | 150 | 48.5 | 48.5 | 59.6 | SKC20 | 2.40 |
| | BT40AD/B-SKA25-90 | P2775780 | 16.0 - 25.4 | 90 | 55 | 55 | 63.4 | SKC25 | 1.80 |
| | BT40AD/B-SKA25-120 | P2775781 | 16.0 - 25.4 | 120 | 55 | 55 | 63.4 | SKC25 | 2.00 |
| | BT40AD/B-SKA25-150 | P2775782 | 16.0 - 25.4 | 150 | 55 | 55 | 63.4 | SKC25 | 2.30 |

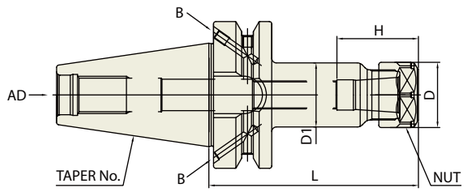
▶CAT(ANSI B5.50) taper and Inch type products are available.
CAT(ANSI B5.50)锥柄及英制产品可供选择

# SK SLIM CHUCK

SKA

## SK SLIM CHUCK
## SK刀柄

JIS B6339/
MAS 403-BT




JIS B6339-BT | AT3 | 2.5G | 25,000 RPM | AD/B

Collet, Nut and spanner, refer to page 199-201
筒夹及扳手，螺帽, 请参阅第199-201页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | CLAMPING RANGE 夹持范围 | L | D | D1 | H | COLLET | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|
| 50 | BT50AD/B-SKA06-105 | P2775783 | 1.8 - 6.0 | 105 | 20 | 19.5 | 31 | SKC6 | 3.80 |
| | BT50AD/B-SKA06-135 | P2775784 | 1.8 - 6.0 | 135 | 20 | 19.5 | 31 | SKC6 | 3.90 |
| | BT50AD/B-SKA06-165 | P2775785 | 1.8 - 6.0 | 165 | 20 | 19.5 | 31 | SKC6 | 4.00 |
| | BT50AD/B-SKA06-195 | P2775786 | 1.8 - 6.0 | 195 | 20 | 19.5 | 31 | SKC6 | 4.20 |
| | BT50AD/B-SKA10-105 | P2775787 | 1.75 - 10.0 | 105 | 28 | 27.5 | 35 | SKC10 | 4.20 |
| | BT50AD/B-SKA10-135 | P2775788 | 1.75 - 10.0 | 135 | 28 | 27.5 | 35 | SKC10 | 4.40 |
| | BT50AD/B-SKA10-165 | P2775789 | 1.75 - 10.0 | 165 | 28 | 27.5 | 35 | SKC10 | 4.60 |
| | BT50AD/B-SKA10-195 | P2775790 | 1.75 - 10.0 | 195 | 28 | 27.5 | 35 | SKC10 | 4.80 |
| | BT50AD/B-SKA13-105 | P2775791 | 2.75 - 13.0 | 105 | 33 | 33 | 43.6 | SKC13 | 4.50 |
| | BT50AD/B-SKA13-135 | P2775792 | 2.75 - 13.0 | 135 | 33 | 33 | 43.6 | SKC13 | 4.70 |
| | BT50AD/B-SKA13-165 | P2775793 | 2.75 - 13.0 | 165 | 33 | 33 | 43.6 | SKC13 | 4.90 |
| | BT50AD/B-SKA13-195 | P2775794 | 2.75 - 13.0 | 195 | 33 | 33 | 43.6 | SKC13 | 5.20 |
| | BT50AD/B-SKA16-105 | P2775795 | 2.75 - 16.0 | 105 | 40 | 40 | 52 | SKC16 | 4.70 |
| | BT50AD/B-SKA16-135 | P2775796 | 2.75 - 16.0 | 135 | 40 | 40 | 52 | SKC16 | 4.90 |
| | BT50AD/B-SKA16-165 | P2775797 | 2.75 - 16.0 | 165 | 40 | 40 | 52 | SKC16 | 5.10 |
| | BT50AD/B-SKA16-195 | P2775798 | 2.75 - 16.0 | 195 | 40 | 40 | 52 | SKC16 | 5.50 |
| | BT50AD/B-SKA20-105 | P2775799 | 3.5 - 20.0 | 105 | 48.5 | 48.5 | 59.6 | SKC20 | 4.30 |
| | BT50AD/B-SKA20-135 | P2775800 | 3.5 - 20.0 | 135 | 48.5 | 48.5 | 59.6 | SKC20 | 4.60 |
| | BT50AD/B-SKA20-165 | P2775801 | 3.5 - 20.0 | 165 | 48.5 | 48.5 | 59.6 | SKC20 | 5.00 |
| | BT50AD/B-SKA20-195 | P2775802 | 3.5 - 20.0 | 195 | 48.5 | 48.5 | 59.6 | SKC20 | 5.40 |
| | BT50AD/B-SKA25-105 | P2775803 | 16.0 - 25.4 | 105 | 55 | 55 | 63.4 | SKC25 | 5.20 |
| | BT50AD/B-SKA25-135 | P2775804 | 16.0 - 25.4 | 135 | 55 | 55 | 63.4 | SKC25 | 5.40 |
| | BT50AD/B-SKA25-165 | P2775805 | 16.0 - 25.4 | 165 | 55 | 55 | 63.4 | SKC25 | 5.60 |
| | BT50AD/B-SKA25-195 | P2775806 | 16.0 - 25.4 | 195 | 55 | 55 | 63.4 | SKC25 | 6.00 |

▶CAT(ANSI B5.50) taper and Inch type products are available.
CAT(ANSI B5.50)锥柄及英制产品可供选择



TOOLING SYSTEM

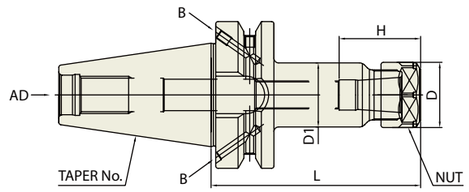
HYDRAULIC CHUCK
SHRINK FIT HOLDER
ER COLLET CHUCK
END MILL HOLDER & SIDE LOCK ARBOR
SHELL MILL ARBOR
POWER MILLING CHUCK
MORSE TAPER ARBOR
SK SLIM CHUCK
SYNCHRO TAPPING CHUCK
ONE STEP TAPPING CHUCK
TAPPING ER CHUCK
TAPPING CHUCK
FACE MILL ARBOR
COPY MILL ARBOR & INDEXABLE DRILL HOLDER
NC DRILL CHUCK & OTHER TOOL HOLDERS
BORING SYSTEM
ACCESSORY & OTHERS

# SK SLIM CHUCK

SKA

## SK SLIM CHUCK
## SK刀柄

JIS B6339/
MAS 403-BT




JIS B6339-BT | AT3 | 6.3G | 15,000 RPM | AD

Collet, Nut and spanner, refer to page 199-201
筒夹及扳手，螺帽, 请参阅第199-201页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | CLAMPING RANGE 夹持范围 | L | D | D1 | H | COLLET | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|
| 30 | BT30-SKA06-60 | P2775807 | 1.8 - 6.0 | 60 | 20 | 19.5 | 31 | SKC6 | 0.70 |
| | BT30-SKA06-90 | P2775808 | 1.8 - 6.0 | 90 | 20 | 19.5 | 31 | SKC6 | 0.80 |
| | BT30-SKA10-60 | P2775809 | 1.75 - 10.0 | 60 | 28 | 27.5 | 35 | SKC10 | 0.90 |
| | BT30-SKA10-90 | P2775810 | 1.75 - 10.0 | 90 | 28 | 27.5 | 35 | SKC10 | 1.00 |
| | BT30-SKA13-60 | P2775811 | 2.75 - 13.0 | 60 | 33 | 33 | 43.6 | SKC13 | 1.00 |
| | BT30-SKA13-90 | P2775812 | 2.75 - 13.0 | 90 | 33 | 33 | 43.6 | SKC13 | 1.10 |
| | BT30-SKA16-60 | P2775813 | 2.75 - 16.0 | 60 | 40 | 40 | 52 | SKC16 | 1.10 |
| | BT30-SKA16-90 | P2775814 | 2.75 - 16.0 | 90 | 40 | 40 | 52 | SKC16 | 1.20 |
| | BT30-SKA20-60 | P2775815 | 3.5 - 20.0 | 60 | 48.5 | 40 | 59.6 | SKC20 | 1.30 |
| | BT30-SKA20-90 | P2775816 | 3.5 - 20.0 | 90 | 48.5 | 40 | 59.6 | SKC20 | 1.40 |
| | BT30-SKA25-90 | P2775817 | 16.0 - 25.4 | 90 | 55 | 45 | 63.4 | SKC25 | 1.50 |
| 40 | BT40-SKA06-90 | P2775818 | 1.8 - 6.0 | 90 | 20 | 19.5 | 31 | SKC6 | 1.10 |
| | BT40-SKA06-120 | P2775819 | 1.8 - 6.0 | 120 | 20 | 19.5 | 31 | SKC6 | 1.40 |
| | BT40-SKA06-150 | P2775820 | 1.8 - 6.0 | 150 | 20 | 19.5 | 31 | SKC6 | 1.50 |
| | BT40-SKA10-90 | P2775821 | 1.75 - 10.0 | 90 | 28 | 27.5 | 35 | SKC10 | 1.20 |
| | BT40-SKA10-120 | P2775822 | 1.75 - 10.0 | 120 | 28 | 27.5 | 35 | SKC10 | 1.40 |
| | BT40-SKA10-150 | P2775823 | 1.75 - 10.0 | 150 | 28 | 27.5 | 35 | SKC10 | 1.60 |
| | BT40-SKA13-90 | P2775824 | 2.75 - 13.0 | 90 | 33 | 33 | 43.6 | SKC13 | 1.40 |
| | BT40-SKA13-120 | P2775825 | 2.75 - 13.0 | 120 | 33 | 33 | 43.6 | SKC13 | 1.60 |
| | BT40-SKA13-150 | P2775826 | 2.75 - 13.0 | 150 | 33 | 33 | 43.6 | SKC13 | 1.80 |
| | BT40-SKA16-90 | P2775827 | 2.75 - 16.0 | 90 | 40 | 40 | 52 | SKC16 | 1.50 |
| | BT40-SKA16-120 | P2775828 | 2.75 - 16.0 | 120 | 40 | 40 | 52 | SKC16 | 1.70 |
| | BT40-SKA16-150 | P2775829 | 2.75 - 16.0 | 150 | 40 | 40 | 52 | SKC16 | 1.90 |
| | BT40-SKA20-90 | P2775830 | 3.5 - 20.0 | 90 | 48.5 | 48.5 | 59.6 | SKC20 | 1.60 |
| | BT40-SKA20-120 | P2775831 | 3.5 - 20.0 | 120 | 48.5 | 48.5 | 59.6 | SKC20 | 2.00 |
| | BT40-SKA20-150 | P2775832 | 3.5 - 20.0 | 150 | 48.5 | 48.5 | 59.6 | SKC20 | 2.40 |
| | BT40-SKA25-90 | P2775833 | 16.0 - 25.4 | 90 | 55 | 55 | 63.4 | SKC25 | 1.80 |
| | BT40-SKA25-120 | P2775834 | 16.0 - 25.4 | 120 | 55 | 55 | 63.4 | SKC25 | 2.00 |
| | BT40-SKA25-150 | P2775835 | 16.0 - 25.4 | 150 | 55 | 55 | 63.4 | SKC25 | 2.30 |

▶CAT(ANSI B5.50) taper and Inch type products are available.
CAT(ANSI B5.50)锥柄及英制产品可供选择

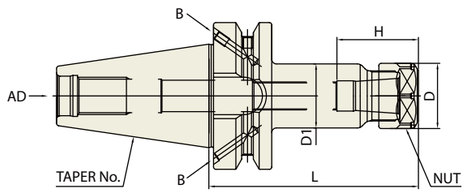
SK SLIM CHUCK

SKA

## SK SLIM CHUCK

JIS B6339/
MAS 403-BT

# SK刀柄




JIS B6339-BT | AT3 | 6.3G | 15,000 RPM | AD

Collet, Nut and spanner, refer to page 199-201
筒夹及扳手，螺帽, 请参阅第199-201页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | CLAMPING RANGE 夹持范围 | L | D | D1 | H | COLLET | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|
| 50 | **BT50-SKA06-105** | **P2775836** | 1.8 - 6.0 | 105 | 20 | 19.5 | 31 | SKC6 | 3.80 |
| | **BT50-SKA06-135** | **P2775837** | 1.8 - 6.0 | 135 | 20 | 19.5 | 31 | SKC6 | 3.90 |
| | **BT50-SKA06-165** | **P2775838** | 1.8 - 6.0 | 165 | 20 | 19.5 | 31 | SKC6 | 4.00 |
| | **BT50-SKA06-195** | **P2775839** | 1.8 - 6.0 | 195 | 20 | 19.5 | 31 | SKC6 | 4.20 |
| | **BT50-SKA10-105** | **P2775840** | 1.75 - 10.0 | 105 | 28 | 27.5 | 35 | SKC10 | 4.20 |
| | **BT50-SKA10-135** | **P2775841** | 1.75 - 10.0 | 135 | 28 | 27.5 | 35 | SKC10 | 4.40 |
| | **BT50-SKA10-165** | **P2775842** | 1.75 - 10.0 | 165 | 28 | 27.5 | 35 | SKC10 | 4.60 |
| | **BT50-SKA10-195** | **P2775843** | 1.75 - 10.0 | 195 | 28 | 27.5 | 35 | SKC10 | 4.80 |
| | **BT50-SKA13-105** | **P2775844** | 2.75 - 13.0 | 105 | 33 | 33 | 43.6 | SKC13 | 4.50 |
| | **BT50-SKA13-135** | **P2775845** | 2.75 - 13.0 | 135 | 33 | 33 | 43.6 | SKC13 | 4.70 |
| | **BT50-SKA13-165** | **P2775846** | 2.75 - 13.0 | 165 | 33 | 33 | 43.6 | SKC13 | 4.90 |
| | **BT50-SKA13-195** | **P2775847** | 2.75 - 13.0 | 195 | 33 | 33 | 43.6 | SKC13 | 5.20 |
| | **BT50-SKA16-105** | **P2775848** | 2.75 - 16.0 | 105 | 40 | 40 | 52 | SKC16 | 4.70 |
| | **BT50-SKA16-135** | **P2775849** | 2.75 - 16.0 | 135 | 40 | 40 | 52 | SKC16 | 4.90 |
| | **BT50-SKA16-165** | **P2775850** | 2.75 - 16.0 | 165 | 40 | 40 | 52 | SKC16 | 5.10 |
| | **BT50-SKA16-195** | **P2775851** | 2.75 - 16.0 | 195 | 40 | 40 | 52 | SKC16 | 5.50 |
| | **BT50-SKA20-105** | **P2775852** | 3.5 - 20.0 | 105 | 48.5 | 48.5 | 59.6 | SKC20 | 4.30 |
| | **BT50-SKA20-135** | **P2775853** | 3.5 - 20.0 | 135 | 48.5 | 48.5 | 59.6 | SKC20 | 4.60 |
| | **BT50-SKA20-165** | **P2775854** | 3.5 - 20.0 | 165 | 48.5 | 48.5 | 59.6 | SKC20 | 5.00 |
| | **BT50-SKA20-195** | **P2775855** | 3.5 - 20.0 | 195 | 48.5 | 48.5 | 59.6 | SKC20 | 5.40 |
| | **BT50-SKA25-105** | **P2775856** | 16.0 - 25.4 | 105 | 55 | 55 | 63.4 | SKC25 | 5.20 |
| | **BT50-SKA25-135** | **P2775857** | 16.0 - 25.4 | 135 | 55 | 55 | 63.4 | SKC25 | 5.40 |
| | **BT50-SKA25-165** | **P2775858** | 16.0 - 25.4 | 165 | 55 | 55 | 63.4 | SKC25 | 5.60 |
| | **BT50-SKA25-195** | **P2775859** | 16.0 - 25.4 | 195 | 55 | 55 | 63.4 | SKC25 | 6.00 |

▶CAT(ANSI B5.50) taper and Inch type products are available.
CAT(ANSI B5.50)锥柄及英制产品可供选择



TOOLING SYSTEM

HYDRAULIC CHUCK
SHRINK FIT HOLDER
ER COLLET CHUCK
END MILL HOLDER & SIDE LOCK ARBOR
SHELL MILL ARBOR
POWER MILLING CHUCK
MORSE TAPER ARBOR
SK SLIM CHUCK
SYNCHRO TAPPING CHUCK
ONE STEP TAPPING CHUCK
TAPPING ER CHUCK
TAPPING CHUCK
FACE MILL ARBOR
COPY MILL ARBOR & INDEXABLE DRILL HOLDER
NC DRILL CHUCK & OTHER TOOL HOLDERS
BORING SYSTEM
ACCESSORY & OTHERS

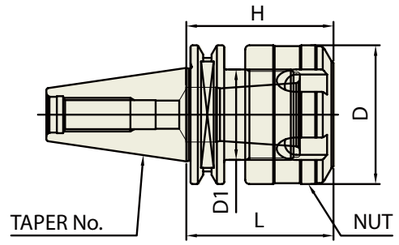
SK SLIM CHUCK

SKA

## SK SLIM CHUCK

ISO 20/25

# SK刀柄




ISO 20/25 | AT3 | 2.5G | 30,000 RPM | AD

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | CLAMPING RANGE 夹持范围 | L | D | D1 | H | COLLET | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|
| 20 | **ISO20-SKA10-35** | **P2773530** | 1.75 - 10.0 | 35 | 33 | 21.5 | 35 | SKC10 | 0.50 |
| 25 | **ISO25-SKA10-35** | **P2773531** | 1.75 - 10.0 | 35 | 33 | 21.5 | 35 | SKC10 | 0.70 |

▶Higher balancing grade is available upon request.
可根据要求提供高动平衡等级

▶To be supplied with assembling of pull stud bolt.
可供应拉丁组装型产品

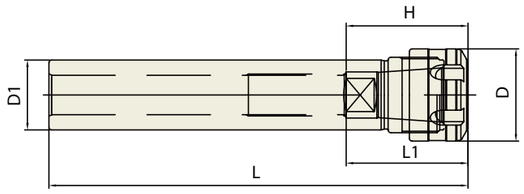
SK SLIM CHUCK

SKA

## SK SLIM CHUCK

STRAIGHT-K

# SK刀柄



Collet, Nut and spanner, refer to page 199-201
筒夹及扳手，螺帽, 请参阅第199-201页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | CLAMPING RANGE 夹持范围 | L | L1 | D | D1 | H | COLLET | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|---|
| 20 | K20-SKA06-100 | P2773532 | 1.8 - 6.0 | 100 | 21 - 35 | 20 | 20 | 31 | SKC6 | 0.20 |
| | K20-SKA06-140 | P2773533 | 1.8 - 6.0 | 140 | 21 - 35 | 20 | 20 | 31 | SKC6 | 0.30 |
| | K20-SKA10-100 | P2773534 | 1.75 - 10.0 | 100 | 30 - 50 | 28 | 20 | 35 | SKC10 | 0.20 |
| | K20-SKA10-140 | P2773535 | 1.75 - 10.0 | 140 | 30 - 50 | 28 | 20 | 35 | SKC10 | 0.30 |
| 25 | K25-SKA06-100 | P2773536 | 1.8 - 6.0 | 100 | 21 - 35 | 20 | 25 | 31 | SKC6 | 0.30 |
| | K25-SKA06-140 | P2773537 | 1.8 - 6.0 | 140 | 21 - 35 | 20 | 25 | 31 | SKC6 | 0.50 |
| | K25-SKA10-100 | P2773538 | 1.75 - 10.0 | 100 | 30 - 50 | 28 | 25 | 35 | SKC10 | 0.30 |
| | K25-SKA10-150 | P2773539 | 1.75 - 10.0 | 150 | 30 - 50 | 28 | 25 | 35 | SKC10 | 0.50 |
| | K25-SKA13-100 | P2773540 | 2.75 - 13.0 | 100 | 31 - 65 | 33 | 25 | 43.6 | SKC13 | 0.40 |
| | K25-SKA13-150 | P2773541 | 2.75 - 13.0 | 150 | 31 - 65 | 33 | 25 | 43.6 | SKC13 | 0.60 |
| 32 | K32-SKA10-100 | P2773542 | 1.75 - 10.0 | 100 | 30 - 50 | 28 | 32 | 35 | SKC10 | 0.50 |
| | K32-SKA10-150 | P2773543 | 1.75 - 10.0 | 150 | 30 - 50 | 28 | 32 | 35 | SKC10 | 0.70 |
| | K32-SKA13-100 | P2773544 | 2.75 - 13.0 | 100 | 31 - 65 | 33 | 32 | 43.6 | SKC13 | 1.00 |
| | K32-SKA13-150 | P2773545 | 2.75 - 13.0 | 150 | 31 - 65 | 33 | 32 | 43.6 | SKC13 | 1.20 |
| | K32-SKA16-100 | P2773546 | 2.75 - 16.0 | 100 | 40 - 70 | 40 | 32 | 52 | SKC16 | 1.00 |
| | K32-SKA16-150 | P2773547 | 2.75 - 16.0 | 150 | 40 - 70 | 40 | 32 | 52 | SKC16 | 1.20 |
| | K32-SKA20-100 | P2773548 | 3.5 - 20.0 | 100 | 47 - 80 | 48.5 | 32 | 59.6 | SKC20 | 1.10 |
| | K32-SKA20-150 | P2773549 | 3.5 - 20.0 | 150 | 47 - 80 | 48.5 | 32 | 59.6 | SKC20 | 1.30 |



TOOLING SYSTEM

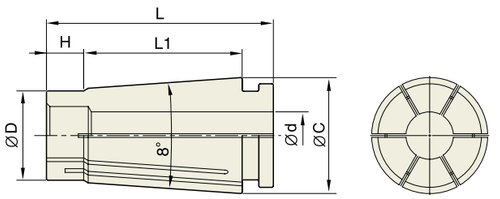
HYDRAULIC CHUCK
SHRINK FIT HOLDER
ER COLLET CHUCK
END MILL HOLDER & SIDE LOCK ARBOR
SHELL MILL ARBOR
POWER MILLING CHUCK
MORSE TAPER ARBOR
SK SLIM CHUCK
SYNCHRO TAPPING CHUCK
ONE STEP TAPPING CHUCK
TAPPING ER CHUCK
TAPPING CHUCK
FACE MILL ARBOR
COPY MILL ARBOR & INDEXABLE DRILL HOLDER
NC DRILL CHUCK & OTHER TOOL HOLDERS
BORING SYSTEM
ACCESSORY & OTHERS

SK SLIM CHUCK

SKC

## SK COLLET

# SK筒夹




◇ T.I.R : ≤0.005mm at 3D

Unit (单位) : mm

| TYPE 型号 | MODEL No. 型号 | EDP No. | CLAMPING RANGE 夹持范围 (d) |
|---|---|---|---|
| SKC6 | SKC6-2 | P2730780 | 1.8 - 2.0 |
| | SKC6-2.5 | P2773601 | 2.3 - 2.5 |
| | SKC6-3 | P2730782 | 2.8 - 3.0 |
| | SKC6-3.5 | P2773602 | 3.0 - 3.5 |
| | SKC6-4 | P2730784 | 3.5 - 4.0 |
| | SKC6-4.5 | P2773603 | 4.0 - 4.5 |
| | SKC6-5 | P2730786 | 4.5 - 5.0 |
| | SKC6-5.5 | P2773604 | 5.0 - 5.5 |
| | SKC6-6 | P2730788 | 5.5 - 6.0 |

| TYPE 型号 | MODEL No. 型号 | EDP No. | CLAMPING RANGE 夹持范围 (d) |
|---|---|---|---|
| SKC10 | SKC10-2 | P2730790 | 1.75 - 2.0 |
| | SKC10-2.5 | P2773605 | 2.25 - 2.5 |
| | SKC10-3 | P2730791 | 2.75 - 3.0 |
| | SKC10-3.5 | P2773606 | 3.0 - 3.5 |
| | SKC10-4 | P2730792 | 3.5 - 4.0 |
| | SKC10-4.5 | P2773607 | 4.0 - 4.5 |
| | SKC10-5 | P2730793 | 4.5 - 5.0 |
| | SKC10-5.5 | P2773608 | 5.0 - 5.5 |
| | SKC10-6 | P2730794 | 5.5 - 6.0 |
| | SKC10-6.5 | P2773609 | 6.0 - 6.5 |
| | SKC10-7 | P2730795 | 6.5 - 7.0 |
| | SKC10-7.5 | P2773610 | 7.0 - 7.5 |
| | SKC10-8 | P2730796 | 7.5 - 8.0 |
| | SKC10-8.5 | P2773611 | 8.0 - 8.5 |
| | SKC10-9 | P2730797 | 8.5 - 9.0 |
| | SKC10-9.5 | P2773612 | 9.0 - 9.5 |
| | SKC10-10 | P2730798 | 9.5 - 10.0 |

| TYPE 型号 | MODEL No. 型号 | EDP No. | CLAMPING RANGE 夹持范围 (d) |
|---|---|---|---|
| SKC13 | SKC13-3 | P2773656 | 2.75 - 3.0 |
| | SKC13-3.5 | P2773657 | 3.0 - 3.5 |
| | SKC13-4 | P2773658 | 3.5 - 4.0 |
| | SKC13-4.5 | P2773659 | 4.0 - 4.5 |
| | SKC13-5 | P2773660 | 4.5 - 5.0 |
| | SKC13-5.5 | P2773661 | 5.0 - 5.5 |
| | SKC13-6 | P2773662 | 5.5 - 6.0 |
| | SKC13-6.5 | P2773663 | 6.0 - 6.5 |
| | SKC13-7 | P2773664 | 6.5 - 7.0 |
| | SKC13-7.5 | P2773665 | 7.0 - 7.5 |
| | SKC13-8 | P2773666 | 7.5 - 8.0 |
| | SKC13-8.5 | P2773667 | 8.0 - 8.5 |
| | SKC13-9 | P2773668 | 8.5 - 9.0 |
| | SKC13-9.5 | P2773669 | 9.0 - 9.5 |
| | SKC13-10 | P2773670 | 9.5 - 10.0 |
| | SKC13-10.5 | P2773671 | 10.0 - 10.5 |
| | SKC13-11 | P2773672 | 10.5 - 11.0 |
| | SKC13-11.5 | P2773673 | 11.0 - 11.5 |
| | SKC13-12 | P2773674 | 11.5 - 12.0 |
| | SKC13-12.5 | P2773675 | 12.0 - 12.5 |
| | SKC13-13 | P2773676 | 12.5 - 13.0 |

## ■ SKC COLLET DIMENSION SKC夹头尺寸

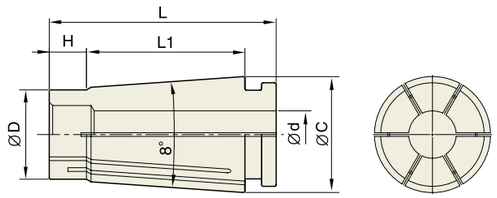
Unit (单位) : mm

| TYPE 型号 | D | L | L1 | H | C | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|
| SKC6 | 7.5 | 25.7 | 17.6 | 3.8 | 10 | 0.03 |
| SKC10 | 12 | 32 | 21.3 | 5 | 15 | 0.04 |
| SKC13 | 15.4 | 39 | 28.3 | 5.5 | 20 | |
| SKC16 | 18.8 | 46 | 32 | 8 | 24 | 0.06 |
| SKC20 | 22.5 | 54.2 | 41 | 8 | 29 | |
| SKC25 | 28.9 | 58.2 | 43 | 8.5 | 35 | 0.10 |

SK SLIM CHUCK

SKC

## SK COLLET
# SK筒夹




◇T.I.R : ≤0.005mm at 3D

Unit (单位) : mm

| TYPE 型号 | MODEL No. 型号 | EDP No. | CLAMPING RANGE 夹持范围 (d) |
|---|---|---|---|
| SKC16 | SKC16-3 | P2730810 | 2.75 - 3.0 |
| | SKC16-3.5 | P2773613 | 3.0 - 3.5 |
| | SKC16-4 | P2730812 | 3.5 - 4.0 |
| | SKC16-4.5 | P2773614 | 4.0 - 4.5 |
| | SKC16-5 | P2773615 | 4.5 - 5.0 |
| | SKC16-5.5 | P2773616 | 5.0 - 5.5 |
| | SKC16-6 | P2730814 | 5.5 - 6.0 |
| | SKC16-6.5 | P2773617 | 6.0 - 6.5 |
| | SKC16-7 | P2773618 | 6.5 - 7.0 |
| | SKC16-7.5 | P2773619 | 7.0 - 7.5 |
| | SKC16-8 | P2730816 | 7.5 - 8.0 |
| | SKC16-8.5 | P2773620 | 8.0 - 8.5 |
| | SKC16-9 | P2773621 | 8.5 - 9.0 |
| | SKC16-9.5 | P2773622 | 9.0 - 9.5 |
| | SKC16-10 | P2730818 | 9.5 - 10.0 |
| | SKC16-10.5 | P2773623 | 10.0 - 10.5 |
| | SKC16-11 | P2773624 | 10.5 - 11.0 |
| | SKC16-11.5 | P2773625 | 10.0 - 11.5 |
| | SKC16-12 | P2730820 | 11.5 - 12.0 |
| | SKC16-12.5 | P2773626 | 12.0 - 12.5 |
| | SKC16-13 | P2773627 | 12.5 - 13.0 |
| | SKC16-13.5 | P2773628 | 13.0 - 13.5 |
| | SKC16-14 | P2773822 | 13.5 - 14.0 |
| | SKC16-14.5 | P2773629 | 14.0 - 14.5 |
| | SKC16-15 | P2773630 | 14.5 - 15.0 |
| | SKC16-15.5 | P2773631 | 15.0 - 15.5 |
| | SKC16-16 | P2730824 | 15.5 - 16.0 |

| TYPE 型号 | MODEL No. 型号 | EDP No. | CLAMPING RANGE 夹持范围 (d) |
|---|---|---|---|
| SKC20 | SKC20-4 | P2730830 | 3.5 - 4.0 |
| | SKC20-4.5 | P2773632 | 4.0 - 4.5 |
| | SKC20-5 | P2773633 | 4.5 - 5.0 |
| | SKC20-5.5 | P2773634 | 5.0 - 5.5 |
| | SKC20-6 | P2730832 | 5.5 - 6.0 |
| | SKC20-6.5 | P2773635 | 6.0 - 6.5 |
| | SKC20-7 | P2773636 | 6.5 - 7.0 |
| | SKC20-7.5 | P2773637 | 7.0 - 7.5 |
| | SKC20-8 | P2730834 | 7.5 - 8.0 |
| | SKC20-8.5 | P2773638 | 8.0 - 8.5 |
| | SKC20-9 | P2773639 | 8.5 - 9.0 |
| | SKC20-9.5 | P2773640 | 9.0 - 9.5 |
| | SKC20-10 | P2730836 | 9.5 - 10.0 |
| | SKC20-10.5 | P2773641 | 10.0 - 10.5 |
| | SKC20-11 | P2773642 | 10.5 - 11.0 |
| | SKC20-11.5 | P2773643 | 11.0 - 11.5 |
| | SKC20-12 | P2730838 | 11.5 - 12.0 |
| | SKC20-12.5 | P2773644 | 12.0 - 12.5 |
| | SKC20-13 | P2773645 | 12.5 - 13.0 |
| | SKC20-13.5 | P2773646 | 13.0 - 13.5 |
| | SKC20-14 | P2730840 | 13.5 - 14.0 |
| | SKC20-14.5 | P2773647 | 14.0 - 14.5 |
| | SKC20-15 | P2773648 | 14.5 - 15.0 |
| | SKC20-15.5 | P2773649 | 15.0 - 15.5 |
| | SKC20-16 | P2730842 | 15.5 - 16.0 |
| | SKC20-16.5 | P2773650 | 16.0 - 16.5 |
| | SKC20-17 | P2773651 | 16.5 - 17.0 |
| | SKC20-17.5 | P2773652 | 17.0 - 17.5 |
| | SKC20-18 | P2730844 | 17.5 - 18.0 |
| | SKC20-18.5 | P2773653 | 18.0 - 18.5 |
| | SKC20-19 | P2773654 | 18.5 - 19.0 |
| | SKC20-19.5 | P2773655 | 19.0 - 19.5 |
| | SKC20-20 | P2730846 | 19.5 - 20.0 |

| TYPE 型号 | MODEL No. 型号 | EDP No. | CLAMPING RANGE 夹持范围 (d) |
|---|---|---|---|
| SKC25 | SKC25-16.5 | P2773677 | 16.0 - 16.5 |
| | SKC25-17 | P2773678 | 16.5 - 17.0 |
| | SKC25-17.5 | P2773679 | 17.0 - 17.5 |
| | SKC25-18 | P2773680 | 17.5 - 18.0 |
| | SKC25-18.5 | P2773681 | 18.0 - 18.5 |
| | SKC25-19 | P2773682 | 18.5 - 19.0 |
| | SKC25-19.5 | P2773683 | 19.0 - 19.5 |
| | SKC25-20 | P2773684 | 19.5 - 20.0 |
| | SKC25-20.5 | P2773685 | 20.0 - 20.5 |
| | SKC25-21 | P2773686 | 20.5 - 21.0 |
| | SKC25-21.5 | P2773687 | 21.0 - 21.5 |
| | SKC25-22 | P2773688 | 21.5 - 22.0 |
| | SKC25-22.5 | P2773689 | 22.0 - 22.5 |
| | SKC25-23 | P2773690 | 22.5 - 23.0 |
| | SKC25-23.5 | P2773691 | 23.0 - 23.5 |
| | SKC25-24 | P2773692 | 23.5 - 24.0 |
| | SKC25-24.5 | P2773693 | 24.0 - 24.5 |
| | SKC25-25 | P2773694 | 24.5 - 25.0 |
| | SKC25-25.4 | P2773695 | 25.0 - 25.4 |





SK SLIM CHUCK

PART

## SK NUT
# SK 螺母

FIG.1

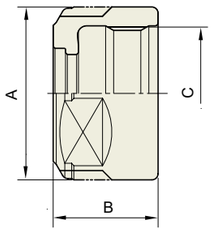
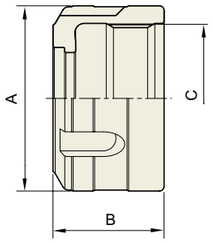



FIG.2




Unit (单位) : mm

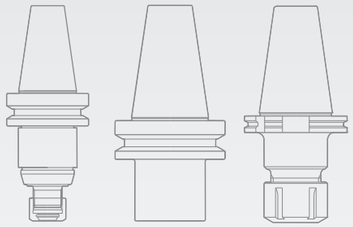
| TYPE 型号 | EDP No. | A | B | C | FIG. | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|
| SKN06 | P2773581 | 20 | 15 | M15.5X1.0 | 1 | 0.02 |
| SKN10 | P2773582 | 28 | 17 | M21.5X1.0 | 1 | 0.04 |
| SKN13 | P2773583 | 33 | 21 | M27X1.0 | 2 | 0.05 |
| SKN16 | P2773584 | 40 | 24 | M32X1.5 | 2 | 0.06 |
| SKN20 | P2773585 | 48.5 | 24 | M40X1.0 | 2 | 0.08 |
| SKN25 | P2773586 | 55 | 30 | M42X1.5 | 2 | 0.10 |

## SK SPANNER
# SK 扳手

| MODEL No. 型号 | EDP No. |
|---|---|
| TSK6 | P2773588 |
| TSK10 | P2773589 |
| TSK13 | P2773590 |
| TSK16 | P2773591 |
| TSK20 | P2773587 |
| TSK25 | P2773592 |

▶ Design and shape could be changed without prior notice.
设计及形状如有更改，恕不另行通知

Global Cutting Tool Leader **YG-1**



# TOOLING SYSTEM

YG-1 TOOLING SYSTEM

# SYNCHRO TAPPING CHUCK

# 同步攻丝刀柄

## SYNCHRO TAPPING CHUCK (ER TYPE)

DIN 69871-SK

DIN 69893/ISO 12164-1-HSK

JIS B6339/MAS 403-BT

STRAIGHT-K

## SYNCHRO TAPPING CHUCK (QUICK CHANGE TYPE)

DIN 69871-SK

DIN 69893/ISO 12164-1-HSK

STRAIGHT-K

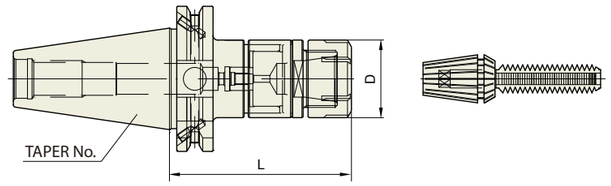
# SYNCHRO TAPPING CHUCK

**SYTER**

## SYNCHRO TAPPING CHUCK (ER TYPE)

DIN 69871-SK

## 同步攻丝刀柄 (ER型)






DIN 69871-SK | AT3 | AD/B

ER collet refer to page 103-107 / Tap ER collet refer to page 108-109
ER筒夹, 参阅第103～107页 / 丝锥ER筒夹, 请参阅第108~109页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | TAP SIZE | NUT 螺母 | D | L | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|
| 40 | **SK40AD/B-SYTER12-79** | **P2773701** | M3-M12 | ER16 | 28 | 79 | 1.00 |
| | **SK40AD/B-SYTER16-85** | **P2773702** | M3-M16 | ER20 | 34 | 85 | 1.08 |
| | **SK40AD/B-SYTER20-90** | **P2773703** | M3-M20 | ER25 | 42 | 90 | 1.08 |
| | **SK40AD/B-SYTER27-100** | **P2773704** | M4-M27 | ER32 | 50 | 100 | 1.37 |
| | **SK40AD/B-SYTER33-120** | **P2773705** | M4-M33 | ER40 | 63 | 120 | 2.16 |
| 50 | **SK50AD/B-SYTER12-79** | **P2773706** | M3-M12 | ER16 | 28 | 79 | 2.83 |
| | **SK50AD/B-SYTER16-85** | **P2773707** | M3-M16 | ER20 | 34 | 85 | 2.86 |
| | **SK50AD/B-SYTER20-90** | **P2773708** | M3-M20 | ER25 | 42 | 90 | 2.87 |
| | **SK50AD/B-SYTER27-100** | **P2773709** | M4-M27 | ER32 | 50 | 100 | 3.04 |
| | **SK50AD/B-SYTER33-105** | **P2773710** | M4-M33 | ER40 | 63 | 105 | 3.93 |

▶Feature :
- To compensate for synchronization errors to extend tap life and to improve thread quality
- To compensate for pitch tolerances of taps
- For machine with synchronized spindle

特征:
- 延长丝锥寿命，为了攻丝品质改善 补偿同步误差
- 保障丝锥的螺距公差
- 适用于同步攻丝的设备

▶CAT(ANSI B5.50) taper and Inch type products are available.
CAT(ANSI B5.50)锥柄及英制产品可供选择



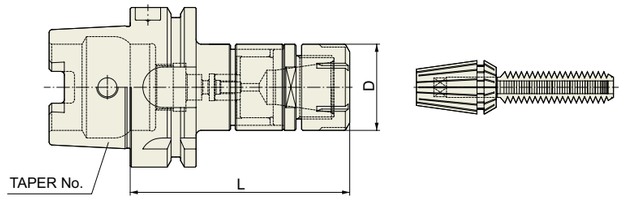
SYNCHRO TAPPING CHUCK

**SYTER**

## SYNCHRO TAPPING CHUCK (ER TYPE)

DIN 69893/ ISO 12164-1-HSK FORM A

## 同步攻丝刀柄 (ER型)




DIN 69893-HSK | AD

ER collet refer to page 103-107 / Tap ER collet refer to page 108-109
ER筒夹, 参阅第103～107页 / 丝锥ER筒夹, 请参阅第108~109页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | TAP SIZE | NUT 螺母 | D | L | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|
| 63A | **HSK63A-SYTER16-90** | **P2773801** | M3-M16 | ER20 | 34 | 90 | 0.95 |
| | **HSK63A-SYTER20-94** | **P2773802** | M3-M20 | ER25 | 42 | 94 | 0.95 |
| | **HSK63A-SYTER27-105** | **P2773803** | M4-M27 | ER32 | 50 | 105 | 1.34 |

▶Feature :
- To compensate for synchronization errors to extend tap life and to improve thread quality
- To compensate for pitch tolerances of taps
- For machine with synchronized spindle

特征:
- 延长丝锥寿命，为了攻丝品质改善 补偿同步误差
- 保障丝锥的螺距公差
- 适用于同步攻丝的设备



TOOLING SYSTEM
HYDRAULIC CHUCK
SHRINK FIT HOLDER
ER COLLET CHUCK
END MILL HOLDER & SIDE LOCK ARBOR
SHELL MILL ARBOR
POWER MILLING CHUCK
MORSE TAPER ARBOR
SK SLIM CHUCK
SYNCHRO TAPPING CHUCK
ONE STEP TAPPING CHUCK
TAPPING ER CHUCK
FACE MILL ARBOR
COPY MILL ARBOR & INDEXABLE DRILL HOLDER
NC DRILL CHUCK & OTHER TOOL HOLDERS
BORING SYSTEM
ACCESSORY & OTHERS

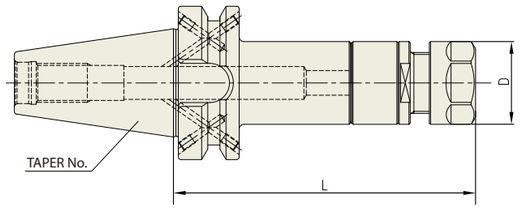
# SYNCHRO TAPPING CHUCK

SYTER

## SYNCHRO TAPPING CHUCK (ER TYPE)

JIS B6339/
MAS 403-BT

## 同步攻丝刀柄 (ER型)




JIS B6339-BT | AT3 | AD/B

ER collet refer to page 103-107 / Tap ER collet refer to page 108-109
ER筒夹, 参阅第103～107页 / 丝锥ER筒夹, 请参阅第108~109页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | TAP SIZE | NUT 螺母 | D | L | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|
| 40 | **BT40AD/B-SYTER12-79** | **P2776301** | M2-M8 | ER16 | 28 | 79 | 1.14 |
| | **BT40AD/B-SYTER16-85** | **P2776302** | M3-M10 | ER20 | 34 | 85 | 1.17 |
| | **BT40AD/B-SYTER20-90** | **P2776303** | M3-M14 | ER25 | 42 | 90 | 1.17 |
| | **BT40AD/B-SYTER27-100** | **P2776304** | M4-M18 | ER32 | 50 | 100 | 1.45 |
| | **BT40AD/B-SYTER33-125** | **P2776305** | M8-M24 | ER40 | 63 | 125 | 2.40 |
| 50 | **BT50AD/B-SYTER12-100** | **P2776306** | M2-M8 | ER16 | 28 | 100 | 3.79 |
| | **BT50AD/B-SYTER16-100** | **P2776307** | M3-M10 | ER20 | 34 | 100 | 3.79 |
| | **BT50AD/B-SYTER20-100** | **P2776308** | M3-M14 | ER25 | 42 | 100 | 3.75 |
| | **BT50AD/B-SYTER27-110** | **P2776309** | M4-M18 | ER32 | 50 | 110 | 3.99 |
| | **BT50AD/B-SYTER33-125** | **P2776310** | M8-M24 | ER40 | 63 | 125 | 4.75 |

▶Feature :
- To compensate for synchronization errors to extend tap life and to improve thread quality
- To compensate for pitch tolerances of taps
- For machine with synchronized spindle

特征:
- 延长丝锥寿命，为了攻丝品质改善 补偿同步误差
- 保障丝锥的螺距公差
- 适用于同步攻丝的设备

▶CAT(ANSI B5.50) taper and Inch type products are available.
CAT(ANSI B5.50)锥柄及英制产品可供选择



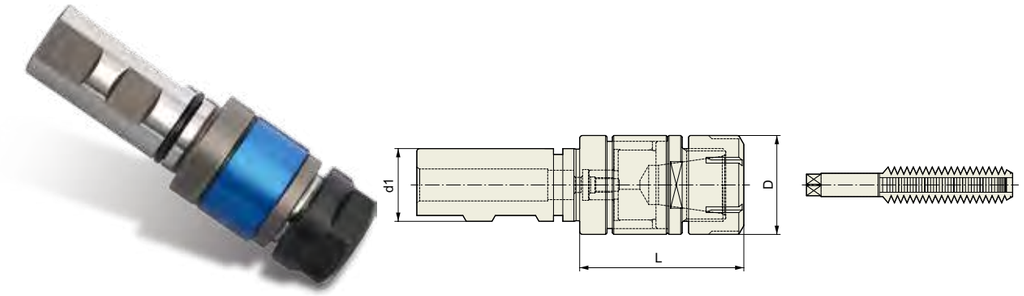
SYNCHRO TAPPING CHUCK

SYTER

## SYNCHRO TAPPING CHUCK (ER TYPE)

STRAIGHT-K

## 同步攻丝刀柄 (ER型)




ER collet refer to page 103-107 / Tap ER collet refer to page 108-109
ER筒夹, 参阅第103～107页 / 丝锥ER筒夹, 请参阅第108~109页

Unit (单位) : mm

| MODEL No. 型号 | EDP No. | TAP SIZE | NUT / COLLET 螺母 / 筒夹 | D | L | d1 | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|
| **K20-SYTER16** | **P2773901** | M3-M16 | ER20 | 34 | 58 | 20 | 0.33 |
| **K25-SYTER16** | **P2773902** | M3-M16 | ER20 | 34 | 61 | 25 | 0.44 |
| **K25-SYTER27** | **P2773903** | M4-M27 | ER32 | 50 | 69 | 25 | 0.60 |

▶Feature :
- To compensate for synchronization errors to extend tap life and to improve thread quality
- To compensate for pitch tolerances of taps
- For machine with synchronized spindle

特征:
- 延长丝锥寿命，为了攻丝品质改善 补偿同步误差
- 保障丝锥的螺距公差
- 适用于同步攻丝的设备

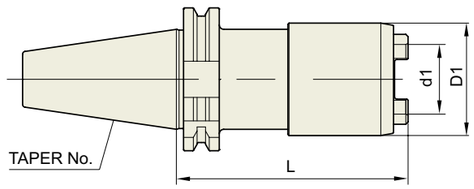
# SYNCHRO TAPPING CHUCK

SYTC

## SYNCHRO TAPPING CHUCK (QUICK CHANGE TYPE)

DIN69871-SK

## 同步攻丝刀柄 (快速更换型)




DIN 69871-SK | AT3 | A

Tap Adapter, Refer to page 227-228丝锥筒夹 请参阅第227页~228页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | TAP SIZE | MATCHING INSERTS | d1 | D1 | L | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|
| 30 | SK30-SYTC12-65 | P2774207 | M3-M12 | 1 | 19 | 36 | 65 | 0.50 |
| | SK30-SYTC20-89 | P2774208 | M6-M24 | 2 | 31 | 50 | 89 | 1.00 |
| 40 | SK40-SYTC12-65 | P2774201 | M3-M12 | 1 | 19 | 36 | 65 | 1.10 |
| | SK40-SYTC20-79 | P2774202 | M6-M24 | 2 | 31 | 50 | 79 | 1.50 |
| | SK40-SYTC33-115 | P2774203 | M18-M38 | 3 | 48 | 74 | 115 | 3.30 |
| 50 | SK50-SYTC12-65 | P2774204 | M3-M12 | 1 | 19 | 36 | 65 | 3.00 |
| | SK50-SYTC20-79 | P2774205 | M6-M24 | 2 | 31 | 50 | 79 | 3.30 |
| | SK50-SYTC33-115 | P2774206 | M18-M38 | 3 | 48 | 74 | 115 | 5.20 |

▶Feature :
- To compensate for synchronization errors to extend tap life and to improve thread quality
- To compensate for pitch tolerances of taps
- For machine with synchronized spindle

特征:
- 延长丝锥寿命，为了攻丝品质改善 补偿同步误差
- 保障丝锥的螺距公差
- 适用于同步攻丝的设备

▶CAT(ANSI B5.50) taper and Inch type products are available.
CAT(ANSI B5.50)锥柄及英制产品可供选择



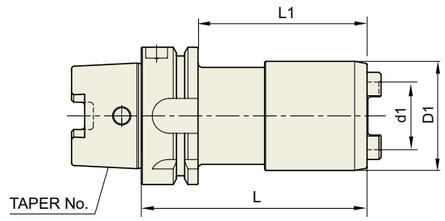
SYNCHRO TAPPING CHUCK

SYTC

## SYNCHRO TAPPING CHUCK (QUICK CHANGE TYPE)

DIN 69893/ ISO 12164-1-HSK FORM A

## 同步攻丝刀柄 (快速更换型)




DIN 69893-HSK | A

Tap Adapter, Refer to page 227-228丝锥筒夹 请参阅第227页~228页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | TAP SIZE | MATCHING INSERTS | d1 | D1 | L | L1 | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|
| 32A | HSK32A-SYTC12-75 | P2774314 | M3-M12 | 1 | 19 | 36 | 75 | 55 | 0.32 |
| 50A | HSK50A-SYTC12-72 | P2774315 | M3-M12 | 1 | 19 | 36 | 72 | 46 | 0.54 |
| | HSK50A-SYTC20-91 | P2774316 | M6-M24 | 2 | 31 | 50 | 91 | 65 | 0.70 |
| 63A | HSK63A-SYTC12-75 | P2774301 | M3-M12 | 1 | 19 | 36 | 75 | 49 | 0.82 |
| | HSK63A-SYTC12-80 | P2774302 | M3-M12 | 1 | 19 | 36 | 80 | 54 | 0.85 |
| | HSK63A-SYTC12-120 | P2774303 | M3-M12 | 1 | 19 | 36 | 120 | 94 | 1.08 |
| | HSK63A-SYTC12-152 | P2774304 | M3-M12 | 1 | 19 | 36 | 152 | 126 | 1.27 |
| | HSK63A-SYTC12-180 | P2774305 | M3-M12 | 1 | 19 | 36 | 180 | 154 | 1.44 |
| | HSK63A-SYTC20-89 | P2774306 | M6-M24 | 2 | 31 | 50 | 89 | 63 | 0.84 |
| | HSK63A-SYTC33-121 | P2774307 | M18-M38 | 3 | 48 | 74 | 121 | 95 | 1.45 |
| 100A | HSK100A-SYTC12-75 | P2774308 | M3-M12 | 1 | 19 | 36 | 75 | 43 | 2.20 |
| | HSK100A-SYTC12-160 | P2774309 | M3-M12 | 1 | 19 | 36 | 160 | 131 | 2.60 |
| | HSK100A-SYTC20-94 | P2774310 | M6-M24 | 2 | 31 | 50 | 94 | 65 | 2.39 |
| | HSK100A-SYTC20-160 | P2774311 | M6-M24 | 2 | 31 | 50 | 160 | 131 | 2.99 |
| | HSK100A-SYTC33-127 | P2774312 | M18-M38 | 3 | 48 | 74 | 127 | 98 | 3.11 |
| | HSK100A-SYTC33-160 | P2774313 | M18-M38 | 3 | 48 | 74 | 160 | 131 | 4.03 |

▶Feature :
- To compensate for synchronization errors to extend tap life and to improve thread quality
- To compensate for pitch tolerances of taps
- For machine with synchronized spindle

特征:
- 延长丝锥寿命，为了攻丝品质改善 补偿同步误差
- 保障丝锥的螺距公差
- 适用于同步攻丝的设备

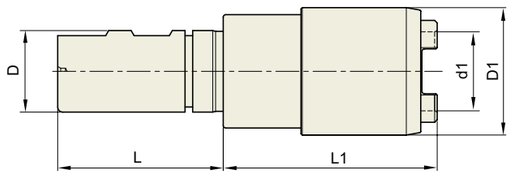
# SYNCHRO TAPPING CHUCK

**SYTC**

## SYNCHRO TAPPING CHUCK (QUICK CHANGE TYPE)

**STRAIGHT-K**

## 同步攻丝刀柄 (快速更换型)



Tap Adapter, Refer to page 227-228丝锥筒夹 请参阅第227页~228页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | TAP SIZE | MATCHING INSERTS | d1 | D1 | L | L1 | D | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|---|
| 20 | **K20-SYTC12-46** | **P2774401** | M3-M12 | 1 | 19 | 36 | 50 | 46 | 20 | 0.28 |
| | **K20-SYTC12-107.5** | **P2774406** | M3-M12 | 1 | 19 | 36 | 50 | 107.5 | 20 | 0.65 |
| 25 | **K25-SYTC12-46** | **P2774402** | M3-M12 | 1 | 19 | 36 | 56 | 46 | 25 | 0.37 |
| | **K25-SYTC20-74** | **P2774403** | M6-M24 | 2 | 31 | 50 | 56 | 74 | 25 | 0.69 |
| | **K25-SYTC33-107.5** | **P2774404** | M18-M38 | 3 | 48 | 74 | 56 | 107.5 | 25 | 1.32 |
| 32 | **K32-SYTC12-74** | **P2774405** | M3-M12 | 1 | 31 | 50 | 60 | 74 | 32 | 0.71 |

▶Feature :
- To compensate for synchronization errors to extend tap life and to improve thread quality
- To compensate for pitch tolerances of taps
- For machine with synchronized spindle

特征:
- 延长丝锥寿命，为了攻丝品质改善 补偿同步误差
- 保障丝锥的螺距公差
- 适用于同步攻丝的设备



YG-1 TOOLING SYSTEM

# ONE STEP TAPPING CHUCK

# 一步式攻丝刀柄

**DIN 69871-SK**

**DIN 69893/ISO 12164-1-HSK**

**STRAIGHT-KW**

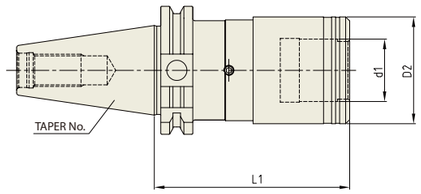
**JIS B6339/MAS 403-BT**

# ONE STEP TAPPING CHUCK

OTC

## ONE STEP TAPPING CHUCK
## 一步式攻丝刀柄

DIN69871-SK



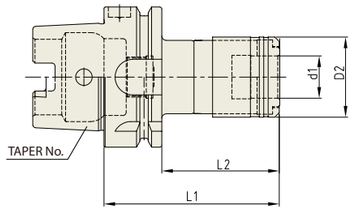

DIN 69871-SK AT3

Tap Adapter, Refer to page 227-228丝锥筒夹 请参阅第227页~228页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | d1 | D2 | L | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|
| 40 | SK40-OTC-M3 ~ M12 | P2802351 | 19 | 36 | 59 | 1.10 |
| | SK40-OTC-M6 ~ M20 | P2802352 | 31 | 53 | 97 | 1.50 |
| | SK40-OTC-M24 ~ M33 | P2802353 | 48 | 78 | 149 | 3.30 |
| 50 | SK50-OTC-M3 ~ M12 | P2802354 | 19 | 36 | 59 | 3.00 |
| | SK50-OTC-M6 ~ M20 | P2802355 | 31 | 53 | 83 | 3.30 |
| | SK50-OTC-M24 ~ M33 | P2802356 | 48 | 78 | 138 | 5.20 |

## DIN 69893/ ISO 12164-1-HSK




DIN 69893-HSK

Tap Adapter, Refer to page 227-228丝锥筒夹 请参阅第227页~228页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | d1 | D2 | L1 | L2 | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|
| 63A | HSK63A-OTC-M3 ~ M12 | P2802401 | 19 | 36 | 77 | 51 | - |
| | HSK63A-OTC-M8 ~ M20 | P2802402 | 31 | 53 | 110 | 84 | - |
| | HSK63A-OTC-M14 ~ M36 | P2802403 | 48 | 78 | 155 | 129 | - |
| 100A | HSK100A-OTC-M3 ~ M12 | P2802404 | 19 | 36 | 85.5 | 56.5 | - |
| | HSK100A-OTC-M6 ~ M20 | P2802405 | 31 | 53 | 119.5 | 90.5 | - |
| | HSK100A-OTC-M14 ~ M36 | P2802406 | 48 | 78 | 161 | 132 | - |



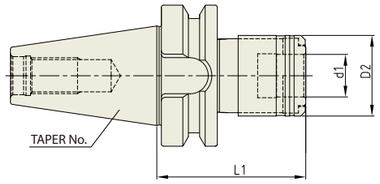
TOOLING SYSTEM
HYDRAULIC CHUCK
SHRINK FIT HOLDER
ER COLLET CHUCK
END MILL HOLDER & SIDE LOCK ARBOR
SHELL MILL ARBOR
POWER MILLING CHUCK
MORSE TAPER ARBOR
SK SLIM CHUCK
SYNCHRO TAPPING CHUCK
ONE STEP TAPPING CHUCK
TAPPING ER CHUCK
FACE MILL ARBOR
COPY MILL ARBOR & INDEXABLE DRILL HOLDER
NC DRILL CHUCK & OTHER TOOL HOLDERS
BORING SYSTEM
ACCESSORY & OTHERS

# ONE STEP TAPPING CHUCK

OTC

## ONE STEP TAPPING CHUCK
## 一步式攻丝刀柄

JIS B6339/ MAS 403-BT



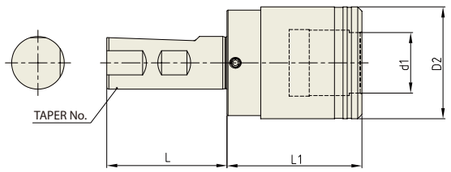

JIS B6339-BT AT3

Tap Adapter, Refer to page 227-228丝锥筒夹 请参阅第227页~228页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | d1 | D2 | L | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|
| 40 | BT40-OTC-M3 ~ M12 | P2802451 | 19 | 36 | 66.5 | 1.10 |
| | BT40-OTC-M6 ~ M20 | P2802452 | 31 | 53 | 93.5 | 1.50 |
| | BT40-OTC-M24 ~ M33 | P2802453 | 48 | 78 | 162.5 | 3.30 |
| 50 | BT50-OTC-M3 ~ M12 | P2802454 | 19 | 36 | 85 | 3.00 |
| | BT50-OTC-M6 ~ M20 | P2802455 | 31 | 53 | 101.5 | 3.30 |
| | BT50-OTC-M24 ~ M33 | P2802456 | 48 | 78 | 141 | 5.20 |

## STRAIGHT-KW



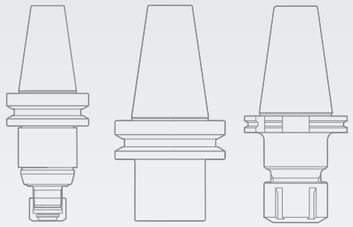

STRAIGHT

Tap Adapter, Refer to page 227-228丝锥筒夹 请参阅第227页~228页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | d1 | D2 | L1 | L2 | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|
| 20 | KW20-OTC-M3 ~ M12 | P2802457 | 19 | 36 | 51 | 40 | 0.80 |
| 25 | KW25-OTC-M3 ~ M12 | P2802458 | 19 | 36 | 57 | 40 | 3.00 |
| | KW25-OTC M6 ~M20 | P2802459 | 31 | 53 | 57 | 64 | 3.30 |
| 32 | KW32-OTC-M3 ~ M12 | P2802460 | 19 | 36 | 60 | 39 | 3.00 |
| | KW32-OTC-M8 ~ M20 | P2802461 | 31 | 53 | 60.5 | 63 | 3.30 |
| | KW32-OTC-M14 ~ M36 | P2802462 | 48 | 78 | 61 | 124 | - |

Global Cutting Tool Leader **YG-1**



# TOOLING SYSTEM

YG-1 TOOLING SYSTEM

# TAPPING ER CHUCK

# 丝锥ER刀柄

DIN 69871-SK

DIN 69893/ISO 12164-1-HSK

CBT (BT DUAL CONTACT)

JIS B6339/MAS 403-BT

## TAPPING ER CHUCK

**Tapping ER chuck**
**丝锥ER刀柄**

Minimizing tool interference during machining with short gauge line

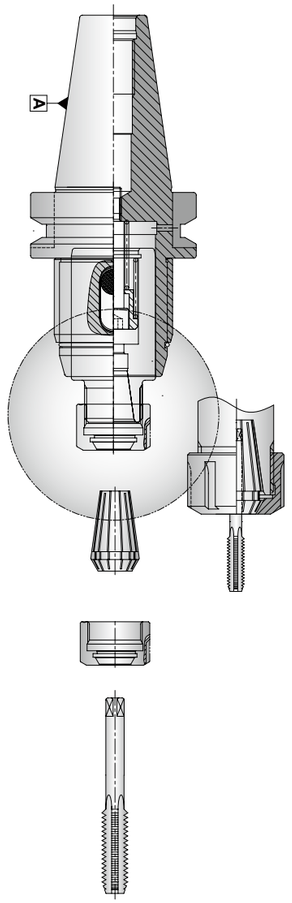
缩短加工半径
降低工具的干涉

Combining strength of strong torque power of ER chuck and tension and compression function of tapping chuck

拥有一般ER刀柄强劲的夹紧力
且拥有攻丝刀柄的伸长及收缩功能

Possible to change suitable tap for machining conditions by replacement of cheaper ER collet (Sharing collet with ER chuck)
-> Saving costs

使用经济型ER筒夹,适用各种丝锥规格.
(共用一般ER筒夹降低成本及费用)



**Tapping chuck**
**攻丝刀柄**

Interfered with tool during machining due to long gauge line

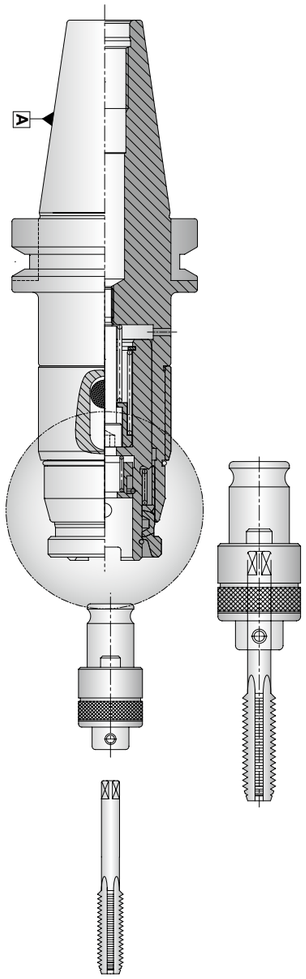
加工半径长
工具可能导致干涉

Tension and compression function

伸长及收缩功能

Preparing and changing expensive tap adapter according to machining conditions

使用丝锥筒夹.
适用各种丝锥规格

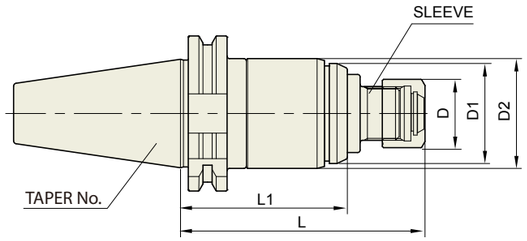






## TAPPING ER CHUCK
## 丝锥ER刀柄

DIN 69871-SK




DIN 69871-SK | AT3 | A

ER collet refer to page 103-107 / Tap ER collet refer to page 108-109
ER筒夹, 参阅第103～107页 / 丝锥ER筒夹, 请参阅第108~109页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | D | D1 | D2 | L | L1 | NUT 螺母 | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|
| 40 | SK40-TER16-100 | P2774001 | 28 | 41 | 45 | 100 | 68.4 | ER16 | 1.65 |
| | SK40-TER16-150 | P2774002 | 28 | 41 | 45 | 150 | 118.4 | ER16 | 1.85 |
| | SK40-TER32-130 | P2774003 | 50 | 58 | 63 | 130 | 92 | ER32 | 2.10 |
| | SK40-TER32-150 | P2774004 | 50 | 58 | 63 | 150 | 112 | ER32 | 2.30 |
| 50 | SK50-TER16-115 | P2774005 | 28 | 41 | 45 | 115 | 79.4 | ER16 | 4.30 |
| | SK50-TER16-150 | P2774006 | 28 | 41 | 45 | 150 | 114.4 | ER16 | 4.50 |
| | SK50-TER32-120 | P2774007 | 50 | 58 | 63 | 120 | 83 | ER32 | 4.65 |
| | SK50-TER32-150 | P2774008 | 50 | 58 | 63 | 150 | 113 | ER32 | 4.85 |

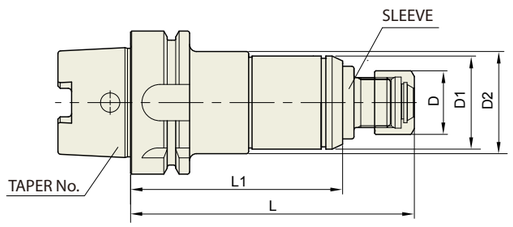
▶CAT(ANSI B5.50) taper and Inch type products are available.
CAT(ANSI B5.50)锥柄及英制产品可供选择

# TAPPING ER CHUCK

TER

## TAPPING ER CHUCK
## 丝锥ER刀柄

DIN 69893/
ISO 12164-1-HSK FORM A




DIN 69893-HSK A

ER collet refer to page 103-107 / Tap ER collet refer to page 108-109
ER筒夹, 参阅第103～107页 / 丝锥ER筒夹, 请参阅第108~109页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | D | D1 | D2 | L | L1 | NUT 螺母 | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|
| 50A | HSK50A-TER16-125 | P2774107 | 28 | 41 | 45 | 125 | 93.4 | ER16 | 1.20 |
| | HSK50A-TER16-150 | P2774108 | 28 | 41 | 45 | 150 | 118.4 | ER16 | 1.30 |
| 63A | HSK63A-TER16-125 | P2774101 | 28 | 41 | 45 | 125 | 93.4 | ER16 | 1.70 |
| | HSK63A-TER16-150 | P2774102 | 28 | 41 | 45 | 150 | 118.4 | ER16 | 1.85 |
| | HSK63A-TER32-150 | P2774103 | 50 | 58 | 63 | 150 | 112 | ER32 | 2.10 |
| | HSK63A-TER32-180 | P2774109 | 50 | 58 | 63 | 180 | 142 | ER32 | 2.30 |
| 100A | HSK100A-TER16-130 | P2774104 | 28 | 41 | 45 | 130 | 98.4 | ER16 | 4.00 |
| | HSK100A-TER16-150 | P2774105 | 28 | 41 | 45 | 150 | 118.4 | ER16 | 4.20 |
| | HSK100A-TER32-150 | P2774106 | 50 | 58 | 63 | 150 | 112 | ER32 | 4.40 |
| | HSK100A-TER32-180 | P2774110 | 50 | 58 | 63 | 180 | 142 | ER32 | 4.60 |



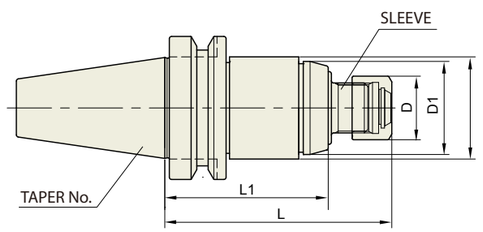
TOOLING SYSTEM
HYDRAULIC CHUCK
SHRINK FIT HOLDER
ER COLLET CHUCK
END MILL HOLDER & SIDE LOCK ARBOR
SHELL MILL ARBOR
POWER MILLING CHUCK
MORSE TAPER ARBOR
SK SLIM CHUCK
SYNCHRO TAPPING CHUCK
ONE STEP TAPPING CHUCK
TAPPING ER CHUCK
TAPPING CHUCK
FACE MILL ARBOR
COPY MILL ARBOR & INDEXABLE DRILL HOLDER
NC DRILL CHUCK & OTHER TOOL HOLDERS
BORING SYSTEM
ACCESSORY & OTHERS

# TAPPING ER CHUCK

TER

## TAPPING ER CHUCK
## 丝锥ER刀柄

CBT
(BT DUAL CONTACT)




CBT AT3 A

ER collet refer to page 103-107 / Tap ER collet refer to page 108-109
ER筒夹, 参阅第103～107页 / 丝锥ER筒夹, 请参阅第108~109页

Unit (单位) : mm

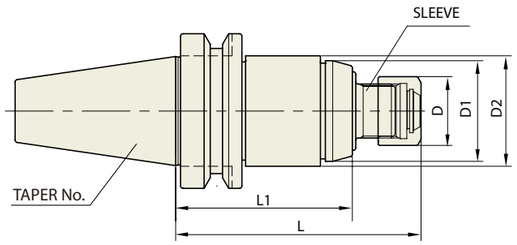
| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | D | D1 | D2 | L | L1 | NUT 螺母 | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|
| 40 | CBT40-TER16-100 | P2774151 | 28 | 41 | 45 | 100 | 68.4 | ER16 | 1.45 |
| | CBT40-TER16-150 | P2774152 | 28 | 41 | 45 | 150 | 118.4 | ER16 | 2.00 |
| | CBT40-TER32-110 | P2774153 | 50 | 58 | 63 | 110 | 72 | ER32 | 2.20 |
| | CBT40-TER32-150 | P2774154 | 50 | 58 | 63 | 150 | 112 | ER32 | 2.70 |
| 50 | CBT50-TER16-115 | P2774155 | 28 | 41 | 45 | 115 | 79.4 | ER16 | 3.95 |
| | CBT50-TER16-150 | P2774156 | 28 | 41 | 45 | 150 | 114.4 | ER16 | 4.35 |
| | CBT50-TER32-120 | P2774157 | 50 | 58 | 63 | 120 | 83 | ER32 | 4.70 |
| | CBT50-TER32-150 | P2774158 | 50 | 58 | 63 | 150 | 113 | ER32 | 5.20 |

# TAPPING ER CHUCK

TER

## TAPPING ER CHUCK
## 丝锥ER刀柄

JIS B6339/
MAS 403-BT




JIS B6339-BT | AT3 | A

ER collet refer to page 103-107 / Tap ER collet refer to page 108-109
ER筒夹, 参阅第103～107页 / 丝锥ER筒夹, 请参阅第108~109页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | D | D1 | D2 | L | L1 | NUT 螺母 | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|
| 40 | **BT40-TER16-100** | **P2774159** | 28 | 41 | 45 | 100 | 68.4 | ER16 | 1.45 |
| | **BT40-TER16-150** | **P2774160** | 28 | 41 | 45 | 150 | 118.4 | ER16 | 2.00 |
| | **BT40-TER32-110** | **P2774161** | 50 | 58 | 63 | 110 | 72 | ER32 | 2.20 |
| | **BT40-TER32-150** | **P2774162** | 50 | 58 | 63 | 150 | 112 | ER32 | 2.70 |
| 50 | **BT50-TER16-115** | **P2774163** | 28 | 41 | 45 | 115 | 79.4 | ER16 | 3.95 |
| | **BT50-TER16-150** | **P2774164** | 28 | 41 | 45 | 150 | 114.4 | ER16 | 4.35 |
| | **BT50-TER32-120** | **P2774165** | 50 | 58 | 63 | 120 | 83 | ER32 | 4.70 |
| | **BT50-TER32-150** | **P2774166** | 50 | 58 | 63 | 150 | 113 | ER32 | 5.20 |

▶CAT(ANSI B5.50) taper and Inch type products are available.
CAT(ANSI B5.50)锥柄及英制产品可供选择



YG-1 TOOLING SYSTEM

# TAPPING CHUCK
# 攻丝刀柄

**DIN 69871-SK**

**DIN 69893/ISO 12164-1-HSK**

**JIS B6339/MAS 403-BT**

**STRAIGHT-K**

**DIN 228-MTA**

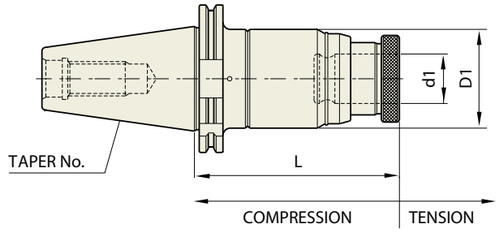
**ACCESSORY**
TAP ADAPTER

TAPPING CHUCK

TC

## TAPPING CHUCK
## 攻丝刀柄

DIN 69871-SK




DIN 69871-SK | AT3 | A

Tap Adapter, Refer to page 227-228丝
锥筒夹 请参阅第227页~228页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | TAP SIZE | LENGTH COMPENSATION | | d1 | D1 | L | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Comp. | Ten. | | | | |
| 40 | **SK40-TC12-90** | **P2520001** | M3-M12 | 5 | 15 | 19 | 45 | 90 | 1.30 |
| | **SK40-TC12-130** | **P2520006** | M3-M12 | 5 | 15 | 19 | 45 | 130 | 1.80 |
| | **SK40-TC24-120** | **P2520002** | M6-M24 | 5 | 20 | 31 | 63 | 120 | 2.50 |
| | **SK40-TC24-142** | **P2520007** | M6-M24 | 5 | 20 | 31 | 63 | 142 | 2.80 |
| 50 | **SK50-TC12-130** | **P2520003** | M3-M12 | 5 | 15 | 19 | 45 | 130 | 4.30 |
| | **SK50-TC12-175** | **P2520008** | M3-M12 | 5 | 15 | 19 | 45 | 175 | 5.50 |
| | **SK50-TC24-142** | **P2520004** | M6-M24 | 5 | 20 | 31 | 63 | 142 | 5.30 |
| | **SK50-TC24-187** | **P2520009** | M6-M24 | 5 | 20 | 31 | 63 | 187 | 7.80 |
| | **SK50-TC38-175** | **P2520005** | M18-M38 | 10 | 25 | 48 | 98 | 175 | 7.50 |

▶CAT(ANSI B5.50) taper and Inch type products are available.
CAT(ANSI B5.50)锥柄及英制产品可供选择

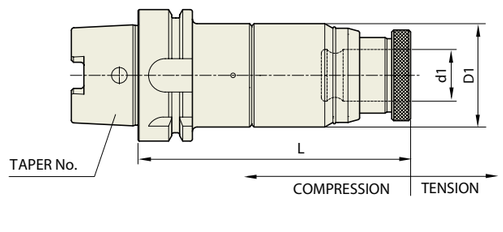


TAPPING CHUCK

TC

## TAPPING CHUCK
## 攻丝刀柄

DIN 69893/
ISO 12164-1-HSK FORM A




DIN 69893-HSK | A

Tap Adapter, Refer to page 227-228丝
锥筒夹 请参阅第227页~228页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | TAP SIZE | LENGTH COMPENSATION | | d1 | D1 | L | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Comp. | Ten. | | | | |
| 50A | **HSK50A-TC12-120** | **P2774506** | M3-M12 | 5 | 15 | 19 | 45 | 120 | 0.80 |
| 63A | **HSK63A-TC12-120** | **P2774501** | M3-M12 | 5 | 15 | 19 | 45 | 120 | 1.00 |
| | **HSK63A-TC12-150** | **P2774507** | M3-M12 | 5 | 15 | 19 | 45 | 150 | 1.70 |
| | **HSK63A-TC24-142** | **P2774502** | M6-M24 | 5 | 20 | 31 | 63 | 142 | 2.40 |
| | **HSK63A-TC24-172** | **P2774508** | M6-M24 | 5 | 20 | 31 | 63 | 172 | 2.70 |
| 100A | **HSK100A-TC12-130** | **P2774503** | M3-M12 | 5 | 15 | 19 | 45 | 130 | 4.30 |
| | **HSK100A-TC12-175** | **P2774509** | M3-M12 | 5 | 15 | 19 | 45 | 175 | 4.80 |
| | **HSK100A-TC12-220** | **P2774510** | M3-M12 | 5 | 15 | 19 | 45 | 220 | 5.30 |
| | **HSK100A-TC24-142** | **P2774504** | M6-M24 | 5 | 20 | 31 | 63 | 142 | 5.20 |
| | **HSK100A-TC24-187** | **P2774511** | M6-M24 | 5 | 20 | 31 | 63 | 187 | 6.60 |
| | **HSK100A-TC38-200** | **P2774505** | M18-M38 | 10 | 25 | 48 | 98 | 200 | 8.00 |



TOOLING SYSTEM

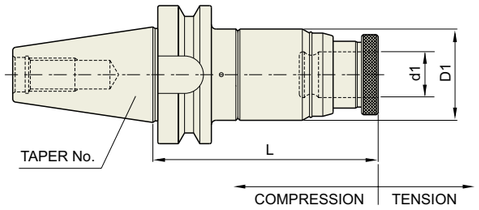
HYDRAULIC CHUCK
SHRINK FIT HOLDER
ER COLLET CHUCK
END MILL HOLDER & SIDE LOCK ARBOR
SHELL MILL ARBOR
POWER MILLING CHUCK
MORSE TAPER ARBOR
SK SLIM CHUCK
SYNCHRO TAPPING CHUCK
ONE STEP TAPPING CHUCK
TAPPING CHUCK
FACE MILL ARBOR
COPY MILL ARBOR & INDEXABLE DRILL HOLDER
NC DRILL CHUCK & OTHER TOOL HOLDERS
BORING SYSTEM
ACCESSORY & OTHERS

TAPPING CHUCK

TC

## TAPPING CHUCK
## 攻丝刀柄

JIS B6339/
MAS 403-BT




JIS B6339-BT | AT3 | A

Tap Adapter, Refer to page 227-228丝锥筒夹 请参阅第227页~228页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | TAP SIZE | LENGTH COMPENSATION | | d1 | D1 | L | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Comp. | Ten. | | | | |
| 30 | **BT30-TC12-105** | **P2778401** | M3-M12 | 5 | 15 | 19 | 45 | 105 | 1.00 |
| 40 | **BT40-TC12-90** | **P2540011** | M3-M12 | 5 | 15 | 19 | 45 | 95 | 1.50 |
| | **BT40-TC12-130** | **P2778403** | M3-M12 | 5 | 15 | 19 | 45 | 130 | 1.60 |
| | **BT40-TC24-100** | **P2540002** | M6-M24 | 5 | 20 | 31 | 63 | 100 | 2.10 |
| | **BT40-TC24-142** | **P2778405** | M6-M24 | 5 | 20 | 31 | 63 | 142 | 2.90 |
| 50 | **BT50-TC12-130** | **P2540003** | M3-M12 | 5 | 15 | 19 | 45 | 130 | 4.20 |
| | **BT50-TC12-175** | **P2778407** | M3-M12 | 5 | 15 | 19 | 45 | 175 | 4.80 |
| | **BT50-TC12-220** | **P2778408** | M3-M12 | 5 | 15 | 19 | 45 | 220 | 5.10 |
| | **BT50-TC24-142** | **P2540004** | M6-M24 | 5 | 20 | 31 | 63 | 142 | 5.80 |
| | **BT50-TC24-187** | **P2778410** | M6-M24 | 5 | 20 | 31 | 63 | 187 | 6.00 |
| | **BT50-TC38-175** | **P2540005** | M18-M38 | 10 | 25 | 48 | 98 | 175 | 8.30 |

▶CAT(ANSI B5.50) taper and Inch type products are available.
CAT(ANSI B5.50)锥柄及英制产品可供选择

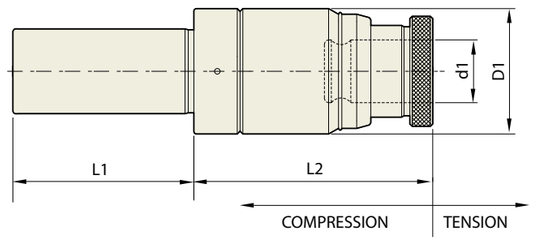


TAPPING CHUCK

TC

## TAPPING CHUCK
## 攻丝刀柄

STRAIGHT-K




Tap Adapter, Refer to page 227-228丝锥筒夹 请参阅第227页~228页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | TAP SIZE | LENGTH COMPENSATION | | d1 | D1 | L1 | L2 | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Comp. | Ten. | | | | | |
| 32 | **K32-TC12-100** | **P2774551** | M3-M12 | 5 | 15 | 19 | 45 | 60 | 100 | 0.90 |
| | **K32-TC24-120** | **P2774552** | M6-M24 | 5 | 20 | 31 | 63 | 60 | 120 | 1.40 |
| 42 | **K42-TC12-100** | **P2774553** | M3-M12 | 5 | 15 | 19 | 45 | 70 | 100 | 1.10 |
| | **K42-TC24-120** | **P2774554** | M6-M24 | 5 | 20 | 31 | 63 | 70 | 120 | 1.60 |



TOOLING SYSTEM

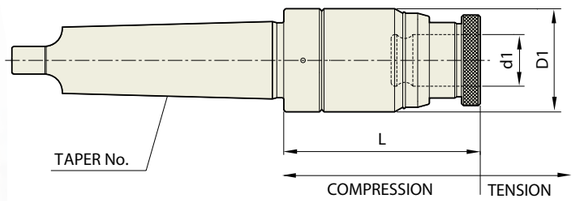
HYDRAULIC CHUCK
SHRINK FIT HOLDER
ER COLLET CHUCK
END MILL HOLDER & SIDE LOCK ARBOR
SHELL MILL ARBOR
POWER MILLING CHUCK
MORSE TAPER ARBOR
SK SLIM CHUCK
SYNCHRO TAPPING CHUCK
ONE STEP TAPPING CHUCK
TAPPING ER CHUCK
TAPPING CHUCK
FACE MILL ARBOR
COPY MILL ARBOR & INDEXABLE DRILL HOLDER
NC DRILL CHUCK & OTHER TOOL HOLDERS
BORING SYSTEM
ACCESSORY & OTHERS

TAPPING CHUCK

TC

## TAPPING CHUCK
## 攻丝刀柄

DIN 228-MTA



Tap Adapter, Refer to page 227-228丝锥筒夹 请参阅第227页~228页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | TAP SIZE | LENGTH COMPENSATION | | d1 | D1 | L | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Comp. | Ten. | | | | |
| 3 | **MTA3-TC12-90** | **P2774555** | M3-M12 | 5 | 15 | 19 | 45 | 90 | 1.00 |
| | **MTA3-TC24-115** | **P2774556** | M6-M24 | 5 | 20 | 31 | 63 | 115 | 2.00 |
| 4 | **MTA4-TC12-105** | **P2774557** | M3-M12 | 5 | 15 | 19 | 45 | 105 | 1.20 |
| | **MTA4-TC24-115** | **P2774558** | M6-M24 | 5 | 20 | 31 | 63 | 115 | 2.20 |
| 5 | **MTA5-TC12-145** | **P2774559** | M3-M12 | 5 | 15 | 19 | 45 | 145 | 1.50 |
| | **MTA5-TC24-175** | **P2774560** | M6-M24 | 5 | 20 | 31 | 63 | 175 | 2.60 |



TOOLING SYSTEM

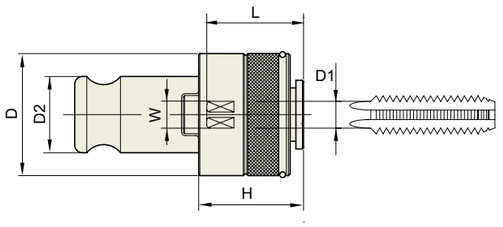
HYDRAULIC CHUCK
SHRINK FIT HOLDER
ER COLLET CHUCK
END MILL HOLDER & SIDE LOCK ARBOR
SHELL MILL ARBOR
POWER MILLING CHUCK
MORSE TAPER ARBOR
SK SLIM CHUCK
SYNCHRO TAPPING CHUCK
ONE STEP TAPPING CHUCK
TAPPING ER CHUCK
TAPPING CHUCK
FACE MILL ARBOR
COPY MILL ARBOR & INDEXABLE DRILL HOLDER
NC DRILL CHUCK & OTHER TOOL HOLDERS
BORING SYSTEM
ACCESSORY & OTHERS

TAPPING CHUCK

TC

## TAP ADAPTER (JIS)
## 丝锥筒夹(JIS)

Below standard
Tap Adapter conforms to JIS




Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | D | D1 (Ø) | D2 | H | W (□) | L | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|
| TCS12 | **TCS12-M3** | **P2774651** | 32 | 4 | 19 | 25 | 3.2 | 24 | 0.18 |
| | **TCS12-M4** | **P2774652** | 32 | 5 | 19 | 25 | 4. | 24 | 0.18 |
| | **TCS12-M5** | **P2774653** | 32 | 5.5 | 19 | 25 | 4.5 | 24 | 0.18 |
| | **TCS12-M6, U1/4** | **P2774654** | 32 | 6 | 19 | 25 | 4.5 | 24 | 0.18 |
| | **TCS12-M8** | **P2774655** | 32 | 6.2 | 19 | 25 | 5 | 25 | 0.18 |
| | **TCS12-M10, U3/8** | **P2774656** | 32 | 7 | 19 | 25 | 5.5 | 25 | 0.18 |
| | **TCS12-M12** | **P2774657** | 32 | 8.5 | 19 | 25 | 6.5 | 26 | 0.18 |
| TCS24 | **TCS24-M6** | **P2774658** | 52 | 6 | 31 | 33 | 4.5 | 38 | 0.60 |
| | **TCS24-M8** | **P2774659** | 52 | 6.2 | 31 | 33 | 5 | 38 | 0.60 |
| | **TCS24-M10** | **P2774660** | 52 | 7 | 31 | 33 | 5.5 | 38 | 0.60 |
| | **TCS24-M12** | **P2774661** | 52 | 8.5 | 31 | 33 | 6.5 | 39 | 0.60 |
| | **TCS24-M14, U3/4** | **P2774662** | 52 | 10.5 | 31 | 33 | 8 | 41 | 0.60 |
| | **TCS24-M16** | **P2774663** | 52 | 12.5 | 31 | 33 | 10 | 43 | 0.60 |
| | **TCS24-M18, P3/8** | **P2774664** | 52 | 14 | 31 | 33 | 11 | 43 | 0.60 |
| | **TCS24-M20** | **P2774665** | 52 | 15 | 31 | 33 | 12 | 43.5 | 0.60 |
| | **TCS24-M22, U7/8** | **P2774666** | 52 | 17 | 31 | 33 | 13 | 46 | 0.60 |
| | **TCS24-M24, PF5/8** | **P2774667** | 52 | 19 | 31 | 33 | 15 | 46 | 0.60 |
| TCS38 | **TCS38-M18** | **P2774668** | 72 | 14 | 48 | 45 | 11 | 43 | 1.80 |
| | **TCS38-M20** | **P2774669** | 72 | 15 | 48 | 45 | 12 | 43.5 | 1.80 |
| | **TCS38-M22** | **P2774670** | 72 | 17 | 48 | 45 | 13 | 45 | 1.80 |
| | **TCS38-M24** | **P2774671** | 72 | 19 | 48 | 45 | 15 | 45 | 1.80 |
| | **TCS38-M27, U1** | **P2774672** | 72 | 20 | 48 | 45 | 15 | 62 | 1.80 |
| | **TCS38-M30, PT3/4** | **P2774673** | 72 | 23 | 48 | 45 | 17 | 64 | 1.80 |
| | **TCS38-M33** | **P2774674** | 72 | 25 | 48 | 45 | 19 | 66 | 1.80 |
| | **TCS38-M36** | **P2774675** | 72 | 28 | 48 | 45 | 21 | 68 | 1.80 |
| | **TCS38-M38** | **P2774676** | 72 | 28 | 48 | 45 | 21 | 68 | 1.80 |

▶ Feature : Quick Change Type with Built-in Torque Safety Device
特点：具有内置扭矩安全装置的快速更换型

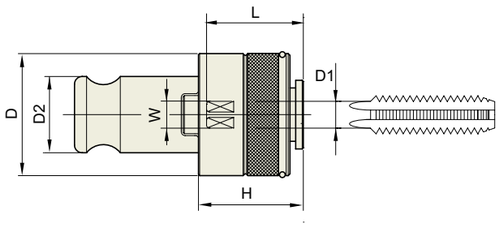
▶ For Pipe Type Tap, please discuss separately.
PIPE TAPE TAP用 需要另行 协商

# TAPPING CHUCK

TC

## TAP ADAPTER (DIN)
## 丝锥筒夹(DIN)

Below standard
Tap Adapter conforms to DIN




Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | D | D1 (Ø) | D2 | H | W (□) | L | DIN No. | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|---|
| TSC12D | TCS12D-2821 | P2774601 | 32 | 2.8 | 19 | 25 | 2.1 | 24 | 371 | 0.20 |
| | TCS12D-3527 | P2774602 | 32 | 3.5 | 19 | 25 | 2.7 | 24 | 371 | 0.20 |
| | TCS12D-4534 | P2774603 | 32 | 4.5 | 19 | 25 | 3.4 | 24 | 371 | 0.20 |
| | TCS12D-43 | P2774604 | 32 | 4 | 19 | 25 | 3 | 24 | 371 | 0.20 |
| | TCS12D-5543 | P2774605 | 32 | 5.5 | 19 | 25 | 4.3 | 25 | 376 | 0.20 |
| | TCS12D-649 | P2774606 | 32 | 6 | 19 | 25 | 4.9 | 25 | 371 | 0.20 |
| | TCS12D-755 | P2774607 | 32 | 7 | 19 | 25 | 5.5 | 25 | 376 | 0.20 |
| | TCS12D-862 | P2774608 | 32 | 8 | 19 | 25 | 6.2 | 25 | 371 | 0.20 |
| | TCS12D-97 | P2774609 | 32 | 9 | 19 | 25 | 7 | 26 | 376 | 0.20 |
| | TCS12D-108 | P2774610 | 32 | 10 | 19 | 25 | 8 | 26 | 371 | 0.20 |
| | TCS12D-119 | P2774611 | 32 | 11 | 19 | 25 | 9 | 26 | 376 | 0.20 |
| TCS24D | TCS24D-649 | P2774612 | 52 | 6 | 31 | 33 | 4.9 | 38 | 371 | 0.60 |
| | TCS24D-755 | P2774613 | 52 | 7 | 31 | 33 | 5.5 | 38 | 376 | 0.60 |
| | TCS24D-862 | P2774614 | 52 | 8 | 31 | 33 | 6.2 | 38 | 371 | 0.60 |
| | TCS24D-97 | P2774615 | 52 | 9 | 31 | 33 | 7 | 38 | 376 | 0.60 |
| | TCS24D-108 | P2774616 | 52 | 10 | 31 | 33 | 8 | 39 | 371 | 0.60 |
| | TCS24D-119 | P2774617 | 52 | 11 | 31 | 33 | 9 | 41 | 376 | 0.60 |
| | TCS24D-129 | P2774618 | 52 | 12 | 31 | 33 | 9 | 43 | 376 | 0.60 |
| | TCS24D-1411 | P2774619 | 52 | 14 | 31 | 33 | 11 | 43 | 376 | 0.60 |
| | TCS24D-1612 | P2774620 | 52 | 16 | 31 | 33 | 12 | 46 | 376 | 0.60 |
| | TCS24D-18145 | P2774621 | 52 | 18 | 31 | 33 | 14.5 | 46 | 376 | 0.60 |
| TCS38D | TCS38D-119 | P2774622 | 72 | 11 | 48 | 45 | 9 | 43 | 376 | 1.80 |
| | TCS38D-129 | P2774623 | 72 | 12 | 48 | 45 | 9 | 43 | 376 | 1.80 |
| | TCS38D-1411 | P2774624 | 72 | 14 | 48 | 45 | 11 | 45 | 376 | 1.80 |
| | TCS38D-1612 | P2774625 | 72 | 16 | 48 | 45 | 12 | 45 | 376 | 1.80 |
| | TCS38D-18145 | P2774626 | 72 | 18 | 48 | 45 | 14.5 | 62 | 376 | 1.80 |
| | TCS38D-2016 | P2774627 | 72 | 20 | 48 | 45 | 16 | 64 | 376 | 1.80 |
| | TCS38D-2218 | P2774628 | 72 | 22 | 48 | 45 | 18 | 66 | 376 | 1.80 |
| | TCS38D-2520 | P2774629 | 72 | 25 | 48 | 45 | 20 | 68 | 376 | 1.80 |
| | TCS38D-2822 | P2774630 | 72 | 28 | 48 | 45 | 22 | 68 | 376 | 1.80 |

▶ Feature : Quick Change Type with Built-in Torque Safety Device
特点：具有内置扭矩安全装置的快速更换型

▶ For Pipe Type Tap, please discuss separately.
PIPE TAPE TAP用 需要另行 协商



YG-1 TOOLING SYSTEM

# FACE MILL ARBOR

# 平面铣刀刀柄

**CBT (BT DUAL CONTACT)**
FMA

**JIS B6339/MAS 403-BT**
FMA

**DIN 69893/ISO 12164-1-HSK**
FMA

**ANSI B5.18-NT**
FMA

**DIN 228-MTA**

**CBT (BT DUAL CONTACT)**
FMB / FMC

**JIS B6339/MAS 403-BT**
FMB / FMC

**DIN 69893/ISO 12164-1-HSK**
FMC

**PARTS**

# FACE MILL ARBOR

FMA

## FACE MILL ARBOR
## 平面铣刀刀柄

**CBT**
**(BT DUAL CONTACT)**

FIG.1

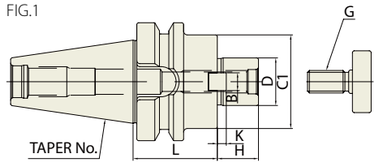
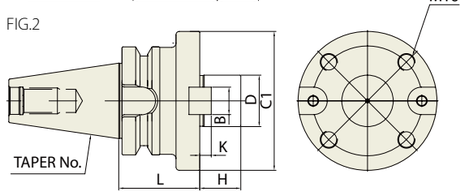



FIG.2




CBT | AT3 | 2.5G | 25,000 RPM | A

Tap Parts, Refer to page 239
配件，请参阅第239页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | D | L | C1 | H | B | K | G | FIG. | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 30 | **CBT30-FMA25.4-45** | **P2779201** | 25.4 | 45 | 50 | 22 | 9.5 | 5 | M12 | 1 | 1.10 |
| | **CBT30-FMA31.75-45** | **P2779202** | 31.75 | 45 | 60 | 30 | 12.7 | 7 | M16 | 1 | 1.20 |
| 40 | **CBT40-FMA25.4-45** | **P2779203** | 25.4 | 45 | 50 | 22 | 9.5 | 5 | M12 | 1 | 1.50 |
| | **CBT40-FMA25.4-90** | **P2779204** | 25.4 | 90 | 50 | 22 | 9.5 | 5 | M12 | 1 | 3.10 |
| | **CBT40-FMA31.75-45** | **P2779205** | 31.75 | 45 | 60 | 30 | 12.7 | 7 | M16 | 1 | 1.90 |
| | **CBT40-FMA31.75-75** | **P2779206** | 31.75 | 75 | 60 | 30 | 12.7 | 7 | M16 | 1 | 2.70 |
| | **CBT40-FMA38.1-60** | **P2779207** | 38.1 | 60 | 80 | 34 | 15.9 | 9 | M20 | 1 | 2.90 |
| 50 | **CBT50-FMA25.4-45** | **P2779208** | 25.4 | 45 | 50 | 22 | 9.5 | 5 | M12 | 1 | 3.70 |
| | **CBT50-FMA25.4-90** | **P2779209** | 25.4 | 90 | 50 | 22 | 9.5 | 5 | M12 | 1 | 4.60 |
| | **CBT50-FMA25.4-150** | **P2779210** | 25.4 | 150 | 50 | 22 | 9.5 | 5 | M12 | 1 | 5.50 |
| | **CBT50-FMA31.75-45** | **P2779211** | 31.75 | 45 | 60 | 30 | 12.7 | 7 | M16 | 1 | 4.50 |
| | **CBT50-FMA31.75-75** | **P2779212** | 31.75 | 75 | 60 | 30 | 12.7 | 7 | M16 | 1 | 5.30 |
| | **CBT50-FMA31.75-105** | **P2779213** | 31.75 | 105 | 60 | 30 | 12.7 | 7 | M16 | 1 | 5.80 |
| | **CBT50-FMA31.75-150** | **P2779214** | 31.75 | 150 | 60 | 30 | 12.7 | 7 | M16 | 1 | 6.30 |
| | **CBT50-FMA38.1-45** | **P2779215** | 38.1 | 45 | 80 | 34 | 15.9 | 9 | M20 | 1 | 4.30 |
| | **CBT50-FMA38.1-75** | **P2779216** | 38.1 | 75 | 80 | 34 | 15.9 | 9 | M20 | 1 | 5.60 |
| | **CBT50-FMA38.1-105** | **P2779217** | 38.1 | 105 | 80 | 34 | 15.9 | 9 | M20 | 1 | 6.00 |
| | **CBT50-FMA38.1-150** | **P2779218** | 38.1 | 150 | 80 | 34 | 15.9 | 9 | M20 | 1 | 6.50 |
| | **CBT50-FMA50.8-45** | **P2779219** | 50.8 | 45 | 100 | 36 | 19.05 | 10 | M24 | 1 | 4.90 |
| | **CBT50-FMA50.8-75** | **P2779220** | 50.8 | 75 | 100 | 36 | 19.05 | 10 | M24 | 1 | 6.80 |
| | **CBT50-FMA47.625-75** | **P2779221** | 47.625 | 75 | 128.57 | 38 | 25.4 | 12.5 | - | 2 | 7.70 |

▶Without "Coolant Through".
没有“冷却剂”



FACE MILL ARBOR

FMA

## FACE MILL ARBOR
## 平面铣刀刀柄

**JIS B6339/**
**MAS 403-BT**

FIG.1

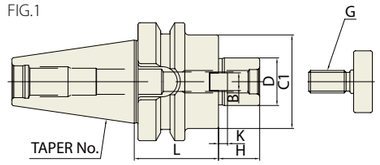
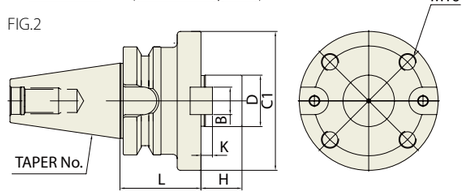



FIG.2




JIS B6339-BT | AT3 | 6.3G | 15,000 RPM | A

Tap Parts, Refer to page 239
配件，请参阅第239页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | D | L | C1 | H | B | K | G | FIG. | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 30 | **BT30-FMA25.4-45** | **P2779222** | 25.4 | 45 | 50 | 22 | 9.5 | 5 | M12 | 1 | 1.10 |
| | **BT30-FMA31.75-45** | **P2779223** | 31.75 | 45 | 60 | 30 | 12.7 | 7 | M16 | 1 | 1.20 |
| 40 | **BT40-FMA25.4-45** | **P2779224** | 25.4 | 45 | 50 | 22 | 9.5 | 5 | M12 | 1 | 1.50 |
| | **BT40-FMA25.4-90** | **P2779225** | 25.4 | 90 | 50 | 22 | 9.5 | 5 | M12 | 1 | 3.10 |
| | **BT40-FMA31.75-45** | **P2779226** | 31.75 | 45 | 60 | 30 | 12.7 | 7 | M16 | 1 | 1.90 |
| | **BT40-FMA31.75-75** | **P2779227** | 31.75 | 75 | 60 | 30 | 12.7 | 7 | M16 | 1 | 2.70 |
| | **BT40-FMA38.1-60** | **P2779228** | 38.1 | 60 | 80 | 34 | 15.9 | 9 | M20 | 1 | 2.90 |
| 50 | **BT50-FMA25.4-45** | **P2779229** | 25.4 | 45 | 50 | 22 | 9.5 | 5 | M12 | 1 | 3.70 |
| | **BT50-FMA25.4-90** | **P2779230** | 25.4 | 90 | 50 | 22 | 9.5 | 5 | M12 | 1 | 4.60 |
| | **BT50-FMA25.4-150** | **P2779231** | 25.4 | 150 | 50 | 22 | 9.5 | 5 | M12 | 1 | 5.50 |
| | **BT50-FMA31.75-45** | **P2779232** | 31.75 | 45 | 60 | 30 | 12.7 | 7 | M16 | 1 | 4.50 |
| | **BT50-FMA31.75-75** | **P2779233** | 31.75 | 75 | 60 | 30 | 12.7 | 7 | M16 | 1 | 5.30 |
| | **BT50-FMA31.75-105** | **P2779234** | 31.75 | 105 | 60 | 30 | 12.7 | 7 | M16 | 1 | 5.80 |
| | **BT50-FMA31.75-150** | **P2779235** | 31.75 | 150 | 60 | 30 | 12.7 | 7 | M16 | 1 | 6.30 |
| | **BT50-FMA38.1-45** | **P2779236** | 38.1 | 45 | 80 | 34 | 15.9 | 9 | M20 | 1 | 4.30 |
| | **BT50-FMA38.1-75** | **P2779237** | 38.1 | 75 | 80 | 34 | 15.9 | 9 | M20 | 1 | 5.60 |
| | **BT50-FMA38.1-105** | **P2779238** | 38.1 | 105 | 80 | 34 | 15.9 | 9 | M20 | 1 | 6.00 |
| | **BT50-FMA38.1-150** | **P2779239** | 38.1 | 150 | 80 | 34 | 15.9 | 9 | M20 | 1 | 6.50 |
| | **BT50-FMA50.8-45** | **P2779240** | 50.8 | 45 | 100 | 36 | 19.05 | 10 | M24 | 1 | 4.90 |
| | **BT50-FMA50.8-75** | **P2779241** | 50.8 | 75 | 100 | 36 | 19.05 | 10 | M24 | 1 | 6.80 |
| | **BT50-FMA47.625-75** | **P2779242** | 47.625 | 75 | 128.57 | 38 | 25.4 | 12.5 | - | 2 | 7.70 |

▶Without "Coolant Through".
没有“冷却剂”

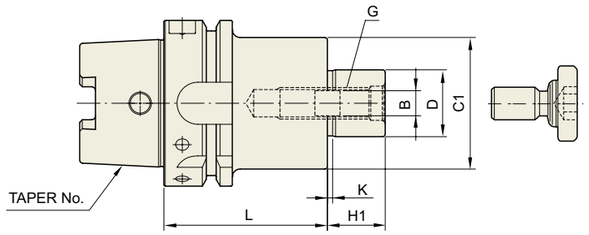
▶CAT(ANSI B5.50) taper and Inch type products are available.
CAT(ANSI B5.50)锥柄及英制产品可供选择

# FACE MILL ARBOR

FMA

## FACE MILL ARBOR
## 平面铣刀刀柄

DIN 69893/
ISO 12164-1-HSK FORM A




DIN 69893-HSK | AT3 | 6.3G | 15,000 RPM | A

Tap Parts, Refer to page 239
配件，请参阅第239页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | D | C1 | L | H1 | B | K | G | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|---|
| 40A | HSK40A-FMA25.4-50 | P2779243 | 25.4 | 50 | 50 | 22 | 9.5 | 5 | M12 | 0.61 |
| 50A | HSK50A-FMA25.4-60 | P2779244 | 25.4 | 50 | 60 | 22 | 9.5 | 5 | M12 | 0.90 |
| 63A | HSK63A-FMA25.4-45 | P2779245 | 25.4 | 50 | 45 | 22 | 9.5 | 5 | M12 | 1.03 |
| | HSK63A-FMA31.75-50 | P2779246 | 31.75 | 60 | 50 | 30 | 12.7 | 7 | M16 | 1.26 |
| 100A | HSK100A-FMA25.4-45 | P2779247 | 25.4 | 50 | 45 | 22 | 9.5 | 5 | M12 | 2.31 |
| | HSK100A-FMA31.75-50 | P2779248 | 31.75 | 60 | 50 | 30 | 12.7 | 7 | M16 | 2.61 |
| | HSK100A-FMA38.1-55 | P2779249 | 38.1 | 80 | 55 | 34 | 15.9 | 9 | M20 | 3.22 |
| | HSK100A-FMA50.8-60 | P2779250 | 50.8 | 100 | 60 | 36 | 19.05 | 10 | M24 | 4.06 |

▶Without "Coolant Through".
没有“冷却剂”



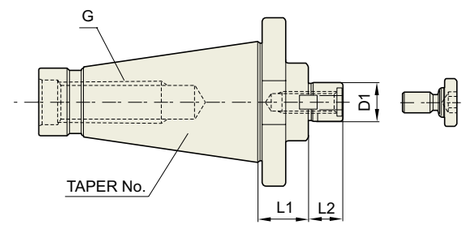
TOOLING SYSTEM
HYDRAULIC CHUCK
SHRINK FIT HOLDER
ER COLLET CHUCK
END MILL HOLDER & SIDE LOCK ARBOR
SHELL MILL ARBOR
POWER MILLING CHUCK
MORSE TAPER ARBOR
SK SLIM CHUCK
SYNCHRO TAPPING CHUCK
ONE STEP TAPPING CHUCK
TAPPING ER CHUCK
TAPPING CHUCK
FACE MILL ARBOR
COPY MILL ARBOR & INDEXABLE DRILL HOLDER
NC DRILL CHUCK & OTHER TOOL HOLDERS
BORING SYSTEM
ACCESSORY & OTHERS

# FACE MILL ARBOR

FMA

## FACE MILL ARBOR
## 平面铣刀刀柄

ANSI B5.18-NT



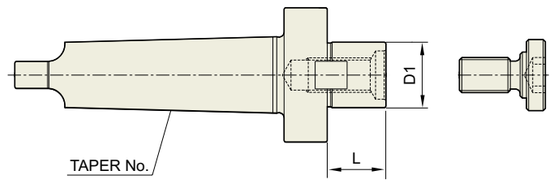

DIN 2080-NT | AT3 | A

Tap Parts, Refer to page 239
配件，请参阅第239页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | CUTTER (Ø) 刀盘 | D1 | L1 | L2 | DRAW THREAD 拉伸螺纹 | OLD MODEL No. 型号 | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|
| 40 | NT40-FMA25.4 | P2779251 | 3"(75) | 25.4 | 30 | 22 | U5/8-11(M16×2) | NT40-3R | 1.45 |
| | NT40-FMA31.75 | P2779252 | 4"(100) | 31.75 | 30 | 30 | U5/8-11(M16×2) | NT40-4R | 1.75 |
| | NT40-FMA38.1 | P2779253 | 5"(125) | 38.1 | 30 | 34 | U5/8-11(M16×2) | NT40-5R | 1.93 |
| | NT40-FMA50.8 | P2779254 | 6"(150) | 50.8 | 30 | 36 | U5/8-11(M16×2) | NT40-6R | 2.55 |
| 50 | NT50-FMA25.4 | P2779255 | 3"(75) | 25.4 | 30 | 22 | U1-8(M24×3) | NT50-3R | 3.30 |
| | NT50-FMA31.75 | P2779256 | 4"(100) | 31.75 | 30 | 30 | U1-8(M24×3) | NT50-4R | 3.40 |
| | NT50-FMA38.1 | P2779257 | 5"(125) | 38.1 | 30 | 34 | U1-8(M24×3) | NT50-5R | 3.60 |
| | NT50-FMA50.8 | P2779258 | 6"(150) | 50.8 | 30 | 36 | U1-8(M24×3) | NT50-6R | 3.90 |
| | NT50-FMA47.625 | P2779259 | 8"(200) | 47.625 | 45 | 38 | U1-8(M24×3) | NT50-8R | 4.90 |

## DIN 228-MTA




Tap Parts, Refer to page 239
配件，请参阅第239页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | CUTTER (Ø) 刀盘 | D1 | L | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|
| 5 | MTA5-FMA25.4 | P2779260 | 3"(75) | 25.4 | 22 | 1.60 |
| | MTA5-FMA31.75 | P2779261 | 4"(100) | 31.75 | 30 | 1.90 |
| | MTA5-FMA38.1 | P2779262 | 5"(125) | 38.1 | 34 | 2.20 |
| 6 | MTA6-FMA25.4 | P2779263 | 3"(75) | 25.4 | 22 | 3.50 |
| | MTA6-FMA31.75 | P2779264 | 4"(100) | 31.75 | 30 | 3.80 |
| | MTA6-FMA38.1 | P2779265 | 5"(125) | 38.1 | 34 | 4.10 |
| | MTA6-FMA50.8 | P2779266 | 6"(150) | 50.8 | 36 | 4.60 |
| | MTA6-FMA47.625 | P2779267 | 8"(200) | 47.625 | 38 | 5.40 |

# FACE MILL ARBOR

FMB

## FACE MILL ARBOR
## 平面铣刀刀柄

CBT
(BT DUAL CONTACT)

FIG.1

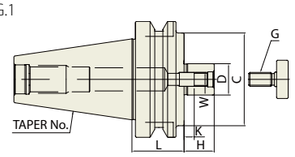



FIG.2

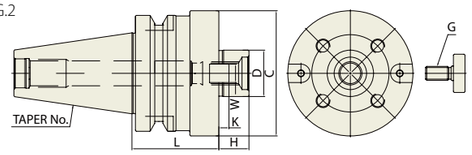
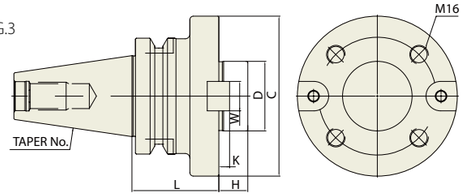



FIG.3




CBT | AT3 | 2.5G | 25,000 RPM | A

Tap Parts, Refer to page 239
配件，请参阅第239页

### ◆ METRIC TYPE

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | D | L | C | H | W | K | G | FIG. | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 30 | CBT30-FMB27-45 | P2779316 | 27 | 45 | 80 | 26 | 12 | 6 | M12 | 1 | 2.10 |
| 40 | CBT40-FMB27-60 | P2779269 | 27 | 60 | 80 | 26 | 12 | 6 | M12 | 1 | 2.50 |
| | CBT40-FMB27-90 | P2779270 | 27 | 90 | 80 | 26 | 12 | 6 | M12 | 1 | 4.70 |
| | CBT40-FMB40-60 | P2779271 | 40 | 60 | 85 | 26 | 16 | 8.5 | M20 | 1 | 7.40 |
| 50 | CBT50-FMB27-45 | P2779272 | 27 | 45 | 80 | 26 | 12 | 6 | M12 | 1 | 4.00 |
| | CBT50-FMB27-90 | P2779273 | 27 | 90 | 80 | 26 | 12 | 6 | M12 | 1 | 5.80 |
| | CBT50-FMB27-150 | P2779274 | 27 | 150 | 80 | 26 | 12 | 6 | M12 | 1 | 8.20 |
| | CBT50-FMB40-45 | P2779275 | 40 | 45 | 85 | 26 | 16 | 8.5 | M20 | 1 | 4.70 |
| | CBT50-FMB40-75 | P2779276 | 40 | 75 | 85 | 26 | 16 | 8.5 | M20 | 1 | 6.10 |
| | CBT50-FMB40-105 | P2779277 | 40 | 105 | 85 | 26 | 16 | 8.5 | M20 | 1 | 8.10 |
| | CBT50-FMB40F-75 | P2779278 | 40 | 75 | 110 | 26 | 16 | 8.5 | M20 | 2 | 6.60 |
| | CBT50-FMB60-75 | P2779279 | 60 | 75 | 140 | 25 | 25.4 | 12.5 | - | 3 | 7.90 |

### ◆ INCH TYPE

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | D | L | C | H | W | K | G | FIG. | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 30 | CBT30-FMB25.4-45 | P2779314 | 25.4 | 45 | 80 | 26 | 9.5 | 5 | M12 | 1 | 2.10 |
| 40 | CBT40-FMB25.4-60 | P2779281 | 25.4 | 60 | 80 | 26 | 9.5 | 5 | M12 | 1 | 2.50 |
| | CBT40-FMB25.4-90 | P2779282 | 25.4 | 90 | 80 | 26 | 9.5 | 5 | M12 | 1 | 4.70 |
| | CBT40-FMB38.1-60 | P2779283 | 38.1 | 60 | 85 | 26 | 15.9 | 9 | M20 | 1 | 7.40 |
| 50 | CBT50-FMB25.4-45 | P2779284 | 25.4 | 45 | 80 | 26 | 9.5 | 5 | M12 | 1 | 4.00 |
| | CBT50-FMB25.4-90 | P2779285 | 25.4 | 90 | 80 | 26 | 9.5 | 5 | M12 | 1 | 5.80 |
| | CBT50-FMB25.4-150 | P2779286 | 25.4 | 150 | 80 | 26 | 9.5 | 5 | M12 | 1 | 8.20 |
| | CBT50-FMB38.1-45 | P2779287 | 38.1 | 45 | 85 | 26 | 15.9 | 9 | M20 | 1 | 4.70 |
| | CBT50-FMB38.1-75 | P2779288 | 38.1 | 75 | 85 | 26 | 15.9 | 9 | M20 | 1 | 6.10 |
| | CBT50-FMB38.1-105 | P2779289 | 38.1 | 105 | 85 | 26 | 15.9 | 9 | M20 | 1 | 8.70 |
| | CBT50-FMB38.F-75 | P2779290 | 38.1 | 75 | 110 | 26 | 15.9 | 9 | M20 | 2 | 6.60 |

▶Without "Coolant Through".
没有“冷却剂”



TOOLING SYSTEM

HYDRAULIC CHUCK
SHRINK FIT HOLDER
ER COLLET CHUCK
END MILL HOLDER & SIDE LOCK ARBOR
SHELL MILL ARBOR
POWER MILLING CHUCK
MORSE TAPER ARBOR
SK SLIM CHUCK
SYNCHRO TAPPING CHUCK
ONE STEP TAPPING CHUCK
TAPPING ER CHUCK
TAPPING CHUCK
FACE MILL ARBOR
COPY MILL ARBOR & INDEXABLE DRILL HOLDER
NC DRILL CHUCK & OTHER TOOL HOLDERS
BORING SYSTEM
ACCESSORY & OTHERS

# FACE MILL ARBOR

FMB

## FACE MILL ARBOR
## 平面铣刀刀柄

JIS B6339/
MAS 403-BT

FIG.1

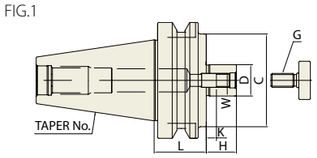



FIG.2

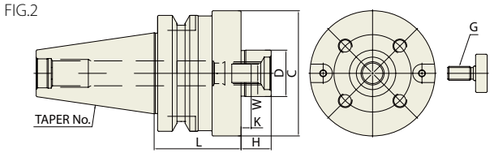
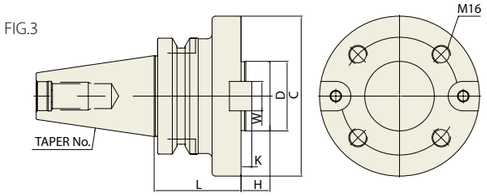



FIG.3




JIS B6339-BT | AT3 | 6.3G | 15,000 RPM | A

Tap Parts, Refer to page 239
配件，请参阅第239页

### ◆ METRIC TYPE

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | D | L | C | H | W | K | G | FIG. | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 30 | BT30-FMB27-45 | P2779291 | 27 | 45 | 80 | 26 | 12 | 6 | M12 | 1 | 2.10 |
| 40 | BT40-FMB27-60 | P2779292 | 27 | 60 | 80 | 26 | 12 | 6 | M12 | 1 | 2.50 |
| | BT40-FMB27-90 | P2779293 | 27 | 90 | 80 | 26 | 12 | 6 | M12 | 1 | 4.70 |
| | BT40-FMB40-60 | P2779294 | 40 | 60 | 85 | 26 | 16 | 8.5 | M20 | 1 | 7.40 |
| 50 | BT50-FMB27-45 | P2779295 | 27 | 45 | 80 | 26 | 12 | 6 | M12 | 1 | 4.00 |
| | BT50-FMB27-90 | P2779296 | 27 | 90 | 80 | 26 | 12 | 6 | M12 | 1 | 5.80 |
| | BT50-FMB27-150 | P2779297 | 27 | 150 | 80 | 26 | 12 | 6 | M12 | 1 | 8.20 |
| | BT50-FMB40-45 | P2779298 | 40 | 45 | 85 | 26 | 16 | 8.5 | M20 | 1 | 4.70 |
| | BT50-FMB40-75 | P2779299 | 40 | 75 | 85 | 26 | 16 | 8.5 | M20 | 1 | 6.10 |
| | BT50-FMB40-105 | P2779300 | 40 | 105 | 85 | 26 | 16 | 8.5 | M20 | 1 | 8.10 |
| | BT50-FMB40F-75 | P2779301 | 40 | 75 | 110 | 26 | 16 | 8.5 | M20 | 2 | 6.60 |
| | BT50-FMB60-75 | P2779302 | 60 | 75 | 140 | 25 | 25.4 | 12.5 | - | 3 | 7.90 |

### ◆ INCH TYPE

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | D | L | C | H | W | K | G | FIG. | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 30 | BT30-FMB25.4-45 | P2779315 | 25.4 | 45 | 80 | 26 | 9.5 | 5 | M12 | 1 | 2.10 |
| 40 | BT40-FMB25.4-60 | P2779304 | 25.4 | 60 | 80 | 26 | 9.5 | 5 | M12 | 1 | 2.50 |
| | BT40-FMB25.4-90 | P2779305 | 25.4 | 90 | 80 | 26 | 9.5 | 5 | M12 | 1 | 4.70 |
| | BT40-FMB38.1-60 | P2779306 | 38.1 | 60 | 85 | 26 | 15.9 | 9 | M20 | 1 | 7.40 |
| 50 | BT50-FMB25.4-45 | P2779307 | 25.4 | 45 | 80 | 26 | 9.5 | 5 | M12 | 1 | 4.00 |
| | BT50-FMB25.4-90 | P2779308 | 25.4 | 90 | 80 | 26 | 9.5 | 5 | M12 | 1 | 5.80 |
| | BT50-FMB25.4-150 | P2779309 | 25.4 | 150 | 80 | 26 | 9.5 | 5 | M12 | 1 | 8.20 |
| | BT50-FMB38.1-45 | P2779310 | 38.1 | 45 | 85 | 26 | 15.9 | 9 | M20 | 1 | 4.70 |
| | BT50-FMB38.1-75 | P2779311 | 38.1 | 75 | 85 | 26 | 15.9 | 9 | M20 | 1 | 6.10 |
| | BT50-FMB38.1-105 | P2779312 | 38.1 | 105 | 85 | 26 | 15.9 | 9 | M20 | 1 | 8.70 |
| | BT50-FMB38.F-75 | P2779313 | 38.1 | 75 | 110 | 26 | 15.9 | 9 | M20 | 2 | 6.60 |

▶Without "Coolant Through".
没有“冷却剂”

▶CAT(ANSI B5.50) taper and Inch type products are available.
CAT(ANSI B5.50)锥柄及英制产品可供选择

# FACE MILL ARBOR

FMC

## FACE MILL ARBOR
## 平面铣刀刀柄

CBT
(BT DUAL CONTACT)

FIG.1

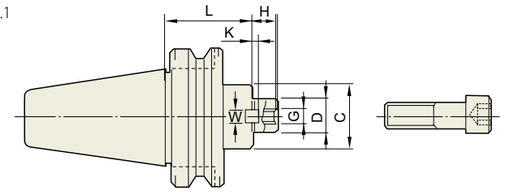
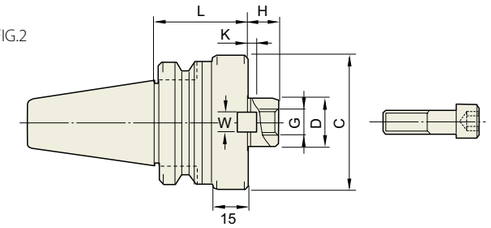



FIG.2




CBT | AT3 | 2.5G | 25,000 RPM | A

Tap Parts, Refer to page 239
配件，请参阅第239页

◆ METRIC TYPE

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | D | L | C | H | W | K | G | FIG. | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 30 | CBT30-FMC22-45 | P2776131 | 22 | 45 | 45 | 18 | 10 | 5 | M10 | 2 | 0.80 |
| 40 | CBT40-FMC22-45 | P2776132 | 22 | 45 | 45 | 18 | 10 | 5 | M10 | 1 | 1.30 |
| | CBT40-FMC27-60 | P2776133 | 27 | 60 | 70 | 20 | 12 | 6 | M12 | 2 | 1.50 |
| | CBT40-FMC32-60 | P2776134 | 32 | 60 | 85 | 22 | 14 | 7 | M16 | 2 | 2.30 |
| 50 | CBT50-FMC22-60 | P2776135 | 22 | 60 | 45 | 18 | 10 | 5 | M10 | 1 | 4.20 |
| | CBT50-FMC22-105 | P2776136 | 22 | 105 | 45 | 18 | 10 | 5 | M10 | 1 | 4.70 |
| | CBT50-FMC22-150 | P2776137 | 22 | 150 | 45 | 18 | 10 | 5 | M10 | 1 | 5.30 |
| | CBT50-FMC27-45 | P2776138 | 27 | 45 | 70 | 20 | 12 | 6 | M12 | 1 | 4.10 |
| | CBT50-FMC27-90 | P2776139 | 27 | 90 | 70 | 20 | 12 | 6 | M12 | 1 | 5.50 |
| | CBT50-FMC27-150 | P2776140 | 27 | 150 | 70 | 20 | 12 | 6 | M12 | 1 | 7.30 |
| | CBT50-FMC32-60 | P2776141 | 32 | 60 | 85 | 22 | 14 | 7 | M16 | 1 | 4.20 |
| | CBT50-FMC32-105 | P2776142 | 32 | 105 | 85 | 22 | 14 | 7 | M16 | 1 | 5.50 |
| | CBT50-FMC32-150 | P2776143 | 32 | 150 | 85 | 22 | 14 | 7 | M16 | 1 | 7.00 |

◆ INCH TYPE

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | D | L | C | H | W | K | G | FIG. | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 30 | CBT30-FMC25.4-45 | P2776144 | 25.4 | 45 | 70 | 20 | 9.5 | 6 | M12 | 2 | 1.10 |
| 40 | CBT40-FMC25.4-60 | P2776145 | 25.4 | 60 | 70 | 20 | 9.5 | 6 | M12 | 2 | 1.50 |
| | CBT40-FMC25.4-90 | P2776146 | 25.4 | 90 | 70 | 20 | 9.5 | 6 | M12 | 2 | 2.20 |
| | CBT40-FMC38.1-60 | P2776147 | 38.1 | 60 | 85 | 22 | 15.9 | 7 | M16 | 2 | 2.30 |
| | CBT40-FMC38.1-75 | P2776148 | 38.1 | 75 | 85 | 22 | 15.9 | 7 | M16 | 2 | 2.60 |
| 50 | CBT50-FMC25.4-45 | P2776149 | 25.4 | 45 | 70 | 20 | 9.5 | 6 | M12 | 1 | 4.10 |
| | CBT50-FMC25.4-90 | P2776150 | 25.4 | 90 | 70 | 20 | 9.5 | 6 | M12 | 1 | 5.50 |
| | CBT50-FMC25.4-150 | P2776151 | 25.4 | 150 | 70 | 20 | 9.5 | 6 | M12 | 1 | 7.30 |
| | CBT50-FMC38.1-45 | P2776152 | 38.1 | 45 | 85 | 22 | 15.9 | 7 | M16 | 1 | 4.20 |
| | CBT50-FMC38.1-75 | P2776153 | 38.1 | 75 | 85 | 22 | 15.9 | 7 | M16 | 1 | 5.50 |
| | CBT50-FMC38.1-105 | P2776154 | 38.1 | 105 | 85 | 22 | 15.9 | 7 | M16 | 1 | 7.00 |

▶Without "Coolant Through".
没有“冷却剂”



TOOLING SYSTEM

HYDRAULIC CHUCK
SHRINK FIT HOLDER
ER COLLET CHUCK
END MILL HOLDER & SIDE LOCK ARBOR
SHELL MILL ARBOR
POWER MILLING CHUCK
MORSE TAPER ARBOR
SK SLIM CHUCK
SYNCHRO TAPPING CHUCK
ONE STEP TAPPING CHUCK
TAPPING ER CHUCK
TAPPING CHUCK

FACE MILL ARBOR
COPY MILL ARBOR & INDEXABLE DRILL HOLDER
NC DRILL CHUCK & OTHER TOOL HOLDERS
BORING SYSTEM
ACCESSORY & OTHERS

# FACE MILL ARBOR

FMC

## FACE MILL ARBOR
## 平面铣刀刀柄

JIS B6339/
MAS 403-BT

FIG.1

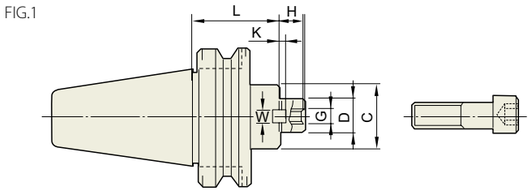
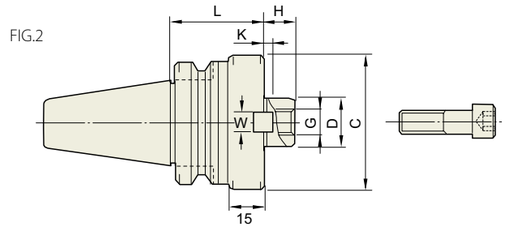



FIG.2




JIS B6339-BT | AT3 | 6.3G | 15,000 RPM | A

Tap Parts, Refer to page 239
配件，请参阅第239页

◆ METRIC TYPE

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | D | L | C | H | W | K | G | FIG. | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 30 | BT30-FMC22-45 | P2776101 | 22 | 45 | 45 | 18 | 10 | 5 | M10 | 2 | 0.80 |
| 40 | BT40-FMC22-45 | P2776102 | 22 | 45 | 45 | 18 | 10 | 5 | M10 | 1 | 1.30 |
| | BT40-FMC27-60 | P2776103 | 27 | 60 | 70 | 20 | 12 | 6 | M12 | 2 | 1.50 |
| | BT40-FMC32-60 | P2776104 | 32 | 60 | 85 | 22 | 14 | 7 | M16 | 2 | 2.30 |
| 50 | BT50-FMC22-60 | P2776105 | 22 | 60 | 45 | 18 | 10 | 5 | M10 | 1 | 4.20 |
| | BT50-FMC22-105 | P2776106 | 22 | 105 | 45 | 18 | 10 | 5 | M10 | 1 | 4.70 |
| | BT50-FMC22-150 | P2776107 | 22 | 150 | 45 | 18 | 10 | 5 | M10 | 1 | 5.30 |
| | BT50-FMC27-45 | P2776108 | 27 | 45 | 70 | 20 | 12 | 6 | M12 | 1 | 4.10 |
| | BT50-FMC27-90 | P2776109 | 27 | 90 | 70 | 20 | 12 | 6 | M12 | 1 | 5.50 |
| | BT50-FMC27-150 | P2776110 | 27 | 150 | 70 | 20 | 12 | 6 | M12 | 1 | 7.30 |
| | BT50-FMC32-60 | P2776111 | 32 | 60 | 85 | 22 | 14 | 7 | M16 | 1 | 4.20 |
| | BT50-FMC32-105 | P2776112 | 32 | 105 | 85 | 22 | 14 | 7 | M16 | 1 | 5.50 |
| | BT50-FMC32-150 | P2776113 | 32 | 150 | 85 | 22 | 14 | 7 | M16 | 1 | 7.00 |

◆ INCH TYPE

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | D | L | C | H | W | K | G | FIG. | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 30 | BT30-FMC25.4-45 | P2776114 | 25.4 | 45 | 70 | 20 | 9.5 | 6 | M12 | 2 | 1.10 |
| 40 | BT40-FMC25.4-60 | P2776115 | 25.4 | 60 | 70 | 20 | 9.5 | 6 | M12 | 2 | 1.50 |
| | BT40-FMC25.4-90 | P2776116 | 25.4 | 90 | 70 | 20 | 9.5 | 6 | M12 | 2 | 2.20 |
| | BT40-FMC38.1-60 | P2776117 | 38.1 | 60 | 85 | 22 | 15.9 | 7 | M16 | 2 | 2.30 |
| | BT40-FMC38.1-75 | P2776118 | 38.1 | 75 | 85 | 22 | 15.9 | 7 | M16 | 2 | 2.60 |
| 50 | BT50-FMC25.4-45 | P2776119 | 25.4 | 45 | 70 | 20 | 9.5 | 6 | M12 | 1 | 4.10 |
| | BT50-FMC25.4-90 | P2776120 | 25.4 | 90 | 70 | 20 | 9.5 | 6 | M12 | 1 | 5.50 |
| | BT50-FMC25.4-150 | P2776121 | 25.4 | 150 | 70 | 20 | 9.5 | 6 | M12 | 1 | 7.30 |
| | BT50-FMC38.1-45 | P2776122 | 38.1 | 45 | 85 | 22 | 15.9 | 7 | M16 | 1 | 4.20 |
| | BT50-FMC38.1-75 | P2776123 | 38.1 | 75 | 85 | 22 | 15.9 | 7 | M16 | 1 | 5.50 |
| | BT50-FMC38.1-105 | P2776124 | 38.1 | 105 | 85 | 22 | 15.9 | 7 | M16 | 1 | 7.00 |

▶Without "Coolant Through".
没有“冷却剂”

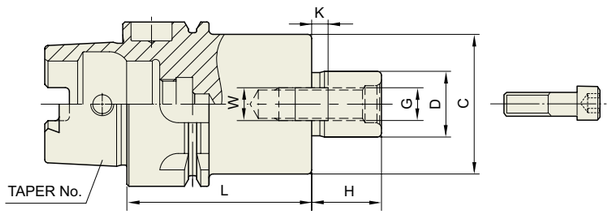
▶CAT(ANSI B5.50) taper and Inch type products are available.
CAT(ANSI B5.50)锥柄及英制产品可供选择

# FACE MILL ARBOR

FMC

## FACE MILL ARBOR
## 平面铣刀刀柄

DIN 69893/
ISO 12164-1-HSK FORM A




DIN 69893-HSK | AT3 | 6.3G | 15,000 RPM | A

Tap Parts, Refer to page 239
配件，请参阅第239页

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | D | C | L | H | W | K | G | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|---|
| 40A | HSK40A-FMC16-45 | P2774707 | 16 | 34 | 45 | 17 | 8 | 4 | M8 | 0.43 |
| | HSK40A-FMC22-50 | P2774708 | 22 | 45 | 50 | 18 | 10 | 5 | M10 | 0.56 |
| | HSK40A-FMC27-60 | P2774709 | 27 | 68 | 60 | 20 | 12 | 7 | M12 | 1.02 |
| 50A | HSK50A-FMC16-40 | P2774710 | 16 | 34 | 40 | 17 | 8 | 4 | M8 | 0.54 |
| | HSK50A-FMC22-50 | P2774711 | 22 | 45 | 50 | 18 | 10 | 5 | M10 | 0.73 |
| | HSK50A-FMC27-60 | P2774712 | 27 | 70 | 60 | 20 | 12 | 6 | M12 | 1.20 |
| 63A | HSK63A-FMC22-45 | P2774701 | 22 | 45 | 45 | 18 | 10 | 5 | M10 | 0.97 |
| | HSK63A-FMC27-60 | P2774702 | 27 | 70 | 60 | 20 | 12 | 6 | M12 | 1.57 |
| | HSK63A-FMC32-60 | P2774703 | 32 | 85 | 60 | 22 | 14 | 7 | M16 | 1.81 |
| 100A | HSK100A-FMC22-50 | P2774704 | 22 | 45 | 50 | 18 | 10 | 5 | M10 | 2.33 |
| | HSK100A-FMC27-60 | P2774705 | 27 | 70 | 60 | 20 | 12 | 6 | M12 | 3.02 |
| | HSK100A-FMC32-60 | P2774706 | 32 | 85 | 60 | 22 | 14 | 7 | M16 | 3.41 |

▶Without "Coolant Through".
没有 “冷却剂”



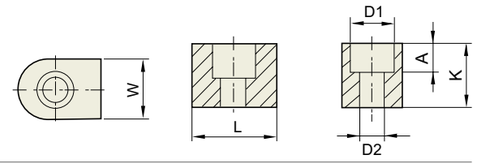


# FACE MILL ARBOR

PART

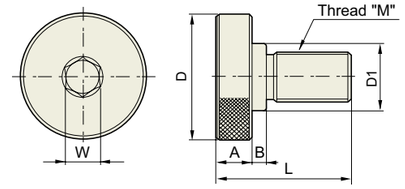
## KEY & BOLT (For FACE MILL ARBOR)
## 传动销&螺丝 (平面铣刀刀柄用)

### ■ KEY 传动销




Unit (单位) : mm

| KEY | EDP No. | W | K | L | D1 | D2 | A | APPLICABLE ARBOR 适用刀柄 |
|---|---|---|---|---|---|---|---|---|
| 8 × 7 × 12.8 | P2778857 | 8 | 7 | 12.8 | 5.8 | 3.2 | 3.2 | SMA16 |
| 10 × 7.8 × 15.5 | P2778858 | 10 | 7.8 | 15.5 | 7.5 | 4.2 | 4.3 | SMA22 |
| 9.52 × 9.52 × 10.2 | P2774753 | 9.52 | 9.52 | 10.2 | 7.5 | 4.5 | 5.2 | FMA25.4 / FMB25.4 |
| 9.5 × 12 × 11 | P2774754 | 9.5 | 12 | 11 | 7.5 | 4.2 | 5 | FMC25.4 |
| 12 × 9 × 18.5 | P2778859 | 12 | 9 | 18.5 | 9 | 5.3 | 5.5 | SMA27 |
| 10 × 10 × 11 | P2774756 | 10 | 10 | 11 | 7.5 | 4.2 | 5 | FMC22 |
| 14 × 11.5 × 20.5 | P2778860 | 14 | 11.5 | 20.5 | 10.5 | 6.5 | 6.5 | SMA32 |
| 12 × 13 × 18 | P2774758 | 12 | 13 | 18 | 9 | 5.3 | 8 | FMB27 / FMC27 |
| 16 × 13.5 × 23.5 | P2778861 | 16 | 13.5 | 23.5 | 10.5 | 6.5 | 6.5 | SMA40 |
| 12.7 × 12.7 × 12.7 | P2774760 | 12.7 | 12.7 | 12.7 | 7.5 | 4.5 | 5.2 | FMA31.75 |
| 15.87 × 15.87 × 18.5 | P2774761 | 15.87 | 15.87 | 18.5 | 10.3 | 6.6 | 7.5 | FMA38.1 / FMB40 / FMB40F |
| 14 × 15 × 20 | P2774762 | 14 | 15 | 20 | 10.5 | 6.3 | 8 | FMC32 |
| 18 × 18 × 28.5 | P2778862 | 18 | 18 | 28.5 | 10.5 | 6.5 | 10 | SMA50 |
| 19 × 18 × 22 | P2774764 | 19 | 18 | 22 | 10.5 | 6.3 | 7 | FMA50.8 |

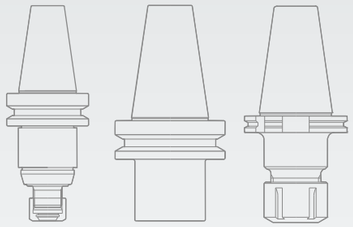



### ■ MOUNTING BOLT 安装螺丝

Unit (单位) : mm

| MOUNTING BOLT | EDP No. | M | D | D1 | L | A | B | W | APPLICABLE ARBOR 适用刀柄 |
|---|---|---|---|---|---|---|---|---|---|
| MB8 | P2774765 | 8 × 1.25 | 20 | 15 | 23 | 7 | 2 | 6 | FMC16 |
| MB10 | P2774766 | 10 × 1.5 | 28 | 18 | 29 | 9 | 2 | 8 | FMC22 |
| MB12 | P2774767 | 12 × 1.75 | 33 | 23 | 32 | 10 | 2 | 10 | FMC27 / FMB27 / FMA25.4 |
| MB16 | P2774768 | 16 × 2.0 | 40 | 23 | 42 | 10 | 6 | 12 | FMC32 / FMA31.75 |
| MB20 | P2774769 | 20 × 2.5 | 50 | 27 | 54 | 14 | 6 | 14 | FMC40 / FMA38.1 / FMB40 / FMB40F |
| MB24 | P2774770 | 24 × 3.0 | 65 | 37 | 62 | 14 | 10 | 17 | FMA50.8 |

Global Cutting Tool Leader **YG-1**



# TOOLING SYSTEM

YG-1 TOOLING SYSTEM

# COPY MILL ARBOR & INDEXABLE DRILL HOLDER

# 仿形铣刀柄& 可转位钻头刀柄

## COPY MILL ARBOR

DIN 69871-SK

DIN 69893/ISO 12164-1-HSK

JIS B6339/MAS 403-BT

## INDEXABLE DRILL HOLDER

DIN 69871-SK

DIN 69893/ISO 12164-1-HSK

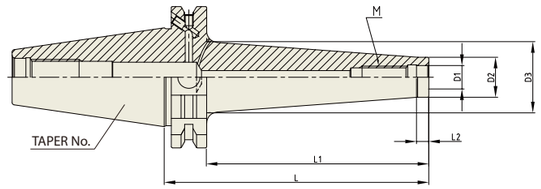
JIS B6339/MAS 403-BT

# COPY MILL ARBOR & INDEXABLE DRILL HOLDER

M

## COPY MILL ARBOR
## 仿形铣刀柄

DIN 69871-SK




DIN 69871-SK | AT3 | 2.5G | 25,000 RPM | (at 3D) ≤3μm | AD/B

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. (M-L1) 型号 | EDP No. | D1 | D2 | D3 | L | L1 | L2 | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|
| 40 | SK40AD/B-M6-25 | P2801701 | 6.5 | 10 | 13 | 44 | 25 | 5 | 0.80 |
| | SK40AD/B-M8-25 | P2801702 | 8.5 | 13 | 15 | 44 | 25 | 5 | 0.80 |
| | SK40AD/B-M8-50 | P2801703 | 8.5 | 13 | 23 | 69 | 50 | 5 | 0.86 |
| | SK40AD/B-M8-75 | P2801704 | 8.5 | 13 | 23 | 94 | 75 | 5 | 0.90 |
| | SK40AD/B-M8-100 | P2801705 | 8.5 | 13 | 25 | 119 | 100 | 5 | 0.97 |
| | SK40AD/B-M10-5 | P2801706 | 10.5 | 18 | 18 | 24 | 5 | 5 | 0.77 |
| | SK40AD/B-M10-25 | P2801707 | 10.5 | 18 | 20 | 44 | 25 | 5 | 0.79 |
| | SK40AD/B-M10-50 | P2801708 | 10.5 | 18 | 23 | 69 | 50 | 5 | 0.85 |
| | SK40AD/B-M10-75 | P2801709 | 10.5 | 18 | 28 | 94 | 75 | 5 | 0.87 |
| | SK40AD/B-M10-100 | P2801710 | 10.5 | 18 | 32 | 119 | 100 | 5 | 1.12 |
| | SK40AD/B-M10-150 | P2801711 | 10.5 | 18 | 36.5 | 169 | 150 | 5 | 1.38 |
| | SK40AD/B-M12-5 | P2801712 | 12.5 | 21 | 21 | 24 | 5 | 5 | 0.77 |
| | SK40AD/B-M12-25 | P2801713 | 12.5 | 21 | 24 | 44 | 25 | 5 | 0.82 |
| | SK40AD/B-M12-50 | P2801714 | 12.5 | 21 | 24 | 69 | 50 | 5 | 0.85 |
| | SK40AD/B-M12-75 | P2801715 | 12.5 | 21 | 31 | 94 | 75 | 5 | 1.02 |
| | SK40AD/B-M12-100 | P2801716 | 12.5 | 21 | 33 | 119 | 100 | 5 | 1.09 |
| | SK40AD/B-M12-150 | P2801717 | 12.5 | 21 | 40 | 169 | 150 | 5 | 1.53 |
| | SK40AD/B-M16-5 | P2801718 | 17 | 29 | 29 | 24 | 5 | 5 | 0.77 |
| | SK40AD/B-M16-25 | P2801719 | 17 | 29 | 29 | 44 | 25 | 5 | 0.85 |
| | SK40AD/B-M16-50 | P2801720 | 17 | 29 | 34 | 69 | 50 | 5 | 1.00 |
| | SK40AD/B-M16-75 | P2801721 | 17 | 29 | 34 | 94 | 75 | 5 | 0.99 |
| | SK40AD/B-M16-100 | P2801722 | 17 | 29 | 36 | 119 | 100 | 5 | 1.34 |
| | SK40AD/B-M16-150 | P2801723 | 17 | 29 | 42.5 | 169 | 150 | 5 | 1.84 |
| 50 | SK50AD/B-M8-50 | P2801724 | 8.5 | 13 | 23 | 69 | 50 | 5 | 2.69 |
| | SK50AD/B-M10-50 | P2801725 | 10.5 | 18 | 23 | 69 | 50 | 5 | 2.71 |
| | SK50AD/B-M10-100 | P2801726 | 10.5 | 18 | 32 | 119 | 100 | 10 | 2.88 |
| | SK50AD/B-M10-150 | P2801727 | 10.5 | 18 | 36.5 | 169 | 150 | 10 | 3.17 |
| | SK50AD/B-M12-50 | P2801728 | 12.5 | 21 | 24 | 69 | 50 | 5 | 2.67 |
| | SK50AD/B-M12-100 | P2801729 | 12.5 | 21 | 33 | 119 | 100 | 10 | 2.93 |
| | SK50AD/B-M12-150 | P2801730 | 12.5 | 21 | 40 | 169 | 150 | 10 | 3.33 |
| | SK50AD/B-M16-50 | P2801731 | 17 | 29 | 34 | 69 | 50 | 5 | 2.79 |
| | SK50AD/B-M16-100 | P2801732 | 17 | 29 | 36 | 119 | 100 | 10 | 3.00 |
| | SK50AD/B-M16-150 | P2801733 | 17 | 29 | 42.5 | 169 | 150 | 10 | 3.60 |



TOOLING SYSTEM

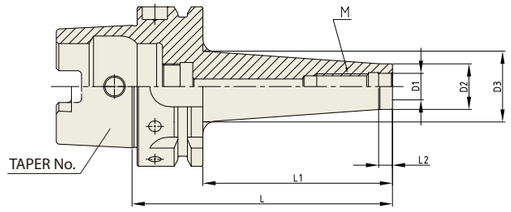
HYDRAULIC CHUCK
SHRINK FIT HOLDER
ER COLLET CHUCK
END MILL HOLDER & SIDE LOCK ARBOR
SHELL MILL ARBOR
POWER MILLING CHUCK
MORSE TAPER ARBOR
SK SLIM CHUCK
SYNCHRO TAPPING CHUCK
ONE STEP TAPPING CHUCK
TAPPING ER CHUCK
TAPPING CHUCK
FACE MILL ARBOR
COPY MILL ARBOR & INDEXABLE DRILL HOLDER
NC DRILL CHUCK & OTHER TOOL HOLDERS
BORING SYSTEM
ACCESSORY & OTHERS

# COPY MILL ARBOR & INDEXABLE DRILL HOLDER

M

## COPY MILL ARBOR
## 仿形铣刀柄

DIN 69893/ ISO 12164-1-HSK FORM A




DIN 69893-HSK | AT3 | 2.5G | 25,000 RPM | (at 3D) ≤3μm | AD

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. (M-L1) 型号 | EDP No. | D1 | D2 | D3 | L | L1 | L2 | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|
| 63A | HSK63A-M5-25 | P2801801 | 5.5 | 10 | 13 | 51 | 25 | 5 | 0.77 |
| | HSK63A-M6-25 | P2801802 | 6.5 | 10 | 13 | 51 | 25 | 5 | 0.77 |
| | HSK63A-M8-25 | P2801803 | 8.5 | 13 | 15 | 51 | 25 | 5 | 0.81 |
| | HSK63A-M8-50 | P2801804 | 8.5 | 13 | 23 | 76 | 50 | 5 | 1.09 |
| | HSK63A-M8-75 | P2801805 | 8.5 | 13 | 23 | 101 | 75 | 5 | 1.29 |
| | HSK63A-M10-25 | P2801806 | 10.5 | 18 | 20 | 51 | 25 | 5 | 0.90 |
| | HSK63A-M10-50 | P2801807 | 10.5 | 18 | 23 | 76 | 50 | 5 | 1.20 |
| | HSK63A-M10-75 | P2801808 | 10.5 | 18 | 28 | 101 | 75 | 5 | 1.33 |
| | HSK63A-M10-100 | P2801809 | 10.5 | 18 | 32 | 126 | 100 | 5 | 1.45 |
| | HSK63A-M10-150 | P2801810 | 10.5 | 18 | 36.5 | 176 | 150 | 5 | 1.60 |
| | HSK63A-M12-25 | P2801811 | 12.5 | 21 | 24 | 51 | 25 | 5 | 0.98 |
| | HSK63A-M12-50 | P2801812 | 12.5 | 21 | 24 | 76 | 50 | 5 | 1.29 |
| | HSK63A-M12-75 | P2801813 | 12.5 | 21 | 31 | 101 | 75 | 5 | 1.92 |
| | HSK63A-M12-100 | P2801814 | 12.5 | 21 | 33 | 126 | 100 | 5 | 2.48 |
| | HSK63A-M12-150 | P2801815 | 12.5 | 21 | 40 | 176 | 150 | 5 | 4.19 |
| | HSK63A-M16-25 | P2801816 | 17 | 29 | 29 | 51 | 25 | 5 | 0.78 |
| | HSK63A-M16-50 | P2801817 | 17 | 29 | 34 | 76 | 50 | 5 | 1.85 |
| | HSK63A-M16-75 | P2801818 | 17 | 29 | 34 | 101 | 75 | 5 | 2.46 |
| | HSK63A-M16-100 | P2801819 | 17 | 29 | 36 | 126 | 100 | 5 | 3.23 |
| | HSK63A-M16-150 | P2801820 | 17 | 29 | 42.5 | 176 | 150 | 5 | 5.39 |
| 100A | HSK100A-M8-50 | P2801821 | 8.5 | 13 | 23 | 79 | 50 | 5 | 2.33 |
| | HSK100A-M10-50 | P2801822 | 10.5 | 18 | 23 | 79 | 50 | 5 | 2.35 |
| | HSK100A-M10-100 | P2801823 | 10.5 | 18 | 32 | 129 | 100 | 10 | 2.59 |
| | HSK100A-M10-150 | P2801824 | 10.5 | 18 | 36.5 | 179 | 150 | 10 | 2.90 |
| | HSK100A-M12-50 | P2801825 | 12.5 | 21 | 24 | 79 | 50 | 5 | 2.37 |
| | HSK100A-M12-100 | P2801826 | 12.5 | 21 | 33 | 129 | 100 | 10 | 2.64 |
| | HSK100A-M12-150 | P2801827 | 12.5 | 21 | 40 | 179 | 150 | 10 | 3.05 |
| | HSK100A-M16-50 | P2801828 | 17 | 29 | 34 | 79 | 50 | 5 | 2.48 |
| | HSK100A-M16-100 | P2801829 | 17 | 29 | 36 | 129 | 100 | 10 | 2.81 |
| | HSK100A-M16-150 | P2801830 | 17 | 29 | 42.5 | 179 | 150 | 10 | 3.32 |

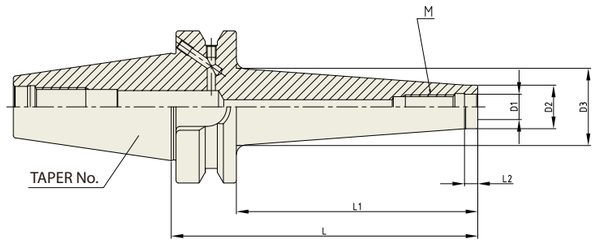
# COPY MILL ARBOR & INDEXABLE DRILL HOLDER

M

## COPY MILL ARBOR

JIS B6339/
MAS 403-BT

## 仿形铣刀柄




JIS B6339-BT | AT3 | 2.5G | 25,000 RPM | (at 3D) ≤3㎛ | AD/B

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. (M-L1) 型号 | EDP No. | D1 | D2 | D3 | L | L1 | L2 | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|
| 40 | BT40AD/B-M6-25 | P2801901 | 6.5 | 10 | 13 | 52 | 25 | 5 | 0.94 |
| | BT40AD/B-M6-50 | P2801902 | 6.5 | 10 | 20 | 77 | 50 | 5 | 0.99 |
| | BT40AD/B-M6-75 | P2801903 | 6.5 | 10 | 23 | 102 | 75 | 5 | 1.04 |
| | BT40AD/B-M8-25 | P2801904 | 8.5 | 13 | 15 | 52 | 25 | 5 | 0.95 |
| | BT40AD/B-M8-50 | P2801905 | 8.5 | 13 | 23 | 77 | 50 | 5 | 1.01 |
| | BT40AD/B-M8-75 | P2801906 | 8.5 | 13 | 23 | 102 | 75 | 5 | 1.05 |
| | BT40AD/B-M10-25 | P2801907 | 10.5 | 18 | 20 | 52 | 25 | 5 | 0.97 |
| | BT40AD/B-M10-50 | P2801908 | 10.5 | 18 | 23 | 77 | 50 | 5 | 1.04 |
| | BT40AD/B-M10-75 | P2801909 | 10.5 | 18 | 32 | 102 | 75 | 5 | 1.28 |
| | BT40AD/B-M12-25 | P2801910 | 12.5 | 21 | 15 | 52 | 25 | 5 | 0.98 |
| | BT40AD/B-M12-75 | P2801911 | 12.5 | 21 | 23 | 102 | 75 | 5 | 1.22 |
| | BT40AD/B-M12-125 | P2801912 | 12.5 | 21 | 23 | 152 | 125 | 5 | 1.50 |
| | BT40AD/B-M16-25 | P2801913 | 17 | 29 | 29 | 52 | 25 | 5 | 1.01 |
| | BT40AD/B-M16-75 | P2801914 | 17 | 29 | 34 | 102 | 75 | 5 | 1.32 |
| | BT40AD/B-M16-125 | P2801915 | 17 | 29 | 40 | 152 | 125 | 5 | 1.75 |
| 50 | BT50AD/B-M8-50 | P2801916 | 8.5 | 13 | 23 | 88 | 50 | 5 | 3.51 |
| | BT50AD/B-M10-50 | P2801917 | 10.5 | 18 | 23 | 88 | 50 | 5 | 3.54 |
| | BT50AD/B-M10-100 | P2801918 | 10.5 | 18 | 32 | 138 | 100 | 10 | 3.77 |
| | BT50AD/B-M12-50 | P2801919 | 12.5 | 21 | 24 | 88 | 50 | 10 | 3.55 |
| | BT50AD/B-M12-100 | P2801920 | 12.5 | 21 | 33 | 138 | 100 | 10 | 3.82 |
| | BT50AD/B-M16-50 | P2801921 | 17 | 29 | 29 | 88 | 50 | 10 | 3.63 |
| | BT50AD/B-M16-100 | P2801922 | 17 | 29 | 36 | 138 | 100 | 10 | 3.98 |
| | BT50AD/B-M16-150 | P2801923 | 17 | 29 | 42.5 | 188 | 150 | 10 | 4.48 |



TOOLING SYSTEM

HYDRAULIC CHUCK
SHRINK FIT HOLDER
ER COLLET CHUCK
END MILL HOLDER & SIDE LOCK ARBOR
SHELL MILL ARBOR
POWER MILLING CHUCK
MORSE TAPER ARBOR
SK SLIM CHUCK
SYNCHRO TAPPING CHUCK
ONE STEP TAPPING CHUCK
TAPPING ER CHUCK
TAPPING CHUCK
FACE MILL ARBOR
COPY MILL ARBOR & INDEXABLE DRILL HOLDER
NC DRILL CHUCK & OTHER TOOL HOLDERS
BORING SYSTEM
ACCESSORY & OTHERS

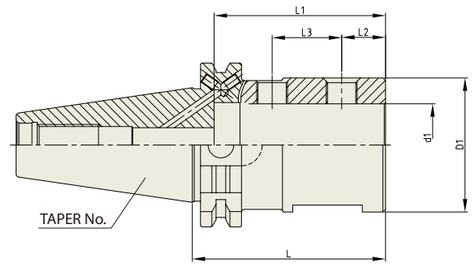
# COPY MILL ARBOR & INDEXABLE DRILL HOLDER

SL

## INDEXABLE DRILL HOLDER

DIN 69871-SK

## 可转位钻头刀柄

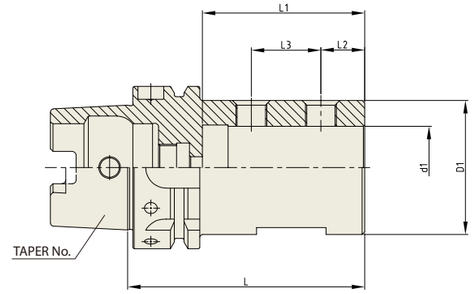



DIN 69871-SK | AT3 | 6.3G | 15,000 RPM | AD/B

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | d1 | D1 | L | L1 | L2 | L3 | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|
| 40 | SK40AD/B-SL20-65 | P2802001 | 20 | 40 | 65 | 56 | 15 | 20 | 1.07 |
| | SK40AD/B-SL25-70 | P2802002 | 25 | 45 | 70 | 61.5 | 17 | 23 | 1.15 |
| | SK40AD/B-SL32-75 | P2802003 | 32 | 52 | 75 | 66.5 | 17 | 27 | 1.27 |
| | SK40AD/B-SL40-115 | P2802004 | 40 | 60 | 115 | 73 | 22 | 28 | 2.10 |
| 50 | SK50AD/B-SL20-70 | P2802005 | 20 | 40 | 70 | 54 | 15 | 20 | 3.00 |
| | SK50AD/B-SL25-70 | P2802006 | 25 | 45 | 70 | 64 | 17 | 23 | 3.04 |
| | SK50AD/B-SL32-75 | P2802007 | 32 | 52 | 75 | 68 | 17 | 27 | 3.14 |
| | SK50AD/B-SL40-80 | P2802008 | 40 | 60 | 80 | 77.0 | 22 | 28 | 3.26 |

## DIN 69893/ ISO 12164-1-HSK FORM A




DIN 69893-HSK | AT3 | 6.3G | 15,000 RPM | AD

Unit (单位) : mm

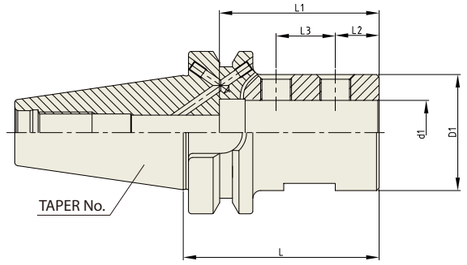
| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | d1 | D1 | L | L1 | L2 | L3 | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|
| 63A | HSK63A-SL20-80 | P2802051 | 20 | 40 | 80 | 54 | 15 | 20 | 1.04 |
| | HSK63A-SL25-90 | P2802052 | 25 | 45 | 90 | 59 | 17 | 23 | 1.21 |
| | HSK63A-SL32-90 | P2802053 | 32 | 52 | 90 | 63 | 17 | 27 | 1.30 |
| | HSK63A-SL40-105 | P2802054 | 40 | 60 | 105 | 73 | 22 | 28 | 1.58 |
| 100A | HSK100A-SL20-90 | P2802055 | 20 | 40 | 90 | 54 | 15 | 20 | 2.71 |
| | HSK100A-SL25-95 | P2802056 | 25 | 45 | 95 | 59 | 17 | 23 | 2.84 |
| | HSK100A-SL32-100 | P2802057 | 32 | 52 | 100 | 63 | 17 | 27 | 3.03 |
| | HSK100A-SL40-110 | P2802058 | 40 | 60 | 110 | 73 | 22 | 28 | 3.32 |

# COPY MILL ARBOR & INDEXABLE DRILL HOLDER

SL

## INDEXABLE DRILL HOLDER
## 可转位钻头刀柄

JIS B6339/
MAS 403-BT




JIS B6339-BT | AT3 | 6.3G | 15,000 RPM | AD/B

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. (M-L1) 型号 | EDP No. | d1 | D1 | L | L1 | L2 | L3 | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|
| 40 | BT40AD/B-SL20-72 | P2802101 | 20 | 40 | 72 | 54 | 15 | 20 | 1.09 |
| | BT40AD/B-SL25-76 | P2802102 | 25 | 45 | 76 | 62 | 17 | 23 | 1.11 |
| | BT40AD/B-SL32-80 | P2802103 | 32 | 52 | 80 | 67 | 17 | 27 | 1.17 |
| | BT40AD/B-SL40-100 | P2802104 | 40 | 60 | 100 | 73 | 22 | 28 | 1.67 |
| 50 | BT50AD/B-SL20-90 | P2802105 | 20 | 40 | 90 | 54 | 15 | 20 | 3.74 |
| | BT50AD/B-SL25-90 | P2802106 | 25 | 45 | 90 | 59 | 17 | 23 | 3.81 |
| | BT50AD/B-SL32-90 | P2802107 | 32 | 52 | 90 | 70 | 17 | 27 | 3.90 |
| | BT50AD/B-SL40-100 | P2802108 | 40 | 60 | 100 | 80 | 22 | 28 | 4.12 |



YG-1 TOOLING SYSTEM

# NC DRILL CHUCK & OTHER TOOL HOLDERS

# NC钻夹头刀柄及其他辅件

## NC DRILL CHUCK
CBT (BT DUAL CONTACT) JIS B6339/MAS 403-BT
DIN 69893/ISO 12164-1-HSK STRAIGHT-K
DIN 69871-SK

## SIDE CUTTER ARBOR
JIS B6339/MAS 403-BT

## JACOBS TAPER ADAPTER
JIS B6339/MAS 403-BT

## BLANK BAR
DIN 69871-SK JIS B6339/MAS 403-BT
DIN 69893/ISO 12164-1-HSK FORM A

## TEST BAR
DIN69871-SK JIS B6339/MAS 403-BT
DIN69893/ISO 12164-1-HSK

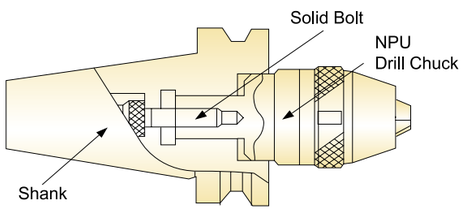
# NC DRILL CHUCK

## FEATURE 特征

YG-1 Drill Chuck is completely tightened with solid bolt, and there is no danger of falling during rotating or cutting.

SSK 钻夹头用实心螺栓完全拧紧
在旋转或切割过程中忽略坠落的危险

## HIGH PRECISION 高精密度




- Drill chuck with excellent high precision (T.I.R 0.05) and shank are integrated, which guarantees excellent T.I.R

- 高精度（T.I.R 0.05）的NC钻夹头与柄部为一体型，保证了优秀的T.I.R

## Strong Chucking Power 强劲的夹持力

Drill may be damaged due to reverse thrust during perforation, but with YG-1 Drill Chuck strongly tightened with wrench, there is no possibility of damage to drill.

在穿孔过程中，钻头可能由于反向推力易损坏，
但SSK钻夹头用扳手强力拧紧防止损坏钻头

## Safety 安全性

YG-1 NC Drill Chuck with strong rigidity contributes to factory automation by unmanned operation by preventing accident from occuring during operation.

- Falling of drill occurring by sudden stopping
- Falling of drill occurring by rapid rotation
- Damage to drill caused by reverse thrust during perforation process

钻头刀柄的一体化设计避免各种作业事故，广泛使用在自动化工厂.

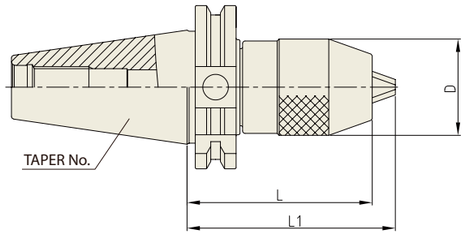
- 避免极速停止导致的掉刀.
- 避免急速旋转的导致的掉刀.
- 贯通作业中，避免反弹力破损钻头.





## NC DRILL CHUCK
## NC钻夹头刀柄

DIN 69871-SK




DIN 69871-SK | AT3 | A

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | CLAMPING RANGE 夹持范围 | D | L (Min.) | L1 (Max.) | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|
| 40 | SK40-NPU8-80 | P2802201 | 0.3 ~ 8 | 36.5 | 80 | 80.7 | - |
| | SK40-NPU8-110 | P2802202 | 0.3 ~ 8 | 36.5 | 110 | 115.7 | - |
| | SK40-NPU8-150 | P2802203 | 0.3 ~ 8 | 36.5 | 150 | 155.7 | - |
| | SK40-NPU13-95 | P2802204 | 1 ~ 13 | 50 | 95 | 100.7 | - |
| | SK40-NPU13-130 | P2802205 | 1 ~ 13 | 50 | 130 | 130.7 | - |
| | SK40-NPU8-150 | P2802206 | 1 ~ 13 | 50 | 150 | 155.7 | - |
| 50 | SK50-NPU8-80 | P2802207 | 0.3 ~ 8 | 36.5 | 80 | 80.7 | - |
| | SK50-NPU8-110 | P2802208 | 0.3 ~ 8 | 36.5 | 110 | 115.7 | - |
| | SK50-NPU8-150 | P2802209 | 0.3 ~ 8 | 36.5 | 150 | 155.7 | - |
| | SK50-NPU13-95 | P2802210 | 1 ~ 13 | 50 | 95 | 100.7 | - |
| | SK50-NPU13-130 | P2802211 | 1 ~ 13 | 50 | 130 | 130.7 | - |
| | SK50-NPU8-150 | P2802212 | 1 ~ 13 | 50 | 150 | 155.7 | - |

▶CAT(ANSI B5.50) taper and Inch type products are available.
CAT(ANSI B5.50)锥柄及英制产品可供选择

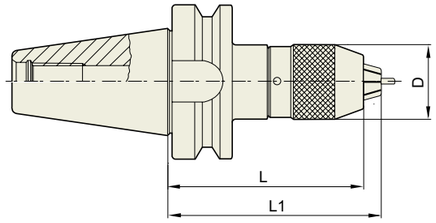
# NC DRILL CHUCK & OTHER TOOL HOLDERS

NPU

## NC DRILL CHUCK

CBT
(BT DUAL CONTACT)

## NC钻夹头刀柄




CBT AT3 A

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | CLAMPING RANGE 夹持范围 | D | L (Min.) | L1 (Max.) | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|
| 30 | CBT30-NPU8-75 | P2776066 | 0.3 - 8 | 36.5 | 75 | 80.7 | 0.80 |
| | CBT30-NPU13-105 | P2776067 | 1 - 13 | 50.4 | 105 | 115 | 1.80 |
| 40 | CBT40-NPU8-80 | P2776068 | 0.3 - 8 | 36.5 | 80 | 85.7 | 1.50 |
| | CBT40-NPU8-110 | P2776054 | 0.3 - 8 | 36.5 | 110 | 115.7 | 1.80 |
| | CBT40-NPU8-150 | P2776055 | 0.3 - 8 | 36.5 | 150 | 155.7 | 2.60 |
| | CBT40-NPU13-95 | P2776069 | 1 - 13 | 50.4 | 95 | 100.7 | 2.10 |
| | CBT40-NPU13-130 | P2776057 | 1 - 13 | 50.4 | 130 | 140 | 2.70 |
| | CBT40-NPU13-150 | P2776058 | 1 - 13 | 50.4 | 150 | 160 | 3.40 |
| 50 | CBT50-NPU8-90 | P2776059 | 0.3 - 8 | 36.5 | 90 | 95.7 | 4.20 |
| | CBT50-NPU8-110 | P2776060 | 0.3 - 8 | 36.5 | 110 | 115.7 | 4.50 |
| | CBT50-NPU8-170 | P2776061 | 0.3 - 8 | 36.5 | 170 | 180.7 | 5.20 |
| | CBT50-NPU13-105 | P2776070 | 1 - 13 | 50.4 | 105 | 115 | 4.80 |
| | CBT50-NPU13-130 | P2776063 | 1 - 13 | 50.4 | 130 | 140 | 5.20 |
| | CBT50-NPU13-150 | P2776064 | 1 - 13 | 50.4 | 150 | 160 | 5.50 |
| | CBT50-NPU13-190 | P2776065 | 1 - 13 | 50.4 | 190 | 200 | 5.90 |

▶CAT(ANSI B5.50) taper and Inch type products are available.
CAT(ANSI B5.50)锥柄及英制产品可供选择



TOOLING SYSTEM

HYDRAULIC CHUCK
SHRINK FIT HOLDER
ER COLLET CHUCK
END MILL HOLDER & SIDE LOCK ARBOR
SHELL MILL ARBOR
POWER MILLING CHUCK
MORSE TAPER ARBOR
SK SLIM CHUCK
SYNCHRO TAPPING CHUCK
ONE STEP TAPPING CHUCK
TAPPING ER CHUCK
TAPPING CHUCK
FACE MILL ARBOR
COPY MILL ARBOR & INDEXABLE DRILL HOLDER
NC DRILL CHUCK & OTHER TOOL HOLDERS
BORING SYSTEM
ACCESSORY & OTHERS

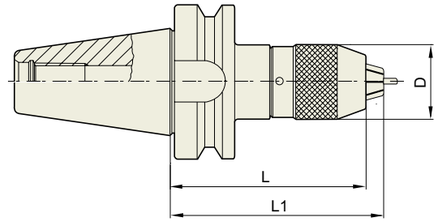
NC DRILL CHUCK & OTHER TOOL HOLDERS

NPU

## NC DRILL CHUCK

JIS B6339/
MAS403-BT

## NC钻夹头刀柄




JIS B6339-BT AT3 A

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | CLAMPING RANGE 夹持范围 | D | L (Min.) | L1 (Max.) | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|
| 30 | BT30-NPU8-75 | P2776016 | 0.3 - 8 | 36.5 | 75 | 80.7 | 0.80 |
| | BT30-NPU13-105 | P2776017 | 1 - 13 | 50.4 | 105 | 115 | 1.80 |
| 40 | BT40-NPU8-80 | P2776018 | 0.3 - 8 | 36.5 | 80 | 85.7 | 1.50 |
| | BT40-NPU8-110 | P2776006 | 0.3 - 8 | 36.5 | 110 | 115.7 | 1.80 |
| | BT40-NPU8-150 | P2776007 | 0.3 - 8 | 36.5 | 150 | 155.7 | 2.60 |
| | BT40-NPU13-95 | P2776019 | 1 - 13 | 50.4 | 95 | 100.7 | 2.10 |
| | BT40-NPU13-130 | P2776008 | 1 - 13 | 50.4 | 130 | 140 | 2.70 |
| | BT40-NPU13-150 | P2776003 | 1 - 13 | 50.4 | 150 | 160 | 3.40 |
| 50 | BT50-NPU8-90 | P2776009 | 0.3 - 8 | 36.5 | 90 | 95.7 | 4.20 |
| | BT50-NPU8-110 | P2776010 | 0.3 - 8 | 36.5 | 110 | 115.7 | 4.50 |
| | BT50-NPU8-170 | P2776011 | 0.3 - 8 | 36.5 | 170 | 180.7 | 5.20 |
| | BT50-NPU13-105 | P2776020 | 1 - 13 | 50.4 | 105 | 115 | 4.80 |
| | BT50-NPU13-130 | P2776013 | 1 - 13 | 50.4 | 130 | 140 | 5.20 |
| | BT50-NPU13-150 | P2776014 | 1 - 13 | 50.4 | 150 | 160 | 5.50 |
| | BT50-NPU13-190 | P2776015 | 1 - 13 | 50.4 | 190 | 200 | 5.90 |

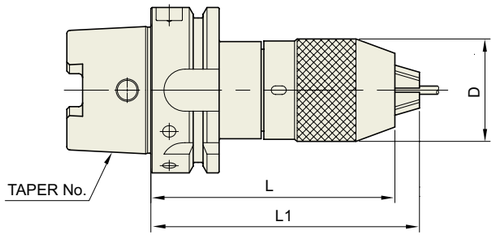
▶CAT(ANSI B5.50) taper and Inch type products are available.
CAT(ANSI B5.50)锥柄及英制产品可供选择

# NC DRILL CHUCK & OTHER TOOL HOLDERS

**NPU**

## NC DRILL CHUCK
## NC钻夹头刀柄

DIN 69893/
ISO 12164-1-HSK FORM A

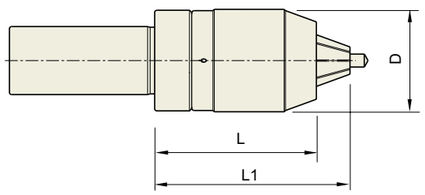



DIN 69893-HSK A

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | CAPACITY | D | L (Min.) | L1 (Max.) | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|
| 40A | **HSK40A-NPU 8-120** | **P2775202** | 0.3 - 8 | 36.5 | 120 | 125.7 | 1.00 |
| 50A | **HSK50A-NPU 8-120** | **P2775203** | 0.3 - 8 | 36.5 | 120 | 125.7 | 1.20 |
| | **HSK50A-NPU13-150** | **P2775201** | 1 - 13 | 50.4 | 150 | 160 | 2.10 |
| 63A | **HSK63A-NPU 8-125** | **P2775204** | 0.3 - 8 | 36.5 | 125 | 130.7 | 2.10 |
| | **HSK63A-NPU13-150** | **P2775205** | 1 - 13 | 50.4 | 150 | 150 | 3.00 |
| 100A | **HSK100A-NPU 8-130** | **P2775206** | 0.3 - 8 | 36.5 | 130 | 135.7 | 4.80 |
| | **HSK100A-NPU13-150** | **P2775207** | 1 - 13 | 50.4 | 150 | 160 | 5.50 |

## STRAIGHT-K




Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | CLAMPING RANGE 夹持范围 | D | L (Min.) | L1 (Max.) | d | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|
| 32 | **K32-NPU8-75** | **P2776021** | 0.3 - 8 | 36.5 | 75 | 80.7 | 32 | 0.70 |
| | **K32-NPU13-100** | **P2775252** | 1 - 13 | 50.4 | 100 | 110 | 32 | 1.50 |
| 42 | **K42-NPU8-70** | **P2775253** | 0.3 - 8 | 36.5 | 70 | 75.7 | 42 | 0.80 |
| | **K42-NPU13-100** | **P2775254** | 1 - 13 | 50.4 | 100 | 110 | 42 | 1.60 |



TOOLING SYSTEM

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MORSE TAPER ARBOR
SK SLIM CHUCK
SYNCHRO TAPPING CHUCK
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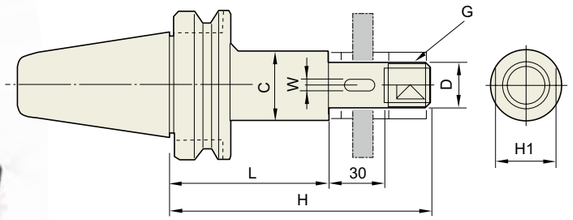
TAPPING ER CHUCK
TAPPING CHUCK
FACE MILL ARBOR
COPY MILL ARBOR & INDEXABLE DRILL HOLDER
NC DRILL CHUCK & OTHER TOOL HOLDERS
BORING SYSTEM
ACCESSORY & OTHERS

# NC DRILL CHUCK & OTHER TOOL HOLDERS

**SCA**

## SIDE CUTTER ARBOR
## 侧铣刀刀柄

JIS B6339/
MAS403-BT




JIS B6339-BT AT3 A

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | H | H1 | C | W | G | D | L | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|---|
| 30 | **BT30-SCA12.7-60** | **P2779141** | 105 | 17 | 20 | - | M12 | 12.7 | 60 | 1.00 |
| | **BT30-SCA15.875-60** | **P2779142** | 106 | 23 | 26 | 3.18 | M14 | 15.875 | 60 | 1.10 |
| | **BT30-SCA22.225-60** | **P2779143** | 110 | 29 | 34 | 3.18 | M20 | 22.225 | 60 | 1.20 |
| | **BT30-SCA25.4-60** | **P2779144** | 115 | 32 | 40 | 6.35 | M24 | 25.4 | 60 | 1.30 |
| 40 | **BT40-SCA12.7-75** | **P2779145** | 120 | 17 | 20 | - | M12 | 12.7 | 75 | 1.20 |
| | **BT40-SCA12.7-105** | **P2779146** | 150 | 17 | 20 | - | M12 | 12.7 | 105 | 1.30 |
| | **BT40-SCA15.875-75** | **P2779147** | 121 | 23 | 26 | 3.18 | M14 | 15.875 | 75 | 1.40 |
| | **BT40-SCA15.875-120** | **P2779148** | 151 | 23 | 26 | 3.18 | M14 | 15.875 | 120 | 1.50 |
| | **BT40-SCA22.225-75** | **P2779149** | 126 | 29 | 34 | 3.18 | M20 | 22.225 | 75 | 1.70 |
| | **BT40-SCA22.225-120** | **P2779150** | 171 | 29 | 34 | 3.18 | M20 | 22.225 | 120 | 2.00 |
| | **BT40-SCA25.4-75** | **P2779151** | 130 | 32 | 40 | 6.35 | M24 | 25.4 | 75 | 2.00 |
| | **BT40-SCA25.4-120** | **P2779152** | 175 | 32 | 40 | 6.35 | M24 | 25.4 | 120 | 2.40 |
| | **BT40-SCA31.75-90** | **P2779153** | 150 | 41 | 46 | 7.92 | M30 | 31.75 | 90 | 2.60 |
| 50 | **BT50-SCA12.7-75** | **P2779154** | 120 | 17 | 20 | - | M12 | 12.7 | 75 | 4.10 |
| | **BT50-SCA12.7-105** | **P2779155** | 150 | 17 | 20 | - | M12 | 12.7 | 105 | 4.20 |
| | **BT50-SCA15.875-90** | **P2779156** | 136 | 23 | 26 | 3.18 | M14 | 15.875 | 90 | 4.20 |
| | **BT50-SCA15.875-120** | **P2779157** | 166 | 23 | 26 | 3.18 | M14 | 15.875 | 120 | 4.20 |
| | **BT50-SCA22.225-90** | **P2779158** | 144 | 29 | 34 | 3.18 | M20 | 22.225 | 90 | 4.40 |
| | **BT50-SCA22.225-135** | **P2779159** | 186 | 29 | 34 | 3.18 | M20 | 22.225 | 135 | 4.70 |
| | **BT50-SCA25.4-90** | **P2779160** | 145 | 32 | 40 | 6.35 | M24 | 25.4 | 90 | 4.50 |
| | **BT50-SCA25.4-135** | **P2779161** | 190 | 32 | 40 | 6.35 | M24 | 25.4 | 135 | 4.90 |
| | **BT50-SCA31.75-90** | **P2779162** | 150 | 41 | 46 | 7.92 | M30 | 31.75 | 90 | 4.70 |
| | **BT50-SCA31.75-135** | **P2779163** | 195 | 41 | 46 | 7.92 | M30 | 31.75 | 135 | 5.20 |
| | **BT50-SCA38.1-90** | **P2779164** | 156 | 46 | 55 | 9.52 | M36 | 38.1 | 90 | 4.90 |
| | **BT50-SCA38.1-135** | **P2779165** | 201 | 46 | 55 | 9.52 | M36 | 38.1 | 135 | 5.90 |

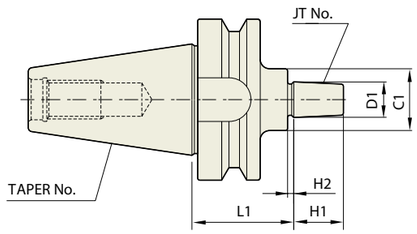
# NC DRILL CHUCK & OTHER TOOL HOLDERS

**JTA**

## JACOBS TAPER ADAPTER

**JIS B6339/ MAS 403-BT**

## 雅各布锥柄变换刀柄




JIS B6339-BT | AT3 | A

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | JT No. | D1 | L1 | H1 | H2 | C1 | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|
| 30 | BT30-JTA1-45 | P2779101 | 1 | 9.754 | 45 | 14 | 3 | 30 | 0.90 |
| | BT30-JTA2-45 | P2779102 | 2 | 14.199 | 45 | 20 | 4 | 30 | 1.00 |
| | BT30-JTA6-45 | P2779103 | 6 | 17.17 | 45 | 24 | 4 | 30 | 1.00 |
| 40 | BT40-JTA1-45 | P2779104 | 1 | 9.754 | 45 | 14 | 3 | 30 | 1.10 |
| | BT40-JTA1-90 | P2779105 | 1 | 9.754 | 90 | 14 | 3 | 30 | 1.10 |
| | BT40-JTA2S-45 | P2779106 | 2(SHORT) | 13.94 | 45 | 18 | 3 | 30 | 1.40 |
| | BT40-JTA2S-90 | P2779107 | 2(SHORT) | 13.94 | 90 | 18 | 3 | 30 | 1.40 |
| | BT40-JTA2-45 | P2779108 | 2 | 14.199 | 45 | 20 | 4 | 30 | 1.10 |
| | BT40-JTA2-90 | P2779109 | 2 | 14.199 | 90 | 20 | 4 | 30 | 1.40 |
| | BT40-JTA33-45 | P2779110 | 33 | 15.85 | 45 | 24 | 4 | 30 | 1.10 |
| | BT40-JTA33-90 | P2779111 | 33 | 15.85 | 90 | 24 | 4 | 30 | 1.40 |
| | BT40-JTA6-45 | P2779112 | 6 | 17.17 | 45 | 24 | 4 | 30 | 1.10 |
| | BT40-JTA6-90 | P2779113 | 6 | 17.17 | 90 | 24 | 4 | 30 | 1.40 |
| | BT40-JTA3-45 | P2779114 | 3 | 20.599 | 45 | 28 | 5 | 35 | 1.20 |
| | BT40-JTA3-90 | P2779115 | 3 | 20.599 | 90 | 28 | 5 | 35 | 1.50 |
| 50 | BT50-JTA1-45 | P2779116 | 1 | 9.754 | 45 | 14 | 3 | 30 | 4.00 |
| | BT50-JTA1-105 | P2779117 | 1 | 9.754 | 105 | 14 | 3 | 30 | 4.40 |
| | BT50-JTA2S-45 | P2779118 | 2(SHORT) | 13.94 | 45 | 18 | 3 | 30 | 4.00 |
| | BT50-JTA2S-105 | P2779119 | 2(SHORT) | 13.94 | 105 | 18 | 3 | 30 | 4.40 |
| | BT50-JTA2-45 | P2779120 | 2 | 14.199 | 45 | 20 | 4 | 30 | 4.00 |
| | BT50-JTA2-105 | P2779121 | 2 | 14.199 | 105 | 20 | 4 | 30 | 4.40 |
| | BT50-JTA33-45 | P2779122 | 33 | 15.85 | 45 | 24 | 4 | 30 | 4.00 |
| | BT50-JTA33-105 | P2779123 | 33 | 15.85 | 105 | 24 | 4 | 30 | 4.40 |
| | BT50-JTA6-45 | P2779124 | 6 | 17.17 | 45 | 24 | 4 | 30 | 4.00 |
| | BT50-JTA6-105 | P2779125 | 6 | 17.17 | 105 | 24 | 4 | 30 | 4.40 |
| | BT50-JTA3-45 | P2779126 | 3 | 20.599 | 45 | 28 | 5 | 35 | 4.00 |
| | BT50-JTA3-105 | P2779127 | 3 | 20.599 | 105 | 28 | 5 | 35 | 4.60 |

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TOOLING SYSTEM

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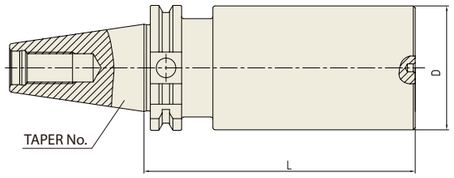
TAPPING CHUCK
FACE MILL ARBOR
COPY MILL ARBOR & INDEXABLE DRILL HOLDER
NC DRILL CHUCK & OTHER TOOL HOLDERS
BORING SYSTEM
ACCESSORY & OTHERS

# NC DRILL CHUCK & OTHER TOOL HOLDERS

**BL**

## BLANK BAR

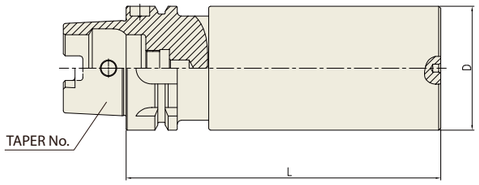
**DIN 69871-SK**




Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | D | L | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|
| 40 | SK40A-BL63-250 | P2779196 | 63 | 160 | 6.18 |
| 50 | SK50A-BL97-315 | P2779197 | 97 | 315 | 18.67 |

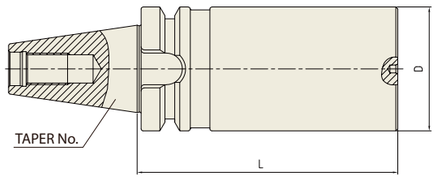
**DIN 69893/ ISO12164-1-HSK FORM A**




Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | D | L | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|
| 63A | HSK63A-BL63-160 | P2779198 | 63 | 160 | 3.91 |
| 100A | HSK100A-BL97-250 | P2779199 | 97 | 250 | 17.70 |

**JIS B6339/ MAS 403-BT**




Unit (单位) : mm

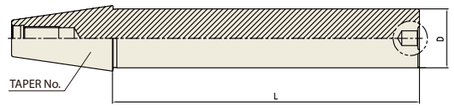
| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | D | L | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|
| BT40 | BT40-BL63-250 | P2779191 | 63 | 160 | 6.37 |
| BT50 | BT50-BL97-315 | P2779351 | 97 | 250 | 19.60 |

# NC DRILL CHUCK & OTHER TOOL HOLDERS

TB

## TEST BAR

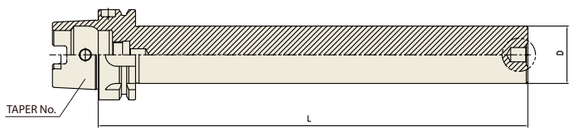
DIN 69871-SK




Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | D | L | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|
| 40 | SK40A-TB40-300 | P2802301 | 40 | 300 | 3.45 |
| 50 | SK50A-TB50-300 | P2802302 | 50 | 300 | 6.44 |

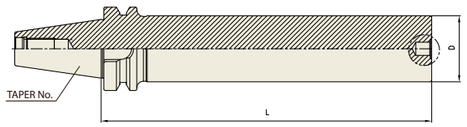
## DIN 69893/ ISO12164-1-HSK FORM A




Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | D | L | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|
| 63A | HSK63A-TB40-300 | P2802303 | 40 | 300 | 2.90 |
| 100A | HSK100A-TB50-300 | P2802304 | 50 | 300 | 6.17 |

## JIS B6339/ MAS 403-BT




Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | D | L | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|
| 40 | BT40-TB50-300 | P2802305 | 40 | 300 | 4.59 |
| 50 | BT50-TB30-200 | P2802306 | 30 | 200 | 4.34 |
| | BT50-TB50-300 | P2802307 | 50 | 300 | 6.88 |



YG-1 TOOLING SYSTEM

# BORING SYSTEM

# 镗孔刀柄系统

### FINE BORING BAR

BORING BAR SET / BASIC HOLDER / EXTENSION BAR / FINE BORING HEAD

### TWIN BORING BAR

BORING BAR SET / STRAIGHT TWIN EDGE BORING BAR / BASIC HOLDER
TWIN BORE HEAD / INSERT HOLDER / REDUCTION / EXTENSION BAR

### MICRO BORING BAR : JIS B6339/MAS 403-BT

BT / ST (BCA) / MICRO UNIT PARTS

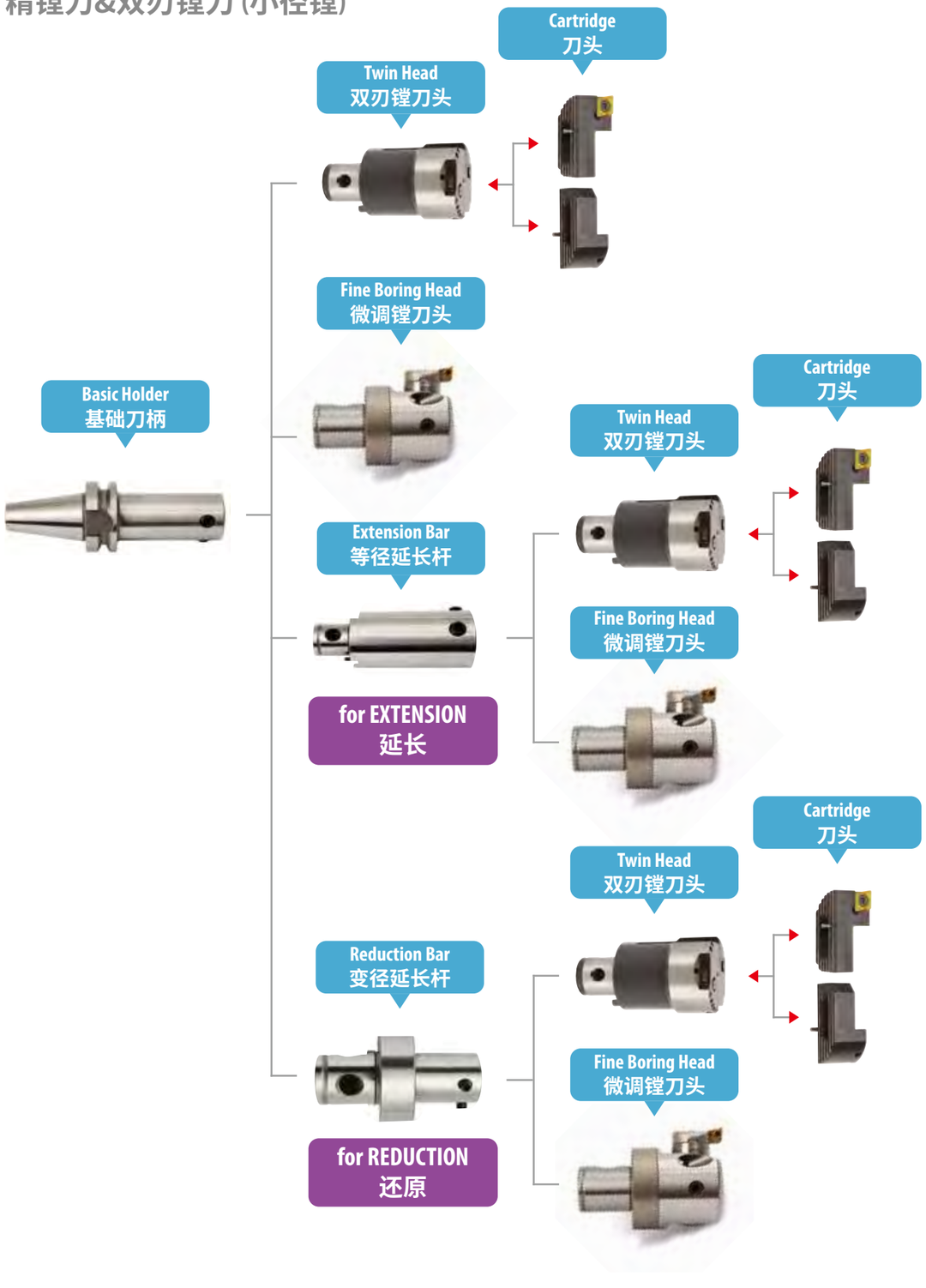
### SQUARE BORING BAR : JIS B6339/MAS 403-BT

BT (BSA) / BT (BSB) / SQUARE BITE (SBC)

### BIG MICRO CUT BORING BAR : JIS B6339/MAS 403-BT

BT (BRA) / (RING ADAPTER, RING HEAD)

# FINE & TWIN Boring Bar (Small Bore)
## 精镗刀&双刃镗刀 (小径镗)






TECHNICAL INFORMATION

FINE & TWIN Boring Bar (Small Bore)
精镗刀&双刃镗刀 (小径镗)

**Fine Boring Range : 20mm~153mm**
**微调镗孔范围**

### FEATURE

- Excellent roughness of boring surface by precise boring
- Precise boring range adjustment by adjustment Dial with 1/100mm unit
- Ease to adjust length by employing modular system to use extension bar with various size
- Double rigid fixing of extension bar with
  - Side locking
  - Fixing pin inside
- Design to use insert conforming to ISO standard
- Basic Holder, Extension Bar and Reduction Bar interchangeable between Fine Boring Bar and Twin Edge Boring Bar

### 特征

- 根据精密的镗孔，加工出优秀的表面粗糙度
- 以1/100mm 单位 调节盘 调节精密的 镗孔范围
- 设计为可使用多种规格的等径延长杆模块式方式，方便调节长度
- 延长杆的 2重固定
  - 侧面锁紧
  - 内附定位销
- 使用标准ISO规格的刀片
- 微调镗刀柄与双刃镗刀之间可互换基本刀柄、等径延长杆及变径延长杆

**Twin Boring Range : 25mm~156mm**
**双刃镗孔范围**

### FEATURE

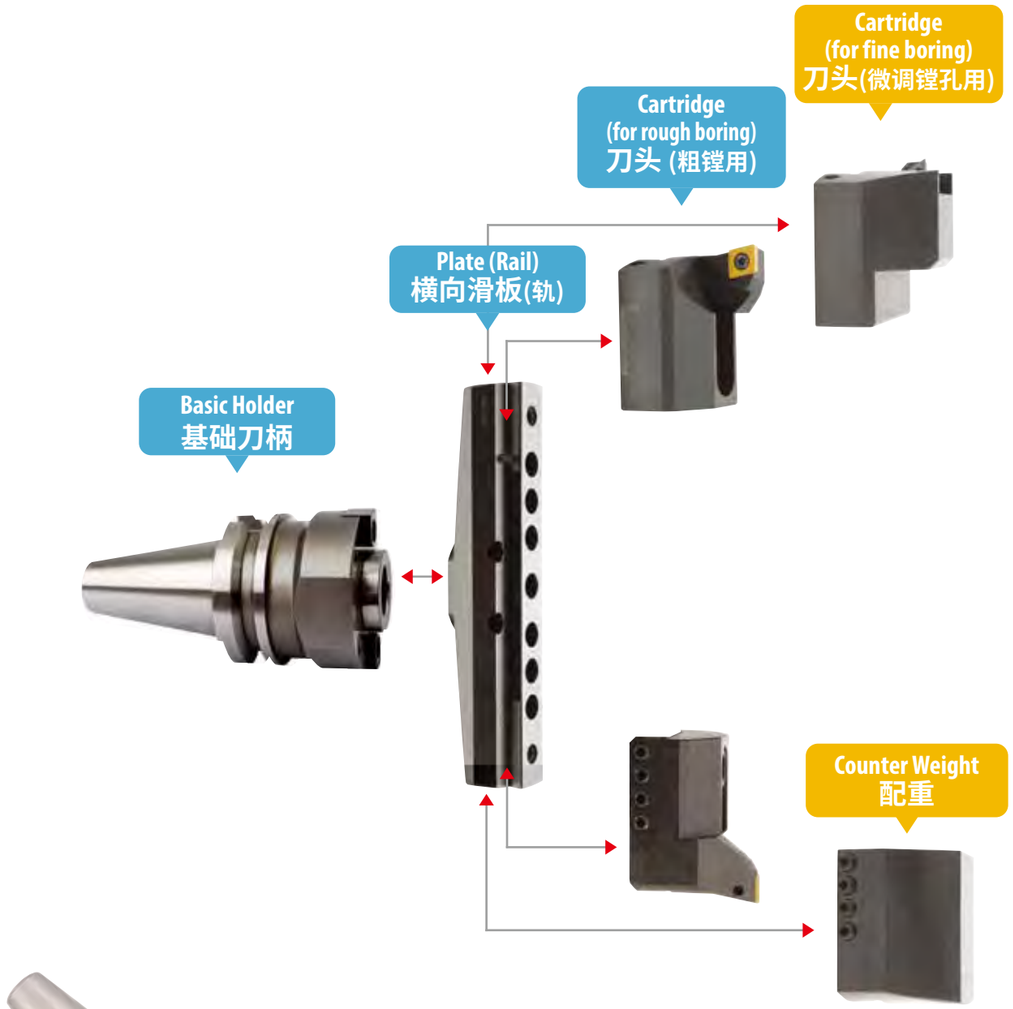
- Easy to replace head
- Extension Bar : Adjusting length according to machining conditions
- Reduction Bar : Adjusting boring range according to machining conditions
- Precision of extension, reduction, and repeatability of assembling and disassembling of Boring Head ; ≤0.002mm
- Using insert conforming to ISO standard
- Basic Holder, Extension Bar and Reduction Bar interchangeable between Fine Boring Bar and Twin Edge Boring Bar

### 特征

- 更换镗头方便
- 等径延长杆：根据作业条件调整长度
- 变径延长杆：根据作业条件调整加工范围
- 加长及变径杆，镗头反复组装精密度0.002mm以下
- 使用刀片：ISO规格
- 微调镗刀柄与双刃镗刀之间可互换基本刀柄、等径延长杆及变径延长杆

# FINE and TWIN EDGE BORING (Big Bore)
## 精镗刀&双刃镗刀 (大径)

**Boring Range : 153mm~576mm (FINE BORING BAR 微调镗孔)**
**镗孔范围　156mm~576mm (TWIN EDGE BORING BAR 双刃镗孔范围)**



### FEATURE

- Easy to replace head
- Using insert conforming to ISO standard
- Special twin edge boring bars with a boring range up to 800mm could be manufactured
- Basic holder interchangeable between Fine Boring Bar and Twin Edge Boring Bar

### 特征

- 方便更换镗头
- 使用ISO标准刀片
- 可制作镗孔范围到 800mm的双刃镗孔刀柄
- 微调镗刀柄与双刃镗刀之间可互换 基本刀柄、 等径延长杆及变径延长杆





## FINE BORING BAR (SMALL BORE)
## 微调镗孔刀柄 (小径)

DIN 69871-SK

DIN 69871-SK　AT3　AD

FIG.1

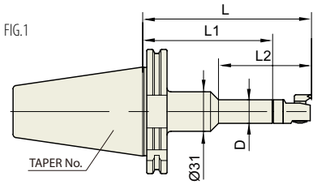
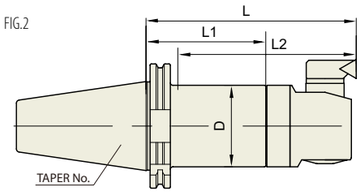



FIG.2




Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | BORE RANGE (FRONT) 镗孔范围 (正面) | D | L | L1 | L2 | FIG. | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|
| 40 | SK40-BAH1-105 | P2777767 | 20 - 26 | 19 | 104.5 | 72 | 73 | 2 | |
| | SK40-BAH2-80 | P2777768 | 25 - 33 | 24 | 78 | 42.5 | 48 | 2 | |
| | SK40-BAH2-120 | P2777769 | 25 - 33 | 24 | 118 | 82.5 | 88 | 2 | |
| | SK40-BAH3-85 | P2777770 | 32 - 42 | 31 | 84 | 44 | 53 | 2 | |
| | SK40-BAH3-135 | P2777771 | 32 - 42 | 31 | 134 | 94 | 103 | 2 | |
| | SK40-BAH4-90 | P2777772 | 41 - 54 | 39 | 90 | 43 | 58 | 2 | |
| | SK40-BAH4-135 | P2777773 | 41 - 54 | 39 | 135 | 88 | 103 | 2 | |
| | SK40-BAH5-105 | P2777774 | 53 - 70 | 50 | 105 | 48 | 73 | 2 | |
| | SK40-BAH5-135 | P2777775 | 53 - 70 | 50 | 135 | 79 | 103 | 2 | |
| | SK40-BAH6-135 | P2777776 | 68 - 100 | 64 | 135 | 64 | 103 | 2 | |
| 50 | SK50-BAH1-135 | P2777777 | 20 - 26 | 19 | 134.5 | 102 | 73 | 1 | |
| | SK50-BAH2-90 | P2777778 | 25 - 33 | 24 | 88 | 52.5 | 66 | 2 | |
| | SK50-BAH2-150 | P2777779 | 25 - 33 | 24 | 148 | 112.5 | 126 | 2 | |
| | SK50-BAH3-95 | P2777780 | 32 - 42 | 31 | 94 | 54 | 71 | 2 | |
| | SK50-BAH3-165 | P2777781 | 32 - 42 | 31 | 164 | 124 | 141 | 2 | |
| | SK50-BAH4-105 | P2777782 | 41 - 54 | 39 | 105 | 58 | 81 | 2 | |
| | SK50-BAH4-165 | P2777783 | 41 - 54 | 39 | 165 | 118 | 141 | 2 | |
| | SK50-BAH4-225 | P2777784 | 41 - 54 | 39 | 225 | 178 | 201 | 2 | |
| | SK50-BAH5-120 | P2777785 | 53 - 70 | 50 | 120 | 63 | 96 | 2 | |
| | SK50-BAH5-165 | P2777786 | 53 - 70 | 50 | 165 | 105 | 141 | 2 | |
| | SK50-BAH5-240 | P2777787 | 53 - 70 | 50 | 240 | 183 | 216 | 2 | |
| | SK50-BAH5-285 | P2777788 | 53 - 70 | 50 | 285 | 228 | 261 | 2 | |
| | SK50-BAH6-165 | P2777789 | 68 - 100 | 64 | 165 | 94 | 141 | 2 | |
| | SK50-BAH6-240 | P2777790 | 68 - 100 | 64 | 240 | 169 | 216 | 2 | |
| | SK50-BAH6-300 | P2777791 | 68 - 100 | 64 | 300 | 229 | 276 | 2 | |
| | SK50-BAH7-210 | P2777792 | 100 - 153 | 90 | 210 | 93 | 191 | 2 | |
| | SK50-BAH7-360 | P2777793 | 100 - 153 | 90 | 360 | 243 | 341 | 2 | |

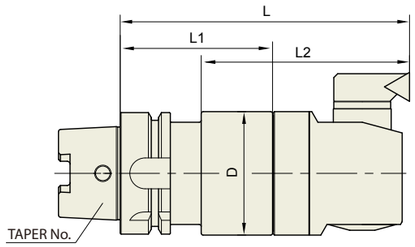
▶Basic Holder, Extension Bar and Reduction Bar interchangeable between Fine Boring Bar and Twin Edge Boring Bar.
微调镗刀柄与双刃镗刀之间可互换基本刀柄、等径延长杆及变径延长杆

BORING SYSTEM

BAH

# FINE BORING BAR (SMALL BORE)
# 微调镗孔刀柄 (小径)

DIN 69893/
ISO 12164-1-HSK FORM A




DIN 69893-HSK | AT3 | AD

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | BORE RANGE (FRONT) 镗孔范围（正面） | D | L | L1 | L2 | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|
| 40A | HSK40A-BAH1-72.5 | P2777736 | 20 - 26 | 19 | 105 | 72.5 | 73 | |
| | HSK40A-BAH2-39.5 | P2777737 | 25 - 33 | 24 | 75 | 39.5 | 44 | |
| | HSK40A-BAH2-84.5 | P2777738 | 25 - 33 | 24 | 120 | 84.5 | 89 | |
| | HSK40A-BAH3-45 | P2777739 | 32 - 42 | 31 | 85 | 45 | 57 | |
| | HSK40A-BAH3-80 | P2777740 | 32 - 42 | 31 | 120 | 80 | 92 | |
| | HSK40A-BAH4-53 | P2777741 | 41 - 54 | 39 | 100 | 53 | - | |
| | HSK40A-BAH4-73 | P2777742 | 41 - 54 | 39 | 120 | 73 | - | |
| 50A | HSK50A-BAH1-72.5 | P2777743 | 20 - 26 | 19 | 105 | 72.5 | 65 | |
| | HSK50A-BAH2-84.5 | P2777744 | 25 - 33 | 24 | 117 | 84.5 | 80 | |
| | HSK50A-BAH3-80 | P2777745 | 32 - 42 | 31 | 120 | 80 | 82 | |
| | HSK50A-BAH4-73 | P2777746 | 41 - 54 | 39 | 120 | 73 | 76 | |
| | HSK50A-BAH5-83 | P2777747 | 53 - 70 | 50 | 140 | 83 | - | |
| 63A | HSK63A-BAH1-77.5 | P2777748 | 20 - 26 | 19 | 110 | 77.5 | 73 | |
| | HSK63A-BAH2-89.5 | P2777749 | 25 - 33 | 24 | 125 | 89.5 | 88 | |
| | HSK63A-BAH3-100 | P2777750 | 32 - 42 | 31 | 140 | 100 | 103 | |
| | HSK63A-BAH4-93 | P2777751 | 41 - 54 | 39 | 140 | 93 | 103 | |
| | HSK63A-BAH5-83 | P2777752 | 53 - 70 | 50 | 140 | 83 | 105 | |
| | HSK63A-BAH6-79 | P2777753 | 68 - 100 | 64 | 150 | 79 | - | |
| 100A | HSK100A-BAH1-102.5 | P2777754 | 20 - 26 | 19 | 135 | 102.5 | 73 | |
| | HSK100A-BAH2-114.5 | P2777755 | 25 - 33 | 24 | 150 | 114.5 | 107 | |
| | HSK100A-BAH3-125 | P2777756 | 32 - 42 | 31 | 165 | 125 | 122 | |
| | HSK100A-BAH4-118 | P2777757 | 41 - 54 | 39 | 165 | 118 | 122 | |
| | HSK100A-BAH4-178 | P2777758 | 41 - 54 | 39 | 225 | 178 | 182 | |
| | HSK100A-BAH5-108 | P2777759 | 53 - 70 | 50 | 165 | 108 | 122 | |
| | HSK100A-BAH5-183 | P2777760 | 53 - 70 | 50 | 240 | 183 | 197 | |
| | HSK100A-BAH5-228 | P2777761 | 53 - 70 | 50 | 285 | 228 | 242 | |
| | HSK100A-BAH6-94 | P2777762 | 68 - 100 | 64 | 165 | 94 | 122 | |
| | HSK100A-BAH6-169 | P2777763 | 68 - 100 | 64 | 240 | 169 | 197 | |
| | HSK100A-BAH6-229 | P2777764 | 68 - 100 | 64 | 300 | 229 | 257 | |
| | HSK100A-BAH7-123 | P2777765 | 100 - 153 | 90 | 210 | 123 | 181 | |
| | HSK100A-BAH7-273 | P2777766 | 100 - 153 | 90 | 360 | 273 | 331 | |

▶Basic Holder, Extension Bar and Reduction Bar interchangeable between Fine Boring Bar and Twin Edge Boring Bar.
微调镗刀柄与双刃镗刀之间可互换基本刀柄、等径延长杆及变径延长杆



BORING SYSTEM

BAH

# FINE BORING BAR (SMALL BORE)
# 微调镗孔刀柄 (小径)

JIS B6339/
MAS 403-BT

FIG.1

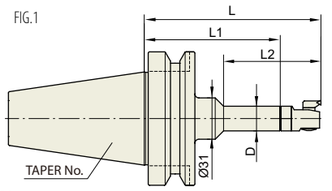
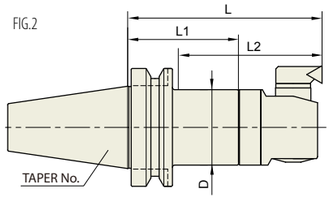



FIG.2




JIS B6339-BT | AT3 | AD

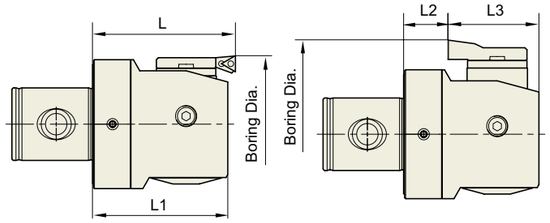
Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | BORE RANGE (FRONT) 镗孔范围（正面） | D | L | L1 | L2 | FIG. | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|
| 30 | BT30-BAH1-105 | P2777701 | 20 - 26 | 19 | 104.5 | 72 | 73 | 1 | |
| | BT30-BAH2-75 | P2777702 | 25 - 33 | 24 | 73 | 37.5 | 48 | 2 | |
| | BT30-BAH2-120 | P2777703 | 25 - 33 | 24 | 118 | 82.5 | 93 | 2 | |
| | BT30-BAH3-80 | P2777704 | 32 - 42 | 31 | 79 | 39 | 53 | 2 | |
| | BT30-BAH3-120 | P2777705 | 32 - 42 | 31 | 119 | 79 | 93 | 2 | |
| | BT30-BAH4-85 | P2777706 | 41 - 54 | 39 | 85 | 38 | 58 | 2 | |
| | BT30-BAH4-120 | P2777707 | 41 - 54 | 39 | 120 | 73 | 93 | 2 | |
| | BT30-BAH5-120 | P2777708 | 53 - 70 | 50 | 120 | 63 | 93 | 2 | |
| 40 | BT40-BAH1-105 | P2777709 | 20 - 26 | 19 | 104.5 | 72 | 73 | 2 | |
| | BT40-BAH2-80 | P2777710 | 25 - 33 | 24 | 78 | 42.5 | 48 | 2 | |
| | BT40-BAH2-120 | P2777711 | 25 - 33 | 24 | 118 | 82.5 | 88 | 2 | |
| | BT40-BAH3-85 | P2777712 | 32 - 42 | 31 | 84 | 44 | 53 | 2 | |
| | BT40-BAH3-135 | P2777713 | 32 - 42 | 31 | 134 | 94 | 103 | 2 | |
| | BT40-BAH4-90 | P2777714 | 41 - 54 | 39 | 90 | 43 | 58 | 2 | |
| | BT40-BAH4-135 | P2777715 | 41 - 54 | 39 | 135 | 88 | 103 | 2 | |
| | BT40-BAH5-105 | P2777716 | 53 - 70 | 50 | 105 | 48 | 73 | 2 | |
| | BT40-BAH5-135 | P2777717 | 53 - 70 | 50 | 135 | 79 | 103 | 2 | |
| | BT40-BAH6-135 | P2777718 | 68 - 100 | 64 | 135 | 64 | 103 | 2 | |
| 50 | BT50-BAH1-135 | P2777719 | 20 - 26 | 19 | 134.5 | 102 | 73 | 1 | |
| | BT50-BAH2-90 | P2777720 | 25 - 33 | 24 | 88 | 52.5 | 47 | 2 | |
| | BT50-BAH2-150 | P2777721 | 25 - 33 | 24 | 148 | 112.5 | 107 | 2 | |
| | BT50-BAH3-95 | P2777722 | 32 - 42 | 31 | 94 | 54 | 52 | 2 | |
| | BT50-BAH3-165 | P2777723 | 32 - 42 | 31 | 164 | 124 | 122 | 2 | |
| | BT50-BAH4-105 | P2777724 | 41 - 54 | 39 | 105 | 58 | 62 | 2 | |
| | BT50-BAH4-165 | P2777725 | 41 - 54 | 39 | 165 | 118 | 122 | 2 | |
| | BT50-BAH4-225 | P2777726 | 41 - 54 | 39 | 225 | 178 | 182 | 2 | |
| | BT50-BAH5-120 | P2777727 | 53 - 70 | 50 | 120 | 63 | 77 | 2 | |
| | BT50-BAH5-165 | P2777728 | 53 - 70 | 50 | 165 | 108 | 122 | 2 | |
| | BT50-BAH5-240 | P2777729 | 53 - 70 | 50 | 240 | 183 | 197 | 2 | |
| | BT50-BAH5-285 | P2777730 | 53 - 70 | 50 | 285 | 228 | 242 | 2 | |
| | BT50-BAH6-165 | P2777731 | 68 - 100 | 64 | 165 | 94 | 122 | 2 | |
| | BT50-BAH6-240 | P2777732 | 68 - 100 | 64 | 240 | 169 | 197 | 2 | |
| | BT50-BAH6-300 | P2777733 | 68 - 100 | 64 | 300 | 229 | 257 | 2 | |
| | BT50-BAH7-180 | P2777734 | 100 - 153 | 90 | 180 | 93 | 142 | 2 | |
| | BT50-BAH7-330 | P2777735 | 100 - 153 | 90 | 330 | 243 | 292 | 2 | |

▶Basic Holder, Extension Bar and Reduction Bar interchangeable between Fine Boring Bar and Twin Edge Boring Bar.
微调镗刀柄与双刃镗刀之间可互换基本刀柄、等径延长杆及变径延长杆

## BORING HEAD (For FINE BORING BAR-SMALL BORE)

# 微调镗头 (微调镗刀-小径用)




Unit (单位) : mm

| MODEL No. 型号 | EDP No. | CARTRIDGE | FRONT BORE 前孔 | | | BACK BORE 后孔 | | | INSERT 刀片 | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | BORE RANGE 镗孔范围 | L | L1 | BORE RANGE 镗孔范围 | L2 | L3 | | |
| FBH20 | P2777869 | FBH1-1 | 20 - 26 | 32.5 | 29.5 | - | 10.5 | 19 | TP08 | |
| FBH25 | P2777870 | FBH2-1 | 25 - 33 | 35.5 | 32.5 | - | 10.5 | 19 | TP08 | |
| FBH32 | P2777871 | FBH3-1 | 32 - 42 | 40 | 35 | - | 10 | 25 | TP08 | |
| FBH41 | P2777872 | FBH4-1 | 41 - 54 | 47 | 43 | - | 14 | 29 | TP11 | |
| FBH53 | P2777873 | FBH5-1 | 53 - 70 | 57 | 53 | 52 - 70 | 19 | 34 | TP11 | |
| FBH68 | P2777874 | FBH6-1 | 68 - 100 | 71 | 67.2 | 80 - 100 | 22 | 45.2 | TP11 | |
| FBH100 | P2777875 | FBH6-1 | 100 - 153 | 71 | 67.2 | 112 - 153 | 22 | 45.2 | TP11 | |
| FBH100-2 | P2777876 | FBH6-1 | 100 - 153 | 87 | 83.2 | 112 - 153 | 38 | 45.2 | TP11 | |

PART

## FBH BITE

# FBH 刀片

Unit (单位) : mm

| MODEL No. 型号 | EDP No. | INSERT 刀片 | BORE RANGE 镗孔范围 | CAMP BOLT | BORING HEAD 镗头 |
|---|---|---|---|---|---|
| FBH20-B | P2802701 | TPGT08 | 20 - 26 | FTNA 0204 | FBH20 |
| FBH25-B | P2802702 | TPGT08 | 25 - 33 | FTNA 0204 | FBH25 |
| FBH32-B | P2802703 | TPGT08 | 32 - 42 | FTNA 0204 | FBH32 |
| FBH41-B | P2802704 | TPGT1103 | 41 - 54 | FTNA 0307 | FBH41 |
| FBH53-B | P2802705 | TPGT1103 | 53 - 70 | FTNA 0307 | FBH53 |
| FBH68-B | P2802706 | TPGT1103 | 68 - 100 | FTNA 0307 | FBH68 |
| FBH100-B | P2802707 | TPGT1103 | 100 - 153 | FTNA 0307 | FBH100 |
| FBH100-2B | P2802708 | TPGT1103 | 100 - 560 | FTNA 0307 | FBH100 |





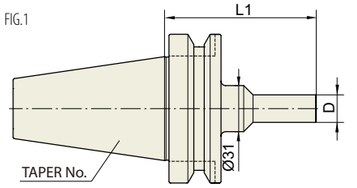
## BASIC HOLDER (For FINE and TWIN EDGE BORING BAR - SMALL BORE)

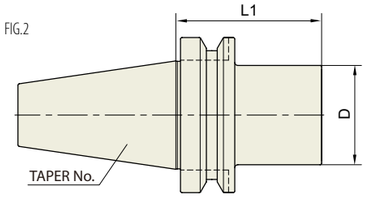
JIS B6339/ MAS 403-BT

# 基础刀柄 (微调镗孔刀柄 及 双刃镗刀-小径用)

JIS B6339-BT

AT3




Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | D | L1 | FIG. | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|
| 30 | BT30-SAS19-72 | P2777794 | 19 | 72 | 1 | |
| | BT30-SAS24-37.5 | P2777795 | 24 | 37.5 | 2 | |
| | BT30-SAS24-82.5 | P2777796 | 24 | 82.5 | 2 | |
| | BT30-SAS31-39 | P2777797 | 31 | 39 | 2 | |
| | BT30-SAS31-79 | P2777798 | 31 | 79 | 2 | |
| | BT30-SAS39-38 | P2777799 | 39 | 38 | 2 | |
| | BT30-SAS39-73 | P2777800 | 39 | 73 | 2 | |
| | BT30-SAS50-63 | P2777801 | 50 | 63 | 2 | |
| 40 | BT40-SAS19-72 | P2777802 | 19 | 72 | 2 | |
| | BT40-SAS24-42.5 | P2777803 | 24 | 42.5 | 2 | |
| | BT40-SAS24-82.5 | P2777804 | 24 | 82.5 | 2 | |
| | BT40-SAS31-44 | P2777805 | 31 | 44 | 2 | |
| | BT40-SAS31-94 | P2777806 | 31 | 94 | 2 | |
| | BT40-SAS39-43 | P2777807 | 39 | 43 | 2 | |
| | BT40-SAS39-88 | P2777808 | 39 | 88 | 2 | |
| | BT40-SAS50-48 | P2777809 | 50 | 48 | 2 | |
| | BT40-SAS50-79 | P2777810 | 50 | 79 | 2 | |
| | BT40-SAS64-64 | P2777811 | 64 | 64 | 2 | |
| 50 | BT50-SAS19-102 | P2777812 | 19 | 102 | 1 | |
| | BT50-SAS24-52.5 | P2777813 | 24 | 52.5 | 2 | |
| | BT50-SAS24-112.5 | P2777814 | 24 | 112.5 | 2 | |
| | BT50-SAS31-54 | P2777815 | 31 | 54 | 2 | |
| | BT50-SAS31-124 | P2777816 | 31 | 124 | 2 | |
| | BT50-SAS39-58 | P2777817 | 39 | 58 | 2 | |
| | BT50-SAS39-118 | P2777818 | 39 | 118 | 2 | |
| | BT50-SAS39-178 | P2777819 | 39 | 178 | 2 | |
| | BT50-SAS50-63 | P2777820 | 50 | 63 | 2 | |
| | BT50-SAS50-108 | P2777821 | 50 | 108 | 2 | |
| | BT50-SAS50-183 | P2777822 | 50 | 183 | 2 | |
| | BT50-SAS50-228 | P2777823 | 50 | 228 | 2 | |
| | BT50-SAS64-94 | P2777824 | 64 | 94 | 2 | |
| | BT50-SAS64-169 | P2777825 | 64 | 169 | 2 | |
| | BT50-SAS64-229 | P2777826 | 64 | 229 | 2 | |
| | BT50-SAS90-93 | P2777827 | 90 | 93 | 2 | |
| | BT50-SAS90-243 | P2777828 | 90 | 243 | 2 | |

YG BORING SYSTEM

PART

## BASIC HOLDER (For FINE and TWIN EDGE BORING BAR - SMALL BORE) DIN 69871-SK

# 基础刀柄 (微调镗孔刀柄 及 双刃镗刀-小径用)

DIN 69871-SK

AT3

FIG.1

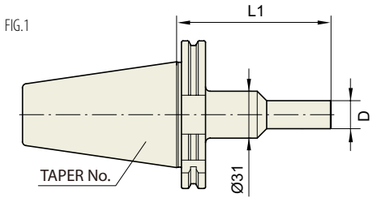
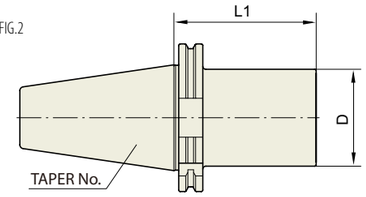



FIG.2




Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | D | L1 | FIG. | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|
| 40 | SK40-SAS19-72 | P2777829 | 19 | 72 | 2 | |
| | SK40-SAS24-42.5 | P2777830 | 24 | 42.5 | 2 | |
| | SK40-SAS24-82.5 | P2777831 | 24 | 82.5 | 2 | |
| | SK40-SAS31-44 | P2777832 | 31 | 44 | 2 | |
| | SK40-SAS31-94 | P2777833 | 31 | 94 | 2 | |
| | SK40-SAS39-43 | P2777834 | 39 | 43 | 2 | |
| | SK40-SAS39-88 | P2777835 | 39 | 88 | 2 | |
| | SK40-SAS50-48 | P2777836 | 50 | 48 | 2 | |
| | SK40-SAS50-79 | P2777837 | 50 | 79 | 2 | |
| | SK40-SAS64-64 | P2777838 | 64 | 64 | 2 | |
| 50 | SK50-SAS19-102 | P2777839 | 19 | 102 | 1 | |
| | SK50-SAS24-52.5 | P2777840 | 24 | 52.5 | 2 | |
| | SK50-SAS24-112.5 | P2777841 | 24 | 112.5 | 2 | |
| | SK50-SAS31-54 | P2777842 | 31 | 54 | 2 | |
| | SK50-SAS31-124 | P2777843 | 31 | 124 | 2 | |
| | SK50-SAS39-58 | P2777844 | 39 | 58 | 2 | |
| | SK50-SAS39-118 | P2777845 | 39 | 118 | 2 | |
| | SK50-SAS39-178 | P2777846 | 39 | 178 | 2 | |
| | SK50-SAS50-63 | P2777847 | 50 | 63 | 2 | |
| | SK50-SAS50-105 | P2777848 | 50 | 105 | 2 | |
| | SK50-SAS50-183 | P2777849 | 50 | 183 | 2 | |
| | SK50-SAS50-228 | P2777850 | 50 | 228 | 2 | |
| | SK50-SAS64-94 | P2777851 | 64 | 94 | 2 | |
| | SK50-SAS64-169 | P2777852 | 64 | 169 | 2 | |
| | SK50-SAS64-229 | P2777853 | 64 | 229 | 2 | |
| | SK50-SAS90-93 | P2777854 | 90 | 93 | 2 | |
| | SK50-SAS90-243 | P2777855 | 90 | 243 | 2 | |

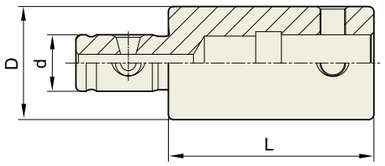


YG BORING SYSTEM

PART

## EXTENSION BAR (For FINE and TWIN EDGE BORING BAR - SMALL BORE)

# 等径延长杆 (微调镗孔刀柄 及 双刃镗刀-小径用)




Unit (单位) : mm

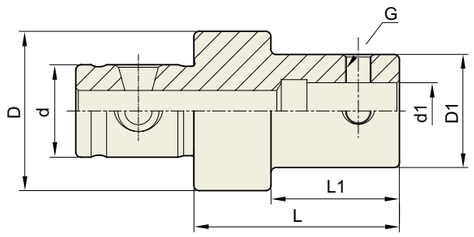
| MODEL No. 型号 | EDP No. | d | D | L | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|
| E-BAH1-20 | P2777856 | 11 | 19 | 20 | |
| E-BAH1-30 | P2777857 | 11 | 19 | 30 | |
| E-BAH2-30 | P2777858 | 14 | 24 | 30 | |
| E-BAH2-45 | P2777859 | 14 | 24 | 45 | |
| E-BAH3-30 | P2777860 | 18 | 31 | 30 | |
| E-BAH3-45 | P2777861 | 18 | 31 | 45 | |
| E-BAH4-45 | P2777862 | 22 | 39 | 45 | |
| E-BAH4-60 | P2777863 | 22 | 39 | 60 | |
| E-BAH5-60 | P2777864 | 28 | 50 | 60 | |
| E-BAH5-90 | P2777865 | 28 | 50 | 90 | |
| E-BAH6-60 | P2777866 | 36 | 64 | 60 | |
| E-BAH6-100 | P2777867 | 36 | 64 | 100 | |
| E-BAH7-105 | P2777868 | 46 | 90 | 105 | |

BORING SYSTEM

PART

## REDUCTION BAR (For FINE and TWIN EDGE BORING BAR-SMALL BORE)

# 变径延长杆 (微调镗孔刀柄 及 双刃镗刀-小径用)




Unit (单位) : mm

| MODEL No. 型号 | EDP No. | d | d1 | D | D1 | L | L1 | G | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|
| R-SAS24-19-30 | P2777912 | 14 | 11 | 24 | 19 | 30 | 20 | M5 | |
| R-SAS31-19-30 | P2777913 | 18 | 11 | 31 | 19 | 30 | 20 | M5 | |
| R-SAS31-24-30 | P2777914 | 18 | 14 | 31 | 24 | 30 | 20 | M5 | |
| R-SAS39-19-45 | P2777915 | 22 | 11 | 39 | 19 | 45 | 25 | M5 | |
| R-SAS39-24-45 | P2777916 | 22 | 14 | 39 | 24 | 45 | 25 | M5 | |
| R-SAS39-31-45 | P2777917 | 22 | 18 | 39 | 31 | 45 | 25 | M8 | |
| R-SAS50-19-60 | P2777918 | 28 | 11 | 50 | 19 | 60 | 35 | M5 | |
| R-SAS50-24-60 | P2777919 | 28 | 14 | 50 | 24 | 60 | 35 | M5 | |
| R-SAS50-31-60 | P2777920 | 28 | 18 | 50 | 31 | 60 | 35 | M8 | |
| R-SAS50-39-60 | P2777921 | 28 | 22 | 50 | 39 | 60 | 35 | M8 | |
| R-SAS64-19-60 | P2777922 | 36 | 11 | 64 | 19 | 60 | 35 | M5 | |
| R-SAS64-24-60 | P2777923 | 36 | 14 | 64 | 24 | 60 | 35 | M5 | |
| R-SAS64-31-60 | P2777924 | 36 | 18 | 64 | 31 | 60 | 35 | M8 | |
| R-SAS64-39-60 | P2777925 | 36 | 22 | 64 | 39 | 60 | 35 | M8 | |
| R-SAS64-50-60 | P2777926 | 36 | 28 | 64 | 50 | 60 | 35 | M10 | |
| R-SAS90-19-105 | P2777927 | 46 | 11 | 90 | 19 | 105 | 75 | M5 | |
| R-SAS90-24-105 | P2777928 | 46 | 14 | 90 | 24 | 105 | 75 | M5 | |
| R-SAS90-31-105 | P2777929 | 46 | 18 | 90 | 31 | 105 | 75 | M8 | |
| R-SAS90-39-105 | P2777930 | 46 | 22 | 90 | 39 | 105 | 75 | M8 | |
| R-SAS90-50-105 | P2777931 | 46 | 28 | 90 | 50 | 105 | 75 | M10 | |
| R-SAS90-64-105 | P2777932 | 46 | 36 | 90 | 64 | 105 | 75 | M16 | |



TOOLING SYSTEM

HYDRAULIC CHUCK
SHRINK FIT HOLDER
ER COLLET CHUCK
END MILL HOLDER & SIDE LOCK ARBOR
SHELL MILL ARBOR
POWER MILLING CHUCK
MORSE TAPER ARBOR
SK SLIM CHUCK
SYNCHRO TAPPING CHUCK
ONE STEP TAPPING CHUCK
TAPPING ER CHUCK
TAPPING CHUCK
FACE MILL ARBOR
COPY MILL ARBOR & INDEXABLE DRILL HOLDER
NC DRILL CHUCK & OTHER TOOL HOLDERS
BORING SYSTEM
ACCESSORY & OTHERS

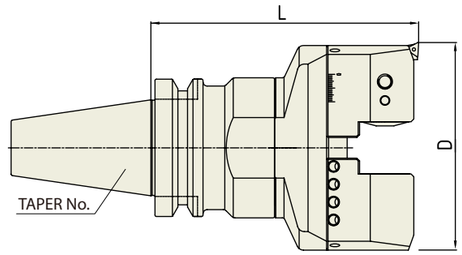
BORING SYSTEM

FBH

## FINE BORING BAR (BIG BORE)

JIS B6339/ MAS 403-BT

# 微调镗孔刀柄 (大径)




JIS B6339-BT | AT3 | A

Unit (单位) : mm

| MODEL No. 型号 | EDP No. | D (BORE RANGE 镗孔范围) Min. 最小 | D (BORE RANGE 镗孔范围) Max. 最大 | BODY (BASIC HOLDER) 基础刀柄 | BORING HEAD 镗头 | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|
| BT50-FBH153-195 | P2777877 | 153 | 216 | BT50-SAS102-90 | FBH153S | |
| BT50-FBH153-265 | P2777878 | | | BT50-SAS102-160 | | |
| BT50-FBH153-315 | P2777879 | | | BT50-SAS102-210 | | |
| BT50-FBH153-365 | P2777880 | | | BT50-SAS102-260 | | |
| BT50-FBH216-195 | P2777881 | 216 | 276 | BT50-SAS102-90 | FBH216S | |
| BT50-FBH216-265 | P2777882 | | | BT50-SAS102-160 | | |
| BT50-FBH216-315 | P2777883 | | | BT50-SAS102-210 | | |
| BT50-FBH216-365 | P2777884 | | | BT50-SAS102-260 | | |
| BT50-FBH276-195 | P2777885 | 276 | 336 | BT50-SAS102-90 | FBH276S | |
| BT50-FBH276-265 | P2777886 | | | BT50-SAS102-160 | | |
| BT50-FBH276-315 | P2777887 | | | BT50-SAS102-210 | | |
| BT50-FBH276-365 | P2777888 | | | BT50-SAS102-260 | | |
| BT50-FBH336-195 | P2777889 | 336 | 396 | BT50-SAS102-90 | FBH336S | |
| BT50-FBH336-265 | P2777890 | | | BT50-SAS102-160 | | |
| BT50-FBH336-315 | P2777891 | | | BT50-SAS102-210 | | |
| BT50-FBH336-365 | P2777892 | | | BT50-SAS102-260 | | |
| BT50-FBH396-195 | P2777893 | 396 | 456 | BT50-SAS102-90 | FBH396S | |
| BT50-FBH396-265 | P2777894 | | | BT50-SAS102-160 | | |
| BT50-FBH396-315 | P2777895 | | | BT50-SAS102-210 | | |
| BT50-FBH396-365 | P2777896 | | | BT50-SAS102-260 | | |
| BT50-FBH456-195 | P2777897 | 456 | 516 | BT50-SAS102-90 | FBH456S | |
| BT50-FBH456-265 | P2777898 | | | BT50-SAS102-160 | | |
| BT50-FBH456-315 | P2777899 | | | BT50-SAS102-210 | | |
| BT50-FBH456-365 | P2777900 | | | BT50-SAS102-260 | | |
| BT50-FBH516-195 | P2777901 | 516 | 576 | BT50-SAS102-90 | FBH516S | |
| BT50-FBH516-265 | P2777902 | | | BT50-SAS102-160 | | |
| BT50-FBH516-315 | P2777903 | | | BT50-SAS102-210 | | |
| BT50-FBH516-365 | P2777904 | | | BT50-SAS102-260 | | |

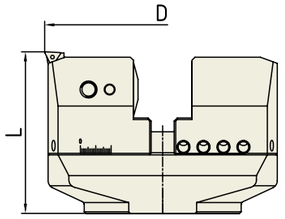
▶ Basic holder interchangeable between Fine Boring Bar and Twing Edge Boring Bar.
基本刀柄可在微调镗孔刀柄和双刃镗孔刀柄之间互换

BORING SYSTEM

PART

## BORING HEAD (For FINE BORING BAR-BIG BORE)

# 精镗头 (微调镗孔刀柄-大径用)




| MODEL No. 型号 | EDP No. | D (BORE RANGE 镗孔范围) | | L (HEIGHT 高度) | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|
| | | Min. 最小 | Max. 最大 | | |
| **FBH153S** | **P2777905** | 153 | 216 | 105 | |
| **FBH216S** | **P2777906** | 216 | 276 | 105 | |
| **FBH276S** | **P2777907** | 276 | 336 | 105 | |
| **FBH336S** | **P2777908** | 336 | 396 | 105 | |
| **FBH396S** | **P2777909** | 396 | 456 | 105 | |
| **FBH456S** | **P2777910** | 456 | 516 | 105 | |
| **FBH516S** | **P2777911** | 516 | 576 | 105 | |

| SPARE PART | | | | | | | |
|---|---|---|---|---|---|---|---|
| BORING HEAD 镗头 | PLATE 滑板 | CARTRIDGE 刀片架 | CLAMP BOLT 夹紧螺栓 | COUNTER WEIGHT 配重 | WRENCH 扳手 | CLAMP SCREW 夹紧螺钉 | T-WRENCH T形扳手 |
| FBH153S | PLA153 | FTP11 | M10*30L | FBB153 | L-W 5 | FTNA0307 | T7 |
| FBH216S | PLA216 | | | | | | |
| FBH276S | PLA276 | | | | | | |
| FBH336S | PLA336 | | | | | | |
| FBH396S | PLA396 | | | | | | |
| FBH456S | PLA456 | | | | | | |
| FBH516S | PLA516 | | | | | | |



BORING SYSTEM

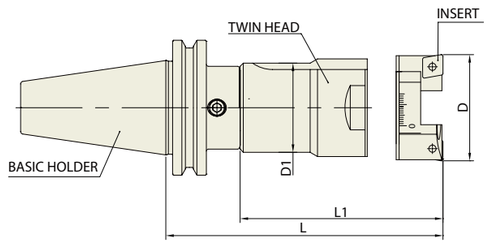
TBH

## TWIN EDGE BORING BAR (SMALL BORE)

DIN 69871-SK

# 双刃镗孔刀柄 (小径)

DIN 69871-SK | AT3 | AD




Unit (单位) : mm

| MODEL No. 型号 | EDP No. | D (BORE RANGE) 镗孔范围 Min. - Max. 最小 - 最大 | L | BASIC HOLDER 基础刀柄 | TWIN HEAD 双刃镗头 | D1 | L1 | INSERT 刀片 | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|
| **SK40-TBH25-122** | **P2779663** | 25 - 34 | 122 | SK40-SAS19-72 | TBH25-50 | 22 | 50 | CCMT060204 | |
| **SK40-TBH34-104** | **P2779664** | 34 - 50 | 104 | SK40-SAS31-44 | TBH34-60 | 31 | 60 | CCMT060204 | |
| **SK40-TBH34-154** | **P2779665** | 34 - 50 | 154 | SK40-SAS31-94 | TBH34-60 | 31 | 60 | CCMT060204 | |
| **SK40-TBH50-123** | **P2779666** | 50 - 76 | 123 | SK40-SAS39-43 | TBH50-80 | 42 | 80 | CCMT09T308 | |
| **SK40-TBH50-168** | **P2779667** | 50 - 76 | 168 | SK40-SAS39-88 | TBH50-80 | 42 | 80 | CCMT09T308 | |
| **SK40-TBH76-174** | **P2779668** | 76 - 116 | 174 | SK40-SAS64-64 | TBH76-110 | 65 | 110 | CCMT120408 | |
| **SK50-TBH25-152** | **P2779669** | 25 - 34 | 152 | SK50-SAS19-102 | TBH25-50 | 22 | 50 | CCMT060204 | |
| **SK50-TBH34-114** | **P2779670** | 34 - 50 | 114 | SK50-SAS31-54 | TBH34-60 | 31 | 60 | CCMT060204 | |
| **SK50-TBH34-184** | **P2779671** | 34 - 50 | 184 | SK50-SAS31-124 | TBH34-60 | 31 | 60 | CCMT060204 | |
| **SK50-TBH50-138** | **P2779672** | 50 - 76 | 138 | SK50-SAS39-58 | TBH50-80 | 42 | 80 | CCMT09T308 | |
| **SK50-TBH50-198** | **P2779673** | 50 - 76 | 198 | SK50-SAS39-118 | TBH50-80 | 42 | 80 | CCMT09T308 | |
| **SK50-TBH50-258** | **P2779674** | 50 - 76 | 258 | SK50-SAS39-178 | TBH50-80 | 42 | 80 | CCMT09T308 | |
| **SK50-TBH76-204** | **P2779675** | 76 - 116 | 204 | SK50-SAS64-94 | TBH76-110 | 65 | 110 | CCMT120408 | |
| **SK50-TBH76-279** | **P2779676** | 76 - 116 | 279 | SK50-SAS64-169 | TBH76-110 | 65 | 110 | CCMT120408 | |
| **SK50-TBH76-339** | **P2779677** | 76 - 116 | 339 | SK50-SAS64-229 | TBH76-110 | 65 | 110 | CCMT120408 | |
| **SK50-TBH116-198** | **P2779678** | 116 - 156 | 198 | SK50-SAS90-93 | TBH116-105 | 90 | 105 | CCMT120408 | |
| **SK50-TBH116-348** | **P2779679** | 116 - 156 | 348 | SK50-SAS90-243 | TBH116-105 | 90 | 105 | CCMT120408 | |

▶ Basic holder interchangeable between Fine Boring Bar and Twing Edge Boring Bar.
基本刀柄可在微调镗孔刀柄和双刃镗孔刀柄之间互换



TOOLING SYSTEM

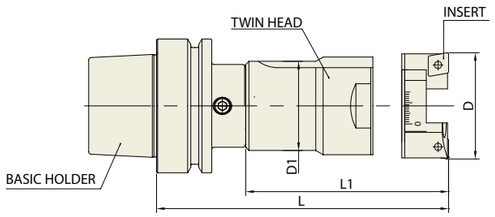
HYDRAULIC CHUCK
SHRINK FIT HOLDER
ER COLLET CHUCK
END MILL HOLDER & SIDE LOCK ARBOR
SHELL MILL ARBOR
POWER MILLING CHUCK
MORSE TAPER ARBOR
SK SLIM CHUCK
SYNCHRO TAPPING CHUCK
ONE STEP TAPPING CHUCK
TAPPING ER CHUCK
TAPPING CHUCK
FACE MILL ARBOR
COPY MILL ARBOR & INDEXABLE DRILL HOLDER
NC DRILL CHUCK & OTHER TOOL HOLDERS
BORING SYSTEM
ACCESSORY & OTHERS

BORING SYSTEM

TBH

# TWIN EDGE BORING BAR (SMALL BORE)
# 双刃镗孔刀柄 (小径)

DIN 69893/
ISO 12164-1-HSK FORM A




DIN 69893-HSK | AD

Unit (单位) : mm

| MODEL No. 型号 | EDP No. | D (BORE RANGE) 镗孔范围 Min. - Max. 最小 - 最大 | L | BASIC HOLDER 基础刀柄 | TWIN HEAD 双刃镗头 | D1 | L1 | INSERT 刀片 | WEIGHT 重量 (Kg) |
|---|---|---|---|---|---|---|---|---|---|
| **HSK40A-TBH25-122.5** | **P2779642** | 25 - 34 | 122.5 | HSK40A-SAS19-72.5 | TBH25-50 | 22 | 50 | CCMT060204 | |
| **HSK40A-TBH34-105** | **P2779643** | 34 - 50 | 105 | HSK40A-SAS31-45 | TBH34-60 | 31 | 60 | CCMT060204 | |
| **HSK40A-TBH34-140** | **P2779644** | 34 - 50 | 140 | HSK40A-SAS31-80 | TBH34-60 | 31 | 60 | CCMT060204 | |
| **HSK40A-TBH50-133** | **P2779645** | 50 - 76 | 133 | HSK40A-SAS39-53 | TBH50-80 | 42 | 80 | CCMT09T308 | |
| **HSK40A-TBH50-153** | **P2779646** | 50 - 76 | 153 | HSK40A-SAS39-73 | TBH50-80 | 42 | 80 | CCMT09T308 | |
| **HSK50A-TBH25-122.5** | **P2779647** | 25 - 34 | 122.5 | HSK50A-SAS19-72.5 | TBH25-50 | 22 | 50 | CCMT060204 | |
| **HSK50A-TBH34-140** | **P2779648** | 34 - 50 | 140 | HSK50A-SAS31-80 | TBH34-60 | 31 | 60 | CCMT060204 | |
| **HSK50A-TBH50-153** | **P2779649** | 50 - 76 | 153 | HSK50A-SAS39-73 | TBH50-80 | 42 | 80 | CCMT09T308 | |
| **HSK63A-TBH25-127.5** | **P2779650** | 25 - 34 | 127.5 | HSK63A-SAS19-77.5 | TBH25-50 | 22 | 50 | CCMT060204 | |
| **HSK63A-TBH34-160** | **P2779651** | 34 - 50 | 160 | HSK63A-SAS31-100 | TBH34-60 | 31 | 60 | CCMT060204 | |
| **HSK63A-TBH50-173** | **P2779652** | 50 - 76 | 173 | HSK63A-SAS39-93 | TBH50-80 | 42 | 80 | CCMT09T308 | |
| **HSK63A-TBH76-189** | **P2779653** | 76 - 116 | 189 | HSK63A-SAS64-79 | TBH76-110 | 65 | 110 | CCMT120408 | |
| **HSK100A-TBH19-152.5** | **P2779654** | 25 - 34 | 152.5 | HSK100A-SAS19-102.5 | TBH25-50 | 22 | 50 | CCMT060204 | |
| **HSK100A-TBH34-185** | **P2779655** | 34 - 50 | 185 | HSK100A-SAS31-125 | TBH34-60 | 31 | 60 | CCMT060204 | |
| **HSK100A-TBH50-198** | **P2779656** | 50 - 76 | 198 | HSK100A-SAS39-118 | TBH50-80 | 42 | 80 | CCMT09T308 | |
| **HSK100A-TBH50-258** | **P2779657** | 50 - 76 | 258 | HSK100A-SAS39-178 | TBH50-80 | 42 | 80 | CCMT09T308 | |
| **HSK100A-TBH76-204** | **P2779658** | 76 - 116 | 204 | HSK100A-SAS64-94 | TBH76-110 | 65 | 110 | CCMT120408 | |
| **HSK100A-TBH76-279** | **P2779659** | 76 - 116 | 279 | HSK100A-SAS64-169 | TBH76-110 | 65 | 110 | CCMT120408 | |
| **HSK100A-TBH76-339** | **P2779660** | 76 - 116 | 339 | HSK100A-SAS64-229 | TBH76-110 | 65 | 110 | CCMT120408 | |
| **HSK100A-TBH116-228** | **P2779661** | 116 - 156 | 228 | HSK100A-SAS90-123 | TBH116-105 | 90 | 105 | CCMT120408 | |
| **HSK100A-TBH116-378** | **P2779662** | 116 - 156 | 378 | HSK100A-SAS90-273 | TBH116-105 | 90 | 105 | CCMT120408 | |

▶ Basic holder interchangeable between Fine Boring Bar and Twing Edge Boring Bar.
基本刀柄可在微调镗孔刀柄和双刃镗孔刀柄之间互换

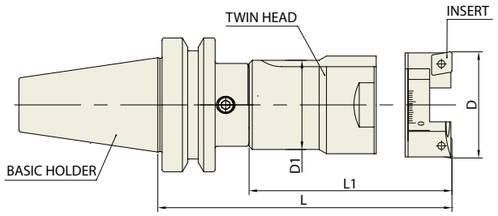


BORING SYSTEM

FBH

# TWIN EDGE BORING BAR (SMALL BORE)
# 双刃镗孔刀柄 (小径)

JIS B6339/
MAS 403-BT




JIS B6339-BT | AT3 | AD

Unit (单位) : mm

| MODEL No. 型号 | EDP No. | D (BORE RANGE) 镗孔范围 Min. - Max. 最小 - 最大 | L | BASIC HOLDER 基础刀柄 | TWIN HEAD 双刃镗头 | D1 | L1 | INSERT 刀片 | WEIGHT 重量 (Kg) |
|---|---|---|---|---|---|---|---|---|---|
| **BT30-TBH25-122** | **P2779620** | 25 - 34 | 122 | BT30-SAS19-72 | TBH25-50 | 22 | 50 | CCMT060204 | |
| **BT30-TBH34-99** | **P2779621** | 34 - 50 | 99 | BT30-SAS31-39 | TBH34-60 | 31 | 60 | CCMT060204 | |
| **BT30-TBH34-139** | **P2779622** | 34 - 50 | 139 | BT30-SAS31-79 | TBH34-60 | 31 | 60 | CCMT060204 | |
| **BT30-TBH50-118** | **P2779623** | 50 - 76 | 118 | BT30-SAS39-38 | TBH50-80 | 42 | 80 | CCMT09T308 | |
| **BT30-TBH50-153** | **P2779624** | 50 - 76 | 153 | BT30-SAS39-73 | TBH50-80 | 42 | 80 | CCMT09T308 | |
| **BT40-TBH25-122** | **P2779625** | 25 - 34 | 122 | BT40-SAS19-72 | TBH25-50 | 22 | 50 | CCMT060204 | |
| **BT40-TBH34-104** | **P2779626** | 34 - 50 | 104 | BT40-SAS31-44 | TBH34-60 | 31 | 60 | CCMT060204 | |
| **BT40-TBH34-154** | **P2779627** | 34 - 50 | 154 | BT40-SAS31-94 | TBH34-60 | 31 | 60 | CCMT060204 | |
| **BT40-TBH50-123** | **P2779628** | 50 - 76 | 123 | BT40-SAS39-43 | TBH50-80 | 42 | 80 | CCMT09T308 | |
| **BT40-TBH50-168** | **P2779629** | 50 - 76 | 168 | BT40-SAS39-88 | TBH50-80 | 42 | 80 | CCMT09T308 | |
| **BT40-TBH76-174** | **P2779630** | 76 - 116 | 174 | BT40-SAS64-64 | TBH76-110 | 65 | 110 | CCMT120408 | |
| **BT50-TBH25-152** | **P2779631** | 25 - 34 | 152 | BT50-SAS19-102 | TBH25-50 | 22 | 50 | CCMT060204 | |
| **BT50-TBH34-114** | **P2779632** | 34 - 50 | 114 | BT50-SAS31-54 | TBH34-60 | 31 | 60 | CCMT060204 | |
| **BT50-TBH34-184** | **P2779633** | 34 - 50 | 184 | BT50-SAS31-124 | TBH34-60 | 31 | 60 | CCMT060204 | |
| **BT50-TBH50-138** | **P2779634** | 50 - 76 | 138 | BT50-SAS39-58 | TBH50-80 | 42 | 80 | CCMT09T308 | |
| **BT50-TBH50-198** | **P2779635** | 50 - 76 | 198 | BT50-SAS39-118 | TBH50-80 | 42 | 80 | CCMT09T308 | |
| **BT50-TBH50-258** | **P2779636** | 50 - 76 | 258 | BT50-SAS39-178 | TBH50-80 | 42 | 80 | CCMT09T308 | |
| **BT50-TBH76-204** | **P2779637** | 76 - 116 | 204 | BT50-SAS64-94 | TBH76-110 | 65 | 110 | CCMT120408 | |
| **BT50-TBH76-279** | **P2779638** | 76 - 116 | 279 | BT50-SAS64-169 | TBH76-110 | 65 | 110 | CCMT120408 | |
| **BT50-TBH76-339** | **P2779639** | 76 - 116 | 339 | BT50-SAS64-229 | TBH76-110 | 65 | 110 | CCMT120408 | |
| **BT50-TBH116-198** | **P2779640** | 116 - 156 | 198 | BT50-SAS90-93 | TBH116-105 | 90 | 105 | CCMT120408 | |
| **BT50-TBH116-348** | **P2779641** | 116 - 156 | 348 | BT50-SAS90-243 | TBH116-105 | 90 | 105 | CCMT120408 | |

▶ Basic holder interchangeable between Fine Boring Bar and Twing Edge Boring Bar.
基本刀柄可在微调镗孔刀柄和双刃镗孔刀柄之间互换

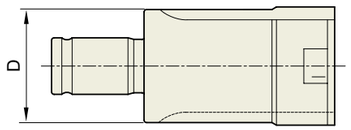


TOOLING SYSTEM

HYDRAULIC CHUCK
SHRINK FIT HOLDER
ER COLLET CHUCK
END MILL HOLDER & SIDE LOCK ARBOR
SHELL MILL ARBOR
POWER MILLING CHUCK
MORSE TAPER ARBOR
SK SLIM CHUCK
SYNCHRO TAPPING CHUCK
ONE STEP TAPPING CHUCK
TAPPING ER CHUCK
TAPPING CHUCK
FACE MILL ARBOR
COPY MILL ARBOR & INDEXABLE DRILL HOLDER
NC DRILL CHUCK & OTHER TOOL HOLDERS
BORING SYSTEM
ACCESSORY & OTHERS

## BORING HEAD (For TWIN EDGE BORING BAR-SMALL BORE)

# 镗头 (双刃镗孔刀柄-小径用)



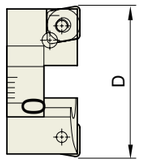

Unit (单位) : mm

| MODEL No. 型号 | EDP No. | D | WEIGHT 重量(Kg) |
|---|---|---|---|
| SAS22-TBH25-50 | P2779529 | 22 | |
| SAS31-TBH34-60 | P2779530 | 31 | |
| SAS42-TBH50-80 | P2779531 | 42 | |
| SAS65-TBH76-110 | P2779532 | 65 | |
| SAS84-TBH116-145 | P2779533 | 84 | |



## INSERT HOLDER (CARTRIDGE For TWIN EDGE BORING BAR-SMALL BORE)

# 刀片架 (双刃镗孔刀柄-小径用)




Unit (单位) : mm

| MODEL No. 型号 | EDP No. | D (BORE RANGE) Min. - Max. | WEIGHT 重量(Kg) |
|---|---|---|---|
| TBH25-CC06 | P2779534 | 25 - 34 | |
| TBH34-CC06 | P2779535 | 34 - 50 | |
| TBH50-CC09 | P2779536 | 50 - 76 | |
| TBH76-CC12 | P2779537 | 76 - 116 | |
| TBH116-CC12 | P2779538 | 116 - 156 | |

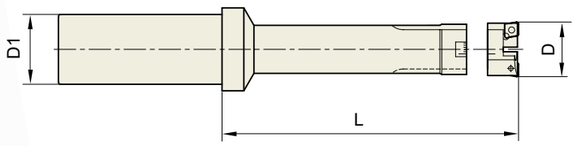




## TWIN EDGE BORING BAR

STRAIGHT-ST

# 双刃镗孔刀柄




Unit (单位) : mm

| TYPE | MODEL No. 型号 | EDP No. | D (BORE RANGE) 镗孔范围 Min. - Max. 最小 - 最大 | L | D1 | INSERT 刀片 | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|
| 32 | ST32-TBH25-125 | P2779559 | 25 - 34 | 125 | 32 | CCMT060200 | |
| | ST32-TBH34-130 | P2779560 | 34 - 50 | 130 | 32 | CCMT060200 | |
| | ST32-TBH50-155 | P2779561 | 50 - 76 | 155 | 32 | CCMT09T300 | |
| 40 | ST40-TBH76-185 | P2779562 | 76 - 116 | 185 | 40 | CCMT120400 | |
| 42 | ST42-TBH76-185 | P2779563 | 76 - 116 | 185 | 42 | CCMT120400 | |

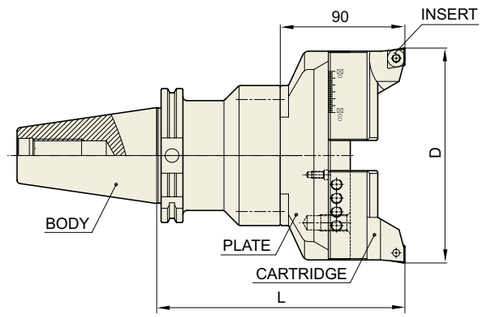
BORING SYSTEM

TBH

# TWIN EDGE BORING BAR (BIG BORE)

DIN 69871-SK

## 双刃镗孔刀柄 (大径)




DIN 69871-SK | AT3 | A

Unit (单位) : mm

| MODEL No. 型号 | EDP No. | D (BORE RANGE) 镗孔范围 Min. - Max. 最小 - 最大 | L | BODY 基础刀柄 | PLATE 滑板 | INSERT 刀片 | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|
| **SK50-TBH156-180** | **P2779585** | 156 - 216 | 180 | SK50-SAS102-90 | PLA156 | CCMT120400 | |
| **SK50-TBH156-230** | **P2779586** | 156 - 216 | 230 | SK50-SAS102-140 | PLA156 | CCMT120400 | |
| **SK50-TBH156-280** | **P2779587** | 156 - 216 | 280 | SK50-SAS102-190 | PLA156 | CCMT120400 | |
| **SK50-TBH216-180** | **P2779588** | 216 - 276 | 180 | SK50-SAS102-90 | PLA216 | CCMT120400 | |
| **SK50-TBH216-230** | **P2779589** | 216 - 276 | 230 | SK50-SAS102-140 | PLA216 | CCMT120400 | |
| **SK50-TBH216-280** | **P2779590** | 216 - 276 | 280 | SK50-SAS102-190 | PLA216 | CCMT120400 | |
| **SK50-TBH276-180** | **P2779591** | 276 - 336 | 180 | SK50-SAS102-90 | PLA276 | CCMT120400 | |
| **SK50-TBH276-230** | **P2779592** | 276 - 336 | 230 | SK50-SAS102-140 | PLA276 | CCMT120400 | |
| **SK50-TBH276-280** | **P2779593** | 276 - 336 | 280 | SK50-SAS102-190 | PLA276 | CCMT120400 | |
| **SK50-TBH336-180** | **P2779594** | 336 - 396 | 180 | SK50-SAS102-90 | PLA336 | CCMT120400 | |
| **SK50-TBH336-230** | **P2779595** | 336 - 396 | 230 | SK50-SAS102-140 | PLA336 | CCMT120400 | |
| **SK50-TBH336-280** | **P2779596** | 336 - 396 | 280 | SK50-SAS102-190 | PLA336 | CCMT120400 | |
| **SK50-TBH396-180** | **P2779597** | 396 - 456 | 180 | SK50-SAS102-90 | PLA396 | CCMT120400 | |
| **SK50-TBH396-230** | **P2779598** | 396 - 456 | 230 | SK50-SAS102-140 | PLA396 | CCMT120400 | |
| **SK50-TBH396-280** | **P2779599** | 396 - 456 | 280 | SK50-SAS102-190 | PLA396 | CCMT120400 | |
| **SK50-TBH456-180** | **P2779600** | 456 - 516 | 180 | SK50-SAS102-90 | PLA456 | CCMT120400 | |
| **SK50-TBH456-230** | **P2779601** | 456 - 516 | 230 | SK50-SAS102-140 | PLA456 | CCMT120400 | |
| **SK50-TBH456-280** | **P2779602** | 456 - 516 | 280 | SK50-SAS102-190 | PLA456 | CCMT120400 | |
| **SK50-TBH516-180** | **P2779603** | 516 - 576 | 180 | SK50-SAS102-90 | PLA516 | CCMT120400 | |
| **SK50-TBH516-230** | **P2779604** | 516 - 576 | 230 | SK50-SAS102-140 | PLA516 | CCMT120400 | |
| **SK50-TBH516-280** | **P2779605** | 516 - 576 | 280 | SK50-SAS102-190 | PLA516 | CCMT120400 | |

▶Upon request, special twin edge boring bars with a boring range up to 800mm could be manufactured and supplied.
根据要求，可定制和提供非常规标准的双刃镗刀，镗孔范围可达800毫米

▶ Basic holder interchangeable between Fine Boring Bar and Twing Edge Boring Bar.
基本刀柄可在微调镗孔刀柄和双刃镗孔刀柄之间互换



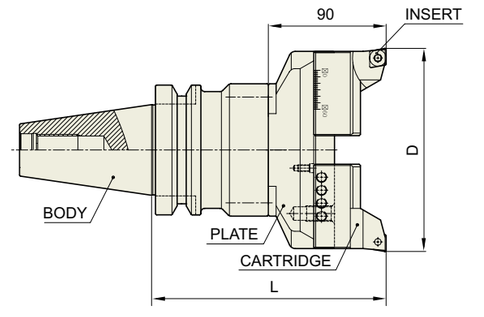
BORING SYSTEM

TBH

# TWIN EDGE BORING BAR (BIG BORE)

JIS B6339/ MAS 403-BT

## 双刃镗孔刀柄 (大径)




JIS B6339-BT | AT3 | A

Unit (单位) : mm

| MODEL No. 型号 | EDP No. | D (BORE RANGE) 镗孔范围 Min. - Max. 最小 - 最大 | L | BODY 基础刀柄 | PLATE 滑板 | INSERT 刀片 | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|
| **BT50-TBH156-180** | **P2779564** | 156 - 216 | 180 | BT50-SAS102-90 | PLA156 | CCMT120400 | |
| **BT50-TBH156-230** | **P2779565** | 156 - 216 | 230 | BT50-SAS102-140 | PLA156 | CCMT120400 | |
| **BT50-TBH156-280** | **P2779566** | 156 - 216 | 280 | BT50-SAS102-190 | PLA156 | CCMT120400 | |
| **BT50-TBH216-180** | **P2779567** | 216 - 276 | 180 | BT50-SAS102-90 | PLA216 | CCMT120400 | |
| **BT50-TBH216-230** | **P2779568** | 216 - 276 | 230 | BT50-SAS102-140 | PLA216 | CCMT120400 | |
| **BT50-TBH216-280** | **P2779569** | 216 - 276 | 280 | BT50-SAS102-190 | PLA216 | CCMT120400 | |
| **BT50-TBH276-180** | **P2779570** | 276 - 336 | 180 | BT50-SAS102-90 | PLA276 | CCMT120400 | |
| **BT50-TBH276-230** | **P2779571** | 276 - 336 | 230 | BT50-SAS102-140 | PLA276 | CCMT120400 | |
| **BT50-TBH276-280** | **P2779572** | 276 - 336 | 280 | BT50-SAS102-190 | PLA276 | CCMT120400 | |
| **BT50-TBH336-180** | **P2779573** | 336 - 396 | 180 | BT50-SAS102-90 | PLA336 | CCMT120400 | |
| **BT50-TBH336-230** | **P2779574** | 336 - 396 | 230 | BT50-SAS102-140 | PLA336 | CCMT120400 | |
| **BT50-TBH336-280** | **P2779575** | 336 - 396 | 280 | BT50-SAS102-190 | PLA336 | CCMT120400 | |
| **BT50-TBH396-180** | **P2779576** | 396 - 456 | 180 | BT50-SAS102-90 | PLA396 | CCMT120400 | |
| **BT50-TBH396-230** | **P2779577** | 396 - 456 | 230 | BT50-SAS102-140 | PLA396 | CCMT120400 | |
| **BT50-TBH396-280** | **P2779578** | 396 - 456 | 280 | BT50-SAS102-190 | PLA396 | CCMT120400 | |
| **BT50-TBH456-180** | **P2779579** | 456 - 516 | 180 | BT50-SAS102-90 | PLA456 | CCMT120400 | |
| **BT50-TBH456-230** | **P2779580** | 456 - 516 | 230 | BT50-SAS102-140 | PLA456 | CCMT120400 | |
| **BT50-TBH456-280** | **P2779581** | 456 - 516 | 280 | BT50-SAS102-190 | PLA456 | CCMT120400 | |
| **BT50-TBH516-180** | **P2779582** | 516 - 576 | 180 | BT50-SAS102-90 | PLA516 | CCMT120400 | |
| **BT50-TBH516-230** | **P2779583** | 516 - 576 | 230 | BT50-SAS102-140 | PLA516 | CCMT120400 | |
| **BT50-TBH516-280** | **P2779584** | 516 - 576 | 280 | BT50-SAS102-190 | PLA516 | CCMT120400 | |

▶Upon request, special twin edge boring bars with a boring range up to 800mm could be manufactured and supplied.
根据要求，可定制和提供非常规标准的双刃镗刀，镗孔范围可达800毫米

▶ Basic holder interchangeable between Fine Boring Bar and Twing Edge Boring Bar.
基本刀柄可在微调镗孔刀柄和双刃镗孔刀柄之间互换



TOOLING SYSTEM

HYDRAULIC CHUCK
SHRINK FIT HOLDER
ER COLLET CHUCK
END MILL HOLDER & SIDE LOCK ARBOR
SHELL MILL ARBOR
POWER MILLING CHUCK
MORSE TAPER ARBOR
SK SLIM CHUCK
SYNCHRO TAPPING CHUCK
ONE STEP TAPPING CHUCK
TAPPING ER CHUCK
TAPPING CHUCK
FACE MILL ARBOR
COPY MILL ARBOR & INDEXABLE DRILL HOLDER
NC DRILL CHUCK & OTHER TOOL HOLDERS
BORING SYSTEM
ACCESSORY & OTHERS

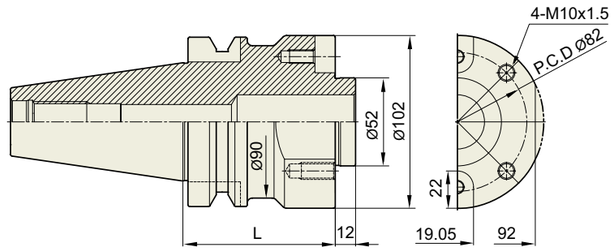
BORING SYSTEM

PART

## TWIN EDGE BORING BAR (BIG BORE)

JIS B6339/
MAS 403-BT

# 基础刀柄 (微调镗孔刀柄及双刃镗孔刀柄-大径)



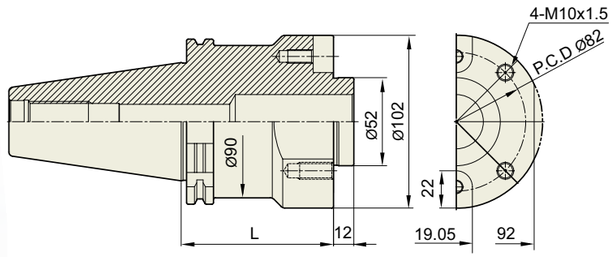

JIS B6339-BT

AT3

Unit (单位) : mm

| MODEL No. 型号 | EDP No. | L | WEIGHT 重量(Kg) |
|---|---|---|---|
| BT50-SAS102-90 | P2779606 | 90 | |
| BT50-SAS102-140 | P2779607 | 140 | |
| BT50-SAS102-190 | P2779608 | 190 | |

## DIN 69871-SK




DIN 69871-SK

AT3

Unit (单位) : mm

| MODEL No. 型号 | EDP No. | L | WEIGHT 重量(Kg) |
|---|---|---|---|
| SK50-SAS102-90 | P2779609 | 90 | |
| SK50-SAS102-140 | P2779610 | 140 | |
| SK50-SAS102-190 | P2779611 | 190 | |

▶ Basic holder interchangeable between Fine Boring Bar and Twing Edge Boring Bar.
基本刀柄可在微调镗孔刀柄和双刃镗孔刀柄之间互换



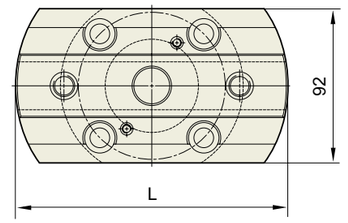
TOOLING SYSTEM
HYDRAULIC CHUCK
SHRINK FIT HOLDER
ER COLLET CHUCK
END MILL HOLDER & SIDE LOCK ARBOR
SHELL MILL ARBOR
POWER MILLING CHUCK
MORSE TAPER ARBOR
SK SLIM CHUCK
SYNCHRO TAPPING CHUCK
ONE STEP TAPPING CHUCK
TAPPING ER CHUCK
TAPPING CHUCK
FACE MILL ARBOR
COPY MILL ARBOR & INDEXABLE DRILL HOLDER
NC DRILL CHUCK & OTHER TOOL HOLDERS
BORING SYSTEM
ACCESSORY & OTHERS

BORING SYSTEM

PART

## PLATE (For TWIN EDGE BORING BAR-BIG BORE)

# 滑板 (双刃镗孔刀柄-大径用)



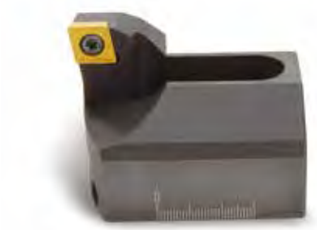

Unit (单位) : mm

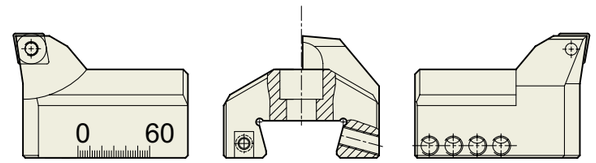
| PLATE | EDP No. | D | WEIGHT 重量(Kg) |
|---|---|---|---|
| PLA156 | P2779612 | 152 | |
| PLA216 | P2779613 | 212 | |
| PLA276 | P2779614 | 272 | |
| PLA336 | P2779615 | 332 | |
| PLA396 | P2779616 | 392 | |
| PLA456 | P2779617 | 452 | |
| PLA516 | P2779618 | 512 | |

PART

## INSERT HOLDER(CARTRIDGE For TWIN EDGE BORING BAR-BIG BORE)

# 刀片架 (双刃镗孔刀柄-大径用)






Unit (单位) : mm

| CARTRIDGE (For Rough Cutting) | EDP No. | WEIGHT 重量(Kg) |
|---|---|---|
| CN120 | P2779619 | |

BORING SYSTEM

BCA

# MICRO BORING BAR
# 微切削镗孔刀柄

JIS B6339/
MAS 403-BT

JIS B6339-BT | AT3 | A

FIG.1

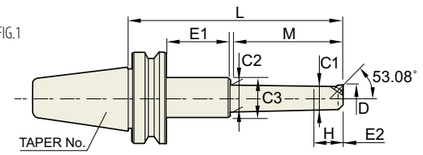
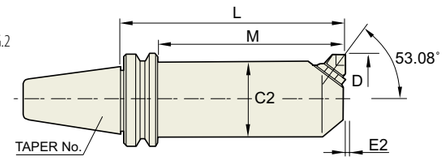



FIG.2




Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | D (BORE RANGE) 镗孔范围 Min. - Max. 最小 - 最大 | L | M | C1 | C2 | C3 | H | E1 | E2 | UNIT | INSERT 刀片 | FIG. | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 30 | BT30-BCA13.5-105 | P2779701 | 13.5 - 16 | 105 | 68 | 12 | 13.0 | 44 | 15 | 5 | 0.2 | M1B2E/F | BRAZED TYPE | 1 | |
| | BT30-BCA14.5-105 | P2779702 | 14.5 - 17 | 105 | 68 | 13 | 14.0 | 44 | 15 | 5 | 0.2 | M1B2E/F | BRAZED TYPE | 1 | |
| | BT30-BCA16-105 | P2779703 | 16 - 22.5 | 105 | 73 | 14 | 15 | - | 18 | - | 0.2 | M1A2E/F | BRAZED TYPE | 3 | |
| | BT30-BCA19-120 | P2779704 | 19 - 23 | 120 | 85 | 16 | 18 | 44 | 23 | 3 | 0.2 | M2B2CC | CCGT0401 | 1 | 0.70 |
| | BT30-BCA23-135 | P2779705 | 23 - 29 | 135 | 105 | 19 | 22 | - | 24 | - | 0.2 | M3B2TC | TBGT0601 | 3 | 0.70 |
| | BT30-BCA29-150 | P2779706 | 29 - 41 | 150 | 115 | 25 | 28 | 44 | 30 | 8 | 0.2 | M3A2TC | TBGT0601 | 1 | 0.90 |
| | BT30-BCA29-195 | P2779707 | 29 - 41 | 195 | 115 | 25 | 28 | 44 | 30 | 53 | 0.2 | M3A2TC | TBGT0601 | 1 | |
| | BT30-BCA38-150 | P2779708 | 38 - 49 | 150 | 115 | 33 | 35 | 55 | 41 | 8 | 0.2 | M5B2TC | TCGT1102 | 1 | 1.40 |
| | BT30-BCA38-210 | P2779709 | 38 - 49 | 210 | 175 | 33 | 37 | 55 | 41 | 8 | 0.2 | M5B2TC | TCGT1102 | 1 | |
| | BT30-BCA46-150 | P2779710 | 46 - 66 | 150 | 115 | 38 | 41 | 55 | 45 | 8 | 0.2 | M5A2TC | TCGT1102 | 1 | 2.10 |
| | BT30-BCA46-210 | P2779711 | 46 - 66 | 210 | 175 | 38 | 45 | 55 | 45 | 8 | 0.2 | M5A2TC | TCGT1102 | 1 | |
| | BT30-BCA62-165 | P2779712 | 62 - 87 | 165 | 135 | 51 | - | - | - | - | 0.2 | M7A2TC | TCGT16T3 | 2 | |
| 40 | BT40-BCA13.5-105 | P2779713 | 13.5 - 16 | 105 | 68 | 12 | 13.0 | 44 | 15 | 5 | 0.2 | M1B2E/F | BRAZED TYPE | 1 | |
| | BT40-BCA14.5-105 | P2779714 | 14.5 - 17 | 105 | 68 | 13 | 14.0 | 44 | 15 | 5 | 0.2 | M1B2E/F | BRAZED TYPE | 1 | |
| | BT40-BCA16-105 | P2779715 | 16 - 22.5 | 105 | 73 | 14 | 15 | - | 18 | - | 0.2 | M1A2E/F | BRAZED TYPE | 3 | |
| | BT40-BCA19-120 | P2779716 | 19 - 23 | 120 | 85 | 16 | 18 | 44 | 23 | 3 | 0.2 | M2B2CC | CCGT0401 | 1 | 1.50 |
| | BT40-BCA23-135 | P2779717 | 23 - 29 | 135 | 105 | 19 | 22 | - | 24 | - | 0.2 | M3B2TC | TBGT0601 | 3 | 1.50 |
| | BT40-BCA29-150 | P2779718 | 29 - 41 | 150 | 115 | 25 | 28 | 44 | 30 | 8 | 0.2 | M3A2TC | TBGT0601 | 1 | 1.50 |
| | BT40-BCA29-195 | P2779719 | 29 - 41 | 195 | 115 | 25 | 28 | 44 | 30 | 53 | 0.2 | M3A2TC | TBGT0601 | 1 | 2.00 |
| | BT40-BCA38-150 | P2779720 | 38 - 49 | 150 | 115 | 33 | 35 | 55 | 41 | 8 | 0.2 | M5B2TC | TCGT1102 | 1 | 1.80 |
| | BT40-BCA38-210 | P2779721 | 38 - 49 | 210 | 175 | 33 | 37 | 55 | 41 | 8 | 0.2 | M5B2TC | TCGT1102 | 1 | 2.20 |
| | BT40-BCA46-150 | P2779722 | 46 - 66 | 150 | 115 | 38 | 41 | 55 | 45 | 8 | 0.2 | M5A2TC | TCGT1102 | 1 | 2.10 |
| | BT40-BCA46-210 | P2779723 | 46 - 66 | 210 | 175 | 38 | 45 | 55 | 45 | 8 | 0.2 | M5A2TC | TCGT1102 | 1 | 2.30 |
| | BT40-BCA62-165 | P2779724 | 62 - 87 | 165 | 135 | 51 | - | - | - | - | 0.2 | M7A2TC | TCGT16T3 | 2 | 2.90 |
| | BT40-BCA62-210 | P2779725 | 62 - 87 | 210 | 180 | 51 | - | - | - | - | 0.2 | M7A2TC | TCGT16T3 | 2 | 3.60 |
| | BT40-BCA83-150 | P2779726 | 83 - 108 | 150 | 120 | 63 | - | - | - | - | 0.2 | M7A2TC | TCGT16T3 | 2 | |
| | BT40-BCA83-210 | P2779727 | 83 - 108 | 210 | 180 | 63 | - | - | - | - | 0.2 | M7A2TC | TCGT16T3 | 2 | |
| | BT40-BCA98-150 | P2779728 | 98 - 142 | 150 | 120 | 83 | - | - | 85 | - | 0.2 | M10A2TC | TCGT16T3 | 4 | |



BORING SYSTEM

BCA

MICRO BORING BAR
微切削镗孔刀柄

JIS B6339/
MAS 403-BT

JIS B6339-BT | AT3 | A

FIG.3

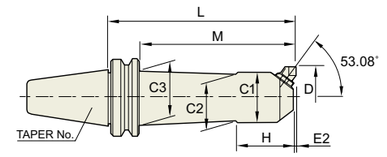
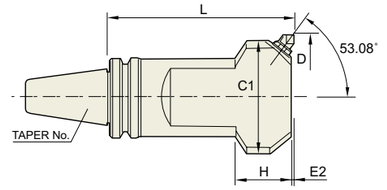



FIG.4




Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | D (BORE RANGE) 镗孔范围 Min. - Max. 最小 - 最大 | L | M | C1 | C2 | C3 | H | E1 | E2 | UNIT | INSERT 刀片 | FIG. | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 50 | BT50-BCA13.5-120 | P2779729 | 13.5 - 16 | 120 | 67 | 12 | 13 | 44 | 15 | 10 | 0.2 | M1B2E/F | - | 1 | |
| | BT50-BCA13.5-195 | P2779730 | 13.5 - 16 | 195 | 67 | 12 | 13 | 44 | 15 | 85 | 0.2 | M1B2E/F | - | 1 | |
| | BT50-BCA14.5-120 | P2779731 | 14.5 - 17 | 120 | 67 | 13 | 14 | 44 | 15 | 10 | 0.2 | M1B2E/F | - | 1 | |
| | BT50-BCA14.5-195 | P2779732 | 14.5 - 17 | 195 | 67 | 13 | 14 | 44 | 15 | 85 | 0.2 | M1B2E/F | - | 1 | |
| | BT50-BCA16-120 | P2779733 | 16 - 22.5 | 120 | 73 | 14 | 15 | 44 | 18 | 4 | 0.2 | M1A2E/F | - | 1 | |
| | BT50-BCA16-195 | P2779734 | 16 - 22.5 | 195 | 73 | 14 | 15 | 44 | 18 | 79 | 0.2 | M1A2E/F | - | 1 | |
| | BT50-BCA19-135 | P2779735 | 19 - 23 | 135 | 86 | 16 | 18 | 44 | 23 | 6 | 0.2 | M2B2CC | CCGT0401 | 1 | 3.80 |
| | BT50-BCA19-210 | P2779736 | 19 - 23 | 210 | 86 | 16 | 18 | 44 | 23 | 81 | 0.2 | M2B2CC | CCGT0401 | 1 | |
| | BT50-BCA23-150 | P2779737 | 23 - 29 | 150 | 105 | 19 | 22 | 44 | 24 | 2 | 0.2 | M3B2TC | TBGT0601 | 1 | 3.90 |
| | BT50-BCA23-225 | P2779738 | 23 - 29 | 225 | 105 | 19 | 22 | 44 | 24 | 77 | 0.2 | M3B2TC | TBGT0601 | 1 | |
| | BT50-BCA29-165 | P2779739 | 29 - 41 | 165 | 115 | 25 | 28 | 44 | 30 | 7 | 0.2 | M3A2TC | TBGT0601 | 1 | 4.50 |
| | BT50-BCA29-225 | P2779740 | 29 - 41 | 225 | 165 | 25 | 28 | 44 | 30 | 67 | 0.2 | M3A2TC | TBGT0601 | 1 | |
| | BT50-BCA38-165 | P2779741 | 38 - 49 | 165 | 115 | 33 | 35 | 55 | 41 | 7 | 0.2 | M5B2TC | TCGT1102 | 1 | |
| | BT50-BCA38-225 | P2779742 | 38 - 49 | 225 | 172 | 33 | 37 | 55 | 41 | 10 | 0.2 | M5B2TC | TCGT1102 | 1 | 5.00 |
| | BT50-BCA46-165 | P2779743 | 46 - 66 | 165 | 115 | 38 | 41 | 55 | 45 | 7 | 0.2 | M5A2TC | TCGT1102 | 1 | 5.20 |
| | BT50-BCA46-225 | P2779744 | 46 - 66 | 225 | 182 | 38 | - | - | 45 | - | 0.2 | M5A2TC | TCGT1102 | 3 | |
| | BT50-BCA46-255 | P2779745 | 46 - 66 | 255 | 206 | 38 | - | 55 | 45 | 6 | 0.2 | M5A2TC | TCGT1102 | 1 | 5.70 |
| | BT50-BCA62-180 | P2779746 | 62 - 87 | 180 | 137 | 51 | - | - | - | - | 0.2 | M7A2TC | TCGT16T3 | 2 | 7.00 |
| | BT50-BCA62-240 | P2779747 | 62 - 87 | 240 | 184 | 51 | 57 | 70 | 60 | 13 | 0.2 | M7A2TC | TCGT16T3 | 1 | 7.60 |
| | BT50-BCA62-330 | P2779748 | 62 - 87 | 330 | 280 | 51 | 60 | 70 | 60 | 7 | 0.2 | M7A2TC | TCGT16T3 | 1 | 9.50 |
| | BT50-BCA83-165 | P2779749 | 83 - 108 | 165 | 122 | 63 | - | - | - | - | 0.2 | M7A2TC | TCGT16T3 | 2 | |
| | BT50-BCA83-240 | P2779750 | 83 - 108 | 240 | 190 | 63 | 62 | 90 | 95 | 7 | 0.2 | M7A2TC | TCGT16T3 | 1 | |
| | BT50-BCA83-345 | P2779751 | 83 - 108 | 345 | 295 | 63 | 62 | 90 | 95 | 7 | 0.2 | M7A2TC | TCGT16T3 | 1 | |
| | BT50-BCA98-165 | P2779752 | 98 - 142 | 165 | 122 | 83 | - | - | - | - | 0.2 | M10A2TC | TCGT16T3 | 2 | |
| | BT50-BCA98-240 | P2779753 | 98 - 142 | 240 | 197 | 83 | - | - | - | - | 0.2 | M10A2TC | TCGT16T3 | 2 | |
| | BT50-BCA98-345 | P2779754 | 98 - 142 | 345 | 302 | 83 | 92 | - | 85 | - | 0.2 | M10A2TC | TCGT16T3 | 3 | |
| | BT50-BCA132-210 | P2779755 | 132 - 176 | 210 | - | 108 | - | - | 65 | - | 0.2 | M10A2TC | TCGT16T3 | 4 | |
| | BT50-BCA132-315 | P2779756 | 132 - 176 | 315 | - | 108 | - | - | 65 | - | 0.2 | M10A2TC | TCGT16T3 | 4 | |
| | BT50-BCA166-225 | P2779757 | 166 - 210 | 225 | - | 142 | - | - | 70 | - | 0.2 | M10A2TC | TCGT16T3 | 4 | |
| | BT50-BCA166-315 | P2779758 | 166 - 210 | 315 | - | 142 | - | - | 70 | - | 0.2 | M10A2TC | TCGT16T3 | 4 | |
| | BT50-BCA200-210 | P2779759 | 200 - 244 | 210 | - | 176 | - | - | 75 | - | 0.2 | M10A2TC | TCGT16T3 | 4 | |

BORING SYSTEM

BCA

## MICRO BORING BAR
STRAIGHT-ST

# 微切削镗孔刀柄

FIG. 1

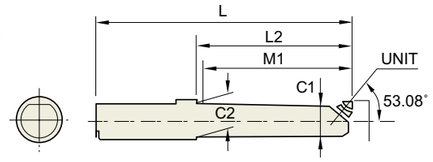
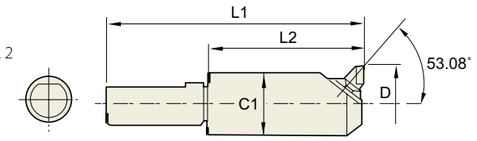



FIG. 2




Unit (单位) : mm

| TYPE | MODEL No. 型号 | EDP No. | D (BORE RANGE) 镗孔范围 Min. - Max. 最小 - 最大 | L1 | L2 | M1 | C1 | C2 | UNIT | FIG. | WEIGHT 重量(Kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 32 | ST32-BCA13.5-75 | P2779760 | 13.5 - 16 | 135 | 75 | 67 | 12 | 13 | M1B2E/F | 1 | 0.50 |
| | ST32-BCA14.5-75 | P2779761 | 14.5 - 17 | 145 | 75 | 67 | 12 | 14 | M1B2E/F | 1 | 0.50 |
| | ST32-BCA16-90 | P2779762 | 16 - 22.5 | 160 | 90 | 82 | 14 | 15 | M1A2E/F | 1 | 0.50 |
| | ST32-BCA19-90 | P2779763 | 19 - 23.0 | 160 | 90 | 82 | 16 | 18 | M2B-2CC | 1 | 0.50 |
| | ST32-BCA23-120 | P2779764 | 23 - 29.0 | 190 | 120 | 110 | 19 | 22 | M3B-2TC | 1 | 1.00 |
| | ST32-BCA29-120 | P2779765 | 29 - 41.0 | 190 | 120 | 110 | 25 | 28 | M3A-2TC | 1 | 1.00 |
| | ST32-BCA38-120 | P2779766 | 38 - 49.0 | 190 | 120 | 115 | 33 | 35 | M5B-2TC | 2 | 1.50 |
| | ST32-BCA46-120 | P2779767 | 46 - 66 | 190 | 120 | 115 | 38 | - | M5A-2TC | 2 | 1.50 |
| | ST32-BCA62-120 | P2779768 | 62 - 87.0 | 190 | 120 | 115 | 51 | - | M7A-2TC | 2 | 2.50 |
| 42 | ST42-BCA13.5-85 | P2779769 | 13.5 - 16 | 165 | 85 | 67 | 12 | 13 | M1B2E/F | 1 | 1.00 |
| | ST42-BCA14.5-85 | P2779770 | 14.5 - 17 | 165 | 85 | 67 | 12 | 14 | M1B2E/F | 1 | 1.00 |
| | ST42-BCA16-100 | P2779771 | 16 - 22.5 | 180 | 100 | 82 | 14 | 15 | M1A2E/F | 1 | 1.00 |
| | ST42-BCA19-100 | P2779772 | 19 - 23.0 | 180 | 100 | 82 | 16 | 18 | M2B2E/F | 1 | 1.00 |
| | ST42-BCA23-120 | P2779773 | 23 - 29.0 | 200 | 120 | 110 | 19 | 22 | M3B-2TC | 1 | 1.50 |
| | ST42-BCA29-120 | P2779774 | 29 - 41.0 | 200 | 120 | 110 | 25 | 28 | M3A-2TC | 1 | 1.50 |
| | ST42-BCA38-130 | P2779775 | 38 - 49.0 | 210 | 130 | 125 | 33 | 35 | M5B-2TC | 1 | 1.50 |
| | ST42-BCA46-135 | P2779776 | 46 - 66.0 | 215 | 135 | 130 | 38 | 44 | M5A-2TC | 1 | 1.50 |
| | ST42-BCA62-135 | P2779777 | 62 - 87.0 | 215 | 135 | 130 | 51 | - | M7A-2TC | 2 | 2.50 |
| | ST42-BCA83-150 | P2779778 | 83 - 108 | 230 | 150 | 145 | 63 | - | M7A-2TC | 2 | 3.00 |

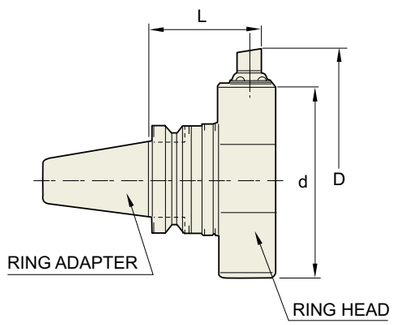


BORING SYSTEM

BCA

## BIG SIZE MICRO CUT BORING BAR
JIS B6339/ MAS 403-BT

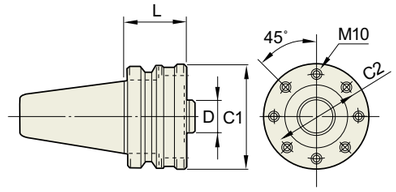
# 大径微切削镗孔刀柄




### BORING RING HOLDER 镗孔环刀柄

Unit (单位) : mm

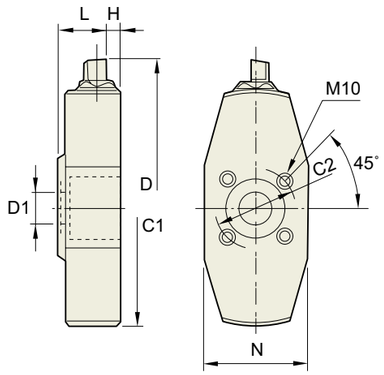
| MODEL No. 型号 | EDP No. | d | D | L |
|---|---|---|---|---|
| BT50-BRA140-105 | P2779779 | 140 | 197 | 105 |
| BT50-BRA140-165 | P2779780 | 140 | 197 | 165 |
| BT50-BRA191-105 | P2779781 | 191 | 248 | 105 |
| BT50-BRA191-165 | P2779782 | 191 | 248 | 165 |
| BT50-BRA242-105 | P2779783 | 242 | 299 | 105 |
| BT50-BRA242-165 | P2779784 | 242 | 299 | 165 |
| BT50-BRA293-105 | P2779785 | 293 | 350 | 105 |
| BT50-BRA293-165 | P2779786 | 293 | 350 | 165 |
| BT50-BRA344-105 | P2779787 | 344 | 401 | 105 |
| BT50-BRA344-165 | P2779788 | 344 | 401 | 165 |
| BT50-BRA395-105 | P2779789 | 395 | 452 | 105 |
| BT50-BRA395-165 | P2779790 | 395 | 452 | 165 |




### RING ADAPTER 夹头

Unit (单位) : mm

| MODEL No. 型号 | EDP No. | D (h6) | L | C1 | C2 |
|---|---|---|---|---|---|
| BT50-RAA32- 60 | P2779791 | 32 | 60 | 102 | 82 |
| BT50-RAA32-120 | P2779792 | 32 | 120 | 102 | 82 |



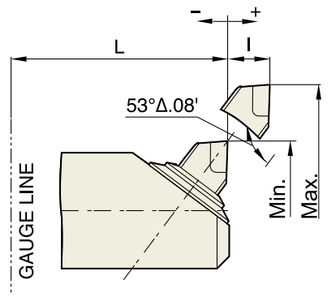

### RING HEAD 镗头

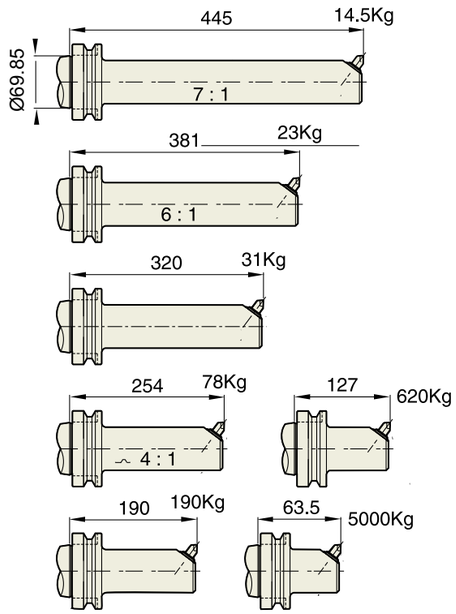
Unit (单位) : mm

| MODEL No. 型号 | EDP No. | D1 (h7) | D (BORE RANGE) 镗孔范围 Min. - Max. 最小 - 最大 | L | C1 | C2 | H | N | UNIT |
|---|---|---|---|---|---|---|---|---|---|
| RH32-BCA140 | P2779793 | 32 | 140 - 197 | 45 | 102 | 82 | 14 | - | M10A2TC |
| RH32-BCA191 | P2779794 | 32 | 191 - 248 | 45 | 136 | 82 | 14 | - | M10A2TC |
| RH32-BCA242 | P2779795 | 32 | 242 - 299 | 45 | 184 | 82 | 14 | 103 | M10A2TC |
| RH32-BCA293 | P2779796 | 32 | 293 - 350 | 45 | 234 | 82 | 14 | 103 | M10A2TC |
| RH32-BCA344 | P2779797 | 32 | 344 - 401 | 45 | 284 | 82 | 14 | 103 | M10A2TC |
| RH32-BCA395 | P2779798 | 32 | 395 - 452 | 45 | 36 | 82 | 14 | 103 | M10A2TC |

## Strength of BORING BAR and Comparison Table of MICRO UNITS

# 镗孔刀柄刚性及微切削刀头比较表




| BORING BAR MODEL No. 镗孔刀柄 型号 | BRAZED TYPE B EF | | SCREW ON TYPE 螺旋型 | | | INSERT SPEC. 刀片规格 |
|---|---|---|---|---|---|---|
| | Min. 最小 | Max. 最大 | Min. 最小 | Max. 最大 | ΔL | |
| BCA19 | M2B2 | M2B2 | - | - | - | CCGT0401 |
| | 19 | 23 | - | - | -1.9 | CCGT0401 |
| BCA23 | M3B2 | M3B2 | M3B2TC | M3B2TC | M3B2TC | TBGT060102 |
| | 23 | 29 | 24.9 | 30.9 | -1.9 | TBGT060102 |
| BCA29 | M3A2 | M3A2 | M3A2TC | M3A2TC | M3A2TC | TBGT060102 |
| | 29 | 41.8 | 30.9 | 43.8 | -1.9 | TBGT060102 |
| BCA38 | M5B2 | M5B2 | M5B2TC | M5B2TC | M5B2TC | TCGT110204 |
| | 38 | 49.2 | 40.9 | 52.1 | -1.9 | TCGT110204 |
| BCA46 | M5A2 | M5A2 | M5A2TC | M5A2TC | M5A2TC | TCGT110204 |
| | 46 | 66.6 | 48.9 | 69.5 | -1.9 | TCGT110204 |
| BCA62 | M7A2 | M7A2 | M7A2TC | M7A2TC | M7A2TC | TCGT16T304 |
| | 62 | 87.4 | 62 | 87.4 | 0 | TCGT16T304 |
| BCA83 | M7A2 | M7A2 | M7A2TC | M7A2TC | M7A2TC | TCGT16T304 |
| | 83 | 108.4 | 83 | 108.4 | 0 | TCGT16T304 |
| BCA98 | M10A2 | M10A2 | M10A2TC | M10A2TC | M10A2TC | TCGT16T304 |
| | 98 | 142.4 | 98 | 142.4 | 0 | TCGT16T304 |
| BCA132 | M10A2 | M10A2 | M10A2TC | M10A2TC | M10A2TC | TCGT16T304 |
| | 132 | 176.4 | 132 | 176.4 | 0 | TCGT16T304 |
| BCA166 | M10A2 | M10A2 | M10A2TC | M10A2TC | M10A2TC | TCGT16T304 |
| | 166 | 210.4 | 166 | 210.4 | 0 | TCGT16T304 |
| BCA200 | M10A2 | M10A2 | M10A2TC | M10A2TC | M10A2TC | TCGT16T304 |
| | 200 | 244.4 | 200 | 244.4 | 0 | TCGT16T304 |

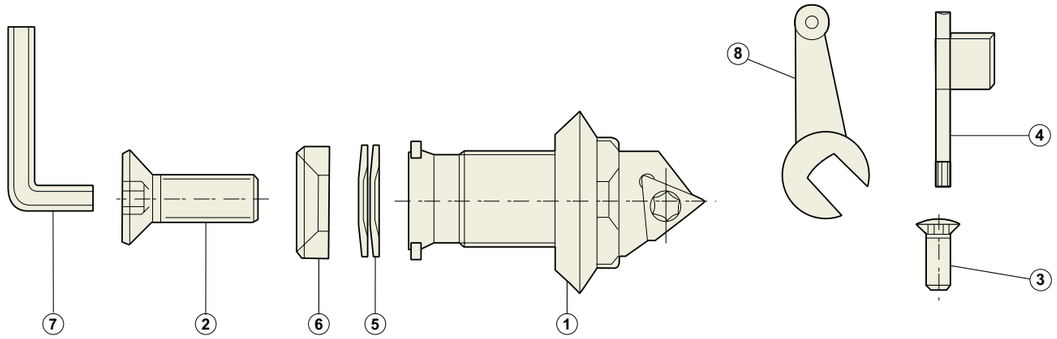


TOOLING SYSTEM
HYDRAULIC CHUCK
SHRINK FIT HOLDER
ER COLLET CHUCK
END MILL HOLDER & SIDE LOCK ARBOR
SHELL MILL ARBOR
POWER MILLING CHUCK
MORSE TAPER ARBOR
SK SLIM CHUCK
SYNCHRO TAPPING CHUCK
ONE STEP TAPPING CHUCK
TAPPING ER CHUCK
TAPPING CHUCK
FACE MILL ARBOR
COPY MILL ARBOR & INDEXABLE DRILL HOLDER
NC DRILL CHUCK & OTHER TOOL HOLDERS
BORING SYSTEM
ACCESSORY & OTHERS

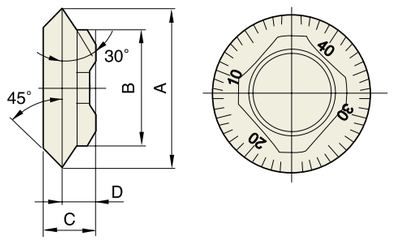
BORING SYSTEM
PART

## MICRO UNIT SPARE PART

# 微切削刀头配件




| PART NAME 零件名称 / ORDER No. 订单No. | | | M1A-B | M2A-B | M3A-B | M5A-B | M5A-B | M7A-B | M10A-B |
|---|---|---|---|---|---|---|---|---|---|
| 1 | DIAL NUT 刻度盘螺母 | Slant Angle 斜角 | 1-40 | 2-40 | 3-40 | 5-40 | 5-40 | 7-80 | 10-80 |
| | DIAL NUT 刻度盘螺母 | Right Angle 直角 | 1-50 | 2-50 | 3-50 | 5-50 | 5-50 | 7-100 | 10-100 |
| 2 | CARTRIDGE BOLT 刀片架螺栓 | M-A | F-M3-0.5-8 | F-M3-0.5-12 | F-M4-0.7-15 | F-M6-1.0-25 | F-M6-1.0-25 | F-M10-1.5-30 | M12-1.75-50 |
| | CARTRIDGE BOLT 刀片架螺栓 | M-B | M-M3-0.5-6 | M-M3-0.5-10 | M-M4-0.7-12 | M-M6-1.0-20 | M-M6-1.0-20 | M-M10-1.5-25 | M12-1.75-35 |
| 3 | INSERT SCREW 刀片螺钉 | | S1845L5 | S1845L5 | S2045L6 | S2555L6 | S2555L6 | S4095L6 | S4095L6 |
| 4 | T-WRENCH T形扳手 | | T6 | T6 | T6 | T8 | T8 | T15 | T15 |
| 5 | SPRING WASHER 弹簧垫圈 | | | CB-2 | CB-3 | CB-5 | CB-5 | CB-7 | CB-10 |
| 6 | MOUNTING WASHER 安装垫圈 | | | 2306 | 3306 | 5306 | 5306 | 7306 | 10306 |
| 7 | L-WRENCH L形扳手 | | WR-2 | WR-2 | WR-2.5 | WR-4 | WR-4 | WR-6 | WR-8 |
| 8 | SPANNER 扳手 | | GS12 | GS12 | GS35 | GS35 | GS35 | GS710 | GS710 |



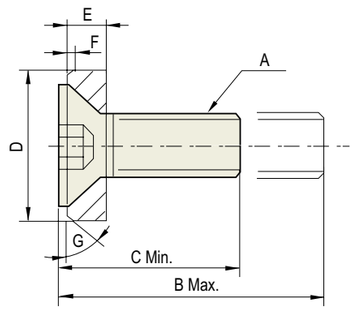




## ■ GRADUATED DIAL UNIT 刻度盘

Unit (单位) : mm

| SIZE | A | B | C | D |
|---|---|---|---|---|
| M1 | 9.53 | 6.99 | 4.45 | 2.54 |
| M2 | 12.7 | 9.53 | 5.08 | 3.30 |
| M3 | 15.88 | 11.3 | 5.59 | 3.56 |
| M5 | 25.4 | 19.05 | 8.76 | 4.83 |
| M7 | 34.93 | 25.40 | 11.68 | 7.11 |
| M10 | 44.45 | 34.93 | 13.84 | 7.49 |




## ■ LOCK SCREW AND WASHER 锁紧螺钉和垫圈

Unit (单位) : mm

| SIZE | A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|---|
| M1 | M3 | 8 | 6 | - | - | - | - |
| M2 | M3 | 12 | 10 | 7.82 | 1.83 | 0.5 | 45° |
| M3 | M4 | 15 | 12 | 10.9 | 2.46 | 1.0 | 45° |
| M5 | M6 | 25 | 20 | 15.7 | 4.32 | 0.8 | 37° |
| M7 | M10 | 30 | 25 | 23.7 | 6.35 | 1.30 | 37° |
| M10 | M12 | 50 | 35 | 31.6 | 7.92 | 2.5 | 37° |

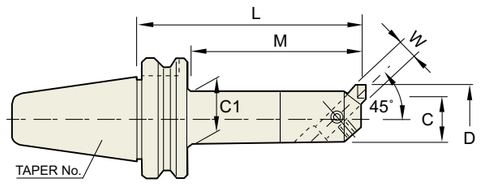
BORING SYSTEM

BSA

# SQUARE BORING BAR (45º)

JIS B6339/
MAS 403-BT

# 直角镗孔刀柄 (45°)




JIS B6339-BT | AT3 | A

Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | D (BORE RANGE) 镗孔范围 Min. - Max. 最小 - 最大 | L | C | C1 | W | M | WEIGHT (Kg) |
|---|---|---|---|---|---|---|---|---|---|
| 30 | BT30-BSA25-120 | P2775401 | 25 - 38 | 120 | 20 | 22 | 8 | 90 | 1.00 |
| | BT30-BSA30-135 | P2775402 | 30 - 42 | 135 | 24 | 26 | 8 | 105 | 1.10 |
| | BT30-BSA38-150 | P2775403 | 38 - 52 | 150 | 30 | 33 | 10 | 120 | 1.40 |
| | BT30-BSA42-150 | P2775404 | 42 - 56 | 150 | 34 | 37 | 10 | 125 | 1.60 |
| | BT30-BSA50-150 | P2775405 | 50 - 65 | 150 | 40 | 44 | 13 | 125 | 1.80 |
| 40 | BT40-BSA25-135 | P2775406 | 25 - 38 | 135 | 20 | 22 | 8 | 108 | 1.30 |
| | BT40-BSA30-165 | P2775407 | 30 - 42 | 165 | 24 | 26 | 8 | 138 | 1.50 |
| | BT40-BSA38-180 | P2775408 | 38 - 52 | 180 | 30 | 33 | 10 | 153 | 1.80 |
| | BT40-BSA42-210 | P2775409 | 42 - 56 | 210 | 34 | 37 | 10 | 183 | 2.30 |
| | BT40-BSA50-180 | P2775410 | 50 - 65 | 180 | 40 | 44 | 13 | 153 | 2.40 |
| | BT40-BSA50-225 | P2775411 | 50 - 65 | 225 | 40 | 44 | 13 | 198 | 2.90 |
| | BT40-BSA62-180 | P2775412 | 62 - 90 | 180 | 50 | 54 | 16 | 153 | 3.20 |
| | BT40-BSA62-240 | P2775413 | 62 - 90 | 240 | 50 | 54 | 16 | 213 | 4.20 |
| | BT40-BSA72-180 | P2775414 | 72 - 110 | 180 | 60 | 63 | 19 | 153 | 4.40 |
| | BT40-BSA72-240 | P2775415 | 72 - 110 | 240 | 60 | 63 | 19 | 213 | 5.70 |
| | BT40-BSA90-180 | P2775416 | 90 - 125 | 180 | 75 | 63 | 19 | 153 | 5.40 |
| 50 | BT50-BSA25-135 | P2775417 | 25 - 38 | 135 | 20 | 22 | 8 | 95 | 4.40 |
| | BT50-BSA30-165 | P2775418 | 30 - 42 | 165 | 24 | 26 | 8 | 125 | 4.60 |
| | BT50-BSA38-180 | P2775419 | 38 - 52 | 180 | 30 | 33 | 10 | 140 | 4.80 |
| | BT50-BSA42-210 | P2775420 | 42 - 56 | 210 | 34 | 37 | 10 | 170 | 5.00 |
| | BT50-BSA50-180 | P2775421 | 50 - 65 | 180 | 40 | 44 | 13 | 140 | 5.40 |
| | BT50-BSA50-240 | P2775422 | 50 - 65 | 240 | 40 | 44 | 13 | 200 | 5.70 |
| | BT50-BSA62-195 | P2775423 | 62 - 90 | 195 | 50 | 54 | 16 | 155 | 6.10 |
| | BT50-BSA62-270 | P2775424 | 62 - 90 | 270 | 50 | 54 | 16 | 230 | 7.50 |
| | BT50-BSA72-195 | P2775425 | 72 - 110 | 195 | 60 | 66 | 19 | 155 | 6.90 |
| | BT50-BSA72-285 | P2775426 | 72 - 110 | 285 | 60 | 66 | 19 | 245 | 9.30 |
| | BT50-BSA90-210 | P2775427 | 90 - 125 | 210 | 75 | 80 | 19 | 170 | 9.20 |
| | BT50-BSA90-300 | P2775428 | 90 - 125 | 300 | 75 | 80 | 19 | 260 | 12.30 |
| | BT50-BSA105-195 | P2775429 | 105 - 160 | 195 | 90 | 90 | 25 | 157 | 10.50 |
| | BT50-BSA105-285 | P2775430 | 105 - 160 | 285 | 90 | 90 | 25 | 247 | 14.80 |



TOOLING SYSTEM

HYDRAULIC CHUCK
SHRINK FIT HOLDER
ER COLLET CHUCK
END MILL HOLDER & SIDE LOCK ARBOR
SHELL MILL ARBOR
POWER MILLING CHUCK
MORSE TAPER ARBOR
SK SLIM CHUCK
SYNCHRO TAPPING CHUCK
ONE STEP TAPPING CHUCK
TAPPING ER CHUCK
TAPPING
FACE MILL ARBOR
COPY MILL ARBOR & INDEXABLE DRILL HOLDER
NC DRILL CHUCK & OTHER TOOL HOLDERS
BORING SYSTEM
ACCESSORY & OTHERS

BORING SYSTEM

BSB

# SQUARE BORING BAR (90º)

JIS B6339/
MAS 403-BT

# 直角镗孔刀柄 (90°)

FIG.1

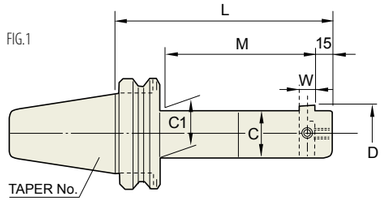
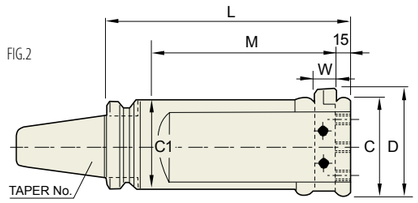



FIG.2




JIS B6339-BT | AT3 | A

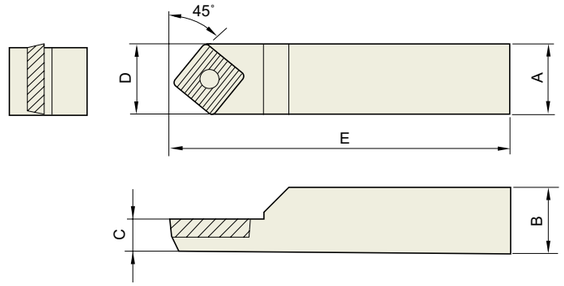
Unit (单位) : mm

| TAPER No. 锥度号 | MODEL No. 型号 | EDP No. | D (BORE RANGE) 镗孔范围 Min. - Max. 最小 - 最大 | L | C | C1 | W | M | WEIGHT 重量(Kg) | FIG. |
|---|---|---|---|---|---|---|---|---|---|---|
| 30 | BT30-BSB25-120 | P2775431 | 25 - 50 | 120 | 20 | 22 | 8 | 90 | 1.10 | 1 |
| | BT30-BSB38-150 | P2775432 | 38 - 70 | 150 | 30 | 33 | 10 | 120 | 1.50 | 1 |
| | BT30-BSB50-150 | P2775433 | 50 - 90 | 150 | 40 | 44 | 13 | 125 | 2.20 | 1 |
| 40 | BT40-BSB25-135 | P2775434 | 25 - 50 | 135 | 20 | 22 | 8 | 108 | 1.30 | 1 |
| | BT40-BSB38-180 | P2775435 | 38 - 70 | 180 | 30 | 33 | 10 | 153 | 1.90 | 1 |
| | BT40-BSB50-180 | P2775436 | 50 - 90 | 180 | 40 | 44 | 13 | 153 | 2.60 | 1 |
| | BT40-BSB50-225 | P2775437 | 50 - 90 | 225 | 40 | 44 | 13 | 198 | 3.10 | 1 |
| | BT40-BSB62-180 | P2775438 | 62 - 115 | 180 | 50 | 56 | 16 | 153 | 3.40 | 1 |
| | BT40-BSB62-225 | P2775439 | 62 - 115 | 225 | 50 | 56 | 16 | 198 | 4.10 | 1 |
| | BT40-BSB72-180 | P2775440 | 72 - 135 | 180 | 60 | 66 | 19 | 153 | 4.70 | 1 |
| | BT40-BSB72-225 | P2775441 | 72 - 135 | 225 | 60 | 66 | 19 | 198 | 5.60 | 1 |
| | BT40-BSB90-180 | P2775442 | 90 - 150 | 180 | 75 | 80 | 19 | 153 | 5.70 | 1 |
| | BT40-BSB90-225 | P2775443 | 90 - 150 | 225 | 75 | 80 | 19 | 198 | 6.60 | 1 |
| 50 | BT50-BSB25-135 | P2775444 | 25 - 50 | 135 | 20 | 22 | 8 | 95 | 4.10 | 1 |
| | BT50-BSB38-180 | P2775445 | 38 - 70 | 180 | 30 | 33 | 10 | 140 | 4.80 | 1 |
| | BT50-BSB50-180 | P2775446 | 50 - 90 | 180 | 40 | 44 | 13 | 140 | 5.50 | 1 |
| | BT50-BSB50-240 | P2775447 | 50 - 50 | 240 | 40 | 44 | 13 | 200 | 5.70 | 1 |
| | BT50-BSB62-195 | P2775448 | 62 - 115 | 195 | 50 | 56 | 16 | 155 | 6.40 | 1 |
| | BT50-BSB62-270 | P2775449 | 62 - 115 | 270 | 50 | 56 | 16 | 230 | 7.90 | 1 |
| | BT50-BSB72-195 | P2775450 | 72 - 135 | 195 | 60 | 66 | 19 | 155 | 7.30 | 1 |
| | BT50-BSB72-285 | P2775451 | 72 - 135 | 285 | 60 | 66 | 19 | 245 | 9.60 | 1 |
| | BT50-BSB90-210 | P2775452 | 90 - 150 | 210 | 75 | 80 | 19 | 170 | 9.60 | 1 |
| | BT50-BSB90-300 | P2775453 | 90 - 150 | 300 | 75 | 80 | 19 | 260 | 12.60 | 1 |
| | BT50-BSB105-195 | P2775454 | 105 - 190 | 195 | 90 | - | 25 | 155 | 11.10 | 2 |
| | BT50-BSB105-285 | P2775455 | 105 - 190 | 285 | 90 | 94 | 25 | 245 | 15.40 | 2 |

BORING SYSTEM

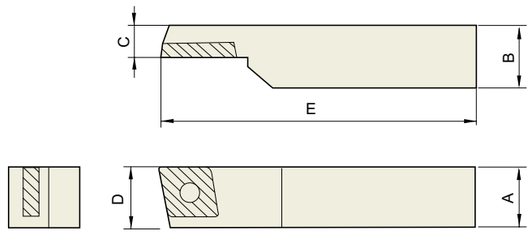
PART

## SQUARE BITE
## 四角刀片




Unit (单位) : mm

| CLASSIFICATION 分类 / SIZE 尺寸 | EDP No. | A | B | C | D | E | SCREW 螺钉 | WRENCH 扳手 | INSERT 刀片 |
|---|---|---|---|---|---|---|---|---|---|
| SBC08-45 | P2775456 | 08 | 08 | 6.3 | 8.39 | 70 | SSB-2506 | T7 | CCMT0602 |
| SBC10-45 | P2775457 | 10 | 10 | 7 | 10.39 | 70 | SSB-2506 | T7 | CCMT0602 |
| SBC13-45 | P2775458 | 13 | 13 | 10 | 13.6 | 80 | SSB-4009 | T15 | CCMT09T3 |
| SBC16-45 | P2775459 | 16 | 16 | 11 | 16.68 | 100 | SSB-5012 | T15 | CCMT1204 |
| SBC19-45 | P2775460 | 19 | 19 | 11 | 19.68 | 100 | SSB-5012 | T15 | CCMT1204 |
| SBC25-45 | P2775461 | 25 | 25 | 12.5 | 25.68 | 120 | SSB-5012 | T15 | CCMT1204 |




Unit (单位) : mm

| CLASSIFICATION 分类 / SIZE 尺寸 | EDP No. | A | B | C | D | E | SCREW 螺钉 | WRENCH 扳手 | INSERT 刀片 |
|---|---|---|---|---|---|---|---|---|---|
| SBC08-90 | P2775462 | 08 | 08 | 6.3 | 8.4 | 70 | SSB-2506 | T7 | CCMT0602 |
| SBC10-90 | P2775463 | 10 | 10 | 7 | 10.4 | 70 | SSB-2506 | T7 | CCMT0602 |
| SBC13-90 | P2775464 | 13 | 13 | 10 | 13.6 | 80 | SSB-4009 | T15 | CCMT09T3 |
| SBC16-90 | P2775465 | 16 | 16 | 11 | 16.7 | 100 | SSB-5012 | T15 | CCMT1204 |
| SBC19-90 | P2775466 | 19 | 19 | 11 | 19.7 | 100 | SSB-5012 | T15 | CCMT1204 |
| SBC25-90 | P2775467 | 25 | 25 | 12.5 | 25.7 | 120 | SSB-5012 | T15 | CCMT1204 |



YG-1 TOOLING SYSTEM

# ACCESSORY & OTHERS

# 辅件 & 其他

**PULL STUD BOLT**
PULL STUD BOLT & SPANNER

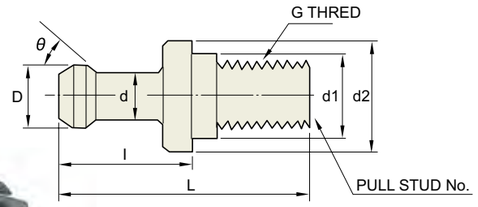
**TOOL CLAMP**

**HEIGHT PRESETTER**

**COOLANT TUBE & SPANNER**

**TECHNICAL DATA : SHANK STANDARD**
DIN 69871-SK / JIS B6339/MAS 403-BT / DIN 69893/ISO 12164-1-HSK
ANSI/ASME B5.50-CAT
DIN 228 (MORSE TAPER) : TANG / SCREW TYPE

# PULL STUD BOLT & SPANNER
# PS拉钉&PS拉钉扳手



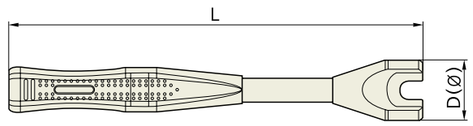

## ■ PULL STUD BOLT PS拉钉

Unit (单位) : mm

| MODEL No. 型号 | EDP No. | D | d2 | d1 | d | L | l | G | O | TYPE |
|---|---|---|---|---|---|---|---|---|---|---|
| PS-1 | P2775051 | 15 | 23 | 17 | 10 | 60 | 35 | M16 | 45° | BT40-I STANDARD TYPE |
| PS-2 | P2775052 | 15 | 23 | 17 | 10 | 60 | 35 | M16 | 60° | BT40-II STANDARD TYPE |
| PS-805 | P2775101 | 19 | 23 | 17 | 14 | 54 | 29 | M16 | 75° | BT40 |
| PS-806 | P2775102 | 19 | 23 | 17 | 14 | 54 | 29 | M16 | 75° | BT40 (Through Hole) |
| PS-5 | P2775053 | 23 | 38 | 25 | 17 | 85 | 45 | M24 | 45° | BT50-I STANDARD TYPE |
| PS-6 | P2775054 | 23 | 38 | 25 | 17 | 85 | 45 | M24 | 60° | BT50-II STANDARD TYPE |
| PS-16 | P2775055 | 11 | 16.5 | 12.5 | 7 | 43 | 23 | M12 | 45° | BT30-I STANDARD TYPE |
| PS-17 | P2775056 | 11 | 16.5 | 12.5 | 7 | 43 | 23 | M12 | 60° | BT30-II STANDARD TYPE |
| PS-0 | P2506706 | 23 | 38 | 25 | 17 | 85 | 45 | M24 | 90° | for BT50 OKK |
| PS-08 | P2506703 | 15 | 23 | 17 | 10 | 60 | 35 | M16 | 90° | for BT40 OKK |
| PS-P | P2775057 | 24 | 36 | 25 | 18 | 71 | 31 | M24 | 90° | for BT50 MITISUI SEIKI |
| PS-P5 | P2775058 | 15 | 23 | 17 | 10 | 50 | 25 | M16 | 90° | for BT40 MITISUI SEIKI |
| PS-G41 | P2775059 | 29 | 37 | 25 | 21 | 65.2 | 25.2 | M24 | 45° | for BT50 MAZAK |
| PS-G51 | P2775060 | 18.8 | 22 | 17 | 12.45 | 44.1 | 19.1 | M16 | 45° | for BT40 MAZAK |
| PS-S2 | P2775061 | 25 | 39 | 25 | 18 | 95 | 55 | M24 | 60° | for SHIN NIPPON KOKI |
| PS-F1 | P2775062 | 23 | 39 | 25 | 18 | 104 | 64 | M24 | 45° | for MITSUBISHI |
| PS-B1 | P2775063 | 22 | 38 | 25 | 16 | 112 | 72 | M24 | 60° | for OKUMA |
| PSS-1 | P2506707 | 19 | 23 | 17 | 14 | 54 | 26 | M16 | 75° | for SK40 |
| PSS-5 | P2506708 | 28 | 36 | 25 | 21 | 74 | 34 | M24 | 75° | for SK50 |

▶ Upon requests, other pull stud bolts with special dimensions could be produced and supplied.
根据要求，可供应通孔型(H type)拉钉

▶ Through hole type (“H” Type) is available upon request.
根据要求，可供应特殊规格的产品




## ■ PULL STUD BOLT SPANNER PS拉钉扳手

Unit (单位) : mm

| MODEL No. 型号 | EDP No. | D | L | WEIGHT 重量(Kg) | TYPE |
|---|---|---|---|---|---|
| PSWB-30 | P2775064 | 27 | 210 | 0.30 | BT30 |
| PSWB-40 | P2775065 | 37 | 230 | 0.40 | BT40 |
| PSWB-50 | P2775066 | 49 | 280 | 0.78 | BT50 |





# PULL STUD BOLT
# PS拉钉

## ■ APPLICATION TABLE OF PULL STUD BOLT PS拉钉应用表

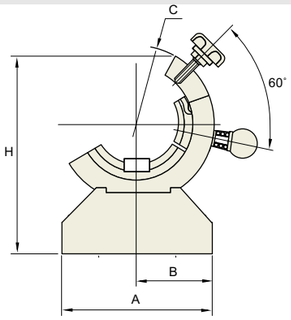
| MACHINE MANUFACTURER 设备制造商 | MACHINE MODEL No. 设备型号 | TAPER No. 锥度号 | PS BOLT |
|---|---|---|---|
| DOOSAN | T 4000 | BT30 | PS-16 |
| | DT 360D | BT30 | PS-16 |
| | DNM 400II/500II/ 650II | BT40 | PSS-1 |
| | DNM 750II/40 | BT40 | PSS-1 |
| | DNM 750II/50 | BT50 | PS-5 |
| | Mynx 6500 | BT50 | PS-5 |
| | Mynx 7500 | BT50 | PS-5 |
| | VM 5400/6500 | BT40 | PSS-1 |
| | VM 750 | BT50 | PS-5 |
| | VM 960 | BT50 | PS-5 |
| | VM 1260 | BT50 | PS-5 |
| | VC 430 | BT40 | PSS-1 |
| | VC 510 | BT40 | PSS-1 |
| | DVM 500II | BT40 | PSS-1 |
| | DVM 5650II | BT40 | PSS-1 |
| | NX 4500II | BT40 | PSS-1 |
| | NX 5500II | BT40 | PSS-1 |
| | NX 6500II | BT40 | PSS-1 |
| | NHM 5000 | BT50 | PS-5 |
| | NHM 6300 | BT50 | PS-5 |
| | NHM 8000 | BT50 | PS-5 |
| | NHM 1000 | BT50 | PS-5 |
| | NHM 1250 | BT50 | PS-5 |
| | NHP 5000 | BT50 | PS-5 |
| | NHP 6300 | BT50 | PS-5 |
| | HC 400II | BT40 | PSS-1 |
| | HC 500II | BT40 | PSS-1 |
| WIA | i-CUT 380T/420T | BT30 | PS-16 |
| | i-CUT 400T/M | BT30 | PS-16 |
| | F 400/500/650 | BT40 | PS-1 |
| | F 500/650 | BT50 | PS-5 |
| | F 510M/550M/660M | BT40 | PS-1 |
| | F 510B | BT40 | PS-1 |
| | F 600B/750B/960B | BT50 | PS-5 |
| | KH 50G/63G | BT50 | PS-5 |
| | KH 80G/1000 | BT40 | PS-1 |
| | HS 5000 | BT40 | PS-1 |
| | HS 5000/6300/8000 | BT50 | PS-5 |

| MACHINE MANUFACTURER 设备制造商 | MACHINE MODEL No. 设备型号 | TAPER No. 锥度号 | PS BOLT |
|---|---|---|---|
| SEMC | Any Mill LCV30A/B | BT30 | PS-17 |
| | Any Mill LCV55S | BT50 | PS-6 |
| | Any Mill LCV650S | BT50 | PS-5 |
| | Any Mill ICV66 | BT50 | PS-5 |
| | Any Mill ICV80 | BT50 | PS-5 |
| | DMC-3000 | BT50 | PS-0 |
| | PCH40 | BT40 | PS-1 |
| | PCH50 | BT50 | PS-5 |
| HWACHEON | SIRIUS-1 | BT30 | PS-16 |
| | SIRIUS-550 | BT40 | PS-1 |
| | SIRIUS-UL/ULG | BT40 | PS-1 |
| | SIRIUS-7040 | BT50 | PS-0 |
| | SIRIUS-650/650N | BT50 | PS-0 |
| | SIRIUS-850/850N | BT50 | PS-0 |
| | SIRIUS-700 | BT50 | PS-0 |
| | SIRIUS-12580 | BT50 | PS-0 |
| S&T | TCH-45 | BT40 | PS-1 |
| | TCH-50 | BT50 | PS-6 |
| | TCH-80 | BT50 | PS-6 |
| | TCH-80TS | BT50 | PS-6 |
| | FX-500H | BT40 | PS-2 |
| | TNV-40A | BT40 | PS-1 |
| | TNV-80A | BT40 | PS-1 |
| | TNV-650V | BT50 | PS-6 |
| HASS | TM-1/2 | BT40 | PS-1 |
| | VF-4SS/3SS/2SS | BT40 | PS-1 |
| | VF-2TR | BT40 | PS-1 |
| | VF-5/50TR | BT50 | PS-5 |
| | VF-9/50 | BT50 | PS-5 |
| | VF-8/50 | BT50 | PS-5 |
| MAZAK | | BT40 | PS-G51 |
| | | BT50 | PS-G41 |
| MORI SEKI | | BT40 | PS-08 |
| | | BT50 | PS-51 |

ACCESSORY & OTHERS

TC

## TOOL CLAMP
# 工具夹持器



• Flange Clamping Design

Unit (单位) : mm

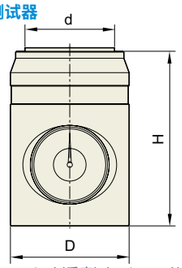
| TAPER No.<br>锥度号 | MODEL No.<br>型号 | EDP No. | A | B | C | H | WEIGHT<br>重量(Kg) |
|---|---|---|---|---|---|---|---|
| BT30 | **TCP30** | **P2775067** | 125 | 65 | 108 | 135 | 3.00 |
| BT40 | **TCP40** | **P2775068** | 160 | 80 | 138 | 180 | 7.60 |
| BT50 | **TCP50** | **P2775069** | 180 | 90 | 165 | 205 | 8.60 |
| SK30 | **TSK30** | **P2775070** | 125 | 65 | 108 | 135 | 3.00 |
| SK40 | **TSK40** | **P2775071** | 160 | 80 | 138 | 180 | 7.60 |
| SK50 | **TSK50** | **P2775072** | 180 | 90 | 165 | 205 | 8.60 |
| HSK32 | **THSK32** | **P2775073** | 125 | 65 | 108 | 135 | - |
| HSK40 | **THSK40** | **P2775074** | - | - | - | - | - |
| HSK50 | **THSK50** | **P2775075** | - | - | - | - | - |
| HSK63 | **THSK63** | **P2775076** | 160 | 80 | 138 | 180 | - |
| HSK100 | **THSK100** | **P2775077** | 180 | 90 | 165 | 205 | - |

▶Tool clamp for CAT tepare available.
可提供CAT teppa工具夹

HP

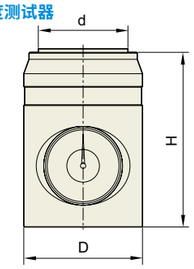
## HEIGHT PRESETTER
# 高度压力测试器

### MAGNETIC HEIGHT PRESETTER
磁性高度压力测试器




• Both vertical and horizontal type usable Vertical (垂直), horizontal(水平)均可使用
• Slim design Vertical (垂直)专用

### HEIGHT PRESETTER
高度测试器




• Exclusively for vertical Vertical(垂直)专用

Unit (单位) : mm

| MODEL No.<br>型号 | EDP No. | D | H | d | DIAL |
|---|---|---|---|---|---|
| **MHP-100 (magnetic)** | **P2591001** | 76 | 100 | 33 | 0.01 |
| **HP-100** | **P2775901** | 68 | 100 / - 0.01 | 33 | 0.01 |

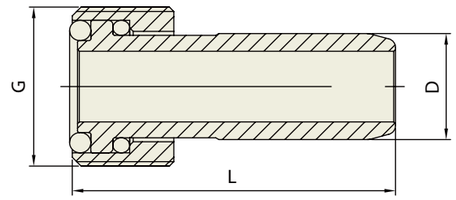


TOOLING SYSTEM
HYDRAULIC CHUCK
SHRINK FIT HOLDER
ER COLLET CHUCK
END MILL HOLDER & SIDE LOCK ARBOR
SHELL MILL ARBOR
POWER MILLING CHUCK
MORSE TAPER ARBOR
SK SLIM CHUCK
SYNCHRO TAPPING CHUCK
ONE STEP TAPPING CHUCK
TAPPING ER CHUCK
TAPPING CHUCK
FACE MILL ARBOR
COPY MILL ARBOR & INDEXABLE DRILL HOLDER
NC DRILL CHUCK & OTHER TOOL HOLDERS
BORING SYSTEM
ACCESSORY & OTHERS

ACCESSORY & OTHERS

CT

## COOLANT TUBE
# 冷却管

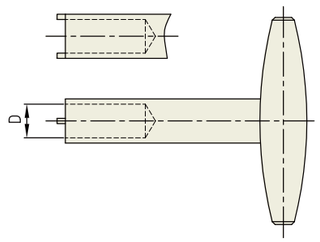



Unit (单位) : mm

| TAPER No.<br>锥度号 | EDP No. | G | D | WEIGHT<br>重量(Kg) |
|---|---|---|---|---|
| **32A** | **P2775078** | M10 | 6 | |
| **40A** | **P2775079** | M12 | 8 | |
| **50A** | **P2775080** | M16 | 10 | |
| **63A** | **P2775081** | M18 | 12 | |
| **80A** | **P2775106** | M20 | 14 | |
| **100A** | **P2775082** | M24 | 16 | |

CTS

## COOLANT TUBE SPANNER
# 冷却管扳手




Unit : mm

| TAPER No. | EDP No. | D |
|---|---|---|
| **HSK32** | **P2775103** | 6 |
| **HSK40** | **P2775104** | 8 |
| **HSK50** | **P2775089** | 10 |
| **HSK63** | **P2775087** | 12 |
| **HSK80** | **P2775105** | 14 |
| **HSK100** | **P2775090** | 16 |

▶Design and shape could be changed without prior notice.
设计及形状如有更改，恕不另行通知

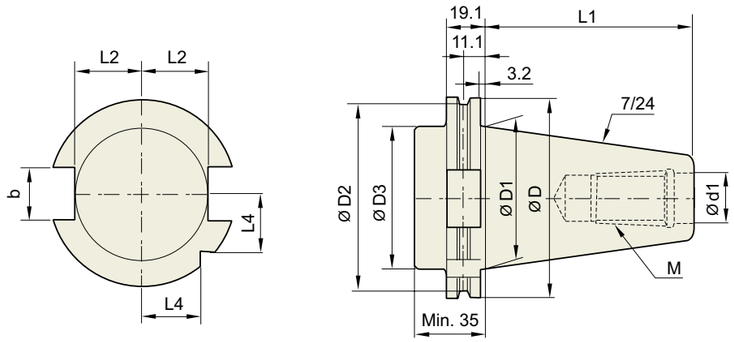
ACCESSORY & OTHERS

STD

## TECHNICAL DATA : SHANK STANDARD

DIN 69871-SK

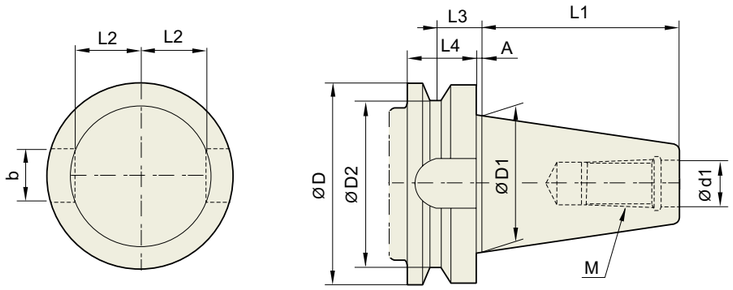
# 技术资料：标准柄部




Unit (单位) : mm

| TAPER No. 锥度号 | ØD | ØD1 | ØD2 | ØD3 | Ød1 | L1 | L2 | L3 | L4 | b | M |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **SK30** | 50 | 31.75 | 44.3 | 45 | 13 | 47.8 | 16.4 | 19 | 15 | 16.1 | M12×1.75 |
| **SK40** | 63.55 | 44.45 | 56.25 | 50 | 17 | 68.4 | 22.8 | 25 | 18.5 | 16.1 | M16×2.0 |
| **SK50** | 97.5 | 69.85 | 91.25 | 80 | 25 | 101.75 | 35.5 | 37.7 | 30 | 25.7 | M24×3.0 |

## JIS B6339/ MAS 403-BT




Unit (单位) : mm

| TAPER No. 锥度号 | ØD | ØD1 | ØD2 | Ød13. | L1 | L2 | L3 | L4 | A | b | M |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **BT30** | 46 | 31.75 | 38 | 12.5 | 48.4 | 16.3 | 13.6 | 20 | 2 | 16.1 | M12×1.75 |
| **BT40** | 63 | 44.45 | 53 | 17 | 65.4 | 22.6 | 16.6 | 25 | 2 | 16.1 | M16×2 |
| **BT50** | 100 | 69.85 | 85 | 25 | 101.8 | 35.4 | 23.2 | 35 | 3 | 25.7 | M24×3 |
| **BT60** | 155 | 107.95 | 135 | 31 | 161.8 | 60.1 | 28.2 | 45 | 3 | 25.7 | M30×3.5 |



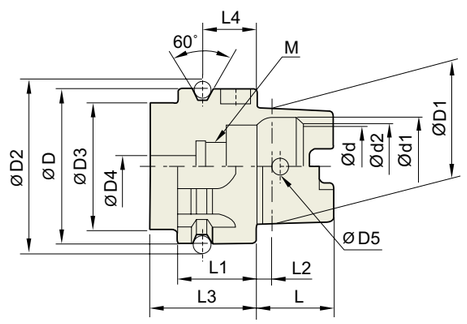
ACCESSORY & OTHERS

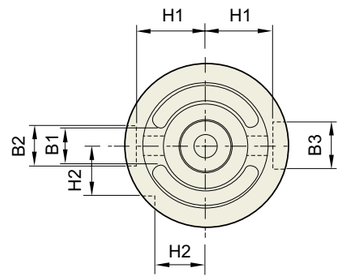
STD

## TECHNICAL DATA : SHANK STANDARD

DIN 69893/ ISO12164-1-HSK

# 技术资料：标准柄部




Unit (单位) : mm

| TAPER No. 锥度号 | ØD | ØD1 | ØD2 | ØD3 | ØD4 | ØD5 | L | L1 | L2 | L3 | L4 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **HSK32A** | 32 | 24 | 37.00 | 26 | 4.2 | 4.0 | 16 | 20 | 3.2 | 35 | 16 |
| **HSK40A** | 40 | 30 | 45.00 | 34 | 5.0 | 4.6 | 20 | 20 | 4.0 | 35 | 16 |
| **HSK50A** | 50 | 38 | 59.30 | 42 | 6.8 | 6.0 | 25 | 26 | 5.0 | 42 | 18 |
| **HSK63A** | 63 | 48 | 72.30 | 53 | 8.4 | 7.5 | 32 | 26 | 6.3 | 42 | 18 |
| **HSK80A** | 80 | 60 | 88.8 | 68 | 10.2 | 8.5 | 40 | 26 | 8 | 42 | 18 |
| **HSK100A** | 100 | 75 | 109.75 | 85 | 12.0 | 12.0 | 50 | 29 | 10.0 | 45 | 20 |

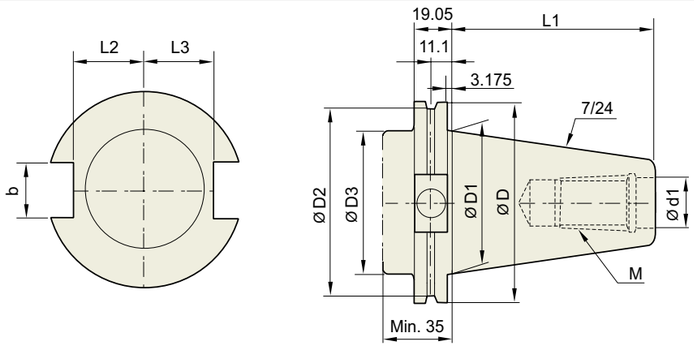
Unit (单位) : mm

| TAPER No. 锥度号 | Ød | Ød1 | Ød2 | B1 | B2 | B3 | H1 | H2 | L4 |
|---|---|---|---|---|---|---|---|---|---|
| **HSK32A** | 17 | 20.5 | 19 | 7.05 | 7 | 9 | 13.0 | 9.5 | M10×1.0 |
| **HSK40A** | 21 | 25.5 | 23 | 8.05 | 9 | 11 | 17.0 | 12.0 | M12×1.0 |
| **HSK50A** | 26 | 32.0 | 29 | 10.54 | 12 | 14 | 21.0 | 15.5 | M16×1.0 |
| **HSK63A** | 34 | 40.0 | 37 | 12.54 | 16 | 18 | 26.5 | 20.0 | M18×1.0 |
| **HSK80A** | 42 | 50 | 46 | 16.04 | 18 | 20 | 34 | 25 | M20×1.5 |
| **HSK100A** | 53 | 63.0 | 58 | 20.02 | 20 | 22 | 44.0 | 31.5 | M24×1.5 |

## TECHNICAL DATA : SHANK STANDARD

## 技术资料：标准柄部

ANSI/
ASME B5.50-CAT (OLD : 1978)




Unit (单位) : mm

| TAPER No.<br>锥度号 | ØD | ØD1 | ØD2 | ØD3 | Ød1 | L1 | L2 | L3 | b | M |
|---|---|---|---|---|---|---|---|---|---|---|
| **CAT30** | 50 | 31.75 | 44.3 | 31.75 | 13 | 47.625 | 16.25 | 18.67 | 16.1 | UNC1/2-13 |
| **CAT40** | 63.55 | 44.45 | 56.25 | 44.45 | 17 | 68.25 | 22.60 | 25 | 16.1 | UNC5/8-11 |
| **CAT50** | 97.5 | 69.85 | 91.25 | 70.1 | 25 | 101.6 | 35.3 | 37.7 | 25.7 | UNC1-18 |
| **CAT60** | 155 | 107.95 | 132.56 | 108 | 32 | 161.93 | 54 | 59.3 | 25.7 | UNC1,1/4-7 |

## ANSI/
## ASME B5.50-CAT (NEW : Revision 2009)

Unit (单位) : mm

| TAPER No.<br>锥度号 | ØD | ØD1 | ØD2 | ØD3 | Ød1 | L1 | L2 | L3 | b | P | M |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **CAT30** | 46.02 | 31.75 | 38.89 | 46.02 | 13 | 47.625 | 16.25 | 18.67 | 16.1 | - | UNC1/2-13 |
| **CAT40** | 63.5 | 44.45 | 56.36 | 63.5 | 17 | 68.25 | 22.6 | 25 | 16.1 | - | UNC5/8-11 |
| **CAT50** | 98.43 | 69.85 | 91.29 | 98.43 | 25 | 101.6 | 35.3 | 37.7 | 25.7 | - | UNC1-18 |
| **CAT60** | 139.7 | 107.95 | 132.56 | 139.7 | 32 | 161.93 | 54 | 59.3 | 25.7 | - | UNC1 1/4-7 |

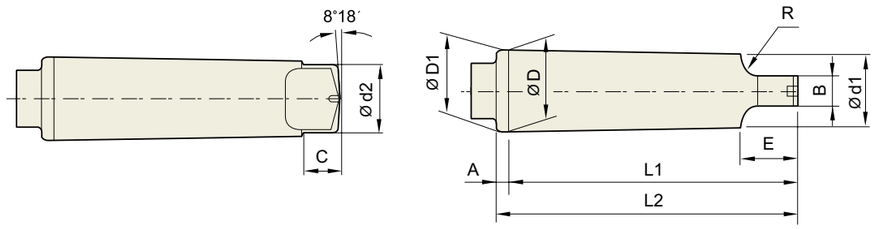




## TECHNICAL DATA : SHANK STANDARD

## 技术资料：标准柄部

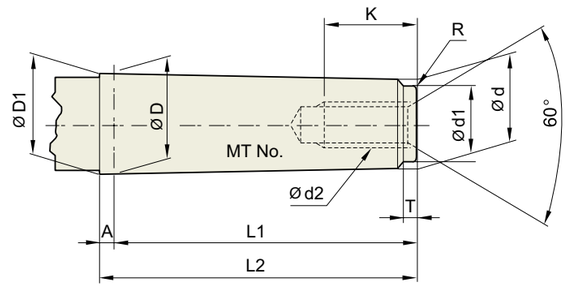
DIN 228 (MORSE TAPER)
TANG TYPE (MTA)




Unit (单位) : mm

| TAPER No.<br>锥度号 | TAPER RATIO<br>(Rad) | TAPER ANGLE<br>(α) | ØD | A3 | ØD1 | Ød1 | L1 | L2 | Ød2 | B | C | E | R |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **MT0** | 1/19.212 | 1°29´27´´ | 9.045 | 3 | 9.045 | 6.104 | 56.5 | 59.5 | 6.0 | 3.9 | 6.5 | 10.5 | 4 |
| **MT1** | 1/20.047 | 1°25´43´´ | 12.065 | 3.5 | 12.065 | 8.972 | 62.0 | 65.5 | 8.7 | 5.2 | 8.5 | 13.5 | 5 |
| **MT2** | 1/20.020 | 1°25´50´´ | 17.780 | 5 | 17.780 | 14.034 | 75.0 | 80.0 | 13.5 | 6.3 | 10 | 16 | 6 |
| **MT3** | 1/19.922 | 1°26´16´´ | 23.825 | 5 | 23.825 | 19.107 | 94.0 | 99.0 | 18.5 | 7.9 | 13 | 20 | 7 |
| **MT4** | 1/19.254 | 1°29´15´´ | 31.267 | 6.5 | 31.267 | 25.164 | 117.5 | 124.0 | 24.5 | 11.9 | 16 | 24 | 8 |
| **MT5** | 1/19.002 | 1°30´26´´ | 44.399 | 6.5 | 44.399 | 36.531 | 149.5 | 156.0 | 35.7 | 15.9 | 19 | 29 | 10 |
| **MT6** | 1/19.180 | 1°29´36´´ | 63.348 | 8 | 63.348 | 52.399 | 210.0 | 218.0 | 51.0 | 19.0 | 27 | 40 | 13 |
| **MT7** | 1/19.231 | 1°29´22´´ | 83.058 | 10 | 83.058 | 68.186 | 286.0 | 296.0 | 66.8 | 28.6 | 35 | 54 | 19 |

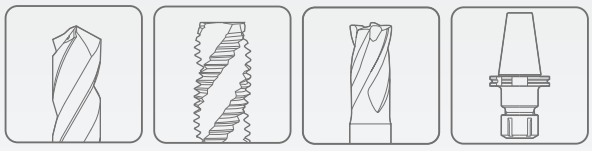
## DIN 228 (MORSE TAPER)
## SCREW TYPE (MTB)




Unit (单位) : mm

| TAPER No.<br>锥度号 | TAPER RATIO<br>(Rad) | TAPER ANGLE<br>(α) | ØD | A | ØD1 | d | L1 | L2 | Ød1 | d2 | K | T | R |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **MT0** | 1/19.212 | 1°29´27´´ | 9.045 | 3 | 9.201 | 6.442 | 50 | 53 | 6.4 | - | - | 4 | 0.2 |
| **MT1** | 1/20.047 | 1°25´43´´ | 12.065 | 3.5 | 12.230 | 9.396 | 53.5 | 57 | 9.4 | M6 | 16 | 5 | 0.2 |
| **MT2** | 1/20.020 | 1°25´50´´ | 17.780 | 5 | 18.030 | 14.583 | 64 | 69 | 14.6 | M10 | 24 | 5 | 0.2 |
| **MT3** | 1/19.922 | 1°26´16´´ | 23.825 | 5 | 24.076 | 19.759 | 81 | 86 | 19.8 | M12 | 28 | 7 | 0.6 |
| **MT4** | 1/19.254 | 1°29´15´´ | 31.267 | 6.5 | 31.605 | 25.943 | 102.5 | 109 | 25.9 | M16 | 32 | 9 | 1 |
| **MT5** | 1/19.002 | 1°30´26´´ | 44.399 | 6.5 | 44.741 | 37.584 | 129.5 | 136 | 37.6 | M20 | 40 | 9 | 2.5 |
| **MT6** | 1/19.180 | 1°29´36´´ | 63.348 | 8 | 63.765 | 53.859 | 182 | 190 | 53.9 | M24 | 50 | 12 | 4 |
| **MT7** | 1/19.231 | 1°29´22´´ | 83.058 | 10 | 83.578 | 70.058 | 250 | 260 | 70.0 | M33 | 80 | 18.5 | 5 |

Global Cutting Tool Leader **YG-1**



# YG-1 CO., LTD.


## HEAD OFFICE

13-40, Songdogwahak-ro 16beon-gil, Yeonsu-gu, Incheon 21984, South Korea

Notice YG-1 Global head office is relocating from December 2020 to a new address as above;

**Phone: +82-32-526-0909**

**Https://www.yg1.kr  E-mail: yg1@yg1.kr**



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