



Solid Carbide Endmills

INDEX

| | | |
|---|--------------------|--|
| A | Basic Information | <p>Notes of Caution 007</p> <p>Guidelines to Icons 008</p> <p>Tungsten Carbide Grades 009</p> <p>Coating 010</p> <p>Solid Carbide Endmills Identification System 012</p> <p>Endmills Index 018</p> <p>Application Summary Of Solid carbide Endmills 020</p> <p>Series Introduction 021</p> |
| B | Endmills Series | <p>钢件、铸铁加工立铣刀 025 Endmills for Steels and Cast Iron</p> <p>高硬钢加工立铣刀 085 Endmills for Hardened Steels</p> <p>不锈钢加工立铣刀 099 Endmills for Stainless Steels</p> <p>铝合金加工立铣刀 112 Endmills for Aluminum Alloys</p> <p>石墨加工立铣刀 129 Endmills for Graphite</p> |
| C | Cutting Parameters | <p>铣削加工的切削参数与通用计算公式 135 Cutting Parameters and General Formula</p> <p>推荐切削参数 136 Recommended Cutting Parameters</p> <p>工件材料表 156 Workpiece Material Table</p> |
| D | Appendix | <p>立铣刀新旧型号对照表 157 Comparison Table of New and Used Endmill Type</p> |

刀具使用注意事项

Notes of Caution

《使用注意事项》是为了安全使用本产品，防止使用者和其他人受到危害或财产损失的重要内容。选择产品前，请仔细阅读本产品的产品规格和功能。在使用本产品时，请仔细阅读本《使用注意事项》，并正确使用。阅读后，请放置于使用者随时能看到的地方进行保管。

Optimized precautions are extremely important for the safe use of cutting tools. Operators and others personnel in the vicinity must be protected from harm and possible injury. Read all product specifications and application recommendations carefully before selecting the appropriate cutting tool. Read and follow the below precautions carefully when applying cutting tools. Keep this precautionary information in a location where it can be referred to by all necessary personnel.

一.操作前的注意事项

Precautions before use

- ① 请不要让小孩及未经培训人员接近或使用本产品；
Cutting tool should only be used by optimizedly trained personnel.
- ② 请将本产品保存在避光、正常温度和湿度地方；
Store cutting tools in their protective containers in a dry place, away from humidity.
- ③ 使用本产品进行切削加工时，可能会有火星飞溅出来，请保持安全距离；
Cutting tools can throw sparks during use. Always take appropriate cautionary measures.
- ④ 操作场所必须严禁火种，不得在操作现场附近放置汽油等易燃性危险物品；
Do not use cutting tools in the vicinity or near any flammable materials.
- ⑤ 使用本产品时需使用防护目镜之类的保护物，请勿直接用手接触刀刃；
Wear eye protection when using this product. Do not come in direct contact with sharp cutting edges.
- ⑥ 在使用本产品前，务必先确认刀具尺码以及工件的尺寸，旋转的方向等，在确定没有伤痕和裂缝的情况下再行操作；
Only use cutting tools in their intended direction of rotation. Do not use tools that are damaged, excessively worn, or show any sign of major fatigue or cracking.
- ⑦ 在使用本产品前，请一定要试运行，确认机床和夹具是否平衡；
Be sure that the machine / toolholder / cutting tool assembly are secure before operating machine.
- ⑧ 为确保本产品正常使用和您的安全，请不要在特殊环境使用本产品或将产品用于其他目的。
Always apply cutting tools only in the manner in which they are intended.

二.操作中的注意事项

Precautions during use

- ① 操作时一定要佩戴安全帽、防护眼镜、口罩等防护器具，同时机床需要使用遮蔽防护板等，以防止火花的飞溅；
Always wear approved protective eyewear.. Machine guards must always be in place before cutting is started.
- ② 严禁在加工时触摸刀具和加工物以免受伤；
Never come in direct contact with cutting edges.
- ③ 严禁触摸转动刀具和加工件等，以免受伤；
Never touch a rotating cutting tool or workpiece.
- ④ 加工场所应配备通风设施，收集并妥善处理磨削作业时所产生的灰尘、雾气和碎屑；
The workshop should be optimizedly equipped with adequate ventilation and accommodations for chip removal.
- ⑤ 要根据加工件的形状和机械的刚性来调整切削条件，切削性能（锋利程度）降低或旋转速度发生变化时，请务必对本产品进行维修或更换本产品；
Cutting conditions and cutting parameters should be modified as required to maintain a safe operating environment.
- ⑥ 加工操作中发生异常震动时，请立即停止操作；
If abnormal or excessive vibration occurs, immediately stop the machine and cutting process.
- ⑦ 在使用本产品时，请根据需要合适地使用切削液。
Use cutting fluid optimizedly when using this product.

三.操作结束后的注意事项















Precautions after use

- ① 请勿用身体或手直接接触刚加工后的本产品（特别是工具）和加工工件；
Never come in direct contact with the cutting tool or workpiece. They may be hot and have sharp edges.
- ② 如需接触加工后的物品，请做好必要的防护；
Wear approved protective gear when coming in contact with sharp edges.
- ③ 客户自行磨削本产品（工具）时，一定要采取通风换气、戴防尘口罩、装吸尘器防尘的措施。
Grinding of the product produces hazardous dust. Approved safety equipment must be worn. Take all necessary safety measures included Optimized ventilation and disposal of grinding dust.

标记说明

GUIDELINES TO ICONS

| | 标示 Mark | 说明 Description |
|------------------------|---|--|
| 柄部形状 Shank |  | ISO 标准柄部 ISO Standard Shank |
| 涂层 Coating |  | AlTiN涂层 AlTiN Coating |
| |  | AlCrN涂层 AlCrN Coating |
| |  | AlCrSiN涂层 AlCrSiN Coating |
| |  | TiAlN涂层 TiAlN Coating |
| |  | 粗晶金刚石涂层 Normal Diamond Coating |
| |  | 超细晶金刚石涂层 Ultra Fine Grain Diamond Coating |
| 底刃形状 Endteeth Type |  | 平头 Square End |
| |  | 圆角头 Corner Radius |
| |  | 球头 Ballnose |
| |  | 倒角 Chamfer |
| 螺旋角 Helix |  | 30° 螺旋角 30° Helix |
| |  | 35° 螺旋角 35° Helix |
| |  | 双螺旋角 Variable Helix |
| |  | 40° 螺旋角 40° Helix |
| |  | 45° 螺旋角 45° Helix |
| 切削方式 Cutting Condition |  | 侧铣 For Side Milling |
| |  | 槽铣 For Slotting |
| |  | 仿形切削 For Profile Milling |

| | 标示 Mark | 说明 Description |
|-------------------------|--|--|
| 刃数 No. of Flutes |  | 2 刃铣刀 2 Flute Endmills |
| |  | 3 刃铣刀 3 Flute Endmills |
| |  | 4 刃铣刀 4 Flute with Variable Helix Endmills |
| |  | 4 刃铣刀 4 Flute Endmills |
| |  | 2 刃球头铣刀 2 Flute Ballnose Endmills |
| |  | 4 刃球头铣刀 4 Flute Ballnose Endmills |
| |  | 5 刃铣刀 5 Flute Endmills |
| 工件材料 Workpiece Material |  | 6 刃铣刀 6 Flute Endmills |
| |  | 钢 Steels |
| |  | 不锈钢 Stainless Steels |
| |  | 铸铁 Cast Iron |
| |  | 非铁材料 Non-ferrous Materials |
| |  | 高温合金、钛合金 Heat-resistant Super Alloys, Titanium Alloys |
| |  | 高硬度材料 High Hardened Materials |



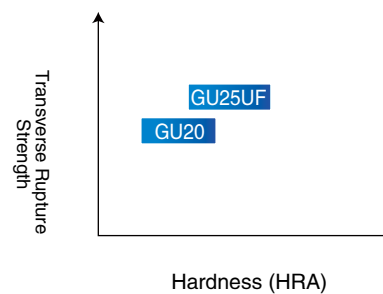
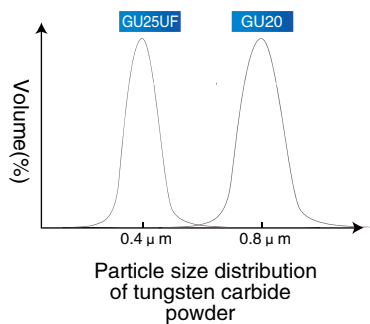
Tungsten Carbide Grades

Based on many years' research of material, our metallurgy specialists have successfully developed super-fine tungsten carbide powder down to 70 nanometer. By using high quality raw materials, we have developed cemented carbide with both high wear resistance and high hardness features, such as GU25UF, GU20, Which can significantly improve the performance.

GU25UF and GU20 are the typical grades for solid carbide tools.

GU25UF is produced from 0.4micron tungsten carbide powder with 12% cobalt powder, provides very high toughness and wear resistance. GU25UF is the most suitable for hard cutting.

GU20 is produced from 0.8 micron tungsten carbide powder with 10% cobalt. GU20 is a baseline grade for general purpose drill and Endmills.



We will continue the research of cemented carbide to improve the performance of carbide rods and satisfy the requirement of high speed and tough cutting.

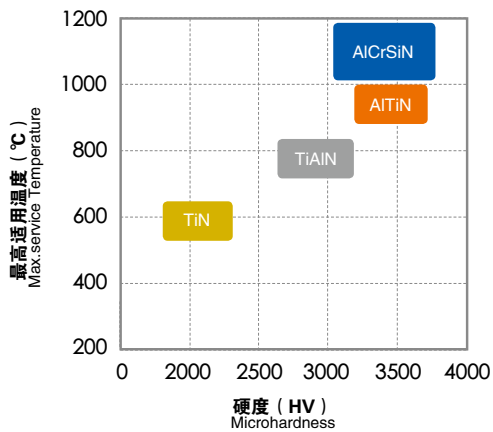
涂层 Coating

涂层特性 Coating Characteristic

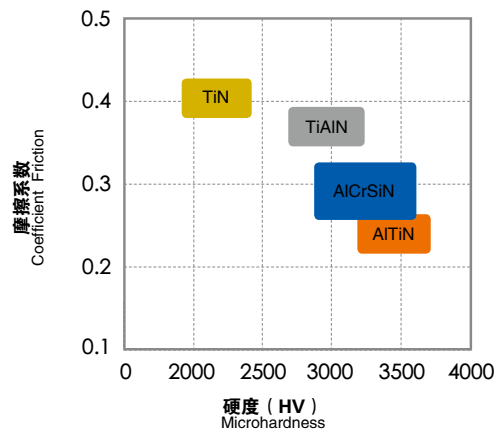
| 涂层 Coating | 维氏硬度 Microhardness (HV0.05) | 摩擦系数 Coefficient Friction | 最高适用温度 Max.service Temperature (°C) | 特点 Characteristic |
|---|-----------------------------------|---------------------------------|---|---|
| AlCrN | 3200 | 0.35 | 1100 | 高抗氧化性，高温耐磨性能极其优异 High oxidation resistance, extremely high temperature abrasion resistance |
| AlCrSiN | 3300 | 0.3 | 1100 | 超高抗氧化性，耐磨性与韧性达到完美平衡 Super-high oxidation resistance, good balance of abrasion resistance and toughness |
| AlTiN | 3400 | 0.25 | 900 | 超高硬度，良好的红硬性和热稳定性 Super-high micro hardness, good hot hardness and stability |
| TiAlN | 3200 | 0.3-0.35 | 900 | 高硬度和耐磨性，良好的韧性 High micro hardness,high abrasion resistance,good toughness |
| 粗晶金刚石 Normal Diamond Coating | 8500 | - | 700 | 高硬度、高热导率、高耐磨性 High hardness, thermal conductivity and wear resistance |
| 超细晶金刚石 Ultra Fine Grain Diamond Coating | 8000 | - | 700 | 表面光滑，自润滑性，良好结合力。 高硬度、高热导率、高耐磨性 Smooth surface,good self-lubricity,good adhesion. High hardness,thermal conductivity and wear resistance |

Position of Main PVD Nano-structure Coating

PVD coating provides for superior control of coating grain size(from 10nm to 500nm), achieves excellent hardness, good oxidation resistant, and improved reduction of the coefficient of friction.



Microhardness and Max. Service Temperature



Microhardness and Coefficient of Friction

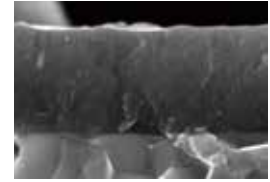
高性能涂层AlCrSiN

High Performance Coating AlCrSiN

特点与功能

Characteristics and Function

- 特殊的涂层构成保证了涂层高的使用寿命。
Specific coating composition assures extremely long service of the coating.
- 纳米结构的涂层具有良好的抗高温氧化性，氧化开始温度可达到1100℃。
Nanolayer coating has excellent oxidation resistance,the oxidation temperature is 1100.
- 通用性良好，以高效率切削加工显著提升生产力。
Productivity increase due to significantly higher cutting speed and feed for applications in a wide range of materials. Significantly enhanced productivity.
- 独特的结构设计使得涂层韧性、热冲击稳定性、残余应力达到完美平衡。
Particular design of structure brings good balance between toughness, thermo-shock stability and residual stress.



涂层断面形貌
SEM Photograph of Coating

AlCrSiN 涂层推荐加工材质

AlCrSiN Coating Suggested Work Material

| 工件材料 Workpiece Material | | | | | | | | |
|-------------------------|-------------------|-------|-------------------------|---------------------|--------------------|-----|-----------------|-------------------|
| P | | M | K | | S | H | | |
| 1 2 3 4 | 5 | 1 2 3 | 1 2 | 3 | 1 2 3 | 4 | 1 2 | 3 |
| 碳钢 合金钢 (<35HRC) | 合金钢 (35-48HRC) | 不锈钢 | 灰铸铁 球墨铸铁 (<32HRC) | 高合金铸铁 (35-45HRC) | 高温合金 (<HB450) | 钛合金 | 淬硬钢 (<55HRC) | 淬硬钢 (55-60HRC) |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

○ 最适合 Most Suitable ○ 适合 Suitable

超细晶金刚石涂层

Ultra Fine Grain Diamond Coating

特点与功能

Characteristics and Function

- 高纯度金刚石涂层，涂层硬度能达到 80GPa 以上。
High purity diamond coating, with hardness up to 80GPa.
- 涂层表面光滑，摩擦系数低。
Ultra smooth and shiny surface, low coefficient friction.
- 适用于非铁材料的精加工，如石墨、高硅铝合金、碳纤维、玻璃纤维、陶瓷等。
Suitable for finish machining nonferrous materials,such as graphite,aluminun, carbon fiber,ceramic,etc.



涂层断面形貌
Cross-section Image



涂层表面形貌
Surface Morphology

整体硬质合金立铣刀型号命名规则

Solid Carbide Endmills Identification System

UP210 -

①

| ① | 工件材料 Workpiece | 系列号 Code of Series | |
|---|----------------------------------|-----------------------|--|
| | 钢件、铸铁 Steel, Cast Iron | UP100 | 通用加工系列(≤35HRC) Suitable for Steels&Cast Iron(≤35HRC). |
| | | UP210 | 通用加工系列(≤48HRC) Suitable for Steels&Cast Iron(≤48HRC). |
| | | UPR100 | 通用粗加工系列(≤48HRC) Suitable for Roughing of Steels & Cast Iron(≤48HRC) |
| | | UPM100 | 通用深沟槽加工系列(≤48HRC) Suitable for Pocket Milling of Steels & Cast Iron(≤48HRC) |
| | | SP210 | 高效加工系列(≤48HRC) Suitable for High Efficiency Machining of Steels & Cast Iron(≤48HRC) |
| | 高硬钢 High Hardened Material | SH160 | 高速加工系列 (48-56HRC) Suitable for high Speed Machining of Hardened Steels (48-56HRC) |
| | | SHM100 | 高速微加工系列 (48-56HRC) Suitable for Micro Machining of Hardened Steels (48-56HRC) |
| | 不锈钢 Stainless Steel | US200 | 不锈钢通用加工系列 Suitable for General Machining of Stainless Steel |
| | 铝合金 Aluminium Alloy | UA100 | 通用铝合金加工系列 Suitable for General Machining of Aluminium Alloy |
| | 石墨 Graphite | SG200 | 石墨高速加工系列 Suitable for High Speed Machining of Graphite. |

S S 2- 060 09

②

| ②刃部形状 Type of Flute | |
|------------------------|-------------------------------------|
| S | 平头 Square |
| B | 球头 Ballnose |
| R | 圆弧角 Corno Radius |
| C | 刀尖倒角 Square End, with chamfer |

③

| ③刃部长度的 | |
|--------|-----------------------|
| N | 长颈 Reduce Neck |
| H | 长柄 Long Shank |
| L | 长刃 Long Flute |
| S | 短刃 Short Flute |
| 空 | 标准 Blank: Standard |

④

| ④刃数 No. of Flutes |
|----------------------|
| 2 |
| 3 |
| 4 |

⑤






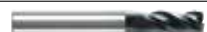




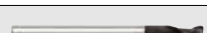
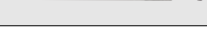














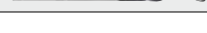

| ⑤刃径 Diameter | |
|-----------------|-----|
| 0.6mm | 006 |
| 6mm | 060 |
| 10mm | 100 |

⑥

| ⑥特性码 Code Characteristic | |
|-----------------------------|--|
| 1 | 平头\球头: Square End\ Ballnose a. 颈长Neck Length b. 刃长Flute Length 6--06 10--10 |
| 2 | 圆角头Corno Radius: r0.2-02 r1-10 |
| 3 | 微小径刀具: 优先顺序 a. 颈长; b. 刃长 (*10): a. 颈长: 1-01 10-10 b. 刃长 (*10): 0.8-08 1.6-16 |
| 4 | 刀尖倒角: Square End, with chamfer: C0.03-03 C0.13-13 |

刀具系列目录







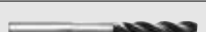
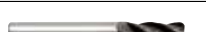


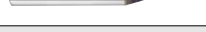





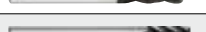





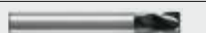


Endmills Index

| 适用加工材料 Workpiece Material | 刀具系列号 Code of Series | 刃部特征 Characteristic of flute | 刀具外型 Endmills | 刀具名称 Description | 型号 Type | 尺寸范围 Diameter Range | 页次 Page |
|--------------------------------------|-------------------------|---|---|--|------------|------------------------|------------|
| 钢件 铸铁 For Steels, Cast Iron | UP100 | 平头 Square End |  | 2刃短刃平头 2 Flute, Stub Length | UP100-SS2 | D1 ~ D16 | 25 |
| | | |  | 2刃平头 2 Flute, Standard Length | UP100-S2 | D1 ~ D20 | 26 |
| | | |  | 2刃长刃平头 2 Flute, Long Flute Length | UP100-SL2 | D2 ~ D20 | 28 |
| | | |  | 2刃长柄平头 2 Flute, with Long Shank Length | UP100-SH2 | D2 ~ D20 | 30 |
| | | |  | 3刃平头 3 Flute, Standard Length | UP100-S3 | D2 ~ D20 | 31 |
| | | |  | 4刃平头 4 Flute, Standard Length | UP100-S4 | D1 ~ D20 | 32 |
| | | |  | 4刃长刃平头 4 Flute, Long Flute Length | UP100-SL4 | D4 ~ D20 | 35 |
| | | |  | 4刃长柄平头 4 Flute, with Long Shank Length | UP100-SH4 | D3 ~ D20 | 36 |
| | |  | 6刃平头 6 Flute, Standard Length | UP100-S6 | D6 ~ D20 | 37 | |
| | | 圆角头 Corner Radius |  | 2刃圆角头 2 Flute, Corner Radius | UP100-R2 | D1 ~ D16 | 38 |
| | | |  | 2刃长柄圆角头 2 Flute Corner Radius, with Long Shank Length | UP100-RH2 | D6 ~ D16 | 41 |
| | | |  | 4刃圆角头 4 Flute, Corner Radius | UP100-R4 | D2 ~ D16 | 43 |
| | | |  | 4刃长柄圆角头 4 Flute Corner Radius, with Long Shank Length | UP100-RH4 | D6 ~ D16 | 46 |
| | | 球头 Ballnose |  | 2刃球头 2 Flute, Ballnose | UP100-B2 | D0.8 ~ D20 | 48 |
| | | |  | 2刃长柄球头 2 Flute Ballnose, with Long Shank Length | UP100-BH2 | D2 ~ D12 | 50 |
| | | |  | 4刃球头 4 Flute, Ballnose | UP100-B4 | D2 ~ D20 | 51 |
| | UP210 | 平头 Square End |  | 2刃短刃平头 2 Flute, Stub Length | UP210-SS2 | D1-D16 | 53 |
| | | |  | 2刃平头 2 Flute, Standard Length | UP210-S2 | D1 ~ D20 | 54 |
| | | |  | 2刃长刃平头 2 Flute, Long Flute Length | UP210-SL2 | D4-D16 | 55 |
| | | |  | 3刃平头 3 Flute, Standard Length | UP210-S3 | D2-D20 | 56 |
| | | |  | 4刃短刃平头 4 Flute, Stub Length | UP210-SS4 | D1-D16 | 57 |
| | | |  | 4刃平头 4 Flute, Standard Length | UP210-S4 | D1 ~ D20 | 58 |
| | | |  | 4刃长刃平头 4 Flute, Long Flute Length | UP210-SL4 | D2 ~ D20 | 60 |
| | | |  | 4刃长柄平头 4 Flute, with Long Shank Length | UP210-SH4 | D3-D20 | 62 |
| | | 圆角头 Corner Radius |  | 2刃圆角头 2 Flute, Corner Radius | UP210-R2 | D3 ~ D16 | 63 |
| | | |  | 2刃长柄圆角头 2 Flute Corner Radius, with Long Shank Length | UP210-RH2 | D6-D16 | 65 |
| | | |  | 4刃圆角头 4 Flute, Corner Radius | UP210-R4 | D3 ~ D16 | 67 |
| | | |  | 4刃长柄圆角头 4 Flute Corner Radius, with Long Shank Length | UP210-RH4 | D6-D16 | 69 |

○ 最适合 Most Suitable ○ 适合 Suitable

刀具系列目录

Endmills Index

| 适用加工材料 Workpiece Material | 刀具系列号 Code of Series | 刃部特征 Characteristic of flute | 刀具外型 Endmills | 刀具名称 Description | 型号 Type | 尺寸范围 Diameter Range | 页次 Page | |
|---|---|---------------------------------|---|---|----------------------------------|------------------------|------------|-----|
| | UP210 | 球头 Ballnose |  | 2刃球头 2 Flute, Ballnose | UP210-B2 | D1 ~ D20 | 71 | |
| | | |  | 2刃长柄球头 2 Flute Ballnose, with Long Shank length | UP210-BH2 | D2 ~ D12 | 73 | |
| | | |  | 4刃球头 4 Flute, Ballnose | UP210-B4 | D4 ~ D12 | 74 | |
| | SP210 | 平头 Square End |  | 3刃平头变螺旋 3 Flute, with Variable Helix | SP210-S3 | D3 ~ D20 | 75 | |
| | | |  | 4刃平头双螺旋(刀尖倒角) 4 Flute, Variable Helix with Chamfer | SP210-C4 | D3 ~ D20 | 76 | |
| | | |  | 4刃平头双螺旋 4 Flute, with Variable Helix | SP210-S4 | D2 ~ D20 | 78 | |
| | | |  | 4刃长颈平头双螺旋(刀尖倒角) 4 Flute, Variable Helix with Chamfer and with Reduced Neck | SP210-CN4 | D3 ~ D20 | 79 | |
| | | 圆角头 Corner Radius |  | 4刃圆角头双螺旋 4 Flutes Corner Radius, with Variable Helix | SP210-R4 | D3 ~ D16 | 80 | |
| | UPR100 | 粗加工 Roughing |  | 4刃粗加工平头 4 Flute Square End, with Roughing Geometry | UPR100-S4 | D6 ~ D20 | 82 | |
| | UPM100 | 微小径深槽加工 Miniature |  | 2刃长颈平头 2 Flute Square End, Miniature Sizes with Neck | UPM100-SN2 | D0.8 ~ D2 | 83 | |
| | | |  | 2刃长颈球头 2 Flute Ballnose, Miniature Sizes with Neck | UPM100-BN2 | D0.8 ~ D2 | 84 | |
| | 高硬钢 Hardened Steels | SH160 | 平头 Square End |  | 2刃平头 2 Flute, Standard Length | SH160-S2 | D1-D20 | 85 |
|  | | | | 4刃平头 4 Flute, Standard Length | SH160-S4 | D1 ~ D20 | 86 | |
|  | | | | 6刃平头 6 Flute, Standard Length | SH160-S6 | D6 ~ D20 | 87 | |
| 圆角头 Corner Radius | | |  | 2刃圆角头 2 Flute, Corner Radius | SH160-R2 | D2-D12 | 88 | |
| | | |  | 4刃圆角头 4 Flute, Corner Radius | SH160-R4 | D3 ~ D12 | 90 | |
| | | |  | 6刃圆角头 6 Flute, Corner Radius | SH160-R6 | D12 ~ D20 | 92 | |
| 球头 Ballnose | | |  | 2刃球头 2 Flute, Ballnose | SH160-B2 | D0.5 ~ D16 | 93 | |
| | | |  | 4刃球头 4 Flute, Ballnose | SH160-B4 | D2 ~ D16 | 94 | |
| SHM100 | | 微小径深槽加工 Miniature |  | 2刃长颈平头 2 Flute Square End, Miniature Sizes with Neck | SHM100-SN2 | D0.4-D2 | 95 | |
| | | |  | 2刃长颈球头 2 Flute Ballnose, Miniature Sizes with Neck | SHM100-BN2 | D0.4-D2 | 97 | |
| 不锈钢 Stainless Steels | | US200 | 平头 Square End |  | 2刃平头 2 Flute, Standard Length | US200-S2 | D0.5-D20 | 99 |
| | | | |  | 4刃短刃平头 4 Flute, Stub Length | US200-SS4 | D2-D20 | 101 |
| |  | | | 4刃平头 4 Flute, Standard Length | US200-S4 | D1-D20 | 102 | |
| |  | | | 4刃长颈平头 4 Flute, with Reduced Neck | US200-SN4 | D2-D20 | 103 | |



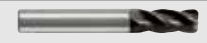













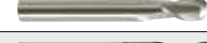




○ 最适合 Most Suitable ○ 适合 Suitable

工件材料
Workpiece Material

| | 工件材料 Workpiece Material | | | | | | | | | | | | | | | |
|------------------------|----------------------------|-----------------------------------|---|-----|--------------------------|-------------------------|---------------------------------|-----------------------|-----------------|----|------------------|-----------------|-----------------|-----------------------|---|---|
| | P | | | M | K | N | | | | | S | H | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 1 | 2 | 3 | 1 | 2 | 3 | 4 | 5 | 1 | 2 |
| 碳钢、 合金钢 (<35HRC) | 合金钢(35- 48HRC) | PH与铁 素体/马氏 体不锈钢 (<35HRC) | | 不锈钢 | 灰铸铁、 球墨铸铁 (<32HRC) | 高合金铸 铁(35- 45HRC) | 锻造铝合 金、铸造 铝合金 (Si<12%) | 铸造 铝合金 (Si>12%) | 铜合金 (<HB200) | 石墨 | 高温合金 (<HB450) | 钛合金 (<HB400) | 淬硬钢 (<55HRC) | 淬硬钢 (55- 60HRC) | | |
| | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | |
| | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | |
| | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | |
| | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | |
| | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | |
| | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | |
| | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | ○ | | | |
| | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | ○ | | | | | | | |
| | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | |
| | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | |
| | | | | | | | | | | | | | ○ | ○ | | |
| | | | | | | | | | | | | | ○ | ○ | | |
| | | | | | | | | | | | | | ○ | ○ | | |
| | | | | | | | | | | | | | ○ | ○ | | |
| | | | | | | | | | | | | | ○ | ○ | | |
| | | | | | | | | | | | | | ○ | ○ | | |
| | | | | | | | | | | | | | ○ | ○ | | |
| | | | | | | | | | | | | | ○ | ○ | | |
| | ○ | ○ | ○ | ○ | ○ | | | | | | | ○ | ○ | | | |
| | ○ | ○ | ○ | ○ | ○ | | | | | | | ○ | ○ | | | |
| | ○ | ○ | ○ | ○ | ○ | | | | | | | ○ | ○ | | | |
| | ○ | ○ | ○ | ○ | ○ | | | | | | | ○ | ○ | | | |

刀具系列目录

Endmills Index

| 适用加工材料 Workpiece Material | 刀具系列号 Code of Series | 刃部特征 Characteristic of flute | 刀具外型 Endmills | 刀具名称 Description | 型号 Type | 尺寸范围 Diameter Range | 页次 Page | | |
|---|---|---------------------------------|---|--|---|----------------------------------|------------|----------|-----|
| 不锈钢 Stainless Steels | US200 | 圆角头 Corner Radius |  | 2刃圆角头 2 Flute, Corner Radius | US200-R2 | D3-D16 | 104 | | |
| | | |  | 3刃圆角头 3 Flute, Corner Radius | US200-R3 | D2-D20 | 106 | | |
| | | |  | 4刃圆角头 4 Flute, Corner Radius | US200-R4 | D2-D20 | 108 | | |
| | | 球头 Ballnose |  | 2刃球头 2 Flute, Ballnose | US200-B2 | D1-D20 | 110 | | |
| | | |  | 4刃球头 4 Flute, Ballnose | US200-B4 | D1-D20 | 111 | | |
| | | | | | | | | | |
| 铝合金 Aluminium Alloy | UA100 | 平头 Square End |  | 2刃平头 2 Flute, Standard Length | UA100-S2 | D1 ~ D20 | 112 | | |
| | | |  | 2刃长刃平头 2 Flute, Long Flute Length | UA100-SL2 | D2 ~ D20 | 113 | | |
| | | |  | 2刃长柄平头 2 Flute, with Long Shank Length | UA100-SH2 | D2 ~ D20 | 114 | | |
| | | |  | 3刃平头 3 Flute, Standard Length | UA100-S3 | D2 ~ D20 | 115 | | |
| | | |  | 3刃长刃平头 3 Flute, Long Flute Length | UA100-SL3 | D2 ~ D20 | 116 | | |
| | | |  | 3刃长柄平头 3 Flute, with Long Shank Length | UA100-SH3 | D2 ~ D20 | 117 | | |
| | | 圆角头 Corner Radius |  | 2刃圆角头 2 Flute, Corner Radius | UA100-R2 | D1 ~ D20 | 118 | | |
| | | |  | 2刃长柄圆角头 2 Flute Corner Radius, with Long Shank Length | UA100-RH2 | D6 ~ D20 | 121 | | |
| | | |  | 3刃圆角头 3 Flute, Corner Radius | UA100-R3 | D1 ~ D20 | 123 | | |
| | | |  | 3刃长柄圆角头 3 Flute Corner Radius, with Long Shank Length | UA100-RH3 | D6 ~ D20 | 126 | | |
| | | 球头 Ballnose |  | 2刃球头 2 Flute, Ballnose | UA100-B2 | D1 ~ D16 | 128 | | |
| | | 石墨 Graphite | SG200 | 平头 Square End |  | 2刃平头 2 Flute, Standard Length | SG200-S2 | D2 ~ D12 | 129 |
| | | | | |  | 4刃平头 4 Flute, Standard Length | SG200-S4 | D2 ~ D12 | 130 |
| | | | | 圆角头 Corner Radius |  | 2刃圆角头 2 Flute, Corner Radius | SG200-R2 | D6 ~ D12 | 131 |
|  | 4刃圆角头 4 Flute, Corner Radius | | | | SG200-R4 | D6 ~ D12 | 132 | | |
| 球头 Ballnose |  | | | 2刃球头 2 Flute, Ballnose | SG200-B2 | D2 ~ D12 | 133 | | |

● 最适合 Most Suitable ○ 适合 Suitable

工件材料
Workpiece Material

| | 工件材料 Workpiece Material | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-----------------|----------------------------|---------------|---|------------------------|---|-----|---|-------------------|---|-----------------|---|----------------------|---|----------------|---|--------------|--|----|--|---------------|--|--------------|--|--------------|--|----------------|--|--|--|
| | P | | | M | K | N | | | | | S | H | | | | | | | | | | | | | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | | | | | | | | | | | | | | |
| 碳钢、合金钢 (<35HRC) | | 合金钢(35-48HRC) | | PH与铁素体/马氏体不锈钢 (<35HRC) | | 不锈钢 | | 灰铸铁、球墨铸铁 (<32HRC) | | 高合金铸铁(35-45HRC) | | 锻造铝合金、铸造铝合金 (Si<12%) | | 铸造铝合金 (Si>12%) | | 铜合金 (<HB200) | | 石墨 | | 高温合金 (<HB450) | | 钛合金 (<HB400) | | 淬硬钢 (<55HRC) | | 淬硬钢 (55-60HRC) | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | ○ | | | | | ○ | | | | | | | | | | | | | | | | | | | | | | | |
| | ○ | ○ | | | | ○ | | | ○ | | | | | | | | | | | | | | | | | | | | |
| | ○ | ○ | | | | ○ | | | ○ | | | | | | | | | | | | | | | | | | | | |
| | ○ | ○ | | | | ○ | | | ○ | | | | | | | | | | | | | | | | | | | | |
| | ○ | ○ | | | | ○ | | | ○ | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | ○ | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | ○ | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | ○ | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | ○ | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | ○ | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | ○ | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | ○ | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | ○ | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | ○ | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | ○ | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | ○ | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | ○ | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | ○ | | | | | | | | | | | | | | | | | | |

整体立铣刀产品应用一览表

Application Summary Of Solid Carbide Endmills

| 材料组 ISO Material Group | 材料 分组 MC | 通用加工 General Machining | 粗加工 Roughing | 高效加工 High Efficiency Machining | 高速加工 High Speed Machining | 微加工 Micro Machining | |
|------------------------------|------------------|-------------------------------|-----------------|--------------------------------------|---------------------------------|---------------------------|--------|
| P | 1 2 3 4 | 碳钢、合金钢 (<35HRC) | UP100 | UP210 | UPR100 | SP210 | UPM100 |
| | 5 | 合金钢 (35HRC-48) | | | | | |
| | 6 | PH与铁素体 /马氏体不锈钢 (<35HRC) | UP100 | | UPR100 | | UPM100 |
| M | 1 2 3 | 不锈钢 | US200 | | | | |
| K | 1 2 | 灰铸铁、球墨铸铁 (<32HRC) | UP100 | UP210 | UPR100 | SP210 | |
| | 3 | 高合金铸铁(35-45HRC) | | | | | |
| N | 1 2 | 锻造铝合金、铸造铝合金 (Si<12%) | UA100 | | SA300 | SA310 | SA360 |
| | 3 | 铸造铝合金 (Si>12%) | | | | | |
| | 4 | 铜合金 (<HB200) | UA100 | | | | |
| | 5 | 石墨 | | | SG200 | | |
| S | 1 2 3 | 高温合金 (<HB450) | | | ST200 | | |
| | 4 | 钛合金 (<HB400) | | | | | |
| H | 1 2 | 淬硬钢 (<55HRC) | | | | SH160 | SHM100 |
| | 3 | 淬硬钢 (55-60HRC) | | | | | |

SA300、SA310、SA360系列详见《航空铝合金高性能刀具》产品目录
SA300、SA310、SA360 Series is in the Catalogs of "Aerospace Aluminium Alloy Endmills"

ST200系列详见《航空钛合金专用刀具》产品目录
ST200 Series is in the "Aerospace Titanium Alloy Tools" Catalog

系列介绍

Series Introduction



UP100通用加工立铣刀

UP100 Endmills for General Purpose

- ①适用于普通钢、铸铁材料 ($\leq 35\text{HRC}$) 的加工;
Suitable for Steels&Cast Iron($\leq 35\text{HRC}$).
- ②锋利的刃口设计, 满足软材料的切削加工;
Sharp Cutting Edges Design, Meet the Cutting of Soft Material



UP210通用加工立铣刀

UP210 Endmills for General Purpose

- ①适用于普通钢、铸铁材料 ($\leq 48\text{HRC}$) 的加工;
Suitable for Steels & Cast Iron($\leq 48\text{HRC}$).
- ②采用高性能AlCr系涂层,耐高温、耐磨损;
High Performance AlCr Series Coating,
High Temperature Resistance and High Wear Resistance.
- ③适用于油雾冷却、水冷、油冷、空冷等多种冷却环境。
Adapt to Several Kinds of Cooling Conditions,
for Example Oil Mist, Water, Oil, Air Cooling.



SP210高效加工立铣刀

SP210 Endmills for High Efficiency Machining

- ①适用于普通钢、铸铁材料 ($\leq 48\text{HRC}$) 的高效加工;
Suitable for High Efficiency Machining of Steels&cast Iron($\leq 48\text{HRC}$) .
- ②不等螺旋角、不等齿距设计, 拥有卓越的抗震能力;
Variable Helix Angle and Differential Flute Pitch, Reduces Vibration.
- ③适用于大切深、大切宽的高效切削 (机床刚性好);
Applicable to High Efficiency Machining of Large Cutting Depth (ap),
Large Cutting Width (ae) .

系列介绍

Series Introduction



UPR100粗加工立铣刀

UPR100 Endmills for Roughing Application

- ①适用于普通钢、铸铁材料 (≤48HRC) 的粗加工;
Suitable for Roughing of Steels & Cast Iron(≤48HRC)
- ②特殊的刃口断屑槽处理, 适用于工件的沟槽和侧壁粗加工
Special Chip-Breaking Cutting Edge Design, for Roughing Applications



UPM100微小径深沟槽加工立铣刀

UPM100 Endmills for Micro Machining

- ①适用于普通钢 (≤HRC48) 的深沟槽加工。
Suitable for Pocket Milling of Steels & Cast Iron(≤48HRC)
- ②长颈避免深腔加工干涉, 适用于模具肋槽的深腔加工
Longer Neck Design, Prevents Collisions With Workpiece During deep Pocket Milling of Mold Rib Areas



SH160高硬钢(48-56HRC)加工立铣刀

SH160 Endmills for Hardened Steels(48-56HRC)

- ①高硬度、高韧性基体材质, 特殊角度设计, 用于高硬钢材料的加工;
High Hardness, High Toughness Matrix Materials, Special Angle Design, Special for Hardened Steels Processing.
- ②适用于48-56HRC高硬钢的精加工;
For Hardened Steels (48-56 HRC) Finishing.
- ③推荐使用气冷或油雾冷却。
Recommended to Use Air or Oil Mist Cooling.

系列介绍

Series Introduction



SHM100高硬钢微小径深沟槽加工

SHM100 Endmills for Micro Machining of Hardened Steels

①特殊角度及长颈避空设计，适用于高硬钢（48-56HRC）的深沟槽微加工；
Special Angles, With Reduced Neck to Prevent Collisions, Deep Trench Processing ;

②推荐使用气冷或油雾冷却。
Recommend the Use of Air or Oil Mist Cooling



US200不锈钢通用立铣刀

US200 Endmills for General Machining of Stainless Steel

①适用于不锈钢（<280HB）的通用加工；
Suitable for General Machining of Stainless Steel (<280HB)

②特殊的刃口设计，有效解决刀具刃口粘屑问题；
Special Edge Design, Effectively Solve the Crumbs

③水冷、油冷为最佳冷却方式。
Water Cooling, Oil Cooling is the Best Cooling Method



UA100铜铝合金通用立铣刀

UA100 Endmills for General Machining of Aluminum Alloy

①适用于铝合金（Si≤12%）及铜合金（<200HB）的通用加工；
Suitable for Aluminum Alloy (Si ≤ 12%) and Copper Alloy (< 200HB) General Processing

②特殊的刃型设计，有效防止振动及解决刀具刃口粘屑问题；
Special Edge Design, Reduces Vibration, Effectively Solve the Crumbs

③水冷为最佳冷却方式。
Water Cooling is the Best Cooling Method

系列介绍

Series Introduction



SG200 石墨加工立铣刀

SG200 Endmills for High Speed Machining of Graphite

①特殊的基材材质与金刚石涂层完美结合，使刀具具有优越的耐磨性，极大的提高了加工寿命；
Special Substrate with the Perfect Combination of Diamond Coating, Superior Wear Resistance

②适用于石墨的半精加工和精加工，推荐使用气冷。
suitable for semi-finishing and finishing of graphite, apply for air cooling.

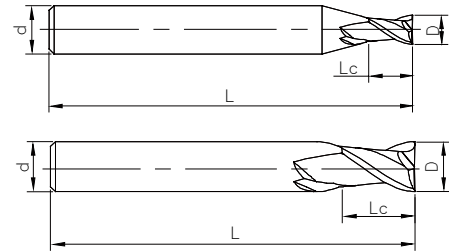


标记说明请参考P6页 See page 6 for guidelines to icons

UP100-SS2

2刃短刃平头

2 Flute, Stub Length



| 订货号 Ordering code | D | Lc | L | d | 图号 Figure No. |
|----------------------|----|----|-----|----|------------------|
| UP100-SS2-01002 | 1 | 2 | 50 | 4 | 1 |
| UP100-SS2-02003 | 2 | 3 | 50 | 4 | 1 |
| UP100-SS2-03005 | 3 | 5 | 50 | 4 | 1 |
| UP100-SS2-04006 | 4 | 6 | 50 | 4 | 2 |
| UP100-SS2-05008 | 5 | 8 | 50 | 6 | 1 |
| UP100-SS2-06009 | 6 | 9 | 50 | 6 | 2 |
| UP100-SS2-07010 | 7 | 10 | 60 | 8 | 1 |
| UP100-SS2-08012 | 8 | 12 | 60 | 8 | 2 |
| UP100-SS2-10015 | 10 | 15 | 75 | 10 | 2 |
| UP100-SS2-12018 | 12 | 18 | 75 | 12 | 2 |
| UP100-SS2-16024 | 16 | 24 | 100 | 16 | 2 |

| D | 公差 Tol |
|--------|------------|
| D ≤ 12 | 0 -0.02 |
| D > 12 | 0 -0.03 |

单位unit (mm)

136页
Page

切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | | | | | | | | | | | |
|-------------------------|---|-------------------|---|------------------------------|---|-----|---|-------------------------|---|---------------------|--|----------------------------|--|-----------------|--|
| P | | | M | K | | N | | | | | | | | | |
| 1 | 2 | 3 | 4 | 1 | 2 | 3 | 1 | 2 | 3 | 4 | | | | | |
| 碳钢 合金钢 (<35HRC) | | 合金钢 (35-48HRC) | | PH与铁素体 马氏体不锈钢 (<35HRC) | | 不锈钢 | | 灰铸铁 球墨铸铁 (<32HRC) | | 高合金铸铁 (35-45HRC) | | 锻造铝合金 铸造铝合金 (Si<12%) | | 铜合金 (<HB200) | |
| ○ | | ○ | | ○ | | ○ | | ○ | | ○ | | ○ | | ○ | |

○ 最适合 Most Suitable ○ 适合 Suitable

钢件、铸铁
For Steels & Cast Iron

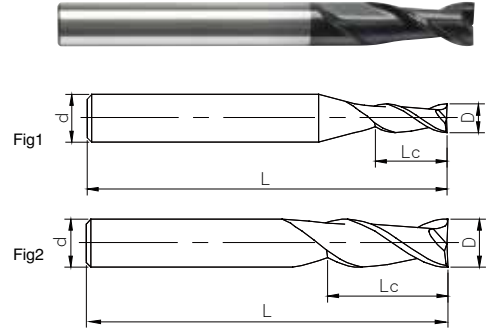


标记说明请参考P6页 See page 6 for guidelines to icons

UP100-S2

2刃平头

2 Flute, Standard Length



| 订货号 Ordering code | D | Lc | L | d | 图号 Figure No. |
|----------------------|-----|----|----|---|------------------|
| UP100-S2-01003 | 1 | 3 | 50 | 4 | 1 |
| UP100-S2-01505 | 1.5 | 5 | 50 | 4 | 1 |
| UP100-S2-02006 | 2 | 6 | 50 | 4 | 1 |
| UP100-S2-02506 | 2.5 | 6 | 50 | 4 | 1 |
| UP100-S2-03009 | 3 | 9 | 50 | 4 | 1 |
| UP100-S2-63009 | 3 | 9 | 50 | 6 | 1 |
| UP100-S2-03509 | 3.5 | 9 | 50 | 4 | 1 |
| UP100-S2-63509 | 3.5 | 9 | 50 | 6 | 1 |
| UP100-S2-04011 | 4 | 11 | 50 | 4 | 2 |
| UP100-S2-64011 | 4 | 11 | 50 | 6 | 1 |
| UP100-S2-04511 | 4.5 | 11 | 50 | 6 | 1 |
| UP100-S2-05013 | 5 | 13 | 50 | 6 | 1 |
| UP100-S2-06016 | 6 | 16 | 50 | 6 | 2 |
| UP100-S2-06516 | 6.5 | 16 | 60 | 8 | 1 |
| UP100-S2-07020 | 7 | 20 | 60 | 8 | 1 |
| UP100-S2-07520 | 7.5 | 20 | 60 | 8 | 1 |

136页
Page
切削参数详见
Cutting Parameters

| D | 公差 Tol |
|--------|------------|
| D ≤ 12 | 0 -0.02 |
| D > 12 | 0 -0.03 |

单位 unit (mm)

| 工件材料 Workpiece Material | | | | | | | | | | | | | | | |
|----------------------------------|---|------------------------------|---|---|---|-----|---|------------------------------------|---|--------------------------------|--|--|--|----------------------------|--|
| P | | | M | K | | N | | | | | | | | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 1 | 2 | 3 | 4 | | | | | | |
| 碳钢 合金钢 ($<35\text{HRC}$) | | 合金钢 ($35-48\text{HRC}$) | | PH与铁素体 马氏体不锈钢 ($<35\text{HRC}$) | | 不锈钢 | | 灰铸铁 球墨铸铁 ($<32\text{HRC}$) | | 高合金铸铁 ($35-45\text{HRC}$) | | 锻造铝合金 铸造铝合金 ($\text{Si} < 12\%$) | | 铜合金 ($<\text{HB}200$) | |
| ○ | | ○ | | ○ | | ○ | | ○ | | ○ | | ○ | | ○ | |

○ 最适合 Most Suitable ○ 适合 Suitable

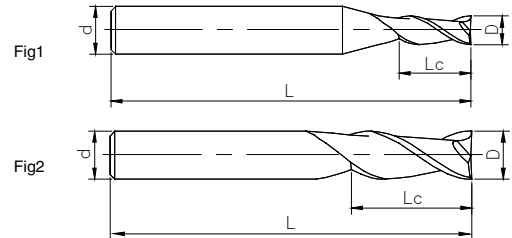


标记说明请参考P6页 See page 6 for guidelines to icons

UP100-S2

2刃平头

2 Flute, Standard Length



» 续前 continue

| 订货号 Ordering code | D | Lc | L | d | 图号 Figure No. |
|----------------------|------|----|-----|----|------------------|
| UP100-S2-08020 | 8 | 20 | 60 | 8 | 2 |
| UP100-S2-08523 | 8.5 | 23 | 75 | 10 | 1 |
| UP100-S2-09023 | 9 | 23 | 75 | 10 | 1 |
| UP100-S2-09525 | 9.5 | 25 | 75 | 10 | 1 |
| UP100-S2-10025 | 10 | 25 | 75 | 10 | 2 |
| UP100-S2-10526 | 10.5 | 26 | 75 | 12 | 1 |
| UP100-S2-11028 | 11 | 28 | 75 | 12 | 1 |
| UP100-S2-12030 | 12 | 30 | 75 | 12 | 2 |
| UP100-S2-14034 | 14 | 34 | 100 | 14 | 1 |
| UP100-S2-15036 | 15 | 36 | 90 | 16 | 1 |
| UP100-S2-16036 | 16 | 36 | 100 | 16 | 2 |
| UP100-S2-17040 | 17 | 40 | 100 | 20 | 1 |
| UP100-S2-18040 | 18 | 40 | 100 | 18 | 2 |
| UP100-S2-19040 | 19 | 40 | 100 | 20 | 1 |
| UP100-S2-20045 | 20 | 45 | 100 | 20 | 2 |

| D | 公差 Tol |
|--------|------------|
| D ≤ 12 | 0 -0.02 |
| D > 12 | 0 -0.03 |

单位unit (mm)

136页
Page

切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | | | | | | |
|-------------------------|---|---|-------------------|------------------------------|-----|-------------------------|---------------------|----------------------------|-----------------|---|
| P | | | M | K | | N | | | | |
| 1 | 2 | 3 | 4 | 1 | 2 | 3 | 1 | 2 | 3 | 4 |
| 碳钢 合金钢 (<35HRC) | | | 合金钢 (35-48HRC) | PH与铁素体 马氏体不锈钢 (<35HRC) | 不锈钢 | 灰铸铁 球墨铸铁 (<32HRC) | 高合金铸铁 (35-45HRC) | 锻造铝合金 铸造铝合金 (Si<12%) | 铜合金 (<HB200) | |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

○ 最适合 Most Suitable ○ 适合 Suitable

钢件、铸铁
For Steels & Cast Iron

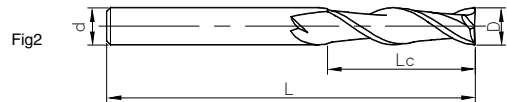
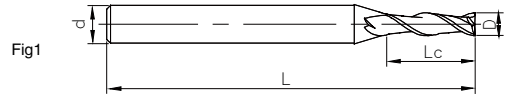


标记说明请参考P6页 See page 6 for guidelines to icons

UP100-SL2

2刃长刃平头

2 Flute, Long Flute Length



| 订货号 Ordering code | D | Lc | L | d | 图号 Figure No. |
|----------------------|----|----|-----|----|------------------|
| UP100-SL2-02015 | 2 | 15 | 75 | 4 | 1 |
| UP100-SL2-03025 | 3 | 25 | 75 | 4 | 1 |
| UP100-SL2-04030 | 4 | 30 | 75 | 4 | 2 |
| UP100-SL2-05030 | 5 | 30 | 75 | 6 | 1 |
| UP100-SL2-06035 | 6 | 35 | 75 | 6 | 2 |
| UP100-SL2-08040 | 8 | 40 | 100 | 8 | 2 |
| UP100-SL2-10045 | 10 | 45 | 100 | 10 | 2 |
| UP100-SL2-12050 | 12 | 50 | 100 | 12 | 2 |
| UP100-SL2-14055 | 14 | 55 | 100 | 14 | 2 |
| UP100-SL2-16050 | 16 | 50 | 150 | 16 | 2 |
| UP100-SL2-16060 | 16 | 60 | 150 | 16 | 2 |
| UP100-SL2-18065 | 18 | 65 | 150 | 18 | 2 |
| UP100-SL2-20070 | 20 | 70 | 150 | 20 | 2 |

| D | 公差 Tol |
|--------|------------|
| D ≤ 12 | 0 -0.02 |
| D > 12 | 0 -0.03 |

单位unit (mm)

136页
Page
切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | | | |
|-------------------------|---|---------------------|---|------------------------------|---|-----------------|---|
| P | | | M | K | | N | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 碳钢 合金钢 (<35HRC) | | 合金钢 (35-48HRC) | | PH与铁素体 马氏体不锈钢 (<35HRC) | | 不锈钢 | |
| 灰铸铁 球墨铸铁 (<32HRC) | | 高合金铸铁 (35-45HRC) | | 锻造铝合金 铸造铝合金 (Si<12%) | | 铜合金 (<HB200) | |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

○ 最适合 Most Suitable ○ 适合 Suitable



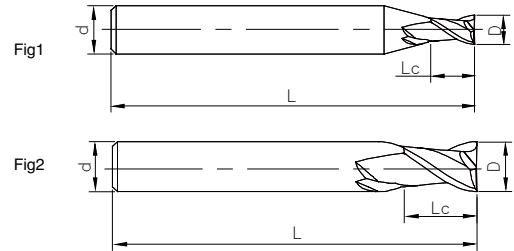
标记说明请参考P6页 See page 6 for guidelines to icons

UP100-SL2

2刃长刃平头

2 Flute, Long Flute Length

》续前 continue



| 订货号 Ordering code | D | Lc | L | d | 图号 Figure No. |
|----------------------|----|----|-----|----|------------------|
| UP210-SL2-04030 | 4 | 30 | 75 | 4 | 2 |
| UP210-SL2-05030 | 5 | 30 | 75 | 6 | 1 |
| UP210-SL2-06035 | 6 | 35 | 75 | 6 | 2 |
| UP210-SL2-08040 | 8 | 40 | 100 | 8 | 2 |
| UP210-SL2-10045 | 10 | 45 | 100 | 10 | 2 |
| UP210-SL2-12050 | 12 | 50 | 100 | 12 | 2 |
| UP210-SL2-14055 | 14 | 55 | 100 | 14 | 2 |
| UP210-SL2-16060 | 16 | 60 | 150 | 16 | 2 |

| D | 公差 Tol |
|--------|--|
| D ≤ 12 | $\begin{matrix} 0 \\ -0.02 \end{matrix}$ |
| D > 12 | $\begin{matrix} 0 \\ -0.03 \end{matrix}$ |

单位unit (mm)

136页
Page
切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | | | |
|-------------------------|-------------------|------------------------------|-----|-------------------------|---------------------|----------------------------|-----------------|
| P | | | M | K | | N | |
| 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 |
| 碳钢 合金钢 (<35HRC) | 合金钢 (35-48HRC) | PH与铁素体 马氏体不锈钢 (<35HRC) | 不锈钢 | 灰铸铁 球墨铸铁 (<32HRC) | 高合金铸铁 (35-45HRC) | 锻造铝合金 铸造铝合金 (Si<12%) | 铜合金 (<HB200) |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

○ 最适合 Most Suitable ○ 适合 Suitable

钢件、铸铁
For Steels&Cast Iron

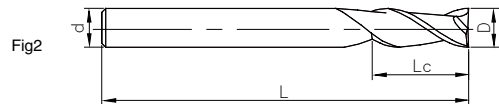
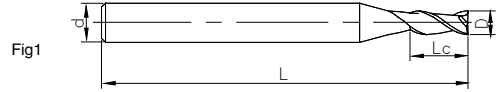


标记说明请参考P6页 See page 6 for guidelines to icons

UP100-SH2

2刃长柄平头

2 Flute, with Long Shank Length



| 订货号 Ordering code | D | Lc | L | d | 图号 Figure No. |
|----------------------|----|----|-----|----|------------------|
| UP100-SH2-02006 | 2 | 6 | 75 | 4 | 1 |
| UP100-SH2-03009 | 3 | 9 | 75 | 4 | 1 |
| UP100-SH2-63012 | 3 | 12 | 75 | 6 | 1 |
| UP100-SH2-04011 | 4 | 11 | 75 | 4 | 2 |
| UP100-SH2-05020 | 5 | 20 | 75 | 6 | 1 |
| UP100-SH2-06016 | 6 | 16 | 100 | 6 | 2 |
| UP100-SH2-06020 | 6 | 20 | 100 | 6 | 2 |
| UP100-SH2-08020 | 8 | 20 | 75 | 8 | 2 |
| UP100-SH2-08025 | 8 | 25 | 100 | 8 | 2 |
| UP100-SH2-10030 | 10 | 30 | 100 | 10 | 2 |
| UP100-SH2-12035 | 12 | 35 | 100 | 12 | 2 |
| UP100-SH2-16036 | 16 | 36 | 150 | 16 | 2 |
| UP100-SH2-20045 | 20 | 45 | 150 | 20 | 2 |

| D | 公差 Tol |
|--------|------------|
| D ≤ 12 | 0 -0.02 |
| D > 12 | 0 -0.03 |

单位unit (mm)

136页
Page
切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | | | | | | | | | | | |
|----------------------------------|---|------------------------------|---|---|---|-----|---|------------------------------------|---|--------------------------------|--|--|--|----------------------------|--|
| P | | | M | K | | N | | | | | | | | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 1 | 2 | 3 | 4 | | | | | | |
| 碳钢 合金钢 ($<35\text{HRC}$) | | 合金钢 ($35-48\text{HRC}$) | | PH与铁素体 马氏体不锈钢 ($<35\text{HRC}$) | | 不锈钢 | | 灰铸铁 球墨铸铁 ($<32\text{HRC}$) | | 高合金铸铁 ($35-45\text{HRC}$) | | 锻造铝合金 铸造铝合金 ($\text{Si}<12\%$) | | 铜合金 ($<\text{HB}200$) | |
| ○ | | ○ | | ○ | | ○ | | ○ | | ○ | | ○ | | ○ | |

○ 最适合 Most Suitable ○ 适合 Suitable

钢件、铸铁
For Steels&Cast Iron

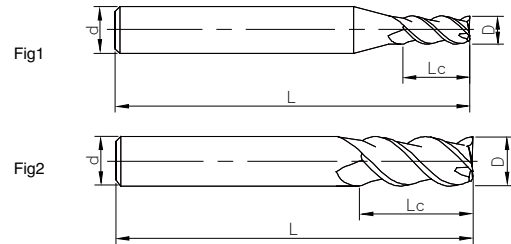


标记说明请参考P6页 See page 6 for guidelines to icons

UP100-S3

3刃平头

3 Flute, Standard Length



| 订货号 Ordering code | D | Lc | L | d | 图号 Figure No. |
|----------------------|-----|----|-----|----|------------------|
| UP100-S3-02006 | 2 | 6 | 50 | 4 | 1 |
| UP100-S3-03009 | 3 | 9 | 50 | 4 | 1 |
| UP100-S3-04011 | 4 | 11 | 50 | 4 | 2 |
| UP100-S3-05013 | 5 | 13 | 50 | 6 | 1 |
| UP100-S3-06016 | 6 | 16 | 50 | 6 | 2 |
| UP100-S3-06516 | 6.5 | 16 | 60 | 8 | 1 |
| UP100-S3-08020 | 8 | 20 | 60 | 8 | 2 |
| UP100-S3-09524 | 9.5 | 24 | 75 | 10 | 1 |
| UP100-S3-10025 | 10 | 25 | 75 | 10 | 2 |
| UP100-S3-12030 | 12 | 30 | 75 | 12 | 2 |
| UP100-S3-16036 | 16 | 36 | 100 | 16 | 2 |
| UP100-S3-18040 | 18 | 40 | 100 | 18 | 2 |
| UP100-S3-20045 | 20 | 45 | 100 | 20 | 2 |
| UP100-S3-25050 | 25 | 50 | 100 | 25 | 2 |

| D | 公差 Tol |
|--------|------------|
| D ≤ 12 | 0 -0.02 |
| D > 12 | 0 -0.03 |

单位unit (mm)

136页
Page

切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | | | | | | |
|-------------------------|---|---|-------------------|------------------------------|-----|-------------------------|---------------------|----------------------------|-----------------|---|
| P | | | M | K | | N | | | | |
| 1 | 2 | 3 | 4 | 1 | 2 | 3 | 1 | 2 | 3 | 4 |
| 碳钢 合金钢 (<35HRC) | | | 合金钢 (35-48HRC) | PH与铁素体 马氏体不锈钢 (<35HRC) | 不锈钢 | 灰铸铁 球墨铸铁 (<32HRC) | 高合金铸铁 (35-45HRC) | 锻造铝合金 铸造铝合金 (Si<12%) | 铜合金 (<HB200) | |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

○ 最适合 Most Suitable ○ 适合 Suitable

钢件、铸铁
For Steels & Cast Iron

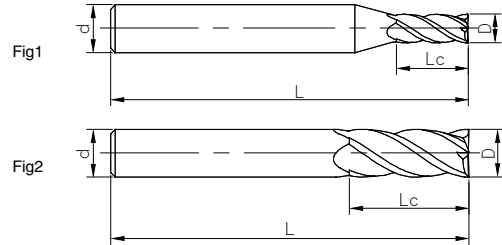


标记说明请参考P6页 See page 6 for guidelines to icons

UP100-S4

4刃平头

4 Flute, Standard Length



| 订货号 Ordering code | D | Lc | L | d | 图号 Figure No. |
|----------------------|-----|----|----|---|------------------|
| UP100-S4-01003 | 1 | 3 | 50 | 4 | 1 |
| UP100-S4-01505 | 1.5 | 5 | 50 | 4 | 1 |
| UP100-S4-02006 | 2 | 6 | 50 | 4 | 1 |
| UP100-S4-02508 | 2.5 | 8 | 50 | 4 | 1 |
| UP100-S4-63006 | 3 | 6 | 50 | 6 | 1 |
| UP100-S4-03009 | 3 | 9 | 50 | 4 | 1 |
| UP100-S4-63009 | 3 | 9 | 50 | 6 | 1 |
| UP100-S4-03511 | 3.5 | 11 | 50 | 4 | 1 |
| UP100-S4-63509 | 3.5 | 9 | 50 | 6 | 1 |
| UP100-S4-04011 | 4 | 11 | 50 | 4 | 2 |
| UP100-S4-64011 | 4 | 11 | 50 | 6 | 1 |

| D | 公差 Tol |
|--------|------------|
| D ≤ 12 | 0 -0.02 |
| D > 12 | 0 -0.03 |

单位 unit (mm)

136页
Page
切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | | | | | | | |
|-------------------------|---|-------------------|---|------------------------------|---|-----|---|-------------------------|---------------------|----------------------------|-----------------|
| P | | | M | K | | N | | | | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 1 | 2 | 3 | 4 | | |
| 碳钢 合金钢 (<35HRC) | | 合金钢 (35-48HRC) | | PH与铁素体 马氏体不锈钢 (<35HRC) | | 不锈钢 | | 灰铸铁 球墨铸铁 (<32HRC) | 高合金铸铁 (35-45HRC) | 锻造铝合金 铸造铝合金 (Si<12%) | 铜合金 (<HB200) |
| ○ | | | | ○ | | | | ○ | | ○ | ○ |

○ 最适合 Most Suitable ○ 适合 Suitable



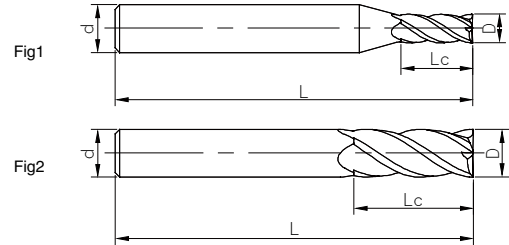
标记说明请参考P6页 See page 6 for guidelines to icons

UP100-S4

4刃平头

4 Flute, Standard Length

》续前 continue



| 订货号 Ordering code | D | Lc | L | d | 图号 Figure No. |
|----------------------|-----|----|----|----|------------------|
| UP100-S4-04511 | 4.5 | 11 | 50 | 6 | 1 |
| UP100-S4-05008 | 5 | 8 | 50 | 6 | 1 |
| UP100-S4-05013 | 5 | 13 | 50 | 6 | 1 |
| UP100-S4-05513 | 5.5 | 13 | 50 | 6 | 1 |
| UP100-S4-06016 | 6 | 16 | 50 | 6 | 2 |
| UP100-S4-06516 | 6.5 | 16 | 60 | 8 | 1 |
| UP100-S4-07020 | 7 | 20 | 60 | 8 | 1 |
| UP100-S4-07520 | 7.5 | 20 | 60 | 8 | 1 |
| UP100-S4-08020 | 8 | 20 | 60 | 8 | 2 |
| UP100-S4-08523 | 8.5 | 23 | 75 | 10 | 1 |
| UP100-S4-09023 | 9 | 23 | 75 | 10 | 1 |

| D | 公差 Tol |
|--------|------------|
| D ≤ 12 | 0 -0.02 |
| D > 12 | 0 -0.03 |

单位unit (mm)

136页
Page

切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | | | | | | |
|-------------------------|---|---|-------------------|------------------------------|-----|-------------------------|---------------------|----------------------------|-----------------|---|
| P | | | M | K | | N | | | | |
| 1 | 2 | 3 | 4 | 1 | 2 | 3 | 1 | 2 | 3 | 4 |
| 碳钢 合金钢 (<35HRC) | | | 合金钢 (35-48HRC) | PH与铁素体 马氏体不锈钢 (<35HRC) | 不锈钢 | 灰铸铁 球墨铸铁 (<32HRC) | 高合金铸铁 (35-45HRC) | 锻造铝合金 铸造铝合金 (Si<12%) | 铜合金 (<HB200) | |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

○ 最适合 Most Suitable ○ 适合 Suitable

钢件、铸铁
For Steels & Cast Iron

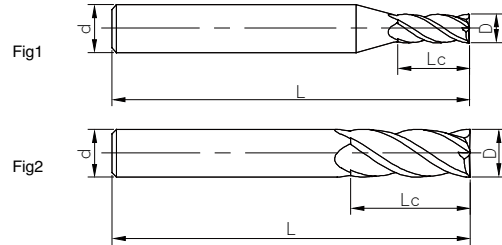


标记说明请参考P6页 See page 6 for guidelines to icons

UP100-S4

4刃平头

4 Flute, Standard Length



》续前 continue

| 订货号 Ordering code | D | Lc | L | d | 图号 Figure No. |
|----------------------|-----|----|-----|----|------------------|
| UP100-S4-09525 | 9.5 | 25 | 75 | 10 | 1 |
| UP100-S4-10025 | 10 | 25 | 75 | 10 | 2 |
| UP100-S4-11028 | 11 | 28 | 75 | 12 | 1 |
| UP100-S4-12030 | 12 | 30 | 75 | 12 | 2 |
| UP100-S4-13032 | 13 | 32 | 90 | 14 | 1 |
| UP100-S4-14034 | 14 | 34 | 100 | 14 | 2 |
| UP100-S4-15036 | 15 | 36 | 90 | 16 | 1 |
| UP100-S4-16036 | 16 | 36 | 100 | 16 | 2 |
| UP100-S4-17038 | 17 | 38 | 100 | 18 | 1 |
| UP100-S4-18038 | 18 | 38 | 100 | 18 | 2 |
| UP100-S4-20045 | 20 | 45 | 100 | 20 | 2 |

| D | 公差 Tol |
|--------|------------|
| D ≤ 12 | 0 -0.02 |
| D > 12 | 0 -0.03 |

单位 unit (mm)

136页
Page
切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | | | |
|-------------------------|-------------------|------------------------------|-----|-------------------------|---------------------|----------------------------|-------------------|
| P | | | M | K | | N | |
| 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 |
| 碳钢 合金钢 (<35HRC) | 合金钢 (35-48HRC) | PH与铁素体 马氏体不锈钢 (<35HRC) | 不锈钢 | 灰铸铁 球墨铸铁 (<32HRC) | 高合金铸铁 (35-45HRC) | 锻造铝合金 铸造铝合金 (Si<12%) | 铜合金 (<HB200) |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

○ 最适合 Most Suitable ○ 适合 Suitable

钢件、铸铁
For Steels & Cast Iron

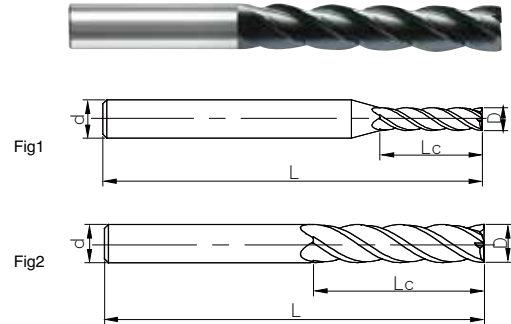


标记说明请参考P6页 See page 6 for guidelines to icons

UP100-SL4

4刃长刃平头

4 Flute, Long Flute Length



| 订货号 Ordering code | D | Lc | L | d | 图号 Figure No. |
|----------------------|----|----|-----|----|------------------|
| UP100-SL4-04030 | 4 | 30 | 75 | 4 | 2 |
| UP100-SL4-05030 | 5 | 30 | 75 | 6 | 1 |
| UP100-SL4-06030 | 6 | 30 | 100 | 6 | 2 |
| UP100-SL4-06035 | 6 | 35 | 75 | 6 | 2 |
| UP100-SL4-08040 | 8 | 40 | 100 | 8 | 2 |
| UP100-SL4-10045 | 10 | 45 | 100 | 10 | 2 |
| UP100-SL4-12040 | 12 | 40 | 150 | 12 | 2 |
| UP100-SL4-12050 | 12 | 50 | 100 | 12 | 2 |
| UP100-SL4-16050 | 16 | 50 | 150 | 16 | 2 |
| UP100-SL4-16060 | 16 | 60 | 150 | 16 | 2 |
| UP100-SL4-20070 | 20 | 70 | 150 | 20 | 2 |

| D | 公差 Tol |
|--------|------------|
| D ≤ 12 | 0 -0.02 |
| D > 12 | 0 -0.03 |

单位unit (mm)

136页
Page
切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | | | | | | | | | |
|-------------------------|---|---|---|-------------------|------------------------------|---|---|-----|---|-------------------------|---------------------|----------------------------|-----------------|
| P | | | M | K | | N | | | | | | | |
| 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 1 | 2 | 4 | | | |
| 碳钢 合金钢 (<35HRC) | | | | 合金钢 (35-48HRC) | PH与铁素体 马氏体不锈钢 (<35HRC) | | | 不锈钢 | | 灰铸铁 球墨铸铁 (<32HRC) | 高合金铸铁 (35-45HRC) | 锻造铝合金 铸造铝合金 (Si<12%) | 铜合金 (<HB200) |
| ○ | | | | ○ | ○ | | | ○ | | ○ | ○ | ○ | |

○ 最适合 Most Suitable ○ 适合 Suitable

钢件、铸铁
For Steels&Cast Iron

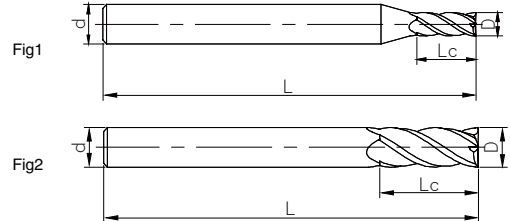


标记说明请参考P6页 See page 6 for guidelines to icons

UP100-SH4

4刃长柄平头

4 Flute, with Long Shank Length



| 订货号 Ordering code | D | Lc | L | d | 图号 Figure No. |
|----------------------|----|----|-----|----|------------------|
| UP100-SH4-03009 | 3 | 9 | 75 | 4 | 1 |
| UP100-SH4-63012 | 3 | 12 | 75 | 6 | 1 |
| UP100-SH4-04011 | 4 | 11 | 75 | 4 | 2 |
| UP100-SH4-64015 | 4 | 15 | 75 | 6 | 1 |
| UP100-SH4-05020 | 5 | 20 | 75 | 6 | 1 |
| UP100-SH4-06016 | 6 | 16 | 100 | 6 | 2 |
| UP100-SH4-06020 | 6 | 20 | 75 | 6 | 2 |
| UP100-SH4-08020 | 8 | 20 | 75 | 8 | 2 |
| UP100-SH4-08025 | 8 | 25 | 100 | 8 | 2 |
| UP100-SH4-10030 | 10 | 30 | 100 | 10 | 2 |
| UP100-SH4-10035 | 10 | 35 | 150 | 10 | 2 |
| UP100-SH4-12035 | 12 | 35 | 100 | 12 | 2 |
| UP100-SH4-16036 | 16 | 36 | 150 | 16 | 2 |
| UP100-SH4-20045 | 20 | 45 | 150 | 20 | 2 |

| D | 公差 Tol |
|--------|------------|
| D ≤ 12 | 0 -0.02 |
| D > 12 | 0 -0.03 |

单位unit (mm)

136页
Page
切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | | | | | | | | | | | |
|-------------------------|---|-------------------|---|------------------------------|---|-----|---|-------------------------|---|---------------------|--|----------------------------|--|-------------------|--|
| P | | | M | K | | N | | | | | | | | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 1 | 2 | 3 | 4 | | | | | | |
| 碳钢 合金钢 (<35HRC) | | 合金钢 (35-48HRC) | | PH与铁素体 马氏体不锈钢 (<35HRC) | | 不锈钢 | | 灰铸铁 球墨铸铁 (<32HRC) | | 高合金铸铁 (35-45HRC) | | 锻造铝合金 铸造铝合金 (Si<12%) | | 铜合金 (<HB200) | |
| ○ | | ○ | | ○ | | ○ | | ○ | | ○ | | ○ | | ○ | |

○ 最适合 Most Suitable ○ 适合 Suitable

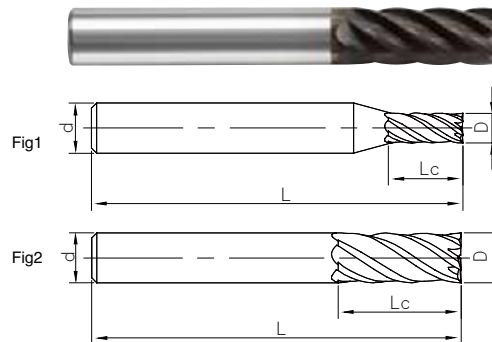


标记说明请参考P6页 See page 6 for guidelines to icons

UP100-S6

6刃平头

6 Flute, Standard Length



| 订货号 Ordering code | D | Lc | L | d | 图号 Figure No. |
|----------------------|----|----|-----|----|------------------|
| UP100-S6-06015 | 6 | 15 | 50 | 6 | 2 |
| UP100-S6-08020 | 8 | 20 | 60 | 8 | 2 |
| UP100-S6-10025 | 10 | 25 | 75 | 10 | 2 |
| UP100-S6-12030 | 12 | 30 | 75 | 12 | 2 |
| UP100-S6-16036 | 16 | 36 | 100 | 16 | 2 |
| UP100-S6-20045 | 20 | 45 | 100 | 20 | 2 |

| D | 公差 Tol |
|--------|------------|
| D ≤ 12 | 0 -0.02 |
| D > 12 | 0 -0.03 |

单位unit (mm)

136页
Page

切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | | | |
|-------------------------|-------------------|------------------------------|-----|-------------------------|---------------------|----------------------------|-----------------|
| P | | | M | K | | N | |
| 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 |
| 碳钢 合金钢 (<35HRC) | 合金钢 (35-48HRC) | PH与铁素体 马氏体不锈钢 (<35HRC) | 不锈钢 | 灰铸铁 球墨铸铁 (<32HRC) | 高合金铸铁 (35-45HRC) | 锻造铝合金 铸造铝合金 (Si<12%) | 铜合金 (<HB200) |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

○ 最适合 Most Suitable ○ 适合 Suitable

钢件、铸铁
For Steels & Cast Iron

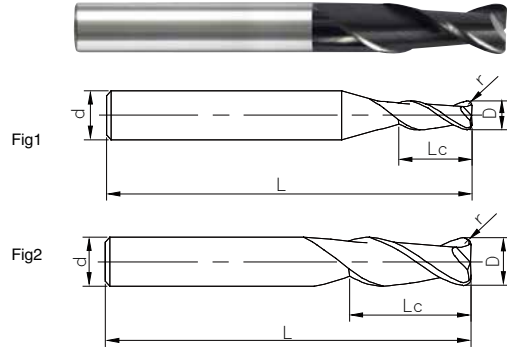


标记说明请参考P6页 See page 6 for guidelines to icons

UP100-R2

2刃圆角头

2 Flute, Corner Radius



| 订货号 Ordering code | D | Lc | r | L | d | 图号 Figure No. |
|----------------------|---|----|-----|----|---|------------------|
| UP100-R2-01001 | 1 | 3 | 0.1 | 50 | 4 | 1 |
| UP100-R2-02002 | 2 | 6 | 0.2 | 50 | 4 | 1 |
| UP100-R2-03002 | 3 | 9 | 0.2 | 50 | 4 | 1 |
| UP100-R2-63002 | 3 | 9 | 0.2 | 50 | 6 | 1 |
| UP100-R2-03003 | 3 | 9 | 0.3 | 50 | 4 | 1 |
| UP100-R2-63003 | 3 | 9 | 0.3 | 50 | 6 | 1 |
| UP100-R2-03005 | 3 | 9 | 0.5 | 50 | 4 | 1 |
| UP100-R2-63005 | 3 | 9 | 0.5 | 50 | 6 | 1 |
| UP100-R2-04002 | 4 | 11 | 0.2 | 50 | 4 | 2 |
| UP100-R2-64002 | 4 | 11 | 0.2 | 50 | 6 | 1 |
| UP100-R2-64003 | 4 | 11 | 0.3 | 50 | 6 | 1 |
| UP100-R2-64005 | 4 | 11 | 0.5 | 50 | 6 | 1 |
| UP100-R2-04003 | 4 | 11 | 0.3 | 50 | 4 | 2 |
| UP100-R2-04005 | 4 | 11 | 0.5 | 50 | 4 | 2 |

| D | 公差 Tol |
|--------|------------|
| D ≤ 12 | 0 -0.02 |
| D > 12 | 0 -0.03 |

单位unit (mm)

136页
Page
切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | | | |
|-------------------------|-------------------|------------------------------|-------|-------------------------|---------------------|----------------------------|-------------------|
| P | | | M | K | N | | |
| 1 2 3 4 | 5 | 6 | 1 2 3 | 1 2 | 3 | 1 2 | 4 |
| 碳钢 合金钢 (<35HRC) | 合金钢 (35-48HRC) | PH与铁素体 马氏体不锈钢 (<35HRC) | 不锈钢 | 灰铸铁 球墨铸铁 (<32HRC) | 高合金铸铁 (35-45HRC) | 锻造铝合金 铸造铝合金 (Si<12%) | 铜合金 (<HB200) |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

○ 最适合 Most Suitable ○ 适合 Suitable



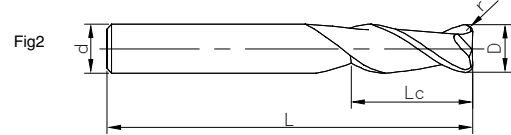
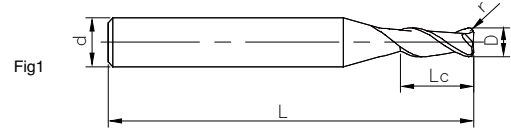
标记说明请参考P6页 See page 6 for guidelines to icons

UP100-R2

2刃圆角头

2 Flute, Corner Radius

》续前 continue



| 订货号 Ordering code | D | Lc | r | L | d | 图号 Figure No. |
|----------------------|---|----|-----|----|---|------------------|
| UP100-R2-04010 | 4 | 11 | 1 | 50 | 4 | 2 |
| UP100-R2-05002 | 5 | 13 | 0.2 | 50 | 6 | 1 |
| UP100-R2-05003 | 5 | 13 | 0.3 | 50 | 6 | 1 |
| UP100-R2-05005 | 5 | 13 | 0.5 | 50 | 6 | 1 |
| UP100-R2-05010 | 5 | 13 | 1 | 50 | 6 | 1 |
| UP100-R2-05015 | 5 | 13 | 1.5 | 50 | 6 | 1 |
| UP100-R2-06005 | 6 | 16 | 0.5 | 50 | 6 | 2 |
| UP100-R2-06010 | 6 | 16 | 1 | 50 | 6 | 2 |
| UP100-R2-06015 | 6 | 16 | 1.5 | 50 | 6 | 2 |
| UP100-R2-06020 | 6 | 16 | 2 | 50 | 6 | 2 |
| UP100-R2-08003 | 8 | 20 | 0.3 | 60 | 8 | 2 |
| UP100-R2-08005 | 8 | 20 | 0.5 | 60 | 8 | 2 |
| UP100-R2-08010 | 8 | 20 | 1 | 60 | 8 | 2 |
| UP100-R2-08015 | 8 | 20 | 1.5 | 60 | 8 | 2 |

| D | 公差 Tol |
|--------|------------|
| D ≤ 12 | 0 -0.02 |
| D > 12 | 0 -0.03 |

单位unit (mm)

136页
Page

切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | | | | | | | | | | | |
|-------------------------|---|-------------------|---|------------------------------|---|-----|---|-------------------------|---|---------------------|--|----------------------------|--|-----------------|--|
| P | | | M | K | | N | | | | | | | | | |
| 1 | 2 | 3 | 4 | 1 | 2 | 3 | 1 | 2 | 3 | 4 | | | | | |
| 碳钢 合金钢 (<35HRC) | | 合金钢 (35-48HRC) | | PH与铁素体 马氏体不锈钢 (<35HRC) | | 不锈钢 | | 灰铸铁 球墨铸铁 (<32HRC) | | 高合金铸铁 (35-45HRC) | | 锻造铝合金 铸造铝合金 (Si<12%) | | 铜合金 (<HB200) | |
| ○ | | ○ | | ○ | | ○ | | ○ | | ○ | | ○ | | ○ | |

○ 最适合 Most Suitable ○ 适合 Suitable

钢件、铸铁
For Steels & Cast Iron

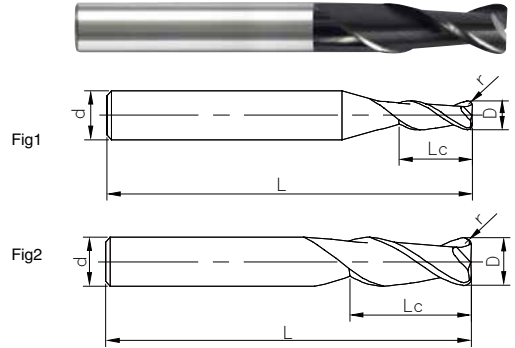


标记说明请参考P6页 See page 6 for guidelines to icons

UP100-R2

2刃圆角头

2 Flute, Corner Radius



》续前 continue

| 订货号 Ordering code | D | Lc | r | L | d | 图号 Figure No. |
|----------------------|----|----|-----|-----|----|------------------|
| UP100-R2-08020 | 8 | 20 | 2 | 60 | 8 | 2 |
| UP100-R2-10003 | 10 | 25 | 0.3 | 75 | 10 | 2 |
| UP100-R2-10005 | 10 | 25 | 0.5 | 75 | 10 | 2 |
| UP100-R2-10010 | 10 | 25 | 1 | 75 | 10 | 2 |
| UP100-R2-10015 | 10 | 25 | 1.5 | 75 | 10 | 2 |
| UP100-R2-10020 | 10 | 25 | 2 | 75 | 10 | 2 |
| UP100-R2-10030 | 10 | 25 | 3 | 75 | 10 | 2 |
| UP100-R2-12005 | 12 | 30 | 0.5 | 75 | 12 | 2 |
| UP100-R2-12010 | 12 | 30 | 1 | 75 | 12 | 2 |
| UP100-R2-12015 | 12 | 30 | 1.5 | 75 | 12 | 2 |
| UP100-R2-12020 | 12 | 30 | 2 | 75 | 12 | 2 |
| UP100-R2-12030 | 12 | 30 | 3 | 75 | 12 | 2 |
| UP100-R2-16010 | 16 | 36 | 1 | 100 | 16 | 2 |
| UP100-R2-16020 | 16 | 36 | 2 | 100 | 16 | 2 |
| UP100-R2-16030 | 16 | 36 | 3 | 100 | 16 | 2 |

| D | 公差 Tol |
|--------|------------|
| D ≤ 12 | 0 -0.02 |
| D > 12 | 0 -0.03 |

单位 unit (mm)

136页
Page
切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | | | |
|--------------------------|---------------------|---------------------------------|-------|----------------------------|-----------------------|--------------------------------|--------------------|
| P | | | M | K | N | | |
| 1 2 3 4 | 5 | 6 | 1 2 3 | 1 2 | 3 | 1 2 | 4 |
| 碳钢 合金钢 (< 35HRC) | 合金钢 (35-48HRC) | PH与铁素体 马氏体不锈钢 (< 35HRC) | 不锈钢 | 灰铸铁 球墨铸铁 (< 32HRC) | 高合金铸铁 (35-45HRC) | 锻造铝合金 铸造铝合金 (Si < 12%) | 铜合金 (< HB200) |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

○ 最适合 Most Suitable ○ 适合 Suitable

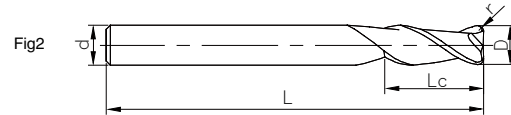
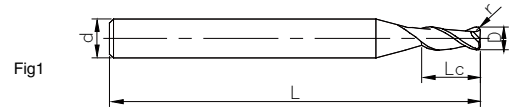


标记说明请参考P6页 See page 6 for guidelines to icons

UP100-RH2

2刃长柄圆角头

2 Flute Corner Radius, with Long Shank Length



| 订货号 Ordering code | D | Lc | r | L | d | 图号 Figure No. |
|----------------------|----|----|-----|-----|----|------------------|
| UP100-RH2-06005 | 6 | 15 | 0.5 | 75 | 6 | 2 |
| UP100-RH2-06010 | 6 | 15 | 1 | 75 | 6 | 2 |
| UP100-RH2-06015 | 6 | 15 | 1.5 | 75 | 6 | 2 |
| UP100-RH2-08005 | 8 | 20 | 0.5 | 100 | 8 | 2 |
| UP100-RH2-08010 | 8 | 20 | 1 | 100 | 8 | 2 |
| UP100-RH2-08015 | 8 | 20 | 1.5 | 100 | 8 | 2 |
| UP100-RH2-10005 | 10 | 25 | 0.5 | 100 | 10 | 2 |
| UP100-RH2-10010 | 10 | 25 | 1 | 100 | 10 | 2 |
| UP100-RH2-10015 | 10 | 25 | 1.5 | 100 | 10 | 2 |

| D | 公差 Tol |
|--------|------------|
| D ≤ 12 | 0 -0.02 |
| D > 12 | 0 -0.03 |

单位unit (mm)

136页
Page

切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | | | |
|-------------------------|-------------------|------------------------------|-----|-------------------------|---------------------|----------------------------|-----------------|
| P | | | M | K | | N | |
| 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 |
| 碳钢 合金钢 (<35HRC) | 合金钢 (35-48HRC) | PH与铁素体 马氏体不锈钢 (<35HRC) | 不锈钢 | 灰铸铁 球墨铸铁 (<32HRC) | 高合金铸铁 (35-45HRC) | 锻造铝合金 铸造铝合金 (Si<12%) | 铜合金 (<HB200) |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

○ 最适合 Most Suitable ○ 适合 Suitable

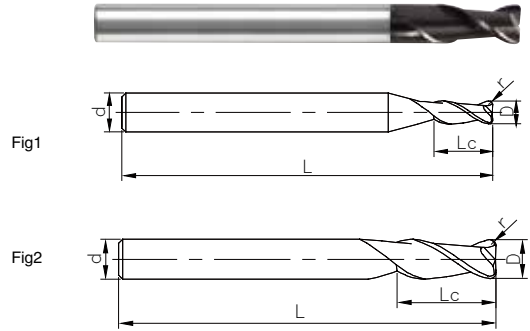
钢件、铸铁
For Steels&Cast Iron



标记说明请参考P6页 See page 6 for guidelines to icons

UP100-RH2

2刃长柄圆角头
2 Flute Corner Radius, with Long
Shank Length



》续前 continue

| 订货号 Ordering code | D | Lc | r | L | d | 图号 Figure No. |
|----------------------|----|----|-----|-----|----|------------------|
| UP100-RH2-10020 | 10 | 25 | 2 | 100 | 10 | 2 |
| UP100-RH2-12005 | 12 | 30 | 0.5 | 100 | 12 | 2 |
| UP100-RH2-12010 | 12 | 30 | 1 | 100 | 12 | 2 |
| UP100-RH2-12015 | 12 | 30 | 1.5 | 100 | 12 | 2 |
| UP100-RH2-12020 | 12 | 30 | 2 | 100 | 12 | 2 |
| UP100-RH2-16005 | 16 | 36 | 0.5 | 150 | 16 | 2 |
| UP100-RH2-16010 | 16 | 36 | 1 | 150 | 16 | 2 |
| UP100-RH2-16015 | 16 | 36 | 1.5 | 150 | 16 | 2 |
| UP100-RH2-16020 | 16 | 36 | 2 | 150 | 16 | 2 |

| D | 公差 Tol |
|--------|------------|
| D ≤ 12 | 0 -0.02 |
| D > 12 | 0 -0.03 |

单位unit (mm)

136页
Page
切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | | | | |
|-------------------------|---|-------------------|------------------------------|-----|-------------------------|---------------------|----------------------------|-------------------|
| P | | | M | K | N | | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | |
| 碳钢 合金钢 (<35HRC) | | 合金钢 (35-48HRC) | PH与铁素体 马氏体不锈钢 (<35HRC) | 不锈钢 | 灰铸铁 球墨铸铁 (<32HRC) | 高合金铸铁 (35-45HRC) | 锻造铝合金 铸造铝合金 (Si<12%) | 铜合金 (<HB200) |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |

○ 最适合 Most Suitable ○ 适合 Suitable

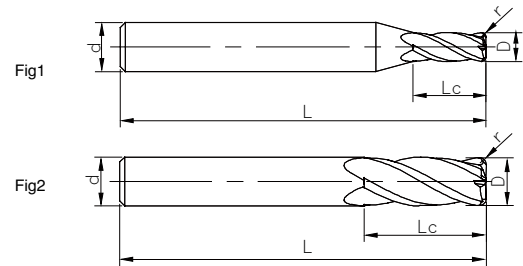


标记说明请参考P6页 See page 6 for guidelines to icons

UP100-R4

4刃圆角头

4 Flute, Corner Radius



| 订货号 Ordering code | D | Lc | r | L | d | 图号 Figure No. |
|----------------------|---|----|-----|----|---|------------------|
| UP100-R4-02002 | 2 | 6 | 0.2 | 50 | 4 | 1 |
| UP100-R4-03002 | 3 | 9 | 0.2 | 50 | 4 | 1 |
| UP100-R4-03003 | 3 | 9 | 0.3 | 50 | 4 | 1 |
| UP100-R4-03005 | 3 | 9 | 0.5 | 50 | 4 | 1 |
| UP100-R4-04002 | 4 | 11 | 0.2 | 50 | 4 | 2 |
| UP100-R4-04003 | 4 | 11 | 0.3 | 50 | 4 | 2 |
| UP100-R4-04005 | 4 | 11 | 0.5 | 50 | 4 | 2 |
| UP100-R4-04010 | 4 | 11 | 1 | 50 | 4 | 2 |
| UP100-R4-05002 | 5 | 13 | 0.2 | 50 | 6 | 1 |
| UP100-R4-05005 | 5 | 13 | 0.5 | 50 | 6 | 1 |
| UP100-R4-05010 | 5 | 13 | 1 | 50 | 6 | 1 |
| UP100-R4-05015 | 5 | 13 | 1.5 | 50 | 6 | 1 |
| UP100-R4-06005 | 6 | 16 | 0.5 | 50 | 6 | 2 |

| D | 公差 Tol |
|--------|--|
| D ≤ 12 | $\begin{matrix} 0 \\ -0.02 \end{matrix}$ |
| D > 12 | $\begin{matrix} 0 \\ -0.03 \end{matrix}$ |

单位unit (mm)

136页
Page

切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | | | | | | |
|-------------------------|-------------------|------------------------------|-----|-------------------------|---------------------|----------------------------|-----------------|---|---|---|
| P | | | M | K | | N | | | | |
| 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 1 | 2 | 4 |
| 碳钢 合金钢 (<35HRC) | 合金钢 (35-48HRC) | PH与铁素体 马氏体不锈钢 (<35HRC) | 不锈钢 | 灰铸铁 球墨铸铁 (<32HRC) | 高合金铸铁 (35-45HRC) | 锻造铝合金 铸造铝合金 (Si<12%) | 铜合金 (<HB200) | | | |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

○ 最适合 Most Suitable ○ 适合 Suitable

钢件、铸铁
For Steels & Cast Iron

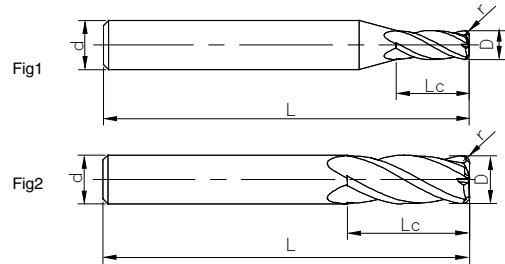


标记说明请参考P6页 See page 6 for guidelines to icons

UP100-R4

4刃圆角头

4 Flute, Corner Radius



》续前 continue

| 订货号 Ordering code | D | Lc | r | L | d | 图号 Figure No. |
|----------------------|----|----|-----|----|----|------------------|
| UP100-R4-06010 | 6 | 16 | 1 | 50 | 6 | 2 |
| UP100-R4-06015 | 6 | 16 | 1.5 | 50 | 6 | 2 |
| UP100-R4-08003 | 8 | 20 | 0.3 | 60 | 8 | 2 |
| UP100-R4-08005 | 8 | 20 | 0.5 | 60 | 8 | 2 |
| UP100-R4-08010 | 8 | 20 | 1 | 60 | 8 | 2 |
| UP100-R4-08015 | 8 | 20 | 1.5 | 60 | 8 | 2 |
| UP100-R4-08020 | 8 | 20 | 2 | 60 | 8 | 2 |
| UP100-R4-10003 | 10 | 25 | 0.3 | 75 | 10 | 2 |
| UP100-R4-10005 | 10 | 25 | 0.5 | 75 | 10 | 2 |
| UP100-R4-10010 | 10 | 25 | 1 | 75 | 10 | 2 |
| UP100-R4-10015 | 10 | 25 | 1.5 | 75 | 10 | 2 |
| UP100-R4-10020 | 10 | 25 | 2 | 75 | 10 | 2 |

| D | 公差 Tol |
|--------|------------|
| D ≤ 12 | 0 -0.02 |
| D > 12 | 0 -0.03 |

单位 unit (mm)

136页
Page
切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | | | | | |
|-------------------------|---|---|-------------------|------------------------------|-----|-------------------------|---------------------|----------------------------|-------------------|
| P | | | M | K | | N | | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 1 | 2 | 3 | 4 |
| 碳钢 合金钢 (<35HRC) | | | 合金钢 (35-48HRC) | PH与铁素体 马氏体不锈钢 (<35HRC) | 不锈钢 | 灰铸铁 球墨铸铁 (<32HRC) | 高合金铸铁 (35-45HRC) | 锻造铝合金 铸造铝合金 (Si<12%) | 铜合金 (<HB200) |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

○ 最适合 Most Suitable ○ 适合 Suitable



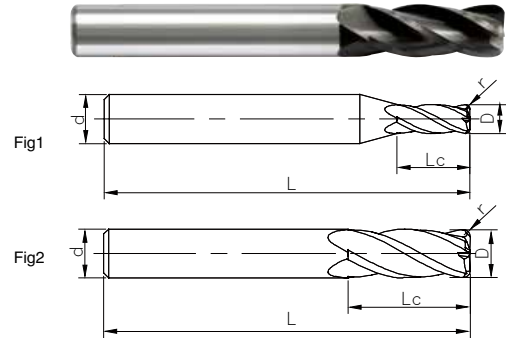
标记说明请参考P6页 See page 6 for guidelines to icons

UP100-R4

4刃圆角头

4 Flute, Corner Radius

》续前 continue



| 订货号 Ordering code | D | Lc | r | L | d | 图号 Figure No. |
|----------------------|----|----|-----|-----|----|------------------|
| UP100-R4-10025 | 10 | 25 | 2.5 | 75 | 10 | 2 |
| UP100-R4-10030 | 10 | 25 | 3 | 75 | 10 | 2 |
| UP100-R4-12005 | 12 | 30 | 0.5 | 75 | 12 | 2 |
| UP100-R4-12010 | 12 | 30 | 1 | 75 | 12 | 2 |
| UP100-R4-12015 | 12 | 30 | 1.5 | 75 | 12 | 2 |
| UP100-R4-12020 | 12 | 30 | 2 | 75 | 12 | 2 |
| UP100-R4-12025 | 12 | 30 | 2.5 | 75 | 12 | 2 |
| UP100-R4-12030 | 12 | 30 | 3 | 75 | 12 | 2 |
| UP100-R4-16005 | 16 | 36 | 0.5 | 100 | 16 | 2 |
| UP100-R4-16010 | 16 | 36 | 1 | 100 | 16 | 2 |
| UP100-R4-16020 | 16 | 36 | 2 | 100 | 16 | 2 |
| UP100-R4-16030 | 16 | 36 | 3 | 100 | 16 | 2 |

| D | 公差 Tol |
|--------|------------|
| D ≤ 12 | 0 -0.02 |
| D > 12 | 0 -0.03 |

单位unit (mm)

136页
Page

切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | | | | | | |
|-------------------------|---|---|-------------------|------------------------------|-----|-------------------------|---------------------|----------------------------|-----------------|---|
| P | | | M | K | | N | | | | |
| 1 | 2 | 3 | 4 | 1 | 2 | 3 | 1 | 2 | 3 | 4 |
| 碳钢 合金钢 (<35HRC) | | | 合金钢 (35-48HRC) | PH与铁素体 马氏体不锈钢 (<35HRC) | 不锈钢 | 灰铸铁 球墨铸铁 (<32HRC) | 高合金铸铁 (35-45HRC) | 锻造铝合金 铸造铝合金 (Si<12%) | 铜合金 (<HB200) | |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

○ 最适合 Most Suitable ○ 适合 Suitable

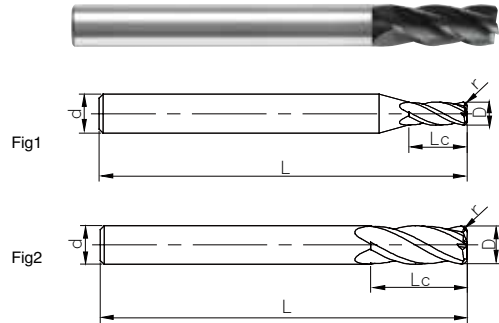
钢件、铸铁
For Steels & Cast Iron



标记说明请参考P6页 See page 6 for guidelines to icons

UP100-RH4

4刃长柄圆角头
4 Flute Corner Radius, with Long
Shank Length



| 订货号 Ordering code | D | Lc | r | L | d | 图号 Figure No. |
|----------------------|----|----|-----|-----|----|------------------|
| UP100-RH4-06005 | 6 | 15 | 0.5 | 75 | 6 | 2 |
| UP100-RH4-06010 | 6 | 15 | 1 | 75 | 6 | 2 |
| UP100-RH4-08005 | 8 | 20 | 0.5 | 100 | 8 | 2 |
| UP100-RH4-08010 | 8 | 20 | 1 | 100 | 8 | 2 |
| UP100-RH4-08015 | 8 | 20 | 1.5 | 100 | 8 | 2 |
| UP100-RH4-08020 | 8 | 20 | 2 | 100 | 8 | 2 |
| UP100-RH4-10005 | 10 | 25 | 0.5 | 100 | 10 | 2 |
| UP100-RH4-10010 | 10 | 25 | 1 | 100 | 10 | 2 |
| UP100-RH4-10015 | 10 | 25 | 1.5 | 100 | 10 | 2 |
| UP100-RH4-10020 | 10 | 25 | 2 | 100 | 10 | 2 |

| D | 公差 Tol |
|--------|------------|
| D ≤ 12 | 0 -0.02 |
| D > 12 | 0 -0.03 |

单位unit (mm)

136页
Page
切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | | | |
|--------------------------|---------------------|---------------------------------|-------|----------------------------|-----------------------|--------------------------------|--------------------|
| P | | | M | K | | | N |
| 1 2 3 4 | 5 | 6 | 1 2 3 | 1 2 | 3 | 1 2 | 4 |
| 碳钢 合金钢 (< 35HRC) | 合金钢 (35-48HRC) | PH与铁素体 马氏体不锈钢 (< 35HRC) | 不锈钢 | 灰铸铁 球墨铸铁 (< 32HRC) | 高合金铸铁 (35-45HRC) | 锻造铝合金 铸造铝合金 (Si < 12%) | 铜合金 (< HB200) |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

○ 最适合 Most Suitable ○ 适合 Suitable



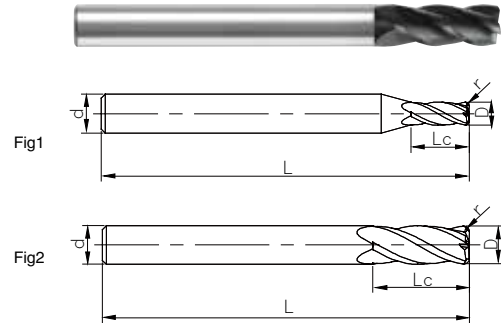
标记说明请参考P6页 See page 6 for guidelines to icons

UP100-RH4

4刃长柄圆角头

4 Flute Corner Radius, with Long Shank Length

》续前 continue



| 订货号 Ordering code | D | Lc | r | L | d | 图号 Figure No. |
|----------------------|----|----|-----|-----|----|------------------|
| UP100-RH4-12005 | 12 | 30 | 0.5 | 100 | 12 | 2 |
| UP100-RH4-12010 | 12 | 30 | 1 | 100 | 12 | 2 |
| UP100-RH4-12015 | 12 | 30 | 1.5 | 100 | 12 | 2 |
| UP100-RH4-12020 | 12 | 30 | 2 | 100 | 12 | 2 |
| UP100-RH4-12030 | 12 | 30 | 3 | 100 | 12 | 2 |
| UP100-RH4-16005 | 16 | 36 | 0.5 | 150 | 16 | 2 |
| UP100-RH4-16010 | 16 | 36 | 1 | 150 | 16 | 2 |
| UP100-RH4-16015 | 16 | 36 | 1.5 | 150 | 16 | 2 |
| UP100-RH4-16020 | 16 | 36 | 2 | 150 | 16 | 2 |
| UP100-RH4-16030 | 16 | 36 | 3 | 150 | 16 | 2 |

| D | 公差 Tol |
|--------|------------|
| D ≤ 12 | 0 -0.02 |
| D > 12 | 0 -0.03 |

单位unit (mm)

136页
Page

切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | | | |
|-------------------------|-------------------|------------------------------|-------|-------------------------|---------------------|----------------------------|-----------------|
| P | | | M | K | | N | |
| 1 2 3 4 | 5 | 6 | 1 2 3 | 1 2 | 3 | 1 2 | 4 |
| 碳钢 合金钢 (<35HRC) | 合金钢 (35-48HRC) | PH与铁素体 马氏体不锈钢 (<35HRC) | 不锈钢 | 灰铸铁 球墨铸铁 (<32HRC) | 高合金铸铁 (35-45HRC) | 锻造铝合金 铸造铝合金 (Si<12%) | 铜合金 (<HB200) |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

○ 最适合 Most Suitable ○ 适合 Suitable

钢件、铸铁
For Steels&Cast Iron

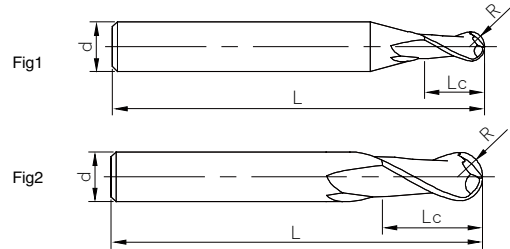


标记说明请参考P6页 See page 6 for guidelines to icons

UP100-B2

2刃球头

2 Flute, Ballnose



| 订货号 Ordering code | D | R | Lc | L | d | 图号 Figure No. |
|----------------------|-----|------|-----|----|---|------------------|
| UP100-B2-00801 | 0.8 | 0.4 | 1.6 | 50 | 4 | 1 |
| UP100-B2-00901 | 0.9 | 0.45 | 1.8 | 50 | 4 | 1 |
| UP100-B2-01002 | 1 | 0.5 | 2 | 50 | 4 | 1 |
| UP100-B2-01503 | 1.5 | 0.75 | 3 | 50 | 4 | 1 |
| UP100-B2-02004 | 2 | 1 | 4 | 50 | 4 | 1 |
| UP100-B2-02505 | 2.5 | 1.25 | 5 | 50 | 4 | 1 |
| UP100-B2-03006 | 3 | 1.5 | 6 | 50 | 4 | 1 |
| UP100-B2-63006 | 3 | 1.5 | 6 | 50 | 6 | 1 |
| UP100-B2-63508 | 3.5 | 1.75 | 8 | 50 | 6 | 1 |
| UP100-B2-04008 | 4 | 2 | 8 | 50 | 4 | 2 |
| UP100-B2-64008 | 4 | 2 | 8 | 50 | 6 | 1 |
| UP100-B2-05010 | 5 | 2.5 | 10 | 50 | 6 | 1 |

| R | 公差 Tol |
|-------|--------|
| R < 3 | ±0.015 |
| R ≥ 3 | ±0.020 |

单位unit (mm)

136页
Page
切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | | | |
|-------------------------|-------------------|------------------------------|-------|-------------------------|---------------------|----------------------------|-------------------|
| P | | | M | K | | N | |
| 1 2 3 4 | 5 | 6 | 1 2 3 | 1 2 | 3 | 1 2 | 4 |
| 碳钢 合金钢 (<35HRC) | 合金钢 (35-48HRC) | PH与铁素体 马氏体不锈钢 (<35HRC) | 不锈钢 | 灰铸铁 球墨铸铁 (<32HRC) | 高合金铸铁 (35-45HRC) | 锻造铝合金 铸造铝合金 (Si<12%) | 铜合金 (<HB200) |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

○ 最适合 Most Suitable ○ 适合 Suitable

钢件、铸铁
For Steels&Cast Iron

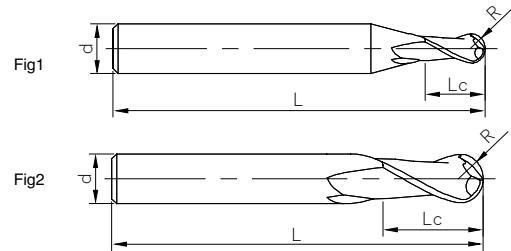


标记说明请参考P6页 See page 6 for guidelines to icons

UP100-B2

2刃球头

2 Flute, Ballnose



》续前 continue

| 订货号 Ordering code | D | R | Lc | L | d | 图号 Figure No. |
|----------------------|----|-----|----|-----|----|------------------|
| UP100-B2-06012 | 6 | 3 | 12 | 50 | 6 | 2 |
| UP100-B2-07014 | 7 | 3.5 | 14 | 60 | 8 | 1 |
| UP100-B2-08014 | 8 | 4 | 14 | 60 | 8 | 2 |
| UP100-B2-09016 | 9 | 4.5 | 16 | 75 | 10 | 1 |
| UP100-B2-10018 | 10 | 5 | 18 | 75 | 10 | 2 |
| UP100-B2-11020 | 11 | 5.5 | 20 | 75 | 12 | 1 |
| UP100-B2-12022 | 12 | 6 | 22 | 75 | 12 | 2 |
| UP100-B2-13026 | 13 | 6.5 | 26 | 90 | 16 | 1 |
| UP100-B2-14026 | 14 | 7 | 26 | 90 | 16 | 1 |
| UP100-B2-15030 | 15 | 7.5 | 30 | 90 | 16 | 1 |
| UP100-B2-16030 | 16 | 8 | 30 | 100 | 16 | 2 |
| UP100-B2-20038 | 20 | 10 | 38 | 100 | 20 | 2 |

| R | 公差 Tol |
|-------|--------|
| R < 3 | ±0.015 |
| R ≥ 3 | ±0.020 |

单位unit (mm)

136页
Page

切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | | | | | | |
|-------------------------|---|---|-------------------|------------------------------|-----|-------------------------|---------------------|----------------------------|-----------------|---|
| P | | | M | K | | N | | | | |
| 1 | 2 | 3 | 4 | 1 | 2 | 3 | 1 | 2 | 3 | 4 |
| 碳钢 合金钢 (<35HRC) | | | 合金钢 (35-48HRC) | PH与铁素体 马氏体不锈钢 (<35HRC) | 不锈钢 | 灰铸铁 球墨铸铁 (<32HRC) | 高合金铸铁 (35-45HRC) | 锻造铝合金 铸造铝合金 (Si<12%) | 铜合金 (<HB200) | |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

○ 最适合 Most Suitable ○ 适合 Suitable

钢件、铸铁
For Steels&Cast Iron

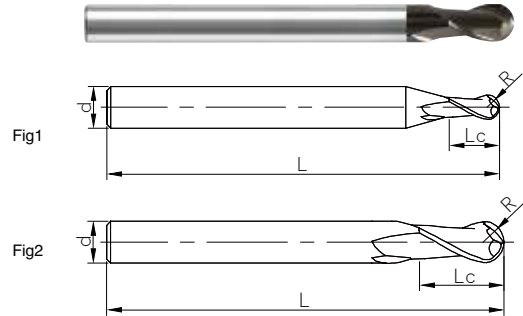


标记说明请参考P6页 See page 6 for guidelines to icons

UP100-BH2

2刃长柄球头

2 Flute Ballnose, with Long Shank Length



| 订货号 Ordering code | D | R | Lc | L | d | 图号 Figure No. |
|----------------------|----|-----|----|-----|----|------------------|
| UP100-BH2-02004 | 2 | 1 | 4 | 75 | 4 | 1 |
| UP100-BH2-03006 | 3 | 1.5 | 6 | 75 | 4 | 1 |
| UP100-BH2-04008 | 4 | 2 | 8 | 75 | 4 | 2 |
| UP100-BH2-05010 | 5 | 2.5 | 10 | 75 | 6 | 1 |
| UP100-BH2-06012 | 6 | 3 | 12 | 100 | 6 | 2 |
| UP100-BH2-08016 | 8 | 4 | 16 | 100 | 8 | 2 |
| UP100-BH2-10020 | 10 | 5 | 20 | 150 | 10 | 2 |
| UP100-BH2-12024 | 12 | 6 | 24 | 150 | 12 | 2 |

| R | 公差 Tol |
|-------|--------|
| R < 3 | ±0.015 |
| R ≥ 3 | ±0.020 |

单位unit (mm)

136页
Page
切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | | | |
|-------------------------|---|---------------------|---|------------------------------|---|-------------------|---|
| P | | | M | K | | N | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 碳钢 合金钢 (<35HRC) | | 合金钢 (35-48HRC) | | PH与铁素体 马氏体不锈钢 (<35HRC) | | 不锈钢 | |
| 灰铸铁 球墨铸铁 (<32HRC) | | 高合金铸铁 (35-45HRC) | | 锻造铝合金 铸造铝合金 (Si<12%) | | 铜合金 (<HB200) | |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

○ 最适合 Most Suitable ○ 适合 Suitable

钢件、铸铁
For Steels&Cast Iron

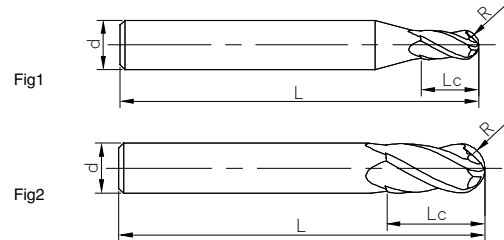


标记说明请参考P6页 See page 6 for guidelines to icons

UP100-B4

4刃球头

4 Flute, Ballnose



| 订货号 Ordering code | D | R | Lc | L | d | 图号 Figure No. |
|----------------------|-----|------|----|----|---|------------------|
| UP100-B4-02004 | 2 | 1.0 | 4 | 50 | 4 | 1 |
| UP100-B4-02505 | 2.5 | 1.25 | 5 | 50 | 4 | 1 |
| UP100-B4-03006 | 3 | 1.5 | 6 | 50 | 4 | 1 |
| UP100-B4-63006 | 3 | 1.5 | 6 | 50 | 6 | 1 |
| UP100-B4-04008 | 4 | 2 | 8 | 50 | 4 | 2 |
| UP100-B4-64008 | 4 | 2 | 8 | 50 | 6 | 1 |
| UP100-B4-05010 | 5 | 2.5 | 10 | 50 | 6 | 1 |
| UP100-B4-06012 | 6 | 3.0 | 12 | 50 | 6 | 2 |

| R | 公差 Tol |
|-------|---------|
| R < 3 | ± 0.015 |
| R ≥ 3 | ± 0.020 |

单位unit (mm)

136页
Page
切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | | | |
|-------------------------|-------------------|------------------------------|-----|-------------------------|---------------------|----------------------------|-----------------|
| P | | | M | K | | N | |
| 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 |
| 碳钢 合金钢 (<35HRC) | 合金钢 (35-48HRC) | PH与铁素体 马氏体不锈钢 (<35HRC) | 不锈钢 | 灰铸铁 球墨铸铁 (<32HRC) | 高合金铸铁 (35-45HRC) | 锻造铝合金 铸造铝合金 (Si<12%) | 铜合金 (<HB200) |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

○ 最适合 Most Suitable ○ 适合 Suitable

钢件、铸铁
For Steels&Cast Iron

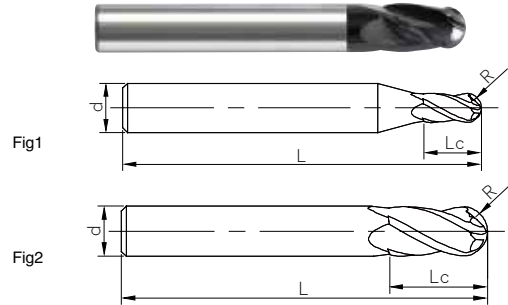


标记说明请参考P6页 See page 6 for guidelines to icons

UP100-B4

4刃球头

4 Flute, Ballnose



》续前 continue

| 订货号 Ordering code | D | R | Lc | L | d | 图号 Figure No. |
|----------------------|----|------|----|-----|----|------------------|
| UP100-B4-07014 | 7 | 3.5 | 14 | 60 | 8 | 1 |
| UP100-B4-08014 | 8 | 4.0 | 14 | 60 | 8 | 2 |
| UP100-B4-09016 | 9 | 4.5 | 16 | 75 | 10 | 1 |
| UP100-B4-10018 | 10 | 5.0 | 18 | 75 | 10 | 2 |
| UP100-B4-11020 | 11 | 5.5 | 20 | 75 | 12 | 1 |
| UP100-B4-12022 | 12 | 6.0 | 22 | 75 | 12 | 2 |
| UP100-B4-14024 | 14 | 7.0 | 24 | 75 | 14 | 2 |
| UP100-B4-16030 | 16 | 8.0 | 30 | 100 | 16 | 2 |
| UP100-B4-20038 | 20 | 10.0 | 38 | 100 | 20 | 2 |

| R | 公差 Tol |
|-------|--------|
| R < 3 | ±0.015 |
| R ≥ 3 | ±0.020 |

单位unit (mm)

136页
Page
切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | | | | | |
|-------------------------|---|---|-------------------|------------------------------|-----|-------------------------|---------------------|----------------------------|-------------------|
| P | | | M | K | N | | | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 1 | 2 | 3 | 4 |
| 碳钢 合金钢 (<35HRC) | | | 合金钢 (35-48HRC) | PH与铁素体 马氏体不锈钢 (<35HRC) | 不锈钢 | 灰铸铁 球墨铸铁 (<32HRC) | 高合金铸铁 (35-45HRC) | 锻造铝合金 铸造铝合金 (Si<12%) | 铜合金 (<HB200) |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

○ 最适合 Most Suitable ○ 适合 Suitable

钢件、铸铁
For Steels&Cast Iron

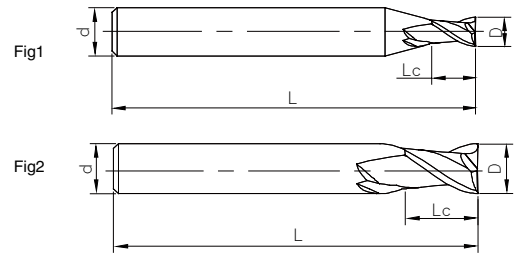


标记说明请参考P6页 See page 6 for guidelines to icons

UP210-SS2 NEW

2刃短刃平头

2 Flute, Stub Length



| 订货号 Ordering code | D | Lc | L | d | 图号 Figure No. |
|----------------------|----|----|-----|----|------------------|
| UP210-SS2-01002 | 1 | 2 | 50 | 4 | 1 |
| UP210-SS2-02003 | 2 | 3 | 50 | 4 | 1 |
| UP210-SS2-03005 | 3 | 5 | 50 | 4 | 1 |
| UP210-SS2-04006 | 4 | 6 | 50 | 4 | 2 |
| UP210-SS2-05008 | 5 | 8 | 50 | 6 | 1 |
| UP210-SS2-06009 | 6 | 9 | 50 | 6 | 2 |
| UP210-SS2-07010 | 7 | 10 | 60 | 8 | 1 |
| UP210-SS2-08012 | 8 | 12 | 60 | 8 | 2 |
| UP210-SS2-10015 | 10 | 15 | 75 | 10 | 2 |
| UP210-SS2-12018 | 12 | 18 | 75 | 12 | 2 |
| UP210-SS2-16024 | 16 | 24 | 100 | 16 | 2 |

| D | 公差 Tol |
|--------|------------|
| D ≤ 12 | 0 -0.02 |
| D > 12 | 0 -0.03 |

单位unit (mm)

139页
Page
切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | | | | | | |
|-------------------------|---|---|-------------------|------------------------------|-----|-------------------------|---------------------|----------------------------|-----------------|---|
| P | | | M | K | | N | | | | |
| 1 | 2 | 3 | 4 | 1 | 2 | 3 | 1 | 2 | 3 | 4 |
| 碳钢 合金钢 (<35HRC) | | | 合金钢 (35-48HRC) | PH与铁素体 马氏体不锈钢 (<35HRC) | 不锈钢 | 灰铸铁 球墨铸铁 (<32HRC) | 高合金铸铁 (35-45HRC) | 锻造铝合金 铸造铝合金 (Si<12%) | 铜合金 (<HB200) | |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

○ 最适合 Most Suitable ○ 适合 Suitable

钢件、铸铁
For Steels & Cast Iron

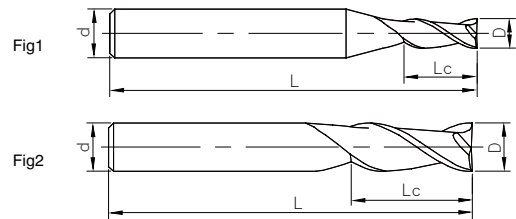


标记说明请参考P6页 See page 6 for guidelines to icons

UP210-S2 NEW

2刃平头

2 Flute, Standard Length



| 订货号 Ordering code | D | Lc | L | d | 图号 Figure No. |
|----------------------|-----|----|-----|----|------------------|
| UP210-S2-01003 | 1 | 3 | 50 | 4 | 1 |
| UP210-S2-01504 | 1.5 | 4 | 50 | 4 | 1 |
| UP210-S2-02006 | 2 | 6 | 50 | 4 | 1 |
| UP210-S2-02508 | 2.5 | 8 | 50 | 4 | 1 |
| UP210-S2-03009 | 3 | 9 | 50 | 4 | 1 |
| UP210-S2-63009 | 3 | 9 | 50 | 6 | 1 |
| UP210-S2-04011 | 4 | 11 | 50 | 4 | 2 |
| UP210-S2-64011 | 4 | 11 | 50 | 6 | 1 |
| UP210-S2-05013 | 5 | 13 | 50 | 6 | 1 |
| UP210-S2-06016 | 6 | 16 | 50 | 6 | 2 |
| UP210-S2-08020 | 8 | 20 | 60 | 8 | 2 |
| UP210-S2-10025 | 10 | 25 | 75 | 10 | 2 |
| UP210-S2-12030 | 12 | 30 | 75 | 12 | 2 |
| UP210-S2-16036 | 16 | 36 | 100 | 16 | 2 |
| UP210-S2-20045 | 20 | 45 | 100 | 20 | 2 |

| D | 公差 Tol |
|--------|------------|
| D ≤ 12 | 0 -0.02 |
| D > 12 | 0 -0.03 |

单位 unit (mm)

139页
Page
切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | |
|-------------------------|-------------------|------------------------------|-------|-------------------------|------------------|
| P | | M | | K | |
| 1 2 3 4 | 5 | 6 | 1 2 3 | 1 2 | 3 |
| 碳钢 合金钢 (<35HRC) | 合金钢 (35-48HRC) | PH与铁素体 马氏体不锈钢 (<35HRC) | 不锈钢 | 灰铸铁 球墨铸铁 (<32HRC) | 高温合金 (<HB450) |
| ○ | ○ | ○ | ○ | ○ | ○ |

○ 最适合 Most Suitable ○ 适合 Suitable

钢件、铸铁
For Steels&Cast Iron

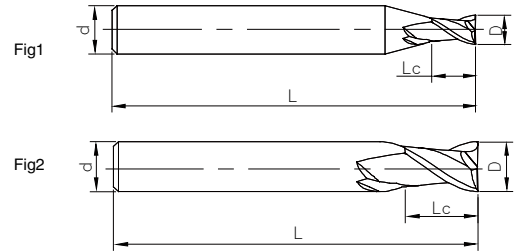


标记说明请参考P6页 See page 6 for guidelines to icons

UP210-SL2 NEW

2刃长刃平头

2 Flute, Long Flute Length



| 订货号 Ordering code | D | Lc | L | d | 图号 Figure No. |
|----------------------|----|----|-----|----|------------------|
| UP210-SL2-04030 | 4 | 30 | 75 | 4 | 2 |
| UP210-SL2-05030 | 5 | 30 | 75 | 6 | 1 |
| UP210-SL2-06035 | 6 | 35 | 75 | 6 | 2 |
| UP210-SL2-08040 | 8 | 40 | 100 | 8 | 2 |
| UP210-SL2-10045 | 10 | 45 | 100 | 10 | 2 |
| UP210-SL2-12050 | 12 | 50 | 100 | 12 | 2 |
| UP210-SL2-14055 | 14 | 55 | 100 | 14 | 2 |
| UP210-SL2-16060 | 16 | 60 | 150 | 16 | 2 |

| D | 公差 Tol |
|--------|------------|
| D ≤ 12 | 0 -0.02 |
| D > 12 | 0 -0.03 |

单位unit (mm)

139页
Page

切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | | | | | | |
|-------------------------|---|---|-------------------|------------------------------|-----|-------------------------|---------------------|----------------------------|-----------------|---|
| P | | | M | K | | N | | | | |
| 1 | 2 | 3 | 4 | 1 | 2 | 3 | 1 | 2 | 3 | 4 |
| 碳钢 合金钢 (<35HRC) | | | 合金钢 (35-48HRC) | PH与铁素体 马氏体不锈钢 (<35HRC) | 不锈钢 | 灰铸铁 球墨铸铁 (<32HRC) | 高合金铸铁 (35-45HRC) | 锻造铝合金 铸造铝合金 (Si<12%) | 铜合金 (<HB200) | |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

○ 最适合 Most Suitable ○ 适合 Suitable

钢件、铸铁
For Steels&Cast Iron

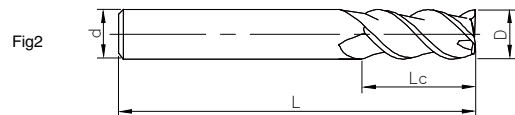
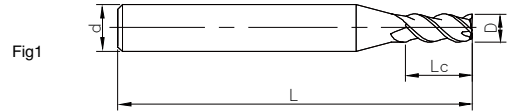


标记说明请参考P6页 See page 6 for guidelines to icons

UP210-S3 NEW

3刃平头

3 Flute, Standard Length



| 订货号 Ordering code | D | Lc | L | d | 图号 Figure No. |
|----------------------|----|----|-----|----|------------------|
| UP210-S3-02006 | 2 | 6 | 50 | 4 | 1 |
| UP210-S3-03009 | 3 | 9 | 50 | 4 | 1 |
| UP210-S3-04011 | 4 | 11 | 50 | 4 | 2 |
| UP210-S3-05013 | 5 | 13 | 50 | 6 | 1 |
| UP210-S3-06016 | 6 | 16 | 50 | 6 | 2 |
| UP210-S3-08020 | 8 | 20 | 60 | 8 | 2 |
| UP210-S3-10025 | 10 | 25 | 75 | 10 | 2 |
| UP210-S3-12030 | 12 | 30 | 75 | 12 | 2 |
| UP210-S3-16036 | 16 | 36 | 100 | 16 | 2 |
| UP210-S3-20045 | 20 | 45 | 100 | 20 | 2 |

| D | 公差 Tol |
|--------|------------|
| D ≤ 12 | 0 -0.02 |
| D > 12 | 0 -0.03 |

单位unit (mm)

139页
Page
切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | |
|-------------------------|-------------------|------------------------------|-------|-------------------------|--------------------|
| P | | M | | K | |
| 1 2 3 4 | 5 | 6 | 1 2 3 | 1 2 | 3 |
| 碳钢 合金钢 (<35HRC) | 合金钢 (35-48HRC) | PH与铁素体 马氏体不锈钢 (<35HRC) | 不锈钢 | 灰铸铁 球墨铸铁 (<32HRC) | 高温合金 (<HB450) |
| ○ | ○ | ○ | ○ | ○ | ○ |

○ 最适合 Most Suitable ○ 适合 Suitable

钢件、铸铁
For Steels&Cast Iron

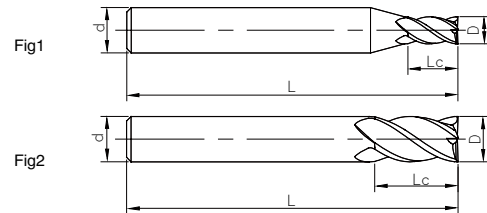


标记说明请参考P6页 See page 6 for guidelines to icons

UP210-SS4 NEW

4刃短刃平头

4 Flute, Stub Length



| 订货号 Ordering code | D | Lc | L | d | 图号 Figure No. |
|----------------------|----|----|-----|----|------------------|
| UP210-SS4-01002 | 1 | 2 | 50 | 4 | 1 |
| UP210-SS4-02003 | 2 | 3 | 50 | 4 | 1 |
| UP210-SS4-03005 | 3 | 5 | 50 | 4 | 1 |
| UP210-SS4-04006 | 4 | 6 | 50 | 4 | 2 |
| UP210-SS4-05008 | 5 | 8 | 50 | 6 | 1 |
| UP210-SS4-06009 | 6 | 9 | 50 | 6 | 2 |
| UP210-SS4-07010 | 7 | 10 | 60 | 8 | 1 |
| UP210-SS4-08012 | 8 | 12 | 60 | 8 | 2 |
| UP210-SS4-10015 | 10 | 15 | 75 | 10 | 2 |
| UP210-SS4-12018 | 12 | 18 | 75 | 12 | 2 |
| UP210-SS4-16024 | 16 | 24 | 100 | 16 | 2 |

| D | 公差 Tol |
|--------|------------|
| D ≤ 12 | 0 -0.02 |
| D > 12 | 0 -0.03 |

单位unit (mm)

139页
Page

切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | | | | | | | | | |
|-------------------------|---|---|---|------------------------------|---|-------------------------|---|---------------------|---|-----------------|--|-------------------|--|
| P | | | M | K | | H | | | | | | | |
| 1 | 2 | 3 | 4 | 1 | 2 | 3 | 1 | 2 | 3 | | | | |
| 碳钢 合金钢 (<35HRC) | | | | 不锈钢 | | 灰铸铁 球墨铸铁 (<32HRC) | | 高合金铸铁 (35-45HRC) | | 淬硬钢 (<55HRC) | | 淬硬钢 (55-60HRC) | |
| 合金钢 (35-48HRC) | | | | PH与铁素体 马氏体不锈钢 (<35HRC) | | | | | | | | | |
| ○ | | | | ○ | | ○ | | ○ | | ○ | | ○ | |

○ 最适合 Most Suitable ○ 适合 Suitable

钢件、铸铁
For Steels & Cast Iron

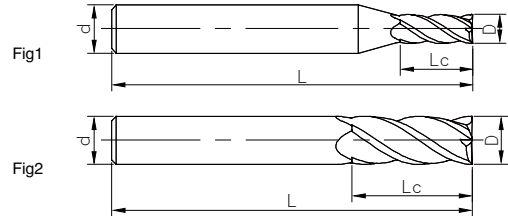


标记说明请参考P6页 See page 6 for guidelines to icons

UP210-S4 NEW

4刃平头

4 Flute, Standard Length



| 订货号 Ordering code | D | Lc | L | d | 图号 Figure No. |
|----------------------|-----|----|----|---|------------------|
| UP210-S4-01003 | 1 | 3 | 50 | 4 | 1 |
| UP210-S4-01505 | 1.5 | 5 | 50 | 4 | 1 |
| UP210-S4-02006 | 2 | 6 | 50 | 4 | 1 |
| UP210-S4-02508 | 2.5 | 8 | 50 | 4 | 1 |
| UP210-S4-03009 | 3 | 9 | 50 | 4 | 1 |
| UP210-S4-63009 | 3 | 9 | 50 | 6 | 1 |
| UP210-S4-03511 | 3.5 | 11 | 50 | 4 | 1 |
| UP210-S4-04011 | 4 | 11 | 50 | 4 | 2 |
| UP210-S4-64011 | 4 | 11 | 50 | 6 | 1 |
| UP210-S4-05008 | 5 | 8 | 50 | 6 | 1 |
| UP210-S4-05013 | 5 | 13 | 50 | 6 | 1 |

| D | 公差 Tol |
|--------|------------|
| D ≤ 12 | 0 -0.02 |
| D > 12 | 0 -0.03 |

单位 unit (mm)

139页
Page
切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | | | | | | |
|-------------------------|---|-------------------|---|------------------------------|---|-----|-------------------------|---------------------|-----------------|-------------------|
| P | | | M | K | | | H | | | |
| 1 | 2 | 3 | 4 | 1 | 2 | 3 | 1 | 2 | 3 | |
| 碳钢 合金钢 (<35HRC) | | 合金钢 (35-48HRC) | | PH与铁素体 马氏体不锈钢 (<35HRC) | | 不锈钢 | 灰铸铁 球墨铸铁 (<32HRC) | 高合金铸铁 (35-45HRC) | 淬硬钢 (<55HRC) | 淬硬钢 (55-60HRC) |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |

○ 最适合 Most Suitable ○ 适合 Suitable

钢件、铸铁
For Steels&Cast Iron

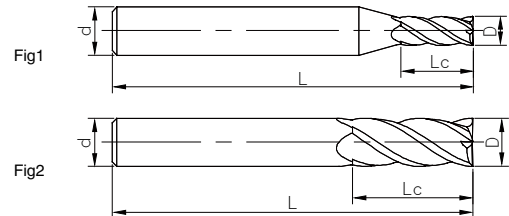


标记说明请参考P6页 See page 6 for guidelines to icons

UP210-S4 NEW

4刃平头

4 Flute, Standard Length



》续前 continue

| 订货号 Ordering code | D | Lc | L | d | 图号 Figure No. |
|----------------------|-----|----|-----|----|------------------|
| UP210-S4-06016 | 6 | 16 | 50 | 6 | 2 |
| UP210-S4-06516 | 6.5 | 16 | 60 | 8 | 1 |
| UP210-S4-08020 | 8 | 20 | 60 | 8 | 2 |
| UP210-S4-08523 | 8.5 | 23 | 75 | 10 | 1 |
| UP210-S4-09023 | 9 | 23 | 75 | 10 | 1 |
| UP210-S4-10025 | 10 | 25 | 75 | 10 | 2 |
| UP210-S4-12030 | 12 | 30 | 75 | 12 | 2 |
| UP210-S4-14034 | 14 | 34 | 100 | 14 | 2 |
| UP210-S4-16036 | 16 | 36 | 100 | 16 | 2 |
| UP210-S4-16040 | 16 | 40 | 100 | 16 | 2 |
| UP210-S4-20045 | 20 | 45 | 100 | 20 | 2 |

| D | 公差 Tol |
|--------|------------|
| D ≤ 12 | 0 -0.02 |
| D > 12 | 0 -0.03 |

单位unit (mm)

139页
Page

切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | | | | |
|-------------------------|-------------------|------------------------------|---|-----|-------------------------|---------------------|-----------------|-------------------|
| P | | | M | K | | H | | |
| 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | |
| 碳钢 合金钢 (<35HRC) | 合金钢 (35-48HRC) | PH与铁素体 马氏体不锈钢 (<35HRC) | | 不锈钢 | 灰铸铁 球墨铸铁 (<32HRC) | 高合金铸铁 (35-45HRC) | 淬硬钢 (<55HRC) | 淬硬钢 (55-60HRC) |
| ○ | ○ | ○ | | ○ | ○ | ○ | ○ | ○ |

○ 最适合 Most Suitable ○ 适合 Suitable

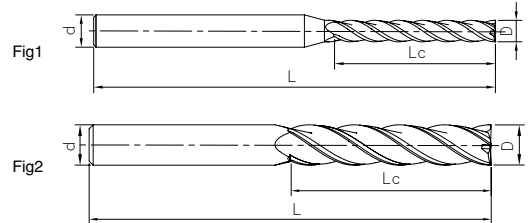
钢件、铸铁
For Steels & Cast Iron



标记说明请参考P6页 See page 6 for guidelines to icons

UP210-SL4 NEW

4刃长刃平头
4Flute, Long Flute Length



| 订货号 Ordering code | D | Lc | L | d | 图号 Figure No. |
|----------------------|---|----|-----|---|------------------|
| UP210-SL4-02010 | 2 | 10 | 50 | 4 | 1 |
| UP210-SL4-03015 | 3 | 15 | 60 | 4 | 1 |
| UP210-SL4-04020 | 4 | 20 | 60 | 4 | 2 |
| UP210-SL4-63015 | 3 | 15 | 60 | 6 | 1 |
| UP210-SL4-64020 | 4 | 20 | 75 | 6 | 1 |
| UP210-SL4-05025 | 5 | 25 | 75 | 6 | 1 |
| UP210-SL4-06030 | 6 | 30 | 75 | 6 | 2 |
| UP210-SL4-06035 | 6 | 35 | 75 | 6 | 2 |
| UP210-SL4-08035 | 8 | 35 | 100 | 8 | 2 |

| D | 公差 Tol |
|--------|------------|
| D ≤ 12 | 0 -0.02 |
| D > 12 | 0 -0.03 |

单位unit (mm)

139页
Page
切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | |
|-------------------------|-------------------|------------------------------|-------|-------------------------|------------------|
| P | | M | | K | |
| 1 2 3 4 | 5 | 6 | 1 2 3 | 1 2 | 3 |
| 碳钢 合金钢 (<35HRC) | 合金钢 (35-48HRC) | PH与铁素体 马氏体不锈钢 (<35HRC) | 不锈钢 | 灰铸铁 球墨铸铁 (<32HRC) | 高温合金 (<HB450) |
| ○ | ○ | ○ | ○ | ○ | ○ |

○ 最适合 Most Suitable ○ 适合 Suitable

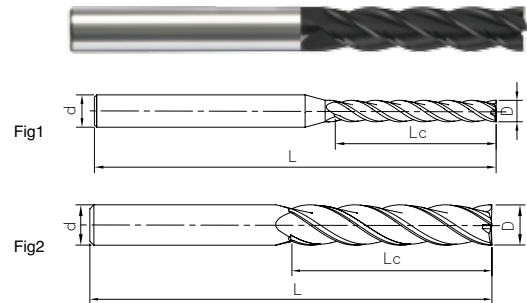


标记说明请参考P6页 See page 6 for guidelines to icons

UP210-SL4 NEW

4刃长刃平头

4Flute, Long Flute Length



》续前 continue

| 订货号 Ordering code | D | Lc | L | d | 图号 Figure No. |
|----------------------|----|----|-----|----|------------------|
| UP210-SL4-08040 | 8 | 40 | 100 | 8 | 2 |
| UP210-SL4-10045 | 10 | 45 | 100 | 10 | 2 |
| UP210-SL4-12045 | 12 | 45 | 100 | 12 | 2 |
| UP210-SL4-12050 | 12 | 50 | 100 | 12 | 2 |
| UP210-SL4-14045 | 14 | 45 | 100 | 14 | 2 |
| UP210-SL4-16060 | 16 | 60 | 150 | 16 | 2 |
| UP210-SL4-16070 | 16 | 70 | 150 | 16 | 2 |
| UP210-SL4-18070 | 18 | 70 | 150 | 18 | 2 |
| UP210-SL4-20070 | 20 | 70 | 150 | 20 | 2 |

| D | 公差 Tol |
|--------|------------|
| D ≤ 12 | 0 -0.02 |
| D > 12 | 0 -0.03 |

单位unit (mm)

139页
Page

切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | |
|-------------------------|-------------------|------------------------------|-------|-------------------------|------------------|
| P | | M | | K | |
| 1 2 3 4 | 5 | 6 | 1 2 3 | 1 2 | 3 |
| 碳钢 合金钢 (<35HRC) | 合金钢 (35-48HRC) | PH与铁素体 马氏体不锈钢 (<35HRC) | 不锈钢 | 灰铸铁 球墨铸铁 (<32HRC) | 高温合金 (<HB450) |
| ○ | ○ | ○ | ○ | ○ | ○ |

○ 最适合 Most Suitable ○ 适合 Suitable

钢件、铸铁
For Steels&Cast Iron

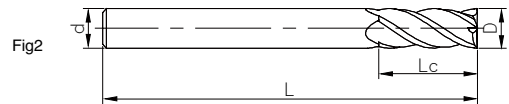
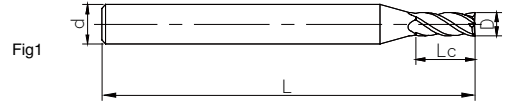


标记说明请参考P6页 See page 6 for guidelines to icons

UP210-SH4 NEW

4刃长柄平头

4 Flute, with Long Shank Length



| 订货号 Ordering code | D | Lc | L | d | 图号 Figure No. |
|----------------------|----|----|-----|----|------------------|
| UP210-SH4-03012 | 3 | 12 | 75 | 4 | 1 |
| UP210-SH4-04015 | 4 | 15 | 75 | 4 | 2 |
| UP210-SH4-05020 | 5 | 20 | 75 | 6 | 1 |
| UP210-SH4-06020 | 6 | 20 | 75 | 6 | 2 |
| UP210-SH4-08025 | 8 | 25 | 100 | 8 | 2 |
| UP210-SH4-10030 | 10 | 30 | 100 | 10 | 2 |
| UP210-SH4-12035 | 12 | 35 | 100 | 12 | 2 |
| UP210-SH4-16036 | 16 | 36 | 150 | 16 | 2 |
| UP210-SH4-20045 | 20 | 45 | 150 | 20 | 2 |

| D | 公差 Tol |
|--------|------------|
| D ≤ 12 | 0 -0.02 |
| D > 12 | 0 -0.03 |

单位unit (mm)

139页
Page
切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | | | |
|-------------------------|-------------------|------------------------------|-----|-------------------------|---------------------|-----------------|-------------------|
| P | | | M | K | | H | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 碳钢 合金钢 (<35HRC) | 合金钢 (35-48HRC) | PH与铁素体 马氏体不锈钢 (<35HRC) | 不锈钢 | 灰铸铁 球墨铸铁 (<32HRC) | 高合金铸铁 (35-45HRC) | 淬硬钢 (<55HRC) | 淬硬钢 (55-60HRC) |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

○ 最适合 Most Suitable ○ 适合 Suitable

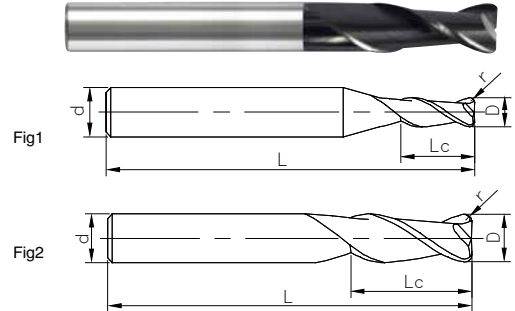


标记说明请参考P6页 See page 6 for guidelines to icons

UP210-R2 **NEW**

2刃圆角头

2 Flute, Corner Radius



| 订货号 Ordering code | D | Lc | r | L | d | 图号 Figure No. |
|----------------------|----|----|-----|----|----|------------------|
| UP210-R2-01002 | 1 | 3 | 0.2 | 50 | 4 | 1 |
| UP210-R2-03003 | 3 | 9 | 0.3 | 50 | 4 | 1 |
| UP210-R2-03005 | 3 | 9 | 0.5 | 50 | 4 | 1 |
| UP210-R2-04005 | 4 | 11 | 0.5 | 50 | 4 | 2 |
| UP210-R2-04010 | 4 | 11 | 1 | 50 | 4 | 2 |
| UP210-R2-05003 | 5 | 13 | 0.3 | 50 | 6 | 1 |
| UP210-R2-06005 | 6 | 16 | 0.5 | 50 | 6 | 2 |
| UP210-R2-06010 | 6 | 16 | 1 | 50 | 6 | 2 |
| UP210-R2-06015 | 6 | 16 | 1.5 | 50 | 6 | 2 |
| UP210-R2-08005 | 8 | 20 | 0.5 | 60 | 8 | 2 |
| UP210-R2-08010 | 8 | 20 | 1 | 60 | 8 | 2 |
| UP210-R2-08015 | 8 | 20 | 1.5 | 60 | 8 | 2 |
| UP210-R2-10005 | 10 | 25 | 0.5 | 75 | 10 | 2 |

| D | 公差 Tol |
|--------|------------|
| D ≤ 12 | 0 -0.02 |
| D > 12 | 0 -0.03 |

单位unit (mm)

139页
Page

切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | | | | | | | | | |
|-------------------------|---|---|---|-----|---|-------------------------|---|---------------------|---|-----------------|--|-------------------|--|
| P | | | M | K | | H | | | | | | | |
| 1 | 2 | 3 | 4 | 1 | 2 | 3 | 1 | 2 | 3 | | | | |
| 碳钢 合金钢 (<35HRC) | | | | 不锈钢 | | 灰铸铁 球墨铸铁 (<32HRC) | | 高合金铸铁 (35-45HRC) | | 淬硬钢 (<55HRC) | | 淬硬钢 (55-60HRC) | |
| ○ | | | | ○ | | ○ | | ○ | | ○ | | ○ | |

○ 最适合 Most Suitable ○ 适合 Suitable

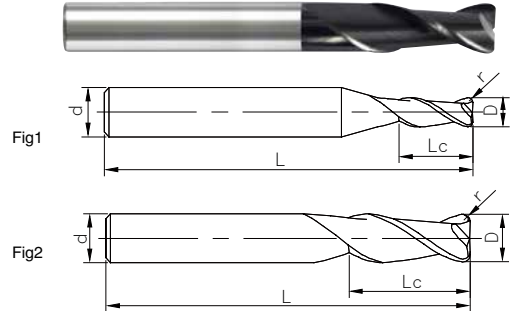
钢件、铸铁
For Steels & Cast Iron



标记说明请参考P6页 See page 6 for guidelines to icons

UP210-R2 NEW

2刃圆角头
2 Flute, Corner Radius



》续前 continue

| 订货号 Ordering code | D | Lc | r | L | d | 图号 Figure No. |
|----------------------|----|----|-----|-----|----|------------------|
| UP210-R2-10010 | 10 | 25 | 1 | 75 | 10 | 2 |
| UP210-R2-10015 | 10 | 25 | 1.5 | 75 | 10 | 2 |
| UP210-R2-10020 | 10 | 25 | 2 | 75 | 10 | 2 |
| UP210-R2-12005 | 12 | 30 | 0.5 | 75 | 12 | 2 |
| UP210-R2-12010 | 12 | 30 | 1 | 75 | 12 | 2 |
| UP210-R2-12015 | 12 | 30 | 1.5 | 75 | 12 | 2 |
| UP210-R2-12020 | 12 | 30 | 2 | 75 | 12 | 2 |
| UP210-R2-12030 | 12 | 30 | 3 | 75 | 12 | 2 |
| UP210-R2-16005 | 16 | 36 | 0.5 | 100 | 16 | 2 |
| UP210-R2-16010 | 16 | 36 | 1 | 100 | 16 | 2 |
| UP210-R2-16020 | 16 | 36 | 2 | 100 | 16 | 2 |
| UP210-R2-16030 | 16 | 36 | 3 | 100 | 16 | 2 |

| D | 公差 Tol |
|--------|------------|
| D ≤ 12 | 0 -0.02 |
| D > 12 | 0 -0.03 |

单位unit (mm)

139页
Page
切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | | | | | | |
|-------------------------|---|---|---|-------------------|------------------------------|-----|-------------------------|---------------------|-----------------|-------------------|
| P | | | M | K | H | | | | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | | |
| 碳钢 合金钢 (<35HRC) | | | | 合金钢 (35-48HRC) | PH与铁素体 马氏体不锈钢 (<35HRC) | 不锈钢 | 灰铸铁 球墨铸铁 (<32HRC) | 高合金铸铁 (35-45HRC) | 淬硬钢 (<55HRC) | 淬硬钢 (55-60HRC) |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | |

○ 最适合 Most Suitable ○ 适合 Suitable

钢件、铸铁
For Steels&Cast Iron

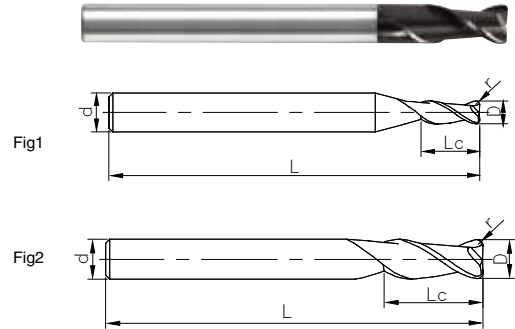


标记说明请参考P6页 See page 6 for guidelines to icons

UP210-RH2 NEW

2刃长柄圆角头

2 Flute Corner Radius, with Long Shank Length



| 订货号 Ordering code | D | R | Lc | L | d | 图号 Figure No. |
|----------------------|----|----|-----|-----|----|------------------|
| UP210-RH2-06005 | 6 | 16 | 0.5 | 75 | 6 | 2 |
| UP210-RH2-06010 | 6 | 16 | 1 | 75 | 6 | 2 |
| UP210-RH2-06015 | 6 | 16 | 1.5 | 75 | 6 | 2 |
| UP210-RH2-08005 | 8 | 20 | 0.5 | 100 | 8 | 2 |
| UP210-RH2-08010 | 8 | 20 | 1 | 100 | 8 | 2 |
| UP210-RH2-08015 | 8 | 20 | 1.5 | 100 | 8 | 2 |
| UP210-RH2-10005 | 10 | 25 | 0.5 | 100 | 10 | 2 |
| UP210-RH2-10010 | 10 | 25 | 1 | 100 | 10 | 2 |
| UP210-RH2-10015 | 10 | 25 | 1.5 | 100 | 10 | 2 |

| D | 公差 Tol |
|-------|--------|
| R < 3 | ±0.015 |
| R ≥ 3 | ±0.020 |

单位unit (mm)

139页
Page

切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | |
|-------------------------|-------------------|------------------------------|-------|-------------------------|------------------|
| P | | M | | K | |
| 1 2 3 4 | 5 | 6 | 1 2 3 | 1 2 | 3 |
| 碳钢 合金钢 (<35HRC) | 合金钢 (35-48HRC) | PH与铁素体 马氏体不锈钢 (<35HRC) | 不锈钢 | 灰铸铁 球墨铸铁 (<32HRC) | 高温合金 (<HB450) |
| ○ | ○ | ○ | ○ | ○ | ○ |

○ 最适合 Most Suitable ○ 适合 Suitable

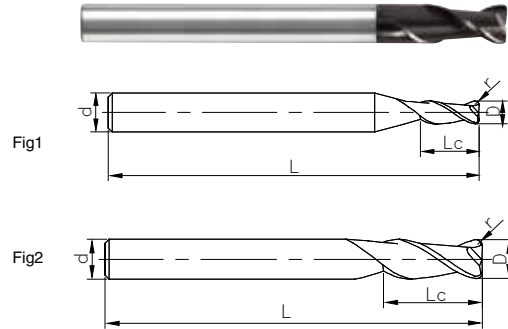
钢件、铸铁
For Steels&Cast Iron



标记说明请参考P6页 See page 6 for guidelines to icons

UP210-RH2 NEW

2刃长柄圆角头
2 Flute Corner Radius, with Long
Shank Length



》续前 continue

| 订货号 Ordering code | D | R | Lc | L | d | 图号 Figure No. |
|----------------------|----|----|-----|-----|----|------------------|
| UP210-RH2-10020 | 10 | 25 | 2 | 100 | 10 | 2 |
| UP210-RH2-12005 | 12 | 30 | 0.5 | 100 | 12 | 2 |
| UP210-RH2-12010 | 12 | 30 | 1 | 100 | 12 | 2 |
| UP210-RH2-12015 | 12 | 30 | 1.5 | 100 | 12 | 2 |
| UP210-RH2-12020 | 12 | 30 | 2 | 100 | 12 | 2 |
| UP210-RH2-16005 | 16 | 36 | 0.5 | 150 | 16 | 2 |
| UP210-RH2-16010 | 16 | 36 | 1 | 150 | 16 | 2 |
| UP210-RH2-16015 | 16 | 36 | 1.5 | 150 | 16 | 2 |
| UP210-RH2-16020 | 16 | 36 | 2 | 150 | 16 | 2 |

| D | 公差 Tol |
|-------|---------|
| R < 3 | ± 0.015 |
| R ≥ 3 | ± 0.020 |

单位unit (mm)

139页
Page
切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | |
|--------------------------|---------------------|---------------------------------|-------|----------------------------|---------------------|
| P | | M | | K | |
| 1 2 3 4 | 5 | 6 | 1 2 3 | 1 2 | 3 |
| 碳钢 合金钢 (< 35HRC) | 合金钢 (35-48HRC) | PH与铁素体 马氏体不锈钢 (< 35HRC) | 不锈钢 | 灰铸铁 球墨铸铁 (< 32HRC) | 高温合金 (< HB450) |
| ○ | ○ | ○ | ○ | ○ | ○ |

○ 最适合 Most Suitable ○ 适合 Suitable

钢件、铸铁
For Steels&Cast Iron

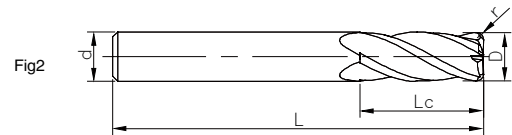
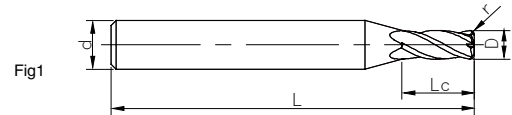


标记说明请参考P6页 See page 6 for guidelines to icons

UP210-R4 NEW

4刃圆角头

4 Flute, Corner Radius



| 订货号 Ordering code | D | Lc | r | L | d | 图号 Figure No. |
|----------------------|-----|----|-----|----|---|------------------|
| UP210-R4-03002 | 3 | 9 | 0.2 | 50 | 4 | 1 |
| UP210-R4-04005 | 4 | 11 | 0.5 | 50 | 4 | 2 |
| UP210-R4-04010 | 4 | 11 | 1 | 50 | 4 | 2 |
| UP210-R4-04510 | 4.5 | 12 | 1 | 50 | 6 | 1 |
| UP210-R4-05002 | 5 | 13 | 0.2 | 50 | 6 | 1 |
| UP210-R4-05005 | 5 | 13 | 0.5 | 50 | 6 | 1 |
| UP210-R4-05010 | 5 | 13 | 1 | 50 | 6 | 1 |
| UP210-R4-06005 | 6 | 16 | 0.5 | 50 | 6 | 2 |
| UP210-R4-06010 | 6 | 16 | 1 | 50 | 6 | 2 |
| UP210-R4-06015 | 6 | 16 | 1.5 | 50 | 6 | 2 |
| UP210-R4-08005 | 8 | 20 | 0.5 | 60 | 8 | 2 |
| UP210-R4-08010 | 8 | 20 | 1 | 60 | 8 | 2 |
| UP210-R4-08015 | 8 | 20 | 1.5 | 60 | 8 | 2 |
| UP210-R4-08020 | 8 | 20 | 2 | 60 | 8 | 2 |

| D | 公差 Tol |
|--------|------------|
| D ≤ 12 | 0 -0.02 |
| D > 12 | 0 -0.03 |

单位unit (mm)

139页
Page

切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | | | | | | | | | |
|-------------------------|---|---|---|-------------------|------------------------------|---|---|-----|---|-------------------------|---------------------|-----------------|-------------------|
| P | | | M | K | | H | | | | | | | |
| 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 1 | 2 | 3 | | | |
| 碳钢 合金钢 (<35HRC) | | | | 合金钢 (35-48HRC) | PH与铁素体 马氏体不锈钢 (<35HRC) | | | 不锈钢 | | 灰铸铁 球墨铸铁 (<32HRC) | 高合金铸铁 (35-45HRC) | 淬硬钢 (<55HRC) | 淬硬钢 (55-60HRC) |
| ○ | | | | ○ | ○ | | | ○ | | ○ | ○ | | |

○ 最适合 Most Suitable ○ 适合 Suitable

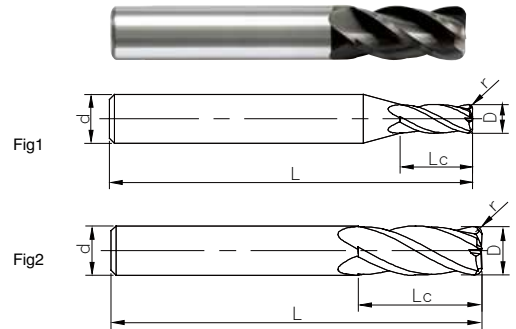
钢件、铸铁
For Steels & Cast Iron



标记说明请参考P6页 See page 6 for guidelines to icons

UP210-R4 NEW

4刃圆角头
4 Flute, Corner Radius



》续前 continue

| 订货号 Ordering code | D | Lc | r | L | d | 图号 Figure No. |
|----------------------|----|----|-----|-----|----|------------------|
| UP210-R4-10005 | 10 | 25 | 0.5 | 75 | 10 | 2 |
| UP210-R4-10010 | 10 | 25 | 1 | 75 | 10 | 2 |
| UP210-R4-10015 | 10 | 25 | 1.5 | 75 | 10 | 2 |
| UP210-R4-10020 | 10 | 25 | 2 | 75 | 10 | 2 |
| UP210-R4-12005 | 12 | 30 | 0.5 | 75 | 12 | 2 |
| UP210-R4-12010 | 12 | 30 | 1 | 75 | 12 | 2 |
| UP210-R4-12015 | 12 | 30 | 1.5 | 75 | 12 | 2 |
| UP210-R4-12020 | 12 | 30 | 2 | 75 | 12 | 2 |
| UP210-R4-12030 | 12 | 30 | 3 | 75 | 12 | 2 |
| UP210-R4-16005 | 16 | 36 | 0.5 | 100 | 16 | 2 |
| UP210-R4-16010 | 16 | 36 | 1 | 100 | 16 | 2 |
| UP210-R4-16020 | 16 | 36 | 2 | 100 | 16 | 2 |
| UP210-R4-16030 | 16 | 36 | 3 | 100 | 16 | 2 |

| D | 公差 Tol |
|--------|--|
| D ≤ 12 | $\begin{matrix} 0 \\ -0.02 \end{matrix}$ |
| D > 12 | $\begin{matrix} 0 \\ -0.03 \end{matrix}$ |

单位unit (mm)

139页
Page
切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | | | | | | |
|-------------------------|---|---|---|-------------------|------------------------------|-----|-------------------------|---------------------|-----------------|-------------------|
| P | | | M | K | H | | | | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | | |
| 碳钢 合金钢 (<35HRC) | | | | 合金钢 (35-48HRC) | PH与铁素体 马氏体不锈钢 (<35HRC) | 不锈钢 | 灰铸铁 球墨铸铁 (<32HRC) | 高合金铸铁 (35-45HRC) | 淬硬钢 (<55HRC) | 淬硬钢 (55-60HRC) |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

○ 最适合 Most Suitable ○ 适合 Suitable

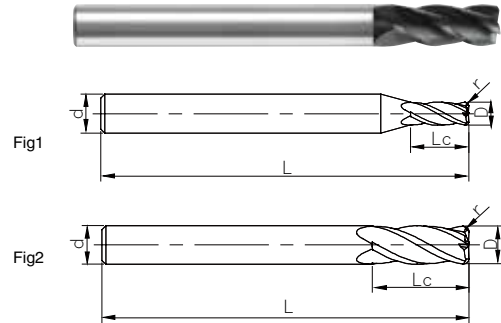


标记说明请参考P6页 See page 6 for guidelines to icons

UP210-RH4 NEW

4刃长柄圆角头

4 Flute Corner Radius, with Long Shank Length



| 订货号 Ordering code | D | R | Lc | L | d | 图号 Figure No. |
|----------------------|----|----|-----|-----|----|------------------|
| UP210-RH4-06005 | 6 | 16 | 0.5 | 75 | 6 | 2 |
| UP210-RH4-06010 | 6 | 16 | 1 | 75 | 6 | 2 |
| UP210-RH4-06015 | 6 | 16 | 1.5 | 75 | 6 | 2 |
| UP210-RH4-08005 | 8 | 20 | 0.5 | 100 | 8 | 2 |
| UP210-RH4-08010 | 8 | 20 | 1 | 100 | 8 | 2 |
| UP210-RH4-08015 | 8 | 20 | 1.5 | 100 | 8 | 2 |
| UP210-RH4-10005 | 10 | 25 | 5 | 100 | 10 | 2 |
| UP210-RH4-10010 | 10 | 25 | 1 | 100 | 10 | 2 |
| UP210-RH4-10015 | 10 | 25 | 1.5 | 100 | 10 | 2 |

| D | 公差 Tol |
|-------|--------|
| R < 3 | ±0.015 |
| R ≥ 3 | ±0.020 |

单位unit (mm)

139页
Page
切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | |
|-------------------------|-------------------|------------------------------|-------|-------------------------|------------------|
| P | | | M | K | |
| 1 2 3 4 | 5 | 6 | 1 2 3 | 1 2 | 3 |
| 碳钢 合金钢 (<35HRC) | 合金钢 (35-48HRC) | PH与铁素体 马氏体不锈钢 (<35HRC) | 不锈钢 | 灰铸铁 球墨铸铁 (<32HRC) | 高温合金 (<HB450) |
| ○ | ○ | ○ | ○ | ○ | ○ |

○ 最适合 Most Suitable ○ 适合 Suitable

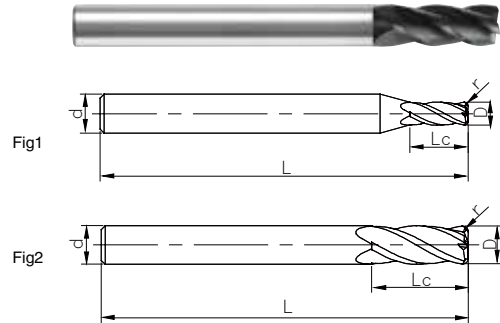
钢件、铸铁
For Steels&Cast Iron



标记说明请参考P6页 See page 6 for guidelines to icons

UP210-RH4 NEW

4刃长柄圆角头
4 Flute Corner Radius, with Long
Shank Length



》续前 continue

| 订货号 Ordering code | D | R | Lc | L | d | 图号 Figure No. |
|----------------------|----|----|-----|-----|----|------------------|
| UP210-RH4-10020 | 10 | 25 | 2 | 100 | 10 | 2 |
| UP210-RH4-12005 | 12 | 30 | 0.5 | 100 | 12 | 2 |
| UP210-RH4-12010 | 12 | 30 | 1 | 100 | 12 | 2 |
| UP210-RH4-12015 | 12 | 30 | 1.5 | 100 | 12 | 2 |
| UP210-RH4-12020 | 12 | 30 | 2 | 100 | 12 | 2 |
| UP210-RH4-16005 | 16 | 36 | 0.5 | 150 | 16 | 2 |
| UP210-RH4-16010 | 16 | 36 | 1 | 150 | 16 | 2 |
| UP210-RH4-16015 | 16 | 36 | 1.5 | 150 | 16 | 2 |
| UP210-RH4-16020 | 16 | 36 | 2 | 150 | 16 | 2 |

| D | 公差 Tol |
|-------|---------|
| R < 3 | ± 0.015 |
| R ≥ 3 | ± 0.020 |

单位unit (mm)

139页
Page
切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | |
|--------------------------|---------------------|---------------------------------|-------|----------------------------|---------------------|
| P | | M | | K | |
| 1 2 3 4 | 5 | 6 | 1 2 3 | 1 2 | 3 |
| 碳钢 合金钢 (< 35HRC) | 合金钢 (35-48HRC) | PH与铁素体 马氏体不锈钢 (< 35HRC) | 不锈钢 | 灰铸铁 球墨铸铁 (< 32HRC) | 高温合金 (< HB450) |
| ○ | ○ | ○ | ○ | ○ | ○ |

○ 最适合 Most Suitable ○ 适合 Suitable

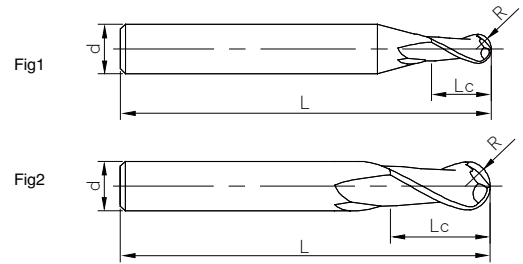
钢件、铸铁
For Steels&Cast Iron



标记说明请参考P6页 See page 6 for guidelines to icons

UP210-B2 NEW

2刃球头
2 Flute, Ballnose



| 订货号 Ordering code | D | R | Lc | L | d | 图号 Figure No. |
|----------------------|-----|------|----|----|---|------------------|
| UP210-B2-01002 | 1 | 0.5 | 2 | 50 | 4 | 1 |
| UP210-B2-01503 | 1.5 | 0.75 | 3 | 50 | 4 | 1 |
| UP210-B2-02004 | 2 | 1 | 4 | 50 | 4 | 1 |
| UP210-B2-02505 | 2.5 | 1.25 | 5 | 50 | 4 | 1 |
| UP210-B2-03006 | 3 | 1.5 | 6 | 50 | 4 | 1 |
| UP210-B2-63006 | 3 | 1.5 | 6 | 50 | 6 | 1 |
| UP210-B2-04008 | 4 | 2 | 8 | 50 | 4 | 2 |
| UP210-B2-64008 | 4 | 2 | 8 | 50 | 6 | 1 |
| UP210-B2-05010 | 5 | 2.5 | 10 | 50 | 6 | 1 |

| R | 公差 Tol |
|-------|---------|
| R < 3 | ± 0.015 |
| R ≥ 3 | ± 0.020 |

单位unit (mm)

139页
Page

切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | | | | | | | | | | | |
|-------------------------|---|-------------------|---|------------------------------|---|-----|---|-------------------------|---|---------------------|--|-----------------|--|-------------------|--|
| P | | | M | K | | H | | | | | | | | | |
| 1 | 2 | 3 | 4 | 1 | 2 | 3 | 1 | 2 | 3 | | | | | | |
| 碳钢 合金钢 (<35HRC) | | 合金钢 (35-48HRC) | | PH与铁素体 马氏体不锈钢 (<35HRC) | | 不锈钢 | | 灰铸铁 球墨铸铁 (<32HRC) | | 高合金铸铁 (35-45HRC) | | 淬硬钢 (<55HRC) | | 淬硬钢 (55-60HRC) | |
| ○ | | ○ | | ○ | | ○ | | ○ | | ○ | | ○ | | ○ | |

○ 最适合 Most Suitable ○ 适合 Suitable

钢件、铸铁
For Steels&Cast Iron

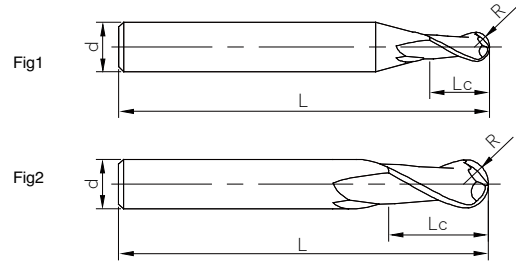


标记说明请参考P6页 See page 6 for guidelines to icons

UP210-B2 NEW

2刃球头

2 Flute, Ballnose



》续前 continue

| 订货号 Ordering code | D | R | Lc | L | d | 图号 Figure No. |
|----------------------|----|-----|----|-----|----|------------------|
| UP210-B2-06012 | 6 | 3 | 12 | 50 | 6 | 2 |
| UP210-B2-07014 | 7 | 3.5 | 14 | 60 | 8 | 1 |
| UP210-B2-08014 | 8 | 4 | 14 | 60 | 8 | 2 |
| UP210-B2-09016 | 9 | 4.5 | 16 | 75 | 10 | 1 |
| UP210-B2-10018 | 10 | 5 | 18 | 75 | 10 | 2 |
| UP210-B2-12022 | 12 | 6 | 22 | 75 | 12 | 2 |
| UP210-B2-14026 | 14 | 7 | 26 | 90 | 14 | 2 |
| UP210-B2-16030 | 16 | 8 | 30 | 100 | 16 | 2 |
| UP210-B2-20038 | 20 | 10 | 38 | 100 | 20 | 2 |

| R | 公差 Tol |
|-------|--------|
| R < 3 | ±0.015 |
| R ≥ 3 | ±0.020 |

单位unit (mm)

139页
Page
切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | | | | | |
|-------------------------|---|-------------------|---|------------------------------|-----|-------------------------|---------------------|-----------------|-------------------|
| P | | | M | K | H | | | | |
| 1 | 2 | 3 | 4 | 1 | 2 | 3 | 1 | 2 | 3 |
| 碳钢 合金钢 (<35HRC) | | 合金钢 (35-48HRC) | | PH与铁素体 马氏体不锈钢 (<35HRC) | 不锈钢 | 灰铸铁 球墨铸铁 (<32HRC) | 高合金铸铁 (35-45HRC) | 淬硬钢 (<55HRC) | 淬硬钢 (55-60HRC) |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

○ 最适合 Most Suitable ○ 适合 Suitable

钢件、铸铁
For Steels&Cast Iron

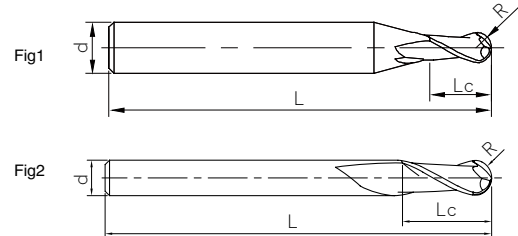


标记说明请参考P6页 See page 6 for guidelines to icons

UP210-BH2 NEW

2刃长柄球头

2 Flute Ballnose,with Long Shank Length



| 订货号 Ordering code | D | R | Lc | L | d | 图号 Figure No. |
|----------------------|----|-----|----|-----|----|------------------|
| UP210-BH2-02004 | 2 | 1 | 4 | 75 | 4 | 1 |
| UP210-BH2-03006 | 3 | 1.5 | 6 | 75 | 4 | 1 |
| UP210-BH2-04008 | 4 | 2 | 8 | 75 | 4 | 2 |
| UP210-BH2-63006 | 3 | 1.5 | 6 | 75 | 6 | 1 |
| UP210-BH2-64008 | 4 | 2 | 8 | 75 | 6 | 1 |
| UP210-BH2-05010 | 5 | 2.5 | 10 | 75 | 6 | 1 |
| UP210-BH2-06012 | 6 | 3 | 12 | 75 | 6 | 2 |
| UP210-BH2-08014 | 8 | 4 | 14 | 100 | 8 | 2 |
| UP210-BH2-10018 | 10 | 5 | 18 | 100 | 10 | 2 |
| UP210-BH2-12022 | 12 | 6 | 22 | 100 | 12 | 2 |

| D | 公差 Tol |
|-------|---------|
| R < 3 | ± 0.015 |
| R ≥ 3 | ± 0.020 |

单位unit (mm)

139页
Page
切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | |
|-------------------------|-------------------|------------------------------|-------|-------------------------|------------------|
| P | | | M | K | |
| 1 2 3 4 | 5 | 6 | 1 2 3 | 1 2 | 3 |
| 碳钢 合金钢 (<35HRC) | 合金钢 (35-48HRC) | PH与铁素体 马氏体不锈钢 (<35HRC) | 不锈钢 | 灰铸铁 球墨铸铁 (<32HRC) | 高温合金 (<HB450) |
| ○ | ○ | ○ | ○ | ○ | ○ |

○ 最适合 Most Suitable ○ 适合 Suitable

钢件、铸铁
For Steels&Cast Iron

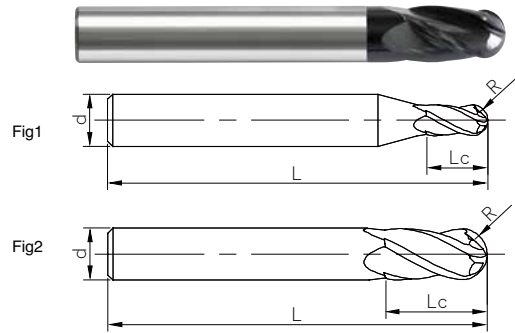


标记说明请参考P6页 See page 6 for guidelines to icons

UP210-B4 NEW

4刃球头

4 Flute, Ballnose



| 订货号 Ordering code | D | R | Lc | L | d | 图号 Figure No. |
|----------------------|----|-----|----|----|----|------------------|
| UP210-B4-04008 | 4 | 2 | 8 | 50 | 4 | 2 |
| UP210-B4-05010 | 5 | 2.5 | 10 | 50 | 6 | 1 |
| UP210-B4-06012 | 6 | 3 | 12 | 50 | 6 | 2 |
| UP210-B4-08014 | 8 | 4 | 14 | 60 | 8 | 2 |
| UP210-B4-10018 | 10 | 5 | 18 | 75 | 10 | 2 |
| UP210-B4-12022 | 12 | 6 | 22 | 75 | 12 | 2 |

| R | 公差 Tol |
|-------|--------|
| R < 3 | ±0.015 |
| R ≥ 3 | ±0.020 |

单位unit (mm)

139页
Page
切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | | | |
|-------------------------|-------------------|------------------------------|-----|-------------------------|---------------------|-----------------|-------------------|
| P | | | M | K | | H | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 碳钢 合金钢 (<35HRC) | 合金钢 (35-48HRC) | PH与铁素体 马氏体不锈钢 (<35HRC) | 不锈钢 | 灰铸铁 球墨铸铁 (<32HRC) | 高合金铸铁 (35-45HRC) | 淬硬钢 (<55HRC) | 淬硬钢 (55-60HRC) |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | |

○ 最适合 Most Suitable ○ 适合 Suitable

钢件、铸铁
For Steels&Cast Iron

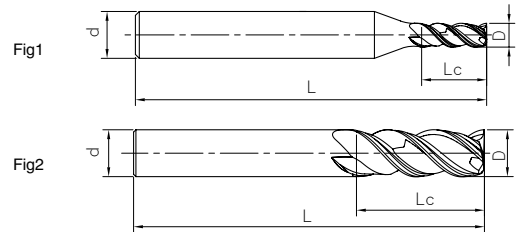


标记说明请参考P6页 See page 6 for guidelines to icons

SP210-S3 NEW

3刃平头变螺旋

3 Flute, with Variable Helix



| 订货号 Ordering code | D | Lc | L | d | 图号 Figure No. |
|----------------------|----|----|-----|----|------------------|
| SP210-S3-03009 | 3 | 9 | 50 | 4 | 1 |
| SP210-S3-04011 | 4 | 11 | 50 | 4 | 2 |
| SP210-S3-05013 | 5 | 13 | 50 | 6 | 1 |
| SP210-S3-06016 | 6 | 16 | 50 | 6 | 2 |
| SP210-S3-08020 | 8 | 20 | 60 | 8 | 2 |
| SP210-S3-10025 | 10 | 25 | 75 | 10 | 2 |
| SP210-S3-12030 | 12 | 30 | 75 | 12 | 2 |
| SP210-S3-16036 | 16 | 36 | 100 | 16 | 2 |
| SP210-S3-20045 | 20 | 45 | 100 | 20 | 2 |

| D | 公差 Tol |
|--------|------------|
| D ≤ 12 | 0 -0.02 |
| D > 12 | 0 -0.03 |

单位unit (mm)

142页
Page

切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | |
|-------------------------|-------------------|------------------------------|-------|-------------------------|------------------|
| P | | | M | K | |
| 1 2 3 4 | 5 | 6 | 1 2 3 | 1 2 | 3 |
| 碳钢 合金钢 (<35HRC) | 合金钢 (35-48HRC) | PH与铁素体 马氏体不锈钢 (<35HRC) | 不锈钢 | 灰铸铁 球墨铸铁 (<32HRC) | 高温合金 (<HB450) |
| ○ | ○ | ○ | ○ | ○ | ○ |

○ 最适合 Most Suitable ○ 适合 Suitable

钢件、铸铁
For Steels & Cast Iron

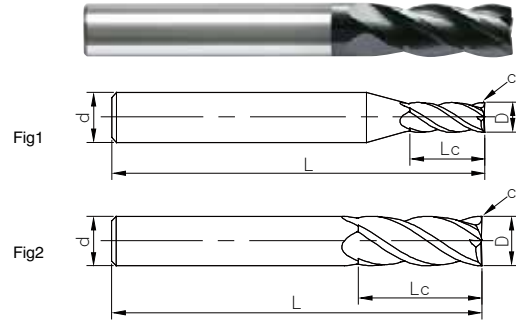


标记说明请参考P6页 See page 6 for guidelines to icons

SP210-C4 NEW

4刃平头双螺旋 (刀尖倒角)

4 Flute, Variable Helix with Chamfer



| 订货号 Ordering code | D | Lc | C(45°) | L | d | 图号 Figure No. |
|----------------------|---|----|--------|----|---|------------------|
| SP210-C4-03003 | 3 | 9 | 0.03 | 50 | 4 | 1 |
| SP210-C4-03013 | 3 | 9 | 0.13 | 50 | 4 | 1 |
| SP210-C4-04004 | 4 | 11 | 0.04 | 50 | 4 | 2 |
| SP210-C4-04018 | 4 | 11 | 0.18 | 50 | 4 | 2 |
| SP210-C4-05005 | 5 | 13 | 0.05 | 50 | 6 | 1 |
| SP210-C4-05020 | 5 | 13 | 0.2 | 50 | 6 | 1 |
| SP210-C4-06006 | 6 | 16 | 0.06 | 50 | 6 | 2 |
| SP210-C4-06020 | 6 | 16 | 0.2 | 50 | 6 | 2 |
| SP210-C4-08008 | 8 | 20 | 0.08 | 60 | 8 | 2 |

| D | 公差 Tol |
|--------|------------|
| D ≤ 12 | 0 -0.02 |
| D > 12 | 0 -0.03 |

单位unit (mm)

142页
Page
切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | | | | | | | | | | | |
|-------------------------|---|-------------------|---|------------------------------|---|-----|---|-------------------------|---|---------------------|--|----------------------------|--|-------------------|--|
| P | | | M | K | | N | | | | | | | | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 1 | 2 | 3 | 4 | | | | | | |
| 碳钢 合金钢 (<35HRC) | | 合金钢 (35-48HRC) | | PH与铁素体 马氏体不锈钢 (<35HRC) | | 不锈钢 | | 灰铸铁 球墨铸铁 (<32HRC) | | 高合金铸铁 (35-45HRC) | | 锻造铝合金 铸造铝合金 (Si<12%) | | 铜合金 (<HB200) | |
| ○ | | ○ | | ○ | | ○ | | ○ | | ○ | | ○ | | ○ | |

○ 最适合 Most Suitable ○ 适合 Suitable

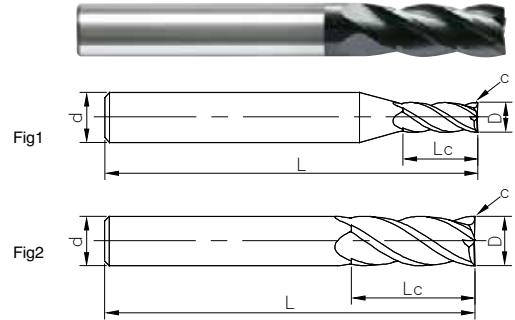


标记说明请参考P6页 See page 6 for guidelines to icons

SP210-C4 NEW

4刃平头双螺旋 (刀尖倒角)

4 Flute, Variable Helix with Chamfer



》续前 continue

| 订货号 Ordering code | D | Lc | C(45°) | L | d | 图号 Figure No. |
|----------------------|----|----|--------|-----|----|------------------|
| SP210-C4-08020 | 8 | 20 | 0.2 | 60 | 8 | 2 |
| SP210-C4-10010 | 10 | 25 | 0.1 | 75 | 10 | 2 |
| SP210-C4-10030 | 10 | 25 | 0.3 | 75 | 10 | 2 |
| SP210-C4-12012 | 12 | 30 | 0.12 | 75 | 12 | 2 |
| SP210-C4-12030 | 12 | 30 | 0.3 | 75 | 12 | 2 |
| SP210-C4-16015 | 16 | 36 | 0.15 | 100 | 16 | 2 |
| SP210-C4-16040 | 16 | 36 | 0.4 | 100 | 16 | 2 |
| SP210-C4-20015 | 20 | 45 | 0.15 | 100 | 20 | 2 |
| SP210-C4-20040 | 20 | 45 | 0.5 | 100 | 20 | 2 |

| D | 公差 Tol |
|--------|------------|
| D ≤ 12 | 0 -0.02 |
| D > 12 | 0 -0.03 |

单位unit (mm)

142页
Page

切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | | | |
|-------------------------|-------------------|------------------------------|-----|-------------------------|---------------------|----------------------------|-----------------|
| P | | | M | K | | N | |
| 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 |
| 碳钢 合金钢 (<35HRC) | 合金钢 (35-48HRC) | PH与铁素体 马氏体不锈钢 (<35HRC) | 不锈钢 | 灰铸铁 球墨铸铁 (<32HRC) | 高合金铸铁 (35-45HRC) | 锻造铝合金 铸造铝合金 (Si<12%) | 铜合金 (<HB200) |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

○ 最适合 Most Suitable ○ 适合 Suitable

钢件、铸铁
For Steels & Cast Iron

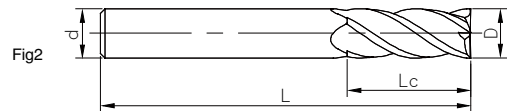
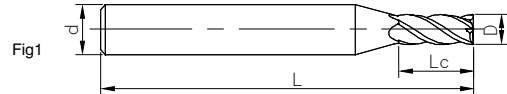


标记说明请参考P6页 See page 6 for guidelines to icons

SP210-S4 NEW

4刃平头双螺旋

4 Flute, with Variable Helix



| 订货号 Ordering code | D | Lc | L | D | 图号 Figure No. |
|----------------------|----|----|-----|----|------------------|
| SP210-S4-02006 | 2 | 6 | 50 | 4 | 1 |
| SP210-S4-03009 | 3 | 9 | 50 | 4 | 1 |
| SP210-S4-04011 | 4 | 11 | 50 | 4 | 2 |
| SP210-S4-05013 | 5 | 13 | 50 | 6 | 1 |
| SP210-S4-06016 | 6 | 16 | 50 | 6 | 2 |
| SP210-S4-08020 | 8 | 20 | 60 | 8 | 2 |
| SP210-S4-10025 | 10 | 25 | 75 | 10 | 2 |
| SP210-S4-12030 | 12 | 30 | 75 | 12 | 2 |
| SP210-S4-16036 | 16 | 36 | 100 | 16 | 2 |
| SP210-S4-20045 | 20 | 45 | 100 | 20 | 2 |

| D | 公差 Tol |
|--------|--|
| D ≤ 12 | $\begin{matrix} 0 \\ -0.02 \end{matrix}$ |
| D > 12 | $\begin{matrix} 0 \\ -0.03 \end{matrix}$ |

单位 unit (mm)

142页
Page
切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | | | |
|-------------------------|---|---|---|-------------------------|------------------------------|-------------------|---|
| P | | | M | K | H | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 碳钢 合金钢 (<35HRC) | | | | 合金钢 (35-48HRC) | PH与铁素体 马氏体不锈钢 (<35HRC) | 不锈钢 | |
| | | | | 灰铸铁 球墨铸铁 (<32HRC) | 高合金铸铁 (35-45HRC) | 淬硬钢 (<55HRC) | |
| | | | | | | 淬硬钢 (55-60HRC) | |
| ○ | | | | ○ | ○ | ○ | |

○ 最适合 Most Suitable ○ 适合 Suitable

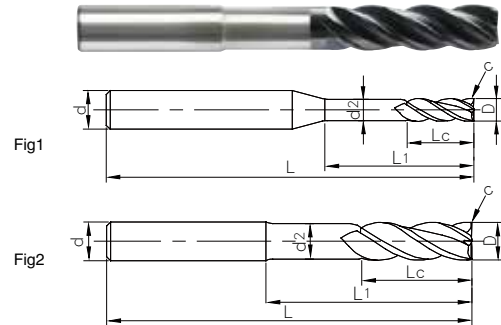


标记说明请参考P6页 See page 6 for guidelines to icons

SP210-CN4 NEW

4刃长颈平头双螺旋 (刀尖倒角)

4 Flute, with Variable Helix and Reduced Neck



| 订货号 Ordering code | D | Lc | C(45°) | d2 | L1 | L | d | 图号 Figure No. |
|----------------------|----|----|--------|-----|----|-----|----|------------------|
| SP210-CN4-03013 | 3 | 10 | 0.13 | 2.9 | 18 | 75 | 4 | 1 |
| SP210-CN4-04018 | 4 | 12 | 0.18 | 3.8 | 20 | 75 | 4 | 2 |
| SP210-CN4-06020 | 6 | 16 | 0.2 | 5.8 | 24 | 100 | 6 | 2 |
| SP210-CN4-08020 | 8 | 20 | 0.2 | 7.5 | 30 | 100 | 8 | 2 |
| SP210-CN4-10030 | 10 | 25 | 0.3 | 9.5 | 40 | 150 | 10 | 2 |
| SP210-CN4-12030 | 12 | 30 | 0.3 | 11 | 40 | 150 | 12 | 2 |
| SP210-CN4-16040 | 16 | 36 | 0.4 | 15 | 50 | 150 | 16 | 2 |
| SP210-CN4-20050 | 20 | 45 | 0.5 | 19 | 60 | 150 | 20 | 2 |

| D | 公差 Tol |
|--------|------------|
| D ≤ 12 | 0 -0.02 |
| D > 12 | 0 -0.03 |

单位unit (mm)

142页
Page
切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | | | | | | |
|-------------------------|---|---|-------------------|------------------------------|-----|-------------------------|---------------------|----------------------------|-----------------|---|
| P | | | M | K | | N | | | | |
| 1 | 2 | 3 | 4 | 1 | 2 | 3 | 1 | 2 | 3 | 4 |
| 碳钢 合金钢 (<35HRC) | | | 合金钢 (35-48HRC) | PH与铁素体 马氏体不锈钢 (<35HRC) | 不锈钢 | 灰铸铁 球墨铸铁 (<32HRC) | 高合金铸铁 (35-45HRC) | 锻造铝合金 铸造铝合金 (Si<12%) | 铜合金 (<HB200) | |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

○ 最适合 Most Suitable ○ 适合 Suitable

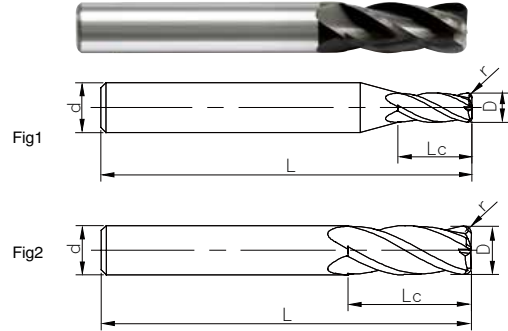
钢件、铸铁
For Steels & Cast Iron



标记说明请参考P6页 See page 6 for guidelines to icons

SP210-R4 NEW

4刃圆角头双螺旋
4 Flutes Corner Radius, with
Variable Helix



| 订货号 Ordering code | D | R | Lc | L | d | 图号 Figure No. |
|----------------------|---|----|-----|----|---|------------------|
| SP210-R4-03003 | 3 | 9 | 0.3 | 50 | 4 | 1 |
| SP210-R4-03005 | 3 | 9 | 0.5 | 50 | 4 | 1 |
| SP210-R4-04003 | 4 | 11 | 0.3 | 50 | 4 | 2 |
| SP210-R4-04005 | 4 | 11 | 0.5 | 50 | 4 | 2 |
| SP210-R4-05003 | 5 | 13 | 0.3 | 50 | 6 | 1 |
| SP210-R4-05005 | 5 | 13 | 0.5 | 50 | 6 | 1 |
| SP210-R4-06003 | 6 | 16 | 0.3 | 50 | 6 | 2 |
| SP210-R4-06005 | 6 | 16 | 0.5 | 50 | 6 | 2 |
| SP210-R4-06010 | 6 | 16 | 1 | 50 | 6 | 2 |

| D | 公差 Tol |
|--------|--|
| D ≤ 12 | $\begin{matrix} 0 \\ -0.02 \end{matrix}$ |
| D > 12 | $\begin{matrix} 0 \\ -0.03 \end{matrix}$ |

单位unit (mm)

142页
Page
切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | | | | | | | | |
|-------------------------|---|---|---|-------------------|------------------------------|-----|---|-------------------------|---------------------|-----------------|---|-------------------|
| P | | | M | K | | H | | | | | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 1 | 2 | 3 | 1 | 2 | 3 | |
| 碳钢 合金钢 (<35HRC) | | | | 合金钢 (35-48HRC) | PH与铁素体 马氏体不锈钢 (<35HRC) | 不锈钢 | | 灰铸铁 球墨铸铁 (<32HRC) | 高合金铸铁 (35-45HRC) | 淬硬钢 (<55HRC) | | 淬硬钢 (55-60HRC) |
| ○ | | | | ○ | ○ | ○ | | ○ | ○ | ○ | | |

○ 最适合 Most Suitable ○ 适合 Suitable

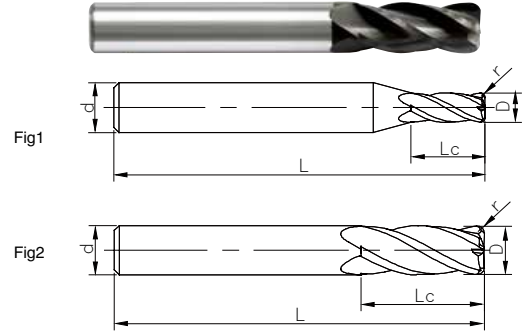


标记说明请参考P6页 See page 6 for guidelines to icons

SP210-R4 NEW

4刃圆角头双螺旋 4 Flutes Corner Radius, with Variable Helix

》续前 continue



| 订货号 Ordering code | D | R | Lc | L | d | 图号 Figure No. |
|----------------------|----|----|-----|----|----|------------------|
| SP210-R4-06015 | 6 | 16 | 1.5 | 50 | 6 | 2 |
| SP210-R4-08005 | 8 | 20 | 0.5 | 60 | 8 | 2 |
| SP210-R4-08010 | 8 | 20 | 1 | 60 | 8 | 2 |
| SP210-R4-08015 | 8 | 20 | 1.5 | 60 | 8 | 2 |
| SP210-R4-08020 | 8 | 20 | 2 | 60 | 8 | 2 |
| SP210-R4-10005 | 10 | 25 | 0.5 | 75 | 10 | 2 |
| SP210-R4-10010 | 10 | 25 | 1 | 75 | 10 | 2 |
| SP210-R4-10015 | 10 | 25 | 1.5 | 75 | 10 | 2 |

| D | 公差 Tol |
|--------|------------|
| D ≤ 12 | 0 -0.02 |
| D > 12 | 0 -0.03 |

单位unit (mm)

142页
Page

切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | | | | |
|-------------------------|-------------------|------------------------------|---|-----|-------------------------|---------------------|-----------------|-------------------|
| P | | | M | K | | H | | |
| 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | |
| 碳钢 合金钢 (<35HRC) | 合金钢 (35-48HRC) | PH与铁素体 马氏体不锈钢 (<35HRC) | | 不锈钢 | 灰铸铁 球墨铸铁 (<32HRC) | 高合金铸铁 (35-45HRC) | 淬硬钢 (<55HRC) | 淬硬钢 (55-60HRC) |
| ○ | ○ | ○ | | ○ | ○ | ○ | ○ | ○ |

○ 最适合 Most Suitable ○ 适合 Suitable

钢件、铸铁
For Steels&Cast Iron

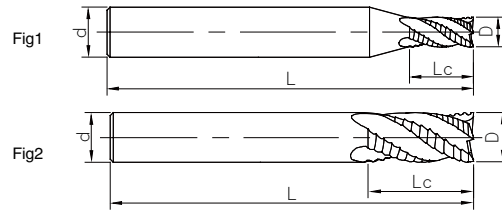


标记说明请参考P6页 See page 6 for guidelines to icons

UPR100-S4

4刃粗加工平头

4 Flute Square End, with
Roughing Geometry



| 订货号 Ordering code | D | Lc | L | d | 图号 Figure No. |
|----------------------|----|----|-----|----|------------------|
| UPR100-S4-06015 | 6 | 15 | 50 | 6 | 2 |
| UPR100-S4-08020 | 8 | 20 | 60 | 8 | 2 |
| UPR100-S4-10025 | 10 | 25 | 75 | 10 | 2 |
| UPR100-S4-12030 | 12 | 30 | 75 | 12 | 2 |
| UPR100-S4-16036 | 16 | 36 | 100 | 16 | 2 |
| UPR100-S4-20045 | 20 | 45 | 100 | 20 | 2 |

| D | 公差 Tol |
|------------|--|
| D ≤ 6 | $\begin{matrix} 0 \\ -0.03 \end{matrix}$ |
| 6 < D ≤ 10 | $\begin{matrix} 0 \\ -0.04 \end{matrix}$ |
| D > 10 | $\begin{matrix} 0 \\ -0.05 \end{matrix}$ |

单位unit (mm)

144页
Page
切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | | | | | | | |
|-------------------------|---|---|-------------------|------------------------------|---|-----|---|-------------------------|---------------------|----------------------------|-------------------|
| P | | | M | K | | N | | | | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 1 | 2 | 3 | 4 | | |
| 碳钢 合金钢 (<35HRC) | | | 合金钢 (35-48HRC) | PH与铁素体 马氏体不锈钢 (<35HRC) | | 不锈钢 | | 灰铸铁 球墨铸铁 (<32HRC) | 高合金铸铁 (35-45HRC) | 锻造铝合金 铸造铝合金 (Si<12%) | 铜合金 (<HB200) |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |

○ 最适合 Most Suitable ○ 适合 Suitable

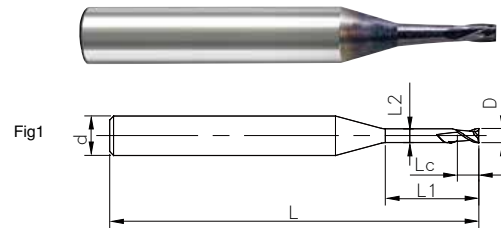


标记说明请参考P6页 See page 6 for guidelines to icons

UPM100-SN2

2刃微小径长颈平头

2 Flute Square End, Miniature Sizes



| 订货号 Ordering code | D | Lc | d2 | L1 | L | d | 图号 Figure No. |
|----------------------|-----|-----|------|----|----|---|------------------|
| UPM100-SN2-00802 | 0.8 | 1.2 | 0.75 | 2 | 50 | 4 | 1 |
| UPM100-SN2-00804 | 0.8 | 1.2 | 0.75 | 4 | 50 | 4 | 1 |
| UPM100-SN2-00806 | 0.8 | 1.2 | 0.75 | 6 | 50 | 4 | 1 |
| UPM100-SN2-01006 | 1.0 | 1.5 | 0.95 | 6 | 50 | 4 | 1 |
| UPM100-SN2-01008 | 1.0 | 1.5 | 0.95 | 8 | 50 | 4 | 1 |
| UPM100-SN2-01010 | 1.0 | 1.5 | 0.95 | 10 | 50 | 4 | 1 |
| UPM100-SN2-01508 | 1.5 | 2.0 | 1.44 | 8 | 50 | 4 | 1 |
| UPM100-SN2-01510 | 1.5 | 2.0 | 1.44 | 10 | 50 | 4 | 1 |
| UPM100-SN2-01512 | 1.5 | 2.0 | 1.44 | 12 | 50 | 4 | 1 |
| UPM100-SN2-02008 | 2.0 | 3.0 | 1.92 | 8 | 50 | 4 | 1 |
| UPM100-SN2-02010 | 2.0 | 3.0 | 1.92 | 10 | 50 | 4 | 1 |
| UPM100-SN2-02012 | 2.0 | 3.0 | 1.92 | 12 | 50 | 4 | 1 |

| D | 公差 Tol |
|---|------------|
| D | 0 -0.02 |

单位unit (mm)

146页
Page
切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | | | |
|-------------------------|---|---------------------|---|------------------------------|---|-----------------|---|
| P | | | M | K | | N | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 碳钢 合金钢 (<35HRC) | | 合金钢 (35-48HRC) | | PH与铁素体 马氏体不锈钢 (<35HRC) | | 不锈钢 | |
| 灰铸铁 球墨铸铁 (<32HRC) | | 高合金铸铁 (35-45HRC) | | 锻造铝合金 铸造铝合金 (Si<12%) | | 铜合金 (<HB200) | |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

○ 最适合 Most Suitable ○ 适合 Suitable

钢件、铸铁
For Steels & Cast Iron

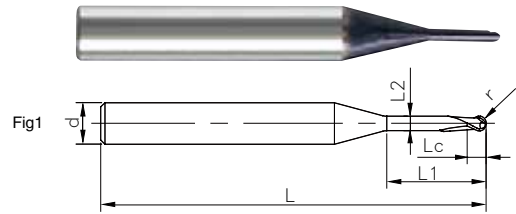


标记说明请参考P6页 See page 6 for guidelines to icons

UPM100-BN2

2刃微小径长颈球头

2 Flute Ballnose, Miniature Sizes



| 订货号 Ordering code | D | R | Lc | d2 | L1 | L | d | 图号 Figure No. |
|----------------------|-----|------|-----|------|----|----|---|------------------|
| UPM100-BN2-00802 | 0.8 | 0.4 | 0.6 | 0.75 | 2 | 50 | 4 | 1 |
| UPM100-BN2-00804 | 0.8 | 0.4 | 0.6 | 0.75 | 4 | 50 | 4 | 1 |
| UPM100-BN2-00806 | 0.8 | 0.4 | 0.6 | 0.75 | 6 | 50 | 4 | 1 |
| UPM100-BN2-01006 | 1.0 | 0.5 | 0.8 | 0.95 | 6 | 50 | 4 | 1 |
| UPM100-BN2-01008 | 1.0 | 0.5 | 0.8 | 0.95 | 8 | 50 | 4 | 1 |
| UPM100-BN2-01010 | 1.0 | 0.5 | 0.8 | 0.95 | 10 | 50 | 4 | 1 |
| UPM100-BN2-01206 | 1.2 | 0.6 | 1.0 | 1.15 | 6 | 50 | 4 | 1 |
| UPM100-BN2-01208 | 1.2 | 0.6 | 1.0 | 1.15 | 8 | 50 | 4 | 1 |
| UPM100-BN2-01210 | 1.2 | 0.6 | 1.0 | 1.15 | 10 | 50 | 4 | 1 |
| UPM100-BN2-01508 | 1.5 | 0.75 | 1.4 | 1.44 | 8 | 50 | 4 | 1 |
| UPM100-BN2-01510 | 1.5 | 0.75 | 1.4 | 1.44 | 10 | 50 | 4 | 1 |
| UPM100-BN2-01512 | 1.5 | 0.75 | 1.4 | 1.44 | 12 | 50 | 4 | 1 |
| UPM100-BN2-02008 | 2.0 | 1.0 | 1.6 | 1.92 | 8 | 50 | 4 | 1 |
| UPM100-BN2-02010 | 2.0 | 1.0 | 1.6 | 1.92 | 10 | 50 | 4 | 1 |
| UPM100-BN2-02012 | 2.0 | 1.0 | 1.6 | 1.92 | 12 | 50 | 4 | 1 |

| | |
|---|--------|
| R | 公差 Tol |
| R | ±0.015 |

单位unit (mm)

146页
Page
切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | | | |
|-------------------------|---|---------------------|---|------------------------------|---|-----------------|---|
| P | | | M | K | | N | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 碳钢 合金钢 (<35HRC) | | 合金钢 (35-48HRC) | | PH与铁素体 马氏体不锈钢 (<35HRC) | | 不锈钢 | |
| 灰铸铁 球墨铸铁 (<32HRC) | | 高合金铸铁 (35-45HRC) | | 锻造铝合金 铸造铝合金 (Si<12%) | | 铜合金 (<HB200) | |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | |

○ 最适合 Most Suitable ○ 适合 Suitable

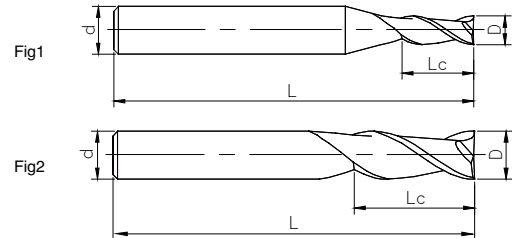


标记说明请参考P6页 See page 6 for guidelines to icons

SH160-S2 NEW

2刃平头

2 Flute, Standard Length



| 订货号 Ordering code | D | Lc | L | d | 图号 Figure No. |
|----------------------|-----|----|-----|----|------------------|
| SH160-S2-01003 | 1 | 3 | 50 | 4 | 1 |
| SH160-S2-01504 | 1.5 | 4 | 50 | 4 | 1 |
| SH160-S2-02006 | 2 | 6 | 50 | 4 | 1 |
| SH160-S2-02508 | 2.5 | 8 | 50 | 4 | 1 |
| SH160-S2-03009 | 3 | 9 | 50 | 4 | 1 |
| SH160-S2-63009 | 3 | 9 | 50 | 6 | 1 |
| SH160-S2-04010 | 4 | 10 | 50 | 4 | 2 |
| SH160-S2-64010 | 4 | 10 | 50 | 6 | 1 |
| SH160-S2-05013 | 5 | 13 | 50 | 6 | 1 |
| SH160-S2-06015 | 6 | 15 | 50 | 6 | 2 |
| SH160-S2-08020 | 8 | 20 | 60 | 8 | 2 |
| SH160-S2-10025 | 10 | 25 | 75 | 10 | 2 |
| SH160-S2-12030 | 12 | 30 | 75 | 12 | 2 |
| SH160-S2-16036 | 16 | 36 | 100 | 16 | 2 |
| SH160-S2-20045 | 20 | 45 | 100 | 20 | 2 |

| D | 公差 Tol |
|--------|------------|
| D ≤ 12 | 0 -0.02 |
| D > 12 | 0 -0.03 |

单位unit (mm)

149页
Page
切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | | | | | | | | | |
|-------------------------|---|---|---|-----|---|-------------------------|---|---------------------|---|-----------------|--|-------------------|--|
| P | | | M | K | | H | | | | | | | |
| 1 | 2 | 3 | 4 | 1 | 2 | 3 | 1 | 2 | 3 | | | | |
| 碳钢 合金钢 (<35HRC) | | | | 不锈钢 | | 灰铸铁 球墨铸铁 (<32HRC) | | 高合金铸铁 (35-45HRC) | | 淬硬钢 (<55HRC) | | 淬硬钢 (55-60HRC) | |
| | | | | | | | | | | ○ | | ○ | |

○ 最适合 Most Suitable ○ 适合 Suitable

高硬钢
Hardened Steels

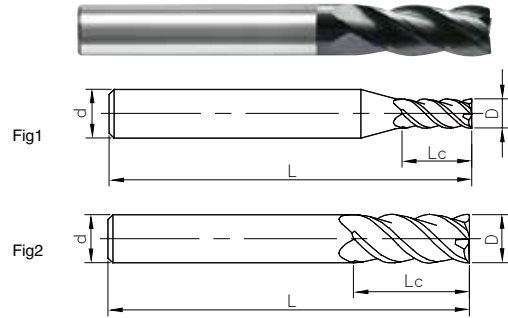


标记说明请参考P6页 See page 6 for guidelines to icons

SH160-S4 NEW

4刃平头

4 Flutes Corner Radius, with Variable Helix



| 订货号 Ordering code | D | Lc | L | d | 图号 Figure No. |
|----------------------|-----|----|-----|----|------------------|
| SH160-S4-01003 | 1 | 3 | 50 | 4 | 1 |
| SH160-S4-01504 | 1.5 | 4 | 50 | 4 | 1 |
| SH160-S4-02006 | 2 | 6 | 50 | 4 | 1 |
| SH160-S4-03009 | 3 | 9 | 50 | 4 | 1 |
| SH160-S4-63009 | 3 | 9 | 50 | 6 | 1 |
| SH160-S4-04010 | 4 | 10 | 50 | 4 | 2 |
| SH160-S4-64010 | 4 | 10 | 50 | 6 | 1 |
| SH160-S4-05013 | 5 | 13 | 50 | 6 | 1 |
| SH160-S4-06015 | 6 | 15 | 50 | 6 | 2 |
| SH160-S4-08020 | 8 | 20 | 60 | 8 | 2 |
| SH160-S4-10025 | 10 | 25 | 75 | 10 | 2 |
| SH160-S4-12030 | 12 | 30 | 75 | 12 | 2 |
| SH160-S4-16036 | 16 | 36 | 100 | 16 | 2 |
| SH160-S4-20045 | 20 | 45 | 100 | 20 | 2 |

| D | 公差 Tol |
|--------|------------|
| D ≤ 12 | 0 -0.02 |
| D > 12 | 0 -0.03 |

单位unit (mm)

149页
Page
切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | | | | | | | | |
|-------------------------|---|---|---|-------------------|------------------------------|-----|---|-------------------------|---------------------|---|-----------------|-------------------|
| P | | | M | K | | H | | | | | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 1 | 2 | 3 | 1 | 2 | 3 | |
| 碳钢 合金钢 (<35HRC) | | | | 合金钢 (35-48HRC) | PH与铁素体 马氏体不锈钢 (<35HRC) | 不锈钢 | | 灰铸铁 球墨铸铁 (<32HRC) | 高合金铸铁 (35-45HRC) | | 淬硬钢 (<55HRC) | 淬硬钢 (55-60HRC) |
| | | | | | | | | | | | ○ | ○ |

○ 最适合 Most Suitable ○ 适合 Suitable

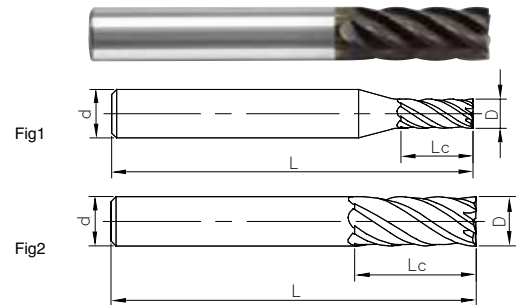


标记说明请参考P6页 See page 6 for guidelines to icons

SH160-S6 NEW

6刃平头

4 Flutes Corner Radius, with
Variable Helix



| 订货号 Ordering code | D | Lc | L | d | 图号 Figure No. |
|----------------------|----|----|-----|----|------------------|
| SH160-S6-06015 | 6 | 15 | 50 | 6 | 2 |
| SH160-S6-08020 | 8 | 20 | 60 | 8 | 2 |
| SH160-S6-10025 | 10 | 25 | 75 | 10 | 2 |
| SH160-S6-12030 | 12 | 30 | 75 | 12 | 2 |
| SH160-S6-16036 | 16 | 36 | 100 | 16 | 2 |
| SH160-S6-20045 | 20 | 45 | 100 | 20 | 2 |

| D | 公差 Tol |
|--------|--|
| D ≤ 12 | $\begin{matrix} 0 \\ -0.02 \end{matrix}$ |
| D > 12 | $\begin{matrix} 0 \\ -0.03 \end{matrix}$ |

单位unit (mm)

切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | | | | | | | |
|-------------------------|---|---|---|-------------------|------------------------------|---|-----|-------------------------|---------------------|-----------------|-------------------|
| P | | | M | K | | H | | | | | |
| 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | | | | |
| 碳钢 合金钢 (<35HRC) | | | | 合金钢 (35-48HRC) | PH与铁素体 马氏体不锈钢 (<35HRC) | | 不锈钢 | 灰铸铁 球墨铸铁 (<32HRC) | 高合金铸铁 (35-45HRC) | 淬硬钢 (<55HRC) | 淬硬钢 (55-60HRC) |
| | | | | | | | | | | ○ | ○ |

○ 最适合 Most Suitable ○ 适合 Suitable

高硬钢
Hardened Steels

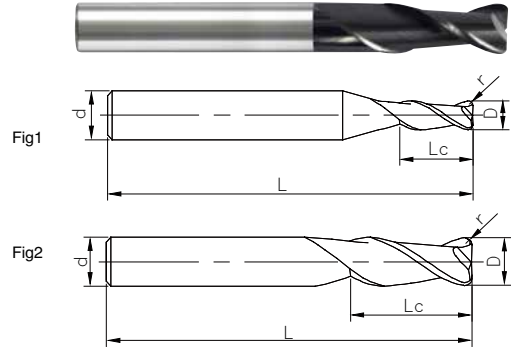


标记说明请参考P6页 See page 6 for guidelines to icons

SH160-R2 NEW

2刃圆角头

2 Flute, Corner Radius



| 订货号 Ordering code | D | Lc | r | L | d | 图号 Figure No. |
|----------------------|---|-----|----|----|---|------------------|
| SH160-R2-02002 | 2 | 0.2 | 6 | 50 | 4 | 1 |
| SH160-R2-03003 | 3 | 0.3 | 9 | 50 | 4 | 1 |
| SH160-R2-03005 | 3 | 0.5 | 9 | 50 | 4 | 1 |
| SH160-R2-04003 | 4 | 0.3 | 10 | 50 | 4 | 2 |
| SH160-R2-04005 | 4 | 0.5 | 10 | 50 | 4 | 2 |
| SH160-R2-04010 | 4 | 1 | 10 | 50 | 4 | 2 |
| SH160-R2-05003 | 5 | 0.3 | 13 | 50 | 6 | 1 |
| SH160-R2-05005 | 5 | 0.5 | 13 | 50 | 6 | 1 |
| SH160-R2-05010 | 5 | 1 | 13 | 50 | 6 | 1 |
| SH160-R2-06003 | 6 | 0.3 | 15 | 50 | 6 | 2 |
| SH160-R2-06005 | 6 | 0.5 | 15 | 50 | 6 | 2 |

| D | 公差 Tol |
|--------|------------|
| D ≤ 12 | 0 -0.02 |
| D > 12 | 0 -0.03 |

单位unit (mm)

149页
Page
切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | | | |
|-------------------------|-------------------|------------------------------|-------|-------------------------|---------------------|-----------------|-------------------|
| P | | | M | K | H | | |
| 1 2 3 4 | 5 | 6 | 1 2 3 | 1 2 | 3 | 1 2 | 3 |
| 碳钢 合金钢 (<35HRC) | 合金钢 (35-48HRC) | PH与铁素体 马氏体不锈钢 (<35HRC) | 不锈钢 | 灰铸铁 球墨铸铁 (<32HRC) | 高合金铸铁 (35-45HRC) | 淬硬钢 (<55HRC) | 淬硬钢 (55-60HRC) |
| | | | | | | ○ | ○ |

○ 最适合 Most Suitable ○ 适合 Suitable



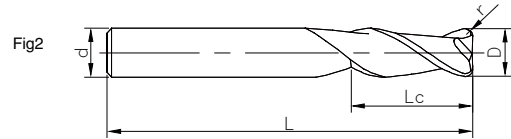
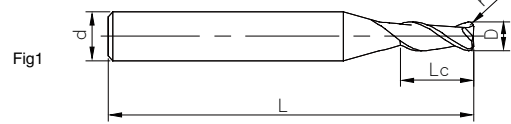
标记说明请参考P6页 See page 6 for guidelines to icons

SH160-R2 NEW

2刃圆角头

2 Flute, Corner Radius

》续前 continue



| 订货号 Ordering code | D | Lc | r | L | d | 图号 Figure No. |
|----------------------|----|-----|----|----|----|------------------|
| SH160-R2-06010 | 6 | 1 | 15 | 50 | 6 | 2 |
| SH160-R2-08005 | 8 | 0.5 | 20 | 60 | 8 | 2 |
| SH160-R2-08010 | 8 | 1 | 20 | 60 | 8 | 2 |
| SH160-R2-10005 | 10 | 0.5 | 25 | 75 | 10 | 2 |
| SH160-R2-10010 | 10 | 1 | 25 | 75 | 10 | 2 |
| SH160-R2-10015 | 10 | 1.5 | 25 | 75 | 10 | 2 |
| SH160-R2-10020 | 10 | 2 | 25 | 75 | 10 | 2 |
| SH160-R2-12005 | 12 | 0.5 | 30 | 75 | 12 | 2 |
| SH160-R2-12010 | 12 | 1 | 30 | 75 | 12 | 2 |
| SH160-R2-12015 | 12 | 1.5 | 30 | 75 | 12 | 2 |
| SH160-R2-12020 | 12 | 2 | 30 | 75 | 12 | 2 |

| D | 公差 Tol |
|--------|------------|
| D ≤ 12 | 0 -0.02 |
| D > 12 | 0 -0.03 |

单位unit (mm)

149页
Page

切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | | | | | | | | | | | |
|-------------------------|---|-------------------|---|------------------------------|---|-----|---|-------------------------|---|---------------------|--|-----------------|--|-------------------|--|
| P | | | M | K | | H | | | | | | | | | |
| 1 | 2 | 3 | 4 | 1 | 2 | 3 | 1 | 2 | 3 | | | | | | |
| 碳钢 合金钢 (<35HRC) | | 合金钢 (35-48HRC) | | PH与铁素体 马氏体不锈钢 (<35HRC) | | 不锈钢 | | 灰铸铁 球墨铸铁 (<32HRC) | | 高合金铸铁 (35-45HRC) | | 淬硬钢 (<55HRC) | | 淬硬钢 (55-60HRC) | |
| | | | | | | | | | | | | ○ | | ○ | |

○ 最适合 Most Suitable ○ 适合 Suitable

高硬钢
Hardened Steels

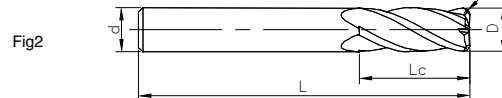
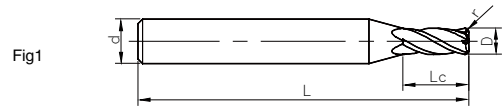


标记说明请参考P6页 See page 6 for guidelines to icons

SH160-R4 NEW

4刃圆角头

4 Flutes Corner Radius, with Variable Helix



| 订货号 Ordering code | D | Lc | r | L | d | 图号 Figure No. |
|----------------------|---|----|-----|----|---|------------------|
| SH160-R4-03003 | 3 | 9 | 0.3 | 50 | 4 | 1 |
| SH160-R4-03005 | 3 | 9 | 0.5 | 50 | 4 | 1 |
| SH160-R4-63003 | 3 | 8 | 0.3 | 50 | 6 | 1 |
| SH160-R4-63005 | 3 | 8 | 0.5 | 50 | 6 | 1 |
| SH160-R4-04003 | 4 | 10 | 0.3 | 50 | 4 | 2 |
| SH160-R4-04005 | 4 | 10 | 0.5 | 50 | 4 | 2 |
| SH160-R4-04010 | 4 | 10 | 1 | 50 | 4 | 2 |
| SH160-R4-64002 | 4 | 10 | 0.2 | 50 | 6 | 2 |
| SH160-R4-64003 | 4 | 10 | 0.3 | 50 | 6 | 2 |
| SH160-R4-64005 | 4 | 10 | 0.5 | 50 | 6 | 2 |
| SH160-R4-64010 | 4 | 10 | 1 | 50 | 6 | 2 |
| SH160-R4-05003 | 5 | 13 | 0.3 | 50 | 6 | 2 |
| SH160-R4-05005 | 5 | 13 | 0.5 | 50 | 6 | 2 |
| SH160-R4-05010 | 5 | 13 | 1 | 50 | 6 | 2 |
| SH160-R4-06002 | 6 | 15 | 0.2 | 50 | 6 | 2 |

| D | 公差 Tol |
|--------|------------|
| D ≤ 12 | 0 -0.02 |
| D > 12 | 0 -0.03 |

单位unit (mm)

149页
Page
切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | | | |
|-------------------------|-------------------|------------------------------|-------|-------------------------|---------------------|-----------------|-------------------|
| P | | | M | K | H | | |
| 1 2 3 4 | 5 | 6 | 1 2 3 | 1 2 | 3 | 1 2 | 3 |
| 碳钢 合金钢 (<35HRC) | 合金钢 (35-48HRC) | PH与铁素体 马氏体不锈钢 (<35HRC) | 不锈钢 | 灰铸铁 球墨铸铁 (<32HRC) | 高合金铸铁 (35-45HRC) | 淬硬钢 (<55HRC) | 淬硬钢 (55-60HRC) |
| | | | | | | ○ | ○ |

○ 最适合 Most Suitable ○ 适合 Suitable

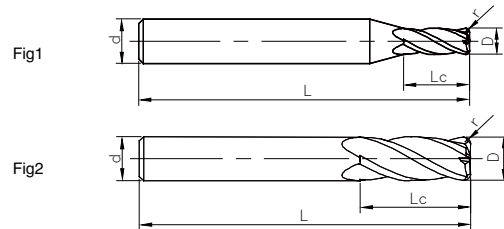


标记说明请参考P6页 See page 6 for guidelines to icons

SH160-R4 NEW

4刃圆角头

4 Flutes Corner Radius, with Variable Helix



» 续前 continue

| 订货号 Ordering code | D | Lc | r | L | d | 图号 Figure No. |
|----------------------|----|----|-----|----|----|------------------|
| SH160-R4-06003 | 6 | 15 | 0.3 | 50 | 6 | 2 |
| SH160-R4-06005 | 6 | 15 | 0.5 | 50 | 6 | 2 |
| SH160-R4-06010 | 6 | 15 | 1 | 50 | 6 | 2 |
| SH160-R4-08002 | 8 | 20 | 0.2 | 60 | 8 | 2 |
| SH160-R4-08003 | 8 | 20 | 0.3 | 60 | 8 | 2 |
| SH160-R4-08005 | 8 | 20 | 0.5 | 60 | 8 | 2 |
| SH160-R4-08010 | 8 | 20 | 1 | 60 | 8 | 2 |
| SH160-R4-10005 | 10 | 25 | 0.5 | 75 | 10 | 2 |
| SH160-R4-10010 | 10 | 25 | 1 | 75 | 10 | 2 |
| SH160-R4-10015 | 10 | 25 | 1.5 | 75 | 10 | 2 |
| SH160-R4-10020 | 10 | 25 | 2 | 75 | 10 | 2 |
| SH160-R4-12005 | 12 | 30 | 0.5 | 75 | 12 | 2 |
| SH160-R4-12010 | 12 | 30 | 1 | 75 | 12 | 2 |
| SH160-R4-12015 | 12 | 30 | 1.5 | 75 | 12 | 2 |
| SH160-R4-12020 | 12 | 30 | 2 | 75 | 12 | 2 |

| D | 公差 Tol |
|--------|------------|
| D ≤ 12 | 0 -0.02 |
| D > 12 | 0 -0.03 |

单位unit (mm)

149页
Page

切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | | | | | | | | | | | |
|-------------------------|---|-------------------|---|------------------------------|---|-----|---|-------------------------|---|---------------------|--|-----------------|--|-------------------|--|
| P | | | M | K | | H | | | | | | | | | |
| 1 | 2 | 3 | 4 | 1 | 2 | 3 | 1 | 2 | 3 | | | | | | |
| 碳钢 合金钢 (<35HRC) | | 合金钢 (35-48HRC) | | PH与铁素体 马氏体不锈钢 (<35HRC) | | 不锈钢 | | 灰铸铁 球墨铸铁 (<32HRC) | | 高合金铸铁 (35-45HRC) | | 淬硬钢 (<55HRC) | | 淬硬钢 (55-60HRC) | |
| | | | | | | | | | | | | ○ | | ○ | |

○ 最适合 Most Suitable ○ 适合 Suitable

高硬钢
Hardened Steels



标记说明请参考P6页 See page 6 for guidelines to icons

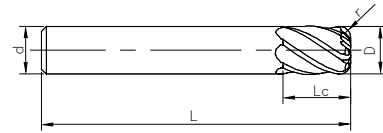


SH160-R6 NEW

6刃圆角头

4 Flutes Corner Radius, with Variable Helix

Fig1



| 订货号 Ordering code | D | Lc | r | L | d | 图号 Figure No. |
|----------------------|----|----|-----|-----|----|------------------|
| SH160-R6-12005 | 12 | 30 | 0.5 | 75 | 12 | 1 |
| SH160-R6-16010 | 16 | 36 | 1 | 100 | 16 | 1 |
| SH160-R6-20010 | 20 | 45 | 1 | 100 | 20 | 1 |

| D | 公差 Tol |
|--------|------------|
| D ≤ 12 | 0 -0.02 |
| D > 12 | 0 -0.03 |

单位unit (mm)

149页
Page
切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | | | | | | | | | | | |
|-------------------------|---|-------------------|---|------------------------------|---|-----|---|-------------------------|---|---------------------|--|-----------------|--|-------------------|--|
| P | | | M | K | | H | | | | | | | | | |
| 1 | 2 | 3 | 4 | 1 | 2 | 3 | 1 | 2 | 3 | | | | | | |
| 碳钢 合金钢 (<35HRC) | | 合金钢 (35-48HRC) | | PH与铁素体 马氏体不锈钢 (<35HRC) | | 不锈钢 | | 灰铸铁 球墨铸铁 (<32HRC) | | 高合金铸铁 (35-45HRC) | | 淬硬钢 (<55HRC) | | 淬硬钢 (55-60HRC) | |
| | | | | | | | | | | | | ○ | | ○ | |

○ 最适合 Most Suitable ○ 适合 Suitable

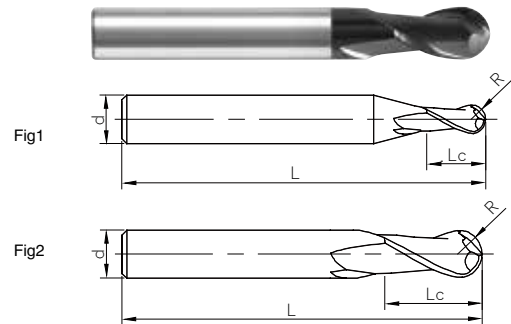


标记说明请参考P6页 See page 6 for guidelines to icons

SH160-B2 NEW

2刃球头

4 Flutes Corner Radius, with
Variable Helix



| 订货号 Ordering code | D | R | Lc | L | d | 图号 Figure No. |
|----------------------|-----|------|----|-----|----|------------------|
| SH160-B2-00501 | 0.5 | 0.25 | 1 | 50 | 4 | 1 |
| SH160-B2-01002 | 1 | 0.5 | 2 | 50 | 4 | 1 |
| SH160-B2-01503 | 1.5 | 0.75 | 3 | 50 | 4 | 1 |
| SH160-B2-02004 | 2 | 1 | 4 | 50 | 4 | 1 |
| SH160-B2-03006 | 3 | 1.5 | 6 | 50 | 4 | 1 |
| SH160-B2-04008 | 4 | 2 | 8 | 50 | 4 | 2 |
| SH160-B2-05010 | 5 | 2.5 | 10 | 50 | 6 | 1 |
| SH160-B2-06012 | 6 | 3 | 12 | 50 | 6 | 2 |
| SH160-B2-07014 | 7 | 3.5 | 14 | 60 | 8 | 1 |
| SH160-B2-08014 | 8 | 4 | 14 | 60 | 8 | 2 |
| SH160-B2-09016 | 9 | 4.5 | 16 | 75 | 10 | 1 |
| SH160-B2-10018 | 10 | 5 | 18 | 75 | 10 | 2 |
| SH160-B2-11020 | 11 | 5.5 | 20 | 75 | 12 | 1 |
| SH160-B2-12022 | 12 | 6 | 22 | 75 | 12 | 2 |
| SH160-B2-16026 | 16 | 8 | 26 | 100 | 16 | 2 |

| R | 公差 Tol |
|-------|---------|
| R < 3 | ± 0.015 |
| R ≥ 3 | ± 0.020 |

单位unit (mm)

149页
Page

切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | | | | | | | | | |
|-------------------------|---|---|---|------------------------------|---|-------------------------|---|---------------------|---|-----------------|--|-------------------|--|
| P | | | M | K | | H | | | | | | | |
| 1 | 2 | 3 | 4 | 1 | 2 | 3 | 1 | 2 | 3 | | | | |
| 碳钢 合金钢 (<35HRC) | | | | 不锈钢 | | 灰铸铁 球墨铸铁 (<32HRC) | | 高合金铸铁 (35-45HRC) | | 淬硬钢 (<55HRC) | | 淬硬钢 (55-60HRC) | |
| 合金钢 (35-48HRC) | | | | PH与铁素体 马氏体不锈钢 (<35HRC) | | | | | | | | | |
| | | | | | | | | | | | | | |

○ 最适合 Most Suitable ○ 适合 Suitable

高硬钢
Hardened Steels

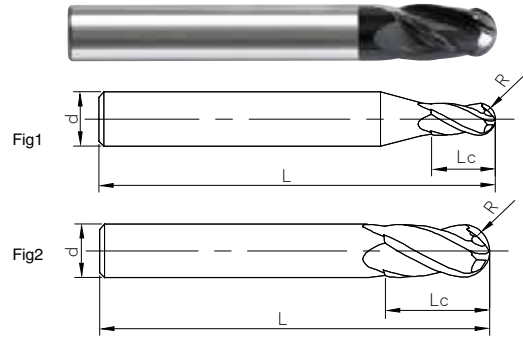


标记说明请参考P6页 See page 6 for guidelines to icons

SH160-B4 NEW

4刃球头

4 Flutes Corner Radius, with Variable Helix



| 订货号 Ordering code | D | R | Lc | L | d | 图号 Figure No. |
|----------------------|----|-----|----|-----|----|------------------|
| SH160-B4-02004 | 2 | 1 | 4 | 50 | 4 | 1 |
| SH160-B4-03006 | 3 | 1.5 | 6 | 50 | 4 | 1 |
| SH160-B4-04008 | 4 | 2 | 8 | 50 | 4 | 2 |
| SH160-B4-05010 | 5 | 2.5 | 10 | 50 | 6 | 1 |
| SH160-B4-06012 | 6 | 3 | 12 | 50 | 6 | 2 |
| SH160-B4-07014 | 7 | 3.5 | 14 | 60 | 8 | 1 |
| SH160-B4-08014 | 8 | 4 | 14 | 60 | 8 | 2 |
| SH160-B4-09016 | 9 | 4.5 | 16 | 75 | 10 | 1 |
| SH160-B4-10018 | 10 | 5 | 18 | 75 | 10 | 2 |
| SH160-B4-11020 | 11 | 5.5 | 20 | 75 | 12 | 1 |
| SH160-B4-12022 | 12 | 6 | 22 | 75 | 12 | 2 |
| SH160-B4-16026 | 16 | 8 | 26 | 100 | 16 | 2 |

| R | 公差 Tol |
|-------|--------|
| R < 3 | ±0.015 |
| R ≥ 3 | ±0.020 |

单位unit (mm)

149页
Page
切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | | | |
|-------------------------|-------------------|------------------------------|-------|-------------------------|---------------------|-----------------|-------------------|
| P | | | M | K | H | | |
| 1 2 3 4 | 5 | 6 | 1 2 3 | 1 2 | 3 | 1 2 | 3 |
| 碳钢 合金钢 (<35HRC) | 合金钢 (35-48HRC) | PH与铁素体 马氏体不锈钢 (<35HRC) | 不锈钢 | 灰铸铁 球墨铸铁 (<32HRC) | 高合金铸铁 (35-45HRC) | 淬硬钢 (<55HRC) | 淬硬钢 (55-60HRC) |
| | | | | | | ○ | ○ |

○ 最适合 Most Suitable ○ 适合 Suitable

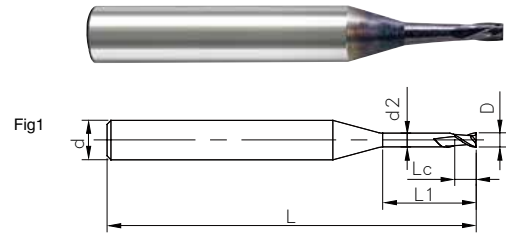


标记说明请参考P6页 See page 6 for guidelines to icons

SHM100-SN2 NEW

2刃微小径长颈平头

4 Flutes Corner Radius, with Variable Helix



| 订货号 Ordering code | D | Lc | d2 | L1 | L | d |
|----------------------|-----|-----|------|----|----|---|
| SHM100-SN2-00401 | 0.4 | 0.6 | 0.36 | 1 | 50 | 4 |
| SHM100-SN2-00402 | 0.4 | 0.6 | 0.36 | 2 | 50 | 4 |
| SHM100-SN2-00404 | 0.4 | 0.6 | 0.36 | 4 | 50 | 4 |
| SHM100-SN2-00602 | 0.6 | 0.8 | 0.56 | 2 | 50 | 4 |
| SHM100-SN2-00604 | 0.6 | 0.8 | 0.56 | 4 | 50 | 4 |
| SHM100-SN2-00606 | 0.6 | 0.8 | 0.56 | 6 | 50 | 4 |
| SHM100-SN2-00802 | 0.8 | 1.2 | 0.75 | 2 | 50 | 4 |
| SHM100-SN2-00804 | 0.8 | 1.2 | 0.75 | 4 | 50 | 4 |
| SHM100-SN2-00806 | 0.8 | 1.2 | 0.75 | 6 | 50 | 4 |

| D | 公差 Tol |
|-----------|--------|
| D ≤ 1 | 0 |
| | -0.01 |
| 1 < D ≤ 2 | 0 |
| | -0.015 |

单位unit (mm)

150页
Page

切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | | | | | | |
|-------------------------|---|---|---|-------------------|------------------------------|-----|-------------------------|---------------------|-----------------|-------------------|
| P | | | M | K | | H | | | | |
| 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | | | |
| 碳钢 合金钢 (<35HRC) | | | | 合金钢 (35-48HRC) | PH与铁素体 马氏体不锈钢 (<35HRC) | 不锈钢 | 灰铸铁 球墨铸铁 (<32HRC) | 高合金铸铁 (35-45HRC) | 淬硬钢 (<55HRC) | 淬硬钢 (55-60HRC) |
| | | | | | | | | | | |
| | | | | | | | | ○ | ○ | |

○ 最适合 Most Suitable ○ 适合 Suitable

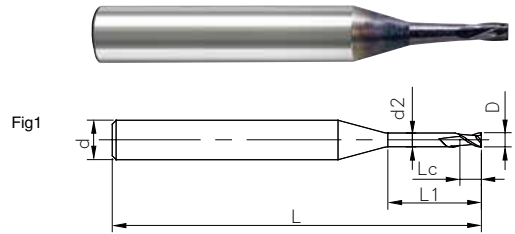
高硬钢
Hardened Steels



标记说明请参考P6页 See page 6 for guidelines to icons

SHM100-SN2 NEW

2刃微小径长颈平头
4 Flutes Corner Radius, with Variable Helix



》续前 continue

| 订货号 Ordering code | D | Lc | d2 | L1 | L | d |
|----------------------|-----|-----|------|----|----|---|
| SHM100-SN2-01006 | 1.0 | 1.5 | 0.95 | 6 | 50 | 4 |
| SHM100-SN2-01008 | 1.0 | 1.5 | 0.95 | 8 | 50 | 4 |
| SHM100-SN2-01010 | 1.0 | 1.5 | 0.95 | 10 | 50 | 4 |
| SHM100-SN2-01508 | 1.5 | 2.0 | 1.44 | 8 | 50 | 4 |
| SHM100-SN2-01510 | 1.5 | 2.0 | 1.44 | 10 | 50 | 4 |
| SHM100-SN2-01512 | 1.5 | 2.0 | 1.44 | 12 | 50 | 4 |
| SHM100-SN2-02008 | 2.0 | 3.0 | 1.92 | 8 | 50 | 4 |
| SHM100-SN2-02010 | 2.0 | 3.0 | 1.92 | 10 | 50 | 4 |
| SHM100-SN2-02012 | 2.0 | 3.0 | 1.92 | 12 | 50 | 4 |

| D | 公差 Tol |
|-----------|--------|
| D ≤ 1 | 0 |
| | -0.01 |
| 1 < D ≤ 2 | 0 |
| | -0.015 |

单位unit (mm)

150页
Page
切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | | | |
|-------------------------|-------------------|------------------------------|-------|-------------------------|---------------------|-----------------|-------------------|
| P | | | M | K | | H | |
| 1 2 3 4 | 5 | 6 | 1 2 3 | 1 2 | 3 | 1 2 | 3 |
| 碳钢 合金钢 (<35HRC) | 合金钢 (35-48HRC) | PH与铁素体 马氏体不锈钢 (<35HRC) | 不锈钢 | 灰铸铁 球墨铸铁 (<32HRC) | 高合金铸铁 (35-45HRC) | 淬硬钢 (<55HRC) | 淬硬钢 (55-60HRC) |
| | | | | | | ○ | ○ |

○ 最适合 Most Suitable ○ 适合 Suitable

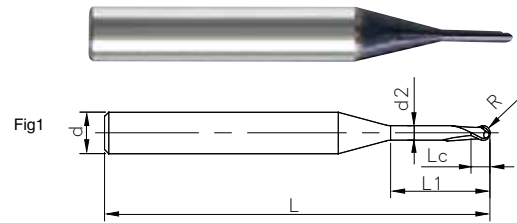


标记说明请参考P6页 See page 6 for guidelines to icons

SHM100-BN2 NEW

2刃微小径长颈球头

4 Flutes Corner Radius, with Variable Helix



| 订货号 Ordering code | D | R | Lc | d2 | L1 | L | d |
|----------------------|-----|-----|-----|------|----|----|---|
| SHM100-BN2-00401 | 0.4 | 0.2 | 0.3 | 0.35 | 1 | 50 | 4 |
| SHM100-BN2-00402 | 0.4 | 0.2 | 0.3 | 0.35 | 2 | 50 | 4 |
| SHM100-BN2-00403 | 0.4 | 0.2 | 0.3 | 0.35 | 3 | 50 | 4 |
| SHM100-BN2-00601 | 0.6 | 0.3 | 0.4 | 0.55 | 1 | 50 | 4 |
| SHM100-BN2-00602 | 0.6 | 0.3 | 0.4 | 0.55 | 2 | 50 | 4 |
| SHM100-BN2-00603 | 0.6 | 0.3 | 0.4 | 0.55 | 3 | 50 | 4 |
| SHM100-BN2-00802 | 0.8 | 0.4 | 0.6 | 0.75 | 2 | 50 | 4 |
| SHM100-BN2-00804 | 0.8 | 0.4 | 0.6 | 0.75 | 4 | 50 | 4 |
| SHM100-BN2-00806 | 0.8 | 0.4 | 0.6 | 0.75 | 6 | 50 | 4 |
| SHM100-BN2-01006 | 1.0 | 0.5 | 0.8 | 0.95 | 6 | 50 | 4 |
| SHM100-BN2-01008 | 1.0 | 0.5 | 0.8 | 0.95 | 8 | 50 | 4 |

| R | 公差 Tol |
|-------------|---------|
| 0.4 ≤ R ≤ 2 | ± 0.005 |

单位unit (mm)

150页
Page
切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | | | | | |
|-------------------------|---|---|---|---------------------|---|------------------------------|---|-------------------|---|
| P | | | M | K | | H | | | |
| 1 | 2 | 3 | 4 | 1 | 2 | 3 | 1 | 2 | 3 |
| 碳钢 合金钢 (<35HRC) | | | | 合金钢 (35-48HRC) | | PH与铁素体 马氏体不锈钢 (<35HRC) | | 不锈钢 | |
| 灰铸铁 球墨铸铁 (<32HRC) | | | | 高合金铸铁 (35-45HRC) | | 淬硬钢 (<55HRC) | | 淬硬钢 (55-60HRC) | |
| ○ | | | | ○ | | ○ | | ○ | |

○ 最适合 Most Suitable ○ 适合 Suitable

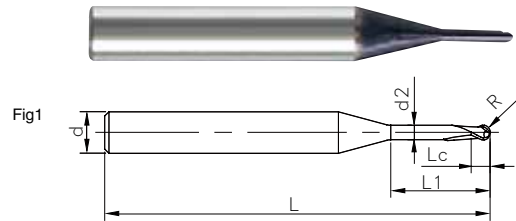
高硬钢
Hardened Steels



标记说明请参考P6页 See page 6 for guidelines to icons

SHM100-BN2 NEW

2刃微小径长颈球头
4 Flutes Corner Radius, with Variable Helix



》续前 continue

| 订货号 Ordering code | D | R | Lc | d2 | L1 | L | d |
|----------------------|-----|------|-----|------|----|----|---|
| SHM100-BN2-01010 | 1.0 | 0.5 | 0.8 | 0.95 | 10 | 50 | 4 |
| SHM100-BN2-01206 | 1.2 | 0.6 | 1.0 | 1.15 | 6 | 50 | 4 |
| SHM100-BN2-01208 | 1.2 | 0.6 | 1.0 | 1.15 | 8 | 50 | 4 |
| SHM100-BN2-01210 | 1.2 | 0.6 | 1.0 | 1.15 | 10 | 50 | 4 |
| SHM100-BN2-01508 | 1.5 | 0.75 | 1.4 | 1.44 | 8 | 50 | 4 |
| SHM100-BN2-01510 | 1.5 | 0.75 | 1.4 | 1.44 | 10 | 50 | 4 |
| SHM100-BN2-01512 | 1.5 | 0.75 | 1.4 | 1.44 | 12 | 50 | 4 |
| SHM100-BN2-02008 | 2.0 | 1.0 | 1.6 | 1.92 | 8 | 50 | 4 |
| SHM100-BN2-02010 | 2.0 | 1.0 | 1.6 | 1.92 | 10 | 50 | 4 |
| SHM100-BN2-02012 | 2.0 | 1.0 | 1.6 | 1.92 | 12 | 50 | 4 |

| R | 公差 Tol |
|-------------|---------|
| 0.4 ≤ R ≤ 2 | ± 0.005 |

单位unit (mm)

150页
Page
切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | | | |
|-------------------------|-------------------|------------------------------|-------|-------------------------|---------------------|-----------------|-------------------|
| P | | | M | K | | H | |
| 1 2 3 4 | 5 | 6 | 1 2 3 | 1 2 | 3 | 1 2 | 3 |
| 碳钢 合金钢 (<35HRC) | 合金钢 (35-48HRC) | PH与铁素体 马氏体不锈钢 (<35HRC) | 不锈钢 | 灰铸铁 球墨铸铁 (<32HRC) | 高合金铸铁 (35-45HRC) | 淬硬钢 (<55HRC) | 淬硬钢 (55-60HRC) |
| | | | | | | ○ | ○ |

○ 最适合 Most Suitable ○ 适合 Suitable

不锈钢
For Stainless Steel

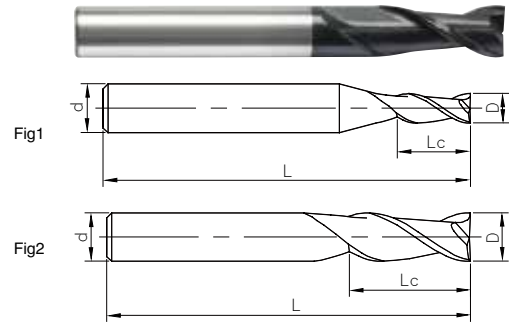


标记说明请参考P6页 See page 6 for guidelines to icons

US200-S2

2刃平头

2 Flute, Standard Length



| 订货号 Ordering code | D | Lc | L | d | 图号 Figure No. |
|----------------------|-----|----|----|---|------------------|
| US200-S2-00501 | 0.5 | 1 | 50 | 4 | 1 |
| US200-S2-00802 | 0.8 | 2 | 50 | 4 | 1 |
| US200-S2-01003 | 1 | 3 | 50 | 4 | 1 |
| US200-S2-01504 | 1.5 | 4 | 50 | 4 | 1 |
| US200-S2-02006 | 2 | 6 | 50 | 4 | 1 |
| US200-S2-02508 | 2.5 | 8 | 50 | 4 | 1 |
| US200-S2-63008 | 3 | 8 | 50 | 6 | 1 |
| US200-S2-03009 | 3 | 9 | 50 | 4 | 1 |
| US200-S2-03510 | 3.5 | 10 | 50 | 4 | 1 |

| D | 公差 Tol |
|--------|------------|
| D ≤ 12 | 0 -0.02 |
| D > 12 | 0 -0.03 |

单位unit (mm)

151页
Page

切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | | | | | |
|-------------------------|---|---|-------------------|------------------------------|-----|-------------------------|---------------------|----------------------------|-----------------|
| P | | | M | K | | N | | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 1 | 2 | 3 | 4 |
| 碳钢 合金钢 (<35HRC) | | | 合金钢 (35-48HRC) | PH与铁素体 马氏体不锈钢 (<35HRC) | 不锈钢 | 灰铸铁 球墨铸铁 (<32HRC) | 高合金铸铁 (35-45HRC) | 锻造铝合金 铸造铝合金 (Si<12%) | 铜合金 (<HB200) |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

○ 最适合 Most Suitable ○ 适合 Suitable

不锈钢
For Stainless Steel

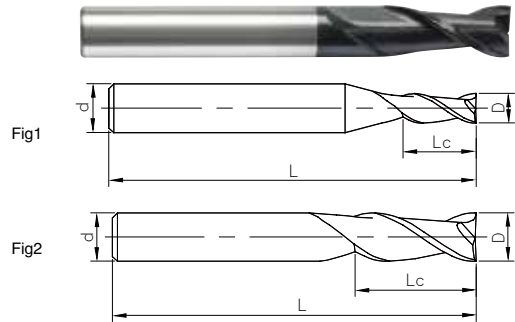


标记说明请参考P6页 See page 6 for guidelines to icons

US200-S2

2刃平头

2 Flute, Standard Length



》续前 continue

| 订货号 Ordering code | D | Lc | L | d | 图号 Figure No. |
|----------------------|----|----|-----|----|------------------|
| US200-S2-04011 | 4 | 11 | 50 | 4 | 2 |
| US200-S2-64011 | 4 | 11 | 50 | 6 | 1 |
| US200-S2-05013 | 5 | 13 | 50 | 6 | 1 |
| US200-S2-06016 | 6 | 16 | 50 | 6 | 2 |
| US200-S2-08020 | 8 | 20 | 60 | 8 | 2 |
| US200-S2-10025 | 10 | 25 | 75 | 10 | 2 |
| US200-S2-12030 | 12 | 30 | 75 | 12 | 2 |
| US200-S2-16036 | 16 | 36 | 100 | 16 | 2 |
| US200-S2-20045 | 20 | 45 | 100 | 20 | 2 |

| D | 公差 Tol |
|--------|------------|
| D ≤ 12 | 0 -0.02 |
| D > 12 | 0 -0.03 |

单位unit (mm)

151页
Page
切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | | |
|-------------------------|-------------------|------------------------------|-------|-------------------------|------------------|-----------------|
| P | | M | | K | S | |
| 1 2 3 4 | 5 | 6 | 1 2 3 | 1 2 | 1 2 3 | 4 |
| 碳钢 合金钢 (<35HRC) | 合金钢 (35-48HRC) | PH与铁素体 马氏体不锈钢 (<35HRC) | 不锈钢 | 灰铸铁 球墨铸铁 (<32HRC) | 高温合金 (<HB450) | 钛合金 (<HB400) |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ |

○ 最适合 Most Suitable ○ 适合 Suitable

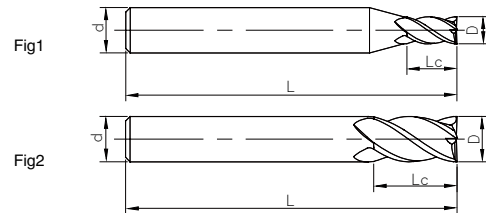


标记说明请参考P6页 See page 6 for guidelines to icons

US200-SS4

4刃短刃平头

4 Flute, Stub Length



| 订货号 Ordering code | D | Lc | L | d | 图号 Figure No. |
|----------------------|----|----|-----|----|------------------|
| US200-SS4-02004 | 2 | 4 | 50 | 4 | 1 |
| US200-SS4-03004 | 3 | 4 | 50 | 4 | 1 |
| US200-SS4-04060 | 4 | 6 | 50 | 4 | 2 |
| US200-SS4-05008 | 5 | 8 | 50 | 6 | 1 |
| US200-SS4-06009 | 6 | 9 | 50 | 6 | 2 |
| US200-SS4-08010 | 8 | 10 | 60 | 8 | 2 |
| US200-SS4-10012 | 10 | 12 | 75 | 10 | 2 |
| US200-SS4-12016 | 12 | 16 | 75 | 12 | 2 |
| US200-SS4-14020 | 14 | 20 | 75 | 14 | 2 |
| US200-SS4-16024 | 16 | 24 | 100 | 16 | 2 |
| US200-SS4-18027 | 18 | 27 | 100 | 18 | 2 |
| US200-SS4-20030 | 20 | 30 | 100 | 20 | 2 |

| D | 公差 Tol |
|--------|------------|
| D ≤ 12 | 0 -0.02 |
| D > 12 | 0 -0.03 |

单位unit (mm)

切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | | |
|-------------------------|-------------------|------------------------------|-------|-------------------------|------------------|-----------------|
| P | | | M | K | S | |
| 1 2 3 4 | 5 | 6 | 1 2 3 | 1 2 | 1 2 3 | 4 |
| 碳钢 合金钢 (<35HRC) | 合金钢 (35-48HRC) | PH与铁素体 马氏体不锈钢 (<35HRC) | 不锈钢 | 灰铸铁 球墨铸铁 (<32HRC) | 高温合金 (<HB450) | 钛合金 (<HB400) |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ |

○ 最适合 Most Suitable ○ 适合 Suitable

不锈钢
For Stainless Steel

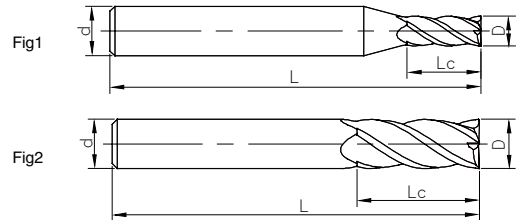


标记说明请参考P6页 See page 6 for guidelines to icons

US200-S4

4刃平头

4 Flute, Standard Length



| 订货号 Ordering code | D | Lc | L | d | 图号 Figure No. |
|----------------------|-----|----|-----|----|------------------|
| US200-S4-01003 | 1 | 3 | 50 | 4 | 1 |
| US200-S4-01504 | 1.5 | 4 | 50 | 4 | 1 |
| US200-S4-02006 | 2 | 6 | 50 | 4 | 1 |
| US200-S4-02508 | 2.5 | 8 | 50 | 4 | 1 |
| US200-S4-63008 | 3 | 8 | 50 | 6 | 1 |
| US200-S4-03009 | 3 | 9 | 50 | 4 | 1 |
| US200-S4-03510 | 3.5 | 10 | 50 | 4 | 1 |
| US200-S4-04011 | 4 | 11 | 50 | 4 | 2 |
| US200-S4-64011 | 4 | 11 | 50 | 6 | 1 |
| US200-S4-05013 | 5 | 13 | 50 | 6 | 1 |
| US200-S4-06016 | 6 | 16 | 50 | 6 | 2 |
| US200-S4-08020 | 8 | 20 | 60 | 8 | 2 |
| US200-S4-10025 | 10 | 25 | 75 | 10 | 2 |
| US200-S4-12030 | 12 | 30 | 75 | 12 | 2 |
| US200-S4-16036 | 16 | 36 | 100 | 16 | 2 |
| US200-S4-20045 | 20 | 45 | 100 | 20 | 2 |

151页
Page
切削参数详见
Cutting Parameters

| D | 公差 Tol |
|--------|------------|
| D ≤ 12 | 0 -0.02 |
| D > 12 | 0 -0.03 |

单位unit (mm)

| 工件材料 Workpiece Material | | | | | | |
|-------------------------|-------------------|------------------------------|-------|-------------------------|------------------|-----------------|
| P | | | M | K | S | |
| 1 2 3 4 | 5 | 6 | 1 2 3 | 1 2 | 1 2 3 | 4 |
| 碳钢 合金钢 (<35HRC) | 合金钢 (35-48HRC) | PH与铁素体 马氏体不锈钢 (<35HRC) | 不锈钢 | 灰铸铁 球墨铸铁 (<32HRC) | 高温合金 (<HB450) | 钛合金 (<HB400) |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ |

○ 最适合 Most Suitable ○ 适合 Suitable

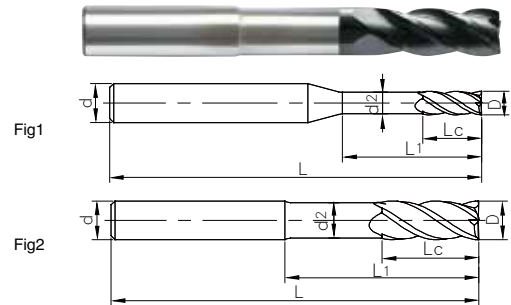
不锈钢
For Stainless Steel



标记说明请参考P6页 See page 6 for guidelines to icons

US200-SN4

4刃长颈平头
4 Flute, with Reduced Neck
Diameter



| 订货号 Ordering code | D | Lc | d2 | L1 | L | d | 图号 Figure No. |
|----------------------|----|----|-----|----|-----|----|------------------|
| US200-SN4-02008 | 2 | 4 | 1.9 | 8 | 50 | 4 | 1 |
| US200-SN4-04012 | 4 | 8 | 3.8 | 12 | 50 | 4 | 2 |
| US200-SN4-06018 | 6 | 13 | 5.8 | 18 | 50 | 6 | 2 |
| US200-SN4-08025 | 8 | 19 | 7.5 | 25 | 60 | 8 | 2 |
| US200-SN4-10032 | 10 | 22 | 9.5 | 32 | 75 | 10 | 2 |
| US200-SN4-12034 | 12 | 24 | 11 | 34 | 75 | 12 | 2 |
| US200-SN4-16036 | 16 | 26 | 15 | 36 | 100 | 16 | 2 |
| US200-SN4-20040 | 20 | 28 | 19 | 40 | 100 | 20 | 2 |

| D | 公差 Tol |
|--------|------------|
| D ≤ 12 | 0 -0.02 |
| D > 12 | 0 -0.03 |

单位unit (mm)

151页
Page
切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | | |
|-------------------------|-------------------|------------------------------|-------|-------------------------|------------------|-----------------|
| P | | | M | K | S | |
| 1 2 3 4 | 5 | 6 | 1 2 3 | 1 2 | 1 2 3 | 4 |
| 碳钢 合金钢 (<35HRC) | 合金钢 (35-48HRC) | PH与铁素体 马氏体不锈钢 (<35HRC) | 不锈钢 | 灰铸铁 球墨铸铁 (<32HRC) | 高温合金 (<HB450) | 钛合金 (<HB400) |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ |

○ 最适合 Most Suitable ○ 适合 Suitable

不锈钢
For Stainless Steel

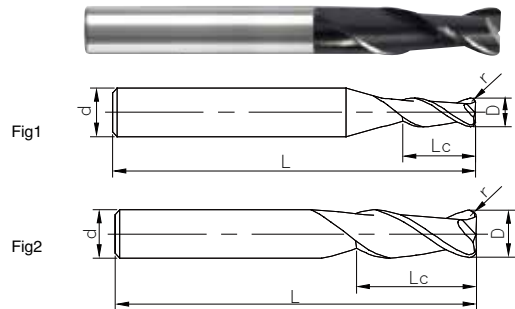


标记说明请参考P6页 See page 6 for guidelines to icons

US200-R2

2刃圆角头

2 Flute, Corner Radius



| 订货号 Ordering code | D | Lc | r | L | d | 图号 Figure No. |
|----------------------|---|----|-----|----|---|------------------|
| US200-R2-03003 | 3 | 9 | 0.3 | 50 | 4 | 1 |
| US200-R2-03005 | 3 | 9 | 0.5 | 50 | 4 | 1 |
| US200-R2-04002 | 4 | 11 | 0.2 | 50 | 4 | 2 |
| US200-R2-64002 | 4 | 11 | 0.2 | 50 | 6 | 1 |
| US200-R2-04003 | 4 | 11 | 0.3 | 50 | 4 | 2 |
| US200-R2-64003 | 4 | 11 | 0.3 | 50 | 6 | 1 |
| US200-R2-64005 | 4 | 11 | 0.5 | 50 | 6 | 1 |
| US200-R2-05002 | 5 | 13 | 0.2 | 50 | 6 | 1 |
| US200-R2-05003 | 5 | 13 | 0.3 | 50 | 6 | 1 |
| US200-R2-05005 | 5 | 13 | 0.5 | 50 | 6 | 1 |
| US200-R2-06002 | 6 | 16 | 0.2 | 50 | 6 | 2 |
| US200-R2-06003 | 6 | 16 | 0.3 | 50 | 6 | 2 |
| US200-R2-06005 | 6 | 16 | 0.5 | 50 | 6 | 2 |

| D | 公差 Tol |
|--------|------------|
| D ≤ 12 | 0 -0.02 |
| D > 12 | 0 -0.03 |

单位unit (mm)

151页
Page
切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | | |
|-------------------------|-------------------|------------------------------|-------|-------------------------|------------------|-----------------|
| P | | | M | K | S | |
| 1 2 3 4 | 5 | 6 | 1 2 3 | 1 2 | 1 2 3 | 4 |
| 碳钢 合金钢 (<35HRC) | 合金钢 (35-48HRC) | PH与铁素体 马氏体不锈钢 (<35HRC) | 不锈钢 | 灰铸铁 球墨铸铁 (<32HRC) | 高温合金 (<HB450) | 钛合金 (<HB400) |
| ○ | ○ | ◎ | ◎ | ○ | ○ | ○ |

◎ 最适合 Most Suitable ○ 适合 Suitable

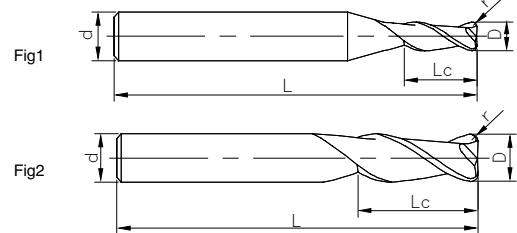


标记说明请参考P6页 See page 6 for guidelines to icons

US200-R2

2刃圆角头

2 Flute, Corner Radius



》续前 continue

| 订货号 Ordering code | D | Lc | r | L | d | 图号 Figure No. |
|----------------------|----|----|-----|-----|----|------------------|
| US200-R2-08005 | 8 | 20 | 0.5 | 60 | 8 | 2 |
| US200-R2-08010 | 8 | 20 | 1 | 60 | 8 | 2 |
| US200-R2-10005 | 10 | 25 | 0.5 | 75 | 10 | 2 |
| US200-R2-10010 | 10 | 25 | 1 | 75 | 10 | 2 |
| US200-R2-10015 | 10 | 25 | 1.5 | 75 | 10 | 2 |
| US200-R2-12005 | 12 | 30 | 0.5 | 75 | 12 | 2 |
| US200-R2-12010 | 12 | 30 | 1 | 75 | 12 | 2 |
| US200-R2-12015 | 12 | 30 | 1.5 | 75 | 12 | 2 |
| US200-R2-16005 | 16 | 36 | 0.5 | 100 | 16 | 2 |
| US200-R2-16010 | 16 | 36 | 1 | 100 | 16 | 2 |
| US200-R2-16020 | 16 | 36 | 2 | 100 | 16 | 2 |
| US200-R2-16030 | 16 | 36 | 3 | 100 | 16 | 2 |

| D | 公差 Tol |
|--------|------------|
| D ≤ 12 | 0 -0.02 |
| D > 12 | 0 -0.03 |

单位unit (mm)

151页
Page

切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | | |
|-------------------------|-------------------|------------------------------|-------|-------------------------|------------------|-----------------|
| P | | | M | K | S | |
| 1 2 3 4 | 5 | 6 | 1 2 3 | 1 2 | 1 2 3 | 4 |
| 碳钢 合金钢 (<35HRC) | 合金钢 (35-48HRC) | PH与铁素体 马氏体不锈钢 (<35HRC) | 不锈钢 | 灰铸铁 球墨铸铁 (<32HRC) | 高温合金 (<HB450) | 钛合金 (<HB400) |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ |

○ 最适合 Most Suitable ○ 适合 Suitable

不锈钢
For Stainless Steel

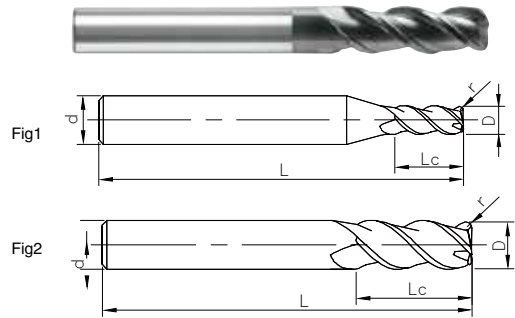


标记说明请参考P6页 See page 6 for guidelines to icons

US200-R3

3刃圆角头

3 Flute, Corner Radius



| 订货号 Ordering code | D | Lc | r | L | d | 图号 Figure No. |
|----------------------|----|----|-----|----|----|------------------|
| US200-R3-02001 | 2 | 6 | 0.1 | 50 | 4 | 1 |
| US200-R3-02002 | 2 | 6 | 0.2 | 50 | 4 | 1 |
| US200-R3-04002 | 4 | 11 | 0.2 | 50 | 4 | 2 |
| US200-R3-04005 | 4 | 11 | 0.5 | 50 | 4 | 2 |
| US200-R3-06002 | 6 | 16 | 0.2 | 50 | 6 | 2 |
| US200-R3-06005 | 6 | 16 | 0.5 | 50 | 6 | 2 |
| US200-R3-08005 | 8 | 20 | 0.5 | 60 | 8 | 2 |
| US200-R3-08010 | 8 | 20 | 1 | 60 | 8 | 2 |
| US200-R3-10005 | 10 | 25 | 0.5 | 75 | 10 | 2 |
| US200-R3-10010 | 10 | 25 | 1 | 75 | 10 | 2 |
| US200-R3-10015 | 10 | 25 | 1.5 | 75 | 10 | 2 |
| US200-R3-10020 | 10 | 25 | 2 | 75 | 10 | 2 |

| D | 公差 Tol |
|--------|------------|
| D ≤ 12 | 0 -0.02 |
| D > 12 | 0 -0.03 |

单位unit (mm)

151页
Page
切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | | |
|-------------------------|-------------------|------------------------------|-------|-------------------------|------------------|-----------------|
| P | | | M | K | S | |
| 1 2 3 4 | 5 | 6 | 1 2 3 | 1 2 | 1 2 3 | 4 |
| 碳钢 合金钢 (<35HRC) | 合金钢 (35-48HRC) | PH与铁素体 马氏体不锈钢 (<35HRC) | 不锈钢 | 灰铸铁 球墨铸铁 (<32HRC) | 高温合金 (<HB450) | 钛合金 (<HB400) |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ |

○ 最适合 Most Suitable ○ 适合 Suitable

不锈钢
For Stainless Steel



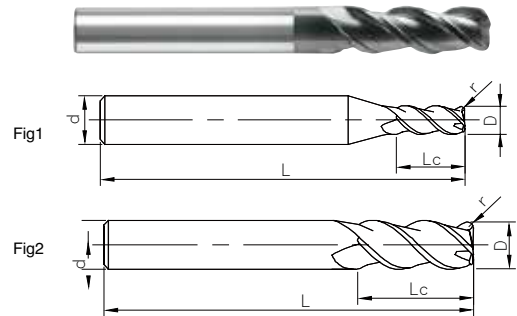
标记说明请参考P6页 See page 6 for guidelines to icons

US200-R3

3刃圆角头

3 Flute, Corner Radius

》续前 continue



| 订货号 Ordering code | D | Lc | r | L | d | 图号 Figure No. |
|----------------------|----|----|-----|-----|----|------------------|
| US200-R3-12005 | 12 | 30 | 0.5 | 75 | 12 | 2 |
| US200-R3-12010 | 12 | 30 | 1 | 75 | 12 | 2 |
| US200-R3-12015 | 12 | 30 | 1.5 | 75 | 12 | 2 |
| US200-R3-16005 | 16 | 36 | 0.5 | 100 | 16 | 2 |
| US200-R3-16010 | 16 | 36 | 1 | 100 | 16 | 2 |
| US200-R3-16020 | 16 | 36 | 2 | 100 | 16 | 2 |
| US200-R3-16030 | 16 | 36 | 3 | 100 | 16 | 2 |
| US200-R3-20005 | 20 | 45 | 0.5 | 100 | 20 | 2 |
| US200-R3-20010 | 20 | 45 | 1 | 100 | 20 | 2 |
| US200-R3-20020 | 20 | 45 | 2 | 100 | 20 | 2 |
| US200-R3-20040 | 20 | 45 | 4 | 100 | 20 | 2 |

| D | 公差 Tol |
|--------|------------|
| D ≤ 12 | 0 -0.02 |
| D > 12 | 0 -0.03 |

单位unit (mm)

151页
Page

切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | | |
|-------------------------|-------------------|------------------------------|-------|-------------------------|------------------|-----------------|
| P | | | M | K | S | |
| 1 2 3 4 | 5 | 6 | 1 2 3 | 1 2 | 1 2 3 | 4 |
| 碳钢 合金钢 (<35HRC) | 合金钢 (35-48HRC) | PH与铁素体 马氏体不锈钢 (<35HRC) | 不锈钢 | 灰铸铁 球墨铸铁 (<32HRC) | 高温合金 (<HB450) | 钛合金 (<HB400) |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ |

○ 最适合 Most Suitable ○ 适合 Suitable

不锈钢
For Stainless Steel

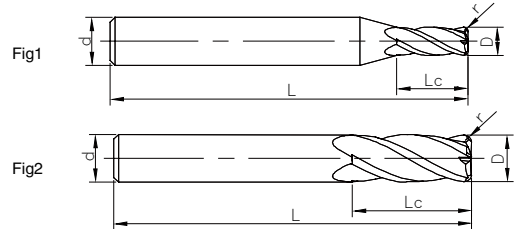


标记说明请参考P6页 See page 6 for guidelines to icons

US200-R4

4刃圆角头

4 Flute, Corner Radius



| 订货号 Ordering code | D | Lc | r | L | d | 图号 Figure No. |
|----------------------|---|----|-----|----|---|------------------|
| US200-R4-02002 | 2 | 6 | 0.2 | 50 | 4 | 1 |
| US200-R4-03003 | 3 | 9 | 0.3 | 50 | 4 | 1 |
| US200-R4-03005 | 3 | 9 | 0.5 | 50 | 4 | 1 |
| US200-R4-64002 | 4 | 11 | 0.2 | 50 | 6 | 1 |
| US200-R4-64003 | 4 | 11 | 0.3 | 50 | 6 | 1 |
| US200-R4-04003 | 4 | 11 | 0.3 | 50 | 4 | 2 |
| US200-R4-04005 | 4 | 11 | 0.5 | 50 | 4 | 2 |
| US200-R4-05005 | 5 | 13 | 0.5 | 50 | 6 | 1 |
| US200-R4-06005 | 6 | 16 | 0.5 | 50 | 6 | 2 |

| D | 公差 Tol |
|--------|------------|
| D ≤ 12 | 0 -0.02 |
| D > 12 | 0 -0.03 |

单位unit (mm)

151页
Page
切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | | |
|-------------------------|-------------------|------------------------------|-------|-------------------------|------------------|-----------------|
| P | | | M | K | S | |
| 1 2 3 4 | 5 | 6 | 1 2 3 | 1 2 | 1 2 3 | 4 |
| 碳钢 合金钢 (<35HRC) | 合金钢 (35-48HRC) | PH与铁素体 马氏体不锈钢 (<35HRC) | 不锈钢 | 灰铸铁 球墨铸铁 (<32HRC) | 高温合金 (<HB450) | 钛合金 (<HB400) |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ |

○ 最适合 Most Suitable ○ 适合 Suitable

不锈钢
For Stainless Steel

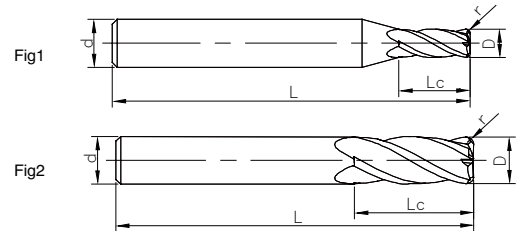


标记说明请参考P6页 See page 6 for guidelines to icons

US200-R4

4刃圆角头

4 Flute, Corner Radius



》续前 continue

| 订货号 Ordering code | D | Lc | r | L | d | 图号 Figure No. |
|----------------------|----|----|-----|-----|----|------------------|
| US200-R4-08002 | 8 | 20 | 0.2 | 60 | 8 | 2 |
| US200-R4-08005 | 8 | 20 | 0.5 | 60 | 8 | 2 |
| US200-R4-08010 | 8 | 20 | 1 | 60 | 8 | 2 |
| US200-R4-10005 | 10 | 25 | 0.5 | 75 | 10 | 2 |
| US200-R4-10010 | 10 | 25 | 1 | 75 | 10 | 2 |
| US200-R4-12010 | 12 | 30 | 1 | 75 | 12 | 2 |
| US200-R4-16010 | 16 | 36 | 1 | 100 | 16 | 2 |
| US200-R4-20010 | 20 | 45 | 1 | 100 | 20 | 2 |

| D | 公差 Tol |
|--------|------------|
| D ≤ 12 | 0 -0.02 |
| D > 12 | 0 -0.03 |

单位unit (mm)

151页
Page
切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | | |
|-------------------------|-------------------|------------------------------|-------|-------------------------|------------------|-----------------|
| P | | | M | K | S | |
| 1 2 3 4 | 5 | 6 | 1 2 3 | 1 2 | 1 2 3 | 4 |
| 碳钢 合金钢 (<35HRC) | 合金钢 (35-48HRC) | PH与铁素体 马氏体不锈钢 (<35HRC) | 不锈钢 | 灰铸铁 球墨铸铁 (<32HRC) | 高温合金 (<HB450) | 钛合金 (<HB400) |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ |

○ 最适合 Most Suitable ○ 适合 Suitable

不锈钢
For Stainless Steel

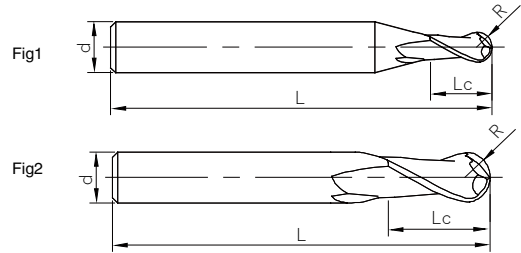


标记说明请参考P6页 See page 6 for guidelines to icons

US200-B2

2刃球头

2 Flute, Ballnose



| 订货号 Ordering code | D | R | Lc | L | d | 图号 Figure No. |
|----------------------|-----|------|----|-----|----|------------------|
| US200-B2-01002 | 1 | 0.5 | 2 | 50 | 4 | 1 |
| US200-B2-01503 | 1.5 | 0.75 | 3 | 50 | 4 | 1 |
| US200-B2-02004 | 2 | 1 | 4 | 50 | 4 | 1 |
| US200-B2-03006 | 3 | 1.5 | 6 | 50 | 4 | 1 |
| US200-B2-63006 | 3 | 1.5 | 6 | 50 | 6 | 1 |
| US200-B2-04008 | 4 | 2 | 8 | 50 | 4 | 2 |
| US200-B2-64008 | 4 | 2 | 8 | 50 | 6 | 1 |
| US200-B2-05010 | 5 | 2.5 | 10 | 50 | 6 | 1 |
| US200-B2-06012 | 6 | 3 | 12 | 50 | 6 | 2 |
| US200-B2-08014 | 8 | 4 | 14 | 60 | 8 | 2 |
| US200-B2-10018 | 10 | 5 | 18 | 75 | 10 | 2 |
| US200-B2-12022 | 12 | 6 | 22 | 75 | 12 | 2 |
| US200-B2-16026 | 16 | 8 | 26 | 100 | 16 | 2 |
| US200-B2-20038 | 20 | 10 | 38 | 100 | 20 | 2 |

| R | 公差 Tol |
|-------|--------|
| R < 3 | ±0.015 |
| R ≥ 3 | ±0.020 |

单位unit (mm)

151页
Page
切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | | |
|-------------------------|-------------------|------------------------------|-------|-------------------------|------------------|-----------------|
| P | | | M | K | S | |
| 1 2 3 4 | 5 | 6 | 1 2 3 | 1 2 | 1 2 3 | 4 |
| 碳钢 合金钢 (<35HRC) | 合金钢 (35-48HRC) | PH与铁素体 马氏体不锈钢 (<35HRC) | 不锈钢 | 灰铸铁 球墨铸铁 (<32HRC) | 高温合金 (<HB450) | 钛合金 (<HB400) |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ |

○ 最适合 Most Suitable ○ 适合 Suitable

不锈钢
For Stainless Steel

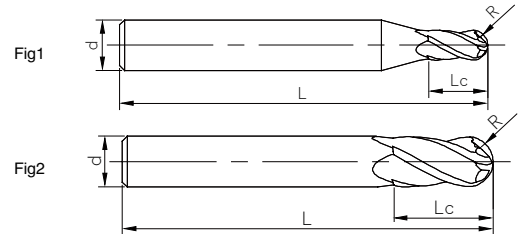


标记说明请参考P6页 See page 6 for guidelines to icons

US200-B4

4刃球头

4 Flute, Ballnose



| 订货号 Ordering code | D | R | Lc | L | d | 图号 Figure No. |
|----------------------|-----|------|----|-----|----|------------------|
| US200-B4-01002 | 1 | 0.5 | 2 | 50 | 4 | 1 |
| US200-B4-01503 | 1.5 | 0.75 | 3 | 50 | 4 | 1 |
| US200-B4-02004 | 2 | 1 | 4 | 50 | 4 | 1 |
| US200-B4-03006 | 3 | 1.5 | 6 | 50 | 4 | 1 |
| US200-B4-63006 | 3 | 1.5 | 6 | 50 | 6 | 1 |
| US200-B4-04008 | 4 | 2 | 8 | 50 | 4 | 2 |
| US200-B4-64008 | 4 | 2 | 8 | 50 | 6 | 1 |
| US200-B4-05010 | 5 | 2.5 | 10 | 50 | 6 | 1 |
| US200-B4-06012 | 6 | 3 | 12 | 50 | 6 | 2 |
| US200-B4-08014 | 8 | 4 | 14 | 60 | 8 | 2 |
| US200-B4-10018 | 10 | 5 | 18 | 75 | 10 | 2 |
| US200-B4-12022 | 12 | 6 | 22 | 75 | 12 | 2 |
| US200-B4-16026 | 16 | 8 | 26 | 100 | 16 | 2 |
| US200-B4-20038 | 20 | 10 | 38 | 100 | 20 | 2 |

| R | 公差 Tol |
|-------|---------|
| R < 3 | ± 0.015 |
| R ≥ 3 | ± 0.020 |

单位unit (mm)

151页
Page
切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | | |
|-------------------------|-------------------|------------------------------|-------|-------------------------|------------------|-----------------|
| P | | | M | K | S | |
| 1 2 3 4 | 5 | 6 | 1 2 3 | 1 2 | 1 2 3 | 4 |
| 碳钢 合金钢 (<35HRC) | 合金钢 (35-48HRC) | PH与铁素体 马氏体不锈钢 (<35HRC) | 不锈钢 | 灰铸铁 球墨铸铁 (<32HRC) | 高温合金 (<HB450) | 钛合金 (<HB400) |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ |

○ 最适合 Most Suitable ○ 适合 Suitable

铝合金
For Aluminum Alloys

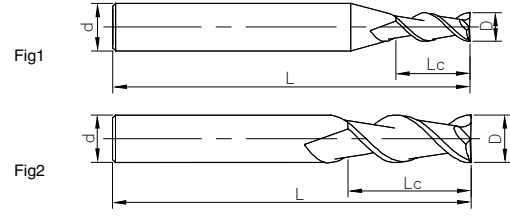


标记说明请参考P6页 See page 6 for guidelines to icons

UA100-S2

2刃平头

2 Flute, Standard Length



| 订货号 Ordering code | D | Lc | L | d | 图号 Figure No. |
|----------------------|----|----|-----|----|------------------|
| UA100-S2-01003 | 1 | 3 | 50 | 4 | 1 |
| UA100-S2-02006 | 2 | 6 | 50 | 4 | 1 |
| UA100-S2-03009 | 3 | 9 | 50 | 4 | 1 |
| UA100-S2-63009 | 3 | 9 | 50 | 6 | 1 |
| UA100-S2-04011 | 4 | 11 | 50 | 4 | 2 |
| UA100-S2-64011 | 4 | 11 | 50 | 6 | 1 |
| UA100-S2-05013 | 5 | 13 | 50 | 6 | 1 |
| UA100-S2-06016 | 6 | 16 | 50 | 6 | 2 |
| UA100-S2-07020 | 7 | 20 | 60 | 8 | 1 |
| UA100-S2-08020 | 8 | 20 | 60 | 8 | 2 |
| UA100-S2-09023 | 9 | 23 | 75 | 10 | 1 |
| UA100-S2-10025 | 10 | 25 | 75 | 10 | 2 |
| UA100-S2-12030 | 12 | 30 | 75 | 12 | 2 |
| UA100-S2-16036 | 16 | 36 | 100 | 16 | 2 |
| UA100-S2-20045 | 20 | 45 | 100 | 20 | 2 |

| D | 公差 Tol |
|--------|------------|
| D ≤ 12 | 0 -0.02 |
| D > 12 | 0 -0.03 |

单位 unit (mm)

154页
Page
切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | | |
|-------------------------|-------------------|-------|-------------------------|----------------------------|-------------------|-----------------|
| P | | M | K | N | | |
| 1 2 3 4 | 5 | 1 2 3 | 1 2 | 1 2 3 | 3 | 4 |
| 碳钢 合金钢 (<35HRC) | 合金钢 (35-48HRC) | 不锈钢 | 灰铸铁 球墨铸铁 (<32HRC) | 锻造铝合金 铸造铝合金 (Si<12%) | 铸造铝合金 (Si>12%) | 铜合金 (<HB200) |
| | | | | ○ | ○ | ○ |

○ 最适合 Most Suitable ○ 适合 Suitable

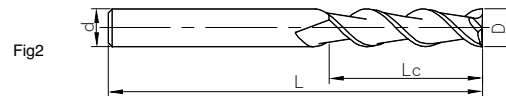
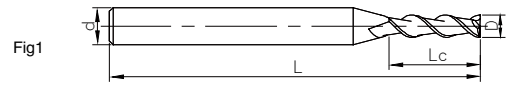


标记说明请参考P6页 See page 6 for guidelines to icons

UA100-SL2

2刃长刃平头

2 Flute, Long Flute Length



| 订货号 Ordering code | D | Lc | L | d | 图号 Figure No. |
|----------------------|----|----|-----|----|------------------|
| UA100-SL2-02020 | 2 | 20 | 75 | 4 | 1 |
| UA100-SL2-03025 | 3 | 25 | 75 | 4 | 1 |
| UA100-SL2-04030 | 4 | 30 | 75 | 4 | 2 |
| UA100-SL2-05030 | 5 | 30 | 75 | 6 | 1 |
| UA100-SL2-06035 | 6 | 35 | 75 | 6 | 2 |
| UA100-SL2-08040 | 8 | 40 | 100 | 8 | 2 |
| UA100-SL2-10045 | 10 | 45 | 100 | 10 | 2 |
| UA100-SL2-12050 | 12 | 50 | 100 | 12 | 2 |
| UA100-SL2-16060 | 16 | 60 | 150 | 16 | 2 |
| UA100-SL2-20070 | 20 | 70 | 150 | 20 | 2 |

| D | 公差 Tol |
|--------|------------|
| D ≤ 12 | 0 -0.02 |
| D > 12 | 0 -0.03 |

单位unit (mm)

154页
Page
切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | | |
|-------------------------|-------------------|-------|-------------------------|----------------------------|-------------------|-----------------|
| P | | M | K | N | | |
| 1 2 3 4 | 5 | 1 2 3 | 1 2 | 1 2 3 | 3 | 4 |
| 碳钢 合金钢 (<35HRC) | 合金钢 (35-48HRC) | 不锈钢 | 灰铸铁 球墨铸铁 (<32HRC) | 锻造铝合金 铸造铝合金 (Si<12%) | 铸造铝合金 (Si>12%) | 铜合金 (<HB200) |
| | | | | ○ | ○ | ○ |

○ 最适合 Most Suitable ○ 适合 Suitable

铝合金
For Aluminum Alloys

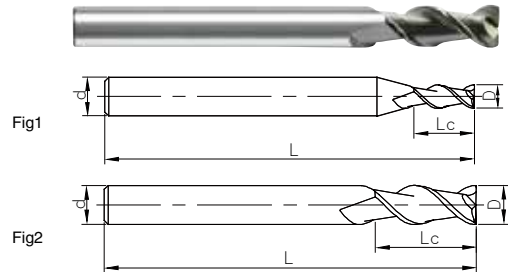


标记说明请参考P6页 See page 6 for guidelines to icons

UA100-SH2

2刃长柄平头

2 Flute, with Long Shank Length



| 订货号 Ordering code | D | Lc | L | d | 图号 Figure No. |
|----------------------|----|----|-----|----|------------------|
| UA100-SH2-02006 | 2 | 6 | 75 | 4 | 1 |
| UA100-SH2-03009 | 3 | 9 | 75 | 4 | 1 |
| UA100-SH2-04010 | 4 | 10 | 75 | 4 | 2 |
| UA100-SH2-06015 | 6 | 16 | 75 | 6 | 2 |
| UA100-SH2-08020 | 8 | 20 | 100 | 8 | 2 |
| UA100-SH2-10025 | 10 | 25 | 100 | 10 | 2 |
| UA100-SH2-12030 | 12 | 30 | 100 | 12 | 2 |
| UA100-SH2-16036 | 16 | 36 | 150 | 16 | 2 |
| UA100-SH2-20045 | 20 | 45 | 150 | 20 | 2 |

| D | 公差 Tol |
|--------|--|
| D ≤ 12 | $\begin{matrix} 0 \\ -0.02 \end{matrix}$ |
| D > 12 | $\begin{matrix} 0 \\ -0.03 \end{matrix}$ |

单位unit (mm)

154页
Page
切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | | |
|-------------------------|-------------------|-------|-------------------------|----------------------------|-------------------|-----------------|
| P | | M | K | N | | |
| 1 2 3 4 | 5 | 1 2 3 | 1 2 | 1 2 3 | 3 | 4 |
| 碳钢 合金钢 (<35HRC) | 合金钢 (35-48HRC) | 不锈钢 | 灰铸铁 球墨铸铁 (<32HRC) | 锻造铝合金 铸造铝合金 (Si<12%) | 铸造铝合金 (Si>12%) | 铜合金 (<HB200) |
| | | | | ○ | ○ | ○ |

○ 最适合 Most Suitable ○ 适合 Suitable

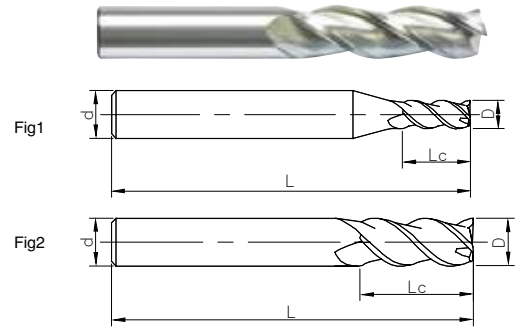


标记说明请参考P6页 See page 6 for guidelines to icons

UA100-S3

3刃平头

3 Flute, Standard Length



| 订货号 Ordering code | D | Lc | L | d | 图号 Figure No. |
|----------------------|----|----|-----|----|------------------|
| UA100-S3-02006 | 2 | 6 | 50 | 4 | 1 |
| UA100-S3-03009 | 3 | 9 | 50 | 4 | 1 |
| UA100-S3-04011 | 4 | 11 | 50 | 4 | 2 |
| UA100-S3-05013 | 5 | 13 | 50 | 6 | 1 |
| UA100-S3-06016 | 6 | 16 | 50 | 6 | 2 |
| UA100-S3-07020 | 7 | 20 | 60 | 8 | 1 |
| UA100-S3-08020 | 8 | 20 | 60 | 8 | 2 |
| UA100-S3-09023 | 9 | 23 | 75 | 10 | 1 |
| UA100-S3-10025 | 10 | 25 | 75 | 10 | 2 |
| UA100-S3-12030 | 12 | 30 | 75 | 12 | 2 |
| UA100-S3-16036 | 16 | 36 | 100 | 16 | 2 |
| UA100-S3-18038 | 18 | 38 | 100 | 18 | 2 |
| UA100-S3-20045 | 20 | 45 | 100 | 20 | 2 |

| D | 公差 Tol |
|--------|--|
| D ≤ 12 | $\begin{matrix} 0 \\ -0.02 \end{matrix}$ |
| D > 12 | $\begin{matrix} 0 \\ -0.03 \end{matrix}$ |

单位unit (mm)

154页
Page
切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | | |
|-------------------------|-------------------|-------|-------------------------|----------------------------|-------------------|-----------------|
| P | | M | K | N | | |
| 1 2 3 4 | 5 | 1 2 3 | 1 2 | 1 2 3 | 3 | 4 |
| 碳钢 合金钢 (<35HRC) | 合金钢 (35-48HRC) | 不锈钢 | 灰铸铁 球墨铸铁 (<32HRC) | 锻造铝合金 铸造铝合金 (Si<12%) | 铸造铝合金 (Si>12%) | 铜合金 (<HB200) |
| | | | | ○ | ○ | ○ |

○ 最适合 Most Suitable ○ 适合 Suitable

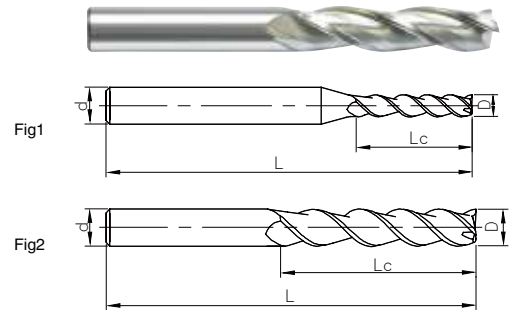
铝合金
For Aluminum Alloys



标记说明请参考P6页 See page 6 for guidelines to icons

UA100-SL3

3刃长刃平头
3 Flute, Long Flute Length



| 订货号 Ordering code | D | Lc | L | d | 图号 Figure No. |
|----------------------|----|----|-----|----|------------------|
| UA100-SL3-02020 | 2 | 20 | 75 | 4 | 1 |
| UA100-SL3-03025 | 3 | 25 | 75 | 4 | 1 |
| UA100-SL3-04030 | 4 | 30 | 75 | 4 | 2 |
| UA100-SL3-05030 | 5 | 30 | 75 | 6 | 1 |
| UA100-SL3-06035 | 6 | 35 | 75 | 6 | 2 |
| UA100-SL3-08040 | 8 | 40 | 100 | 8 | 2 |
| UA100-SL3-10045 | 10 | 45 | 100 | 10 | 2 |
| UA100-SL3-12050 | 12 | 50 | 100 | 12 | 2 |
| UA100-SL3-16060 | 16 | 60 | 150 | 16 | 2 |
| UA100-SL3-20070 | 20 | 70 | 150 | 20 | 2 |

| D | 公差 Tol |
|--------|------------|
| D ≤ 12 | 0 -0.02 |
| D > 12 | 0 -0.03 |

单位unit (mm)

154页
Page
切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | | |
|-------------------------|-------------------|-------|-------------------------|----------------------------|-------------------|-----------------|
| P | | M | K | N | | |
| 1 2 3 4 | 5 | 1 2 3 | 1 2 | 1 2 3 | 3 | 4 |
| 碳钢 合金钢 (<35HRC) | 合金钢 (35-48HRC) | 不锈钢 | 灰铸铁 球墨铸铁 (<32HRC) | 锻造铝合金 铸造铝合金 (Si<12%) | 铸造铝合金 (Si>12%) | 铜合金 (<HB200) |
| | | | | ○ | ○ | ○ |

○ 最适合 Most Suitable ○ 适合 Suitable

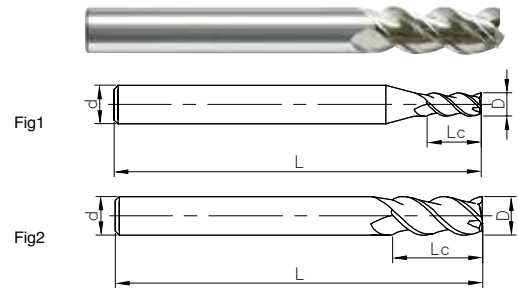


标记说明请参考P6页 See page 6 for guidelines to icons

UA100-SH3

3刃长柄平头

3 Flute, with Long Shank Length



| 订货号 Ordering code | D | Lc | L | d | 图号 Figure No. |
|----------------------|----|----|-----|----|------------------|
| UA100-SH3-02008 | 2 | 8 | 75 | 4 | 1 |
| UA100-SH3-03010 | 3 | 10 | 75 | 4 | 1 |
| UA100-SH3-04012 | 4 | 12 | 75 | 4 | 2 |
| UA100-SH3-06016 | 6 | 16 | 75 | 6 | 2 |
| UA100-SH3-08020 | 8 | 20 | 100 | 8 | 2 |
| UA100-SH3-10025 | 10 | 25 | 100 | 10 | 2 |
| UA100-SH3-12030 | 12 | 30 | 100 | 12 | 2 |
| UA100-SH3-16036 | 16 | 36 | 150 | 16 | 2 |
| UA100-SH3-20045 | 20 | 45 | 150 | 20 | 2 |

| D | 公差 Tol |
|--------|------------|
| D ≤ 12 | 0 -0.02 |
| D > 12 | 0 -0.03 |

单位unit (mm)

154页
Page
切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | | |
|-------------------------|-------------------|-------|-------------------------|----------------------------|-------------------|-----------------|
| P | | M | K | N | | |
| 1 2 3 4 | 5 | 1 2 3 | 1 2 | 1 2 3 | 3 | 4 |
| 碳钢 合金钢 (<35HRC) | 合金钢 (35-48HRC) | 不锈钢 | 灰铸铁 球墨铸铁 (<32HRC) | 锻造铝合金 铸造铝合金 (Si<12%) | 铸造铝合金 (Si>12%) | 铜合金 (<HB200) |
| | | | | ○ | ○ | ○ |

○ 最适合 Most Suitable ○ 适合 Suitable

铝合金
For Aluminum Alloys

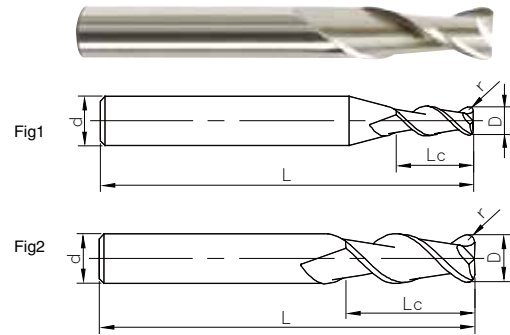


标记说明请参考P6页 See page 6 for guidelines to icons

UA100-R2

2刃圆角头

2 Flute, Corner Radius



| 订货号 Ordering code | D | Lc | r | L | d | 图号 Figure No. |
|----------------------|---|----|-----|----|---|------------------|
| UA100-R2-01001 | 1 | 3 | 0.1 | 50 | 4 | 1 |
| UA100-R2-02002 | 2 | 6 | 0.2 | 50 | 4 | 1 |
| UA100-R2-03002 | 3 | 9 | 0.2 | 50 | 4 | 1 |
| UA100-R2-03003 | 3 | 9 | 0.3 | 50 | 4 | 1 |
| UA100-R2-63003 | 3 | 9 | 0.3 | 50 | 6 | 1 |
| UA100-R2-03005 | 3 | 9 | 0.5 | 50 | 4 | 1 |
| UA100-R2-63005 | 3 | 9 | 0.5 | 50 | 6 | 1 |
| UA100-R2-04002 | 4 | 11 | 0.2 | 50 | 4 | 2 |
| UA100-R2-04003 | 4 | 11 | 0.3 | 50 | 4 | 2 |
| UA100-R2-64003 | 4 | 11 | 0.3 | 50 | 6 | 1 |
| UA100-R2-04005 | 4 | 11 | 0.5 | 50 | 4 | 2 |
| UA100-R2-64005 | 4 | 11 | 0.5 | 50 | 6 | 1 |
| UA100-R2-04010 | 4 | 11 | 1 | 50 | 4 | 2 |
| UA100-R2-05002 | 5 | 13 | 0.2 | 50 | 6 | 1 |
| UA100-R2-05003 | 5 | 13 | 0.3 | 50 | 6 | 1 |

| D | 公差 Tol |
|--------|------------|
| D ≤ 12 | 0 -0.02 |
| D > 12 | 0 -0.03 |

单位 unit (mm)

154页
Page
切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | | |
|-------------------------|-------------------|-------|-------------------------|----------------------------|-------------------|-----------------|
| P | | M | K | N | | |
| 1 2 3 4 | 5 | 1 2 3 | 1 2 | 1 2 3 | 3 | 4 |
| 碳钢 合金钢 (<35HRC) | 合金钢 (35-48HRC) | 不锈钢 | 灰铸铁 球墨铸铁 (<32HRC) | 锻造铝合金 铸造铝合金 (Si<12%) | 铸造铝合金 (Si>12%) | 铜合金 (<HB200) |
| | | | | ○ | ○ | ○ |

○ 最适合 Most Suitable ○ 适合 Suitable



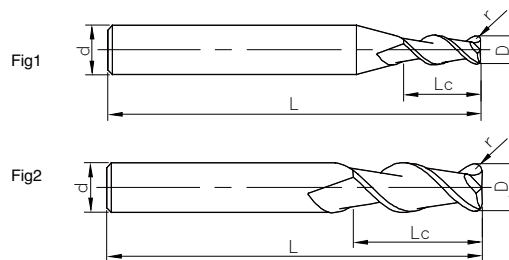
标记说明请参考P6页 See page 6 for guidelines to icons

UA100-R2

2刃圆角头

2 Flute, Corner Radius

》续前 continue



| 订货号 Ordering code | D | Lc | r | L | d | 图号 Figure No. |
|----------------------|----|----|-----|----|----|------------------|
| UA100-R2-05005 | 5 | 13 | 0.5 | 50 | 6 | 1 |
| UA100-R2-05010 | 5 | 13 | 1 | 50 | 6 | 1 |
| UA100-R2-05015 | 5 | 13 | 1.5 | 50 | 6 | 1 |
| UA100-R2-06005 | 6 | 16 | 0.5 | 50 | 6 | 2 |
| UA100-R2-06010 | 6 | 16 | 1 | 50 | 6 | 2 |
| UA100-R2-06015 | 6 | 16 | 1.5 | 50 | 6 | 2 |
| UA100-R2-06020 | 6 | 16 | 2 | 50 | 6 | 2 |
| UA100-R2-08005 | 8 | 20 | 0.5 | 60 | 8 | 2 |
| UA100-R2-08010 | 8 | 20 | 1 | 60 | 8 | 2 |
| UA100-R2-08015 | 8 | 20 | 1.5 | 60 | 8 | 2 |
| UA100-R2-08020 | 8 | 20 | 2 | 60 | 8 | 2 |
| UA100-R2-10005 | 10 | 25 | 0.5 | 75 | 10 | 2 |
| UA100-R2-10010 | 10 | 25 | 1 | 75 | 10 | 2 |
| UA100-R2-10015 | 10 | 25 | 1.5 | 75 | 10 | 2 |
| UA100-R2-10020 | 10 | 25 | 2 | 75 | 10 | 2 |

| D | 公差 Tol |
|--------|------------|
| D ≤ 12 | 0 -0.02 |
| D > 12 | 0 -0.03 |

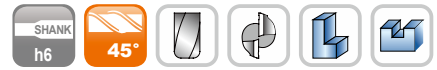
单位unit (mm)

154页
Page
切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | | |
|-------------------------|-------------------|-------|-------------------------|----------------------------|-------------------|-----------------|
| P | | M | K | N | | |
| 1 2 3 4 | 5 | 1 2 3 | 1 2 | 1 2 3 | 3 | 4 |
| 碳钢 合金钢 (<35HRC) | 合金钢 (35-48HRC) | 不锈钢 | 灰铸铁 球墨铸铁 (<32HRC) | 锻造铝合金 铸造铝合金 (Si<12%) | 铸造铝合金 (Si>12%) | 铜合金 (<HB200) |
| | | | | ○ | ○ | ○ |

○ 最适合 Most Suitable ○ 适合 Suitable

铝合金
For Aluminum Alloys

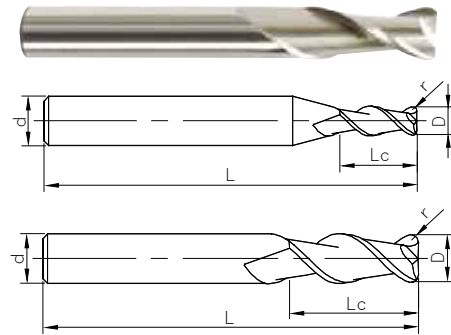


标记说明请参考P6页 See page 6 for guidelines to icons

UA100-R2

2刃圆角头

2 Flute, Corner Radius



》续前 continue

| 订货号 Ordering code | D | Lc | D | L | d | 图号 Figure No. |
|----------------------|----|----|-----|-----|----|------------------|
| UA100-R2-10025 | 10 | 25 | 2.5 | 75 | 10 | 2 |
| UA100-R2-12005 | 12 | 30 | 0.5 | 75 | 12 | 2 |
| UA100-R2-12010 | 12 | 30 | 1 | 75 | 12 | 2 |
| UA100-R2-12015 | 12 | 30 | 1.5 | 75 | 12 | 2 |
| UA100-R2-12020 | 12 | 30 | 2 | 75 | 12 | 2 |
| UA100-R2-12025 | 12 | 30 | 2.5 | 75 | 12 | 2 |
| UA100-R2-16005 | 16 | 36 | 0.5 | 100 | 16 | 2 |
| UA100-R2-16010 | 16 | 36 | 1 | 100 | 16 | 2 |
| UA100-R2-16015 | 16 | 36 | 1.5 | 100 | 16 | 2 |
| UA100-R2-16020 | 16 | 36 | 2 | 100 | 16 | 2 |
| UA100-R2-16025 | 16 | 36 | 2.5 | 100 | 16 | 2 |
| UA100-R2-20005 | 20 | 45 | 0.5 | 100 | 20 | 2 |
| UA100-R2-20010 | 20 | 45 | 1 | 100 | 20 | 2 |
| UA100-R2-20015 | 20 | 45 | 1.5 | 100 | 20 | 2 |
| UA100-R2-20020 | 20 | 45 | 2 | 100 | 20 | 2 |
| UA100-R2-20030 | 20 | 45 | 3 | 100 | 20 | 2 |

154页
Page
切削参数详见
Cutting Parameters

| D | 公差 Tol |
|--------|------------|
| D ≤ 12 | 0 -0.02 |
| D > 12 | 0 -0.03 |

单位unit (mm)

| 工件材料 Workpiece Material | | | | | | |
|-------------------------|-------------------|-------|-------------------------|----------------------------|-------------------|-----------------|
| P | | M | K | N | | |
| 1 2 3 4 | 5 | 1 2 3 | 1 2 | 1 2 3 | 3 | 4 |
| 碳钢 合金钢 (<35HRC) | 合金钢 (35-48HRC) | 不锈钢 | 灰铸铁 球墨铸铁 (<32HRC) | 锻造铝合金 铸造铝合金 (Si<12%) | 铸造铝合金 (Si>12%) | 铜合金 (<HB200) |
| | | | | ○ | ○ | ○ |

○ 最适合 Most Suitable ○ 适合 Suitable

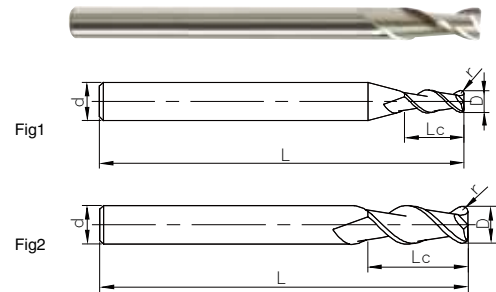


标记说明请参考P6页 See page 6 for guidelines to icons

UA100-RH2

2刃长柄圆角头

2 Flute Corner Radius, with Long Shank Length



| 订货号 Ordering code | D | Lc | r | L | d | 图号 Figure No. |
|----------------------|----|----|-----|-----|----|------------------|
| UA100-RH2-06005 | 6 | 16 | 0.5 | 75 | 6 | 2 |
| UA100-RH2-06010 | 6 | 16 | 1 | 75 | 6 | 2 |
| UA100-RH2-06015 | 6 | 16 | 1.5 | 75 | 6 | 2 |
| UA100-RH2-06020 | 6 | 16 | 2 | 75 | 6 | 2 |
| UA100-RH2-08005 | 8 | 20 | 0.5 | 100 | 8 | 2 |
| UA100-RH2-08010 | 8 | 20 | 1 | 100 | 8 | 2 |
| UA100-RH2-08015 | 8 | 20 | 1.5 | 100 | 8 | 2 |
| UA100-RH2-08020 | 8 | 20 | 2 | 100 | 8 | 2 |
| UA100-RH2-10005 | 10 | 25 | 0.5 | 100 | 10 | 2 |
| UA100-RH2-10010 | 10 | 25 | 1 | 100 | 10 | 2 |
| UA100-RH2-10015 | 10 | 25 | 1.5 | 100 | 10 | 2 |
| UA100-RH2-10020 | 10 | 25 | 2 | 100 | 10 | 2 |
| UA100-RH2-10025 | 10 | 25 | 2.5 | 100 | 10 | 2 |
| UA100-RH2-12005 | 12 | 30 | 0.5 | 100 | 12 | 2 |

| D | 公差 Tol |
|--------|------------|
| D ≤ 12 | 0 -0.02 |
| D > 12 | 0 -0.03 |

单位unit (mm)

154页
Page
切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | | |
|-------------------------|-------------------|-------|-------------------------|----------------------------|-------------------|-----------------|
| P | | M | K | N | | |
| 1 2 3 4 | 5 | 1 2 3 | 1 2 | 1 2 3 | 3 | 4 |
| 碳钢 合金钢 (<35HRC) | 合金钢 (35-48HRC) | 不锈钢 | 灰铸铁 球墨铸铁 (<32HRC) | 锻造铝合金 铸造铝合金 (Si<12%) | 铸造铝合金 (Si>12%) | 铜合金 (<HB200) |
| | | | | ○ | ○ | ○ |

○ 最适合 Most Suitable ○ 适合 Suitable

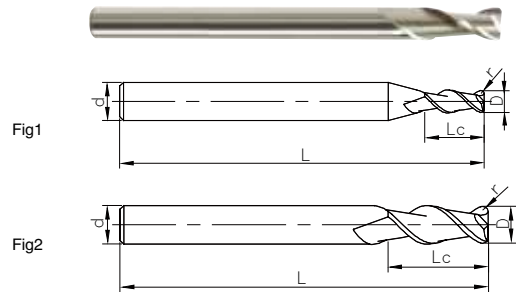
铝合金
For Aluminum Alloys



标记说明请参考P6页 See page 6 for guidelines to icons

UA100-RH2

2刃长柄圆角头
2 Flute Corner Radius, with Long
Shank Length



》续前 continue

| 订货号 Ordering code | D | Lc | r | L | d | 图号 Figure No. |
|----------------------|----|----|-----|-----|----|------------------|
| UA100-RH2-12010 | 12 | 30 | 1 | 100 | 12 | 2 |
| UA100-RH2-12015 | 12 | 30 | 1.5 | 100 | 12 | 2 |
| UA100-RH2-12020 | 12 | 30 | 2 | 100 | 12 | 2 |
| UA100-RH2-12025 | 12 | 30 | 2.5 | 100 | 12 | 2 |
| UA100-RH2-16005 | 16 | 36 | 0.5 | 150 | 16 | 2 |
| UA100-RH2-16010 | 16 | 36 | 1 | 150 | 16 | 2 |
| UA100-RH2-16015 | 16 | 36 | 1.5 | 150 | 16 | 2 |
| UA100-RH2-16020 | 16 | 36 | 2 | 150 | 16 | 2 |
| UA100-RH2-16025 | 16 | 36 | 2.5 | 150 | 16 | 2 |
| UA100-RH2-20005 | 20 | 45 | 0.5 | 150 | 20 | 2 |
| UA100-RH2-20010 | 20 | 45 | 1 | 150 | 20 | 2 |
| UA100-RH2-20015 | 20 | 45 | 1.5 | 150 | 20 | 2 |
| UA100-RH2-20020 | 20 | 45 | 2 | 150 | 20 | 2 |
| UA100-RH2-20030 | 20 | 45 | 3 | 150 | 20 | 2 |

| D | 公差 Tol |
|--------|------------|
| D ≤ 12 | 0 -0.02 |
| D > 12 | 0 -0.03 |

单位unit (mm)

154页
Page
切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | | |
|-------------------------|-------------------|-------|-------------------------|----------------------------|-------------------|-----------------|
| P | | M | K | N | | |
| 1 2 3 4 | 5 | 1 2 3 | 1 2 | 1 2 3 | 3 | 4 |
| 碳钢 合金钢 (<35HRC) | 合金钢 (35-48HRC) | 不锈钢 | 灰铸铁 球墨铸铁 (<32HRC) | 锻造铝合金 铸造铝合金 (Si<12%) | 铸造铝合金 (Si>12%) | 铜合金 (<HB200) |
| | | | | ○ | ○ | ○ |

○ 最适合 Most Suitable ○ 适合 Suitable

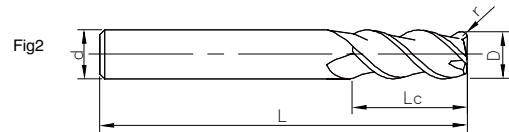
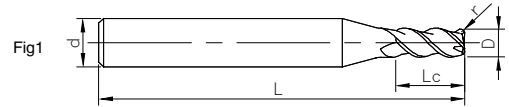


标记说明请参考P6页 See page 6 for guidelines to icons

UA100-R3

3刃圆角头

3 Flute, Corner Radius



| 订货号 Ordering code | D | Lc | r | L | d | 图号 Figure No. |
|----------------------|---|----|-----|----|---|------------------|
| UA100-R3- 01001 | 1 | 3 | 0.1 | 50 | 4 | 1 |
| UA100-R3- 02002 | 2 | 6 | 0.2 | 50 | 4 | 1 |
| UA100-R3- 03002 | 3 | 9 | 0.2 | 50 | 4 | 1 |
| UA100-R3- 03003 | 3 | 9 | 0.3 | 50 | 4 | 1 |
| UA100-R3- 03005 | 3 | 9 | 0.5 | 50 | 4 | 1 |
| UA100-R3- 04002 | 4 | 11 | 0.2 | 50 | 4 | 2 |
| UA100-R3- 04003 | 4 | 11 | 0.3 | 50 | 4 | 2 |
| UA100-R3- 04005 | 4 | 11 | 0.5 | 50 | 4 | 2 |
| UA100-R3- 04010 | 4 | 11 | 1 | 50 | 4 | 2 |
| UA100-R3- 05002 | 5 | 13 | 0.2 | 50 | 6 | 1 |
| UA100-R3- 05003 | 5 | 13 | 0.3 | 50 | 6 | 1 |
| UA100-R3- 05005 | 5 | 13 | 0.5 | 50 | 6 | 1 |
| UA100-R3- 05010 | 5 | 13 | 1 | 50 | 6 | 1 |
| UA100-R3- 05015 | 5 | 13 | 1.5 | 50 | 6 | 1 |

| D | 公差 Tol |
|--------|------------|
| D ≤ 12 | 0 -0.02 |
| D > 12 | 0 -0.03 |

单位unit (mm)

154页
Page
切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | | |
|-------------------------|-------------------|-------|-------------------------|----------------------------|-------------------|-----------------|
| P | | M | K | N | | |
| 1 2 3 4 | 5 | 1 2 3 | 1 2 | 1 2 3 | 3 | 4 |
| 碳钢 合金钢 (<35HRC) | 合金钢 (35-48HRC) | 不锈钢 | 灰铸铁 球墨铸铁 (<32HRC) | 锻造铝合金 铸造铝合金 (Si<12%) | 铸造铝合金 (Si>12%) | 铜合金 (<HB200) |
| | | | | ○ | ○ | ○ |

○ 最适合 Most Suitable ○ 适合 Suitable

铝合金
For Aluminum Alloys

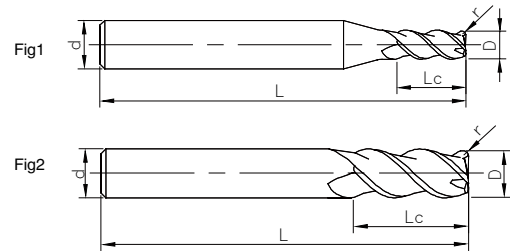


标记说明请参考P6页 See page 6 for guidelines to icons

UA100-R3

3刃圆角头

3 Flute, Corner Radius



》续前 continue

| 订货号 Ordering code | D | Lc | r | L | d | 图号 Figure No. |
|----------------------|----|----|-----|----|----|------------------|
| UA100-R3- 06005 | 6 | 16 | 0.5 | 50 | 6 | 2 |
| UA100-R3- 06010 | 6 | 16 | 1 | 50 | 6 | 2 |
| UA100-R3- 06015 | 6 | 16 | 1.5 | 50 | 6 | 2 |
| UA100-R3- 06020 | 6 | 16 | 2 | 50 | 6 | 2 |
| UA100-R3- 08005 | 8 | 20 | 0.5 | 60 | 8 | 2 |
| UA100-R3- 08010 | 8 | 20 | 1 | 60 | 8 | 2 |
| UA100-R3- 08015 | 8 | 20 | 1.5 | 60 | 8 | 2 |
| UA100-R3- 08020 | 8 | 20 | 2 | 60 | 8 | 2 |
| UA100-R3- 10005 | 10 | 25 | 0.5 | 75 | 10 | 2 |
| UA100-R3- 10010 | 10 | 25 | 1 | 75 | 10 | 2 |
| UA100-R3- 10015 | 10 | 25 | 1.5 | 75 | 10 | 2 |
| UA100-R3- 10020 | 10 | 25 | 2 | 75 | 10 | 2 |
| UA100-R3- 10025 | 10 | 25 | 2.5 | 75 | 10 | 2 |
| UA100-R3- 12005 | 12 | 30 | 0.5 | 75 | 12 | 2 |

| D | 公差 Tol |
|--------|------------|
| D ≤ 12 | 0 -0.02 |
| D > 12 | 0 -0.03 |

单位unit (mm)

154页
Page
切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | | |
|-------------------------|-------------------|-------|-------------------------|----------------------------|-------------------|-----------------|
| P | | M | K | N | | |
| 1 2 3 4 | 5 | 1 2 3 | 1 2 | 1 2 3 | 3 | 4 |
| 碳钢 合金钢 (<35HRC) | 合金钢 (35-48HRC) | 不锈钢 | 灰铸铁 球墨铸铁 (<32HRC) | 锻造铝合金 铸造铝合金 (Si<12%) | 铸造铝合金 (Si>12%) | 铜合金 (<HB200) |
| | | | | ○ | ○ | ○ |

○ 最适合 Most Suitable ○ 适合 Suitable



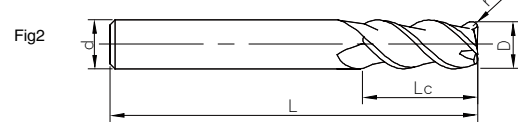
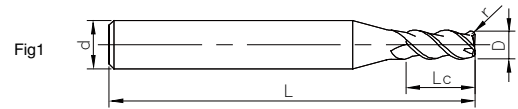
标记说明请参考P6页 See page 6 for guidelines to icons

UA100-R3

3刃圆角头

3 Flute, Corner Radius

》续前 continue



| 订货号 Ordering code | D | Lc | r | L | d | 图号 Figure No. |
|----------------------|----|----|-----|-----|----|------------------|
| UA100-R3- 12010 | 12 | 30 | 1 | 75 | 12 | 2 |
| UA100-R3- 12015 | 12 | 30 | 1.5 | 75 | 12 | 2 |
| UA100-R3- 12020 | 12 | 30 | 2 | 75 | 12 | 2 |
| UA100-R3- 12025 | 12 | 30 | 2.5 | 75 | 12 | 2 |
| UA100-R3- 16005 | 16 | 36 | 0.5 | 100 | 16 | 2 |
| UA100-R3- 16010 | 16 | 36 | 1 | 100 | 16 | 2 |
| UA100-R3- 16015 | 16 | 36 | 1.5 | 100 | 16 | 2 |
| UA100-R3- 16020 | 16 | 36 | 2 | 100 | 16 | 2 |
| UA100-R3- 16025 | 16 | 36 | 2.5 | 100 | 16 | 2 |
| UA100-R3- 20005 | 20 | 45 | 0.5 | 100 | 20 | 2 |
| UA100-R3- 20010 | 20 | 45 | 1 | 100 | 20 | 2 |
| UA100-R3- 20015 | 20 | 45 | 1.5 | 100 | 20 | 2 |
| UA100-R3- 20020 | 20 | 45 | 2 | 100 | 20 | 2 |
| UA100-R3- 20030 | 20 | 45 | 3 | 100 | 20 | 2 |

| D | 公差 Tol |
|--------|------------|
| D ≤ 12 | 0 -0.02 |
| D > 12 | 0 -0.03 |

单位unit (mm)

154页
Page

切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | | |
|-------------------------|-------------------|-------|-------------------------|----------------------------|-------------------|-----------------|
| P | | M | K | N | | |
| 1 2 3 4 | 5 | 1 2 3 | 1 2 | 1 2 3 | 3 | 4 |
| 碳钢 合金钢 (<35HRC) | 合金钢 (35-48HRC) | 不锈钢 | 灰铸铁 球墨铸铁 (<32HRC) | 锻造铝合金 铸造铝合金 (Si<12%) | 铸造铝合金 (Si>12%) | 铜合金 (<HB200) |
| | | | | ○ | ○ | ○ |

○ 最适合 Most Suitable ○ 适合 Suitable

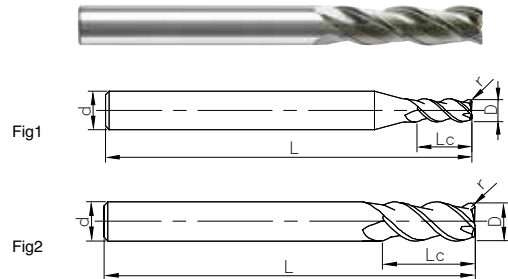
铝合金
For Aluminum Alloys



标记说明请参考P6页 See page 6 for guidelines to icons

UA100-RH3

3刃长柄圆角头
3 Flute Corner Radius, with Long
Shank Length



| 订货号 Ordering code | D | Lc | r | L | d | 图号 Figure No. |
|----------------------|----|----|-----|-----|----|------------------|
| UA100-RH3-06005 | 6 | 16 | 0.5 | 75 | 6 | 2 |
| UA100-RH3-06010 | 6 | 16 | 1 | 75 | 6 | 2 |
| UA100-RH3-06015 | 6 | 16 | 1.5 | 75 | 6 | 2 |
| UA100-RH3-06020 | 6 | 16 | 2 | 75 | 6 | 2 |
| UA100-RH3-08005 | 8 | 20 | 0.5 | 100 | 8 | 2 |
| UA100-RH3-08010 | 8 | 20 | 1 | 100 | 8 | 2 |
| UA100-RH3-08015 | 8 | 20 | 1.5 | 100 | 8 | 2 |
| UA100-RH3-08020 | 8 | 20 | 2 | 100 | 8 | 2 |
| UA100-RH3-10005 | 10 | 25 | 0.5 | 100 | 10 | 2 |
| UA100-RH3-10010 | 10 | 25 | 1 | 100 | 10 | 2 |
| UA100-RH3-10015 | 10 | 25 | 1.5 | 100 | 10 | 2 |
| UA100-RH3-10020 | 10 | 25 | 2 | 100 | 10 | 2 |
| UA100-RH3-10025 | 10 | 25 | 2.5 | 100 | 10 | 2 |
| UA100-RH3-12005 | 12 | 30 | 0.5 | 100 | 12 | 2 |

| D | 公差 Tol |
|--------|------------|
| D ≤ 12 | 0 -0.02 |
| D > 12 | 0 -0.03 |

单位unit (mm)

154页
Page
切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | | |
|-------------------------|-------------------|-------|-------------------------|----------------------------|-------------------|-----------------|
| P | | M | K | N | | |
| 1 2 3 4 | 5 | 1 2 3 | 1 2 | 1 2 3 | 3 | 4 |
| 碳钢 合金钢 (<35HRC) | 合金钢 (35-48HRC) | 不锈钢 | 灰铸铁 球墨铸铁 (<32HRC) | 锻造铝合金 铸造铝合金 (Si<12%) | 铸造铝合金 (Si>12%) | 铜合金 (<HB200) |
| | | | | ○ | ○ | ○ |

○ 最适合 Most Suitable ○ 适合 Suitable

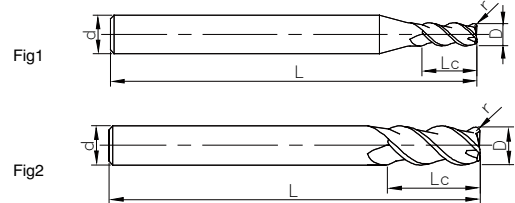


标记说明请参考P6页 See page 6 for guidelines to icons

UA100-RH3

3刃长柄圆角头

3 Flute Corner Radius, with Long Shank Length



》续前 continue

| 订货号 Ordering code | D | Lc | r | L | d | 图号 Figure No. |
|----------------------|----|----|-----|-----|----|------------------|
| UA100-RH3-12010 | 12 | 30 | 1 | 100 | 12 | 2 |
| UA100-RH3-12015 | 12 | 30 | 1.5 | 100 | 12 | 2 |
| UA100-RH3-12020 | 12 | 30 | 2 | 100 | 12 | 2 |
| UA100-RH3-12025 | 12 | 30 | 2.5 | 100 | 12 | 2 |
| UA100-RH3-16005 | 16 | 36 | 0.5 | 150 | 16 | 2 |
| UA100-RH3-16010 | 16 | 36 | 1 | 150 | 16 | 2 |
| UA100-RH3-16015 | 16 | 36 | 1.5 | 150 | 16 | 2 |
| UA100-RH3-16020 | 16 | 36 | 2 | 150 | 16 | 2 |
| UA100-RH3-16025 | 16 | 36 | 2.5 | 150 | 16 | 2 |
| UA100-RH3-20005 | 20 | 45 | 0.5 | 150 | 20 | 2 |
| UA100-RH3-20010 | 20 | 45 | 1 | 150 | 20 | 2 |
| UA100-RH3-20015 | 20 | 45 | 1.5 | 150 | 20 | 2 |
| UA100-RH3-20020 | 20 | 45 | 2 | 150 | 20 | 2 |
| UA100-RH3-20030 | 20 | 45 | 3 | 150 | 20 | 2 |

| D | 公差 Tol |
|--------|------------|
| D ≤ 12 | 0 -0.02 |
| D > 12 | 0 -0.03 |

单位unit (mm)

154页
Page
切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | | |
|-------------------------|-------------------|-------|-------------------------|----------------------------|-------------------|-----------------|
| P | | M | K | N | | |
| 1 2 3 4 | 5 | 1 2 3 | 1 2 | 1 2 3 | 3 | 4 |
| 碳钢 合金钢 (<35HRC) | 合金钢 (35-48HRC) | 不锈钢 | 灰铸铁 球墨铸铁 (<32HRC) | 锻造铝合金 铸造铝合金 (Si<12%) | 铸造铝合金 (Si>12%) | 铜合金 (<HB200) |
| | | | | ○ | ○ | ○ |

○ 最适合 Most Suitable ○ 适合 Suitable

铝合金
For Aluminum Alloys

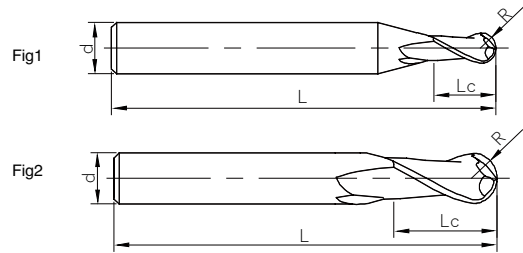


标记说明请参考P6页 See page 6 for guidelines to icons

UA100-B2

2刃球头

2 Flute, Ballnose



| 订货号 Ordering code | D | Lc | r | L | d | 图号 Figure No. |
|----------------------|----|-----|----|-----|----|------------------|
| UA100-B2-01002 | 1 | 0.5 | 2 | 50 | 4 | 1 |
| UA100-B2-02004 | 2 | 1 | 4 | 50 | 4 | 1 |
| UA100-B2-03006 | 3 | 1.5 | 6 | 50 | 4 | 1 |
| UA100-B2-63006 | 3 | 1.5 | 6 | 50 | 6 | 1 |
| UA100-B2-04008 | 4 | 2 | 8 | 50 | 4 | 2 |
| UA100-B2-64008 | 4 | 2 | 8 | 50 | 6 | 1 |
| UA100-B2-05010 | 5 | 2.5 | 10 | 50 | 6 | 1 |
| UA100-B2-06012 | 6 | 3 | 12 | 50 | 6 | 2 |
| UA100-B2-07014 | 7 | 3.5 | 14 | 60 | 8 | 1 |
| UA100-B2-08014 | 8 | 4 | 14 | 60 | 8 | 2 |
| UA100-B2-09016 | 9 | 4.5 | 16 | 75 | 10 | 1 |
| UA100-B2-10018 | 10 | 5 | 18 | 75 | 10 | 2 |
| UA100-B2-12022 | 12 | 6 | 22 | 75 | 12 | 2 |
| UA100-B2-16026 | 16 | 8 | 26 | 100 | 16 | 2 |

| R | 公差 Tol |
|-------|---------|
| R < 3 | ± 0.015 |
| R ≥ 3 | ± 0.020 |

单位unit (mm)

154页
Page
切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | | |
|-------------------------|-------------------|-------|-------------------------|----------------------------|-------------------|-----------------|
| P | | M | K | N | | |
| 1 2 3 4 | 5 | 1 2 3 | 1 2 | 1 2 3 | 3 | 4 |
| 碳钢 合金钢 (<35HRC) | 合金钢 (35-48HRC) | 不锈钢 | 灰铸铁 球墨铸铁 (<32HRC) | 锻造铝合金 铸造铝合金 (Si<12%) | 铸造铝合金 (Si>12%) | 铜合金 (<HB200) |
| | | | | ○ | ○ | ○ |

○ 最适合 Most Suitable ○ 适合 Suitable

石墨
For Gtaphite

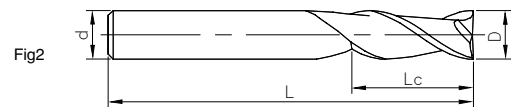
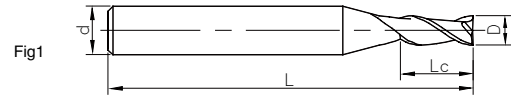


标记说明请参考P6页 See page 6 for guidelines to icons

SG200-S2

2刃平头

2 Flute, Standard Length



| 订货号 Ordering code | D | Lc | L | d | 图号 Figure No. |
|----------------------|----|----|----|----|------------------|
| SG200-S2-02006 | 2 | 6 | 50 | 4 | 1 |
| SG200-S2-03009 | 3 | 9 | 50 | 4 | 1 |
| SG200-S2-04010 | 4 | 10 | 50 | 4 | 2 |
| SG200-S2-05013 | 5 | 13 | 50 | 6 | 1 |
| SG200-S2-06015 | 6 | 15 | 50 | 6 | 2 |
| SG200-S2-08020 | 8 | 20 | 60 | 8 | 2 |
| SG200-S2-10025 | 10 | 25 | 75 | 10 | 2 |
| SG200-S2-12030 | 12 | 30 | 75 | 12 | 2 |

| D | 公差 Tol |
|--------|--|
| D ≤ 12 | $\begin{matrix} 0 \\ -0.02 \end{matrix}$ |
| D > 12 | $\begin{matrix} 0 \\ -0.03 \end{matrix}$ |

单位unit (mm)

155页
Page
切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | |
|-------------------------|-------------------|-------|-------------------------|-------------------|----|
| P | | M | K | N | |
| 1 2 3 4 | 5 | 1 2 3 | 1 2 | 3 | 5 |
| 碳钢 合金钢 (<35HRC) | 合金钢 (35-48HRC) | 不锈钢 | 灰铸铁 球墨铸铁 (<32HRC) | 铸造铝合金 (Si>12%) | 石墨 |
| | | | | ○ | ⊙ |

⊙ 最适合 Most Suitable ○ 适合 Suitable

石墨
For Graphite

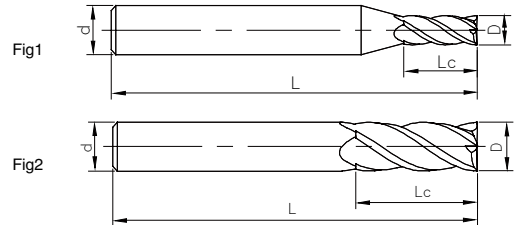


标记说明请参考P6页 See page 6 for guidelines to icons

SG200-S4

4刃平头

4 Flute, Standard Length



| 订货号 Ordering code | D | Lc | L | d | 图号 Figure No. |
|----------------------|----|----|----|----|------------------|
| SG200-S4-02006 | 2 | 6 | 50 | 4 | 1 |
| SG200-S4-03009 | 3 | 9 | 50 | 4 | 1 |
| SG200-S4-04010 | 4 | 10 | 50 | 4 | 2 |
| SG200-S4-05013 | 5 | 13 | 50 | 6 | 1 |
| SG200-S4-06015 | 6 | 15 | 50 | 6 | 2 |
| SG200-S4-08020 | 8 | 20 | 60 | 8 | 2 |
| SG200-S4-10025 | 10 | 25 | 75 | 10 | 2 |
| SG200-S4-12030 | 12 | 30 | 75 | 12 | 2 |

| D | 公差 Tol |
|--------|------------|
| D ≤ 12 | 0 -0.02 |
| D > 12 | 0 -0.03 |

单位unit (mm)

155页
Page
切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | |
|-------------------------|-------------------|-------|-------------------------|-------------------|----|
| P | | M | K | N | |
| 1 2 3 4 | 5 | 1 2 3 | 1 2 | 3 | 5 |
| 碳钢 合金钢 (<35HRC) | 合金钢 (35-48HRC) | 不锈钢 | 灰铸铁 球墨铸铁 (<32HRC) | 铸造铝合金 (Si>12%) | 石墨 |
| | | | | ○ | ⊙ |

○ 最适合 Most Suitable ⊙ 适合 Suitable

石墨
For Gtaphite

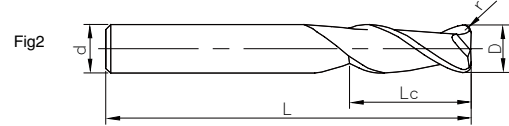
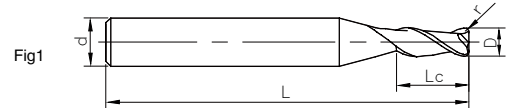


标记说明请参考P6页 See page 6 for guidelines to icons

SG200-R2

2刃圆角头

2 Flute, Corner Radius



| 订货号 Ordering code | D | Lc | r | L | d | 图号 Figure No. |
|----------------------|----|----|-----|----|----|------------------|
| SG200-R2-06003 | 6 | 16 | 0.3 | 50 | 6 | 2 |
| SG200-R2-06005 | 6 | 16 | 0.5 | 50 | 6 | 2 |
| SG200-R2-08005 | 8 | 20 | 0.5 | 60 | 8 | 2 |
| SG200-R2-08010 | 8 | 20 | 1 | 60 | 8 | 2 |
| SG200-R2-10005 | 10 | 25 | 0.5 | 75 | 10 | 2 |
| SG200-R2-10010 | 10 | 25 | 1 | 75 | 10 | 2 |
| SG200-R2-10015 | 10 | 25 | 1.5 | 75 | 10 | 2 |
| SG200-R2-12005 | 12 | 30 | 0.5 | 75 | 12 | 2 |
| SG200-R2-12010 | 12 | 30 | 1 | 75 | 12 | 2 |
| SG200-R2-12015 | 12 | 30 | 1.5 | 75 | 12 | 2 |

| D | 公差 Tol |
|--------|------------|
| D ≤ 12 | 0 -0.02 |
| D > 12 | 0 -0.03 |

单位unit (mm)

155页
Page

切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | |
|-------------------------|-------------------|-------|-------------------------|-------------------|----|
| P | | M | K | N | |
| 1 2 3 4 | 5 | 1 2 3 | 1 2 | 3 | 5 |
| 碳钢 合金钢 (<35HRC) | 合金钢 (35-48HRC) | 不锈钢 | 灰铸铁 球墨铸铁 (<32HRC) | 铸造铝合金 (Si>12%) | 石墨 |
| | | | | ○ | ◎ |

◎ 最适合 Most Suitable ○ 适合 Suitable

石墨
For Graphite

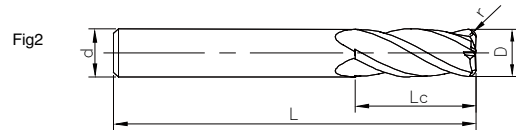
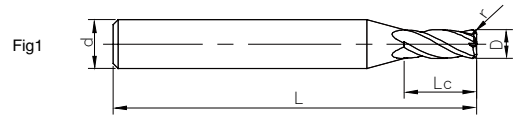


标记说明请参考P6页 See page 6 for guidelines to icons

SG200-R4

4刃圆角头

4 Flute, Corner Radius



| 订货号 Ordering code | D | Lc | r | L | d | 图号 Figure No. |
|----------------------|----|----|-----|----|----|------------------|
| SG200-R4-06005 | 6 | 16 | 0.5 | 50 | 6 | 2 |
| SG200-R4-08002 | 8 | 20 | 0.2 | 60 | 8 | 2 |
| SG200-R4-08005 | 8 | 20 | 0.5 | 60 | 8 | 2 |
| SG200-R4-10005 | 10 | 25 | 0.5 | 75 | 10 | 2 |
| SG200-R4-10010 | 10 | 25 | 1 | 75 | 10 | 2 |
| SG200-R4-12010 | 12 | 30 | 1 | 75 | 12 | 2 |

| D | 公差 Tol |
|--------|--|
| D ≤ 12 | $\begin{matrix} 0 \\ -0.02 \end{matrix}$ |
| D > 12 | $\begin{matrix} 0 \\ -0.03 \end{matrix}$ |

单位 unit (mm)

155页
Page
切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | |
|-------------------------|-------------------|-------|-------------------------|-------------------|----|
| P | | M | K | N | |
| 1 2 3 4 | 5 | 1 2 3 | 1 2 | 3 | 5 |
| 碳钢 合金钢 (<35HRC) | 合金钢 (35-48HRC) | 不锈钢 | 灰铸铁 球墨铸铁 (<32HRC) | 铸造铝合金 (Si>12%) | 石墨 |
| | | | | ○ | ○ |

○ 最适合 Most Suitable ○ 适合 Suitable

石墨
For Gtaphite

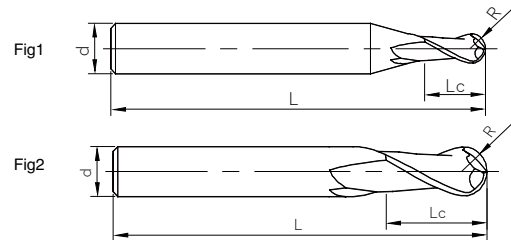


标记说明请参考P6页 See page 6 for guidelines to icons

SG200-B2

2刃球头

2 Flute, Ballnose



| 订货号 Ordering code | D | Lc | r | L | d | 图号 Figure No. |
|----------------------|----|-----|----|----|----|------------------|
| SG200-B2-02004 | 2 | 1 | 4 | 50 | 4 | 1 |
| SG200-B2-03006 | 3 | 1.5 | 6 | 50 | 4 | 1 |
| SG200-B2-04008 | 4 | 2 | 8 | 50 | 4 | 2 |
| SG200-B2-05010 | 5 | 2.5 | 10 | 50 | 6 | 1 |
| SG200-B2-06012 | 6 | 3 | 12 | 50 | 6 | 2 |
| SG200-B2-08014 | 8 | 4 | 14 | 60 | 8 | 2 |
| SG200-B2-10018 | 10 | 5 | 18 | 75 | 10 | 2 |
| SG200-B2-12022 | 12 | 6 | 22 | 75 | 12 | 2 |

| R | 公差 Tol |
|-------|---------|
| R < 3 | ± 0.015 |
| R ≥ 3 | ± 0.020 |

单位unit (mm)

155页
Page
切削参数详见
Cutting Parameters

| 工件材料 Workpiece Material | | | | | |
|-------------------------|-------------------|-------|-------------------------|-------------------|----|
| P | | M | K | N | |
| 1 2 3 4 | 5 | 1 2 3 | 1 2 | 3 | 5 |
| 碳钢 合金钢 (<35HRC) | 合金钢 (35-48HRC) | 不锈钢 | 灰铸铁 球墨铸铁 (<32HRC) | 铸造铝合金 (Si>12%) | 石墨 |
| | | | | ○ | ⊙ |

⊙ 最适合 Most Suitable ○ 适合 Suitable

切削参数

Cutting Parameters



铣削加工的切削参数与通用计算公式

Cutting Parameters and General Formula

常用参数及其单位 Parameter and Unit

| | | | |
|--|------------------------|--|------------|
| D 铣刀直径 Diameter | (mm) | F _n 每转进给量 Feed per Revolution | (mm/rev) |
| a _p 切削深度 Cutting Depth | (mm) | f _z 每刃进给量 Feeding per Teeth | (mm/tooth) |
| a _e 切削宽度 Cutting Width | (mm) | Z 刀刃数 Number of Teeth | |
| V _f 进给速度 Feed Rate | (mm/min) | n 主轴转速 Spindle Speed | (rev/min) |
| V _c 切削速度 Cutting Speed (工件长度+ 铣刀直径: l+D) | (m/min) | L 工作台总进给长度 Length | (mm) |
| Q 金属切削率 Rate of Metal Removal | (cm ³ /min) | T _c 加工时间 Processing Time | (min) |

通用计算公式 General Formula

| | |
|-------------------------------------|--|
| 主轴转速 Spindle Speed n | $n = \frac{V_c \cdot 1000}{\pi \cdot D} \text{ (rev/min)}$ |
| 切削速度 Cutting Speed V _c | $V_c = \frac{\pi \cdot D \cdot n}{1000} \text{ (m/min)}$ |
| 进给速度 Feed Rate V _f | $V_f = f_z \cdot z \cdot n \text{ (mm/min)}$ |
| 每刃进给量 Feed per Teeth f _z | $f_z = \frac{V_f}{z \cdot n} \text{ (mm)}$ |
| 金属切削率 Rate of Metal Removal Q | $Q = \frac{a_e \cdot a_p \cdot V_f}{1000} \text{ (cm}^3\text{/min)}$ |
| 加工时间 Processing Time T _c | $T_c = \frac{L}{V_f} \text{ (min)}$ |

推荐切削参数

Recommended Cutting Parameters

UP100

钢件、铸铁 For Steels, Cast Iron —— 侧铣 Side Milling

| 工件材料 Workpiece Material | |  | | 切削速度 Cutting Speed(m/min) | | | 刃径 Tool Diameter(mm) | | | | | | | | | | |
|----------------------------|----|---|----------|------------------------------|---------------|-----------|-------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | | | | 最小 Min | 较好 Optimum | 最大 Max | mm | 1 | 2 | 4 | 6 | 8 | 10 | 12 | 16 | 20 | 25 |
| P | P1 | 1 x D | 0.12 x D | 140 | 170 | 200 | fz | 0.013 | 0.02 | 0.033 | 0.045 | 0.062 | 0.075 | 0.085 | 0.11 | 0.12 | 0.15 |
| | P2 | 1 x D | 0.12 x D | 140 | 170 | 200 | fz | 0.013 | 0.02 | 0.033 | 0.045 | 0.062 | 0.075 | 0.085 | 0.11 | 0.12 | 0.15 |
| | P3 | 1 x D | 0.12 x D | 120 | 150 | 180 | fz | 0.01 | 0.015 | 0.03 | 0.04 | 0.06 | 0.07 | 0.08 | 0.09 | 0.1 | 0.13 |
| | P4 | 1 x D | 0.12 x D | 120 | 150 | 180 | fz | 0.01 | 0.015 | 0.03 | 0.04 | 0.06 | 0.07 | 0.08 | 0.09 | 0.1 | 0.13 |
| | P5 | 1 x D | 0.1 x D | 100 | 120 | 150 | fz | 0.007 | 0.012 | 0.025 | 0.038 | 0.058 | 0.065 | 0.07 | 0.075 | 0.085 | 0.105 |
| | P6 | 1 x D | 0.1 x D | 90 | 110 | 130 | fz | 0.007 | 0.012 | 0.022 | 0.035 | 0.05 | 0.055 | 0.06 | 0.065 | 0.075 | 0.105 |
| M | M1 | 1 x D | 0.12 x D | 110 | 140 | 170 | fz | 0.013 | 0.02 | 0.033 | 0.045 | 0.062 | 0.075 | 0.085 | 0.11 | 0.12 | 0.15 |
| | M2 | 1 x D | 0.12 x D | 100 | 130 | 150 | fz | 0.01 | 0.015 | 0.03 | 0.04 | 0.06 | 0.07 | 0.08 | 0.09 | 0.1 | 0.13 |
| | M3 | 1 x D | 0.1 x D | 90 | 110 | 130 | fz | 0.007 | 0.012 | 0.025 | 0.035 | 0.05 | 0.055 | 0.06 | 0.065 | 0.075 | 0.105 |
| K | K1 | 1 x D | 0.12 x D | 140 | 170 | 200 | fz | 0.012 | 0.02 | 0.035 | 0.05 | 0.06 | 0.07 | 0.08 | 0.095 | 0.11 | 0.14 |
| | K2 | 1 x D | 0.12 x D | 120 | 150 | 180 | fz | 0.01 | 0.016 | 0.03 | 0.045 | 0.055 | 0.065 | 0.075 | 0.09 | 0.1 | 0.13 |
| | K3 | 1 x D | 0.1 x D | 100 | 130 | 150 | fz | 0.008 | 0.013 | 0.024 | 0.04 | 0.05 | 0.06 | 0.07 | 0.08 | 0.09 | 0.11 |
| N | N1 | 1 x D | 0.18 x D | 300 | 500 | 700 | fz | 0.02 | 0.03 | 0.05 | 0.07 | 0.09 | 0.11 | 0.13 | 0.17 | 0.22 | 0.28 |
| | N2 | 1 x D | 0.18 x D | 300 | 500 | 700 | fz | 0.018 | 0.025 | 0.045 | 0.065 | 0.085 | 0.105 | 0.12 | 0.15 | 0.18 | 0.24 |
| | N4 | 1 x D | 0.18 x D | 250 | 450 | 650 | fz | 0.015 | 0.02 | 0.04 | 0.06 | 0.075 | 0.095 | 0.11 | 0.14 | 0.17 | 0.23 |

上表最适合加工钢件、铸铁，也可用于其他通用加工，以上其他材料加工参数仅供参考。
This serie tools are most suitable for steels and cast iron, and also versatile for other materials listed above.

推荐切削参数

Recommended Cutting Parameters

UP100

钢件、铸铁 For Steels , Cast Iron —— 槽铣 Slotting

| 工件材料 Workpiece Material | |  | 切削速度 Cutting Speed (m/min) | | | 刃径 Tool Diameter (mm) | | | | | | | | | | |
|----------------------------|----|---|-------------------------------|---------------|-----------|--------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | | | 最小 Min | 较好 Optimum | 最大 Max | mm | 1 | 2 | 4 | 6 | 8 | 10 | 12 | 16 | 20 | 25 |
| P | P1 | 1 x D | 60 | 80 | 95 | fz | 0.01 | 0.02 | 0.04 | 0.05 | 0.06 | 0.07 | 0.08 | 0.12 | 0.15 | 0.2 |
| | P2 | 1 x D | 60 | 80 | 95 | fz | 0.01 | 0.02 | 0.04 | 0.05 | 0.06 | 0.07 | 0.08 | 0.12 | 0.15 | 0.2 |
| | P3 | 0.8 x D | 55 | 75 | 90 | fz | 0.008 | 0.015 | 0.035 | 0.045 | 0.05 | 0.06 | 0.07 | 0.1 | 0.12 | 0.16 |
| | P4 | 0.8 x D | 55 | 70 | 85 | fz | 0.008 | 0.015 | 0.035 | 0.045 | 0.05 | 0.06 | 0.07 | 0.1 | 0.12 | 0.16 |
| | P5 | 0.5 x D | 50 | 60 | 70 | fz | 0.006 | 0.012 | 0.03 | 0.04 | 0.045 | 0.055 | 0.065 | 0.09 | 0.11 | 0.13 |
| | P6 | 0.3 x D | 35 | 50 | 60 | fz | 0.006 | 0.009 | 0.015 | 0.03 | 0.04 | 0.05 | 0.06 | 0.07 | 0.08 | 0.11 |
| M | M1 | 0.3 x D | 40 | 55 | 65 | fz | 0.009 | 0.012 | 0.02 | 0.036 | 0.047 | 0.058 | 0.068 | 0.08 | 0.09 | 0.12 |
| | M2 | 0.3 x D | 40 | 55 | 65 | fz | 0.007 | 0.01 | 0.017 | 0.033 | 0.044 | 0.054 | 0.064 | 0.075 | 0.085 | 0.1 |
| | M3 | 0.3 x D | 35 | 50 | 60 | fz | 0.006 | 0.009 | 0.015 | 0.03 | 0.04 | 0.05 | 0.06 | 0.07 | 0.08 | 0.095 |
| K | K1 | 0.8 x D | 50 | 60 | 70 | fz | 0.008 | 0.015 | 0.035 | 0.045 | 0.05 | 0.06 | 0.07 | 0.1 | 0.12 | 0.16 |
| | K2 | 0.8 x D | 40 | 55 | 65 | fz | 0.009 | 0.012 | 0.02 | 0.036 | 0.047 | 0.058 | 0.068 | 0.08 | 0.09 | 0.12 |
| | K3 | 0.5 x D | 40 | 55 | 65 | fz | 0.007 | 0.01 | 0.017 | 0.033 | 0.044 | 0.054 | 0.064 | 0.075 | 0.085 | 0.1 |
| N | N1 | 0.5 x D | 150 | 180 | 220 | fz | 0.012 | 0.022 | 0.043 | 0.054 | 0.065 | 0.075 | 0.09 | 0.15 | 0.18 | 0.22 |
| | N2 | 0.5 x D | 150 | 180 | 220 | fz | 0.012 | 0.022 | 0.043 | 0.054 | 0.065 | 0.075 | 0.09 | 0.15 | 0.18 | 0.22 |
| | N4 | 0.5 x D | 130 | 160 | 190 | fz | 0.01 | 0.02 | 0.04 | 0.05 | 0.06 | 0.07 | 0.08 | 0.12 | 0.15 | 0.2 |


上表最适合加工钢件、铸铁，也可用于其他通用加工，以上其他材料加工参数仅供参考。
This serie tools are most suitable for steels and cast iron, and also versatile for other materials listed above.

推荐切削参数

Recommended Cutting Parameters

UP100

钢件、铸铁 For Steels, Cast Iron —— 仿形铣 Profiling

| 工件材料 Workpiece Material | |  | | 切削速度 Cutting Speed (m/min) | | | 刃径 Tool Diameter(mm) | | | | | | | | | |
|----------------------------|----|---|---------|-------------------------------|---------------|-----------|-------------------------|-------|-------|-------|-------|-------|-------|-------|------|------|
| | | | | 最小 Min | 较好 Optimum | 最大 Max | mm | 1 | 2 | 4 | 6 | 8 | 10 | 12 | 16 | 20 |
| P | P1 | 0.2 x D | 0.3 x D | 120 | 160 | 200 | fz | 0.009 | 0.018 | 0.038 | 0.058 | 0.076 | 0.095 | 0.115 | 0.15 | 0.18 |
| | P2 | 0.2 x D | 0.3 x D | 120 | 160 | 200 | fz | 0.009 | 0.018 | 0.038 | 0.058 | 0.076 | 0.095 | 0.115 | 0.15 | 0.18 |
| | P3 | 0.2 x D | 0.3 x D | 110 | 140 | 170 | fz | 0.007 | 0.015 | 0.032 | 0.052 | 0.07 | 0.085 | 0.105 | 0.13 | 0.16 |
| | P4 | 0.2 x D | 0.3 x D | 110 | 140 | 170 | fz | 0.007 | 0.015 | 0.032 | 0.052 | 0.07 | 0.085 | 0.105 | 0.13 | 0.16 |
| M | M1 | 0.2 x D | 0.2 x D | 80 | 110 | 130 | fz | 0.007 | 0.015 | 0.032 | 0.052 | 0.07 | 0.085 | 0.105 | 0.13 | 0.16 |
| | M2 | 0.2 x D | 0.2 x D | 80 | 110 | 130 | fz | 0.007 | 0.015 | 0.032 | 0.052 | 0.07 | 0.085 | 0.105 | 0.13 | 0.16 |
| | M3 | 0.1 x D | 0.1 x D | 70 | 85 | 100 | fz | 0.006 | 0.013 | 0.03 | 0.05 | 0.06 | 0.076 | 0.09 | 0.12 | 0.15 |
| K | K1 | 0.2 x D | 0.2 x D | 110 | 140 | 170 | fz | 0.009 | 0.018 | 0.038 | 0.058 | 0.076 | 0.095 | 0.115 | 0.15 | 0.18 |
| | K2 | 0.2 x D | 0.2 x D | 110 | 140 | 170 | fz | 0.007 | 0.015 | 0.032 | 0.052 | 0.07 | 0.085 | 0.105 | 0.13 | 0.16 |
| | K3 | 0.3 x D | 0.3 x D | 150 | 200 | 280 | fz | 0.02 | 0.04 | 0.08 | 0.12 | 0.16 | 0.2 | 0.24 | 0.32 | 0.4 |
| N | N1 | 0.3 x D | 0.3x D | 280 | 450 | 600 | fz | 0.025 | 0.05 | 0.1 | 0.15 | 0.2 | 0.25 | 0.3 | 0.4 | 0.5 |
| | N2 | 0.3 x D | 0.3x D | 280 | 450 | 600 | fz | 0.025 | 0.05 | 0.09 | 0.13 | 0.18 | 0.22 | 0.27 | 0.36 | 0.45 |
| | N4 | 0.3 x D | 0.5 x D | 250 | 350 | 450 | fz | 0.018 | 0.035 | 0.08 | 0.1 | 0.16 | 0.19 | 0.23 | 0.3 | 0.36 |

上表最适合加工钢件、铸铁，也可用于其他通用加工，以上其他材料加工参数仅供参考。
This serie tools are most suitable for steels and cast iron, and also versatile for other materials listed above.


- 1、请使用刚性较高的机床和刀柄。
Make sure work piece and machine are stable and use a precision holder.
- 2、请根据切削速度、设备刚性等情况可适当调整转速和进给速度。
Please adjust the speed, feed and cutting depth according to actual cutting conditons.
- 3、上表是按照刀具悬长为直径4倍以下时所制订的，如果刀具悬长过长，加工时易产生振动，此时，请适当调整转速，进给速度和切深量。
The milling conditions are for an Endmills where the tool overhang length is less than 4*D(mill dia).
When the tool overhang length is longer, please adjust the speed, feed and cutting depth.

推荐切削参数

Recommended Cutting Parameters

UP210

钢件、铸铁 For Steels, Cast Iron——侧铣 Side Milling

| 工件材料 Workpiece Material |  | 切削速度 Cutting Speed (m/min) | | | 刃径 Tool Diameter(mm) | | | | | | | | | | |
|----------------------------|---|-------------------------------|----------|-----------|-------------------------|-----------|----|-------|-------|-------|-------|-------|-------|-------|-------|
| | | a_p | a_e | 最小 Min | 较好 Optimum | 最大 Max | mm | 3 | 4 | 6 | 8 | 10 | 12 | 16 | 20 |
| P | P1 | 1.5 x D | 0.15 x D | 150 | 180 | 210 | Fz | 0.028 | 0.036 | 0.048 | 0.065 | 0.08 | 0.09 | 0.12 | 0.15 |
| | P2 | 1.5 x D | 0.15 x D | 150 | 180 | 210 | Fz | 0.028 | 0.036 | 0.048 | 0.065 | 0.08 | 0.09 | 0.12 | 0.15 |
| | P3 | 1.5 x D | 0.15 x D | 130 | 150 | 170 | Fz | 0.025 | 0.032 | 0.042 | 0.063 | 0.073 | 0.084 | 0.095 | 0.12 |
| | P4 | 1 x D | 0.15 x D | 130 | 150 | 170 | Fz | 0.025 | 0.032 | 0.042 | 0.063 | 0.073 | 0.084 | 0.095 | 0.12 |
| | P5 | 1 x D | 0.12 x D | 110 | 130 | 160 | Fz | 0.022 | 0.028 | 0.04 | 0.06 | 0.068 | 0.073 | 0.08 | 0.09 |
| | P6 | 0.8 x D | 0.12 x D | 100 | 120 | 140 | Fz | 0.02 | 0.025 | 0.038 | 0.054 | 0.06 | 0.065 | 0.07 | 0.08 |
| M | M1 | 1.5 x D | 0.15 x D | 120 | 150 | 180 | Fz | 0.028 | 0.036 | 0.048 | 0.066 | 0.085 | 0.09 | 0.12 | 0.13 |
| | M2 | 1.5 x D | 0.15 x D | 110 | 130 | 160 | Fz | 0.025 | 0.032 | 0.043 | 0.063 | 0.074 | 0.085 | 0.095 | 0.11 |
| | M3 | 1 x D | 0.12 x D | 100 | 120 | 140 | Fz | 0.021 | 0.027 | 0.038 | 0.054 | 0.06 | 0.065 | 0.07 | 0.08 |
| K | K1 | 1.5 x D | 0.15 x D | 150 | 180 | 210 | Fz | 0.03 | 0.037 | 0.053 | 0.064 | 0.075 | 0.085 | 0.1 | 0.12 |
| | K2 | 1.5 x D | 0.15 x D | 130 | 160 | 190 | Fz | 0.025 | 0.032 | 0.048 | 0.059 | 0.069 | 0.08 | 0.095 | 0.11 |
| | K3 | 1 x D | 0.12 x D | 110 | 140 | 170 | Fz | 0.022 | 0.03 | 0.045 | 0.056 | 0.065 | 0.075 | 0.09 | 0.102 |


上表最适合加工钢件、铸铁，也可用于其他通用加工，以上其他材料加工参数仅供参考。
This serie tools are most suitable for steels and cast iron, and also versatile for other materials listed above.

推荐切削参数

Recommended Cutting Parameters

UP210

钢件、铸铁 For Steels, Cast Iron——槽铣 Slotting

| 工件材料 Workpiece Material | |  | 切削速度 Cutting Speed (m/min) | | | 刃径 Tool Diameter(mm) | | | | | | | | |
|----------------------------|----|---|-------------------------------|---------------|-----------|-------------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| | | | 最小 Min | 较好 Optimum | 最大 Max | mm | 3 | 4 | 6 | 8 | 10 | 12 | 16 | 20 |
| P | P1 | 0.8 x D | 60 | 80 | 95 | Fz | 0.025 | 0.042 | 0.052 | 0.062 | 0.072 | 0.082 | 0.125 | 0.16 |
| | P2 | 0.8 x D | 60 | 80 | 95 | Fz | 0.025 | 0.042 | 0.052 | 0.062 | 0.072 | 0.082 | 0.125 | 0.16 |
| | P3 | 0.5 x D | 55 | 75 | 90 | Fz | 0.022 | 0.037 | 0.047 | 0.052 | 0.062 | 0.072 | 0.105 | 0.13 |
| | P4 | 0.5 x D | 55 | 70 | 85 | Fz | 0.022 | 0.037 | 0.047 | 0.052 | 0.062 | 0.072 | 0.105 | 0.13 |
| | P5 | 0.3 x D | 50 | 60 | 70 | Fz | 0.02 | 0.032 | 0.042 | 0.047 | 0.057 | 0.068 | 0.095 | 0.12 |
| | P6 | 0.3 x D | 35 | 50 | 60 | Fz | 0.012 | 0.018 | 0.033 | 0.043 | 0.054 | 0.065 | 0.075 | 0.085 |
| M | M1 | 0.3 x D | 40 | 55 | 65 | Fz | 0.015 | 0.022 | 0.038 | 0.049 | 0.06 | 0.07 | 0.083 | 0.095 |
| | M2 | 0.3 x D | 40 | 55 | 65 | Fz | 0.012 | 0.018 | 0.035 | 0.046 | 0.056 | 0.066 | 0.078 | 0.09 |
| | M3 | 0.3 x D | 35 | 50 | 60 | Fz | 0.01 | 0.017 | 0.032 | 0.042 | 0.053 | 0.064 | 0.075 | 0.085 |
| K | K1 | 0.5 x D | 50 | 60 | 70 | Fz | 0.022 | 0.037 | 0.047 | 0.052 | 0.063 | 0.074 | 0.105 | 0.13 |
| | K2 | 0.5 x D | 45 | 55 | 65 | Fz | 0.018 | 0.028 | 0.043 | 0.05 | 0.06 | 0.07 | 0.085 | 0.096 |
| | K3 | 0.3 x D | 40 | 50 | 60 | Fz | 0.015 | 0.023 | 0.04 | 0.045 | 0.055 | 0.065 | 0.08 | 0.09 |


上表最适合加工钢件、铸铁，也可用于其他通用加工，以上其他材料加工参数仅供参考。
This serie tools are most suitable for steels and cast iron, and also versatile for other materials listed above.

推荐切削参数

Recommended Cutting Parameters

UP210

钢件、铸铁 For Steels, Cast Iron——仿形铣 Profiling

| 工件材料 Workpiece Material | |  | | 切削速度 Cutting Speed (m/min) | | | 刃径 Tool Diameter(mm) | | | | | | | | | |
|----------------------------|----|---|----------|-------------------------------|---------------|-----------|-------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | | | | 最小 Min | 较好 Optimum | 最大 Max | mm | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| P | P1 | 0.2 x D | 0.3 x D | 120 | 160 | 200 | Fz | 0.04 | 0.05 | 0.06 | 0.07 | 0.08 | 0.09 | 0.1 | 0.11 | 0.12 |
| | P2 | 0.2 x D | 0.3 x D | 120 | 160 | 200 | Fz | 0.04 | 0.05 | 0.06 | 0.07 | 0.08 | 0.09 | 0.1 | 0.11 | 0.12 |
| | P3 | 0.2 x D | 0.3 x D | 110 | 140 | 170 | Fz | 0.035 | 0.045 | 0.055 | 0.063 | 0.072 | 0.08 | 0.09 | 0.1 | 0.11 |
| | P4 | 0.2 x D | 0.3 x D | 110 | 140 | 170 | Fz | 0.035 | 0.045 | 0.055 | 0.063 | 0.072 | 0.08 | 0.09 | 0.1 | 0.11 |
| | P5 | 0.15 x D | 0.15 x D | 100 | 120 | 150 | Fz | 0.032 | 0.042 | 0.052 | 0.058 | 0.065 | 0.072 | 0.08 | 0.087 | 0.095 |
| | P6 | 0.15 x D | 0.15 x D | 100 | 120 | 150 | Fz | 0.03 | 0.04 | 0.05 | 0.056 | 0.062 | 0.068 | 0.075 | 0.082 | 0.09 |
| M | M1 | 0.2 x D | 0.2 x D | 80 | 110 | 130 | Fz | 0.035 | 0.045 | 0.055 | 0.063 | 0.072 | 0.08 | 0.09 | 0.1 | 0.11 |
| | M2 | 0.2 x D | 0.2 x D | 80 | 110 | 130 | Fz | 0.035 | 0.045 | 0.055 | 0.063 | 0.072 | 0.08 | 0.09 | 0.1 | 0.11 |
| | M3 | 0.1 x D | 0.1 x D | 70 | 85 | 100 | Fz | 0.032 | 0.042 | 0.052 | 0.058 | 0.065 | 0.072 | 0.08 | 0.087 | 0.095 |
| K | K1 | 0.2 x D | 0.2 x D | 110 | 140 | 170 | Fz | 0.04 | 0.05 | 0.06 | 0.07 | 0.08 | 0.09 | 0.1 | 0.11 | 0.12 |
| | K2 | 0.2 x D | 0.2 x D | 110 | 140 | 170 | Fz | 0.035 | 0.045 | 0.055 | 0.063 | 0.072 | 0.08 | 0.09 | 0.1 | 0.11 |
| | K3 | 0.1 x D | 0.1 x D | 100 | 120 | 150 | Fz | 0.032 | 0.042 | 0.052 | 0.06 | 0.07 | 0.077 | 0.085 | 0.095 | 0.105 |

上表最适合加工钢件、铸铁，也可用于其他通用加工，以上其他材料加工参数仅供参考。
This series tools are most suitable for steels and cast iron, and also versatile for other materials listed above.


- 1、请使用刚性较高的机床和刀柄。
Make sure work piece and machine are stable and use a precision holder.
- 2、请根据切削速度、设备刚性等情况可适当调整转速和进给速度。
Please adjust the speed, feed and cutting depth according to actual cutting conditions.
- 3、上表是按照刀具悬长为直径4倍以下时所制订的，如果刀具悬长过长，加工时易产生振动，此时，请适当调整转速，进给速度和切深量。
The milling conditions are for an Endmills where the tool overhang length is less than 4*D (mill dia).
When the tool overhang length is longer, please adjust the speed, feed and cutting depth.

推荐切削参数

Recommended Cutting Parameters

SP210

钢件、铸铁 For Steels, Cast Iron——侧铣 Side Milling

| 工件材料 Workpiece Material | |  | | 切削速度 Cutting Speed (m/min) | | | 刃径 Tool Diameter (mm) | | | | | | | | |
|----------------------------|----|---|----------|-------------------------------|---------------|-----------|--------------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| | | | | 最小 Min | 较好 Optimum | 最大 Max | mm | 3 | 4 | 6 | 8 | 10 | 12 | 16 | 20 |
| P | P1 | 1.5 x D | 0.15 x D | 170 | 200 | 230 | Fz | 0.032 | 0.041 | 0.053 | 0.07 | 0.085 | 0.1 | 0.125 | 0.155 |
| | P2 | 1.5 x D | 0.15 x D | 170 | 200 | 230 | Fz | 0.032 | 0.041 | 0.053 | 0.07 | 0.085 | 0.1 | 0.125 | 0.155 |
| | P3 | 1.5 x D | 0.15 x D | 150 | 170 | 190 | Fz | 0.03 | 0.037 | 0.047 | 0.068 | 0.078 | 0.089 | 0.1 | 0.125 |
| | P4 | 1 x D | 0.15 x D | 150 | 170 | 190 | Fz | 0.03 | 0.037 | 0.047 | 0.068 | 0.078 | 0.089 | 0.1 | 0.125 |
| | P5 | 1 x D | 0.12 x D | 130 | 150 | 180 | Fz | 0.027 | 0.033 | 0.045 | 0.065 | 0.073 | 0.078 | 0.085 | 0.095 |
| | P6 | 0.8 x D | 0.12 x D | 120 | 140 | 160 | Fz | 0.025 | 0.03 | 0.035 | 0.059 | 0.065 | 0.07 | 0.075 | 0.085 |
| M | M1 | 1.5 x D | 0.15 x D | 150 | 170 | 190 | Fz | 0.033 | 0.041 | 0.053 | 0.071 | 0.09 | 0.095 | 0.125 | 0.135 |
| | M2 | 1.5 x D | 0.15 x D | 130 | 150 | 180 | Fz | 0.033 | 0.037 | 0.048 | 0.068 | 0.079 | 0.09 | 0.1 | 0.115 |
| | M3 | 1 x D | 0.12 x D | 120 | 140 | 160 | Fz | 0.026 | 0.032 | 0.043 | 0.059 | 0.065 | 0.07 | 0.075 | 0.085 |
| K | K1 | 1.5 x D | 0.15 x D | 170 | 200 | 230 | Fz | 0.035 | 0.042 | 0.058 | 0.069 | 0.08 | 0.09 | 0.105 | 0.125 |
| | K2 | 1.5 x D | 0.15 x D | 150 | 170 | 190 | Fz | 0.03 | 0.037 | 0.053 | 0.064 | 0.074 | 0.085 | 0.1 | 0.115 |
| | K3 | 1 x D | 0.12 x D | 130 | 150 | 180 | Fz | 0.027 | 0.035 | 0.05 | 0.061 | 0.07 | 0.08 | 0.095 | 0.107 |


上表最适合加工钢件、铸铁，也可用于其他通用加工，以上其他材料加工参数仅供参考。
This series tools are most suitable for steels and cast iron, and also versatile for other materials listed above.

推荐切削参数

Recommended Cutting Parameters

SP210

钢件、铸铁 For Steels, Cast Iron——槽铣 Slotting

| 工件材料 Workpiece Material | |  | 切削速度 Cutting Speed (m/min) | | | 刃径 Tool Diameter (mm) | | | | | | | | |
|----------------------------|----|---|-------------------------------|---------------|-----------|--------------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| | | | 最小 Min | 较好 Optimum | 最大 Max | mm | 3 | 4 | 6 | 8 | 10 | 12 | 16 | 20 |
| P | P1 | 1 x D | 60 | 80 | 95 | Fz | 0.031 | 0.048 | 0.057 | 0.067 | 0.077 | 0.089 | 0.133 | 0.17 |
| | P2 | 1 x D | 60 | 80 | 95 | Fz | 0.031 | 0.048 | 0.057 | 0.067 | 0.077 | 0.089 | 0.133 | 0.17 |
| | P3 | 0.8 x D | 55 | 75 | 90 | Fz | 0.028 | 0.043 | 0.052 | 0.057 | 0.067 | 0.079 | 0.113 | 0.14 |
| | P4 | 0.8 x D | 55 | 70 | 85 | Fz | 0.028 | 0.043 | 0.052 | 0.057 | 0.067 | 0.079 | 0.113 | 0.14 |
| | P5 | 0.5 x D | 50 | 60 | 70 | Fz | 0.026 | 0.038 | 0.047 | 0.052 | 0.062 | 0.075 | 0.103 | 0.13 |
| | P6 | 0.3 x D | 35 | 50 | 60 | Fz | 0.018 | 0.024 | 0.038 | 0.048 | 0.059 | 0.072 | 0.083 | 0.095 |
| M | M1 | 0.3 x D | 40 | 55 | 65 | Fz | 0.021 | 0.028 | 0.043 | 0.054 | 0.065 | 0.077 | 0.091 | 0.105 |
| | M2 | 0.3 x D | 40 | 55 | 65 | Fz | 0.018 | 0.024 | 0.04 | 0.051 | 0.061 | 0.073 | 0.086 | 0.1 |
| | M3 | 0.3 x D | 35 | 50 | 60 | Fz | 0.016 | 0.023 | 0.037 | 0.047 | 0.058 | 0.071 | 0.083 | 0.095 |
| K | K1 | 0.8 x D | 50 | 60 | 70 | Fz | 0.028 | 0.043 | 0.052 | 0.057 | 0.068 | 0.081 | 0.113 | 0.14 |
| | K2 | 0.8 x D | 45 | 55 | 65 | Fz | 0.024 | 0.034 | 0.048 | 0.055 | 0.065 | 0.077 | 0.093 | 0.106 |
| | K3 | 0.5 x D | 40 | 50 | 60 | Fz | 0.021 | 0.029 | 0.045 | 0.05 | 0.06 | 0.072 | 0.088 | 0.1 |

上表最适合加工钢件、铸铁，也可用于其他通用加工，以上其他材料加工参数仅供参考。


This series tools are most suitable for steels and cast iron, and also versatile for other materials listed above.

推荐切削参数

Recommended Cutting Parameters

UPR100

钢件、铸铁 For Steels, Cast Iron (粗加工 Roughing) —— 侧铣 Side Milling

| 工件材料 Workpiece Material | |  | | 切削速度 Cutting Speed (m/min) | | | 刃径 Tool Diameter (mm) | | | | | | |
|----------------------------|----|---|----------|-------------------------------|---------------|-----------|--------------------------|-------|-------|-------|-------|------|------|
| | | | | 最小 Min | 较好 Optimum | 最大 Max | mm | 6 | 8 | 10 | 12 | 16 | 20 |
| P | P1 | 1 x D | 0.2 x D | 120 | 140 | 160 | fz | 0.042 | 0.056 | 0.07 | 0.08 | 0.1 | 0.11 |
| | P2 | 1 x D | 0.2 x D | 120 | 140 | 160 | fz | 0.042 | 0.056 | 0.07 | 0.08 | 0.1 | 0.11 |
| | P3 | 1 x D | 0.2 x D | 110 | 130 | 150 | fz | 0.036 | 0.048 | 0.06 | 0.072 | 0.09 | 0.1 |
| | P4 | 1 x D | 0.2 x D | 110 | 130 | 150 | fz | 0.036 | 0.048 | 0.06 | 0.072 | 0.09 | 0.1 |
| | P5 | 1 x D | 0.12 x D | 100 | 110 | 120 | fz | 0.03 | 0.04 | 0.05 | 0.06 | 0.08 | 0.09 |
| | P6 | 1 x D | 0.12 x D | 90 | 100 | 110 | fz | 0.025 | 0.035 | 0.045 | 0.055 | 0.06 | 0.07 |
| M | M1 | 1 x D | 0.2 x D | 110 | 130 | 150 | fz | 0.036 | 0.048 | 0.06 | 0.072 | 0.09 | 0.1 |
| | M2 | 1 x D | 0.2 x D | 110 | 130 | 150 | fz | 0.036 | 0.048 | 0.06 | 0.072 | 0.09 | 0.1 |
| | M3 | 1 x D | 0.12 x D | 100 | 110 | 120 | fz | 0.03 | 0.04 | 0.05 | 0.06 | 0.08 | 0.09 |
| K | K1 | 1 x D | 0.2 x D | 120 | 140 | 160 | fz | 0.042 | 0.056 | 0.07 | 0.08 | 0.1 | 0.11 |
| | K2 | 1 x D | 0.2 x D | 120 | 140 | 160 | fz | 0.042 | 0.056 | 0.07 | 0.08 | 0.1 | 0.11 |
| | K3 | 1 x D | 0.12 x D | 110 | 130 | 150 | fz | 0.036 | 0.048 | 0.06 | 0.072 | 0.09 | 0.1 |
| N | N1 | 1.5 x D | 0.3 x D | 250 | 350 | 500 | fz | 0.06 | 0.08 | 0.1 | 0.12 | 0.16 | 0.2 |
| | N2 | 1.5 x D | 0.3 x D | 250 | 350 | 500 | fz | 0.06 | 0.08 | 0.1 | 0.12 | 0.16 | 0.2 |
| | N4 | 1.5 x D | 0.3 x D | 200 | 300 | 400 | fz | 0.055 | 0.07 | 0.09 | 0.1 | 0.13 | 0.16 |


上表最适合加工钢件、铸铁，也可用于其他通用加工，以上其他材料加工参数仅供参考。
This serie tools are most suitable for steels and cast iron, and also versatile for other materials listed above.

推荐切削参数

Recommended Cutting Parameters

UPR100

钢件、铸铁 For Steels , Cast Iron (微小径深槽加工 Miniature) —— 槽铣 Slotting

| 工件材料 Workpiece Material | |  | 切削速度 Cutting Speed (m/min) | | | 刃径 Tool Diameter(mm) | | | | | | |
|----------------------------|----|---|-------------------------------|---------------|-----------|-------------------------|-------|-------|-------|-------|-------|-------|
| | | | 最小 Min | 较好 Optimum | 最大 Max | mm | 6 | 8 | 10 | 12 | 16 | 20 |
| P | P1 | 1 x D | 60 | 80 | 95 | fz | 0.045 | 0.055 | 0.065 | 0.075 | 0.11 | 0.14 |
| | P2 | 1 x D | 60 | 80 | 95 | fz | 0.045 | 0.055 | 0.065 | 0.075 | 0.11 | 0.14 |
| | P3 | 0.8 x D | 55 | 75 | 90 | fz | 0.04 | 0.045 | 0.055 | 0.065 | 0.09 | 0.11 |
| | P4 | 0.8 x D | 55 | 70 | 85 | fz | 0.04 | 0.045 | 0.055 | 0.065 | 0.09 | 0.11 |
| | P5 | 0.5 x D | 50 | 60 | 70 | fz | 0.03 | 0.04 | 0.05 | 0.06 | 0.07 | 0.08 |
| | P6 | 0.3 x D | 35 | 50 | 60 | fz | 0.025 | 0.035 | 0.045 | 0.055 | 0.06 | 0.07 |
| M | M1 | 0.5 x D | 40 | 55 | 65 | fz | 0.03 | 0.04 | 0.05 | 0.06 | 0.07 | 0.08 |
| | M2 | 0.5 x D | 40 | 55 | 65 | fz | 0.03 | 0.04 | 0.05 | 0.06 | 0.07 | 0.08 |
| | M3 | 0.3 x D | 35 | 50 | 60 | fz | 0.025 | 0.035 | 0.045 | 0.055 | 0.06 | 0.07 |
| K | K1 | 1 x D | 50 | 60 | 70 | fz | 0.04 | 0.045 | 0.055 | 0.065 | 0.09 | 0.11 |
| | K2 | 1 x D | 40 | 55 | 65 | fz | 0.032 | 0.042 | 0.052 | 0.06 | 0.07 | 0.08 |
| | K3 | 0.8 x D | 40 | 55 | 65 | fz | 0.03 | 0.04 | 0.05 | 0.055 | 0.065 | 0.075 |
| N | N1 | 1 x D | 150 | 180 | 220 | fz | 0.05 | 0.06 | 0.07 | 0.08 | 0.13 | 0.16 |
| | N2 | 1 x D | 150 | 180 | 220 | fz | 0.05 | 0.06 | 0.07 | 0.08 | 0.13 | 0.16 |
| | N4 | 1 x D | 130 | 160 | 190 | fz | 0.045 | 0.055 | 0.065 | 0.075 | 0.11 | 0.14 |

上表最适合加工钢件、铸铁，也可用于其他通用加工，以上其他材料加工参数仅供参考。
This serie tools are most suitable for steels and cast iron, and also versatile for other materials listed above.

- 1、请使用刚性较高的机床和刀柄。
Make sure work piece and machine are stable and use a precision holder.
- 2、请根据切削速度、设备刚性等情况可适当调整转速和进给速度。
Please adjust the speed, feed and cutting depth according to actual cutting conditons.
- 3、上表是按照刀具悬长为直径4倍以下时所制订的，如果刀具悬长过长，加工时易产生振动，此时，请适当调整转速，进给速度和切深量。
The milling conditions are for an Endmills where the tool overhang length is less than 4*D(mill dia).
When the tool overhang length is longer, please adjust the speed, feed and cutting depth.

推荐切削参数

Recommended Cutting Parameters

UPM100

钢件、铸铁 For Steels, Cast Iron (微小径深槽加工 Miniature) —— 侧铣 Side Milling

| 工件材料 Workpiece Material | |  | | 切削速度 Cutting Speed (m/min) | 刃径 Tool Diameter (mm) | | | | | | | | |
|----------------------------|----|---|----------|--------------------------------|--------------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| | | | | | mm | 0.8 | 0.9 | 1 | 1.2 | 1.4 | 1.6 | 1.8 | 2 |
| P | P1 | 0.5x D | 0.05 x D | 机床最高转速 Max.Speed Of Machine | fz | 0.016 | 0.018 | 0.02 | 0.023 | 0.027 | 0.03 | 0.035 | 0.04 |
| | P2 | 0.5x D | 0.05 x D | 机床最高转速 Max.Speed Of Machine | fz | 0.016 | 0.018 | 0.02 | 0.023 | 0.027 | 0.03 | 0.035 | 0.04 |
| | P3 | 0.5x D | 0.05 x D | 机床最高转速 Max.Speed Of Machine | fz | 0.015 | 0.017 | 0.019 | 0.022 | 0.025 | 0.028 | 0.033 | 0.038 |
| | P4 | 0.5x D | 0.05 x D | 机床最高转速 Max.Speed Of Machine | fz | 0.015 | 0.017 | 0.019 | 0.022 | 0.025 | 0.028 | 0.033 | 0.038 |
| | P5 | 0.5x D | 0.05 x D | 机床最高转速 Max.Speed Of Machine | fz | 0.015 | 0.017 | 0.019 | 0.022 | 0.025 | 0.028 | 0.033 | 0.038 |
| | P6 | 0.5x D | 0.05 x D | 机床最高转速 Max.Speed Of Machine | fz | 0.009 | 0.01 | 0.012 | 0.014 | 0.016 | 0.018 | 0.02 | 0.022 |
| M | M1 | 0.5x D | 0.03 x D | 机床最高转速 Max.Speed Of Machine | fz | 0.016 | 0.018 | 0.02 | 0.023 | 0.027 | 0.03 | 0.035 | 0.04 |
| | M2 | 0.5x D | 0.03 x D | 机床最高转速 Max.Speed Of Machine | fz | 0.016 | 0.018 | 0.02 | 0.023 | 0.027 | 0.03 | 0.035 | 0.04 |
| | M3 | 0.5x D | 0.02 x D | 机床最高转速 Max.Speed Of Machine | fz | 0.015 | 0.017 | 0.019 | 0.022 | 0.025 | 0.028 | 0.033 | 0.038 |
| K | K1 | 0.5x D | 0.05 x D | 机床最高转速 Max.Speed Of Machine | fz | 0.016 | 0.018 | 0.02 | 0.023 | 0.027 | 0.03 | 0.035 | 0.04 |
| | K2 | 0.5x D | 0.05 x D | 机床最高转速 Max.Speed Of Machine | fz | 0.016 | 0.018 | 0.02 | 0.023 | 0.027 | 0.03 | 0.035 | 0.04 |
| | K3 | 0.5x D | 0.03 x D | 机床最高转速 Max.Speed Of Machine | fz | 0.013 | 0.015 | 0.016 | 0.018 | 0.022 | 0.027 | 0.032 | 0.037 |


上表最适合加工钢件、铸铁，也可用于其他通用加工，以上其他材料加工参数仅供参考。
This serie tools are most suitable for steels and cast iron, and also versatile for other materials listed above.

推荐切削参数

Recommended Cutting Parameters

UPM100

钢件、铸铁 For Steels, Cast Iron (微小径深槽加工 Miniature) —— 槽铣 Slotting

| 工件材料 Workpiece Material | |  | 切削速度 Cutting Speed (m/min) | 刃径 Tool Diameter (mm) | | | | | | | | |
|----------------------------|----|---|--------------------------------|--------------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| | | | | mm | 0.8 | 0.9 | 1 | 1.2 | 1.4 | 1.6 | 1.8 | 2 |
| P | P1 | 0.3 x D | 机床最高转速 Max.Speed Of Machine | fz | 0.01 | 0.011 | 0.012 | 0.014 | 0.017 | 0.02 | 0.023 | 0.025 |
| | P2 | 0.3 x D | 机床最高转速 Max.Speed Of Machine | fz | 0.01 | 0.011 | 0.012 | 0.014 | 0.017 | 0.02 | 0.023 | 0.025 |
| | P3 | 0.2 x D | 机床最高转速 Max.Speed Of Machine | fz | 0.009 | 0.01 | 0.011 | 0.013 | 0.016 | 0.019 | 0.022 | 0.024 |
| | P4 | 0.2 x D | 机床最高转速 Max.Speed Of Machine | fz | 0.009 | 0.01 | 0.011 | 0.013 | 0.016 | 0.019 | 0.022 | 0.024 |
| | P5 | 0.1 x D | 机床最高转速 Max.Speed Of Machine | fz | 0.008 | 0.009 | 0.01 | 0.012 | 0.015 | 0.018 | 0.021 | 0.023 |
| | P6 | 0.1 x D | 机床最高转速 Max.Speed Of Machine | fz | 0.008 | 0.009 | 0.01 | 0.012 | 0.015 | 0.018 | 0.021 | 0.023 |
| M | M1 | 0.2 x D | 机床最高转速 Max.Speed Of Machine | fz | 0.009 | 0.01 | 0.011 | 0.013 | 0.016 | 0.019 | 0.022 | 0.024 |
| | M2 | 0.2 x D | 机床最高转速 Max.Speed Of Machine | fz | 0.009 | 0.01 | 0.011 | 0.013 | 0.016 | 0.019 | 0.022 | 0.024 |
| | M3 | 0.1 x D | 机床最高转速 Max.Speed Of Machine | fz | 0.008 | 0.009 | 0.01 | 0.012 | 0.015 | 0.018 | 0.021 | 0.023 |
| K | K1 | 0.3 x D | 机床最高转速 Max.Speed Of Machine | fz | 0.01 | 0.011 | 0.012 | 0.014 | 0.017 | 0.02 | 0.023 | 0.025 |
| | K2 | 0.3 x D | 机床最高转速 Max.Speed Of Machine | fz | 0.01 | 0.011 | 0.012 | 0.014 | 0.017 | 0.02 | 0.023 | 0.025 |
| | K3 | 0.2 x D | 机床最高转速 Max.Speed Of Machine | fz | 0.009 | 0.01 | 0.011 | 0.013 | 0.016 | 0.019 | 0.022 | 0.024 |

上表最适合加工钢件、铸铁，也可用于其他通用加工，以上其他材料加工参数仅供参考。
This serie tools are most suitable for steels and cast iron, and also versatile for other materials listed above.

推荐切削参数

Recommended Cutting Parameters

UPM100

钢件、铸铁 For Steels, Cast Iron (微小径深槽加工 Miniature) —— 仿形铣 Profiling

| 工件材料 Workpiece Material | |  | | 切削速度 Cutting Speed (m/min) | 刃径 Tool Diameter (mm) | | | | | | | | |
|----------------------------|----|---|----------|--------------------------------|--------------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| | | | | | mm | 0.2 | 0.4 | 0.6 | 0.8 | 1 | 1.2 | 1.6 | 2 |
| P | P1 | 0.02 x D | 0.02 x D | 机床最高转速 Max.Speed Of Machine | fz | 0.006 | 0.011 | 0.017 | 0.023 | 0.028 | 0.035 | 0.045 | 0.055 |
| | P2 | 0.02 x D | 0.02 x D | 机床最高转速 Max.Speed Of Machine | fz | 0.006 | 0.011 | 0.017 | 0.023 | 0.028 | 0.035 | 0.045 | 0.055 |
| | P3 | 0.02 x D | 0.02 x D | 机床最高转速 Max.Speed Of Machine | fz | 0.005 | 0.01 | 0.016 | 0.021 | 0.026 | 0.032 | 0.042 | 0.052 |
| | P4 | 0.02 x D | 0.02 x D | 机床最高转速 Max.Speed Of Machine | fz | 0.005 | 0.01 | 0.016 | 0.021 | 0.026 | 0.032 | 0.042 | 0.052 |
| | P5 | 0.01 x D | 0.01 x D | 机床最高转速 Max.Speed Of Machine | fz | 0.005 | 0.01 | 0.016 | 0.021 | 0.026 | 0.032 | 0.042 | 0.052 |
| | P6 | 0.01 x D | 0.01 x D | 机床最高转速 Max.Speed Of Machine | fz | 0.004 | 0.009 | 0.014 | 0.019 | 0.023 | 0.028 | 0.04 | 0.048 |
| M | M1 | 0.02 x D | 0.02 x D | 机床最高转速 Max.Speed Of Machine | fz | 0.006 | 0.011 | 0.017 | 0.023 | 0.028 | 0.035 | 0.045 | 0.055 |
| | M2 | 0.02 x D | 0.02 x D | 机床最高转速 Max.Speed Of Machine | fz | 0.006 | 0.011 | 0.017 | 0.023 | 0.028 | 0.035 | 0.045 | 0.055 |
| | M3 | 0.01 x D | 0.01 x D | 机床最高转速 Max.Speed Of Machine | fz | 0.005 | 0.01 | 0.016 | 0.021 | 0.026 | 0.032 | 0.042 | 0.052 |
| K | K1 | 0.02 x D | 0.02 x D | 机床最高转速 Max.Speed Of Machine | fz | 0.006 | 0.011 | 0.017 | 0.023 | 0.028 | 0.035 | 0.045 | 0.055 |
| | K2 | 0.02 x D | 0.02 x D | 机床最高转速 Max.Speed Of Machine | fz | 0.006 | 0.011 | 0.017 | 0.023 | 0.028 | 0.035 | 0.045 | 0.055 |
| | K3 | 0.02 x D | 0.02 x D | 机床最高转速 Max.Speed Of Machine | fz | 0.005 | 0.01 | 0.016 | 0.021 | 0.026 | 0.032 | 0.042 | 0.052 |

上表最适合加工钢件、铸铁，也可用于其他通用加工，以上其他材料加工参数仅供参考。
This serie tools are most suitable for steels and cast iron, and also versatile for other materials listed above.


- 1、铣刀装夹时，刃部的径向跳动控制在0.01mm以下
Maximum T.I.R. in when tool is chucked is 0.01mm(0.01mm maximum recommended).
- 2、请使用刚性较高的机床和刀柄。
Make sure work piece and machine are stable and use a precision holder.
- 3、请根据切削速度、设备刚性等情况可适当调整转速和进给速度。
Please adjust the speed, feed and cutting depth according to actual cutting conditons.
- 4、上表是按照刀具悬长为直径4倍以下时所制订的，如果刀具悬长过长，加工时易产生振动，此时，请适当调整转速，进给速度和切深量。
The milling conditions are for an Endmills where the tool overhang length is less than 4*D(mill dia).
When the tool overhang length is longer, please adjust the speed, feed and cutting depth.

推荐切削参数

Recommended Cutting Parameters


SH160

高硬钢 Hardened Steels —— 侧铣 Side Milling

| 工件材料 Workpiece Material | |  | | 切削速度 Cutting Speed (m/min) | | | 刃径 Tool Diameter (mm) | | | | | | | | |
|---|----|---|--------|-------------------------------|---------------|-----------|--------------------------|-------|-------|-------|------|-------|-------|-------|-------|
| | | | | 最小 Min | 较好 Optimum | 最大 Max | mm | 2 | 4 | 6 | 8 | 10 | 12 | 16 | 20 |
|  | H1 | 1.5xD | 0.08xD | 120 | 150 | 170 | Fz | 0.018 | 0.025 | 0.04 | 0.05 | 0.06 | 0.07 | 0.085 | 0.1 |
| | H2 | 1xD | 0.05xD | 100 | 120 | 150 | Fz | 0.01 | 0.02 | 0.03 | 0.04 | 0.048 | 0.056 | 0.065 | 0.075 |
| | H3 | 0.7xD | 0.03xD | 80 | 90 | 110 | Fz | 0.008 | 0.015 | 0.023 | 0.03 | 0.038 | 0.042 | 0.053 | 0.06 |

SH160

高硬钢 Hardened Steels —— 仿形铣 Profiling

| 工件材料 Workpiece Material | |  | | 切削速度 Cutting Speed (m/min) | | | 刃径 Tool Diameter (mm) | | | | | | | | |
|---|----|--|--------|-------------------------------|---------------|-----------|--------------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| | | | | 最小 Min | 较好 Optimum | 最大 Max | mm | 2 | 4 | 6 | 8 | 10 | 12 | 14 | 16 |
|  | H1 | 0.04xD | 0.03xD | 200 | 220 | 250 | Fz | 0.015 | 0.022 | 0.037 | 0.046 | 0.055 | 0.065 | 0.072 | 0.08 |
| | H2 | 0.03xD | 0.03xD | 170 | 200 | 230 | Fz | 0.008 | 0.018 | 0.028 | 0.038 | 0.045 | 0.054 | 0.058 | 0.062 |
| | H3 | 0.02xD | 0.02xD | 130 | 150 | 180 | Fz | 0.007 | 0.013 | 0.02 | 0.028 | 0.035 | 0.04 | 0.045 | 0.05 |

上表最适合加工钢件、铸铁，也可用于其他通用加工，以上其他材料加工参数仅供参考。
This series tools are most suitable for steels and cast iron, and also versatile for other materials listed above.


- 1、请使用刚性较高的机床和刀柄。
Make sure work piece and machine are stable and use a precision holder.
- 2、请根据切削速度、设备刚性等情况可适当调整转速和进给速度。
Please adjust the speed, feed and cutting depth according to actual cutting conditions.
- 3、上表是按照刀具悬长为直径4倍以下时所制订的，如果刀具悬长过长，加工时易产生振动，此时，请适当调整转速，进给速度和切深量。
The milling conditions are for an Endmills where the tool overhang length is less than 4*D(mill dia).
When the tool overhang length is longer, please adjust the speed, feed and cutting depth.

推荐切削参数

Recommended Cutting Parameters


SHM100

高硬钢 Hardened Steels (微小径深槽加工 Miniature) —— 侧铣 Side Milling

| 工件材料 Workpiece Material | |  | | 切削速度 Cutting Speed (m/min) | 刃径 Tool Diameter (mm) | | | | | | |
|----------------------------|----|---|---------|--------------------------------|--------------------------|-------|-------|-------|-------|-------|-------|
| | | | | | mm | 0.4 | 0.6 | 0.8 | 1 | 1.5 | 2 |
| H | H1 | 1 x D | 0.1x D | 机床最高转速 Max.Speed Of Machine | fz | 0.009 | 0.012 | 0.015 | 0.021 | 0.023 | 0.028 |
| | H2 | 0.7 x D | 0.08x D | 机床最高转速 Max.Speed Of Machine | fz | 0.011 | 0.014 | 0.017 | 0.023 | 0.028 | 0.033 |
| | H3 | 0.5 x D | 0.05x D | 机床最高转速 Max.Speed Of Machine | fz | 0.012 | 0.015 | 0.019 | 0.025 | 0.03 | 0.035 |


SHM100

高硬钢 Hardened Steels (微小径深槽加工 Miniature) —— 槽铣 Slotting

| 工件材料 Workpiece Material | |  | | 切削速度 Cutting Speed (m/min) | 刃径 Tool Diameter (mm) | | | | | | |
|----------------------------|----|---|--|--------------------------------|--------------------------|-------|-------|-------|-------|-------|-------|
| | | | | | mm | 0.4 | 0.6 | 0.8 | 1 | 1.5 | 2 |
| H | H1 | 0.2 x D | | 机床最高转速 Max.Speed Of Machine | Fz | 0.006 | 0.009 | 0.012 | 0.018 | 0.02 | 0.025 |
| | H2 | 0.1 x D | | 机床最高转速 Max.Speed Of Machine | Fz | 0.008 | 0.011 | 0.014 | 0.02 | 0.025 | 0.03 |
| | H3 | 0.05 x D | | 机床最高转速 Max.Speed Of Machine | Fz | 0.009 | 0.012 | 0.016 | 0.022 | 0.027 | 0.032 |

SHM100

高硬钢 Hardened Steels (微小径深槽加工 Miniature) —— 仿形铣 Profiling

| 工件材料 Workpiece Material | |  | | 切削速度 Cutting Speed (m/min) | 刃径 Tool Diameter (mm) | | | | | | | |
|----------------------------|----|---|--------|--------------------------------|--------------------------|-------|-------|-------|-------|-------|-------|-------|
| | | | | | mm | 0.4 | 0.6 | 0.8 | 1 | 1.2 | 1.5 | 2 |
| H | H1 | 0.04xD | 0.03xD | 机床最高转速 Max.Speed Of Machine | Fz | 0.015 | 0.018 | 0.022 | 0.024 | 0.026 | 0.03 | 0.04 |
| | H2 | 0.03xD | 0.03xD | 机床最高转速 Max.Speed Of Machine | Fz | 0.018 | 0.021 | 0.024 | 0.026 | 0.03 | 0.035 | 0.045 |
| | H3 | 0.02xD | 0.02xD | 机床最高转速 Max.Speed Of Machine | Fz | 0.021 | 0.024 | 0.026 | 0.028 | 0.034 | 0.04 | 0.05 |

上表最适合加工钢件、铸铁，也可用于其他通用加工，以上其他材料加工参数仅供参考。
This serie tools are most suitable for steels and cast iron, and also versatile for other materials listed above.

1、铣刀装夹时，刃部的径向跳动控制在0.01mm以下
Maximum T.I.R. in when tool is chucked is 0.01mm(0.01mm maximum recommended).

2、请使用刚性较高的机床和刀柄。
Make sure work piece and machine are stable and use a precision holder.

3、请根据切削速度、设备刚性等情况可适当调整转速和进给速度。
Please adjust the speed, feed and cutting depth according to actual cutting conditons.


4、上表是按照刀具悬长为直径4倍以下时所制订的，如果刀具悬长过长，加工时易产生振动，此时，请适当调整转速，进给速度和切深量。
The milling conditions are for an Endmills where the tool overhang length is less than 4*D(mill dia).
When the tool overhang length is longer, please adjust the speed, feed and cutting depth.

推荐切削参数

Recommended Cutting Parameters

US200

不锈钢 Stainless Steels —— 侧铣 Side Milling

| 工件材料 Workpiece Material |  | | 切削速度 Cutting Speed (m/min) | | | 刃径 Tool Diameter (mm) | | | | | | | | | | |
|----------------------------|---|-------|-------------------------------|---------------|-----------|--------------------------|----|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | | | 最小 Min | 较好 Optimum | 最大 Max | mm | 1 | 2 | 4 | 6 | 8 | 10 | 12 | 16 | 20 | |
| P | P1 | 1 x D | 0.1 x D | 120 | 150 | 180 | fz | 0.011 | 0.018 | 0.03 | 0.042 | 0.059 | 0.071 | 0.08 | 0.105 | 0.113 |
| | P2 | 1 x D | 0.1 x D | 120 | 150 | 180 | fz | 0.011 | 0.018 | 0.03 | 0.042 | 0.059 | 0.071 | 0.08 | 0.105 | 0.113 |
| | P3 | 1 x D | 0.1 x D | 100 | 130 | 160 | fz | 0.008 | 0.013 | 0.028 | 0.038 | 0.057 | 0.066 | 0.076 | 0.085 | 0.095 |
| | P4 | 1 x D | 0.1 x D | 100 | 130 | 160 | fz | 0.008 | 0.013 | 0.028 | 0.038 | 0.057 | 0.066 | 0.076 | 0.085 | 0.095 |
| | P5 | 1 x D | 0.1 x D | 90 | 110 | 140 | fz | 0.006 | 0.01 | 0.022 | 0.036 | 0.055 | 0.062 | 0.067 | 0.072 | 0.082 |
| | P6 | 1 x D | 0.1 x D | 80 | 100 | 120 | fz | 0.006 | 0.01 | 0.022 | 0.036 | 0.055 | 0.062 | 0.067 | 0.072 | 0.082 |
| M | M1 | 1 x D | 0.1 x D | 100 | 120 | 150 | fz | 0.011 | 0.018 | 0.03 | 0.042 | 0.059 | 0.071 | 0.08 | 0.105 | 0.113 |
| | M2 | 1 x D | 0.1 x D | 90 | 110 | 130 | fz | 0.008 | 0.013 | 0.028 | 0.038 | 0.057 | 0.066 | 0.076 | 0.085 | 0.095 |
| | M3 | 1 x D | 0.1 x D | 80 | 100 | 110 | fz | 0.006 | 0.01 | 0.022 | 0.032 | 0.046 | 0.052 | 0.057 | 0.062 | 0.072 |
| K | K1 | 1 x D | 0.1 x D | 120 | 150 | 180 | fz | 0.01 | 0.018 | 0.032 | 0.045 | 0.056 | 0.066 | 0.076 | 0.09 | 0.105 |
| | K2 | 1 x D | 0.1 x D | 100 | 130 | 160 | fz | 0.008 | 0.013 | 0.027 | 0.042 | 0.052 | 0.062 | 0.072 | 0.085 | 0.095 |
| S | S1 | 1 x D | 0.05 x D | 25 | 35 | 45 | fz | 0.007 | 0.01 | 0.015 | 0.022 | 0.03 | 0.034 | 0.04 | 0.05 | 0.06 |
| | S2 | 1 x D | 0.05 x D | 25 | 35 | 45 | fz | 0.007 | 0.01 | 0.015 | 0.022 | 0.03 | 0.034 | 0.04 | 0.05 | 0.06 |
| | S3 | 1 x D | 0.05 x D | 25 | 35 | 45 | fz | 0.007 | 0.01 | 0.015 | 0.022 | 0.03 | 0.034 | 0.04 | 0.05 | 0.06 |
| | S4 | 1 x D | 0.08 x D | 50 | 60 | 80 | fz | 0.01 | 0.015 | 0.023 | 0.032 | 0.045 | 0.052 | 0.058 | 0.07 | 0.08 |

上表最适合加工不锈钢，也可用于其他通用加工，以上其他材料加工参数仅供参考。
This serie tools are most suitable for stainless steels, and also versatile for other materials listed above.

推荐切削参数

Recommended Cutting Parameters

US200

不锈钢 Stainless Steels —— 槽铣 Slotting

| 工件材料 Workpiece Material | |  | 切削速度 Cutting Speed (m/min) | | | 刃径 Tool Diameter (mm) | | | | | | | | | |
|----------------------------|----|---|-------------------------------|---------------|-----------|--------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | | | 最小 Min | 较好 Optimum | 最大 Max | mm | 1 | 2 | 4 | 6 | 8 | 10 | 12 | 16 | 20 |
| P | P1 | 0.8 x D | 50 | 70 | 85 | fz | 0.01 | 0.02 | 0.04 | 0.05 | 0.06 | 0.07 | 0.08 | 0.12 | 0.15 |
| | P2 | 0.8 x D | 50 | 70 | 85 | fz | 0.01 | 0.02 | 0.04 | 0.05 | 0.06 | 0.07 | 0.08 | 0.12 | 0.15 |
| | P3 | 0.7 x D | 50 | 65 | 80 | fz | 0.008 | 0.015 | 0.035 | 0.045 | 0.05 | 0.06 | 0.07 | 0.1 | 0.12 |
| | P4 | 0.7 x D | 50 | 65 | 80 | fz | 0.008 | 0.015 | 0.035 | 0.045 | 0.05 | 0.06 | 0.07 | 0.1 | 0.12 |
| | P5 | 0.5 x D | 45 | 55 | 65 | fz | 0.006 | 0.012 | 0.03 | 0.04 | 0.045 | 0.055 | 0.065 | 0.09 | 0.1 |
| | P6 | 0.3 x D | 40 | 50 | 60 | fz | 0.006 | 0.009 | 0.015 | 0.03 | 0.04 | 0.05 | 0.06 | 0.07 | 0.08 |
| M | M1 | 0.3 x D | 40 | 50 | 60 | fz | 0.009 | 0.012 | 0.02 | 0.036 | 0.047 | 0.058 | 0.068 | 0.08 | 0.09 |
| | M2 | 0.3 x D | 40 | 50 | 60 | fz | 0.007 | 0.01 | 0.017 | 0.033 | 0.044 | 0.054 | 0.064 | 0.075 | 0.085 |
| | M3 | 0.3 x D | 35 | 45 | 55 | fz | 0.006 | 0.009 | 0.015 | 0.03 | 0.04 | 0.05 | 0.06 | 0.07 | 0.08 |
| K | K1 | 0.7 x D | 50 | 60 | 70 | fz | 0.008 | 0.015 | 0.035 | 0.045 | 0.05 | 0.06 | 0.07 | 0.1 | 0.12 |
| | K2 | 0.7 x D | 40 | 55 | 65 | fz | 0.009 | 0.012 | 0.02 | 0.036 | 0.047 | 0.058 | 0.068 | 0.08 | 0.09 |
| S | S1 | 0.25 x D | 20 | 30 | 40 | fz | 0.005 | 0.01 | 0.015 | 0.022 | 0.025 | 0.03 | 0.035 | 0.045 | 0.055 |
| | S2 | 0.25 x D | 20 | 30 | 40 | fz | 0.005 | 0.01 | 0.015 | 0.022 | 0.025 | 0.03 | 0.035 | 0.045 | 0.055 |
| | S3 | 0.25 x D | 20 | 30 | 40 | fz | 0.005 | 0.01 | 0.015 | 0.022 | 0.025 | 0.03 | 0.035 | 0.045 | 0.055 |
| | S4 | 0.3 x D | 30 | 50 | 70 | fz | 0.008 | 0.013 | 0.018 | 0.025 | 0.03 | 0.035 | 0.04 | 0.05 | 0.06 |

上表最适合加工不锈钢，也可用于其他通用加工，以上其他材料加工参数仅供参考。
This serie tools are most suitable for stainless steels, and also versatile for other materials listed above.

推荐切削参数

Recommended Cutting Parameters

US200

不锈钢 Stainless Steels —— 仿形铣 Profiling

| 工件材料 Workpiece Material |  | 切削速度 Cutting Speed (m/min) | | | 刃径 Tool Diameter (mm) | | | | | | | | | | | |
|----------------------------|---|-------------------------------|----------|-----------|----------------------------|-----------|----|-------|-------|-------|-------|-------|-------|-------|------|------|
| | | a_p | a_e | 最小 Min | 较好 Optimum | 最大 Max | mm | 1 | 2 | 4 | 6 | 8 | 10 | 12 | 16 | 20 |
| P | P1 | 0.2 x D | 0.3 x D | 120 | 160 | 200 | fz | 0.007 | 0.015 | 0.032 | 0.052 | 0.07 | 0.085 | 0.105 | 0.13 | 0.16 |
| | P2 | 0.2 x D | 0.3 x D | 120 | 160 | 200 | fz | 0.007 | 0.015 | 0.032 | 0.052 | 0.07 | 0.085 | 0.105 | 0.13 | 0.16 |
| | P3 | 0.2 x D | 0.3 x D | 110 | 140 | 170 | fz | 0.006 | 0.013 | 0.03 | 0.05 | 0.068 | 0.082 | 0.1 | 0.12 | 0.15 |
| | P4 | 0.2 x D | 0.3 x D | 110 | 140 | 170 | fz | 0.006 | 0.013 | 0.03 | 0.05 | 0.068 | 0.082 | 0.1 | 0.12 | 0.15 |
| | P5 | 0.15 x D | 0.15 x D | 100 | 120 | 150 | fz | 0.005 | 0.012 | 0.028 | 0.047 | 0.065 | 0.078 | 0.095 | 0.11 | 0.14 |
| | P6 | 0.15 x D | 0.15 x D | 100 | 120 | 150 | fz | 0.005 | 0.011 | 0.026 | 0.045 | 0.063 | 0.075 | 0.09 | 0.1 | 0.13 |
| M | M1 | 0.2 x D | 0.2 x D | 80 | 110 | 130 | fz | 0.007 | 0.015 | 0.032 | 0.052 | 0.07 | 0.085 | 0.105 | 0.13 | 0.16 |
| | M2 | 0.2 x D | 0.2 x D | 80 | 110 | 130 | fz | 0.007 | 0.015 | 0.032 | 0.052 | 0.07 | 0.085 | 0.105 | 0.13 | 0.16 |
| | M3 | 0.1 x D | 0.1 x D | 70 | 85 | 100 | fz | 0.006 | 0.013 | 0.03 | 0.05 | 0.06 | 0.076 | 0.09 | 0.12 | 0.15 |
| K | K1 | 0.2 x D | 0.2 x D | 110 | 140 | 170 | fz | 0.009 | 0.018 | 0.038 | 0.058 | 0.076 | 0.095 | 0.115 | 0.15 | 0.18 |
| | K2 | 0.2 x D | 0.2 x D | 110 | 140 | 170 | fz | 0.007 | 0.015 | 0.032 | 0.052 | 0.07 | 0.085 | 0.105 | 0.13 | 0.16 |
| S | S1 | 0.15 x D | 0.15 x D | 30 | 40 | 50 | fz | 0.006 | 0.013 | 0.03 | 0.05 | 0.068 | 0.082 | 0.1 | 0.12 | 0.15 |
| | S2 | 0.15 x D | 0.15 x D | 30 | 40 | 50 | fz | 0.006 | 0.013 | 0.03 | 0.05 | 0.068 | 0.082 | 0.1 | 0.12 | 0.15 |
| | S3 | 0.15 x D | 0.15 x D | 30 | 40 | 50 | fz | 0.006 | 0.013 | 0.03 | 0.05 | 0.068 | 0.082 | 0.1 | 0.12 | 0.15 |
| | S4 | 0.3 x D | 0.2 x D | 60 | 70 | 80 | fz | 0.01 | 0.02 | 0.04 | 0.06 | 0.08 | 0.1 | 0.12 | 0.16 | 0.2 |

上表最适合加工不锈钢，也可用于其他通用加工，以上其他材料加工参数仅供参考。
This serie tools are most suitable for stainless steels, and also versatile for other materials listed above.


- 1、请使用刚性较高的机床和刀柄。
Make sure work piece and machine are stable and use a precision holder.
- 2、请根据切削速度、设备刚性等情况可适当调整转速和进给速度。
Please adjust the speed, feed and cutting depth according to actual cutting conditons.
- 3、上表是按照刀具悬长为直径4倍以下时所制订的，如果刀具悬长过长，加工时易产生振动，此时，请适当调整转速，进给速度和切深量。
The milling conditions are for an Endmills where the tool overhang length is less than 4*D(mill dia).
When the tool overhang length is longer, please adjust the speed, feed and cutting depth.

推荐切削参数

Recommended Cutting Parameters

UA100

铝合金 Aluminium Alloy —— 侧铣 Side Milling

| 工件材料 Workpiece Material | |  | | 切削速度 Cutting Speed (m/min) | | | 刃径 Tool Diameter (mm) | | | | | | | | | |
|---|----|---|----------|-------------------------------|---------------|-----------|--------------------------|-------|-------|-------|-------|-------|------|------|------|------|
| | | | | 最小 Min | 较好 Optimum | 最大 Max | mm | 1 | 2 | 4 | 6 | 8 | 10 | 12 | 16 | 20 |
|  | N1 | 1.5 x D | 0.2 x D | 300 | 500 | 700 | fz | 0.02 | 0.03 | 0.055 | 0.065 | 0.075 | 0.1 | 0.14 | 0.2 | 0.25 |
| | N2 | 1.5 x D | 0.2 x D | 300 | 500 | 700 | fz | 0.02 | 0.03 | 0.055 | 0.065 | 0.075 | 0.1 | 0.14 | 0.2 | 0.25 |
| | N3 | 1.5 x D | 0.15 x D | 200 | 350 | 550 | fz | 0.015 | 0.025 | 0.045 | 0.055 | 0.065 | 0.08 | 0.12 | 0.16 | 0.2 |
| | N4 | 1.5 x D | 0.2 x D | 280 | 450 | 650 | fz | 0.018 | 0.028 | 0.05 | 0.06 | 0.07 | 0.09 | 0.13 | 0.18 | 0.22 |


UA100

铝合金 Aluminium Alloy —— 槽铣 Slotting

| 工件材料 Workpiece Material | |  | | 切削速度 Cutting Speed (m/min) | | | 刃径 Tool Diameter (mm) | | | | | | | | | |
|---|----|--|--|-------------------------------|---------------|-----------|--------------------------|-------|-------|-------|-------|-------|-------|-------|------|------|
| | | | | 最小 Min | 较好 Optimum | 最大 Max | mm | 1 | 2 | 4 | 6 | 8 | 10 | 12 | 16 | 20 |
|  | N1 | 0.8 x D | | 180 | 250 | 300 | fz | 0.015 | 0.025 | 0.045 | 0.058 | 0.07 | 0.08 | 0.095 | 0.16 | 0.19 |
| | N2 | 0.8 x D | | 180 | 250 | 300 | fz | 0.015 | 0.025 | 0.045 | 0.058 | 0.07 | 0.08 | 0.095 | 0.16 | 0.19 |
| | N3 | 0.5 x D | | 150 | 200 | 250 | fz | 0.01 | 0.018 | 0.035 | 0.045 | 0.055 | 0.065 | 0.078 | 0.13 | 0.16 |
| | N4 | 0.8 x D | | 160 | 220 | 280 | fz | 0.012 | 0.02 | 0.04 | 0.05 | 0.06 | 0.07 | 0.084 | 0.14 | 0.17 |

UA100

铝合金 Aluminium Alloy —— 仿形铣 Profiling

| 工件材料 Workpiece Material | |  | | 切削速度 Cutting Speed (m/min) | | | 刃径 Tool Diameter (mm) | | | | | | | | | |
|---|----|---|---------|-------------------------------|---------------|-----------|--------------------------|-------|-------|------|------|------|------|------|------|--|
| | | | | 最小 Min | 较好 Optimum | 最大 Max | mm | 1 | 2 | 4 | 6 | 8 | 10 | 12 | 16 | |
|  | N1 | 0.3 x D | 0.3 x D | 320 | 450 | 600 | fz | 0.025 | 0.05 | 0.08 | 0.12 | 0.16 | 0.2 | 0.24 | 0.32 | |
| | N2 | 0.3 x D | 0.3 x D | 320 | 450 | 600 | fz | 0.025 | 0.05 | 0.08 | 0.12 | 0.16 | 0.2 | 0.24 | 0.32 | |
| | N3 | 0.3 x D | 0.3 x D | 250 | 320 | 400 | fz | 0.02 | 0.04 | 0.06 | 0.1 | 0.14 | 0.18 | 0.22 | 0.25 | |
| | N4 | 0.3 x D | 0.3 x D | 300 | 400 | 500 | fz | 0.022 | 0.045 | 0.07 | 0.11 | 0.15 | 0.19 | 0.23 | 0.28 | |

- 1、请使用刚性较高的机床和刀柄。
Make sure work piece and machine are stable and use a precision holder.
- 2、请根据切削速度、设备刚性等情况可适当调整转速和进给速度。
Please adjust the speed, feed and cutting depth according to actual cutting conditons.
- 3、上表是按照刀具悬长为直径4倍以下时所制订的，如果刀具悬长过长，加工时易产生振动，此时，请适当调整转速，进给速度和切深量。
The milling conditions are for an Endmills where the tool overhang length is less than 4*D(mill dia).
When the tool overhang length is longer, please adjust the speed, feed and cutting depth

推荐切削参数

Recommended Cutting Parameters



SG200

石墨 Graphite —— 侧铣 Side Milling

| 工件材料 Workpiece Material | |  | | 切削速度 Cutting Speed (m/min) | | | 刃径 Tool Diameter (mm) | | | | | | | |
|---|----|---|-----------------|-------------------------------|---------------|-----------|--------------------------|------|------|------|------|------|-------|------|
| | | | | 最小 Min | 较好 Optimum | 最大 Max | mm | 1 | 2 | 4 | 6 | 8 | 10 | 12 |
|  | N3 | $1 \times D$ | $0.15 \times D$ | 150 | 200 | 300 | fz | 0.02 | 0.03 | 0.05 | 0.06 | 0.07 | 0.085 | 0.13 |
| | N5 | $1.5 \times D$ | $0.5 \times D$ | 150 | 250 | 400 | fz | 0.03 | 0.05 | 0.07 | 0.09 | 0.11 | 0.15 | 0.18 |


SG200

石墨 Graphite —— 槽铣 Slotting

| 工件材料 Workpiece Material | |  | | 切削速度 Cutting Speed (m/min) | | | 刃径 Tool Diameter (mm) | | | | | | | |
|---|----|---|--|-------------------------------|---------------|-----------|--------------------------|-------|------|-------|-------|-------|------|-------|
| | | | | 最小 Min | 较好 Optimum | 最大 Max | mm | 1 | 2 | 4 | 6 | 8 | 10 | 12 |
|  | N3 | $0.5 \times D$ | | 120 | 180 | 250 | fz | 0.012 | 0.02 | 0.04 | 0.05 | 0.06 | 0.07 | 0.09 |
| | N5 | $0.5 \times D$ | | 120 | 200 | 300 | fz | 0.018 | 0.03 | 0.045 | 0.065 | 0.085 | 0.11 | 0.150 |

SG200

石墨 Graphite —— 仿形铣 Profiling

| 工件材料 Workpiece Material | |  | | 切削速度 Cutting Speed (m/min) | | | 刃径 Tool Diameter (mm) | | | | | | | | |
|---|----|---|----------------|-------------------------------|---------------|-----------|--------------------------|-------|-------|-------|-------|------|------|------|------|
| | | | | 最小 Min | 较好 Optimum | 最大 Max | mm | 0.5 | 1 | 2 | 4 | 6 | 8 | 10 | 12 |
|  | N3 | $0.3 \times D$ | $0.3 \times D$ | 150 | 200 | 300 | fz | 0.008 | 0.018 | 0.032 | 0.045 | 0.06 | 0.08 | 0.11 | 0.13 |
| | N5 | $0.4 \times D$ | $0.5 \times D$ | 150 | 250 | 400 | fz | 0.01 | 0.02 | 0.035 | 0.05 | 0.07 | 0.09 | 0.12 | 0.15 |

1、请使用刚性较高的机床和刀柄。

Make sure work piece and machine are stable and use a precision holder.

2、请根据切削速度、设备刚性等情况可适当调整转速和进给速度。

Please adjust the speed, feed and cutting depth according to actual cutting conditions.

3、上表是按照刀具悬长为直径4倍以下时所制订的，如果刀具悬长过长，加工时易产生振动，此时，请适当调整转速，进给速度和切深量。

The milling conditions are for an Endmills where the tool overhang length is less than 4*D(mill dia).

When the tool overhang length is longer, please adjust the speed, feed and cutting depth.

工件材料表

Workpiece Material Table

| 材料组 ISO Material Group | MC | 工件材料 Workpiece Material | 含量 Carbon Content | 抗拉强度 Tensile Strength N/mm ² | 布氏硬度 Brinell Hardness HB | 洛氏硬度 Rockwell Hardness HRC |
|---|----|---|-------------------------|---|--------------------------------|-------------------------------------|
| P 钢 Steels | P1 | 低碳钢, 长切屑 Low-carbon Steels, Long Chipping. | C<0.25% | <530 | <125 | |
| | P2 | 低碳钢, 短切屑, 易切钢 Low-carbon Steels, Short Chipping, Free-cutting Steels | C<0.25% | <530 | <125 | |
| | P3 | 高碳钢及中碳钢 High-carbon Steels, Medium-carbon Steels. | C>0.25% | >530 | <220 | <25 |
| | P4 | 合金钢, 工具钢 Alloy Steels, Tool Steels. | C>0.25% | 600-850 | <330 | <35 |
| | P5 | 合金钢, 工具钢 Alloy Steels, Tool Steels. | C>0.25% | 850-1400 | 340-450 | 35-48 |
| | P6 | 铁素体不锈钢, 马氏体不锈钢, PH不锈钢 Ferritic Stainless Steels, Martensitic Stainless Steels, PH Stainless Steels. | C=(0-0.4)% | 600-900 | <330 | <35 |
| | P7 | 高强度铁素体不锈钢, 马氏体不锈钢, PH 不锈钢, High-strength Ferritic Stainless Steels, Martensitic Stainless Steels, PH Stainless Steels. | C=(0.1-0.6)% | 900-1350 | 330-450 | 35-48 |
| M 不锈钢 Stainless Steels | M1 | 奥氏体不锈钢, Austenitic Stainless Steels. | C=(0.05-0.15)% | <600 | 130-200 | |
| | M2 | 高强度的奥氏体和铸造不锈钢 High-Strength Austenitic Stainless Steels and Cast Stainless Steels. | C=(0.05-0.15)% | 600-800 | 150-230 | <25 |
| | M3 | 双相不锈钢 Duplex Stainless Steels. | C=(0.05-0.20)% | <800 | 135-275 | <30 |
| K 铸铁 Cast Iron | K1 | 灰铸铁 Grey Cast Iron. | | 125-500 | 120-290 | <32 |
| | K2 | 中等加工难度的合金铸铁, 球墨铸铁 Moderately Difficult Alloy Cast iron, Nodular Cast Iron. | | <600 | 130-260 | <28 |
| | K3 | 难加工的高合金铸铁, 球墨铸铁 Difficult High-alloy Cast Iron, Nodular Cast Iron. | | >600 | 180-350 | <43 |
| N 有色金属 Non-ferrous Materials | N1 | 锻造铝合金 Wrought Aluminium Alloys. | | <520 | 60-90 | |
| | N2 | 铸造铝合金 Cast Aluminium Alloys. | Si<12% | <350 | 70-100 | |
| | N3 | 铸造铝合金 Cast Aluminium Alloys. | Si>12% | 200-320 | 60-120 | |
| | N4 | 铜, 铜合金 Copper, Copper Alloys. | | 200-650 | 60-200 | |
| | N5 | 石墨, 复合材料 Graphite, CFK, CFRP Graphite, Composite Materials. | | 600-1500 | | |
| | N6 | 铝基复合材料(MMCs) Aluminium-based Composite Materials. | GFK, CFK | <700 | <210 | |
| S 耐热合金、钛 合金 Heat-resistant Alloys and Titanium Alloys | S1 | 铁基高温合金 Iron-based Heat-resistant Alloys. | | 500-1200 | 160-260 | 25-48 |
| | S2 | 钴基高温合金 Cobalt-based Heat-resistant Alloys. | | 1000-1450 | 250-450 | 25-48 |
| | S3 | 镍基高温合金 Nickel-based Heat-resistant Alloys. | | 600-1700 | 160-450 | <48 |
| | S4 | 钛及钛合金 Titanium and Titanium Alloys. | | 900-1600 | 300-400 | 33-48 |
| H 高硬度材料 High Hardness Materials | H1 | 淬硬钢 Hardened Steels. | | | | 44-48 |
| | H2 | 淬硬钢 Hardened Steels. | | | | 48-55 |
| | H3 | 淬硬钢 Hardened Steels. | | | | 56-60 |
| | H4 | 淬硬钢 Hardened Steels. | | | | >60 |

Comparison Table of New and Used Endmill Type

| 适用加工材料 Workpiece Material | 刀具系列 Code of Series | 刃部特征 Characteristic of flute | 刀具名称 Description | 旧产品商品号 Used Products Item No. | 新产品型号 New Products Type | 页码 Page |
|------------------------------|---|------------------------------------|--|---|----------------------------|---------------|
| 钢件、铸铁 Steels, Cast Iron | UP100 | 平头 Square End | 2刃短刃平头 2 Flute, Stub Length | UBSS2AA**** | UP100-SS2**** | 25 |
| | | | 2刃平头 2 Flute, Standard Length | UBRS2AA**** | UP100-S2**** | 26 |
| | | | 2刃长刃平头 2 Flute, Long Flute Length | UBLS2AA**** | UP100-SL2**** | 28 |
| | | | 2刃长柄平头 2 Flute, with Long Shank Length | UBHS2AA**** | UP100-SH2**** | 30 |
| | | | 3刃平头 3 Flute, Standard Length | UBRS3AA**** | UP100-S3**** | 31 |
| | | | 4刃平头 4 Flute, Standard Length | UBRS4AA**** | UP100-S4**** | 32 |
| | | | 4刃长刃平头 4 Flute, Long Flute Length | UBLS4AA**** | UP100-SL2**** | 35 |
| | | | 4刃长柄平头 4 Flute, with Long Shank Length | UBHS4AA**** | UP100-SH4**** | 36 |
| | | | 6刃平头 6 Flute, Standard Length | UBRS4AA**** | UP100-S6**** | 37 |
| | | 圆角头 Corner Radius | 2刃圆角头 2 Flute, Corner Radius | UBRR2AA**** | UP100-R2**** | 38 |
| | | | 2刃长柄圆角头 2 Flute Corner Radius, with Long Shank Length | UBHR2AA**** | UP100-RH2**** | 41 |
| | | | 4刃圆角头 4 Flute, Corner Radius | UBRR4AA**** | UP100-R4**** | 43 |
| | | | 4刃长柄圆角头 4 Flute Corner Radius, with Long Shank Length | UBHR4AA**** | UP100-RH4**** | 46 |
| | | 球头 Ballnose | 2刃球头 2 Flute, Ballnose | UBBS2AA**** | UP100-B2**** | 48 |
| | | | 2刃长柄球头 2 Flute Ballnose, with Long Shank Length | UBHS2AA**** | UP100-BH2**** | 50 |
| | | | 4刃球头 4 Flute, Ballnose | UBBS4AA**** | UP100-B4**** | 51 |
| | | UP210 | 平头 Square End | 2刃短刃平头 2 Flute, Stub Length | UP210-SS2**** | 53 |
| | | | | 2刃平头 2 Flute, Standard Length | UP210-S2**** | 54 |
| | 2刃长刃平头 2 Flute, Long Flute Length | | | UP210-SL2**** | 55 | |
| | 3刃平头 3 Flute, Standard Length | | | UP210-S3**** | 56 | |
| | 4刃短刃平头 4 Flute, Stub Length | | | UP210-SS4**** | 57 | |
| | 4刃平头 4 Flute, Standard Length | | | UP210-S4**** | 58 | |
| | 4刃长刃平头 5 Flute, Long Flute Length | | | UP210-SL4**** | 60 | |
| | 4刃长柄平头 4 Flute, with Long Shank Length | | | UP210-SH4**** | 62 | |
| | 圆角头 Corner Radius | | | 2刃圆角头 2 Flute, Corner Radius | UP210-R2**** | 63 |
| | | | 2刃长柄圆角头 2 Flute Corner Radius, with Long Shank Length | UP210-RH2**** | 65 | |
| | | | 4刃圆角头 4 Flute, Corner Radius | UP210-R4**** | 67 | |
| | | | 4刃长柄圆角头 4 Flute Corner Radius, with Long Shank Length | UP210-RH4**** | 69 | |
| | 球头 Ballnose | | 2刃球头 2 Flute, Ballnose | UP210-B2**** | 71 | |
| | | | 2刃长柄球头 2 Flute Ballnose, with Long Shank Length" | UP210-BH2**** | 73 | |
| | | | 4刃球头 4 Flute, Ballnose | UP210-B4**** | 74 | |
| | SP210 | | 平头 Square End | 3刃平头双螺旋 3 Flute, with Variable Helix | SP210-S3**** | 75 |
| | | | | 4刃平头双螺旋(刀尖倒角) 4 Flute, Variable Helix with Chamfer | SP210-C4**** | 76 |
| | | | | 4刃平头双螺旋 4 Flute, with Variable Helix | SP210-S4**** | 78 |
| | | | | 4刃长颈平头双螺旋(刀尖倒角) 4 Flute, Variable Helix with Chamfer and with Reduced Neck | SP210-CN4**** | 79 |
| | | | 圆角头 Corner Radius | 4刃圆角头双螺旋 4 Flutes Corner Radius, with Variable Helix | SP210-R4**** | 80 |
| | UPR100 | | 粗加工 Roughing | 4刃粗加工平头 4 Flute Square End, with Roughing Geometry | UBRD4AA**** | UPR100-S4**** |
| | UPM100 | 微小径深槽加工 Miniature | 2刃长颈平头 2 Flute Square End, Miniature Sizes with Neck | UBMS2NA**** | UPM100-SN2**** | 83 |
| | | | 2刃长颈球头 2 Flute Ballnose, Miniature Sizes with Neck | UBMB2NA**** | UPM100-BN2**** | 84 |

| 适用加工材料 Workpiece Material | 刀具系列 Code of Series | 刃部特征 Characteristic of flute | 刀具名称 Description | 旧产品商品号 Used Products Item No. | 新产品型号 New Products Type | 页码 Page |
|---|--|---------------------------------|---|----------------------------------|----------------------------|----------------------------------|
| 高硬钢 Hardened Steels | SH160 | 平头 Square End | 2刃平头 2 Flute, Standard Length | SH160-S2**** | | 85 |
| | | | 4刃平头 4 Flute, Standard Length | SH160-S4**** | | 86 |
| | | 圆角头 corner Radius | 6刃平头 6 Flute, Standard Length | SH160-S6**** | | 87 |
| | | | 2刃圆角头 2 Flute, Corner Radius | SH160-R2**** | | 88 |
| | | | 4刃圆角头 4 Flute, Corner Radius | SH160-R4**** | | 90 |
| | | | 6刃圆角头 6 Flute, Corner Radius | SH160-R6**** | | 92 |
| | 球头 Ballnose | 2刃球头 2 Flute, Ballnose | SH160-B2**** | | 93 | |
| | | 4刃球头 4 Flute, Ballnose | SH160-B4**** | | 94 | |
| | SHM100 | 微小径深槽加工 Miniature | 2刃长颈平头 2 Flute Square End, Miniature Sizes with Neck | SHM100-SN2**** | | 95 |
| | | | 2刃长颈球头 2 Flute Ballnose, Miniature Sizes with Neck | SHM100-BN2**** | | 97 |
| 不锈钢 Stainless Steels | US200 | 平头 Square End | 2刃平头 2 Flute, Standard Length | USRS2AA**** | US200-S2**** | 99 |
| | | | 4刃短刃平头 4 Flute, Stub Length | USSS3AA**** | US200-SS4**** | 101 |
| | | | 4刃平头 4 Flute, Standard Length | USRS4AA**** | US200-S4**** | 102 |
| | | | 4刃长颈平头 4 Flute, with Neck | USNS5AA**** | US200-SN4**** | 103 |
| | | 圆角头 Corner Radius | 2刃圆角头 2 Flute, Corner Radius | USRR2AA**** | US200-R2**** | 104 |
| | | | 3刃圆角头 3 Flute, Corner Radius | USRR3AA**** | US200-R3**** | 106 |
| | | | 4刃圆角头 4 Flute, Corner Radius | USRR4AA**** | US200-R4**** | 108 |
| | | 球头 Ballnose | 2刃球头 2 Flute, Ballnose | USRB2AA**** | US200-B2**** | 110 |
| | | | 4刃球头 4 Flute, Ballnose | USRB4AA**** | US200-B4**** | 111 |
| | | | 铝合金 Aluminium Alloy | UA100 | 平头 Square End | 2刃平头 2 Flute, Standard Length |
| 2刃长刃平头 2 Flute, Long Flute Length | UALS2AB**** | UA100-SL2**** | | | | 113 |
| 2刃长柄平头 2 Flute, with Long Shank Length | UAHS2AB**** | UA100-SH2**** | | | | 114 |
| 3刃平头 3 Flute, Standard Length | UARS3AB**** | UA100-S3**** | | | | 115 |
| 3刃长刃平头 3 Flute, Long Flute Length | UALS3AB**** | UA100-SL3**** | | | | 116 |
| 3刃长柄平头 3 Flute, with Long Shank Length | UARS3AB**** | UA100-SH3**** | | | | 117 |
| 圆角头 Corner Radius | 2刃圆角头 2 Flute, Corner Radius | UARR2AB**** | | | UA100-R2**** | 118 |
| | 2刃长柄圆角头 2 Flute Corner Radius, with Long Shank Length | UAHR2AB**** | | | UA100-RH2**** | 121 |
| | 3刃圆角头 3 Flute, Corner Radius | UARR3AB**** | | | UA100-R3**** | 123 |
| | 3刃长柄圆角头 3 Flute Corner Radius, with Long Shank Length | UAHR3AB**** | | | UA100-RH3**** | 126 |
| 球头 Ballnose | 2刃球头 2 Flute, Ballnose | UARB2AB**** | UA100-B2**** | 128 | | |
| 石墨 Graphite | SG200 | 平头 Square End | 2刃平头 2 Flute, Standard Length | SGRS2CD**** | SG200-S2**** | 129 |
| | | | 4刃平头 4 Flute, Standard Length | SGRS4CD**** | SG200-S4**** | 130 |
| | | 圆角头 Corner Radius | 2刃圆角头 2 Flute, Corner Radius | SGRR2CD**** | SG200-R2**** | 131 |
| | | | 4刃圆角头 4 Flute, Corner Radius | SGRR4CD**** | SG200-R4**** | 132 |
| | | 球头 Ballnose | 2刃球头 2 Flute, Ballnose | SGRB2CD**** | SG200-B2**** | 133 |



JIANGXI YATECH MATERIALS CO., LTD.

**Address: Room 7h, 7th Floor, Building 1, Yida Blue
Bay Business Center, Jiujiang City, Jiangxi
Province, China**

E-mail: yatech@yatechmaterials.com