HANDERK

常州市鹏锦精密工具有限公司
Changzhou Handerk Precision Tools Co., Ltd.

# 2023 CATALOG

## Contact


Whatsapp: +86 13815069640
Email: sherry@hdktool.com

Wechat
微信: +86 13815069640

# 公司简介
# COMPANY PROFILE


常州市鹏锦精密工具有限公司，地处中国工具名镇——西夏墅，环境优雅，交通便利。公司创立于2000年，专业生产CNC切削工具包括合金铣刀、合金钻头、刀片刀粒等，有较完善的产品研发、制造、销售能力，率先通过了ISO9001：2018国际质量管理体系认证。

截止目前，公司远营总资产2亿多人民币，三个分厂总面积达6000平，员工120余人。160台国产及进口设备，其中包括SAGE、WALTER、ANCA，分别生产制造不同的产品，每种产品规格库存上千。

秉承“产品和服务是企业生命力”的信念，HANDERK不断了解客户和市场需求，加强团队技术建设，提高制造技术实力，改善生产制造工艺，积极研发新产品，以提升我们的专业度和创新能力。除了提供高质量的产品和技术解决方案，我们希望为合作伙伴们提供更多业务帮助，实现共同发展、合作共赢。

Changzhou HANDERK Precision Tools Co., Ltd. is located in Xixiashu, a famous tool town in China, with elegant environment and convenient transportation. Founded in 2000, the company specializes in the production of CNC cutting tools including Carbide End Mills, Carbide Drills, Carbide Inserts, etc. We have relatively complete product development, manufacturing, and sales capabilities, and has taken the lead in passing the ISO9001: 2018 international quality management system certification.

Up to now, HANDERK has a total asset of more than 200 million RMB, three branch factories with a total area of 6,000 square meters and over 120 employees. 160 sets of domestic and imported equipment, including SAGE, WALTER, and ANCA, manufacture different products respectively, with thousands of stocks for each product specification.

Adhering to the belief that "Products and services are the vitality of the enterprise", HANDERK is keeping to understand the needs of customers and the market, strengthens the technical construction of the team, improves the strength of manufacturing technology, production and manufacturing process, and actively develops new products to enhance our professionalism and innovation capabilities. In addition to providing high-quality products and technical solutions, we hope to provide more business assistance to our partners to achieve common development and win-win cooperation.


# COMPANY STRENGTH

## 1.公司主要产品 / Main Products

硬质合金圆棒，钨钢平刀、钨钢球刀、钨钢圆鼻刀，铝用平刀，铝用球刀、铝用圆鼻刀，倒角刀，定点钻，合金钻头，深沟刀，粗皮刀，非标订做，常用规格备有大量现货，并可根据客户要求定制各类非标合金产品。

产品广泛应用于: 航空航天业、汽车、摩托车行业、电器电子、重大机械制造行业、广告家具行业、等等 .....

Carbide rod, Carbide Square End Mill, Ball Nose End Mill, Coner Radius End Mill, Square/Ball Nose/Corner Radius End Mill for Aluminum, Chamfer Tool, Sport Drill, Carbide Drill Bit, Long Neck End Mill, Roughing End Mill, non-standard products, common specifications are available in large quantities, and various non-standard products can be customized according to customer requirements.
Products are widely used in: aerospace industry, automobile, motorcycle industry, electrical appliances and electronics, major machinery manufacturing industry, advertising furniture industry, etc.....

## 2.内销部分 / Domestic Sales

全国各地区线下有经销，线上淘宝天猫等7家店铺，主要销售地区为浙江、广东、河北等。

There are 7 stores including offline distribution, online Taobao and Tmall in all regions of the country. The main sales areas are Zhejiang, Guangdong, Hebei, etc.

## 3.出口部分 / Export Section

全球80多个国家，划分主要有: 俄罗斯、印尼、印度、美国、墨西哥、越南、马来西亚、泰国等地区。

There are more than 80 countries in the world, mainly divided into: Russia, Indonesia, India, the United States, Mexico, Vietnam, Malaysia, Thailand and other regions.



# 各种各样的整体立铣刀
# ALL KINDS OF SOLID CARBIDE END MILLS

- **通用系列 General Series**
  兼具高灵活性和高经济且品种规格齐全的高性能产品。
  High performance products with high flexibility，high economy and complete specifications.
- **专用系列 Special Series**
  满足特定需要并且具有高效，可靠和耐用特性的独特的优质刀具。
  A unique quality tool that meets specific needs and has high efficiency, reliability, and durability.
- **定制解决方案 Customizad Solutions**
  特别设计以满足高性能需求的定制产品和高级非标产品。
  Specially designed to meet high performance requirements of custom products and advanced non-standard products.

## HRC45-普通钢，铸铁材料的加工系列

**Suitable for ordinary steel,cast iron material processing series**

非常适合普通钢，铸铁材料的加工
The special tool design is very suitable for ordinary steel, cast iron material processing

切削参数
Cutting Parameters：P9-16

## HRC55-各种钢材的通用加工系列

**Suitable for various steels universal processing series**

大的螺旋角和特殊刃型设计，非常适合各种钢材的通用加工
The design of large helix angle and special edge,
very suitable for all kinds of steel general processing

切削参数
Cutting Parameters：P20-27

## HRC65-不锈钢，铸铁材料的高硬效加工系列

**Suitable for stainless steel,cast iron high-efficiency processing series**

非常适合不锈钢，铸铁材料的加工
The special tool design is very suitable for stainless steel，cast iron material processing

切削参数
Cutting Parameters：P30-35

## ST-H系列-硬钢，模具钢，热处理钢材料的高速高效加工

**Suitable for hard steel, mold steel, and heat-treated steel material high-speed and efficient processing**

特殊的刀具设计，非常适合硬钢，模具钢，热处理材料的高效高速加工
The special tool design is very suitable for high-efficiency and high-speed cutting of hard steel, mold steel, and heat-treated material processing

切削参数
Cutting Parameters：P38-41

## ST-U系列-不锈钢，钛合金，模具钢材料的高速高效加工

**Suitable for stainless steel, titanium alloy, and mold steel material high-speed and efficient processing**

非常适合不锈钢, 钛合金, 模具钢材料的加工
The special tool design is very suitable for processing stainless steel, titanium alloy, and mold steel materials

切削参数
Cutting Parameters：P44-45

## AL-超亮铝通用加工系列

**Super bright aluminum processing series**

适用于铝合金材料的高效超亮加工
Applicable to aluminum alloy material efficient ultra-bright processing

切削参数
Cutting Parameters：P48-55

## CPD-钢，铸铁材料的粗加工系列

**Rough processing for steel and cast iron material series**

非常适合硬钢，铸铁材料的粗加工
Suitable for roughing of hard steel and cast iron

切削参数
Cutting Parameters：P59-61

## SGXJ-高精度深沟加工系列

**Suitable for High-precision micro diameter pocket machining series**

XJ
微小径平头 Micropath flat head

SG
深沟平头 Deep groove flat head

XJ
微小径球头 Micropath ball head

SG
深沟球刀头 Deep groove ball head

切削参数
Cutting Parameters：P64-67

## DJD-钢，铸铁材料的加工系列

**Suitable for steel and cast iron material processing series**

非常适合钢，铸铁材料的加工 Suitable for steel and cast iron

切削参数
Cutting Parameters：P69-71

## DXZ-钢，铸铁材料的加工系列

**Suitable for steel and cast iron material processing seriestt**

非常适合钢，铸铁材料的加工 Suitable for steel and cast iron

切削参数
Cutting Parameters：P73-75

## NRD-钢，铸铁材料的加工系列

**Suitable for steel and cast iron material processing series**

非常适合钢，铸铁材料的加工 Suitable for steel and cast iron

切削参数
Cutting Parameters：P77-78

## TXD-各种钢材的通用加工系列

**Suitable for various steels universal processing series**

非常适合各种钢材的通用加工
The special tool design is very suitable for various steels universal processing

切削参数
Cutting Parameters: P80-81

## YWXD-各种钢材的通用加工系列

**Suitable for various steels universal processing series**

非常适合各种钢材的通用加工
The special tool design is very suitable for various steels universal processing

切削参数
Cutting Parameters: P82-83

## LWXD-各种钢材的通用加工系列

**Suitable for various steels universal processing series**

非常适合各种钢材的通用加工
The special tool design is very suitable for various steels universal processing

切削参数
Cutting Parameters: P85-86

## ZT-各种钢材的通用加工系列

**Suitable for various steels universal processing series**

非常适合各种钢材的通用加工
The special tool design is very suitable for various steels universal processing

切削参数
Cutting Parameters: P88-93

# 图标类型和标识
# Icon Type And Identification

## 被加工材料 Processed Material

| | | | |
|---|---|---|---|
| P | 钢和高合金钢 | Steel, high-alloyed | P |
| M | 不锈钢 | Stainless steel | M |
| K | 灰铸铁,可锻铸铁和球墨铸铁 | Grey cast iron, spheroidal graphite iron/malleable cast iron | K |
| N | 铝合金及其它有色金属 | Aluminium and other non-ferrous metals | N |
| S | 特殊合金,镍基合金以及钛合金 | Special, super and titanium alloys | S |
| H | 硬化钢及硬化铸铁 | Hardened steel and chilled cast iron | H |

## 图标 Icons

**切削方式 Cutting Wethod**

侧铣 Side Milling | 槽铣 Slot Milling | 仿形 Profiling | 台阶 Step Milling | 粗加工 Roughing | 螺旋 Helix | 钻铣 Drilling

**涂层 Coating**

AlTiN | TiSiN | NACO | AlCrSiN | AL

**系列 Series**

HRC45 | HRC55 | HRC65 | 700 | 750 | AL | CPD | SGXJ | DJXD | DXZ | NRD | TXD | YWXD | LWXD | YMXD | ZT

**柄部 Shank**


ISO 标准柄部 ISO Standard Shank

**刃长 Blade Length**

短 Short | 标准 Standard | 长 Long

**刃数 No. of Flutes**


2刃 2Flute | 3刃 3Flute | 4刃 4Flute

**类型 Type**

2刃平头 2Flute，Square | 3刃球头 3Flute，Square | 4刃球头 4Flute，Square

2刃球头 2Flute，Ballnose

2刃圆弧 2Flute，Corner-Radius | 4刃圆弧 4Flute，Corner-Radius

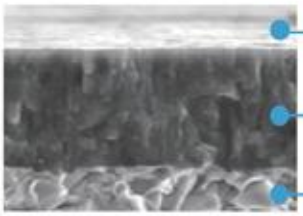
**螺旋角 Helix**

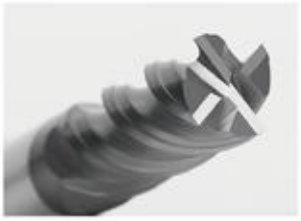

**底刃形状 Endteeth Type**


平头 Square | 圆角头 Corner-R | 球头 Ballnose | 刀尖倒角 Chamfer

## 新型涂层
## NEW COATING

新开发的NACO4涂层具有更高的耐磨性。
涂层的平滑处理降低了切削阻力并显着改善了排屑。
这种下一代涂层在加工难切削材料时提供了更长的刀具寿命和更高的效率。
Newly-developed NACO4 coating with improved wear resistance.
The smoothing treatment of the coating layer reduces the cutting resistance and improves chip discharge significantly. This next-generation coating offers longer tool life and higher efficiency in machining difficult-to-cut materials.



独创的表面处理技术
光滑的表面和锋利的边缘得到了很好的平衡，可以顺畅地排屑并降低切削阻力，从而提高加工效率和刀具寿命。
Unique surface treatment technology
A good balance of smooth surfaces and sharp edges enables smooth chip evacuation and reduced cutting resistance, increasing machining efficiency and tool life.

## 彩色涂层
## DLC COATING

硬度与 CVD 金刚石涂层相似，具有高附着强度。
Hardness similar to that of CVD diamond coating achieved with high adhesion strength.

## 古铜纳米涂层
## ALTIN+TISIN COATING

该涂层耐高温性能良好，具有低磨擦系数等特点，在高速钢或硬质合金钻头上涂层，适用于深孔钻铣加工
The coating has good high temperature resistance and low friction coefficient. It is suitable for coating on high-speed steel or carbide drill bits, and is suitable for deep hole drilling and milling.

## 蓝纳米涂层
## TIALSIN COATING

该涂层在钻铣铸铁或普通钢性能良好，减少粘刀现象。在高速钢或硬质合金钻头上涂层，适用于深孔钻铣加工
The coating has good performance in drilling and milling cast iron or ordinary steel, reducing the phenomenon of sticking. Suitable for coating on HSS or carbide drills; also suitable for deep hole drilling and milling

## 黑色涂层
## ALTIN COATING

该涂层在切削硬度介于45HRC与50HRC等难加工材料上能发挥出优秀的性能；特别适用于高速切削加工
The coating can exert excellent performance on difficult-to-machine materials such as cutting hardness between 45HRC and 50HRC; especially suitable for high-speed cutting

# PRODUCT 产品应用
# APPLICATIONS

| | | 材料分组 Material Grouping | 通用加工 General Machining | 粗加工 Roughing | 高效加工 Efficient Machining | 微加工 Micro Machining |
|---|---|---|---|---|---|---|
| P | 1 2 3 4 | 碳钢，合金钢（<45HRC）<br>Carbon Steel，Alloy Steel（<45HRC） | HRC55<br>HRC65<br>ST-H<br>ST-U | CPD | ST-H<br>ST-U | SGXJ |
| | 5 | 合金钢（HRC50）<br>Alloy Steel（HRC50） | | | | |
| | 6 | PH马铁素体/马氏体钢（<45HRC）<br>PH Feritic, Martensitic Steel（<45HRC） | | | | |
| M | 1 2 3 | 不锈钢<br>Stainless Steel | HRC65 | | ST-H<br>ST-U | |
| K | 1 2 | 灰铸铁，球墨铸铁（<32HRC）<br>Grey Cast Iron（<32HRC） | HRC45<br>HRC55<br>HRC65<br>ST-H<br>ST-U | CPD | ST-H<br>ST-U | SGXJ |
| | 3 | 高合金铸铁（35~45HRC）<br>High-Alloy Cast Iron（35~45HRC） | | | | |
| N | 1 2 | 变形铝合金，锻造铝合金（Si≤12%）<br>Wrought Aluminium Alloys/Cast Aluminium Allopys（Si≤12%） | AL | | AL | AL |
| | 3 | 铸造铝合金（Si>12%）<br>Cast Aluminium Allopys（Si>12%） | | | | |
| | 4 | 铜合金（<200HB）<br>Copper Allopys（<200HB） | | | | |
| S | 1 2 3 | 高温合金（<450HB）<br>Heat-Resistant Alloys（<450HB） | | | ST-H<br>ST-U | |
| | 4 | 钛合金（<400HB）<br>Titanium Alloys（<400HB） | | | | |
| H | 1 | 高硬钢（63HRC）<br>High hardness steel（63HRC） | | | ST-H | |
| | 2 | 超高硬（65HRC）<br>Superhard Material（65HRC） | | | ST-U | |

# HRC45加工立铣刀

普通钢，铸铁材料的加工
Suitable for processing ordinary steel and cast iron materials

P K

适用于低合金钢，45号钢等材料的加工
特殊的刃口的断屑槽处理
采用高性能AITIN涂层，耐高温，耐磨损

Suitable for processing low alloy steel, No. 45 steel, ect.
Chipbreaker treatment for special cutting edge
High-performance AITIN coating, high temperature resistance, wear resistance

刃口耐磨性和刀具刚性提升
Improved edge wear resistance and tool rigidity

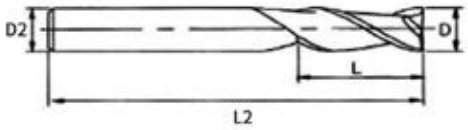
全球合作伙伴-WORLDWIDE RELIABLE PARTNER

## Carbide 2Flutes Square End Mill（Standard）

PD450 AlTiN HRC 45 S

| 单位Unit | (mm) | |
|---|---|---|
| D | D≤12 | D>12 |
| 公差Tol | 0 | 0 |
| | -0.015 | -0.02 |

P ●
M
K ●
N
S
H




| Diameter D | Cutting Length L | Shank D2 | Overall Length L2 | Ordering Code |
|---|---|---|---|---|
| mm | mm | mm | mm | |
| 1 | 3 | 4 | 50 | PD450-2F-01030450 |
| 1.5 | 5 | 4 | 50 | PD450-2F-015050450 |
| 2 | 6 | 4 | 50 | PD450-2F-02060450 |
| 2.5 | 8 | 4 | 50 | PD450-2F-025080450 |
| 3 | 9 | 3 | 50 | PD450-2F-03090350 |
| 3 | 9 | 4 | 50 | PD450-2F-03090450 |
| 3.5 | 11 | 4 | 50 | PD450-2F-035110450 |
| 4 | 10 | 4 | 50 | PD450-2F-04120450 |
| 5 | 13 | 5 | 50 | PD450-2F-05130450 |
| 5 | 13 | 6 | 50 | PD450-2F-05130650 |
| 6 | 15 | 6 | 50 | PD450-2F-06150650 |
| 7 | 20 | 8 | 60 | PD450-2F-07200860 |
| 8 | 20 | 8 | 60 | PD450-2F-08200860 |
| 9 | 25 | 10 | 75 | PD450-2F-09251075 |
| 10 | 25 | 10 | 75 | PD450-2F-10251075 |
| 11 | 25 | 12 | 75 | PD450-2F-11251275 |
| 12 | 30 | 12 | 75 | PD450-2F-12301275 |
| 14 | 45 | 14 | 100 | PD450-2F-144514100 |
| 15 | 45 | 16 | 100 | PD450-2F-154516100 |
| 16 | 45 | 16 | 100 | PD450-2F-164516100 |
| 18 | 45 | 18 | 100 | PD450-2F-184518100 |
| 20 | 45 | 20 | 100 | PD450-2F-204520100 |

| ISO | 被加工材料 Workpiece Material | 切削量（mm） Depth of cut | Vc m/min | | 刃径 Tool Diameter（mm） 3 | 4 | 6 | 8 | 10 | 12 | 16 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 碳钢合金（<45HRC） Carbon steel alloy steel | ap≤1.5D ap≤0.15D | 180 | 转速 rote speed（min-1） 进给转速 feed velocity（mm/min） | 19110 1070 | 14330 1030 | 9550 920 | 7170 930 | 5730 920 | 4780 860 | 3580 860 | 2870 860 |
| | 合金钢（50HRC） Alloy Steel | ap≤1D ap≤0.12D | 130 | 转速 rote speed（min-1） 进给转速 feed velocity（mm/min） | 13800 610 | 10350 580 | 6900 550 | 5180 620 | 4140 560 | 3450 500 | 2590 410 | 2070 370 |
| K | 灰铸铜，球墨铸铁（<32HRC） Gry cast iron，nodular cast iron | ap≤1.5D ap≤0.15D | 160 | 转速 rote speed（min-1） 进给转速 feed velocity（mm/min） | 16990 850 | 12740 820 | 8490 820 | 6370 750 | 5100 700 | 4250 680 | 3190 610 | 2550 560 |
| | 高合金铸铁（35-45HRC） High alloy cast iron | ap≤1D ap≤0.12D | 140 | 转速 rote speed（min-1） 进给转速 feed velocity（mm/min） | 14860 650 | 11150 670 | 7430 670 | 5570 620 | 4460 580 | 3720 560 | 2790 500 | 2230 460 |

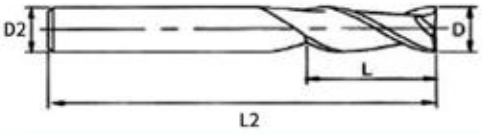
上表是侧铣加工的标准值，刀具切槽时，转速要以上表格的50%~70%，进给速度要以40%~60%为标准值。
Above table is the standard cutting data for side milling maching, if for groove cutting , the VC should reach 50%~70% and the feed should reach 40%~60% based on the table.

# Carbide 2Flutes Square End Mill（Extra Long）

PD450 | AlTiN | HRC 45 | S

| 单位Unit | (mm) | |
|---|---|---|
| D | D≤12 | D>12 |
| 公差Tol | 0 | 0 |
| | -0.015 | -0.02 |

P ●
M
K ●
N
S
H




| Diameter D | Cutting Length L | Shank D2 | Overall Length L2 | Ordering Code |
|---|---|---|---|---|
| mm | mm | mm | mm | |
| 3 | 12 | 3 | 75 | PD450-2F-03120375 |
| 4 | 15 | 4 | 75 | PD450-2F-04160475 |
| 5 | 18 | 5 | 75 | PD450-2F-05180575 |
| 6 | 25 | 6 | 75 | PD450-2F-06240675 |
| 8 | 25 | 8 | 75 | PD450-2F-08250875 |
| 3 | 12 | 3 | 100 | PD450-2F-031203100 |
| 4 | 20 | 4 | 100 | PD450-2F-042004100 |
| 5 | 30 | 5 | 100 | PD450-2F-053005100 |
| 6 | 30 | 6 | 100 | PD450-2F-063006100 |
| 8 | 35 | 8 | 100 | PD450-2F-083508100 |
| 10 | 40 | 10 | 100 | PD450-2F-104010100 |
| 12 | 45 | 12 | 100 | PD450-2F-124512100 |
| 6 | 45 | 6 | 150 | PD450-2F-064506150 |
| 8 | 50 | 8 | 150 | PD450-2F-085008150 |
| 10 | 55 | 10 | 150 | PD450-2F-105510150 |
| 12 | 55 | 12 | 150 | PD450-2F-125512150 |
| 14 | 60 | 14 | 150 | PD450-2F-147014150 |
| 16 | 70 | 16 | 150 | PD450-2F-168016150 |
| 18 | 70 | 18 | 150 | PD450-2F-188018150 |
| 20 | 70 | 20 | 150 | PD450-2F-208020150 |

| ISO | 被加工材料 Workpiece Material | 切削量（mm） Depth of cut | Vc m/min | | 刃径 Tool Diameter（mm） 3 | 4 | 6 | 8 | 10 | 12 | 16 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 碳钢合金（<45HRC） Carbon steel alloy steel | ap≤1.5D ap≤0.15D | 180 | 转速 rote speed（min-1） 进给转速 feed velocity（mm/min） | 19110 1070 | 14330 1030 | 9550 920 | 7170 930 | 5730 920 | 4780 860 | 3580 860 | 2870 860 |
| | 合金钢（50HRC） Alloy Steel | ap≤1D ap≤0.12D | 130 | 转速 rote speed（min-1） 进给转速 feed velocity（mm/min） | 13800 610 | 10350 580 | 6900 550 | 5180 620 | 4140 560 | 3450 500 | 2590 410 | 2070 370 |
| K | 灰铸铁，球墨铸铁（<32HRC） Gry cast iron，nodular cast iron | ap≤1.5D ap≤0.15D | 160 | 转速 rote speed（min-1） 进给转速 feed velocity（mm/min） | 16990 850 | 12740 820 | 8490 820 | 6370 750 | 5100 700 | 4250 680 | 3190 610 | 2550 560 |
| | 高合金铸铁（35-45HRC） High alloy cast iron | ap≤1D ap≤0.12D | 140 | 转速 rote speed（min-1） 进给转速 feed velocity（mm/min） | 14860 650 | 11150 670 | 7430 670 | 5570 620 | 4460 580 | 3720 560 | 2790 500 | 2230 460 |

上表是侧铣加工的标准值，刀具切槽时，转速要以上表格的50%~70%，进给速度要以40%~60%为标准值。

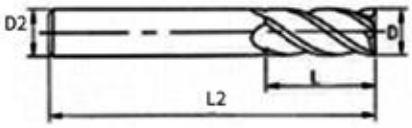
Above table is the standard cutting data for side milling maching, if for groove cutting , the VC should reach 50%~70% and the feed should reach 40%~60% based on the table.

# Carbide 4Flutes Square End Mill（Standard）

PD450 AlTiN HRC 45 S

| 单位Unit | (mm) | |
|---|---|---|
| D | D≤12 | D>12 |
| 公差Tol | 0 | 0 |
| | -0.015 | -0.02 |

P ●
M
K ●
N
S
H




| Diameter D | Cutting Length L | Shank D2 | Overall Length L2 | Ordering Code |
|---|---|---|---|---|
| mm | mm | mm | mm | |
| 1 | 3 | 4 | 50 | PD450-4F-01030450 |
| 1.5 | 5 | 4 | 50 | PD450-4F-015050450 |
| 2 | 6 | 4 | 50 | PD450-4F-02060450 |
| 2.5 | 8 | 4 | 50 | PD450-4F-025080450 |
| 3 | 9 | 3 | 50 | PD450-4F-03090350 |
| 3 | 9 | 4 | 50 | PD450-4F-03090450 |
| 3.5 | 11 | 4 | 50 | PD450-4F-035110450 |
| 4 | 12 | 4 | 50 | PD450-4F-04120450 |
| 5 | 13 | 5 | 50 | PD450-4F-05130550 |
| 5 | 13 | 6 | 50 | PD450-4F-05130650 |
| 6 | 15 | 6 | 50 | PD450-4F-06150650 |
| 7 | 20 | 8 | 60 | PD450-4F-07200860 |
| 8 | 20 | 8 | 60 | PD450-4F-08200860 |
| 8 | 24 | 8 | 60 | PD450-4F-08240860 |
| 9 | 25 | 10 | 75 | PD450-4F-09251075 |
| 10 | 25 | 10 | 75 | PD450-4F-10251075 |
| 10 | 30 | 10 | 75 | PD450-4F-10301075 |
| 11 | 30 | 12 | 75 | PD450-4F-11301275 |
| 12 | 30 | 12 | 75 | PD450-4F-12301275 |
| 12 | 35 | 12 | 75 | PD450-4F-12351275 |
| 13 | 45 | 14 | 100 | PD450-4F-134514100 |
| 14 | 45 | 14 | 100 | PD450-4F-144514100 |
| 15 | 45 | 16 | 100 | PD450-4F-154516100 |
| 16 | 45 | 16 | 100 | PD450-4F-164516100 |
| 18 | 45 | 18 | 100 | PD450-4F-184518100 |
| 20 | 45 | 20 | 100 | PD450-4F-204520100 |

| ISO | 被加工材料 Workpiece Material | 切削量（mm） Depth of cut | Vc m/min | | 刃径 Tool Diameter（mm） 3 | 4 | 6 | 8 | 10 | 12 | 16 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 碳钢合金（<45HRC） Carbon steel alloy steel | ap≤1.5D ap≤0.15D | 180 | 转速 rote speed（min-1） 进给转速 feed velocity（mm/min） | 19110 1070 | 14330 1030 | 9550 920 | 7170 930 | 5730 920 | 4780 860 | 3580 860 | 2870 860 |
| | 合金钢（50HRC） Alloy Steel | ap≤1D ap≤0.12D | 130 | 转速 rote speed（min-1） 进给转速 feed velocity（mm/min） | 13800 610 | 10350 580 | 6900 550 | 5180 620 | 4140 560 | 3450 500 | 2590 410 | 2070 370 |
| K | 灰铸铜，球墨铸铁（<32HRC） Gry cast iron，nodular cast iron | ap≤1.5D ap≤0.15D | 160 | 转速 rote speed（min-1） 进给转速 feed velocity（mm/min） | 16990 850 | 12740 820 | 8490 820 | 6370 750 | 5100 700 | 4250 680 | 3190 610 | 2550 560 |
| | 高合金铸铁（35-45HRC） High alloy cast iron | ap≤1D ap≤0.12D | 140 | 转速 rote speed（min-1） 进给转速 feed velocity（mm/min） | 14860 650 | 11150 670 | 7430 670 | 5570 620 | 4460 580 | 3720 560 | 2790 500 | 2230 460 |

上表是侧铣加工的标准值，刀具切槽时，转速要以上表格的50%~70%，进给速度要以40%~60%为标准值。

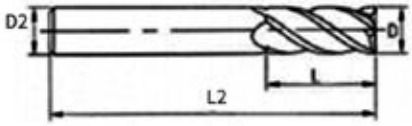
Above table is the standard cutting data for side milling maching, if for groove cutting , the VC should reach 50%~70% and the feed should reach 40%~60% based on the table.

# Carbide 4Flutes Square End Mill（Extra Long）

PD450 | AlTiN | HRC 45 | S

| 单位Unit | (mm) | |
|---|---|---|
| D | D≤12 | D>12 |
| 公差Tol | 0 | 0 |
| | -0.015 | -0.02 |

P ●
M
K ●
N
S
H




| Diameter D | Cutting Length L | Shank D2 | Overall Length L2 | Ordering Code |
|---|---|---|---|---|
| mm | mm | mm | mm | |
| 3 | 12 | 3 | 75 | PD450-4F-03120375 |
| 3.5 | 11 | 4 | 75 | PD450-4F-035110475 |
| 4 | 16 | 4 | 75 | PD450-4F-04160475 |
| 5 | 18 | 5 | 75 | PD450-4F-05180575 |
| 6 | 24 | 6 | 75 | PD450-4F-06240675 |
| 8 | 25 | 8 | 75 | PD450-4F-08250875 |
| 3 | 12 | 3 | 100 | PD450-4F-031203100 |
| 4 | 20 | 4 | 100 | PD450-4F-042004100 |
| 5 | 30 | 5 | 100 | PD450-4F-053005100 |
| 6 | 30 | 6 | 100 | PD450-4F-063006100 |
| 8 | 35 | 8 | 100 | PD450-4F-083508100 |
| 10 | 40 | 10 | 100 | PD450-4F-104010100 |
| 10 | 50 | 10 | 100 | PD450-4F-105010100 |
| 12 | 45 | 12 | 100 | PD450-4F-124512100 |
| 12 | 50 | 12 | 100 | PD450-4F-125012100 |
| 6 | 45 | 6 | 150 | PD450-4F-064506150 |
| 8 | 50 | 8 | 150 | PD450-4F-085008150 |
| 10 | 55 | 10 | 150 | PD450-4F-105510150 |
| 12 | 55 | 12 | 150 | PD450-4F-125512150 |
| 14 | 70 | 14 | 150 | PD450-4F-147014150 |
| 16 | 80 | 16 | 150 | PD450-4F-168016150 |
| 18 | 80 | 18 | 150 | PD450-4F-188018150 |
| 20 | 80 | 20 | 150 | PD450-4F-208020150 |
| 6 | 50 | 6 | 200 | PD450-4F-065006200 |
| 8 | 60 | 8 | 200 | PD450-4F-086008200 |
| 10 | 65 | 10 | 200 | PD450-4F-106510200 |
| 12 | 70 | 12 | 200 | PD450-4F-127012200 |
| 14 | 80 | 14 | 200 | PD450-4F-148014200 |
| 16 | 85 | 16 | 200 | PD450-4F-168516200 |
| 20 | 90 | 20 | 200 | PD450-4F-209020200 |

| ISO | 被加工材料 Workpiece Material | 切削量（mm） Depth of cut | Vc m/min | | 刃径 Tool Diameter（mm） 3 | 4 | 6 | 8 | 10 | 12 | 16 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 碳钢合金（<45HRC） Carbon steel alloy steel | ap≤1.5D ap≤0.15D | 180 | 转速 rote speed（min-1） 进给转速 feed velocity（mm/min） | 19110 1070 | 14330 1030 | 9550 920 | 7170 930 | 5730 920 | 4780 860 | 3580 860 | 2870 860 |
| | 合金钢（50HRC） Alloy Steel | ap≤1D ap≤0.12D | 130 | 转速 rote speed（min-1） 进给转速 feed velocity（mm/min） | 13800 610 | 10350 580 | 6900 550 | 5180 620 | 4140 560 | 3450 500 | 2590 410 | 2070 370 |
| K | 灰铸铜，球墨铸铁（<32HRC） Gry cast iron，nodular cast iron | ap≤1.5D ap≤0.15D | 160 | 转速 rote speed（min-1） 进给转速 feed velocity（mm/min） | 16990 850 | 12740 820 | 8490 820 | 6370 750 | 5100 700 | 4250 680 | 3190 610 | 2550 560 |
| | 高合金铸铁（35-45HRC） High alloy cast iron | ap≤1D ap≤0.12D | 140 | 转速 rote speed（min-1） 进给转速 feed velocity（mm/min） | 14860 650 | 11150 670 | 7430 670 | 5570 620 | 4460 580 | 3720 560 | 2790 500 | 2230 460 |

上表是侧铣加工的标准值，刀具切槽时，转速要以上表格的50%~70%，进给速度要以40%~60%为标准值。

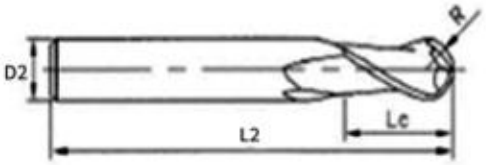
Above table is the standard cutting data for side milling maching, if for groove cutting , the VC should reach 50%~70% and the feed should reach 40%~60% based on the table.

# Carbide Ball Nose End Mill（Standard）

QD450 | AlTiN | HRC 45 | B

| 单位Unit | (mm) | | |
|---|---|---|---|
| R | R≤1.5 | 1.5<R<3 | R≥3 |
| 公差Tol | 0 -0.015 | 0 -0.015 | 0 -0.02 |

| | |
|---|---|
| P | ● |
| M | |
| K | ● |
| N | |
| S | |
| H | |




| Cutting Length L | Radius R | Shank D2 | Overall Length L2 | Ordering Code |
|---|---|---|---|---|
| mm | mm | mm | mm | |
| 2 | 0.5 | 4 | 50 | QD450-2F-01020450 |
| 3 | 0.75 | 4 | 50 | QD450-2F-015030450 |
| 4 | 1 | 4 | 50 | QD450-2F-02040450 |
| 5 | 1.25 | 4 | 50 | QD450-2F-025050450 |
| 6 | 1.5 | 3 | 50 | QD450-2F-03060350 |
| 6 | 1.5 | 4 | 50 | QD450-2F-03060450 |
| 7 | 1.75 | 4 | 50 | QD450-2F-035070450 |
| 8 | 2 | 4 | 50 | QD450-2F-04080450 |
| 10 | 2.5 | 5 | 50 | QD450-2F-05100550 |
| 10 | 2.5 | 6 | 50 | QD450-2F-05100650 |
| 12 | 3 | 6 | 50 | QD450-2F-06120650 |
| 14 | 3.5 | 8 | 60 | QD450-2F-07120860 |
| 16 | 4 | 8 | 60 | QD450-2F-08160860 |
| 20 | 5 | 10 | 75 | QD450-2F-10201075 |
| 24 | 6 | 12 | 75 | QD450-2F-12241275 |
| 28 | 7 | 14 | 100 | QD450-2F-142814100 |
| 32 | 8 | 16 | 100 | QD450-2F-163216100 |
| 36 | 9 | 18 | 100 | QD450-2F-183618100 |
| 40 | 10 | 20 | 100 | QD450-2F-204020100 |

| ISO | 被加工材料 Workpiece Material | 切削量（mm） Depth of cut | Vc m/min | | 刃径 Tool Diameter（mm） 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 碳钢合金（<45HRC） Carbon steel alloy steel | ap≤0.2D ap≤0.3D | 160 | 转速 rote speed（min-1） 进给转速 feed velocity（mm/min） | 12740 1020 | 10190 1020 | 8490 1020 | 7280 1020 | 6370 1020 | 5660 1020 | 5100 1020 | 4630 1020 | 4250 1020 |
| | 合金钢（50HRC） Alloy Steel | ap≤0.15D ap≤0.15D | 120 | 转速 rote speed（min-1） 进给转速 feed velocity（mm/min） | 9550 610 | 7640 640 | 6370 660 | 5460 630 | 4780 620 | 4250 610 | 3820 610 | 3470 610 | 3190 610 |
| K | 灰铸铁，球墨铸铁（<32HRC） Gry cast iron，nodular cast iron | ap≤0.2D ap≤0.2D | 140 | 转速 rote speed（min-1） 进给转速 feed velocity（mm/min） | 11150 780 | 8920 800 | 7430 820 | 6370 800 | 5570 800 | 4950 790 | 4460 800 | 4050 810 | 3720 820 |
| | 高合金铸铁（35-45HRC） High alloy cast iron | ap≤0.1D ap≤0.1D | 120 | 转速 rote speed（min-1） 进给转速 feed velocity（mm/min） | 9550 610 | 7640 640 | 6370 660 | 5460 660 | 4780 670 | 4250 650 | 3820 650 | 3470 660 | 3190 670 |

上表是侧铣加工的标准值，刀具切槽时，转速要以上表格的50%~70%，进给速度要以40%~60%为标准值。

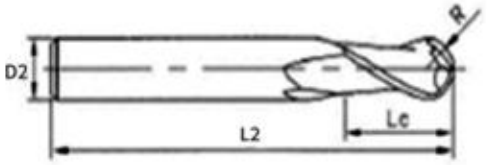
Above table is the standard cutting data for side milling maching, if for groove cutting , the VC should reach 50%~70% and the feed should reach 40%~60% based on the table.

# Carbide Ball Nose End Mill（Extra Long）

QD450 | AlTiN | HRC 45 | 2F | 35° | B

| 单位Unit | (mm) | | |
|---|---|---|---|
| R | R≤1.5 | 1.5<R<3 | R≥3 |
| 公差Tol | 0 | 0 | 0 |
| | -0.015 | -0.015 | -0.02 |

| | |
|---|---|
| P | ● |
| M | |
| K | ● |
| N | |
| S | |
| H | |




| Cutting Length L | Radius R | Shank D2 | Overall Length L2 |
|---|---|---|---|
| mm | mm | mm | mm |
| 6 | 1.5 | 3 | 75 |
| 8 | 2 | 4 | 75 |
| 10 | 2.5 | 5 | 75 |
| 12 | 3 | 6 | 75 |
| 16 | 4 | 8 | 75 |
| 6 | 1.5 | 3 | 100 |
| 4 | 2 | 4 | 100 |
| 10 | 2.5 | 5 | 100 |
| 12 | 3 | 6 | 100 |
| 16 | 4 | 8 | 100 |
| 20 | 5 | 10 | 100 |
| 24 | 6 | 12 | 100 |
| 12 | 3 | 6 | 150 |
| 16 | 4 | 8 | 150 |
| 20 | 5 | 10 | 150 |
| 24 | 6 | 12 | 150 |
| 28 | 7 | 14 | 150 |
| 32 | 8 | 16 | 150 |
| 36 | 9 | 18 | 150 |
| 40 | 10 | 20 | 150 |
| 12 | 3 | 6 | 200 |
| 16 | 4 | 8 | 200 |
| 20 | 5 | 10 | 200 |
| 24 | 6 | 12 | 200 |
| 32 | 8 | 16 | 200 |

## Ordering Code

| Ordering Code |
|---|
| QD450-2F-03060375 |
| QD450-2F-04080475 |
| QD450-2F-05100575 |
| QD450-2F-06120675 |
| QD450-2F-08160875 |
| QD450-2F-030603100 |
| QD450-2F-040804100 |
| QD450-2F-051005100 |
| QD450-2F-061206100 |
| QD450-2F-081608100 |
| QD450-2F-102010100 |
| QD450-2F-122412100 |
| QD450-2F-061206150 |
| QD450-2F-081608150 |
| QD450-2F-102010150 |
| QD450-2F-122412150 |
| QD450-2F-142814150 |
| QD450-2F-163216150 |
| QD450-2F-183618150 |
| QD450-2F-204020150 |
| QD450-2F-061206200 |
| QD450-2F-081608200 |
| QD450-2F-102010200 |
| QD450-2F-122412200 |
| QD450-2F-163216200 |

| ISO | 被加工材料 Workpiece Material | 切削量（mm） Depth of cut | Vc m/min | | 刃径 Tool Diameter（mm） 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 碳钢合金（<45HRC） Carbon steel alloy steel | ap≤0.2D ap≤0.3D | 160 | 转速 rote speed（min-1） 进给转速 feed velocity（mm/min） | 12740 1020 | 10190 1020 | 8490 1020 | 7280 1020 | 6370 1020 | 5660 1020 | 5100 1020 | 4630 1020 | 4250 1020 |
| | 合金钢（50HRC） Alloy Steel | ap≤0.15D ap≤0.15D | 120 | 转速 rote speed（min-1） 进给转速 feed velocity（mm/min） | 9550 610 | 7640 640 | 6370 660 | 5460 630 | 4780 620 | 4250 610 | 3820 610 | 3470 610 | 3190 610 |
| K | 灰铸铁，球墨铸铁（<32HRC） Gry cast iron，nodular cast iron | ap≤0.2D ap≤0.2D | 140 | 转速 rote speed（min-1） 进给转速 feed velocity（mm/min） | 11150 780 | 8920 800 | 7430 820 | 6370 800 | 5570 800 | 4950 790 | 4460 800 | 4050 810 | 3720 820 |
| | 高合金铸铁（35-45HRC） High alloy cast iron | ap≤0.1D ap≤0.1D | 120 | 转速 rote speed（min-1） 进给转速 feed velocity（mm/min） | 9550 610 | 7640 640 | 6370 660 | 5460 660 | 4780 670 | 4250 650 | 3820 650 | 3470 660 | 3190 670 |

上表是侧铣加工的标准值，刀具切槽时，转速要以上表格的50%~70%，进给速度要以40%~60%为标准值。

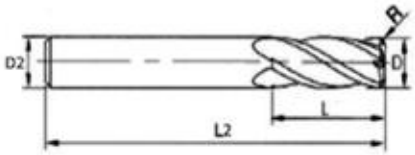
Above table is the standard cutting data for side milling maching, if for groove cutting , the VC should reach 50%~70% and the feed should reach 40%~60% based on the table.

# Carbide Corner Radius End Mill（Standard）

YB450 | AlTiN | HRC 45 | S

| 单位Unit | (mm) | |
|---|---|---|
| D | D≤12 | D>12 |
| 公差Tol | 0 | 0 |
| | -0.015 | -0.02 |

P ●
M
K ●
N
S
H




| Diameter D | Radius R | Cutting Length L | Shank D2 | Overall Length L2 | Ordering Code |
|---|---|---|---|---|---|
| mm | mm | mm | mm | mm | |
| 1 | 0.2 | 3 | 4 | 50 | YB450-4F-0102030450 |
| 1.5 | 0.2 | 5 | 4 | 50 | YB450-4F-01502050450 |
| 2 | 0.2 | 6 | 4 | 50 | YB450-4F-0202060450 |
| 2 | 0.5 | 6 | 4 | 50 | YB450-4F-0205060450 |
| 2.5 | 0.2 | 8 | 4 | 50 | YB450-4F-02502080450 |
| 2.5 | 0.5 | 8 | 4 | 50 | YB450-4F-02505080450 |
| 3 | 0.2 | 8 | 3 | 50 | YB450-4F-0302090350 |
| 3 | 0.2 | 9 | 4 | 50 | YB450-4F-0302090450 |
| 3 | 0.5 | 8 | 3 | 50 | YB450-4F-0305090350 |
| 3 | 0.5 | 9 | 4 | 50 | YB450-4F-0305090450 |
| 3.5 | 0.5 | 11 | 4 | 50 | YB450-4F-03505110450 |
| 4 | 0.2 | 10 | 4 | 50 | YB450-4F-0402120450 |
| 4 | 0.5 | 10 | 4 | 50 | YB450-4F-0405120450 |
| 5 | 0.5 | 13 | 5 | 50 | YB450-4F-0505130550 |
| 5 | 0.5 | 13 | 6 | 50 | YB450-4F-0505130650 |
| 5 | 1 | 13 | 5 | 50 | YB450-4F-051130550 |
| 5 | 1 | 13 | 6 | 50 | YB450-4F-051130650 |
| 6 | 0.2 | 15 | 6 | 50 | YB450-4F-0602150650 |
| 6 | 0.3 | 15 | 6 | 50 | YB450-4F-0603150650 |
| 6 | 0.5 | 15 | 6 | 50 | YB450-4F-0605150650 |
| 6 | 1 | 15 | 6 | 50 | YB450-4F-061150650 |
| 8 | 0.5 | 20 | 8 | 60 | YB450-4F-0805200860 |
| 8 | 1 | 20 | 8 | 60 | YB450-4F-081200860 |
| 8 | 2 | 20 | 8 | 60 | YB450-4F-082200860 |
| 10 | 0.5 | 25 | 10 | 75 | YB450-4F-1005251075 |
| 10 | 1 | 25 | 10 | 75 | YB450-4F-101251075 |
| 10 | 2 | 25 | 10 | 75 | YB450-4F-102251075 |
| 10 | 3 | 25 | 10 | 75 | YB450-4F-103251075 |
| 12 | 0.5 | 30 | 12 | 75 | YB450-4F-1205301275 |
| 12 | 1 | 30 | 12 | 75 | YB450-4F-121301275 |
| 12 | 2 | 30 | 12 | 75 | YB450-4F-122301275 |
| 12 | 3 | 30 | 12 | 75 | YB450-4F-123301275 |

| ISO | 被加工材料 Workpiece Material | 切削量 (mm) Depth of cut | Vc m/min | | 刀径 Tool Diameter (mm) 3 | 4 | 6 | 8 | 10 | 12 | 16 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 碳钢合金（<45HRC） Carbon steel alloy steel | ap≤1.5D<br>ap≤0.15D | 180 | 转速 rote speed (min-1)<br>进给转速 feed velocity (mm/min) | 19110<br>1070 | 14330<br>1030 | 9550<br>920 | 7170<br>930 | 5730<br>920 | 4780<br>860 | 3580<br>860 | 2870<br>860 |
| | 合金钢（50HRC） Alloy Steel | ap≤1D<br>ap≤0.12D | 130 | 转速 rote speed (min-1)<br>进给转速 feed velocity (mm/min) | 13800<br>610 | 10350<br>580 | 6900<br>550 | 5180<br>620 | 4140<br>560 | 3450<br>500 | 2590<br>410 | 2070<br>370 |
| K | 灰铸铁、球墨铸铁（<32HRC） Gry cast iron、nodular cast iron | ap≤1.5D<br>ap≤0.15D | 160 | 转速 rote speed (min-1)<br>进给转速 feed velocity (mm/min) | 16990<br>850 | 12740<br>820 | 8490<br>820 | 6370<br>750 | 5100<br>700 | 4250<br>680 | 3190<br>610 | 2550<br>560 |
| | 高合金铸铁（35-45HRC） High alloy cast iron | ap≤1D<br>ap≤0.12D | 140 | 转速 rote speed (min-1)<br>进给转速 feed velocity (mm/min) | 14860<br>650 | 11150<br>670 | 7430<br>670 | 5570<br>620 | 4460<br>580 | 3720<br>560 | 2790<br>500 | 2230<br>460 |

上表是侧铣加工的标准值，刀具切槽时，转速要以上表给的50%~70%，进给速度要以40%~60%为标准值。

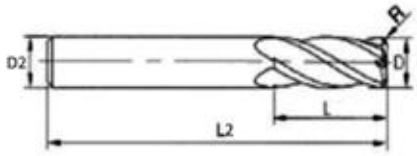
Above table is the standard cutting data for side milling maching, if for groove cutting , the VC should reach 50%~70% and the feed should reach 40%~60% based on the table.

# Carbide Corner Radius End Mill（Extra Long）

YB450 | AlTiN | HRC 45 | S

| 单位Unit | (mm) | |
|---|---|---|
| D | D≤12 | D>12 |
| 公差Tol | 0 | 0 |
| | -0.015 | -0.02 |

P ●
M
K ●
N
S
H




| Diameter D | Radius R | Cutting Length L | Shank D2 | Overall Length L2 | Ordering Code |
|---|---|---|---|---|---|
| mm | mm | mm | mm | mm | |
| 3 | 0.5 | 12 | 3 | 75 | YB450-4F-0305120375 |
| 4 | 0.5 | 15 | 4 | 75 | YB450-4F-0405160475 |
| 5 | 0.5 | 25 | 5 | 75 | YB450-4F-0505180575 |
| 6 | 0.5 | 25 | 6 | 75 | YB450-4F-0605240675 |
| 8 | 0.5 | 25 | 8 | 75 | YB450-4F-0805250875 |
| 4 | 0.5 | 20 | 4 | 100 | YB450-4F-04052004100 |
| 4 | 1 | 20 | 4 | 100 | YB450-4F-0412004100 |
| 5 | 0.5 | 30 | 5 | 100 | YB450-4F-05053005100 |
| 5 | 1 | 30 | 5 | 100 | YB450-4F-0513005100 |
| 6 | 0.5 | 30 | 6 | 100 | YB450-4F-06053006100 |
| 6 | 1 | 30 | 6 | 100 | YB450-4F-0613006100 |
| 8 | 0.5 | 35 | 8 | 100 | YB450-4F-08053508100 |
| 8 | 1 | 35 | 8 | 100 | YB450-4F-0813508100 |
| 10 | 0.5 | 40 | 10 | 100 | YB450-4F-10054010100 |
| 10 | 1 | 40 | 10 | 100 | YB450-4F-1014010100 |
| 12 | 0.5 | 45 | 12 | 100 | YB450-4F-12054512100 |
| 12 | 1 | 45 | 12 | 100 | YB450-4F-1214512100 |
| 8 | 0.5 | 50 | 8 | 150 | YB450-4F-08055008150 |
| 8 | 1 | 50 | 8 | 150 | YB450-4F-0815008150 |
| 10 | 0.5 | 55 | 10 | 150 | YB450-4F-10055510150 |
| 10 | 1 | 55 | 10 | 150 | YB450-4F-1015510150 |
| 12 | 0.5 | 60 | 12 | 150 | YB450-4F-12055512150 |
| 12 | 1 | 60 | 12 | 150 | YB450-4F-1215512150 |

| ISO | 被加工材料 Workpiece Material | 切削量（mm） Depth of cut | Vc m/min | | 刀径 Tool Diameter（mm） 3 | 4 | 6 | 8 | 10 | 12 | 16 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 碳钢合金（<45HRC） Carbon steel alloy steel | ap≤1.5D ap≤0.15D | 180 | 转速 rote speed（min-1） 进给转速 feed velocity（mm/min） | 19110 1070 | 14330 1030 | 9550 920 | 7170 930 | 5730 920 | 4780 860 | 3580 860 | 2870 860 |
| | 合金钢（50HRC） Alloy Steel | ap≤1D ap≤0.12D | 130 | 转速 rote speed（min-1） 进给转速 feed velocity（mm/min） | 13800 610 | 10350 580 | 6900 550 | 5180 620 | 4140 560 | 3450 500 | 2590 410 | 2070 370 |
| K | 灰铸铜，球墨铸铁（<32HRC） Gry cast iron，nodular cast iron | ap≤1.5D ap≤0.15D | 160 | 转速 rote speed（min-1） 进给转速 feed velocity（mm/min） | 16990 850 | 12740 820 | 8490 820 | 6370 750 | 5100 700 | 4250 680 | 3190 610 | 2550 560 |
| | 高合金铸铁（35-45HRC） High alloy cast iron | ap≤1D ap≤0.12D | 140 | 转速 rote speed（min-1） 进给转速 feed velocity（mm/min） | 14860 650 | 11150 670 | 7430 670 | 5570 620 | 4460 580 | 3720 560 | 2790 500 | 2230 460 |

上表是侧铣加工的标准值，刀具切槽时，转速要以上表格的50%~70%，进给速度要以40%~60%为标准值。

Above table is the standard cutting data for side milling maching, if for groove cutting , the VC should reach 50%~70% and the feed should reach 40%~60% based on the table.

# 550古铜系列
# 通用加工立铣刀
# GENERAL MACHINING END MILLS

New TiSiN

P K

- 适用于普通钢、P20、铸铁材料的加工
- 采用高性能TiSiN涂层，耐高温、耐磨损
- 采用细晶粒硬质合金基材
- Suitable for ordinary steel, P20, cast iron materials processing.
- High-performance TiSiN coating, high temperature and wear resistance.
- Ultra-fine grained carbide material.

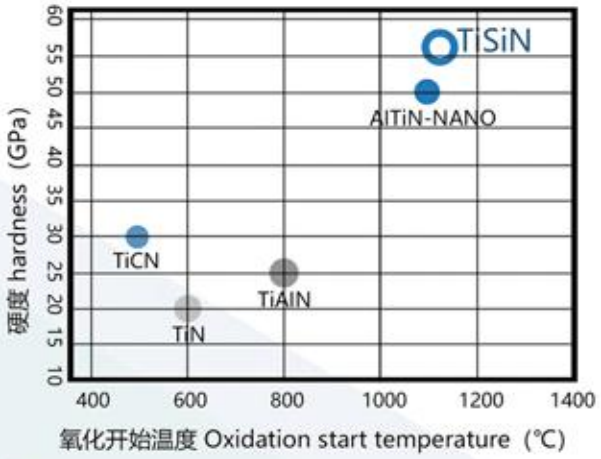
刃口耐磨性和刀具刚性提升

Improved edge wear resistance and tool rigidity

全球合作伙伴-WORLDWIDE RELIABLE PARTNER

各种钢材的通用加工: 抗沾刀能力强，提高刀具寿命，
35°螺旋角设计，切削顺滑，不积屑
General processing of various steels
Strong anti-sticking ability，improve tool life,
35° helix angle design，Smooth cutting without chip accumulation

## ● 产品特点 Features

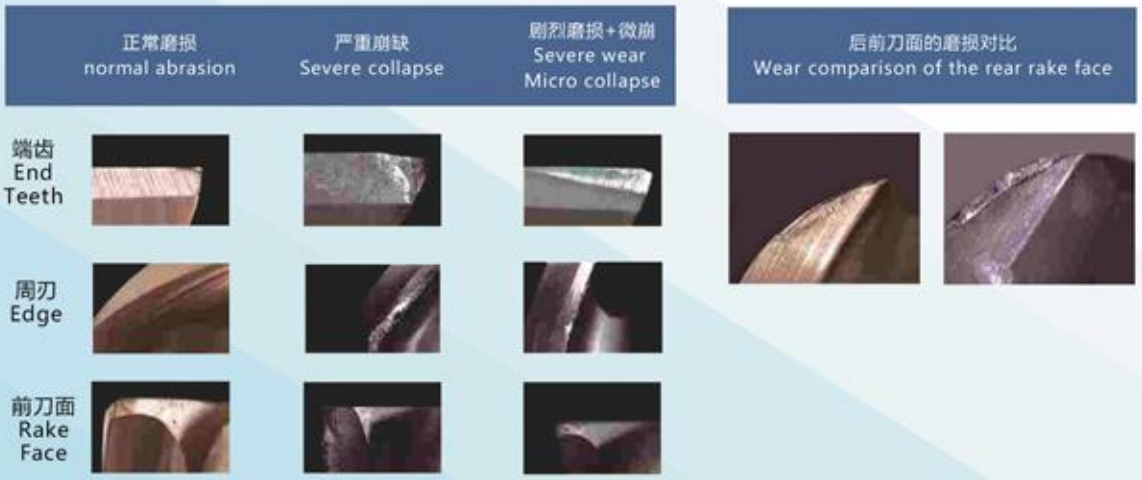



● 大螺旋角Irregular helix angle


[震动小，有效加工，提高生产效率]

[Improved productivty with effective machining due to less vibration]

## ● 加工后磨损状况 Wear condition after processing



# 采用超细硬质合金基材
# 特殊切刃和高性能TISIN涂层，从而实现高精度，长寿命加工
# Ultra-fine cemented carbide substrate
# Special cutting edge and high performance TISIN coating to achieve high precision, long life processing

## 特殊顶端形状实现良好的切削效果
## Special end shape achieves good cutting results

弓形R刃角分散切削阻力抑制切刃的磨损
The arcuate R edge disperses the cutting resistance to reduce the wear of the cutting edge

### 大容量槽 Large chip groove

即使大切深加工也可以稳定排屑
Stable chip removal even in deep cutting



### 刃口钝化
### Edge Precision passivation

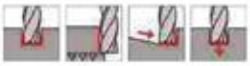
刃口钝化提高道具使用寿命和工件表面洁度。特殊角度设计，刃口强度极高，通用性强。
Improve tool life and workpiece surface finish. Special angle design and high edge strength ensure stronger versatility.

### 高质量刃面 High quality blade surface

平滑锋利的切刃
优异的耐磨损性和耐熔着性
Smooth and sharp cutting edge
Excellent wear resistance and Fusion resistance

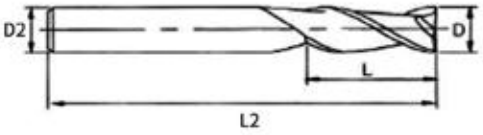
# Carbide 2Flutes Square End Mill（Standard）

PD550 | TISIN | HRC 55 | S



| 单位Unit | (mm) | |
|---|---|---|
| D | D≤12 | D>12 |
| 公差Tol | 0 | 0 |
| | -0.015 | -0.02 |

P ●
M
K ●
N
S
H




| Diameter D | Cutting Length L | Shank D2 | Overall Length L2 | Ordering Code |
|---|---|---|---|---|
| mm | mm | mm | mm | |
| 1 | 3 | 4 | 50 | PD550-2F-01030450 |
| 1.5 | 5 | 4 | 50 | PD550-2F-015050450 |
| 2 | 6 | 4 | 50 | PD550-2F-02060450 |
| 2.5 | 8 | 4 | 50 | PD550-2F-025080450 |
| 3 | 9 | 3 | 50 | PD550-2F-03090350 |
| 3 | 9 | 4 | 50 | PD550-2F-03090450 |
| 3.5 | 11 | 4 | 50 | PD550-2F-035110450 |
| 4 | 12 | 4 | 50 | PD550-2F-04120450 |
| 5 | 13 | 5 | 50 | PD550-2F-05130450 |
| 5 | 13 | 6 | 50 | PD550-2F-05130650 |
| 6 | 15 | 6 | 50 | PD550-2F-06150650 |
| 7 | 20 | 8 | 60 | PD550-2F-07200860 |
| 8 | 20 | 8 | 60 | PD550-2F-08200860 |
| 9 | 25 | 10 | 75 | PD550-2F-09251075 |
| 10 | 25 | 10 | 75 | PD550-2F-10251075 |
| 11 | 25 | 12 | 75 | PD550-2F-11251275 |
| 12 | 30 | 12 | 75 | PD550-2F-12301275 |
| 14 | 45 | 14 | 100 | PD550-2F-144514100 |
| 15 | 45 | 16 | 100 | PD550-2F-154516100 |
| 16 | 45 | 16 | 100 | PD550-2F-164516100 |
| 18 | 45 | 18 | 100 | PD550-2F-184518100 |
| 20 | 45 | 20 | 100 | PD550-2F-204520100 |

| ISO | 被加工材料 Workpiece Material | 切削量（mm） Depth of cut | Vc m/min | | 刃径 Tool Diameter（mm） 3 | 4 | 6 | 8 | 10 | 12 | 16 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 碳钢合金（<45HRC） Carbon steel alloy steel | ap≤1.5D ap≤0.15D | 180 | 转速 rote speed（min-1） 进给转速 feed velocity（mm/min） | 19110 1070 | 14330 1030 | 9550 920 | 7170 930 | 5730 920 | 4780 860 | 3580 860 | 2870 860 |
| | 合金钢（50HRC） Alloy Steel | ap≤1D ap≤0.12D | 130 | 转速 rote speed（min-1） 进给转速 feed velocity（mm/min） | 13800 610 | 10350 580 | 6900 550 | 5180 620 | 4140 560 | 3450 500 | 2590 410 | 2070 370 |
| K | 灰铸铜，球墨铸铁（<32HRC） Gry cast iron，nodular cast iron | ap≤1.5D ap≤0.15D | 160 | 转速 rote speed（min-1） 进给转速 feed velocity（mm/min） | 16990 850 | 12740 820 | 8490 820 | 6370 750 | 5100 700 | 4250 680 | 3190 610 | 2550 560 |
| | 高合金铸铁（35-45HRC） High alloy cast iron | ap≤1D ap≤0.12D | 140 | 转速 rote speed（min-1） 进给转速 feed velocity（mm/min） | 14860 650 | 11150 670 | 7430 670 | 5570 620 | 4460 580 | 3720 560 | 2790 500 | 2230 460 |

上表是侧铣加工的标准值，刀具切槽时，转速要以上表格的50%~70%，进给速度要以40%~60%为标准值。

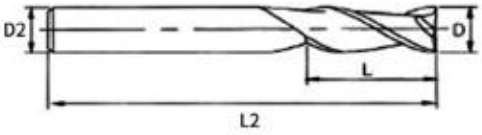
Above table is the standard cutting data for side milling maching, if for groove cutting , the VC should reach 50%~70% and the feed should reach 40%~60% based on the table.

# Carbide 2Flutes Square End Mill（Extra Long）

PD550 | TISIN | HRC 55 | S

| 单位Unit | (mm) | |
|---|---|---|
| D | D≤12 | D>12 |
| 公差Tol | 0 | 0 |
| | -0.015 | -0.02 |

| | |
|---|---|
| P | ● |
| M | |
| K | ● |
| N | |
| S | |
| H | |




| Diameter D | Cutting Length L | Shank D2 | Overall Length L2 | Ordering Code |
|---|---|---|---|---|
| mm | mm | mm | mm | |
| 3 | 12 | 3 | 75 | PD550-2F-03120375 |
| 4 | 16 | 4 | 75 | PD550-2F-04160475 |
| 5 | 18 | 5 | 75 | PD550-2F-05180575 |
| 6 | 24 | 6 | 75 | PD550-2F-06240675 |
| 8 | 25 | 8 | 75 | PD550-2F-08250875 |
| 3 | 12 | 3 | 100 | PD550-2F-031203100 |
| 4 | 20 | 4 | 100 | PD550-2F-042004100 |
| 5 | 30 | 5 | 100 | PD550-2F-053005100 |
| 6 | 30 | 6 | 100 | PD550-2F-063006100 |
| 8 | 35 | 8 | 100 | PD550-2F-083508100 |
| 10 | 40 | 10 | 100 | PD550-2F-104010100 |
| 12 | 45 | 12 | 100 | PD550-2F-124512100 |
| 6 | 45 | 6 | 150 | PD550-2F-064506150 |
| 8 | 50 | 8 | 150 | PD550-2F-085008150 |
| 10 | 55 | 10 | 150 | PD550-2F-105510150 |
| 12 | 55 | 12 | 150 | PD550-2F-125512150 |
| 14 | 70 | 14 | 150 | PD550-2F-147014150 |
| 16 | 80 | 16 | 150 | PD550-2F-168016150 |
| 18 | 80 | 18 | 150 | PD550-2F-188018150 |
| 20 | 80 | 20 | 150 | PD550-2F-208020150 |

| ISO | 被加工材料 Workpiece Material | 切削量（mm） Depth of cut | Vc m/min | | 刃径 Tool Diameter（mm） 3 | 4 | 6 | 8 | 10 | 12 | 16 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 碳钢合金（<45HRC） Carbon steel alloy steel | ap≤1.5D ap≤0.15D | 180 | 转速 rote speed（min-1） 进给转速 feed velocity（mm/min） | 19110 1070 | 14330 1030 | 9550 920 | 7170 930 | 5730 920 | 4780 860 | 3580 860 | 2870 860 |
| | 合金钢（50HRC） Alloy Steel | ap≤1D ap≤0.12D | 130 | 转速 rote speed（min-1） 进给转速 feed velocity（mm/min） | 13800 610 | 10350 580 | 6900 550 | 5180 620 | 4140 560 | 3450 500 | 2590 410 | 2070 370 |
| K | 灰铸铁，球墨铸铁（<32HRC） Gry cast iron，nodular cast iron | ap≤1.5D ap≤0.15D | 160 | 转速 rote speed（min-1） 进给转速 feed velocity（mm/min） | 16990 850 | 12740 820 | 8490 820 | 6370 750 | 5100 700 | 4250 680 | 3190 610 | 2550 560 |
| | 高合金铸铁（35-45HRC） High alloy cast iron | ap≤1D ap≤0.12D | 140 | 转速 rote speed（min-1） 进给转速 feed velocity（mm/min） | 14860 650 | 11150 670 | 7430 670 | 5570 620 | 4460 580 | 3720 560 | 2790 500 | 2230 460 |

上表是侧铣加工的标准值，刀具切槽时，转速要以上表格的50%~70%，进给速度要以40%~60%为标准值。

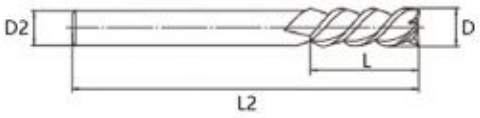
Above table is the standard cutting data for side milling maching, if for groove cutting , the VC should reach 50%~70% and the feed should reach 40%~60% based on the table.

# Carbide 4Flutes Square End Mill（Standard）

PD550 | TISIN | HRC 55 | S

| 单位Unit | (mm) | |
|---|---|---|
| D | D≤12 | D>12 |
| 公差Tol | 0 | 0 |
| | -0.015 | -0.02 |

| | |
|---|---|
| P | ● |
| M | |
| K | ● |
| N | |
| S | |
| H | |




| Diameter D | Cutting Length L | Shank D2 | Overall Length L2 | Ordering Code |
|---|---|---|---|---|
| mm | mm | mm | mm | |
| 1 | 3 | 4 | 50 | PD550-4F-01030450 |
| 1.5 | 5 | 4 | 50 | PD550-4F-015050450 |
| 2 | 6 | 4 | 50 | PD550-4F-02060450 |
| 2.5 | 8 | 4 | 50 | PD550-4F-025080450 |
| 3 | 9 | 3 | 50 | PD550-4F-03090350 |
| 3 | 9 | 4 | 50 | PD550-4F-03090450 |
| 3.5 | 11 | 4 | 50 | PD550-4F-035110450 |
| 4 | 12 | 4 | 50 | PD550-4F-04120450 |
| 5 | 13 | 5 | 50 | PD550-4F-05130550 |
| 5 | 13 | 6 | 50 | PD550-4F-05130650 |
| 6 | 15 | 6 | 50 | PD550-4F-06150650 |
| 7 | 20 | 8 | 60 | PD550-4F-07200860 |
| 8 | 20 | 8 | 60 | PD550-4F-08200860 |
| 8 | 24 | 8 | 60 | PD550-4F-08240860 |
| 9 | 25 | 10 | 75 | PD550-4F-09251075 |
| 10 | 25 | 10 | 75 | PD550-4F-10251075 |
| 10 | 30 | 10 | 75 | PD550-4F-10301075 |
| 11 | 30 | 12 | 75 | PD550-4F-11301275 |
| 12 | 30 | 12 | 75 | PD550-4F-12301275 |
| 12 | 35 | 12 | 75 | PD550-4F-12351275 |
| 13 | 45 | 14 | 100 | PD550-4F-134514100 |
| 14 | 45 | 14 | 100 | PD550-4F-144514100 |
| 15 | 45 | 16 | 100 | PD550-4F-154516100 |
| 16 | 45 | 16 | 100 | PD550-4F-164516100 |
| 18 | 45 | 18 | 100 | PD550-4F-184518100 |
| 20 | 45 | 20 | 100 | PD550-4F-204520100 |

| ISO | 被加工材料 Workpiece Material | 切削量（mm） Depth of cut | Vc m/min | | 刃径 Tool Diameter（mm） 3 | 4 | 6 | 8 | 10 | 12 | 16 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 碳钢合金（<45HRC） Carbon steel alloy steel | ap≤1.5D ap≤0.15D | 180 | 转速 rote speed（min-1） | 19110 | 14330 | 9550 | 7170 | 5730 | 4780 | 3580 | 2870 |
| | | | | 进给转速 feed velocity（mm/min） | 1070 | 1030 | 920 | 930 | 920 | 860 | 860 | 860 |
| | 合金钢（50HRC） Alloy Steel | ap≤1D ap≤0.12D | 130 | 转速 rote speed（min-1） | 13800 | 10350 | 6900 | 5180 | 4140 | 3450 | 2590 | 2070 |
| | | | | 进给转速 feed velocity（mm/min） | 610 | 580 | 550 | 620 | 560 | 500 | 410 | 370 |
| K | 灰铸铁，球墨铸铁（<32HRC） Gry cast iron，nodular cast iron | ap≤1.5D ap≤0.15D | 160 | 转速 rote speed（min-1） | 16990 | 12740 | 8490 | 6370 | 5100 | 4250 | 3190 | 2550 |
| | | | | 进给转速 feed velocity（mm/min） | 850 | 820 | 820 | 750 | 700 | 680 | 610 | 560 |
| | 高合金铸铁（35-45HRC） High alloy cast iron | ap≤1D ap≤0.12D | 140 | 转速 rote speed（min-1） | 14860 | 11150 | 7430 | 5570 | 4460 | 3720 | 2790 | 2230 |
| | | | | 进给转速 feed velocity（mm/min） | 650 | 670 | 670 | 620 | 580 | 560 | 500 | 460 |

上表是侧铣加工的标准值，刀具切槽时，转速要以上表格的50%~70%，进给速度要以40%~60%为标准值。

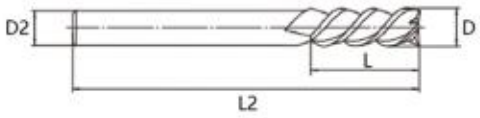
Above table is the standard cutting data for side milling maching, if for groove cutting , the VC should reach 50%~70% and the feed should reach 40%~60% based on the table.

# Carbide 4Flutes Square End Mill（Extra Long）

PD550 | TISIN | HRC 55 | S

| 单位Unit | (mm) | |
|---|---|---|
| D | D≤12 | D>12 |
| 公差Tol | 0 | 0 |
| | -0.015 | -0.02 |

P ●
M
K ●
N
S
H




| Diameter D | Cutting Length L | Shank D2 | Overall Length L2 | Ordering Code |
|---|---|---|---|---|
| mm | mm | mm | mm | |
| 3 | 12 | 3 | 75 | PD550-4F-03120375 |
| 3.5 | 11 | 4 | 75 | PD550-4F-035110475 |
| 4 | 16 | 4 | 75 | PD550-4F-04160475 |
| 5 | 18 | 5 | 75 | PD550-4F-05180575 |
| 6 | 24 | 6 | 75 | PD550-4F-06240675 |
| 8 | 25 | 8 | 75 | PD550-4F-08250875 |
| 3 | 12 | 3 | 100 | PD550-4F-031203100 |
| 4 | 20 | 4 | 100 | PD550-4F-042004100 |
| 5 | 30 | 5 | 100 | PD550-4F-053005100 |
| 6 | 30 | 6 | 100 | PD550-4F-063006100 |
| 8 | 35 | 8 | 100 | PD550-4F-083508100 |
| 10 | 40 | 10 | 100 | PD550-4F-104010100 |
| 10 | 50 | 10 | 100 | PD550-4F-105010100 |
| 12 | 45 | 12 | 100 | PD550-4F-124512100 |
| 12 | 50 | 12 | 100 | PD550-4F-125012100 |
| 6 | 45 | 6 | 150 | PD550-4F-064506150 |
| 8 | 50 | 8 | 150 | PD550-4F-085008150 |
| 10 | 55 | 10 | 150 | PD550-4F-105510150 |
| 12 | 55 | 12 | 150 | PD550-4F-125512150 |
| 14 | 70 | 14 | 150 | PD550-4F-147014150 |
| 16 | 80 | 16 | 150 | PD550-4F-168016150 |
| 18 | 80 | 18 | 150 | PD550-4F-188018150 |
| 20 | 80 | 20 | 150 | PD550-4F-208020150 |
| 6 | 50 | 6 | 200 | PD550-4F-065006200 |
| 8 | 60 | 8 | 200 | PD550-4F-086008200 |
| 10 | 65 | 10 | 200 | PD550-4F-106510200 |
| 12 | 70 | 12 | 200 | PD550-4F-127012200 |
| 14 | 80 | 14 | 200 | PD550-4F-148014200 |
| 16 | 85 | 16 | 200 | PD550-4F-168516200 |
| 20 | 90 | 20 | 200 | PD550-4F-209020200 |

| ISO | 被加工材料 Workpiece Material | 切削量（mm） Depth of cut | Vc m/min | | 刃径 Tool Diameter（mm） 3 | 4 | 6 | 8 | 10 | 12 | 16 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 碳钢合金（<45HRC） Carbon steel alloy steel | ap≤1.5D ap≤0.15D | 180 | 转速 rote speed（min-1） 进给转速 feed velocity（mm/min） | 19110 1070 | 14330 1030 | 9550 920 | 7170 930 | 5730 920 | 4780 860 | 3580 860 | 2870 860 |
| | 合金钢（50HRC） Alloy Steel | ap≤1D ap≤0.12D | 130 | 转速 rote speed（min-1） 进给转速 feed velocity（mm/min） | 13800 610 | 10350 580 | 6900 550 | 5180 620 | 4140 560 | 3450 500 | 2590 410 | 2070 370 |
| K | 灰铸铜，球墨铸铁（<32HRC） Gry cast iron，nodular cast iron | ap≤1.5D ap≤0.15D | 160 | 转速 rote speed（min-1） 进给转速 feed velocity（mm/min） | 16990 850 | 12740 820 | 8490 820 | 6370 750 | 5100 700 | 4250 680 | 3190 610 | 2550 560 |
| | 高合金铸铁（35-45HRC） High alloy cast iron | ap≤1D ap≤0.12D | 140 | 转速 rote speed（min-1） 进给转速 feed velocity（mm/min） | 14860 650 | 11150 670 | 7430 670 | 5570 620 | 4460 580 | 3720 560 | 2790 500 | 2230 460 |

上表是侧铣加工的标准值，刀具切槽时，转速要以上表格的50%~70%，进给速度要以40%~60%为标准值。

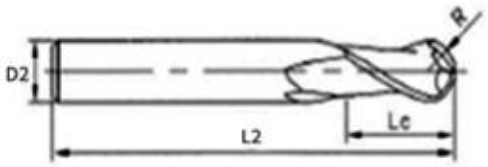
Above table is the standard cutting data for side milling maching, if for groove cutting , the VC should reach 50%~70% and the feed should reach 40%~60% based on the table.

# Carbide Ball Nose End Mill（Standard）

QD550 | TISIN | HRC 55 | 2 | 35° | B

| 单位Unit | (mm) | | |
|---|---|---|---|
| R | R≤1.5 | 1.5<R<3 | R≥3 |
| 公差Tol | 0 | 0 | 0 |
| | -0.015 | -0.015 | -0.02 |

| | |
|---|---|
| P | ● |
| M | |
| K | ● |
| N | |
| S | |
| H | |




| Cutting Length L | Radius R | Shank D2 | Overall Length L2 |
|---|---|---|---|
| mm | mm | mm | mm |
| 2 | 0.5 | 4 | 50 |
| 3 | 0.75 | 4 | 50 |
| 4 | 1 | 4 | 50 |
| 5 | 1.25 | 4 | 50 |
| 6 | 1.5 | 3 | 50 |
| 6 | 1.5 | 4 | 50 |
| 7 | 1.75 | 4 | 50 |
| 8 | 2 | 4 | 50 |
| 10 | 2.5 | 5 | 50 |
| 10 | 2.5 | 6 | 50 |
| 12 | 3 | 6 | 50 |
| 14 | 3.5 | 8 | 60 |
| 16 | 4 | 8 | 60 |
| 20 | 5 | 10 | 75 |
| 24 | 6 | 12 | 75 |
| 28 | 7 | 14 | 100 |
| 32 | 8 | 16 | 100 |
| 36 | 9 | 18 | 100 |
| 40 | 10 | 20 | 100 |

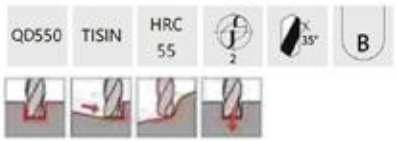
| Ordering Code |
|---|
| QD550-2F-01020450 |
| QD550-2F-015030450 |
| QD550-2F-02040450 |
| QD550-2F-025050450 |
| QD550-2F-03060350 |
| QD550-2F-03060450 |
| QD550-2F-035070450 |
| QD550-2F-04080450 |
| QD550-2F-05100550 |
| QD550-2F-05100650 |
| QD550-2F-06120650 |
| QD550-2F-07140860 |
| QD550-2F-08160860 |
| QD550-2F-10201075 |
| QD550-2F-12241275 |
| QD550-2F-142814100 |
| QD550-2F-163216100 |
| QD550-2F-183618100 |
| QD550-2F-204020100 |

| ISO | 被加工材料 Workpiece Material | 切削量（mm） Depth of cut | Vc m/min | | 刃径 Tool Diameter（mm） 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 碳钢合金（<45HRC） Carbon steel alloy steel | ap≤0.2D ap≤0.3D | 160 | 转速 rote speed（min-1） 进给转速 feed velocity（mm/min） | 12740 1020 | 10190 1020 | 8490 1020 | 7280 1020 | 6370 1020 | 5660 1020 | 5100 1020 | 4630 1020 | 4250 1020 |
| | 合金钢（50HRC） Alloy Steel | ap≤0.15D ap≤0.15D | 120 | 转速 rote speed（min-1） 进给转速 feed velocity（mm/min） | 9550 610 | 7640 640 | 6370 660 | 5460 630 | 4780 620 | 4250 610 | 3820 610 | 3470 610 | 3190 610 |
| K | 灰铸铜，球墨铸铁（<32HRC） Gry cast iron，nodular cast iron | ap≤0.2D ap≤0.2D | 140 | 转速 rote speed（min-1） 进给转速 feed velocity（mm/min） | 11150 780 | 8920 800 | 7430 820 | 6370 800 | 5570 800 | 4950 790 | 4460 800 | 4050 810 | 3720 820 |
| | 高合金铸铁（35-45HRC） High alloy cast iron | ap≤0.1D ap≤0.1D | 120 | 转速 rote speed（min-1） 进给转速 feed velocity（mm/min） | 9550 610 | 7640 640 | 6370 660 | 5460 660 | 4780 670 | 4250 650 | 3820 650 | 3470 660 | 3190 670 |

上表是侧铣加工的标准值，刀具切槽时，转速要以上表格的50%~70%，进给速度要以40%~60%为标准值。

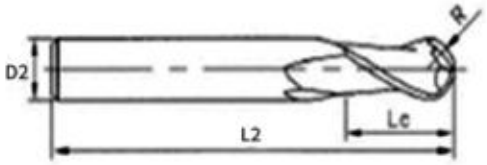
Above table is the standard cutting data for side milling maching, if for groove cutting , the VC should reach 50%~70% and the feed should reach 40%~60% based on the table.

# Carbide Ball Nose End Mill（Extra Long）




| 单位Unit | (mm) | | |
|---|---|---|---|
| R | R≤1.5 | 1.5<R<3 | R≥3 |
| 公差Tol | 0 | 0 | 0 |
| | -0.015 | -0.015 | -0.02 |

| | |
|---|---|
| P | ● |
| M | |
| K | ● |
| N | |
| S | |
| H | |




| Cutting Length L | Radius R | Shank D2 | Overall Length L2 |
|---|---|---|---|
| mm | mm | mm | mm |
| 6 | 1.5 | 3 | 75 |
| 8 | 2 | 4 | 75 |
| 10 | 2.5 | 5 | 75 |
| 12 | 3 | 6 | 75 |
| 16 | 4 | 8 | 75 |
| 6 | 1.5 | 3 | 100 |
| 8 | 2 | 4 | 100 |
| 10 | 2.5 | 5 | 100 |
| 12 | 3 | 6 | 100 |
| 16 | 4 | 8 | 100 |
| 20 | 5 | 10 | 100 |
| 24 | 6 | 12 | 100 |
| 12 | 3 | 6 | 150 |
| 16 | 4 | 8 | 150 |
| 20 | 5 | 10 | 150 |
| 24 | 6 | 12 | 150 |
| 28 | 7 | 14 | 150 |
| 32 | 8 | 16 | 150 |
| 36 | 9 | 18 | 150 |
| 40 | 10 | 20 | 150 |
| 12 | 3 | 6 | 200 |
| 16 | 4 | 8 | 200 |
| 20 | 5 | 10 | 200 |
| 24 | 6 | 12 | 200 |
| 32 | 8 | 16 | 200 |

| Ordering Code |
|---|
| QD550-2F-03060375 |
| QD550-2F-04080475 |
| QD550-2F-05100575 |
| QD550-2F-06120675 |
| QD550-2F-08160875 |
| QD550-2F-030603100 |
| QD550-2F-040804100 |
| QD550-2F-051005100 |
| QD550-2F-061206100 |
| QD550-2F-081608100 |
| QD550-2F-102010100 |
| QD550-2F-122412100 |
| QD550-2F-061206150 |
| QD550-2F-081608150 |
| QD550-2F-102010150 |
| QD550-2F-122412150 |
| QD550-2F-142814150 |
| QD550-2F-163216150 |
| QD550-2F-183618150 |
| QD550-2F-204020150 |
| QD550-2F-061206200 |
| QD550-2F-081608200 |
| QD550-2F-102010200 |
| QD550-2F-122412200 |
| QD550-2F-163216200 |

| ISO | 被加工材料 Workpiece Material | 切削量（mm） Depth of cut | Vc m/min | | 刀径 Tool Diameter（mm） 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 碳钢合金（<45HRC） Carbon steel alloy steel | ap≤0.2D | 160 | 转速 rote speed（min-1） | 12740 | 10190 | 8490 | 7280 | 6370 | 5660 | 5100 | 4630 | 4250 |
| | | ap≤0.3D | | 进给转速 feed velocity（mm/min） | 1020 | 1020 | 1020 | 1020 | 1020 | 1020 | 1020 | 1020 | 1020 |
| | 合金钢（50HRC） Alloy Steel | ap≤0.15D | 120 | 转速 rote speed（min-1） | 9550 | 7640 | 6370 | 5460 | 4780 | 4250 | 3820 | 3470 | 3190 |
| | | ap≤0.15D | | 进给转速 feed velocity（mm/min） | 610 | 640 | 660 | 630 | 620 | 610 | 610 | 610 | 610 |
| K | 灰铸铜，球墨铸铁（<32HRC） Gry cast iron，nodular cast iron | ap≤0.2D | 140 | 转速 rote speed（min-1） | 11150 | 8920 | 7430 | 6370 | 5570 | 4950 | 4460 | 4050 | 3720 |
| | | ap≤0.2D | | 进给转速 feed velocity（mm/min） | 780 | 800 | 820 | 800 | 800 | 790 | 800 | 810 | 820 |
| | 高合金铸铁（35-45HRC） High alloy cast iron | ap≤0.1D | 120 | 转速 rote speed（min-1） | 9550 | 7640 | 6370 | 5460 | 4780 | 4250 | 3820 | 3470 | 3190 |
| | | ap≤0.1D | | 进给转速 feed velocity（mm/min） | 610 | 640 | 660 | 660 | 670 | 650 | 650 | 660 | 670 |

上表是侧铣加工的标准值，刀具切槽时，转速要以上表格的50%~70%，进给速度要以40%~60%为标准值。

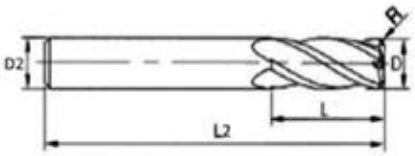
Above table is the standard cutting data for side milling maching, if for groove cutting , the VC should reach 50%~70% and the feed should reach 40%~60% based on the table.

# Carbide Corner Radius End Mill（Standard）

YB550 | TISIN | HRC 55 | S

| P | ● |
|---|---|
| M | |
| K | ● |
| N | |
| S | |
| H | |

| 单位Unit | (mm) | |
|---|---|---|
| D | D≤12 | D>12 |
| 公差Tol | 0 | 0 |
| | -0.015 | -0.02 |




| Diameter D | Radius R | Cutting Length L | Shank D2 | Overall Length L2 | Ordering Code |
|---|---|---|---|---|---|
| mm | mm | mm | mm | mm | |
| 1 | 0.2 | 3 | 4 | 50 | YB550-4F-0102030450 |
| 1.5 | 0.2 | 5 | 4 | 50 | YB550-4F-01502050450 |
| 2 | 0.2 | 6 | 4 | 50 | YB550-4F-0202060450 |
| 2 | 0.5 | 6 | 4 | 50 | YB550-4F-0205060450 |
| 2.5 | 0.2 | 8 | 4 | 50 | YB550-4F-02502080450 |
| 2.5 | 0.5 | 8 | 4 | 50 | YB550-4F-02505080450 |
| 3 | 0.2 | 8 | 3 | 50 | YB550-4F-0302090350 |
| 3 | 0.2 | 9 | 4 | 50 | YB550-4F-0302090450 |
| 3 | 0.5 | 8 | 3 | 50 | YB550-4F-0305090350 |
| 3 | 0.5 | 9 | 4 | 50 | YB550-4F-0305090450 |
| 3.5 | 0.5 | 11 | 4 | 50 | YB550-4F-03505110450 |
| 4 | 0.2 | 10 | 4 | 50 | YB550-4F-0402120450 |
| 4 | 0.5 | 10 | 4 | 50 | YB550-4F-0405120450 |
| 5 | 0.5 | 13 | 5 | 50 | YB550-4F-0505130550 |
| 5 | 0.5 | 13 | 6 | 50 | YB550-4F-0505130650 |
| 5 | 1 | 13 | 5 | 50 | YB550-4F-051130550 |
| 5 | 1 | 13 | 6 | 50 | YB550-4F-051130650 |
| 6 | 0.2 | 15 | 6 | 50 | YB550-4F-0602150650 |
| 6 | 0.3 | 15 | 6 | 50 | YB550-4F-0603150650 |
| 6 | 0.5 | 15 | 6 | 50 | YB550-4F-0605150650 |
| 6 | 1 | 15 | 6 | 50 | YB550-4F-061150650 |
| 8 | 0.5 | 20 | 8 | 60 | YB550-4F-0805200860 |
| 8 | 1 | 20 | 8 | 60 | YB550-4F-081200860 |
| 8 | 2 | 20 | 8 | 60 | YB550-4F-082200860 |
| 10 | 0.5 | 25 | 10 | 75 | YB550-4F-1005251075 |
| 10 | 1 | 25 | 10 | 75 | YB550-4F-101251075 |
| 10 | 2 | 25 | 10 | 75 | YB550-4F-102251075 |
| 10 | 3 | 25 | 10 | 75 | YB550-4F-103251075 |
| 12 | 0.5 | 30 | 12 | 75 | YB550-4F-1205301275 |
| 12 | 1 | 30 | 12 | 75 | YB550-4F-121301275 |
| 12 | 2 | 30 | 12 | 75 | YB550-4F-122301275 |
| 12 | 3 | 30 | 12 | 75 | YB550-4F-123301275 |

| ISO | 被加工材料 Workpiece Material | 切削量 (mm) Depth of cut | Vc m/min | | 刀径 Tool Diameter (mm) 3 | 4 | 6 | 8 | 10 | 12 | 16 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 碳钢合金（<45HRC） Carbon steel alloy steel | ap≤1.5D | 180 | 转速 rote speed (min-1) | 19110 | 14330 | 9550 | 7170 | 5730 | 4780 | 3580 | 2870 |
| | 合金钢（50HRC） Alloy Steel | ap≤0.15D | | 进给转速 feed velocity (mm/min) | 1070 | 1030 | 920 | 930 | 920 | 860 | 860 | 860 |
| | | ap≤1D | 130 | 转速 rote speed (min-1) | 13800 | 10350 | 6900 | 5180 | 4140 | 3450 | 2590 | 2070 |
| | | ap≤0.12D | | 进给转速 feed velocity (mm/min) | 610 | 580 | 550 | 620 | 560 | 500 | 410 | 370 |
| K | 灰铸铁、球墨铸铁（<52HRC） Gry cast iron、nodular cast iron | ap≤1.5D | 160 | 转速 rote speed (min-1) | 16990 | 12740 | 8490 | 6370 | 5100 | 4250 | 3190 | 2550 |
| | 高合金钢铁（35-45HRC） High alloy cast iron | ap≤0.15D | | 进给转速 feed velocity (mm/min) | 850 | 820 | 820 | 750 | 700 | 680 | 610 | 560 |
| | | ap≤1D | 140 | 转速 rote speed (min-1) | 14860 | 11150 | 7430 | 5570 | 4460 | 3720 | 2790 | 2230 |
| | | ap≤0.12D | | 进给转速 feed velocity (mm/min) | 650 | 670 | 670 | 620 | 580 | 560 | 500 | 460 |

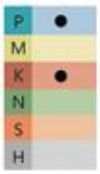
上表是侧铣加工的标准值，刀具切槽时，转速要以上表格的50%~70%，进给速度要以40%~60%为标准值。

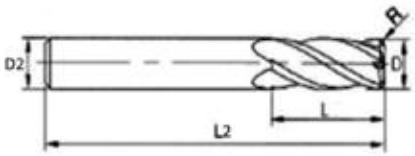
Above table is the standard cutting data for side milling maching, if for groove cutting , the VC should reach 50%~70% and the feed should reach 40%~60% based on the table.

# Carbide Corner Radius End Mill（Extra Long）

YB550 | TISIN | HRC 55 | S

| 单位Unit | (mm) | |
|---|---|---|
| D | D≤12 | D>12 |
| 公差Tol | 0 | 0 |
| | -0.015 | -0.02 |




| Diameter D | Radius R | Cutting Length L | Shank D2 | Overall Length L2 |
|---|---|---|---|---|
| mm | mm | mm | mm | mm |
| 3 | 0.5 | 12 | 3 | 75 |
| 4 | 0.5 | 15 | 4 | 75 |
| 5 | 0.5 | 25 | 5 | 75 |
| 6 | 0.5 | 25 | 6 | 75 |
| 8 | 0.5 | 25 | 8 | 75 |
| 4 | 0.5 | 20 | 4 | 100 |
| 4 | 1 | 20 | 4 | 100 |
| 5 | 0.5 | 30 | 5 | 100 |
| 5 | 1 | 30 | 5 | 100 |
| 6 | 0.5 | 30 | 6 | 100 |
| 6 | 1 | 30 | 6 | 100 |
| 8 | 0.5 | 35 | 8 | 100 |
| 8 | 1 | 35 | 8 | 100 |
| 10 | 0.5 | 40 | 10 | 100 |
| 10 | 1 | 40 | 10 | 100 |
| 12 | 0.5 | 45 | 12 | 100 |
| 12 | 1 | 45 | 12 | 100 |
| 8 | 0.5 | 50 | 8 | 100 |
| 8 | 1 | 50 | 8 | 150 |
| 10 | 0.5 | 55 | 10 | 150 |
| 10 | 1 | 55 | 10 | 150 |
| 12 | 0.5 | 60 | 12 | 150 |
| 12 | 1 | 60 | 12 | 150 |

| MÃ ĐẶT HÀNG |
|---|
| YB550-4F-0305120375 |
| YB550-4F-0405160475 |
| YB550-4F-0505180575 |
| YB550-4F-0605240675 |
| YB550-4F-0805250875 |
| YB550-4F-04052004100 |
| YB550-4F-0412004100 |
| YB550-4F-05053005100 |
| YB550-4F-0513005100 |
| YB550-4F-06053006100 |
| YB550-4F-0613006100 |
| YB550-4F-08053508100 |
| YB550-4F-0813508100 |
| YB550-4F-10054010100 |
| YB550-4F-1014010100 |
| YB550-4F-12054512100 |
| YB550-4F-1214512100 |
| YB550-4F-08055008150 |
| YB550-4F-0815008150 |
| YB550-4F-10055510150 |
| YB550-4F-1015510150 |
| YB550-4F-12055512150 |
| YB550-4F-1215512150 |

| ISO | 被加工材料 Workpiece Material | 切削量（mm） Depth of cut | Vc m/min | | 刃径 Tool Diameter（mm） 3 | 4 | 6 | 8 | 10 | 12 | 16 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 碳钢合金（<45HRC） Carbon steel alloy steel 合金钢（50HRC） Alloy Steel | ap≤1.5D ap≤0.15D | 180 | 转速 rote speed（min-1） 进给转速 feed velocity（mm/min） | 19110 1070 | 14330 1030 | 9550 920 | 7170 930 | 5730 920 | 4780 860 | 3580 860 | 2870 860 |
| | | ap≤1D ap≤0.12D | 130 | 转速 rote speed（min-1） 进给转速 feed velocity（mm/min） | 13800 610 | 10350 580 | 6900 550 | 5180 620 | 4140 560 | 3450 500 | 2590 410 | 2070 370 |
| K | 灰铸铁，球墨铸铁（<32HRC） Gry cast iron，nodular cast iron 高合金铸铁（35-45HRC） High alloy cast iron | ap≤1.5D ap≤0.15D | 160 | 转速 rote speed（min-1） 进给转速 feed velocity（mm/min） | 16990 850 | 12740 820 | 8490 820 | 6370 750 | 5100 700 | 4250 680 | 3190 610 | 2550 560 |
| | | ap≤1D ap≤0.12D | 140 | 转速 rote speed（min-1） 进给转速 feed velocity（mm/min） | 14860 650 | 11150 670 | 7430 670 | 5570 620 | 4460 580 | 3720 560 | 2790 500 | 2230 460 |

上表是侧铣加工的标准值，刀具切槽时，转速要以上表格的50%~70%，进给速度要以40%~60%为标准值。

Above table is the standard cutting data for side milling maching, if for groove cutting , the VC should reach 50%~70% and the feed should reach 40%~60% based on the table.

# HRC65系列
# HIGH PERFORMANCE

P K M H

HRC65高硬度高效加工立铣刀
HRC65 High hardness and high efficiency machining end milling cutter

END

- 适用于高硬度钢件的高效加工
- 可加工不锈钢，调质钢和一般经过热处理的钢材
- 适用于精加工
- Suitable for efficient processing of high-hardness steel parts
- Can process stainless steel, quenched and tempered steel and generally heat-treated steel.
- Suitable for finishing

卓越的抗震能力
Excellent vibration resistance

全球合作伙伴-WORLDWIDE RELIABLE PARTNERS

0.4μm微晶粒尺寸，可加工不锈钢，
大多数钢和经过热处理的钢材。
0.4μm micro grain size, can process stainless steel,
most modulated steel and general steel after heat treatment.

## ●产品特点 Features

采用高性能复合涂层
HIGH-PERFORMANCE COMPOSITE COATING

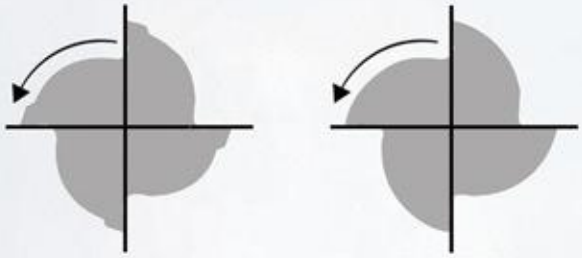
### ●大螺旋角Lang Helix Angle

**大螺旋角：抑制振动，完全面良好**
Lage Helix Angle: vibration suppresion,
good finfish surface


[振动小，有效加工，提高生产效率]
[Improved productivty with effective machining due to less vibration]

### ●槽型经过特殊设计，能够更好的改善切削流动和卷曲，以及降低切屑力。

The groove is specially designed to better improve chip flow and curl, and reduce cutting force.



本产品槽型
This Product Type

传统槽型
Traditional Type

## ●加工效果 Machining Effect

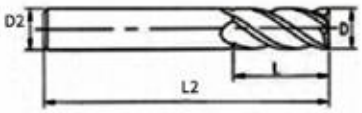
| 加工时间 processing time | 50min | | | |
|---|---|---|---|---|
| 刀具磨损 Tool wear |  |  |  |  |
| 刀具型号 Tool type | HRC65-S4-D6.0 | A公司同类产品 Similar products of company A | B公司同类产品 Similar products of company B | HRC65-S4-D6.0 |

## Carbide 4Flutes Square End Mill（Standard）

PD650 | NACO | HRC 65 | S

| P | ● |
|---|---|
| M | ● |
| K | ● |
| N | |
| S | |
| H | ● |

| 单位Unit | (mm) | |
|---|---|---|
| D | D≤12 | D>12 |
| 公差Tol | 0 | 0 |
| | -0.015 | -0.02 |




| Diameter D | Cutting Length L | Shank D2 | Overall Length L2 | Ordering Code |
|---|---|---|---|---|
| mm | mm | mm | mm | |
| 1 | 3 | 4 | 50 | PD650-4F-01030450 |
| 1.5 | 4 | 4 | 50 | PD650-4F-015040450 |
| 2 | 6 | 4 | 50 | PD650-4F-02060450 |
| 2.5 | 8 | 4 | 50 | PD650-4F-025080450 |
| 3 | 8 | 3 | 50 | PD650-4F-03080350 |
| 3 | 8 | 4 | 50 | PD650-4F-03080450 |
| 3.5 | 10 | 4 | 50 | PD650-4F-035100450 |
| 4 | 12 | 4 | 50 | PD650-4F-04120450 |
| 5 | 13 | 5 | 50 | PD650-4F-05130550 |
| 5 | 13 | 6 | 50 | PD650-4F-05130650 |
| 6 | 15 | 6 | 50 | PD650-4F-06150650 |
| 7 | 20 | 8 | 60 | PD650-4F-07200860 |
| 8 | 20 | 8 | 60 | PD650-4F-08200860 |
| 9 | 25 | 10 | 75 | PD650-4F-09251075 |
| 10 | 25 | 10 | 75 | PD650-4F-10251075 |
| 11 | 30 | 12 | 75 | PD650-4F-11301275 |
| 12 | 30 | 12 | 75 | PD650-4F-12301275 |
| 14 | 45 | 14 | 100 | PD650-4F-144514100 |
| 16 | 45 | 16 | 100 | PD650-4F-164516100 |
| 18 | 45 | 18 | 100 | PD650-4F-184518100 |
| 20 | 45 | 20 | 100 | PD650-4F-204520100 |

| ISO | 被加工材料 Workpiece Material | 切削量（mm） Depth of cut | Vc m/min | | 刃径 Tool Diameter（mm） 2 | 4 | 6 | 8 | 10 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|
| H | 合金钢、淬硬钢(<60HAC) Alloy steel,hardened steel | ap≤1D ap≤0.05D | 120 | 转速 rote speed（min-1） 进给转速 feed velocity（mm/min） | 19110 380 | 9550 380 | 6370 380 | 7170 930 | 4780 380 | 3490 360 |
| | 合金钢、淬硬钢(65HRC) Alloy steel, hardened stee | ap≤0.7D ap≤0.03D | 90 | 转速 rote speed（min-1） 进给转速 feed velocity（mm/min） | 15920 260 | 11940 360 | 7960 370 | 5180 620 | 4780 370 | 3980 340 |

上表是侧铣加工的标准值，刀具切槽时，转速要以上表格的50%~70%，进给速度要以40%~60%为标准值。

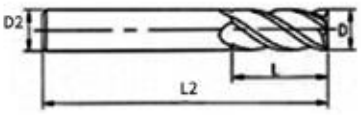
Above table is the standard cutting data for side milling machine, if for groove cutting , the VC should reach 50%~70% and the feed should reach 40%~60% based on the table.

## Carbide 4Flutes Square End Mill（Extra Long）

PD650 NACO HRC 65 S

| 单位Unit | (mm) | |
|---|---|---|
| D | D≤12 | D>12 |
| 公差Tol | 0 | 0 |
| | -0.015 | -0.02 |

P ●
M ●
K ●
N
S
H ●




| Diameter D | Cutting Length L | Shank D2 | Overall Length L2 | Ordering Code |
|---|---|---|---|---|
| mm | mm | mm | mm | |
| 3 | 12 | 3 | 75 | PD650-4F-03120375 |
| 4 | 16 | 4 | 75 | PD650-4F-04160475 |
| 5 | 18 | 5 | 75 | PD650-4F-05180575 |
| 6 | 24 | 6 | 75 | PD650-4F-06240675 |
| 8 | 25 | 8 | 75 | PD650-4F-08250875 |
| 3 | 12 | 3 | 100 | PD650-4F-031203100 |
| 4 | 20 | 4 | 100 | PD650-4F-042004100 |
| 5 | 30 | 5 | 100 | PD650-4F-053005100 |
| 6 | 30 | 6 | 100 | PD650-4F-063006100 |
| 8 | 35 | 8 | 100 | PD650-4F-083508100 |
| 10 | 40 | 10 | 100 | PD650-4F-104010100 |
| 12 | 45 | 12 | 100 | PD650-4F-124512100 |
| 6 | 45 | 6 | 150 | PD650-4F-064506150 |
| 8 | 50 | 8 | 150 | PD650-4F-085008150 |
| 10 | 55 | 10 | 150 | PD650-4F-105510150 |
| 12 | 55 | 12 | 150 | PD650-4F-125512150 |
| 14 | 70 | 14 | 150 | PD650-4F-147014150 |
| 16 | 70 | 16 | 150 | PD650-4F-167016150 |
| 20 | 70 | 20 | 150 | PD650-4F-207020150 |

| ISO | 被加工材料 Workpiece Material | 切削量（mm） Depth of cut | Vc m/min | | 刃径 Tool Diameter（mm） 2 | 4 | 6 | 8 | 10 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|
| H | 合金钢、淬硬钢(<60HAC) Alloy steel,hardened steel | ap≤1D ap≤0.05D | 120 | 转速 rote speed（min-1） 进给转速 feed velocity（mm/min） | 19110 380 | 9550 380 | 6370 380 | 7170 930 | 4780 380 | 3490 360 |
| | 合金钢、淬硬钢(65HRC) Alloy steel, hardened stee | ap≤0.7D ap≤0.03D | 90 | 转速 rote speed（min-1） 进给转速 feed velocity（mm/min） | 15920 260 | 11940 360 | 7960 370 | 5180 620 | 4780 370 | 3980 340 |

上表是侧铣加工的标准值，刀具切槽时，转速要以上表格的50%~70%，进给速度要以40%~60%为标准值。

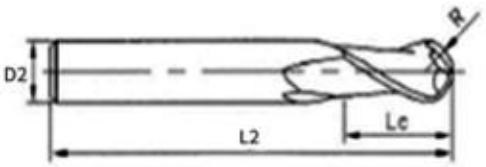
Above table is the standard cutting data for side milling maching, if for groove cutting , the VC should reach 50%~70% and the feed should reach 40%~60% based on the table.t

## Carbide Ball Nose End Mill（Standard）

QD650 | NACO | HRC 65 | 2F | 45° | B

| | |
|---|---|
| P | ● |
| M | ● |
| K | ● |
| N | |
| S | |
| H | ● |

| 单位Unit | (mm) | | |
|---|---|---|---|
| R | R≤1.5 | 1.5<R<3 | R≥3 |
| 公差Tol | 0 | 0 | 0 |
| | -0.015 | -0.015 | -0.02 |




| Cutting Length L | Radius R | Shank D2 | Overall Length L2 | Ordering Code |
|---|---|---|---|---|
| mm | mm | mm | mm | |
| 2 | 0.5 | 4 | 50 | QD650-2F-01020450 |
| 3 | 0.75 | 4 | 50 | QD650-2F-015030450 |
| 4 | 1 | 4 | 50 | QD650-2F-02040450 |
| 5 | 1.25 | 4 | 50 | QD650-2F-025050450 |
| 6 | 1.5 | 3 | 50 | QD650-2F-03060350 |
| 6 | 1.5 | 4 | 50 | QD650-2F-03060450 |
| 7 | 1.75 | 4 | 50 | QD650-2F-035070450 |
| 12 | 2 | 4 | 50 | QD650-2F-04080450 |
| 12 | 2.5 | 5 | 50 | QD650-2F-05100550 |
| 12 | 2.5 | 6 | 50 | QD650-2F-05100650 |
| 12 | 3 | 6 | 50 | QD650-2F-06120650 |
| 16 | 4 | 8 | 60 | QD650-2F-08160860 |
| 20 | 5 | 10 | 75 | QD650-2F-10201075 |
| 24 | 6 | 12 | 75 | QD650-2F-12241275 |
| 28 | 7 | 14 | 100 | QD650-2F-142814100 |
| 32 | 8 | 16 | 100 | QD650-2F-163216100 |
| 36 | 9 | 18 | 100 | QD650-2F-183618100 |
| 40 | 10 | 20 | 100 | QD650-2F-204020100 |

| ISO | 被加工材料 Workpiece Material | 切削量（mm） Depth of cut | Vc m/min | | 刃径 Tool Diameter（mm） 2 | 4 | 6 | 8 | 10 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|
| H | 合金钢、淬硬钢(<60HAC) Alloy steel,hardened steel | ap≤1D ap≤0.05D | 120 | 转速 rote speed（min-1） 进给转速 feed velocity（mm/min） | 19110 380 | 9550 380 | 6370 380 | 7170 930 | 4780 380 | 3490 360 |
| | 合金钢、淬硬钢(65HRC) Alloy steel, hardened stee | ap≤0.7D ap≤0.03D | 90 | 转速 rote speed（min-1） 进给转速 feed velocity（mm/min） | 15920 260 | 11940 360 | 7960 370 | 5180 620 | 4780 370 | 3980 340 |

上表是侧铣加工的标准值，刀具切槽时，转速要以上表格的50%~70%，进给速度要以40%~60%为标准值。

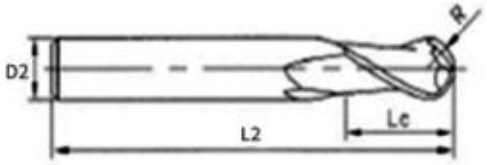
Above table is the standard cutting data for side milling maching, if for groove cutting , the VC should reach 50%~70% and the feed should reach 40%~60% based on the table.

# Carbide Ball Nose End Mill（Extra Long）

QD650 | NACO | HRC 65 | 2F | 45° | B

| P | ● |
|---|---|
| M | ● |
| K | ● |
| N | |
| S | |
| H | ● |

| 单位Unit | (mm) | | |
|---|---|---|---|
| R | R≤1.5 | 1.5<R<3 | R≥3 |
| 公差Tol | 0 | 0 | 0 |
| | -0.015 | -0.015 | -0.02 |




| Cutting Length L | Radius R | Shank D2 | Overall Length L2 | Ordering Code |
|---|---|---|---|---|
| mm | mm | mm | mm | |
| 6 | 1.5 | 3 | 75 | QD650-2F-03060375 |
| 8 | 2 | 4 | 75 | QD650-2F-04080475 |
| 10 | 2.5 | 5 | 75 | QD650-2F-05100575 |
| 12 | 3 | 6 | 75 | QD650-2F-06120675 |
| 16 | 4 | 8 | 75 | QD650-2F-08160875 |
| 8 | 2 | 4 | 100 | QD650-2F-040804100 |
| 12 | 2.5 | 5 | 100 | QD650-2F-051005100 |
| 12 | 3 | 6 | 100 | QD650-2F-061206100 |
| 16 | 4 | 8 | 100 | QD650-2F-081608100 |
| 20 | 5 | 10 | 100 | QD650-2F-102010100 |
| 24 | 6 | 12 | 100 | QD650-2F-122412100 |
| 12 | 3 | 6 | 150 | QD650-2F-061206150 |
| 16 | 4 | 8 | 150 | QD650-2F-081608150 |
| 20 | 5 | 10 | 150 | QD650-2F-102010150 |
| 24 | 6 | 12 | 150 | QD650-2F-122412150 |
| 28 | 7 | 14 | 150 | QD650-2F-142814150 |
| 32 | 8 | 16 | 150 | QD650-2F-163216150 |
| 40 | 10 | 20 | 150 | QD650-2F-204020150 |

| ISO | 被加工材料 Workpiece Material | 切削量（mm） Depth of cut | Vc m/min | | 刃径 Tool Diameter（mm） 2 | 4 | 6 | 8 | 10 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|
| H | 合金钢、淬硬钢(<60HAC) Alloy steel,hardened steel | ap≤1D ap≤0.05D | 120 | 转速 rote speed（min-1） 进给转速 feed velocity（mm/min） | 19110 380 | 9550 380 | 6370 380 | 7170 930 | 4780 380 | 3490 360 |
| | 合金钢、淬硬钢(65HRC) Alloy steel, hardened stee | ap≤0.7D ap≤0.03D | 90 | 转速 rote speed（min-1） 进给转速 feed velocity（mm/min） | 15920 260 | 11940 360 | 7960 370 | 5180 620 | 4780 370 | 3980 340 |

上表是侧铣加工的标准值，刀具切槽时，转速要以上表格的50%~70%，进给速度要以40%~60%为标准值。

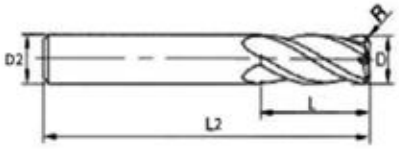
Above table is the standard cutting data for side milling maching, if for groove cutting , the VC should reach 50%~70% and the feed should reach 40%~60% based on the table.

# Carbide Corner Radius End Mill（Standard）

YB650 | NACO | HRC 65 | S

| | |
|---|---|
| P | ● |
| M | ● |
| K | ● |
| N | |
| S | |
| H | ● |

| 单位Unit | (mm) | |
|---|---|---|
| D | D≤12 | D>12 |
| 公差Tol | 0 | 0 |
| | -0.015 | -0.02 |




| Diameter D | Radius R | Cutting Length L | Shank D2 | Overall Length L2 | Ordering Code |
|---|---|---|---|---|---|
| mm | mm | mm | mm | mm | |
| 1 | 0.2 | 3 | 4 | 50 | YB650-4F-0102030450 |
| 1.5 | 0.2 | 5 | 4 | 50 | YB650-4F-01502050450 |
| 2 | 0.2 | 6 | 4 | 50 | YB650-4F-0202060450 |
| 2 | 0.5 | 6 | 4 | 50 | YB650-4F-0205060450 |
| 2.5 | 0.2 | 8 | 4 | 50 | YB650-4F-02502080450 |
| 2.5 | 0.5 | 8 | 3 | 50 | YB650-4F-02505080350 |
| 3 | 0.5 | 8 | 3 | 50 | YB650-4F-0305090350 |
| 3 | 0.2 | 9 | 4 | 50 | YB650-4F-0302090450 |
| 3 | 0.5 | 9 | 4 | 50 | YB650-4F-0305090450 |
| 4 | 0.2 | 10 | 4 | 50 | YB650-4F-0402120450 |
| 4 | 0.5 | 10 | 4 | 50 | YB650-4F-0405120450 |
| 4 | 1 | 10 | 4 | 50 | YB650-4F-041120450 |
| 5 | 0.5 | 13 | 5 | 50 | YB650-4F-0505130550 |
| 5 | 1 | 13 | 5 | 50 | YB650-4F-051130550 |
| 5 | 0.5 | 13 | 6 | 50 | YB650-4F-0505130650 |
| 5 | 1 | 13 | 6 | 50 | YB650-4F-051130650 |
| 6 | 0.2 | 15 | 6 | 50 | YB650-4F-0602150650 |
| 6 | 0.5 | 15 | 6 | 50 | YB650-4F-0605150650 |
| 6 | 1 | 15 | 6 | 50 | YB650-4F-061150650 |
| 8 | 0.5 | 20 | 8 | 60 | YB650-4F-0805200860 |
| 8 | 1 | 20 | 8 | 60 | YB650-4F-081200860 |
| 10 | 0.5 | 25 | 10 | 75 | YB650-4F-1005251075 |
| 10 | 1 | 25 | 10 | 75 | YB650-4F-101251075 |
| 12 | 0.5 | 30 | 12 | 75 | YB650-4F-1205301275 |
| 12 | 1 | 30 | 12 | 75 | YB650-4F-121301275 |

| ISO | 被加工材料 Workpiece Material | 切削量（mm） Depth of cut | Vc m/min | | 刃径 Tool Diameter（mm） 2 | 4 | 6 | 8 | 10 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|
| H | 合金钢、淬硬钢(<60HAC) Alloy steel,hardened steel | ap≤1D ap≤0.05D | 120 | 转速 rote speed（min-1） 进给转速 feed velocity（mm/min） | 19110 380 | 9550 380 | 6370 380 | 7170 930 | 4780 380 | 3490 360 |
| | 合金钢、淬硬钢(65HRC) Alloy steel, hardened stee | ap≤0.7D ap≤0.03D | 90 | 转速 rote speed（min-1） 进给转速 feed velocity（mm/min） | 15920 260 | 11940 360 | 7960 370 | 5180 620 | 4780 370 | 3980 340 |

上表是侧铣加工的标准值，刀具切槽时，转速要以上表格的50%~70%，进给速度要以40%~60%为标准值。

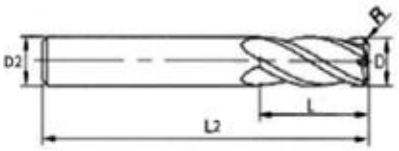
Above table is the standard cutting data for side milling maching, if for groove cutting , the VC should reach 50%~70% and the feed should reach 40%~60% based on the table.

# Carbide Corner Radius End Mill（Extra Long）

YB650 | NACO | HRC 65 | S

| 单位Unit | (mm) | |
|---|---|---|
| D | D≤12 | D>12 |
| 公差Tol | 0 | 0 |
| | -0.015 | -0.02 |

P ●
M ●
K ●
N
S
H ●




| Diameter D | Radius R | Cutting Length L | Shank D2 | Overall Length L2 |
|---|---|---|---|---|
| mm | mm | mm | mm | mm |
| 4 | 0.5 | 15 | 4 | 75 |
| 6 | 0.5 | 25 | 6 | 75 |
| 6 | 1 | 25 | 6 | 75 |
| 8 | 0.5 | 30 | 8 | 75 |
| 8 | 1 | 30 | 8 | 75 |
| 4 | 0.5 | 20 | 4 | 100 |
| 4 | 1 | 20 | 4 | 100 |
| 6 | 0.5 | 30 | 6 | 100 |
| 6 | 1 | 30 | 6 | 100 |
| 8 | 0.5 | 35 | 8 | 100 |
| 8 | 1 | 35 | 8 | 100 |
| 10 | 0.5 | 40 | 10 | 100 |
| 10 | 1 | 40 | 10 | 100 |
| 12 | 0.5 | 45 | 12 | 100 |
| 12 | 1 | 45 | 12 | 100 |

| Ordering Code |
|---|
| YB650-4F-0405160475 |
| YB650-4F-0605240675 |
| YB650-4F-061240675 |
| YB650-4F-0805250875 |
| YB650-4F-081250875 |
| YB650-4F-04052004100 |
| YB650-4F-0412004100 |
| YB650-4F-06053006100 |
| YB650-4F-0613006100 |
| YB650-4F-08053508100 |
| YB650-4F-0813508100 |
| YB650-4F-10054010100 |
| YB650-4F-1014010100 |
| YB650-4F-12054512100 |
| YB650-4F-1214512100 |

| ISO | 被加工材料 Workpiece Material | 切削量（mm） Depth of cut | Vc m/min | | 刃径 Tool Diameter（mm） 2 | 4 | 6 | 8 | 10 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|
| H | 合金钢，淬硬钢(<60HAC) Alloy steel,hardened steel | ap≤1D ap≤0.05D | 120 | 转速 rote speed（min-1） 进给转速 feed velocity（mm/min） | 19110 380 | 9550 380 | 6370 380 | 7170 930 | 4780 380 | 3490 360 |
| | 合金钢，淬硬钢(65HRC) Alloy steel, hardened stee | ap≤0.7D ap≤0.03D | 90 | 转速 rote speed（min-1） 进给转速 feed velocity（mm/min） | 15920 260 | 11940 360 | 7960 370 | 5180 620 | 4780 370 | 3980 340 |

上表是侧铣加工的标准值，刀具切槽时，转速要以上表格的50%~70%，进给速度要以40%~60%为标准值。
Above table is the standard cutting data for side milling maching, if for groove cutting , the VC should reach 50%~70% and the feed should reach 40%~60% based on the table.

# ST-H系列铣刀
# ST-H SERIES ENDMILL

## 通用加工立铣刀 · GENERAL MACHINING END MILLS

P M H K

多功能刀具，适用材料最广泛，工况适应性最优性价比之王，高速加工，精粗两用，高效率加工

Multifunctional tool, applicable to the widest range of materials, the best adaptability to working conditions, the king of cost performance, high-speed machining, both fine and rough, high-efficiency machining

高硬度 高韧性基材

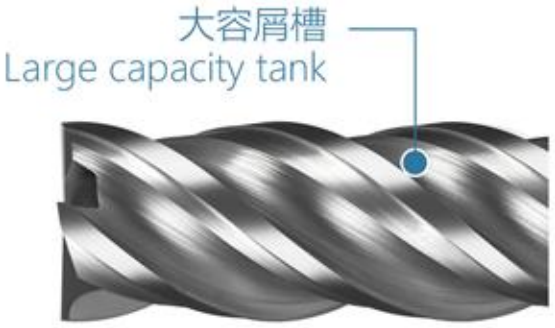
High hardness and high toughness base material

全球合作伙伴-WORLDWIDE RELIABLE PARTNERS

# 通用加工·抗粘刀能力强，提升刀具寿命
# General machining, strong anti-sticking ability, extended tool life

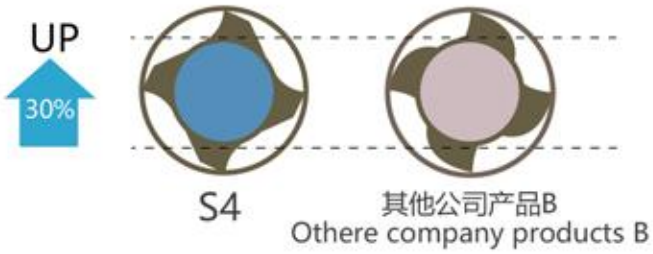
## 稳定的排屑量。芯厚大，高刚性
## Stable chip evacuation. Large core thickness, high rigidity.

在切槽·高进给加工中发挥威力
Play a powerful role in slotting and high feed processing



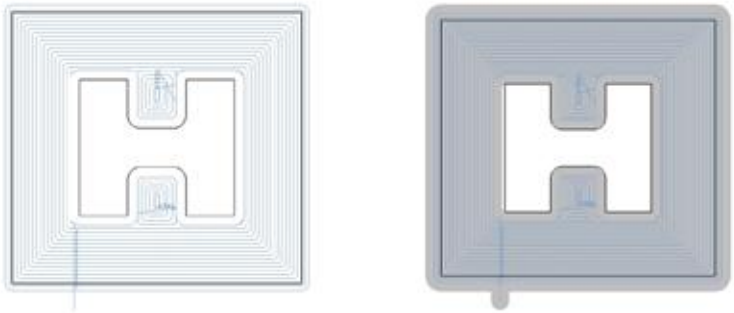

抗振刀性·抗弯能力强
Vibration resistance strong bending resistance

芯厚对比 The core thickness contrast



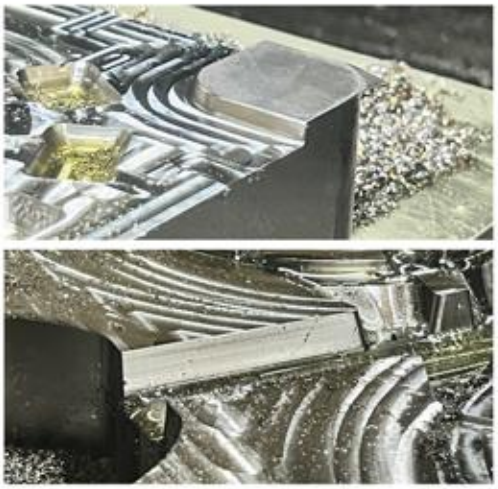

## ST-H系列案例 ST-H SERIES CASE

侧面铣削 Side milling



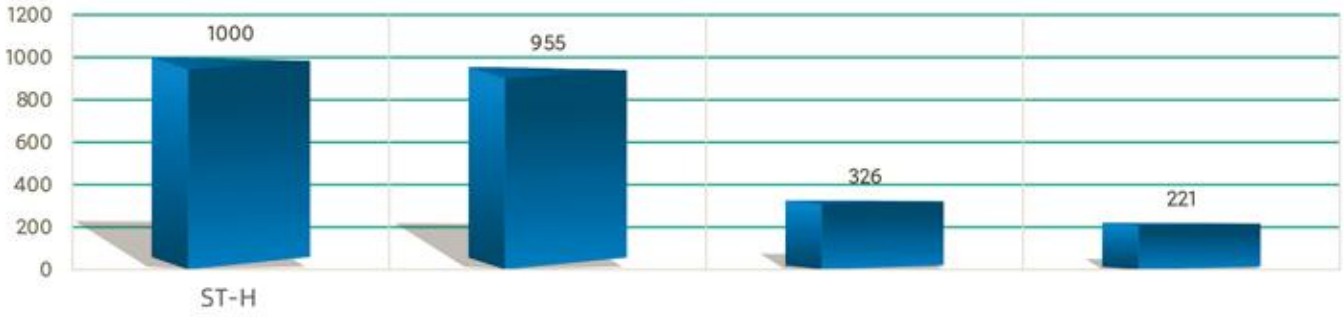
压铸热处理后: H13钢 HRC55-60　应用规格: 8R0.5x60mm
转速:7700 进给:2500 切深:10μm

After die casting heat treatment: H13 steel HRC55-60
Application specifications: 8R0.5x60mm
Rotation speed: 7700 Feed: 2500 Depth of cut: 10μm

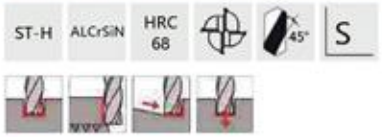


（加工效果Processing effect）

刀具寿命对比（件数）
Tool life comparison (number of pieces)

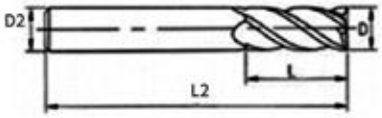


## Carbide 4Flutes Square End Mill (Standard)




| 单位Unit | (mm) | |
|---|---|---|
| D | D≤12 | D>12 |
| 公差Tol | 0 | 0 |
| | -0.005 | -0.005 |

| | |
|---|---|
| P | ● |
| M | ● |
| K | ● |
| N | |
| S | ● |
| H | ● |



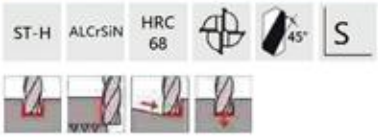

| Diameter D | Cutting Length L | Shank D2 | Overall Length L2 | Ordering Code |
|---|---|---|---|---|
| mm | mm | mm | mm | |
| 1 | 3 | 4 | 50 | ST-H-4F-01030450 |
| 1.5 | 5 | 4 | 50 | ST-H-4F-015050450 |
| 2 | 6 | 4 | 50 | ST-H-4F-02060450 |
| 2.5 | 8 | 4 | 50 | ST-H-4F-025080450 |
| 3 | 9 | 4 | 50 | ST-H-4F-03090450 |
| 4 | 12 | 4 | 50 | ST-H-4F-04120450 |
| 5 | 13 | 6 | 50 | ST-H-4F-05130650 |
| 6 | 18 | 6 | 50 | ST-H-4F-06180650 |
| 8 | 20 | 8 | 60 | ST-H-4F-08200860 |
| 10 | 30 | 10 | 75 | ST-H-4F-10301075 |
| 12 | 36 | 12 | 75 | ST-H-4F-12361275 |
| 14 | 40 | 14 | 100 | ST-H-4F-144014100 |
| 16 | 45 | 16 | 100 | ST-H-4F-164516100 |
| 18 | 50 | 18 | 100 | ST-H-4F-185018100 |
| 20 | 50 | 20 | 100 | ST-H-4F-205020100 |

| ISO | 被加工材料 Workpiece Material | 切削量 (mm) Depth of cut | Vc m/min | | 刃径 Tool Diameter (mm) 3 | 4 | 6 | 8 | 10 | 12 | 16 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 碳钢合金 (<45HRC) Carbon steel alloy steel | ap≤1.5D ap≤0.15D | 200 | 转速 rote speed (min-1) 进给转速 feed velocity (mm/min) | 21230 2040 | 15920 1960 | 10620 1690 | 7960 1670 | 6370 1620 | 5310 1590 | 3980 1490 | 3190 1480 |
| | 合金钢 (50HRC) Alloy Steel | ap≤1D ap≤0.12D | 150 | 转速 rote speed (min-1) 进给转速 feed velocity (mm/min) | 15920 1290 | 10350 1180 | 7960 1080 | 5970 1160 | 4780 1050 | 3980 930 | 2990 760 | 2390 680 |
| M | 不锈钢 stainless steel | ap≤1.5D ap≤0.15D | 150 | 转速 rote speed (min-1) 进给转速 feed velocity (mm/min) | 15920 1580 | 11940 1330 | 49600 1150 | 5970 1220 | 4780 1130 | 3980 1080 | 2900 900 | 2390 820 |
| K | 灰铸铜，球墨铸铁 (<32HRC) Gry cast iron，nodular cast iron | ap≤1.5D ap≤0.15D | 170 | 转速 rote speed (min-1) 进给转速 feed velocity (mm/min) | 18050 1620 | 13540 1500 | 9020 1440 | 6770 1330 | 5410 1200 | 4510 1150 | 3380 1020 | 2710 930 |
| | 高合金铸铁 (35-45HRC) High alloy cast iron | ap≤1D ap≤0.12D | 150 | 转速 rote speed (min-1) 进给转速 feed velocity (mm/min) | 15920 1290 | 11940 1250 | 7960 1190 | 5970 1090 | 4780 1000 | 3980 960 | 2990 850 | 2390 770 |
| H | 合金钢、淬硬钢(<60HRC) Alloy steel, hardened steel | ap≤1D ap≤0.05D | 120 | 转速 rote speed (min-1) 进给转速 feed velocity (mm/min) | 16710 380 | 9550 380 | 6370 380 | 4780 380 | 3820 370 | 3190 360 | 2390 310 | 1910 290 |

上表是侧铣加工的标准值，刀具切槽时，转速要以上表的50%~70%，进给速度要以40%~60%为标准值。

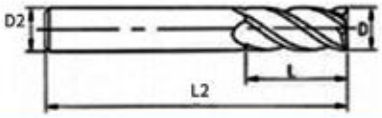
Above table is the standard cutting data for side milling maching, if for groove cuttingtheVC should reach 50%-70%and the feed should reach 40%-60% based on the table.

# Carbide 4Flutes Square End Mill (Extra Long)




| 单位Unit | (mm) | |
|---|---|---|
| D | D≤12 | D>12 |
| 公差Tol | 0 | 0 |
| | -0.005 | -0.005 |

| | |
|---|---|
| P | ● |
| M | ● |
| K | ● |
| N | |
| S | ● |
| H | ● |



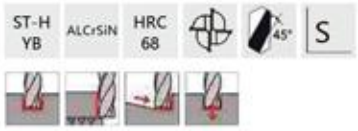

| Diameter D | Cutting Length L | Shank D2 | Overall Length L2 | Ordering Code |
|---|---|---|---|---|
| mm | mm | mm | mm | |
| 3 | 12 | 4 | 75 | ST-H-4F-03120475 |
| 4 | 16 | 4 | 75 | ST-H-4F-04160475 |
| 5 | 20 | 6 | 75 | ST-H-4F-05200675 |
| 6 | 25 | 6 | 75 | ST-H-4F-06250675 |
| 8 | 32 | 8 | 75 | ST-H-4F-08320875 |
| 3 | 12 | 4 | 100 | ST-H-4F-031204100 |
| 4 | 16 | 4 | 100 | ST-H-4F-041604100 |
| 6 | 25 | 6 | 100 | ST-H-4F-062506100 |
| 8 | 32 | 8 | 100 | ST-H-4F-083208100 |
| 10 | 40 | 10 | 100 | ST-H-4F-104010100 |
| 12 | 50 | 12 | 100 | ST-H-4F-125012100 |
| 6 | 45 | 6 | 150 | ST-H-4F-064506150 |
| 8 | 50 | 8 | 150 | ST-H-4F-085008150 |
| 10 | 55 | 10 | 150 | ST-H-4F-105510150 |
| 12 | 60 | 12 | 150 | ST-H-4F-126012150 |
| 16 | 65 | 16 | 150 | ST-H-4F-166516150 |
| 20 | 80 | 20 | 150 | ST-H-4F-208020150 |

| ISO | 被加工材料 Workpiece Material | 切削量 (mm) Depth of cut | Vc m/min | | 刃径 Tool Diameter (mm) 3 | 4 | 6 | 8 | 10 | 12 | 16 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 碳钢合金 (<45HRC) Carbon steel alloy steel | ap≤1.5D ap≤0.15D | 200 | 转速 rote speed (min-1) 进给转速 feed velocity (mm/min) | 21230 2040 | 15920 1960 | 10620 1690 | 7960 1670 | 6370 1620 | 5310 1590 | 3980 1490 | 3190 1480 |
| | 合金钢 (50HRC) Alloy Steel | ap≤1D ap≤0.12D | 150 | 转速 rote speed (min-1) 进给转速 feed velocity (mm/min) | 15920 1290 | 10350 1180 | 7960 1080 | 5970 1160 | 4780 1050 | 3980 930 | 2990 760 | 2390 680 |
| M | 不锈钢 stainless steel | ap≤1.5D ap≤0.15D | 150 | 转速 rote speed (min-1) 进给转速 feed velocity (mm/min) | 15920 1580 | 11940 1330 | 49600 1150 | 5970 1220 | 4780 1130 | 3980 1080 | 2900 900 | 2390 820 |
| K | 灰铸铁，球墨铸铁 (<32HRC) Gry cast iron，nodular cast iron | ap≤1.5D ap≤0.15D | 170 | 转速 rote speed (min-1) 进给转速 feed velocity (mm/min) | 18050 1620 | 13540 1500 | 9020 1440 | 6770 1330 | 5410 1200 | 4510 1150 | 3380 1020 | 2710 930 |
| | 高合金铸铁 (35-45HRC) High alloy cast iron | ap≤1D ap≤0.12D | 150 | 转速 rote speed (min-1) 进给转速 feed velocity (mm/min) | 15920 1290 | 11940 1250 | 7960 1190 | 5970 1090 | 4780 1000 | 3980 960 | 2990 850 | 2390 770 |
| H | 合金钢，淬硬钢(<60HRC) Alloy steel, hardened steel | ap≤1D ap≤0.05D | 120 | 转速 rote speed (min-1) 进给转速 feed velocity (mm/min) | 16710 380 | 9550 380 | 6370 380 | 4780 380 | 3820 370 | 3190 360 | 2390 310 | 1910 290 |

上表是侧铣加工的标准值，刀具切槽时，转速要以上表的50%~70%，进给速度要以40%~60%为标准值。

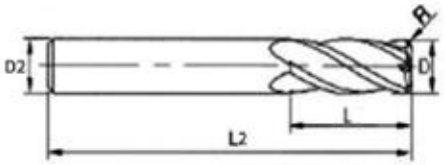
Above table is the standard cutting data for side milling maching, if for groove cuttingtheVC should reach 50%-70%and the feed should reach 40%-60% based on the table.

# Carbide Corner Radius End Mill（Standard）




| 单位Unit | (mm) | |
|---|---|---|
| D | D≤12 | D>12 |
| 公差Tol | 0 | 0 |
| | -0.005 | -0.005 |

| | |
|---|---|
| P | ● |
| M | ● |
| K | ● |
| N | |
| S | ● |
| H | ● |



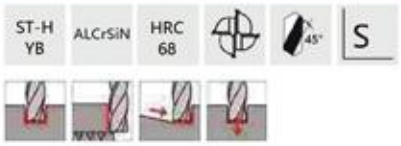

| Diameter D | Radius R | Cutting Length L | Shank D2 | Overall Length L2 | Ordering Code |
|---|---|---|---|---|---|
| mm | mm | mm | mm | mm | |
| 1 | R0.2 | 3 | 4 | 50 | ST-H-4F-YB01002030450 |
| 1.5 | R0.2 | 4 | 4 | 50 | ST-H-4F-YB015002040450 |
| 2 | R0.2 | 5 | 4 | 50 | ST-H-4F-YB02002050450 |
| 2.5 | R0.2 | 7 | 4 | 50 | ST-H-4F-YB025002074050 |
| 2.5 | R0.5 | 7 | 4 | 50 | ST-H-4F-YB025005070450 |
| 3 | R0.2 | 8 | 4 | 50 | ST-H-4F-YB03002080450 |
| 3 | R0.5 | 8 | 4 | 50 | ST-H-4F-YB03005080450 |
| 3 | R1 | 8 | 4 | 50 | ST-H-4F-YB0301080450 |
| 3.5 | R0.5 | 8 | 4 | 50 | ST-H-4F-YB035005080450 |
| 4 | R0.2 | 10 | 4 | 50 | ST-H-4F-YB04002100450 |
| 4 | R1 | 10 | 4 | 50 | ST-H-4F-YB0401100450 |
| 5 | R0.2 | 13 | 6 | 50 | ST-H-4F-YB05002130650 |
| 5 | R0.5 | 13 | 5 | 50 | ST-H-4F-YB05005130550 |
| 5 | R0.5 | 13 | 6 | 50 | ST-H-4F-YB05005130650 |
| 5 | R1 | 13 | 6 | 50 | ST-H-4F-YB0501130650 |
| 6 | R0.2 | 15 | 6 | 50 | ST-H-4F-YB06002150650 |
| 6 | R0.5 | 15 | 6 | 50 | ST-H-4F-YB06005150650 |
| 6 | R1 | 15 | 6 | 50 | ST-H-4F-YB0601150650 |
| 8 | R0.5 | 20 | 8 | 60 | ST-H-4F-YB08005200860 |
| 8 | R1 | 20 | 8 | 60 | ST-H-4F-YB0801200860 |
| 10 | R0.5 | 25 | 10 | 75 | ST-H-4F-YB10005251075 |
| 10 | R1 | 25 | 10 | 75 | ST-H-4F-YB1001251075 |
| 12 | R0.5 | 30 | 12 | 75 | ST-H-4F-YB12005301275 |
| 12 | R1 | 30 | 12 | 75 | ST-H-4F-YB1201301275 |

| ISO | 被加工材料 Workpiece Material | 切削量（mm） Depth of cut | Vc m/min | | 刃径 Tool Diameter（mm） 3 | 4 | 6 | 8 | 10 | 12 | 16 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 碳钢合金（<45HRC） Carbon steel alloy steel | ap≤1.5D ap≤0.15D | 200 | 转速 rote speed（min-1） 进给转速 feed velocity（mm/min） | 21230 2040 | 15920 1960 | 10620 1690 | 7960 1670 | 6370 1620 | 5310 1590 | 3980 1490 | 3190 1480 |
| | 合金钢（50HRC） Alloy Steel | ap≤1D ap≤0.12D | 150 | 转速 rote speed（min-1） 进给转速 feed velocity（mm/min） | 15920 1290 | 10350 1180 | 7960 1080 | 5970 1160 | 4780 1050 | 3980 930 | 2990 760 | 2390 680 |
| M | 不锈钢 stainless steel | ap≤1.5D ap≤0.15D | 150 | 转速 rote speed（min-1） 进给转速 feed velocity（mm/min） | 15920 1580 | 11940 1330 | 49600 1150 | 5970 1220 | 4780 1130 | 3980 1080 | 2900 900 | 2390 820 |
| K | 灰铸铜，球墨铸铁（<32HRC） Gry cast iron，nodular cast iron | ap≤1.5D ap≤0.15D | 170 | 转速 rote speed（min-1） 进给转速 feed velocity（mm/min） | 18050 1620 | 13540 1500 | 9020 1440 | 6770 1330 | 5410 1200 | 4510 1150 | 3380 1020 | 2710 930 |
| | 高合金铸铁（35-45HRC） High alloy cast iron | ap≤1D ap≤0.12D | 150 | 转速 rote speed（min-1） 进给转速 feed velocity（mm/min） | 15920 1290 | 11940 1250 | 7960 1190 | 5970 1090 | 4780 1000 | 3980 960 | 2990 850 | 2390 770 |
| H | 合金钢、淬硬钢(<60HRC) Alloy steel, hardened steel | ap≤1D ap≤0.05D | 120 | 转速 rote speed（min-1） 进给转速 feed velocity（mm/min） | 16710 380 | 9550 380 | 6370 380 | 4780 380 | 3820 370 | 3190 360 | 2390 310 | 1910 290 |

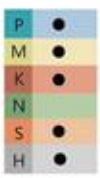
上表是侧铣加工的标准值，刀具切槽时，转速要以上表的50%~70%，进给速度要以40%~60%为标准值。

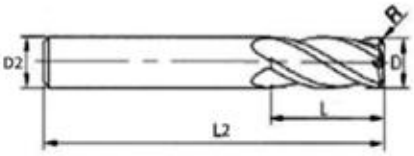
Above table is the standard cutting data for side milling maching, if for groove cuttingtheVC should reach 50%-70%and the feed should reach 40%-60% based on the table.

# Carbide Corner Radius End Mill（Extra Long）




| 单位Unit | (mm) | |
|---|---|---|
| D | D≤12 | D>12 |
| 公差Tol | 0 | 0 |
| | -0.005 | -0.005 |




| Diameter D | Radius R | Cutting Length L | Shank D2 | Overall Length L2 |
|---|---|---|---|---|
| mm | mm | mm | mm | mm |
| 4 | R0.5 | 10 | 4 | 75 |
| 4 | R1 | 10 | 4 | 75 |
| 5 | R0.5 | 13 | 5 | 75 |
| 6 | R0.5 | 15 | 6 | 75 |
| 6 | R1 | 15 | 6 | 75 |
| 8 | R0.5 | 50 | 8 | 75 |
| 8 | R1 | 20 | 8 | 75 |
| 4 | R0.5 | 10 | 4 | 100 |
| 4 | R1 | 10 | 4 | 100 |
| 6 | R0.5 | 15 | 6 | 100 |
| 6 | R1 | 15 | 6 | 100 |
| 8 | R0.5 | 20 | 8 | 100 |
| 8 | R1 | 20 | 8 | 100 |
| 10 | R0.5 | 25 | 10 | 100 |
| 10 | R1 | 25 | 10 | 100 |
| 12 | R0.5 | 30 | 12 | 100 |
| 12 | R1 | 30 | 12 | 100 |
| 10 | R0.5 | 40 | 10 | 150 |
| 10 | R1 | 40 | 10 | 150 |
| 12 | R0.5 | 48 | 12 | 150 |

| Ordering Code |
|---|
| ST-H-4F-YB04005100475 |
| ST-H-4F-YB0401100475 |
| ST-H-4F-YB05005130575 |
| ST-H-4F-YB06005150675 |
| ST-H-4F-YB0601150675 |
| ST-H-4F-YB08005500875 |
| ST-H-4F-YB0801200875 |
| ST-H-4F-YB040051004100 |
| ST-H-4F-YB04011004100 |
| ST-H-4F-YB060051506100 |
| ST-H-4F-YB06011506100 |
| ST-H-4F-YB080052008100 |
| ST-H-4F-YB08012008100 |
| ST-H-4F-YB100052510100 |
| ST-H-4F-YB10012510100 |
| ST-H-4F-YB120053012100 |
| ST-H-4F-YB12013012100 |
| ST-H-4F-YB100054010150 |
| ST-H-4F-YB10014010150 |
| ST-H-4F-YB120054812150 |

| ISO | 被加工材料 Workpiece Material | 切削量（mm） Depth of cut | Vc m/min | | 刃径 Tool Diameter（mm） 3 | 4 | 6 | 8 | 10 | 12 | 16 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 碳钢合金（<45HRC） Carbon steel alloy steel 合金钢（50HRC） Alloy Steel | ap≤1.5D ap≤0.15D | 200 | 转速 rote speed（min-1） 进给转速 feed velocity（mm/min） | 21230 2040 | 15920 1960 | 10620 1690 | 7960 1670 | 6370 1620 | 5310 1590 | 3980 1490 | 3190 1480 |
| | | ap≤1D ap≤0.12D | 150 | 转速 rote speed（min-1） 进给转速 feed velocity（mm/min） | 15920 1290 | 10350 1180 | 7960 1080 | 5970 1160 | 4780 1050 | 3980 930 | 2990 760 | 2390 680 |
| M | 不锈钢 stainless steel | ap≤1.5D ap≤0.15D | 150 | 转速 rote speed（min-1） 进给转速 feed velocity（mm/min） | 15920 1580 | 11940 1330 | 49600 1150 | 5970 1220 | 4780 1130 | 3980 1080 | 2900 900 | 2390 820 |
| K | 灰铸铁，球墨铸铁（<32HRC） Gry cast iron，nodular cast iron 高合金铸铁（35-45HRC） High alloy cast iron | ap≤1.5D ap≤0.15D | 170 | 转速 rote speed（min-1） 进给转速 feed velocity（mm/min） | 18050 1620 | 13540 1500 | 9020 1440 | 6770 1330 | 5410 1200 | 4510 1150 | 3380 1020 | 2710 930 |
| | | ap≤1D ap≤0.12D | 150 | 转速 rote speed（min-1） 进给转速 feed velocity（mm/min） | 15920 1290 | 11940 1250 | 7960 1190 | 5970 1090 | 4780 1000 | 3980 960 | 2990 850 | 2390 770 |
| H | 合金钢，淬硬钢(<60HRC) Alloy steel, hardened steel | ap≤1D ap≤0.05D | 120 | 转速 rote speed（min-1） 进给转速 feed velocity（mm/min） | 16710 380 | 9550 380 | 6370 380 | 4780 380 | 3820 370 | 3190 360 | 2390 310 | 1910 290 |

上表是侧铣加工的标准值，刀具切槽时，转速要以上表的50%~70%，进给速度要以40%~60%为标准值。

Above table is the standard cutting data for side milling maching, if for groove cuttingtheVC should reach 50%-70%and the feed should reach 40%-60% based on the table.

# 高性能ST-U系列铣刀

## HIGH PERFORMANCE ST-U SERIES ENDMILL

### 超高硬高效立铣刀

### EXTREMELY HIGH HARDNESS AND HIGH PERFORMANCE END MILL

- 底刃不等分，大螺旋角设计，减少震动，加工表面光洁度高
- 特殊的刀具设计，非常适合加工各种难加工硬钢
- Variable bottom edges and large helix angle to reduce vibration and improve surface finish.
- The tool design is especially suitable for machining high hardness steel.

P M K H S

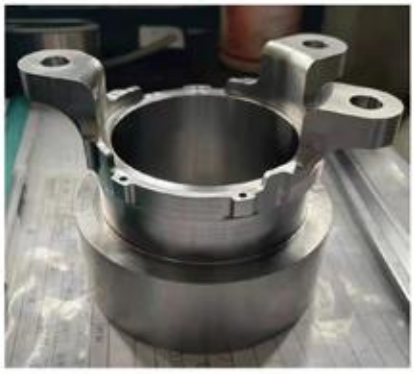
不等分特殊刃形，减少震动，表面光洁度高

Specially uneven blade shape, reduced vibration, high surface gloss

全球合作伙伴-WORLDWIDE RELIABLE PARTNERS

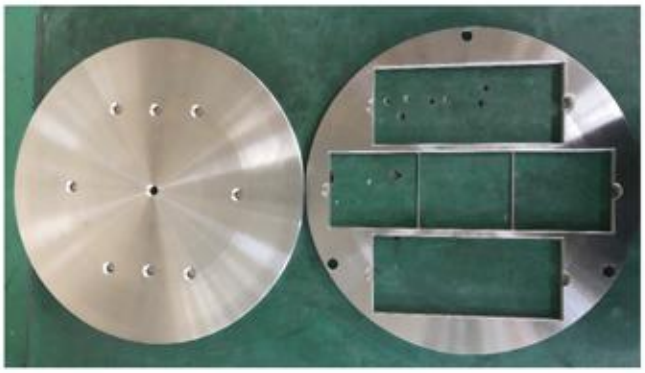
底刃不等分，大幅度抑制振动，减少震动，可实现稳定加工
The bottom edge is not equally divided, greatly inhibit vibration, reduce vibration, can realize stable processing

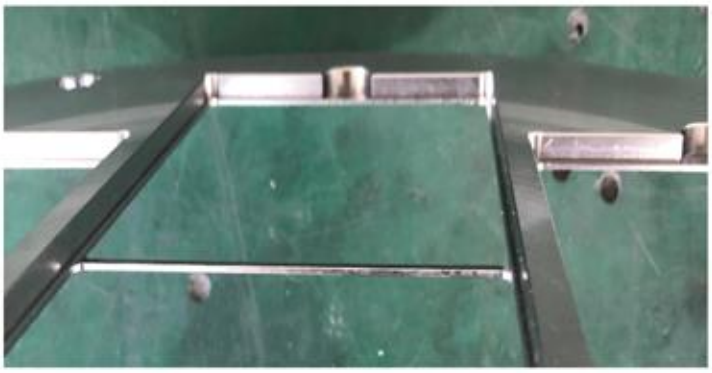
特殊的容屑槽形状，即使在沟槽及型腔加工中
也能表现出优异的性能
Special chip groove shape, even in the groove and cavity machining can also show excellent performance.



加工材料: TC18 钛合金
刀具规格: MS4CD10四刃平刀
加工参数: S=2000 F=1000 动态铣削
切削量: Ap: 20.0mm Ae: 02~0.3mm

Processing material: TC18 titanium alloy
Tool specifications: MS4CD10 four-edged flat knife
Processing parameters: S=2000 F=1000 dynamic milling
Cutting amount: Ap: 20.0mm Ae: 02~0.3mm





T2 纯钛 加工案例
使用机械:常準(TMV-11H)
加工材料:T2纯钛
工件尺寸:
直径350mm，厚度7mm
刀具规格:
MS4C D6 四刃平刀
切削速度:
VC=85
加工参数:
S=4500 F=1800开槽切槽
切削量:Ap:0.25mm Ae:6.0mm

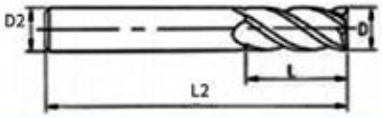
T2 pure titanium processing case
Machine used: Changsha (TMV-11H)
Processing material: T2 pure titanium
Work piece size:
Diameter 350mm, thickness 7mm
Tool specifications:
MS4C D6 four-edged flat knife
Cutting speed:
VC=85
Processing parameters:
S=4500 F=1800 grooving and grooving
Cutting amount: Ap: 0.25mm Ae: 6.0mm

## Carbide 4Flutes Square End Mill (Standard)

ST-U | ALCrSiN | HRC 68 | 42° 38° | S

| 单位Unit | (mm) | |
|---|---|---|
| D | D≤12 | D>12 |
| 公差Tol | 0 | 0 |
| | -0.005 | -0.005 |

| | |
|---|---|
| P | ● |
| M | ● |
| K | ● |
| N | |
| S | ● |
| H | ● |




| Diameter D | Cutting Length L | Shank D2 | Overall Length L2 | Ordering Code |
|---|---|---|---|---|
| mm | mm | mm | mm | |
| 1 | 3 | 4 | 50 | ST-U-4F-01030450 |
| 1.5 | 5 | 4 | 50 | ST-U-4F-015050450 |
| 2 | 6 | 4 | 50 | ST-U-4F-02060450 |
| 2.5 | 8 | 4 | 50 | ST-U-4F-025080450 |
| 3 | 9 | 4 | 50 | ST-U-4F-03090450 |
| 4 | 11 | 4 | 50 | ST-U-4F-04110450 |
| 5 | 13 | 6 | 50 | ST-U-4F-051360550 |
| 6 | 15 | 6 | 50 | ST-U-4F-06150650 |
| 8 | 20 | 8 | 60 | ST-U-4F-08200860 |
| 10 | 25 | 10 | 75 | ST-U-4F-10251075 |
| 12 | 30 | 12 | 75 | ST-U-4F-12301275 |
| 16 | 45 | 16 | 100 | ST-U-4F-164516100 |

## Carbide 4Flutes Square End Mill (Extra Long)

| Diameter D | Cutting Length L | Shank D2 | Overall Length L2 | Ordering Code |
|---|---|---|---|---|
| mm | mm | mm | mm | |
| 4 | 12 | 4 | 75 | ST-U-4F-04120475 |
| 6 | 18 | 6 | 75 | ST-U-4F-06180675 |
| 8 | 24 | 8 | 75 | ST-U-4F-08240875 |
| 6 | 18 | 6 | 100 | ST-U-4F-061806100 |
| 8 | 24 | 8 | 100 | ST-U-4F-082408100 |
| 10 | 30 | 10 | 100 | ST-U-4F-103010100 |
| 12 | 36 | 12 | 100 | ST-U-4F-123612100 |

| ISO | 被加工材料 Workpiece Material | 切削量 (mm) Depth of cut | Vc m/min | | 刃径 Tool Diameter (mm) 3 | 4 | 6 | 8 | 10 | 12 | 16 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 碳钢合金 (<45HRC) Carbon steel alloy steel | ap≤1.5D ap≤0.15D | 200 | 转速 rote speed (min-1) 进给转速 feed velocity (mm/min) | 21230 2040 | 15920 1960 | 10620 1690 | 7960 1670 | 6370 1620 | 5310 1590 | 3980 1490 | 3190 1480 |
| | 合金钢 (50HRC) Alloy Steel | ap≤1D ap≤0.12D | 150 | 转速 rote speed (min-1) 进给转速 feed velocity (mm/min) | 15920 1290 | 10350 1180 | 7960 1080 | 5970 1160 | 4780 1050 | 3980 930 | 2990 760 | 2390 680 |
| M | 不锈钢 stainless steel | ap≤1.5D ap≤0.15D | 150 | 转速 rote speed (min-1) 进给转速 feed velocity (mm/min) | 15920 1580 | 11940 1330 | 49600 1150 | 5970 1220 | 4780 1130 | 3980 1080 | 2900 900 | 2390 820 |
| K | 灰铸铁, 球墨铸铁 (<32HRC) Gry cast iron, nodular cast iron | ap≤1.5D ap≤0.15D | 170 | 转速 rote speed (min-1) 进给转速 feed velocity (mm/min) | 18050 1620 | 13540 1500 | 9020 1440 | 6770 1330 | 5410 1200 | 4510 1150 | 3380 1020 | 2710 930 |
| | 高合金铸铁 (35-45HRC) High alloy cast iron | ap≤1D ap≤0.12D | 150 | 转速 rote speed (min-1) 进给转速 feed velocity (mm/min) | 15920 1290 | 11940 1250 | 7960 1190 | 5970 1090 | 4780 1000 | 3980 960 | 2990 850 | 2390 770 |
| H | 合金钢, 淬硬钢(<60HRC) Alloy steel, hardened steel | ap≤1D ap≤0.05D | 120 | 转速 rote speed (min-1) 进给转速 feed velocity (mm/min) | 16710 380 | 9550 380 | 6370 380 | 4780 380 | 3820 370 | 3190 360 | 2390 310 | 1910 290 |

上表是侧铣加工的标准值，刀具切槽时，转速要以上表的50%~70%，进给速度要以40%~60%为标准值。

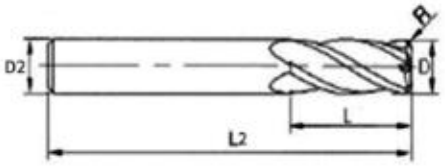
Above table is the standard cutting data for side milling maching, if for groove cuttingtheVC should reach 50%-70%and the feed should reach 40%-60% based on the table.

# Carbide Corner Radius End Mill (Standard)

ST-U YB | ALCrSiN | HRC 68 | S

| 单位Unit | (mm) | |
|---|---|---|
| D | D≤12 | D>12 |
| 公差Tol | 0 | 0 |
| | -0.005 | -0.005 |

| | |
|---|---|
| P | ● |
| M | ● |
| K | ● |
| N | |
| S | ● |
| H | ● |




| Diameter D | Radius R | Cutting Length L | Shank D2 | Overall Length L2 | Ordering Code |
|---|---|---|---|---|---|
| mm | mm | mm | mm | mm | |
| 1 | R0.2 | 3 | 4 | 50 | ST-U-4F-YB0100200450 |
| 1.5 | R0.2 | 4 | 4 | 50 | ST-U-4F-YB015002040450 |
| 2 | R0.2 | 5 | 4 | 50 | ST-U-4F-YB02002050450 |
| 3 | R0.2 | 9 | 4 | 50 | ST-U-4F-YB03002090450 |
| 3 | R0.5 | 9 | 4 | 50 | ST-U-4F-YB03005090450 |
| 4 | R0.2 | 11 | 4 | 50 | ST-U-4F-YB04002110450 |
| 4 | R0.5 | 11 | 4 | 50 | ST-U-4F-YB04005110450 |
| 5 | R0.5 | 13 | 6 | 50 | ST-U-4F-YB05005130650 |
| 5 | R1 | 13 | 6 | 50 | ST-U-4F-YB0501130650 |
| 5 | R0.2 | 13 | 6 | 50 | ST-U-4F-YB05002130650 |
| 6 | R0.2 | 15 | 15 | 50 | ST-U-4F-YB06002150650 |
| 6 | R0.5 | 15 | 15 | 50 | ST-U-4F-YB06005150650 |
| 6 | R1 | 15 | 15 | 50 | ST-U-4F-YB0601150650 |
| 8 | R0.5 | 20 | 20 | 60 | ST-U-4F-YB08005200860 |
| 8 | R1 | 20 | 20 | 60 | ST-U-4F-YB0801200860 |
| 10 | R0.5 | 25 | 25 | 75 | ST-U-4F-YB1000521075 |
| 10 | R1 | 25 | 25 | 75 | ST-U-4F-YB1001251075 |
| 12 | R0.5 | 30 | 30 | 75 | ST-U-4F-YB12005301275 |
| 12 | R1 | 30 | 30 | 75 | ST-U-4F-YB120131275 |

| ISO | 被加工材料 Workpiece Material | 切削量 (mm) Depth of cut | Vc m/min | | 刃径 Tool Diameter (mm) 3 | 4 | 6 | 8 | 10 | 12 | 16 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 碳钢合金 (<45HRC) Carbon steel alloy steel | ap≤1.5D | 200 | 转速 rote speed (min-1) | 21230 | 15920 | 10620 | 7960 | 6370 | 5310 | 3980 | 3190 |
| | | ap≤0.15D | | 进给转速 feed velocity (mm/min) | 2040 | 1960 | 1690 | 1670 | 1620 | 1590 | 1490 | 1480 |
| | 合金钢 (50HRC) Alloy Steel | ap≤1D | 150 | 转速 rote speed (min-1) | 15920 | 10350 | 7960 | 5970 | 4780 | 3980 | 2990 | 2390 |
| | | ap≤0.12D | | 进给转速 feed velocity (mm/min) | 1290 | 1180 | 1080 | 1160 | 1050 | 930 | 760 | 680 |
| M | 不锈钢 stainless steel | ap≤1.5D | 150 | 转速 rote speed (min-1) | 15920 | 11940 | 49600 | 5970 | 4780 | 3980 | 2900 | 2390 |
| | | ap≤0.15D | | 进给转速 feed velocity (mm/min) | 1580 | 1330 | 1150 | 1220 | 1130 | 1080 | 900 | 820 |
| K | 灰铸铜，球墨铸铁 (<32HRC) Gry cast iron，nodular cast iron | ap≤1.5D | 170 | 转速 rote speed (min-1) | 18050 | 13540 | 9020 | 6770 | 5410 | 4510 | 3380 | 2710 |
| | | ap≤0.15D | | 进给转速 feed velocity (mm/min) | 1620 | 1500 | 1440 | 1330 | 1200 | 1150 | 1020 | 930 |
| | 高合金铸铁 (35-45HRC) High alloy cast iron | ap≤1D | 150 | 转速 rote speed (min-1) | 15920 | 11940 | 7960 | 5970 | 4780 | 3980 | 2990 | 2390 |
| | | ap≤0.12D | | 进给转速 feed velocity (mm/min) | 1290 | 1250 | 1190 | 1090 | 1000 | 960 | 850 | 770 |
| H | 合金钢，淬硬钢(<60HRC) Alloy steel, hardened steel | ap≤1D | 120 | 转速 rote speed (min-1) | 16710 | 9550 | 6370 | 4780 | 3820 | 3190 | 2390 | 1910 |
| | | ap≤0.05D | | 进给转速 feed velocity (mm/min) | 380 | 380 | 380 | 380 | 370 | 360 | 310 | 290 |

上表是侧铣加工的标准值，刀具切槽时，转速要以上表的50%~70%，进给速度要以40%~60%为标准值。

Above table is the standard cutting data for side milling maching, if for groove cuttingtheVC should reach 50%-70%and the feed should reach 40%-60% based on the table.

# AL系列

## 超亮铝加工立铣刀

**Super Bright Aluminum Processing Series**

N

### 高光·HIGHLIGHT

- 适用于铝合金材料的高效超亮加工
- 底刃变分度，独特螺旋角设计，拥有卓越的抗震性能，加工表面精度高
- It is suitable for high-efficiency super bright processing of aluminum alloy materials.
- The variable indexing of the bottom edge, the unique design of the helix angle, has excellent anti-seismic performance and high precision of the processed surface.

特殊的刃口设计，有效解决刀具刃口沾屑问题

Special edge design, effectively solve the problem of sticky

全球合作伙伴-WORLDWIDE RELIABLE PARTNERS

# 铝合金材料的高效超亮加工
# Aluminum alloy material efficient ultra-bright processing

**抑制毛刺 Inhibition of burr**

大前角和小棱边实现优秀的切削效果。
Large front  angle and small edge achieve excellent cutting effect.

**大容屑槽 Large Chip flute**

在高进给加工中，刀具的切削与排屑更加流畅。
The cutting and chip removal are more smooth and stable in the high feed processing.

**锋利切削刃 Sharp cutting edge**

锋利的切削刃及大螺旋角设计有效防止机屑瘤的产生
Sharp cutting edge and large spiral angle design can effectively prevent the generation of built-up edge.

N

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 sticking
**高光•HIGHLIGHT**

特殊的容屑槽形状，即使在沟槽及型腔加工中也能表现出优异的性能
Special chip flute shape,can show excellent performance even in groove and cavity machining.


1. 大排屑空间,不易积屑
Large chip removal space, not easy to accumulate chips
2. 抗震工艺,锋利月牙刃口
Anti-seismic technology, sharp crescent edge

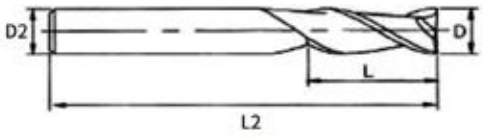
全刃口抗震设计，能抑制加工过程中的颤振，提高加工表面质量。
Full-edge anti-vibration design can supp ress vibration during processing and improve the quality of the processed surface.

## 2Flutes Square End Mill For Aluminum （Standard）

LYJCD | AL | HRC 55 | S

| 单位Unit | (mm) | |
|---|---|---|
| D | D≤12 | D>12 |
| 公差Tol | 0 | 0 |
| | -0.015 | -0.02 |

P
M
K
N ●
S
H

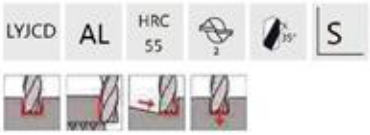



| Diameter D | Cutting Length L | Shank D2 | Overall Length L2 | Ordering Code |
|---|---|---|---|---|
| mm | mm | mm | mm | |
| 1 | 3 | 4 | 50 | LYJCD-2F-01030450 |
| 1.5 | 5 | 4 | 50 | LYJCD-2F-015050450 |
| 2 | 6 | 4 | 50 | LYJCD-2F-02060450 |
| 2.5 | 8 | 4 | 50 | LYJCD-2F-025080450 |
| 3 | 9 | 3 | 50 | LYJCD-2F-03090350 |
| 3 | 9 | 4 | 50 | LYJCD-2F-03090450 |
| 3.5 | 11 | 4 | 50 | LYJCD-2F-035110450 |
| 4 | 12 | 4 | 50 | LYJCD-2F-04120450 |
| 5 | 15 | 5 | 50 | LYJCD-2F-05150550 |
| 5 | 15 | 6 | 50 | LYJCD-2F-05150650 |
| 6 | 18 | 6 | 50 | LYJCD-2F-06180650 |
| 7 | 24 | 8 | 60 | LYJCD-2F-07240860 |
| 8 | 24 | 8 | 60 | LYJCD-2F-08240860 |
| 10 | 30 | 10 | 75 | LYJCD-2F-10301075 |
| 11 | 35 | 12 | 75 | LYJCD-2F-11351275 |
| 12 | 35 | 12 | 75 | LYJCD-2F-12351275 |
| 14 | 45 | 14 | 100 | LYJCD-2F-144514100 |
| 16 | 45 | 16 | 100 | LYJCD-2F-164516100 |
| 18 | 45 | 18 | 100 | LYJCD-2F-184518100 |
| 20 | 45 | 20 | 100 | LYJCD-2F-204520100 |

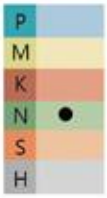
| ISO | 被加工材料 Workpiece Material | 切削量 (mm) Depth of cut | Vc m/min | | 刃径 tool Diameter (mm) 1 | 2 | 4 | 6 | 8 | 10 | 12 | 16 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N | 锻造及铸造铝合金(Si<12%) Forging and casting aluminum alloy<br>铜合金(<200HB) Copper alloy | ap≤1.5D | 150 (60~350) | 转速 rote speed (min-1) | 16000 | 12700 | 12000 | 10600 | 10000 | 9500 | 9280 | 7000 | 5600 |
| | | ap≤0.2D | | 进给转速 feed velocity (mm/min) | 580 | 710 | 1200 | 1280 | 1390 | 1720 | 2400 | 2500 | 2450 |
| | | ap≤1.5D | 150 (60~350) | 转速 rote speed (min-1) | 16000 | 12700 | 12000 | 10600 | 10000 | 9500 | 9280 | 7000 | 5600 |
| | | ap≤0.2D | | 进给转速 feed velocity (mm/min) | 520 | 650 | 1070 | 1150 | 1250 | 1550 | 2170 | 2250 | 2200 |

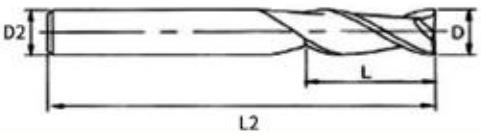
| ISO | 被加工材料 Workpiece Material | 切削量 (mm) Depth of cut | Vc m/min | | 刃径 tool Diameter (mm) 1 | 2 | 4 | 6 | 8 | 10 | 12 | 16 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N | 锻造及铸造铝合金(Si<12%) Forging and casting aluminum alloy<br>铜合金(<200HB) Copper alloy | ap≤0.5D | 150 (60~350) | 转速 rote speed (min-1) | 16000 | 10000 | 9000 | 8000 | 7800 | 8000 | 6800 | 5000 | 4000 |
| | | ap≤1D | | 进给转速 feed velocity (mm/min) | 400 | 500 | 810 | 920 | 1100 | 1280 | 1300 | 1310 | 1200 |
| | | ap≤0.5D | 150 (60~350) | 转速 rote speed (min-1) | 16000 | 10000 | 9000 | 8000 | 7800 | 8000 | 6800 | 5000 | 4000 |
| | | ap≤1D | | 进给转速 feed velocity (mm/min) | 380 | 450 | 800 | 830 | 1000 | 1150 | 1130 | 1000 | 1080 |

# 2Flutes Square End Mill For Aluminum (Extra Long)




| 单位Unit | (mm) | |
|---|---|---|
| D | D≤12 | D>12 |
| 公差Tol | 0 | 0 |
| | -0.015 | -0.02 |




| Diameter D | Cutting Length L | Shank D2 | Overall Length L2 |
|---|---|---|---|
| mm | mm | mm | mm |
| 3 | 12 | 3 | 75 |
| 4 | 16 | 4 | 75 |
| 5 | 18 | 5 | 75 |
| 6 | 25 | 6 | 75 |
| 8 | 25 | 8 | 75 |
| 3 | 12 | 3 | 100 |
| 4 | 20 | 4 | 100 |
| 5 | 30 | 5 | 100 |
| 6 | 30 | 6 | 100 |
| 8 | 35 | 8 | 100 |
| 10 | 40 | 10 | 100 |
| 12 | 45 | 12 | 100 |
| 6 | 45 | 6 | 150 |
| 8 | 50 | 8 | 150 |
| 10 | 55 | 10 | 150 |
| 12 | 55 | 12 | 150 |
| 14 | 70 | 14 | 150 |
| 16 | 80 | 16 | 150 |
| 18 | 80 | 18 | 150 |
| 20 | 80 | 20 | 150 |

| Ordering Code |
|---|
| LYJCD-2F-03120375 |
| LYJCD-2F-04160475 |
| LYJCD-2F-05180575 |
| YJCD-2F-06250675 |
| LYJCD-2F-08250875 |
| LYJCD-2F-031203100 |
| YJCD-2F-042004100 |
| LYJCD-2F-053005100 |
| LYJCD-2F-063006100 |
| LYJCD-2F-083508100 |
| YJCD-2F-104010100 |
| LYJCD-2F-124512100 |
| LYJCD-2F-064506150 |
| LYJCD-2F-085008150 |
| LYJCD-2F-105510150 |
| LYJCD-2F-125512150 |
| LYJCD-2F-147014150 |
| LYJCD-2F-168016150 |
| LYJCD-2F-188018150 |
| LYJCD-2F-208020150 |

| ISO | 被加工材料 Workpiece Material | 切削量 (mm) Depth of cut | Vc m/min | | 刃径 tool Diameter (mm) 1 | 2 | 4 | 6 | 8 | 10 | 12 | 16 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N | 锻造及铸造铝合金(Si<12%) Forging and casting aluminum alloy<br>铜合金(<200HB) Copper alloy | ap≤1.5D | 150 (60~350) | 转速 rote speed (min-1) | 16000 | 12700 | 12000 | 10600 | 10000 | 9500 | 9280 | 7000 | 5600 |
| | | ap≤0.2D | | 进给转速 feed velocity (mm/min) | 580 | 710 | 1200 | 1280 | 1390 | 1720 | 2400 | 2500 | 2450 |
| | | ap≤1.5D | 150 (60~350) | 转速 rote speed (min-1) | 16000 | 12700 | 12000 | 10600 | 10000 | 9500 | 9280 | 7000 | 5600 |
| | | ap≤0.2D | | 进给转速 feed velocity (mm/min) | 520 | 650 | 1070 | 1150 | 1250 | 1550 | 2170 | 2250 | 2200 |

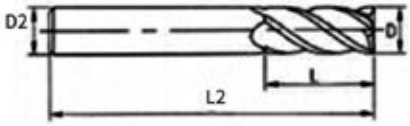
| ISO | 被加工材料 Workpiece Material | 切削量 (mm) Depth of cut | Vc m/min | | 刃径 tool Diameter (mm) 1 | 2 | 4 | 6 | 8 | 10 | 12 | 16 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N | 锻造及铸造铝合金(Si<12%) Forging and casting aluminum alloy<br>铜合金(<200HB) Copper alloy | ap≤0.5D | 150 (60~350) | 转速 rote speed (min-1) | 16000 | 10000 | 9000 | 8000 | 7800 | 8000 | 6800 | 5000 | 4000 |
| | | ap≤1D | | 进给转速 feed velocity (mm/min) | 400 | 500 | 810 | 920 | 1100 | 1280 | 1300 | 1310 | 1200 |
| | | ap≤0.5D | 150 (60~350) | 转速 rote speed (min-1) | 16000 | 10000 | 9000 | 8000 | 7800 | 8000 | 6800 | 5000 | 4000 |
| | | ap≤1D | | 进给转速 feed velocity (mm/min) | 380 | 450 | 800 | 830 | 1000 | 1150 | 1130 | 1000 | 1080 |

# 3Flutes Square End Mill For Aluminum (Standard)

LYD | DLC | HRC 55 | S

| 单位Unit | (mm) | |
|---|---|---|
| D | D≤12 | D>12 |
| 公差Tol | 0 | 0 |
| | -0.015 | -0.02 |

P
M
K
N ●
S
H




| Diameter D | Cutting Length L | Shank D2 | Overall Length L2 | Ordering Code |
|---|---|---|---|---|
| mm | mm | mm | mm | |
| 1 | 3 | 4 | 50 | LYD-3F-01030450 |
| 1.5 | 5 | 4 | 50 | LYD-3F-015050450 |
| 2 | 6 | 4 | 50 | LYD-3F-02060450 |
| 2.5 | 8 | 4 | 50 | LYD-3F-025080450 |
| 3 | 9 | 3 | 50 | LYD-3F-03090350 |
| 3 | 9 | 4 | 50 | LYD-3F-03090450 |
| 3.5 | 11 | 4 | 50 | LYD-3F-035110450 |
| 4 | 12 | 4 | 50 | LYD-3F-04120450 |
| 5 | 15 | 5 | 50 | LYD-3F-05150550 |
| 5 | 15 | 6 | 50 | LYD-3F-05150650 |
| 6 | 18 | 6 | 50 | LYD-3F-06180650 |
| 7 | 24 | 8 | 60 | LYD-3F-07240860 |
| 8 | 24 | 8 | 60 | LYD-3F-08240860 |
| 9 | 30 | 10 | 75 | LYD-3F-09301075 |
| 10 | 30 | 10 | 75 | LYD-3F-10301075 |
| 11 | 35 | 12 | 75 | LYD-3F-11351275 |
| 12 | 35 | 12 | 75 | LYD-3F-12351275 |
| 14 | 45 | 14 | 100 | LYD-3F-144514100 |
| 16 | 45 | 16 | 100 | LYD-3F-164516100 |
| 18 | 45 | 18 | 100 | LYD-3F-184518100 |
| 20 | 45 | 20 | 100 | LYD-3F-204520100 |

| ISO | 被加工材料 Workpiece Material | 切削量 (mm) Depth of cut | Vc m/min | | 刃径 tool Diameter (mm) 1 | 2 | 4 | 6 | 8 | 10 | 12 | 16 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N | 锻造及铸造铝合金(Si<12%) Forging and casting aluminum alloy<br>铜合金(<200HB) Copper alloy | ap≤1.5D | 150 (60~350) | 转速 rote speed (min-1) | 16000 | 12700 | 12000 | 10600 | 10000 | 9500 | 9280 | 7000 | 5600 |
| | | ap≤0.2D | | 进给转速 feed velocity (mm/min) | 580 | 710 | 1200 | 1280 | 1390 | 1720 | 2400 | 2500 | 2450 |
| | | ap≤1.5D | 150 (60~350) | 转速 rote speed (min-1) | 16000 | 12700 | 12000 | 10600 | 10000 | 9500 | 9280 | 7000 | 5600 |
| | | ap≤0.2D | | 进给转速 feed velocity (mm/min) | 520 | 650 | 1070 | 1150 | 1250 | 1550 | 2170 | 2250 | 2200 |

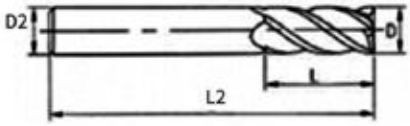
| ISO | 被加工材料 Workpiece Material | 切削量 (mm) Depth of cut | Vc m/min | | 刃径 tool Diameter (mm) 1 | 2 | 4 | 6 | 8 | 10 | 12 | 16 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N | 锻造及铸造铝合金(Si<12%) Forging and casting aluminum alloy<br>铜合金(<200HB) Copper alloy | ap≤0.5D | 150 (60~350) | 转速 rote speed (min-1) | 16000 | 10000 | 9000 | 8000 | 7800 | 8000 | 6800 | 5000 | 4000 |
| | | ap≤1D | | 进给转速 feed velocity (mm/min) | 400 | 500 | 810 | 920 | 1100 | 1280 | 1300 | 1310 | 1200 |
| | | ap≤0.5D | 150 (60~350) | 转速 rote speed (min-1) | 16000 | 10000 | 9000 | 8000 | 7800 | 8000 | 6800 | 5000 | 4000 |
| | | ap≤1D | | 进给转速 feed velocity (mm/min) | 380 | 450 | 800 | 830 | 1000 | 1150 | 1130 | 1000 | 1080 |

# 3Flutes Square End Mill For Aluminum（Extra Long）

LYD | DLC | HRC 55 | S

| 单位Unit | (mm) | |
|---|---|---|
| D | D≤12 | D>12 |
| 公差Tol | 0 | 0 |
| | -0.015 | -0.02 |

P
M
K
N ●
S
H




| Diameter D | Cutting Length L | Shank D2 | Overall Length L2 | Ordering Code |
|---|---|---|---|---|
| mm | mm | mm | mm | |
| 2 | 6 | 4 | 75 | LYD-3F-02060475 |
| 3 | 9 | 4 | 75 | LYD-3F-03090475 |
| 3 | 12 | 3 | 75 | LYD-3F-03120375 |
| 3.5 | 11 | 4 | 75 | LYD-3F-035110475 |
| 4 | 16 | 4 | 75 | LYD-3F-04160475 |
| 5 | 18 | 5 | 75 | LYD-3F-05180575 |
| 6 | 25 | 6 | 75 | LYD-3F-06250675 |
| 8 | 30 | 8 | 75 | LYD-3F-08300875 |
| 3 | 12 | 3 | 100 | LYD-3F-031203100 |
| 4 | 20 | 4 | 100 | LYD-3F-042004100 |
| 5 | 30 | 5 | 100 | LYD-3F-053005100 |
| 6 | 30 | 6 | 100 | LYD-3F-063006100 |
| 8 | 35 | 8 | 100 | LYD-3F-083508100 |
| 10 | 40 | 10 | 100 | LYD-3F-104010100 |
| 12 | 45 | 12 | 100 | LYD-3F-124512100 |
| 6 | 45 | 6 | 150 | LYD-3F-064506150 |
| 8 | 50 | 8 | 150 | LYD-3F-085008150 |
| 10 | 55 | 10 | 150 | LYD-3F-105510150 |
| 12 | 55 | 12 | 150 | LYD-3F-125512150 |
| 14 | 70 | 14 | 150 | LYD-3F-147014150 |
| 16 | 80 | 16 | 150 | LYD-3F-168016150 |
| 18 | 80 | 18 | 150 | LYD-3F-188018150 |
| 20 | 80 | 20 | 150 | LYD-3F-208020150 |
| 6 | 50 | 6 | 200 | LYD-3F-065006200 |
| 8 | 60 | 8 | 200 | LYD-3F-08608200 |
| 10 | 65 | 10 | 200 | LYD-3F-106510200 |
| 12 | 70 | 12 | 200 | LYD-3F-127012200 |
| 14 | 80 | 14 | 200 | LYD-3F-148014200 |
| 16 | 85 | 16 | 200 | LYD-3F-168516200 |
| 20 | 90 | 20 | 200 | LYD-3F-209020200 |

| ISO | 被加工材料 Workpiece Material | 切削量 (mm) Depth of cut | Vc m/min | | 刃径 tool Diameter (mm) 1 | 2 | 4 | 6 | 8 | 10 | 12 | 16 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N | 锻造及铸造铝合金(Si<12%) Forging and casting aluminum alloy | ap≤1.5D | 150 | 转速 rote speed (min-1) | 16000 | 13000 | 12000 | 10600 | 10000 | 9500 | 9280 | 7000 | 5600 |
| | 铜合金(<200HB) Copper alloy | ap≤0.2D | (60~350) | 进给转速 feed velocity (mm/min) | 650 | 850 | 1430 | 1530 | 1670 | 2050 | 2800 | 3000 | 3150 |
| | | ap≤1.5D | 150 | 转速 rote speed (min-1) | 16000 | 13000 | 12000 | 10600 | 10000 | 9500 | 9280 | 7000 | 5600 |
| | | ap≤0.2D | (60~350) | 进给转速 feed velocity (mm/min) | 720 | 900 | 1200 | 1200 | 1500 | 1800 | 2225 | 2500 | 3000 |

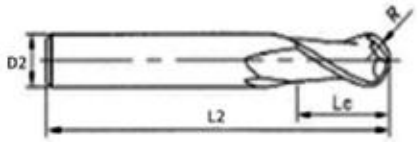
| ISO | 被加工材料 Workpiece Material | 切削量 (mm) Depth of cut | Vc m/min | | 刃径 tool Diameter (mm) 1 | 2 | 4 | 6 | 8 | 10 | 12 | 16 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N | 锻造及铸造铝合金(Si<12%) Forging and casting aluminum alloy | ap≤1.5D | 150 | 转速 rote speed (min-1) | 16000 | 10000 | 9000 | 8000 | 7800 | 8000 | 6800 | 5000 | 4000 |
| | 铜合金(<200HB) Copper alloy | ap≤0.2D | (60~350) | 进给转速 feed velocity (mm/min) | 450 | 570 | 960 | 1050 | 1300 | 1500 | 1620 | 1680 | 1800 |
| | | ap≤1.5D | 150 | 转速 rote speed (min-1) | 16000 | 10000 | 9000 | 8000 | 7800 | 8000 | 6800 | 5000 | 4000 |
| | | ap≤0.2D | (60~350) | 进给转速 feed velocity (mm/min) | 450 | 520 | 860 | 830 | 9600 | 1240 | 1500 | 1500 | 1510 |

# Ball Nose End Mill For Aluminum (Standard)

LYQD | AL | HRC 55 | B

| 单位Unit | (mm) | | |
|---|---|---|---|
| R | R≤1.5 | 1.5<R<3 | R≥3 |
| 公差Tol | 0 | 0 | 0 |
| | -0.01 | -0.015 | -0.02 |

P
M
K
N ●
S
H




| Cutting Length L | Radius R | Shank D2 | Overall Length L2 |
|---|---|---|---|
| mm | mm | mm | mm |
| 2 | 0.5 | 4 | 50 |
| 3 | 0.75 | 4 | 50 |
| 4 | 1 | 4 | 50 |
| 5 | 1.25 | 4 | 50 |
| 6 | 1.5 | 3 | 50 |
| 6 | 1.5 | 4 | 50 |
| 7 | 1.75 | 4 | 50 |
| 12 | 2 | 4 | 50 |
| 12 | 2.5 | 5 | 50 |
| 12 | 2.5 | 6 | 50 |
| 12 | 3 | 6 | 50 |
| 16 | 4 | 8 | 60 |
| 20 | 5 | 10 | 75 |
| 24 | 6 | 12 | 75 |
| 28 | 7 | 14 | 100 |
| 32 | 8 | 16 | 100 |
| 36 | 9 | 18 | 100 |
| 40 | 10 | 20 | 100 |

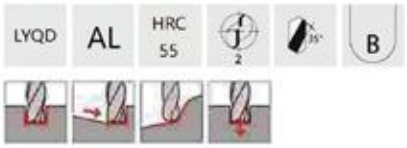
| Ordering Code |
|---|
| LYQD-2F-01020450 |
| LYQD-2F-015030450 |
| LYQD-2F-02040450 |
| LYQD-2F-025050450 |
| LYQD-2F-03060350 |
| LYQD-2F-03060450 |
| LYQD-2F-035070450 |
| LYQD-2F-04080450 |
| LYQD-2F-05100550 |
| LYQD-2F-05100650 |
| LYQD-2F-06120650 |
| LYQD-2F-08160860 |
| LYQD-2F-10201075 |
| LYQD-2F-12241275 |
| LYQD-2F-142814100 |
| LYQD-2F-163216100 |
| LYQD-2F-183618100 |
| LYQD-2F-204020100 |

| ISO | 被加工材料 Workpiece Material | 切削量 (mm) Depth of cut | Vc m/min | | 刃径 tool Diameter (mm) 1 | 2 | 4 | 6 | 8 | 10 | 12 | 16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N | 锻造及铸造铝合金(Si<12%) Forging and casting aluminum alloy<br>铜合金(<200HB) Copper alloy | ap≤0.5D | 150 (60~350) | 转速 rote speed (min-1) | 19000 | 15900 | 11900 | 10600 | 8000 | 7950 | 7950 | 7000 |
| | | ap≤1D | | 进给转速 feed velocity (mm/min) | 950 | 1600 | 1900 | 2500 | 2250 | 3800 | 3800 | 4450 |
| | | ap≤0.5D | 150 (60~350) | 转速 rote speed (min-1) | 19000 | 15900 | 11900 | 10600 | 8000 | 7950 | 7950 | 7000 |
| | | ap≤1D | | 进给转速 feed velocity (mm/min) | 860 | 1430 | 1720 | 2300 | 2300 | 2850 | 3450 | 4010 |

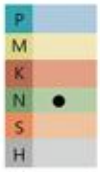
1.请使用高精度的机床和刀柄。
2.请使用油冷冷却的切削液。
3.机床与工件安装刚性较差的情况下，会产生振动和异常声音，此时应将上表的转速与进给速度同比降低。
4.在不干涉的条件下尽可能使刀具悬长最短。

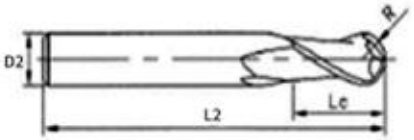
1.Piease use high-precision machine tools and tool holder.
2.Pls use oil cooled cutting liquid.
3.When the riaidity of the machine tool and the workpiece is poorly installed, vibration and abnormal sound will occur. At this time, the rotation speed and feed rate of the above table should be reduced.
4. Keep the tool overhang as short as possible without interference.

# Ball Nose End Mill For Aluminum (Extra Long)




| 单位Unit | (mm) | | |
|---|---|---|---|
| R | R≤1.5 | 1.5<R<3 | R≥3 |
| 公差Tol | 0 | 0 | 0 |
| | -0.01 | -0.015 | -0.02 |




| Cutting Length L | Radius R | Shank D2 | Overall Length L2 |
|---|---|---|---|
| mm | mm | mm | mm |
| 6 | 1.5 | 3 | 75 |
| 8 | 2 | 4 | 75 |
| 10 | 2.5 | 5 | 75 |
| 12 | 3 | 6 | 75 |
| 16 | 4 | 8 | 75 |
| 6 | 1.5 | 3 | 100 |
| 8 | 2 | 4 | 100 |
| 10 | 2.5 | 5 | 100 |
| 12 | 3 | 6 | 100 |
| 16 | 4 | 8 | 100 |
| 20 | 5 | 10 | 100 |
| 24 | 6 | 12 | 100 |
| 12 | 3 | 6 | 150 |
| 16 | 4 | 8 | 150 |
| 20 | 5 | 10 | 150 |
| 24 | 6 | 12 | 150 |

| Ordering Code |
|---|
| LYQD-2F-03060375 |
| LYQD-2F-04080475 |
| LYQD-2F-05100575 |
| LYQD-2F-06120675 |
| LYQD-2F-08160875 |
| LYQD-2F-030603100 |
| LYQD-2F-040804100 |
| LYQD-2F-051005100 |
| LYQD-2F-061206100 |
| LYQD-2F-081608100 |
| LYQD-2F-102010100 |
| LYQD-2F-122412100 |
| LYQD-2F-061206150 |
| LYQD-2F-081608150 |
| LYQD-2F-102010150 |
| LYQD-2F-122412150 |

| ISO | 被加工材料 Workpiece Material | 切削量 (mm) Depth of cut | Vc m/min | | 刃径 tool Diameter (mm) 1 | 2 | 4 | 6 | 8 | 10 | 12 | 16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N | 锻造及铸造铝合金(SI<12%) Forging and casting aluminum alloy<br>铜合金(<200HB) Copper alloy | ap≤0.5D | 150 (60~350) | 转速 rote speed (min-1) | 19000 | 15900 | 11900 | 10600 | 8000 | 7950 | 7950 | 7000 |
| | | ap≤1D | | 进给转速 feed velocity (mm/min) | 950 | 1600 | 1900 | 2500 | 2250 | 3800 | 3800 | 4450 |
| | | ap≤0.5D | 150 (60~350) | 转速 rote speed (min-1) | 19000 | 15900 | 11900 | 10600 | 8000 | 7950 | 7950 | 7000 |
| | | ap≤1D | | 进给转速 feed velocity (mm/min) | 860 | 1430 | 1720 | 2300 | 2300 | 2850 | 3450 | 4010 |

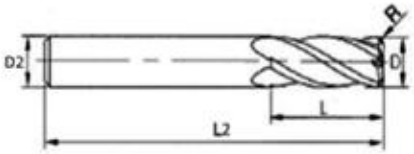
1.请使用高精度的机床和刀柄。
2.请使用油冷冷却的切削液。
3.机床与工件安装刚性较差的情况下，会产生振动和异常声音，此时应将上表的转速与进给速度同比降低。
4.在不干涉的条件下尽可能使刀具悬长最短。
1.Piease use high-precision machine tools and tool holder.
2.Pls use oil cooled cutting liquid.
3.When the riaidity of the machine tool and the workpiece is poorly installed, vibration and abnormal sound will occur.
At this time, the rotation speed and feed rate of the above table should be reduced.
4. Keep the tool overhang as short as possible without interference.

# Carbide Corner Radius End Mill (Standard)

| LYYB | AL | HRC 55 | 3 | 55° | S |
|---|---|---|---|---|---|

| 单位Unit | (mm) | |
|---|---|---|
| D | D≤12 | D>12 |
| 公差Tol | 0 | 0 |
| | -0.015 | -0.02 |

| | |
|---|---|
| P | |
| M | |
| K | |
| N | ● |
| S | |
| H | |




| Diameter D | Radius R | Cutting Length L | Shank D2 | Overall Length L2 |
|---|---|---|---|---|
| mm | mm | mm | mm | mm |
| 1 | 0.2 | 3 | 4 | 50 |
| 1.5 | 0.2 | 4.5 | 4 | 50 |
| 2 | 0.2 | 6 | 4 | 50 |
| 2 | 0.5 | 6 | 4 | 50 |
| 3 | 0.2 | 9 | 4 | 50 |
| 3 | 0.5 | 9 | 4 | 50 |
| 3 | 1 | 9 | 4 | 50 |
| 4 | 0.5 | 12 | 4 | 50 |
| 4 | 1 | 12 | 4 | 50 |
| 5 | 0.5 | 18 | 6 | 50 |
| 5 | 0.5 | 18 | 5 | 50 |
| 5 | 1 | 18 | 5 | 50 |
| 5 | 1 | 18 | 6 | 50 |
| 6 | 0.5 | 18 | 6 | 50 |
| 6 | 1 | 18 | 6 | 50 |
| 8 | 0.5 | 24 | 8 | 60 |
| 8 | 1 | 24 | 8 | 60 |
| 8 | 2 | 24 | 8 | 60 |
| 10 | 0.5 | 30 | 10 | 75 |
| 10 | 1 | 30 | 10 | 75 |
| 12 | 0.5 | 35 | 12 | 75 |
| 12 | 1 | 35 | 12 | 75 |

| Ordering Code |
|---|
| LYYB-3F-0102030450 |
| LYYB-3F-01502050450 |
| LYYB-3F-0202060450 |
| LYYB-3F-0205060450 |
| LYYB-3F-0302090450 |
| LYYB-3F-0305090450 |
| LYYB-3F-031090450 |
| LYYB-3F-0405120450 |
| LYYB-3F-041120450 |
| LYYB-3F-0505130650 |
| LYYB-3F-0505130550 |
| LYYB-3F-051130550 |
| LYYB-3F-051130650 |
| LYYB-3F-0605150650 |
| LYYB-3F-061150650 |
| LYYB-3F-0805200860 |
| LYYB-3F-081200860 |
| LYYB-3F-082200860 |
| LYYB-3F-1005251075 |
| LYYB-3F-101251075 |
| LYYB-3F-1205301275 |
| LYYB-3F-121301275 |

| ISO | 被加工材料 Workpiece Material | 切削量 (mm) Depth of cut | Vc m/min | | 刃径 tool Diameter (mm) 1 | 2 | 4 | 6 | 8 | 10 | 12 | 16 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N | 锻造及铸造铝合金(Si<12%) Forging and casting aluminum alloy<br>铜合金(<200HB) Copper alloy | ap≤1.5D | 150 (60~350) | 转速 rote speed (min-1) | 16000 | 13000 | 12000 | 10600 | 10000 | 9500 | 9280 | 7000 | 5600 |
| | | ap≤0.2D | | 进给转速 feed velocity (mm/min) | 650 | 850 | 1200 | 1530 | 1670 | 2050 | 2800 | 3000 | 3150 |
| | | ap≤1.5D | 150 (60~350) | 转速 rote speed (min-1) | 16000 | 13000 | 12000 | 10600 | 10000 | 9500 | 9280 | 7000 | 5600 |
| | | ap≤0.2D | | 进给转速 feed velocity (mm/min) | 720 | 900 | 1200 | 1200 | 1500 | 1800 | 2225 | 2500 | 3000 |

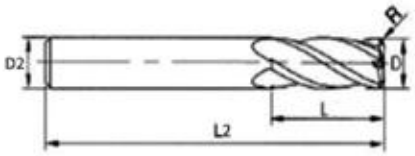
| ISO | 被加工材料 Workpiece Material | 切削量 (mm) Depth of cut | Vc m/min | | 刃径 tool Diameter (mm) 1 | 2 | 4 | 6 | 8 | 10 | 12 | 16 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N | 锻造及铸造铝合金(Si<12%) Forging and casting aluminum alloy<br>铜合金(<200HB) Copper alloy | ap≤0.5D | 150 (60~350) | 转速 rote speed (min-1) | 16000 | 10000 | 9000 | 8000 | 7800 | 8000 | 6800 | 5000 | 4000 |
| | | ap≤1D | | 进给转速 feed velocity (mm/min) | 450 | 570 | 960 | 1050 | 1300 | 1500 | 1620 | 1680 | 1800 |
| | | ap≤0.5D | 150 (60~350) | 转速 rote speed (min-1) | 16000 | 10000 | 9000 | 8000 | 7800 | 8000 | 6800 | 5000 | 4000 |
| | | ap≤1D | | 进给转速 feed velocity (mm/min) | 450 | 520 | 860 | 830 | 960 | 1240 | 1500 | 1550 | 1510 |

# Carbide Corner Radius End Mill （Extra Long）

LYYB | AL | HRC 55 | 3 | S

| 单位Unit | (mm) | |
|---|---|---|
| D | D≤12 | D>12 |
| 公差Tol | 0 | 0 |
| | -0.015 | -0.02 |

P
M
K
N ●
S
H




| Diameter D | Radius R | Cutting Length L | Shank D2 | Overall Length L2 |
|---|---|---|---|---|
| mm | mm | mm | mm | mm |
| 4 | 0.5 | 20 | 4 | 75 |
| 4 | 1 | 20 | 4 | 75 |
| 6 | 0.5 | 25 | 6 | 75 |
| 6 | 1 | 25 | 6 | 75 |
| 8 | 0.5 | 30 | 8 | 75 |
| 8 | 1 | 30 | 8 | 75 |
| 4 | 0.5 | 25 | 4 | 100 |
| 4 | 1 | 25 | 4 | 100 |
| 6 | 0.5 | 30 | 6 | 100 |
| 6 | 1 | 30 | 6 | 100 |
| 8 | 0.5 | 35 | 8 | 100 |
| 8 | 1 | 35 | 8 | 100 |
| 10 | 0.5 | 40 | 10 | 100 |
| 10 | 1 | 40 | 10 | 100 |
| 12 | 0.5 | 45 | 12 | 100 |
| 12 | 1 | 45 | 12 | 100 |

| Ordering Code |
|---|
| LYYB-3F-0405160475 |
| LYYB-3F-041160475 |
| LYYB-3F-0605240675 |
| LYYB-3F-061240675 |
| LYYB-3F-0805250875 |
| LYYB-3F-081250875 |
| LYYB-3F-04052004100 |
| LYYB-3F-0412004100 |
| LYYB-3F-06053006100 |
| LYYB-3F-061300610 |
| LYYB-3F-08053508100 |
| LYYB-3F-0813508100 |
| LYYB-3F-10054010100 |
| LYYB-3F-1014010100 |
| LYYB-3F-12054512100 |
| LYYB-3F-1214512100 |

| ISO | 被加工材料 Workpiece Material | 切削量 (mm) Depth of cut | Vc m/min | | 刃径 tool Diameter (mm) 1 | 2 | 4 | 6 | 8 | 10 | 12 | 16 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N | 锻造及铸造铝合金(Si<12%) Forging and casting aluminum alloy<br>铜合金(<200HB) Copper alloy | ap≤1.5D | 150 (60~350) | 转速 rote speed (min-1) | 16000 | 13000 | 12000 | 10600 | 10000 | 9500 | 9280 | 7000 | 5600 |
| | | ap≤0.2D | | 进给转速 feed velocity (mm/min) | 650 | 850 | 1200 | 1530 | 1670 | 2050 | 2800 | 3000 | 3150 |
| | | ap≤1.5D | 150 (60~350) | 转速 rote speed (min-1) | 16000 | 13000 | 12000 | 10600 | 10000 | 9500 | 9280 | 7000 | 5600 |
| | | ap≤0.2D | | 进给转速 feed velocity (mm/min) | 720 | 900 | 1200 | 1200 | 1500 | 1800 | 2225 | 2500 | 3000 |

| ISO | 被加工材料 Workpiece Material | 切削量 (mm) Depth of cut | Vc m/min | | 刃径 tool Diameter (mm) 1 | 2 | 4 | 6 | 8 | 10 | 12 | 16 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N | 锻造及铸造铝合金(Si<12%) Forging and casting aluminum alloy<br>铜合金(<200HB) Copper alloy | ap≤0.5D | 150 (60~350) | 转速 rote speed (min-1) | 16000 | 10000 | 9000 | 8000 | 7800 | 8000 | 6800 | 5000 | 4000 |
| | | ap≤1D | | 进给转速 feed velocity (mm/min) | 450 | 570 | 960 | 1050 | 1300 | 1500 | 1620 | 1680 | 1800 |
| | | ap≤0.5D | 150 (60~350) | 转速 rote speed (min-1) | 16000 | 10000 | 9000 | 8000 | 7800 | 8000 | 6800 | 5000 | 4000 |
| | | ap≤1D | | 进给转速 feed velocity (mm/min) | 450 | 520 | 860 | 830 | 960 | 1240 | 1500 | 1550 | 1510 |

# 粗加工立铣刀系列
# *Endmills for roughing application series*

- 适用于普通钢，铸铁材料的粗加工
- 特殊的刃口断屑槽处理，适用于工件的沟槽和侧壁粗加工
- 采用TiSiN涂层
- Suitable for rough machining of steel&cast iron.
- Special cutting edge chipbreaker treatment, suitable for rough machining of groove and side wall of workpieces
- TiSiN Coating.


刃口耐磨性和刀具刚性提升

Improved edge wear resistance and tool rigidity

全球合作伙伴-WORLDWIDE RELIABL PARTNERS

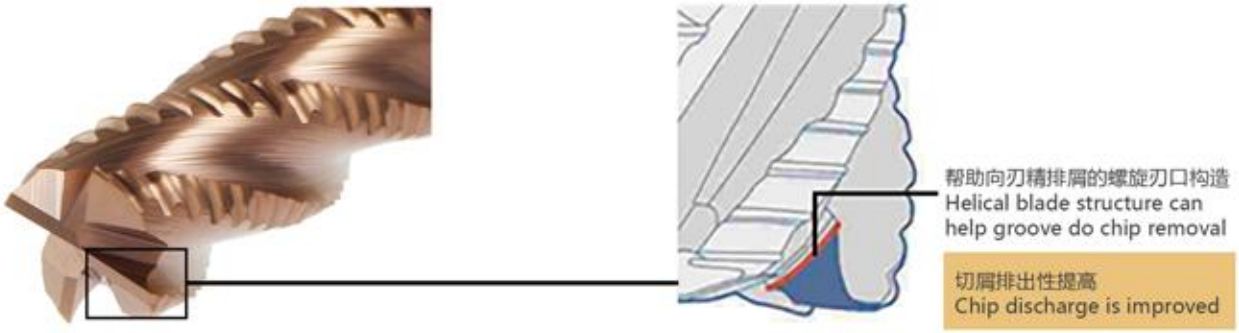
# 多刃规格实现高效率，稳定加工，可应对钢，铸铁的粗加工
# Multi-blade specification to achieve high efficiency, stable processing, can be corresponding to steel, cast iron rough processing.

## 1 多刃规格实现高效率加工
## Multi-blade specification to achieve high efficiency processing

**多刃规格：独特的刃口形状提高排屑性能**

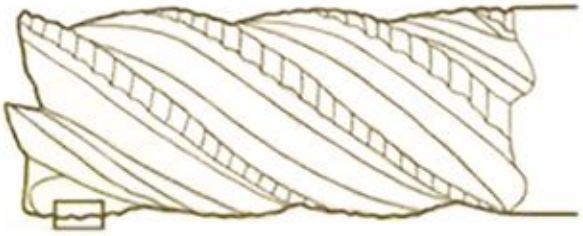
**Multi-edge specification: Unique edge shape improves chip evacuation performance**

多刃规格（Φ16-6枚刀）Multi-blade specification (Φ16-6T)　独特的刃口形状 Unique edge shape

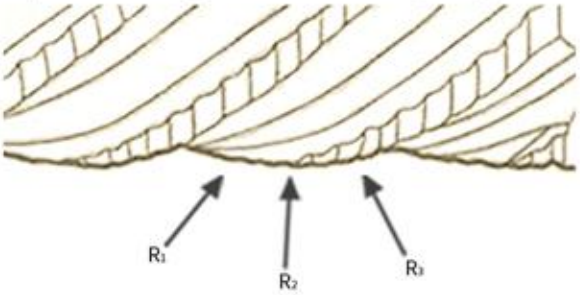



## 2 耐崩损 Resistance to collapse

特殊R角波形切刃，应力集中，抑制崩损。实现稳定加工。
Special R-angle wave cutting edge, stress concentration, suppression of chipping. and achieve stable processing.



特殊R角波形切刃
Special R-angle wave cutting edge




不同的R角组合构成波形切刃（复合R角形状）
缓和应力集中，提高抗崩损性
Different R angles forms wavy cutting edges (composite R angle shape) to relieve concentration and improve the collapse resistance

加工12m后的刀尖状态
The tip state after procesng 12m
(本公司对比) (Comparison of our company)


US

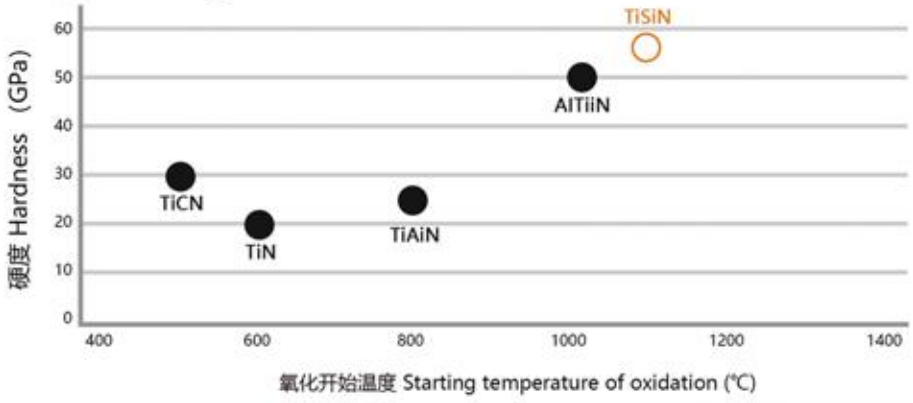

其他公司产品B Other commpany products

切削参数 Cutting paramter：n=2900min$^{-1}$
Vf=712mm/min, ap*ae=5*3mm
加工径 Processing diameter θ10, Wet
台阶加工 Processing steps
被削材 By cutting material：Ti-6Al-4V

## 3 实现长寿命，稳定加工
Achieve long life,stable processiing

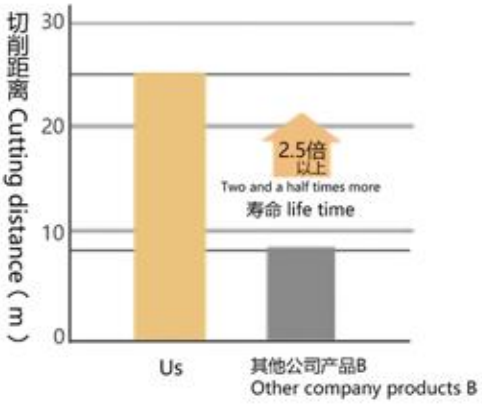
### 采用耐磨性、抗氧化性优异的(TiSiN)PVD涂层
### (TiSiN) PVD coating with excellent wear resistance and oxidation resistance

涂层特性 Coating Characteristics

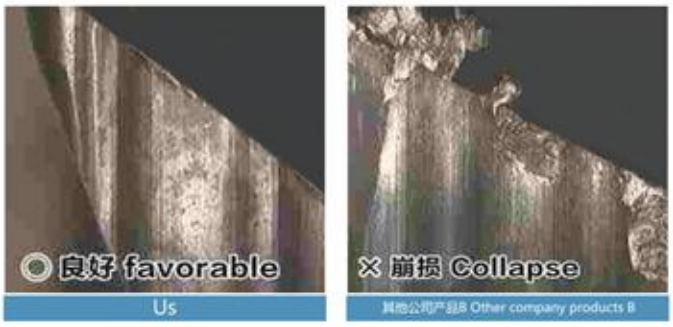



低 Low 抗氧化性 Oxidation resistance 高 High

寿命对比 compared with life
(本公司对比) (Comparison of our company)




加工8.4m后的刀尖状态
The tip state after 8.4m processing

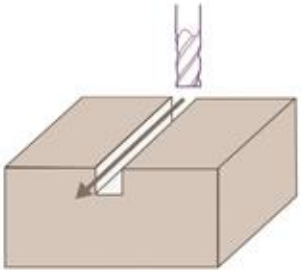


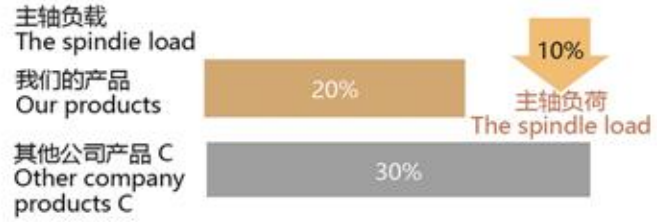

切削参数 Cutting paramter: n=3500min$^{-1}$, Vf=840mm/min, ap*ae=5*4mm
加工径 Processing diameter: θ16，台阶加工 Processing steps，Wet
被削材 By cutting material: SU304

## 加工实例 Processing Example

### 加测试件 Testware SUS304

n=1.800min$^{-1}$
(Vc=56m/min)
Vf=250 mm/min
(fz=0.027 mm/t)
apxae=3x10mm(切槽加工
Grooving processing)
3走刀 3 Feed
Wet(内部给油Internal to the oil)






该产品降低主轴负载10%切削音安静、设备振动减少、完成面良好
This product reduces spindle load by 10%. The cutting sound is quiet. the vibration of equipment is reduced. and the finished surface is good.

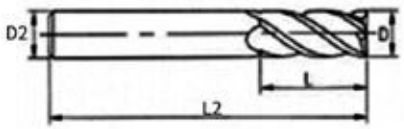
来自用户评价)
(From user reviews)

# Rough End Mill (Standard)

CPD550 TiSiN HRC 55 S

| P | ● |
|---|---|
| M | |
| K | ● |
| N | |
| S | |
| H | |

| 单位Unit | (mm) | |
|---|---|---|
| D | D≤12 | D>12 |
| 公差Tol | 0 | 0 |
| | -0.015 | -0.02 |




| Diameter D | Cutting Length L | Shank D2 | Overall Length L2 |
|---|---|---|---|
| mm | mm | mm | mm |
| 4 | 12 | 4 | 50 |
| 5 | 13 | 5 | 50 |
| 5 | 13 | 6 | 50 |
| 6 | 15 | 6 | 50 |
| 8 | 20 | 8 | 60 |
| 10 | 25 | 10 | 75 |
| 12 | 30 | 12 | 75 |
| 14 | 45 | 14 | 100 |
| 16 | 45 | 16 | 100 |
| 18 | 45 | 18 | 100 |
| 20 | 45 | 20 | 100 |

| Ordering Code |
|---|
| CPD550-4F-04120450 |
| CPD550-4F-05130550 |
| CPD550-4F-05130650 |
| CPD550-4F-06150650 |
| CPD550-4F-08200860 |
| CPD550-4F-10251075 |
| CPD550-4F-12301275 |
| CPD550-4F-144514100 |
| CPD550-4F-164516100 |
| CPD550-4F-184518100 |
| CPD550-4F-204520100 |

| ISO | 被加工材料 Workpiece Material | 切削量 (mm) Depth of cut | Vc m/min | | 刃径 Tool Diameter (mm) 6 | 8 | 10 | 12 | 16 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|
| P | 碳钢合金 (<45HRC) Carbon steel alloy steel | ap≤1D | 80 | 转速 rote speed (min-1) | 4250 | 3190 | 2550 | 2120 | 1590 | 1270 |
| | | | | 进给转速 feed velocity (mm/min) | 760 | 700 | 660 | 640 | 640 | 710 |
| | 合金钢 (50HRC) Alloy Steel | ap≤0.5D | 60 | 转速 rote speed (min-1) | 3190 | 2390 | 1910 | 1590 | 1190 | 960 |
| | | | | 进给转速 feed velocity (mm/min) | 380 | 380 | 380 | 380 | 330 | 310 |
| K | 灰铸铁，球墨铸铁 (<32HRC) Gry cast iron，nodular cast iron | ap≤1D | 55 | 转速 rote speed (min-1) | 2920 | 2190 | 1750 | 1460 | 1100 | 880 |
| | | | | 进给转速 feed velocity (mm/min) | 370 | 370 | 360 | 350 | 310 | 280 |
| | 高合金铸铁 (35-45HRC) High alloy cast iron | ap≤0.8D | 55 | 转速 rote speed (min-1) | 2920 | 2190 | 1750 | 1460 | 1133 | 880 |
| | | | | 进给转速 feed velocity (mm/min) | 350 | 350 | 350 | 320 | 290 | 260 |

上表是侧铣加工的标准值，刀具切槽时，转速要以上表格的50%~70%，进给速度要以40%~60%为标准值。

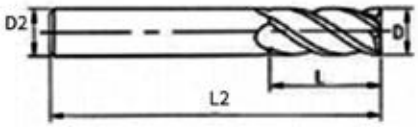
Above table is the standard cutting data for side milling maching, if for groove cutting , the VC should reach 50%~70% and the feed should reach 40%~60% based on the table.

# Rough End Mill（Extra Long）

CPD550 | TISIN | HRC 55 | S

| 单位Unit | (mm) | |
|---|---|---|
| D | D≤12 | D>12 |
| 公差Tol | 0 | 0 |
| | -0.015 | -0.02 |

| | |
|---|---|
| P | ● |
| M | |
| K | ● |
| N | |
| S | |
| H | |




| Diameter D | Cutting Length L | Shank D2 | Overall Length L2 |
|---|---|---|---|
| mm | mm | mm | mm |
| 6 | 24 | 6 | 75 |
| 8 | 25 | 8 | 75 |
| 6 | 30 | 6 | 100 |
| 8 | 35 | 8 | 100 |
| 10 | 40 | 10 | 100 |
| 12 | 45 | 12 | 100 |
| 16 | 70 | 16 | 150 |
| 20 | 70 | 20 | 150 |

| Ordering Code |
|---|
| CPD550-4F-06240675 |
| CPD550-4F-08250875 |
| CPD550-4F-063006100 |
| CPD550-4F-083508100 |
| CPD550-4F-104010100 |
| CPD550-4F-124512100 |
| CPD550-4F-167016150 |
| CPD550-4F-207020150 |

| ISO | 被加工材料 Workpiece Material | 切削量（mm） Depth of cut | Vc m/min | | 刃径 Tool Diameter（mm） 6 | 8 | 10 | 12 | 16 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|
| P | 碳钢合金（<45HRC） Carbon steel alloy steel | ap≤1D | 80 | 转速 rote speed（min-1） | 4250 | 3190 | 2550 | 2120 | 1590 | 1270 |
| | | | | 进给转速 feed velocity（mm/min） | 760 | 700 | 660 | 640 | 640 | 710 |
| | 合金钢（50HRC） Alloy Steel | ap≤0.5D | 60 | 转速 rote speed（min-1） | 3190 | 2390 | 1910 | 1590 | 1190 | 960 |
| | | | | 进给转速 feed velocity（mm/min） | 380 | 380 | 380 | 380 | 330 | 310 |
| K | 灰铸铁，球墨铸铁（<32HRC） Gry cast iron，nodular cast iron | ap≤1D | 55 | 转速 rote speed（min-1） | 2920 | 2190 | 1750 | 1460 | 1100 | 880 |
| | | | | 进给转速 feed velocity（mm/min） | 370 | 370 | 360 | 350 | 310 | 280 |
| | 高合金铸铁（35-45HRC） High alloy cast iron | ap≤0.8D | 55 | 转速 rote speed（min-1） | 2920 | 2190 | 1750 | 1460 | 1133 | 880 |
| | | | | 进给转速 feed velocity（mm/min） | 350 | 350 | 350 | 320 | 290 | 260 |

上表是侧铣加工的标准值，刀具切槽时，转速要以上表格的50%~70%，进给速度要以40%~60%为标准值。

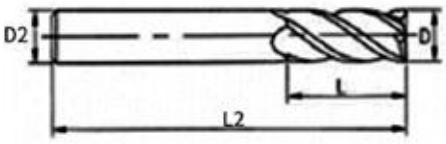
Above table is the standard cutting data for side milling maching, if for groove cutting , the VC should reach 50%~70% and the feed should reach 40%~60% based on the table.

## Rough End Mill (Standard)

LYCPD | AL | HRC 55 | S

| 单位Unit | (mm) | |
|---|---|---|
| D | D≤12 | D>12 |
| 公差Tol | 0 | 0 |
| | -0.015 | -0.02 |

| | |
|---|---|
| P | |
| M | |
| K | |
| N | ● |
| S | |
| H | |




| Diameter D | Cutting Length L | Shank D2 | Overall Length L2 | Ordering Code |
|---|---|---|---|---|
| mm | mm | mm | mm | |
| 4 | 12 | 4 | 50 | LYCPD-3F-04120450 |
| 5 | 15 | 5 | 50 | LYCPD-3F-05150550 |
| 5 | 15 | 6 | 50 | LYCPD-3F-05150650 |
| 6 | 18 | 6 | 50 | LYCPD-3F-06180650 |
| 8 | 24 | 8 | 60 | LYCPD-3F-08240860 |
| 10 | 30 | 10 | 75 | LYCPD-3F-10301075 |
| 12 | 35 | 12 | 75 | LYCPD-3F-12351275 |
| 14 | 45 | 14 | 100 | LYCPD-3F-144514100 |
| 16 | 45 | 16 | 100 | LYCPD-3F-164516100 |
| 18 | 45 | 18 | 100 | LYCPD-3F-184518100 |
| 20 | 45 | 20 | 100 | LYCPD-3F-204520100 |

## Rough End Mill (Extra Long)

| Diameter D | Cutting Length L | Shank D2 | Overall Length L2 | Ordering Code |
|---|---|---|---|---|
| mm | mm | mm | mm | |
| 6 | 24 | 6 | 75 | LYCPD-3F-06240675 |
| 8 | 25 | 8 | 75 | LYCPD-3F-08250875 |
| 6 | 30 | 6 | 100 | LYCPD-3F-063006100 |
| 8 | 35 | 8 | 100 | LYCPD-3F-083508100 |
| 10 | 40 | 10 | 100 | LYCPD-3F-104010100 |
| 12 | 45 | 12 | 100 | LYCPD-3F-124512100 |
| 14 | 70 | 14 | 150 | LYCPD-3F-147014100 |
| 16 | 70 | 16 | 150 | LYCPD-3F-167016150 |
| 20 | 70 | 20 | 150 | LYCPD-3F-207020150 |

| ISO | 被加工材料 Workpiece Material | 切削量 (mm) Depth of cut | Vc m/min | | 刃径 tool Diameter (mm) 1 | 2 | 4 | 6 | 8 | 10 | 12 | 16 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N | 锻造及铸造铝合金(Si<12%) Forging and casting aluminum alloy 铜合金(<200HB) Copper alloy | ap≤1.5D | 150 (60~350) | 转速 rote speed (min-1) | 16000 | 13000 | 12000 | 10600 | 10000 | 9500 | 9280 | 7000 | 5600 |
| | | ap≤0.2D | | 进给转速 feed velocity (mm/min) | 650 | 850 | 1430 | 1530 | 1670 | 2050 | 2800 | 3000 | 3150 |
| | | ap≤1.5D | 150 (60~350) | 转速 rote speed (min-1) | 16000 | 13000 | 12000 | 10600 | 10000 | 9500 | 9280 | 7000 | 5600 |
| | | ap≤0.2D | | 进给转速 feed velocity (mm/min) | 720 | 900 | 1200 | 1200 | 1500 | 1800 | 2225 | 2500 | 3000 |


# 微小径系列

## SUITABLE FOR MICRO DIAMETER POCKET MILLING SERIES

- 适用于各种钢件，铸铁的深槽加工
- 采用高性能TiSiN涂层，耐高温，耐磨损
- 长颈避免深腔加工干涉，适用于模具肋槽的深腔加工

- Suitable for deep groove processing various steel and cast iron.
- High-performance TiSiN coating for high temperature and wear resistance.
- Long neck desgin avoids collision with workpiece, Suitable for deep pocket milling of mold rib.

精细研磨，尺寸精准

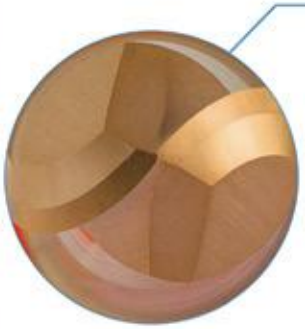
Fine grinding，high precise sizes

全球合作伙伴-WORLDWIDE RELIABL PARTNERS

# 模具肋槽的深腔加工; 精细研磨, 尺寸精准
# Suitable for deep pocket milling of mold rib areas; Fine grinding, High precise sizes.

## 切边刀刃形状 Cutting edge shape

- 刀口精准钝化，提高刀具使用寿命
- 可抑制加工表面的不均匀性，确保优异的光洁度
- Accurate passivation of cutting edge, improve tool life.
- Can Suppresses the unevenness of the surface and ensures perfect finish.

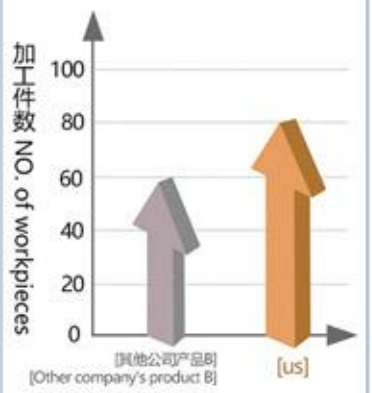


## 球头端齿 The ball head end teeth

- 刀具刃型优化，精细研磨，尺寸精准
- 球点形状的切削提供优良的耐磨性和切削性能
- Cutting edge optimization, fine grinding, precise size.
- Cutting edge of the ball point shape provide excellent wear resistance and cutting performance.

## 加工案例-对比 Processing Case-Comparison

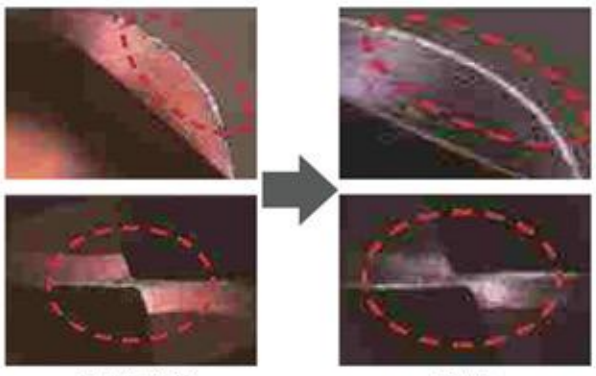
**[切削性能 Cutting Performance]**




新型涂层TiSiN具有优异的韧性和耐磨性
New TISIN coating has excellent toughness and wear resistance

## 磨损对比图 Picture of abrasion comparison

| | |
|---|---|
| ■ 工件 Workpiece | Co-Cr |
| ■ 切削条件 Cutting conditions | vc(m/min)=150<br>fz(mm/t)=0.08<br>ap(mm)=0.13<br>ae(mm)=0.7<br>wet |
| ■ 刀具 Tool | SGQD |



[其他公司产品B]
[PRODUCTS OF OTHER COMPANIESB

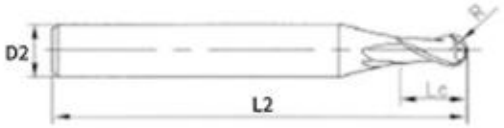
[SGQD]

# Micro Diameter Ball Nose End Mill (Standard)

| WXJQD | TISIN | HRC 60 | 2 | 45° | B |
|---|---|---|---|---|---|

| 单位Unit | (mm) |
|---|---|
| R | R |
| 公差Tol | ±0.015 |

| | |
|---|---|
| P | ● |
| M | |
| K | ● |
| N | ● |
| S | |
| H | |




| Diameter D | Radius R | Shank D2 | Overall Length L2 |
|---|---|---|---|
| mm | mm | mm | mm |
| 0.3 | 0.15 | 4 | 50 |
| 0.4 | 0.2 | 4 | 50 |
| 0.5 | 0.25 | 4 | 50 |
| 0.7 | 0.35 | 4 | 50 |
| 0.8 | 0.4 | 4 | 50 |
| 0.9 | 0.45 | 4 | 50 |

| Ordering Code |
|---|
| WXJQD-2F-0030060450 |
| WXJQD-2F-0040080450 |
| WXJQD-2F-005010450 |
| WXJQD-2F-0070140450 |
| WXJQD-2F-0080160450 |
| WXJQD-2F-0090180450 |

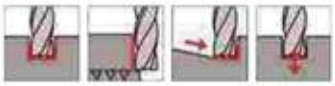
| ISO | 被加工材料 Workpiece Material | 切削量 (mm) Depth of cut | Vc m/min | | 刃径 Tool Diameter (mm) 0.6 | 0.8 | 1.0 | 1.2 | 1.6 | 2.0 |
|---|---|---|---|---|---|---|---|---|---|---|
| P | 碳钢合金 (<45HRC)<br>Carbon steel alloy steel<br>合金钢 (50HRC)<br>Alloy Steel | ap≤0.02D<br>ap≤0.02D | 80 | 转速 rote speed (min-1)<br>进给转速 feed velocity (mm/min) | 42460<br>1400 | 15920<br>1960 | 25480<br>1430 | 21230<br>1490 | 6370<br>1620 | 12740<br>1400 |
| | | ap≤0.01D<br>ap≤0.01D | 70 | 转速 rote speed (min-1)<br>进给转速 feed velocity (mm/min) | 37150<br>1190 | 10350<br>1180 | 22290<br>1160 | 5970<br>1160 | 4780<br>1050 | 11150<br>1160 |
| K | 灰铸铁，球墨铸铁 (<32HRC)<br>Gry cast iron，nodular cast iron<br>高合金铸铁 (35-45HRC)<br>High alloy cast iron | ap≤0.02D<br>ap≤0.02D | 80 | 转速 rote speed (min-1)<br>进给转速 feed velocity (mm/min) | 42460<br>1440 | 31850<br>1460 | 25480<br>1430 | 17520<br>2630 | 11680<br>2570 | 12740<br>1400 |
| | | ap≤0.02D<br>ap≤0.02D | 70 | 转速 rote speed (min-1)<br>进给转速 feed velocity (mm/min) | 37150<br>1190 | 27870<br>1170 | 22290<br>1160 | 17520<br>2450 | 11680<br>2450 | 11150<br>1160 |

上表是侧铣加工的标准值，刀具切槽时，转速要以上表的50%~70%，进给速度要以40%~60%为标准值。
Above table is the standard cutting data for side milling maching, if for groove cuttingtheVC should reach 50%-70%and the feed should reach 40%-60% based on the table.

| ISO | 被加工材料 Workpiece Material | 切削量 (mm) Depth of cut | Vc m/min | | 刃径 tool Diameter (mm) 1 | 2 | 4 | 6 | 8 | 10 | 12 | 16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N | 锻造及铸造铝合金(SI<12%)<br>Forging and casting aluminum alloy<br>铜合金(<200HB)<br>Copper alloy | ap≤0.5D<br>ap≤1D | 150<br>(60~350) | 转速 rote speed (min-1)<br>进给转速 feed velocity (mm/min) | 19000<br>950 | 15900<br>1600 | 11900<br>1900 | 10600<br>2500 | 8000<br>2250 | 7950<br>3800 | 7950<br>3800 | 7000<br>4450 |
| | | ap≤0.5D<br>ap≤1D | 150<br>(60~350) | 转速 rote speed (min-1)<br>进给转速 feed velocity (mm/min) | 19000<br>860 | 15900<br>1430 | 11900<br>1720 | 10600<br>2300 | 8000<br>2300 | 7950<br>2850 | 7950<br>3450 | 7000<br>4010 |

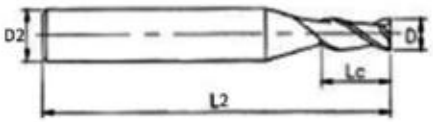
# Micro Diameter Square End Mill (Standard)

| WXJPD | TISIN | HRC 60 | 2 | 45° | S |
|---|---|---|---|---|---|



| 单位Unit | (mm) |
|---|---|
| D | D |
| 公差Tol | 0 |
| | -0.015 |

| | |
|---|---|
| P | ● |
| M | |
| K | ● |
| N | ● |
| S | |
| H | |




| Diameter D | Cutting Length L | Shank D2 | Overall Length L2 |
|---|---|---|---|
| mm | mm | mm | mm |
| 0.2 | 0.4 | 4 | 50 |
| 0.3 | 0.6 | 4 | 50 |
| 0.4 | 0.8 | 4 | 50 |
| 0.5 | 1 | 4 | 50 |
| 0.6 | 1.2 | 4 | 50 |
| 0.7 | 1.4 | 4 | 50 |
| 0.8 | 1.6 | 4 | 50 |
| 0.9 | 1.8 | 4 | 50 |

| Ordering Code |
|---|
| WXJPD-2F-0020040450 |
| WXJPD-2F-0030060450 |
| WXJPD-2F-0040080450 |
| WXJPD-2F-005010450 |
| WXJPD-2F-0060120450 |
| WXJPD-2F-00740140450 |
| WXJPD-2F-0080160450 |
| WXJPD-2F-0090180450 |

| ISO | 被加工材料 Workpiece Material | 切削量 (mm) Depth of cut | Vc m/min | | 刃径 Tool Diameter (mm) 0.8 | 0.9 | 1.0 | 1.2 | 1.4 | 1.6 | 1.8 | 2.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 碳钢合金 (<45HRC) Carbon steel alloy steel | ap≤0.5D | 90 | 转速 rote speed (min-1) | 35830 | 31850 | 28600 | 23890 | 20470 | 17910 | 15920 | 5840 |
| | | ap≤0.05D | | 进给转速 feed velocity (mm/min) | 1150 | 1150 | 1150 | 1100 | 1110 | 1070 | 1110 | 2800 |
| | 合金钢 (50HRC) Alloy Steel | ap≤0.5D | 70 | 转速 rote speed (min-1) | 27870 | 24770 | 22290 | 18580 | 15920 | 13930 | 12380 | 4780 |
| | | ap≤0.05D | | 进给转速 feed velocity (mm/min) | 840 | 840 | 850 | 820 | 800 | 780 | 820 | 2000 |
| K | 灰铸铜，球墨铸铁 (<32HRC) Gry cast iron，nodular cast iron | ap≤0.5D | 90 | 转速 rote speed (min-1) | 35830 | 31850 | 28660 | 23890 | 20470 | 17910 | 15920 | 5840 |
| | | ap≤0.05D | | 进给转速 feed velocity (mm/min) | 1150 | 1150 | 1150 | 1100 | 1100 | 1070 | 1110 | 2530 |
| | 高合金铸铁 (35-45HRC) High alloy cast iron | ap≤0.5D | 80 | 转速 rote speed (min-1) | 31850 | 28310 | 25480 | 21230 | 18200 | 15920 | 14150 | 5840 |
| | | ap≤0.05D | | 进给转速 feed velocity (mm/min) | 830 | 850 | 820 | 760 | 800 | 860 | 910 | 2440 |

上表是侧铣加工的标准值，刀具切槽时，转速要以上表的50%~70%，进给速度要以40%~60%为标准值。

Above table is the standard cutting data for side milling maching, if for groove cuttingtheVC should reach 50%-70%and the feed should reach 40%-60% based on the table.

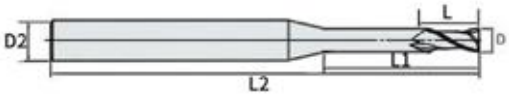
| ISO | 被加工材料 Workpiece Material | 切削量 (mm) Depth of cut | Vc m/min | | 刃径 tool Diameter (mm) 1 | 2 | 4 | 6 | 8 | 10 | 12 | 16 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N | 锻造及铸造铝合金(Si<12%) Forging and casting aluminum alloy | ap≤1.5D | 150 (60~350) | 转速 rote speed (min-1) | 16000 | 12700 | 12000 | 10600 | 10000 | 9500 | 9280 | 7000 | 5600 |
| | | ap≤0.2D | | 进给转速 feed velocity (mm/min) | 580 | 710 | 1200 | 1280 | 1390 | 1720 | 2400 | 2500 | 2450 |
| | 铜合金(<200HB) Copper alloy | ap≤1.5D | 150 (60~350) | 转速 rote speed (min-1) | 16000 | 12700 | 12000 | 10600 | 10000 | 9500 | 9280 | 7000 | 5600 |
| | | ap≤0.2D | | 进给转速 feed velocity (mm/min) | 520 | 650 | 1070 | 1150 | 1250 | 1550 | 2170 | 2250 | 2200 |

# Long Neck Square End Mill (Standard)

| SGPD | TISIN | HRC 55 | 2/4 | 35° | S |
|---|---|---|---|---|---|

| 单位Unit | (mm) | |
|---|---|---|
| D | D≤12 | D>12 |
| 公差Tol | 0 | 0 |
| | -0.015 | -0.02 |

| | |
|---|---|
| P | ● |
| M | |
| K | ● |
| N | ● |
| S | |
| H | |




| Diameter D | Cutting Length L | Shank D2 | Effective cutting Length L1 | Overall Length L2 | Ordering Code |
|---|---|---|---|---|---|
| mm | mm | mm | mm | mm | |
| 0.3 | 0.6 | 4 | 2/3 | 50 | SGPD-2F-00302040250 |
| 0.4 | 0.8 | 4 | 3/4/5/6 | 50 | SGPD-2F-00402040350 |
| 0.5 | 1 | 4 | 2/3/4/6/8 | 50 | SGPD-2F-00502040250 |
| 0.6 | 1.2 | 4 | 2/3/4/6/8 | 50 | SGPD-2F-00602040250 |
| 0.7 | 1.4 | 4 | 3/4/6/8/10 | 50 | SGPD-2F-00703040350 |
| 0.8 | 1.6 | 4 | 3/4/6/8/10 | 50 | SGPD-2F-00803040350 |
| 0.9 | 1.8 | 4 | 3/4/6/8/10 | 50 | SGPD-2F-00903040350 |
| 1 | 3 | 4 | 6/8/10/12/16/20 | 50 | SGPD-4F-0103040650 |
| 1.5 | 4.5 | 4 | 6/8/10/12/16/20 | 50 | SGPD-4F-01506040650 |
| 2 | 6 | 4 | 8/10/12/16/20 | 50 | SGPD-4F-0206040850 |
| 2.5 | 8 | 4 | 10/12/16/20 | 50 | SGPD-4F-025080410450 |
| 3 | 9 | 4 | 12/16/20 | 50 | SGPD-4F-0309041250 |

| ISO | 被加工材料 Workpiece Material | 切削量 (mm) Depth of cut | Vc m/min | | 刃径 Tool Diameter (mm) 0.8 | 0.9 | 1.0 | 1.2 | 1.4 | 1.6 | 1.8 | 2.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 碳钢合金 (<45HRC) Carbon steel alloy steel | ap≤0.5D | 90 | 转速 rote speed (min-1) | 19900 | 31850 | 28600 | 23890 | 13270 | 9950 | 8850 | 7960 |
| | | ap≤0.05D | | 进给转速 feed velocity (mm/min) | 400 | 1150 | 1150 | 1100 | 370 | 400 | 410 | 400 |
| | 合金钢 (50HRC) Alloy Steel | ap≤0.5D | 70 | 转速 rote speed (min-1) | 15920 | 24770 | 22290 | 18580 | 10620 | 7960 | 7080 | 6370 |
| | | ap≤0.05D | | 进给转速 feed velocity (mm/min) | 250 | 840 | 850 | 820 | 250 | 290 | 300 | 290 |
| K | 灰铸铁，球墨铸铁 (<32HRC) Gry cast iron，nodular cast iron | ap≤0.5D | 90 | 转速 rote speed (min-1) | 15920 | 31850 | 28660 | 23890 | 10620 | 9100 | 7960 | 6370 |
| | | ap≤0.05D | | 进给转速 feed velocity (mm/min) | 320 | 1150 | 1150 | 1100 | 300 | 310 | 320 | 320 |
| | 高合金铸铁 (35-45HRC) High alloy cast iron | ap≤0.5D | 80 | 转速 rote speed (min-1) | 11940 | 28310 | 25480 | 21230 | 7960 | 6800 | 5970 | 4780 |
| | | ap≤0.05D | | 进给转速 feed velocity (mm/min) | 210 | 850 | 820 | 760 | 210 | 220 | 230 | 230 |

上表是侧铣加工的标准值，刀具切槽时，转速要以上表的50%~70%，进给速度要以40%~60%为标准值。

Above table is the standard cutting data for side milling maching, if for groove cuttingtheVC should reach 50%-70%and the feed should reach 40%-60% based on the table.

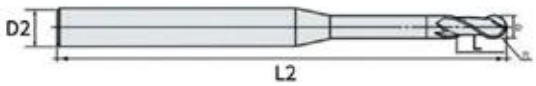
| ISO | 被加工材料 Workpiece Material | 切削量 (mm) Depth of cut | Vc m/min | | 刃径 tool Diameter (mm) 1 | 2 | 4 | 6 | 8 | 10 | 12 | 16 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N | 锻造及铸造铝合金(Si<12%) Forging and casting aluminum alloy | ap≤1.5D | 150 (60~350) | 转速 rote speed (min-1) | 16000 | 12700 | 12000 | 10600 | 10000 | 9500 | 9280 | 7000 | 5600 |
| | | ap≤0.2D | | 进给转速 feed velocity (mm/min) | 580 | 710 | 1200 | 1280 | 1390 | 1720 | 2400 | 2500 | 2450 |
| | 铜合金(<200HB) Copper alloy | ap≤1.5D | 150 (60~350) | 转速 rote speed (min-1) | 16000 | 12700 | 12000 | 10600 | 10000 | 9500 | 9280 | 7000 | 5600 |
| | | ap≤0.2D | | 进给转速 feed velocity (mm/min) | 520 | 650 | 1070 | 1150 | 1250 | 1550 | 2170 | 2250 | 2200 |

# Long Neck Ball Nose End Mill (Standard)

| SGQD | TISIN | HRC 55 | f/2 | 35° | B |
|---|---|---|---|---|---|

| 单位Unit | (mm) |
|---|---|
| R | R |
| 公差Tol | ±0.015 |

| | |
|---|---|
| P | ● |
| M | |
| K | ● |
| N | ● |
| S | |
| H | |




| Radius R | Shank D2 | Cutting Length L | Effective cutting Length L1 | Overall Length L2 |
|---|---|---|---|---|
| mm | mm | mm | mm | mm |
| 0.15 | 4 | 0.6 | 2/3/4 | 50 |
| 0.2 | 4 | 0.8 | 2/3/4/5/6 | 50 |
| 0.25 | 4 | 1 | 2/3/4/6/8 | 50 |
| 0.3 | 4 | 1.2 | 2/3/4/6/8 | 50 |
| 0.35 | 4 | 1.4 | 3/4/6/8/10 | 50 |
| 0.4 | 4 | 1.6 | 3/4/6/8/10 | 50 |
| 0.5 | 4 | 2 | 6/8/10/12/16/20 | 50 |
| 0.75 | 4 | 3 | 6/8/10/12/16/20 | 50 |
| 1 | 4 | 4 | 6/8/10/12/16/20 | 50 |

| Ordering Code |
|---|
| SGQD-2F-001504020250 |
| SGOD-2F-00204020250 |
| SGOD-2F-002504020250 |
| SGQD-2F-00304020250 |
| SGQD-2F-003504030350 |
| SGOD-2F-00404030350 |
| SGQD-2F-00504060650 |
| SGQD-2F-007504060650 |
| SGQD-4F-0104060650 |

| ISO | 被加工材料 Workpiece Material | 切削量 (mm) Depth of cut | Vc m/min | | 刃径 Tool Diameter (mm) 0.6 | 0.8 | 1.0 | 1.2 | 1.6 | 2.0 |
|---|---|---|---|---|---|---|---|---|---|---|
| P | 碳钢合金 (<45HRC) Carbon steel alloy steel | ap≤0.02D | 80 | 转速 rote speed (min-1) | 42460 | 15920 | 25480 | 21230 | 6370 | 12740 |
| | | ap≤0.02D | | 进给转速 feed velocity (mm/min) | 1400 | 1960 | 1430 | 1490 | 1620 | 1400 |
| | 合金钢 (50HRC) Alloy Steel | ap≤0.01D | 70 | 转速 rote speed (min-1) | 37150 | 10350 | 22290 | 5970 | 4780 | 11150 |
| | | ap≤0.01D | | 进给转速 feed velocity (mm/min) | 1190 | 1180 | 1160 | 1160 | 1050 | 1160 |
| K | 灰铸铁，球墨铸铁 (<32HRC) Gry cast iron，nodular cast iron | ap≤0.02D | 80 | 转速 rote speed (min-1) | 42460 | 31850 | 25480 | 17520 | 11680 | 12740 |
| | | ap≤0.02D | | 进给转速 feed velocity (mm/min) | 1440 | 1460 | 1430 | 2630 | 2570 | 1400 |
| | 高合金铸铁 (35-45HRC) High alloy cast iron | ap≤0.02D | 70 | 转速 rote speed (min-1) | 37150 | 27870 | 22290 | 17520 | 11680 | 11150 |
| | | ap≤0.02D | | 进给转速 feed velocity (mm/min) | 1190 | 1170 | 1160 | 2450 | 2450 | 1160 |

上表是侧铣加工的标准值，刀具切槽时，转速要以上表的50%~70%，进给速度要以40%~60%为标准值。
Above table is the standard cutting data for side milling maching, if for groove cuttingtheVC should reach 50%-70%and the feed should reach 40%-60% based on the table.

| ISO | 被加工材料 Workpiece Material | 切削量 (mm) Depth of cut | Vc m/min | | 刃径 tool Diameter (mm) 1 | 2 | 4 | 6 | 8 | 10 | 12 | 16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N | 锻造及铸造铝合金(Si<12%) Forging and casting aluminum alloy | ap≤0.5D | 150 (60~350) | 转速 rote speed (min-1) | 19000 | 15900 | 11900 | 10600 | 8000 | 7950 | 7950 | 7000 |
| | | ap≤1D | | 进给转速 feed velocity (mm/min) | 950 | 1600 | 1900 | 2500 | 2250 | 3800 | 3800 | 4450 |
| | 铜合金(<200HB) Copper alloy | ap≤0.5D | 150 (60~350) | 转速 rote speed (min-1) | 19000 | 15900 | 11900 | 10600 | 8000 | 7950 | 7950 | 7000 |
| | | ap≤1D | | 进给转速 feed velocity (mm/min) | 860 | 1430 | 1720 | 2300 | 2300 | 2850 | 3450 | 4010 |

# 倒角铣削
# CHAMFER CUTTERS

## 数控硬质合金倒角铣削
## CNC Carbide Chamfering Milling

- 非常适合在小而窄的区域和平面上进行倒角和去毛刺
- 针对较大特征的轮廓和倒角进行了优化
- 端部切割，非常适合一次性混合地板和倒角墙

- Ideal for chamfering and deburring small, narrow areas and flat surfaces.
- Optimized for contours and chamfers on larger features.
- End cut, ideal for mixing floors and chamfering walls in one go.

特殊的刃口设计，有效解决刀具刃口沾屑问题
Special edge design, effectively solve the problem of sticky

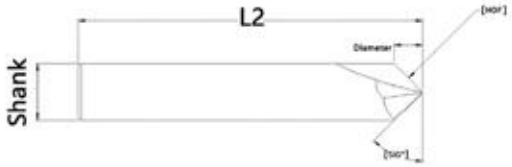
全球合作伙伴-WORLDWIDE RELIABLE PARTNERS

# Chamfer End Mill (Standard)

| ZCDJD | TiAlN | HRC 55 | |
|---|---|---|---|

| 单位Unit | (mm) |
|---|---|
| D | D |
| 公差Tol | 0 |
| | -0.015 |

| | |
|---|---|
| P | ● |
| M | |
| K | ● |
| N | |
| S | |
| H | |




| Diameter D | Angle | Shank D2 | Overall Length L2 | Ordering Code |
|---|---|---|---|---|
| mm | | mm | mm | |
| 2 | 60° | 4 | 50 | ZCDJD-02600450 |
| 2 | 120° | 4 | 50 | ZCDJD-021200450 |
| 3 | 120° | 3 | 50 | ZCDJD-031200350 |
| 3 | 60° | 4 | 50 | ZCDJD-03600450 |
| 3 | 120° | 4 | 50 | ZCDJD-031200450 |
| 3 | 90° | 3 | 50 | ZCDJD-03900350 |
| 4 | 90° | 4 | 50 | ZCDJD-04900450 |
| 5 | 90° | 5 | 50 | ZCDJD-05900550 |
| 6 | 90° | 6 | 50 | ZCDJD-06900650 |
| 8 | 90° | 8 | 60 | ZCDJD-08900860 |
| 10 | 90° | 10 | 75 | ZCDJD-10901075 |
| 10 | 90° | 10 | 75 | ZCDJD-10901075 |
| 4 | 60° | 4 | 50 | ZCDJD-04600450 |
| 4 | 120° | 4 | 50 | ZCDJD-041200450 |
| 4 | 120° | 4 | 50 | ZCDJD-041200450 |
| 6 | 60° | 6 | 50 | ZCDJD-06600650 |
| 6 | 60° | 6 | 50 | ZCDJD-06600650 |
| 10 | 60° | 10 | 75 | ZCDJD-10601075 |

| ISO | 被加工材料 Workpiece Material | 切削量 (mm) Depth of cut | Vc m/min | | 刃径 Tool Diameter (mm) 0.8 | 0.9 | 1.0 | 1.2 | 1.4 | 1.6 | 1.8 | 2.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 碳钢合金 (<45HRC)<br>Carbon steel alloy steel<br>合金钢 (50HRC)<br>Alloy Steel | ap≤0.5D<br>ap≤0.05D | 90 | 转速 rote speed (min-1)<br>进给转速 feed velocity (mm/min) | 35830<br>1150 | 31850<br>1150 | 28600<br>1150 | 23890<br>1100 | 20470<br>1110 | 17910<br>1070 | 15920<br>1110 | 5840<br>2800 |
| | | ap≤0.5D<br>ap≤0.05D | 70 | 转速 rote speed (min-1)<br>进给转速 feed velocity (mm/min) | 27870<br>840 | 24770<br>840 | 22290<br>850 | 18580<br>820 | 15920<br>800 | 13930<br>780 | 12380<br>820 | 4780<br>2000 |
| K | 灰铸铁，球墨铸铁 (<32HRC)<br>Gry cast iron，nodular cast iron<br>高合金铸铁 (35-45HRC)<br>High alloy cast iron | ap≤0.5D<br>ap≤0.05D | 90 | 转速 rote speed (min-1)<br>进给转速 feed velocity (mm/min) | 35830<br>1150 | 31850<br>1150 | 28660<br>1150 | 23890<br>1100 | 20470<br>1100 | 17910<br>1070 | 15920<br>1110 | 5840<br>2530 |
| | | ap≤0.5D<br>ap≤0.05D | 80 | 转速 rote speed (min-1)<br>进给转速 feed velocity (mm/min) | 31850<br>830 | 28310<br>850 | 25480<br>820 | 21230<br>760 | 18200<br>800 | 15920<br>860 | 14150<br>910 | 5840<br>2440 |

上表是侧铣加工的标准值，刀具切槽时，转速要以上表的50%~70%，进给速度要以40%~60%为标准值。

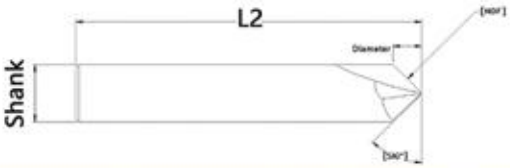
Above table is the standard cutting data for side milling maching, if for groove cuttingtheVC should reach 50%-70%and the feed should reach 40%-60% based on the table.

# Chamfer End Mill (Standard)

| DJD | TiASiN | HRC 65 | |
|---|---|---|---|

| | |
|---|---|
| P | ● |
| M | ● |
| K | ● |
| N | |
| S | |
| H | ● |

| 单位Unit | (mm) |
|---|---|
| D | D |
| 公差Tol | 0 |
| | -0.015 |




| Diameter D | Angle | Shank D2 | Overall Length L2 | Ordering Code |
|---|---|---|---|---|
| mm | | mm | mm | |
| 3 | 90° | 3 | 50 | DJD-03900350 |
| 3 | 90° | 4 | 50 | DJD-03900450 |
| 4 | 90° | 4 | 50 | DJD-04900450 |
| 5 | 90° | 5 | 50 | DJD-05900550 |
| 6 | 90° | 6 | 50 | DJD-06900650 |
| 8 | 90° | 8 | 60 | DJD-08900875 |
| 10 | 90° | 10 | 75 | DJD-10901275 |
| 12 | 90° | 12 | 75 | DJD-12901275 |

| ISO | 被加工材料 Workpiece Material | 切削量 (mm) Depth of cut | Vc m/min | | 刃径 Tool Diameter (mm) 2 | 4 | 6 | 8 | 10 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|
| H | 合金钢、淬硬钢(<60HAC) Alloy steel,hardened steel | ap≤1D<br>ap≤0.05D | 120 | 转速 rote speed (min-1)<br>进给转速 feed velocity (mm/min) | 19110<br>380 | 9550<br>380 | 6370<br>380 | 7170<br>930 | 4780<br>380 | 3490<br>360 |
| | 合金钢、淬硬钢(65HRC) Alloy steel, hardened stee | ap≤0.7D<br>ap≤0.03D | 90 | 转速 rote speed (min-1)<br>进给转速 feed velocity (mm/min) | 15920<br>260 | 11940<br>360 | 7960<br>370 | 5180<br>620 | 4780<br>370 | 3980<br>340 |

上表是侧铣加工的标准值，刀具切槽时，转速要以上表格的50%~70%，进给速度要以40%~60%为标准值。

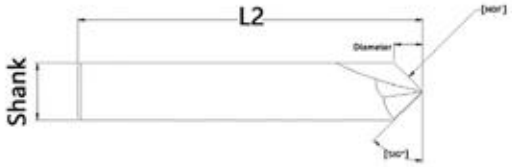
Above table is the standard cutting data for side milling maching, if for groove cutting , the VC should reach 50%~70% and the feed should reach 40%~60% based on the table.

# Chamfer End Mill (Standard)

| ZCDJD | AL | HRC 55 | |
|---|---|---|---|

| 单位Unit | (mm) |
|---|---|
| D | D |
| 公差Tol | 0 |
| | -0.015 |

| | |
|---|---|
| P | |
| M | |
| K | |
| N | ● |
| S | |
| H | |




| Diameter D | Angle | Shank D2 | Overall Length L2 | Ordering Code |
|---|---|---|---|---|
| mm | | mm | mm | |
| 2 | 60° | 4 | 50 | ZCDJD-YL-02600450 |
| 2 | 60° | 4 | 50 | ZCDJD-YL-02600450 |
| 3 | 60° | 3 | 50 | ZCDJD-YL-03600350 |
| 3 | 120° | 3 | 50 | ZCDJD-YL-031200350 |
| 3 | 60° | 4 | 50 | ZCDJD-YL-03600450 |
| 3 | 120° | 4 | 50 | ZCDJD-YL-031200450 |
| 3 | 90° | 3 | 50 | ZCDJD-YL-03900350 |
| 3 | 90° | 4 | 50 | ZCDJD-YL-03900450 |
| 4 | 90° | 4 | 50 | ZCDJD-YL-04900450 |
| 5 | 90° | 5 | 50 | ZCDJD-YL-05900550 |
| 6 | 90° | 6 | 50 | ZCDJD-YL-06900650 |
| 8 | 90° | 8 | 60 | ZCDJD-YL-08900860 |
| 10 | 90° | 10 | 75 | ZCDJD-YL-10901075 |
| 12 | 90° | 12 | 75 | ZCDJD-YL-12901275 |

| ISO | 被加工材料 Workpiece Material | 切削量 (mm) Depth of cut | Vc m/min | | 刃径 tool Diameter (mm) 1 | 2 | 4 | 6 | 8 | 10 | 12 | 16 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N | 锻造及铸造铝合金(Si<12%) Forging and casting aluminum alloy<br>铜合金(<200HB) Copper alloy | ap≤1.5D | 150 (60~350) | 转速 rote speed (min-1) | 16000 | 12700 | 12000 | 10600 | 10000 | 9500 | 9280 | 7000 | 5600 |
| | | ap≤0.2D | | 进给转速 feed velocity (mm/min) | 580 | 710 | 1200 | 1280 | 1390 | 1720 | 2400 | 2500 | 2450 |
| | | ap≤1.5D | 150 (60~350) | 转速 rote speed (min-1) | 16000 | 12700 | 12000 | 10600 | 10000 | 9500 | 9280 | 7000 | 5600 |
| | | ap≤0.2D | | 进给转速 feed velocity (mm/min) | 520 | 650 | 1070 | 1150 | 1250 | 1550 | 2170 | 2250 | 2200 |

| ISO | 被加工材料 Workpiece Material | 切削量 (mm) Depth of cut | Vc m/min | | 刃径 tool Diameter (mm) 1 | 2 | 4 | 6 | 8 | 10 | 12 | 16 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N | 锻造及铸造铝合金(Si<12%) Forging and casting aluminum alloy<br>铜合金(<200HB) Copper alloy | ap≤0.5D | 150 (60~350) | 转速 rote speed (min-1) | 16000 | 10000 | 9000 | 8000 | 7800 | 8000 | 6800 | 5000 | 4000 |
| | | ap≤1D | | 进给转速 feed velocity (mm/min) | 400 | 500 | 810 | 920 | 1100 | 1280 | 1300 | 1310 | 1200 |
| | | ap≤0.5D | 150 (60~350) | 转速 rote speed (min-1) | 16000 | 10000 | 9000 | 8000 | 7800 | 8000 | 6800 | 5000 | 4000 |
| | | ap≤1D | | 进给转速 feed velocity (mm/min) | 380 | 450 | 800 | 830 | 1000 | 1150 | 1130 | 1000 | 1080 |

# 定心钻

## 硬质合金定心钻
## Carbide Center Drill

- 具有高锋利性和出色耐用性的定心钻
- 钻高速钢的使用提高了跳动精度
- 优化的刀具形状可提供出色的锋利度并有助于防止磨损。
- The center drill with high sharpness and outstanding durability
- The use of cobalt HSS improving runout accuracy
- The optimized tool shape deliver excellent sharpness and help prevent breakages.

刃口耐磨性和刀具刚性提升
Improved edge wear resistance and tool rigidity

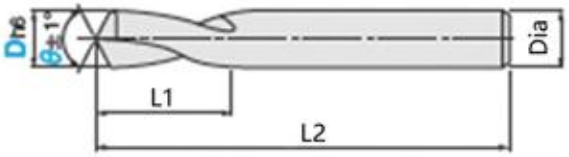
全球合作伙伴-WORLDWIDE RELIABL PARTNERS

# Center Drill（Standard）

| GYDXZ | TiAlN | HRC 55 | |
|---|---|---|---|

| 单位Unit | (mm) |
|---|---|
| D | D |
| 公差Tol | 0 |
| | -0.015 |

| | |
|---|---|
| P | ● |
| M | |
| K | ● |
| N | |
| S | |
| H | |




| Diameter D | Angle | Shank D2 | Overall Length L2 | Ordering Code |
|---|---|---|---|---|
| mm | | mm | mm | |
| 1 | 90° | 4 | 50 | GYDXZ-2F-01900450 |
| 2.5 | 90° | 4 | 50 | GYDXZ-2F-025900450 |
| 3 | 90° | 3 | 50 | GYDXZ-2F-03900350 |
| 3 | 90° | 4 | 50 | GYDXZ-2F-03900450 |
| 4 | 90° | 4 | 50 | GYDXZ-2F-04900450 |
| 5 | 90° | 5 | 50 | GYDXZ-2F-05900550 |
| 6 | 90° | 6 | 50 | GYDXZ-2F-06900650 |
| 8 | 90° | 8 | 60 | GYDXZ-2F-08900860 |
| 10 | 90° | 10 | 75 | GYDXZ-2F-10901075 |
| 12 | 90° | 12 | 75 | GYDXZ-2F-12901275 |
| 4 | 90° | 4 | 100 | GYDXZ-2F-049004100 |
| 6 | 90° | 6 | 100 | GYDXZ-2F-069006100 |
| 8 | 90° | 8 | 100 | GYDXZ-2F-089008100 |
| 10 | 90° | 10 | 100 | GYDXZ-2F-109010100 |
| 12 | 90° | 12 | 100 | GYDXZ-2F-129012100 |
| 16 | 90° | 16 | 100 | GYDXZ-2F-169016100 |

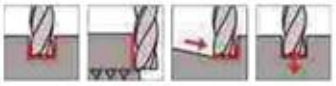
| ISO | 被加工材料 Workpiece Material | 切削量（mm） Depth of cut | Vc m/min | | 刃径 Tool Diameter（mm） 0.8 | 0.9 | 1.0 | 1.2 | 1.4 | 1.6 | 1.8 | 2.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 碳钢合金（<45HRC） Carbon steel alloy steel | ap≤0.5D | 90 | 转速 rote speed（min-1） | 35830 | 31850 | 28600 | 23890 | 20470 | 17910 | 15920 | 5840 |
| | | ap≤0.05D | | 进给转速 feed velocity（mm/min） | 1150 | 1150 | 1150 | 1100 | 1110 | 1070 | 1110 | 2800 |
| | 合金钢（50HRC） Alloy Steel | ap≤0.5D | 70 | 转速 rote speed（min-1） | 27870 | 24770 | 22290 | 18580 | 15920 | 13930 | 12380 | 4780 |
| | | ap≤0.05D | | 进给转速 feed velocity（mm/min） | 840 | 840 | 850 | 820 | 800 | 780 | 820 | 2000 |
| K | 灰铸铁，球墨铸铁（<32HRC） Gry cast iron，nodular cast iron | ap≤0.5D | 90 | 转速 rote speed（min-1） | 35830 | 31850 | 28660 | 23890 | 20470 | 17910 | 15920 | 5840 |
| | | ap≤0.05D | | 进给转速 feed velocity（mm/min） | 1150 | 1150 | 1150 | 1100 | 1100 | 1070 | 1110 | 2530 |
| | 高合金铸铁（35-45HRC） High alloy cast iron | ap≤0.5D | 80 | 转速 rote speed（min-1） | 31850 | 28310 | 25480 | 21230 | 18200 | 15920 | 14150 | 5840 |
| | | ap≤0.05D | | 进给转速 feed velocity（mm/min） | 830 | 850 | 820 | 760 | 800 | 860 | 910 | 2440 |

上表是侧铣加工的标准值，刀具切槽时，转速要以上表的50%~70%，进给速度要以40%~60%为标准值。

Above table is the standard cutting data for side milling maching, if for groove cuttingtheVC should reach 50%-70%and the feed should reach 40%-60% based on the table.

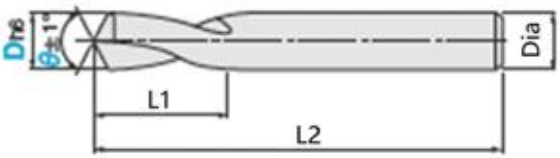
# Center Drill（Standard）

| DXZ | TiAlSiN | HRC 65 | |
|---|---|---|---|



| 单位Unit | (mm) |
|---|---|
| D | D |
| 公差Tol | 0 |
| | -0.015 |

| | |
|---|---|
| P | ● |
| M | ● |
| K | ● |
| N | |
| S | |
| H | ● |




| Diameter D | Angle | Shank D2 | Overall Length L2 | Ordering Code |
|---|---|---|---|---|
| mm | | mm | mm | |
| 1 | 90° | 4 | 50 | DXZ-2F-01900450 |
| 2 | 90° | 4 | 50 | DXZ-2F-02900450 |
| 3 | 90° | 4 | 50 | DXZ-2F-03900450 |
| 4 | 90° | 4 | 50 | DXZ-2F-04900450 |
| 5 | 90° | 5 | 50 | DXZ-2F-05900550 |
| 6 | 90° | 6 | 50 | DXZ-2F-06900650 |
| 8 | 90° | 8 | 60 | DXZ-2F-08900860 |
| 10 | 90° | 10 | 75 | DXZ-2F-10901075 |
| 12 | 90° | 12 | 75 | DXZ-2F-12901275 |

| ISO | 被加工材料 Workpiece Material | 切削量（mm） Depth of cut | Vc m/min | | 刃径 Tool Diameter（mm） 2 | 4 | 6 | 8 | 10 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|
| H | 合金钢、淬硬钢(<60HAC) Alloy steel,hardened steel | ap≤1D ap≤0.05D | 120 | 转速 rote speed（min-1） 进给转速 feed velocity（mm/min） | 19110 380 | 9550 380 | 6370 380 | 7170 930 | 4780 380 | 3490 360 |
| | 合金钢、淬硬钢(65HRC) Alloy steel, hardened stee | ap≤0.7D ap≤0.03D | 90 | 转速 rote speed（min-1） 进给转速 feed velocity（mm/min） | 15920 260 | 11940 360 | 7960 370 | 5180 620 | 4780 370 | 3980 340 |

上表是侧铣加工的标准值，刀具切槽时，转速要以上表格的50%~70%，进给速度要以40%~60%为标准值。

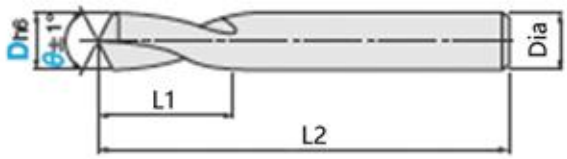
Above table is the standard cutting data for side milling maching, if for groove cutting , the VC should reach 50%~70% and the feed should reach 40%~60% based on the table.

# Center Drill (Standard)

| LYDXZ | AL | HRC 55 | |
|---|---|---|---|

| | |
|---|---|
| P | |
| M | |
| K | |
| N | ● |
| S | |
| H | |

| 单位Unit | (mm) |
|---|---|
| D | D |
| 公差Tol | 0 |
| | -0.015 |




| Diameter D | Angle | Shank D2 | Overall Length L2 | Ordering Code |
|---|---|---|---|---|
| mm | | mm | mm | |
| 1 | 90° | 4 | 50 | LYDXZ-2F-01900450 |
| 2 | 90° | 4 | 50 | LYDXZ-2F-02900450 |
| 3 | 90° | 4 | 50 | LYDXZ-2F-03900450 |
| 4 | 90° | 4 | 50 | LYDXZ-2F-04900450 |
| 5 | 90° | 5 | 50 | LYDXZ-2F-05900550 |
| 6 | 90° | 6 | 50 | LYDXZ-2F-06900650 |
| 8 | 90° | 8 | 60 | LYDXZ-2F-08900860 |
| 10 | 90° | 10 | 75 | LYDXZ-2F-10901075 |
| 12 | 90° | 12 | 75 | LYDXZ-2F-12901275 |
| 4 | 90° | 4 | 100 | LYDXZ-2F-049004100 |
| 6 | 90° | 6 | 100 | LYDXZ-2F-069006100 |
| 8 | 90° | 8 | 100 | LYDXZ-2F-089008100 |
| 10 | 90° | 10 | 100 | LYDXZ-2F-109010100 |
| 12 | 90° | 12 | 100 | LYDXZ-2F-129012100 |
| 16 | 90° | 16 | 100 | LYDXZ-2F-169016100 |

| ISO | 被加工材料 Workpiece Material | 切削量 (mm) Depth of cut | Vc m/min | | 刃径 tool Diameter (mm) 1 | 2 | 4 | 6 | 8 | 10 | 12 | 16 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N | 锻造及铸造铝合金(Si<12%) Forging and casting aluminum alloy | ap≤1.5D | 150 (60~350) | 转速 rote speed (min-1) | 16000 | 12700 | 12000 | 10600 | 10000 | 9500 | 9280 | 7000 | 5600 |
| | | ap≤0.2D | | 进给转速 feed velocity (mm/min) | 580 | 710 | 1200 | 1280 | 1390 | 1720 | 2400 | 2500 | 2450 |
| | 铜合金(<200HB) Copper alloy | ap≤1.5D | 150 (60~350) | 转速 rote speed (min-1) | 16000 | 12700 | 12000 | 10600 | 10000 | 9500 | 9280 | 7000 | 5600 |
| | | ap≤0.2D | | 进给转速 feed velocity (mm/min) | 520 | 650 | 1070 | 1150 | 1250 | 1550 | 2170 | 2250 | 2200 |

# 整体硬质合金内径立铣刀
# Solid Carbide Inner R EndMill

- 适用于铜、不锈钢、合金钢、碳钢、铸铁等材料
- 适用于圆弧加工，具有光洁度高、不起毛边等特点
- 内R铣刀使用最新的超细碳化钨，具有最高的耐磨性和强度
- Suitable for copper, stainless steel, alloy steel, carbon steel, cast iron and other materials.
- It is suitable for arc processing and has the characteristics of high smoothness and no burrs.
- The inner R end mill uses the latest ultra-fine tungsten carbide, which has the highest wear resistance and strength.

刃口耐磨性和刀具刚性提升

Improved edge wear resistance and tool steel

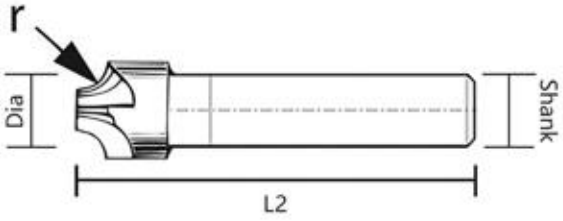
全球合作伙伴-WORLDWIDE RELIABL PARTNERS

# Internal R End Mill (Standard)

| NRD | TiAlN | HRC 55 | | | S |
|---|---|---|---|---|---|

| 单位Unit | (mm) |
|---|---|
| D | D |
| 公差Tol | 0 |
| | -0.015 |

| | |
|---|---|
| P | ● |
| M | |
| K | ● |
| N | |
| S | |
| H | |



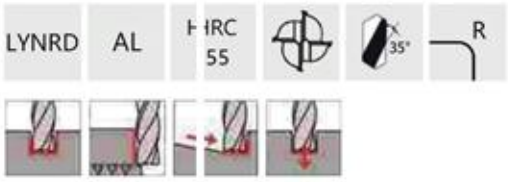

| Diameter D | Radius R | Shank D2 | Overall Length L2 | Ordering Code |
|---|---|---|---|---|
| mm | mm | mm | mm | |
| 4 | 0.5 | 4 | 50 | NRD-4F-040050450 |
| 4 | 0.75 | 4 | 50 | NRD-4F-0400750450 |
| 4 | 1 | 4 | 50 | NRD-4F-04010450 |
| 6 | 1.5 | 6 | 50 | NRD-4F-060150650 |
| 6 | 2 | 6 | 50 | NRD-4F-06020650 |
| 6 | 2.5 | 6 | 50 | NRD-4F-060250650 |
| 8 | 3 | 8 | 60 | NRD-4F-0803060 |
| 10 | 4 | 10 | 60 | NRD-4F-10041060 |
| 12 | 5 | 12 | 60 | NRD-4F-12051260 |
| 14 | 6 | 14 | 75 | NRD-4F-14061475 |
| 16 | 7 | 16 | 75 | NRD-4F-16071675 |

| ISO | 被加工材料 Workpiece Material | 切削量 (mm) Depth of cut | Vc m/min | | 刃径 Tool Diameter (mm) 3 | 4 | 6 | 8 | 10 | 12 | 16 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 碳钢合金 (<45HRC) Carbon steel alloy steel | ap≤1.5D ap≤0.15D | 200 | 转速 rote speed (min-1) 进给转速 feed velocity (mm/min) | 21230 2040 | 15920 1960 | 10620 1690 | 7960 1670 | 6370 1620 | 5310 1590 | 3980 1490 | 3190 1480 |
| | 合金钢 (50HRC) Alloy Steel | ap≤1D ap≤0.12D | 150 | 转速 rote speed (min-1) 进给转速 feed velocity (mm/min) | 15920 1290 | 10350 1180 | 7960 1080 | 5970 1160 | 4780 1050 | 3980 930 | 2990 760 | 2390 680 |
| K | 灰铸铁，球墨铸铁 (<32HRC) Gry cast iron，nodular cast iron | ap≤1.5D ap≤0.15D | 170 | 转速 rote speed (min-1) 进给转速 feed velocity (mm/min) | 18050 1620 | 13540 1500 | 9020 1440 | 6770 1330 | 5410 1200 | 4510 1150 | 3380 1020 | 2710 930 |
| | 高合金铸铁 (35-45HRC) High alloy cast iron | ap≤1D ap≤0.12D | 150 | 转速 rote speed (min-1) 进给转速 feed velocity (mm/min) | 15920 1290 | 11940 1250 | 7960 1190 | 5970 1090 | 4780 1000 | 3980 960 | 2990 850 | 2390 770 |

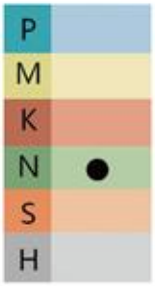
上表是侧铣加工的标准值，刀具切槽时，转速要以上表的50%~70%，进给速度要以40%~60%为标准值。

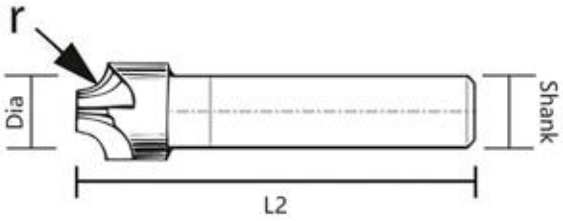
Above table is the standard cutting data for side milling maching, if for groove cuttingtheVC should reach 50%-70%and the feed should reach 40%-60% based on the table.

# Internal R End Mill (Standard)




| 单位Unit | (mm) |
|---|---|
| D | D |
| 公差Tol | 0 |
| | -0.015 |




| Diameter D | Radius R | Shank D2 | Overall Length L2 | Ordering Code |
|---|---|---|---|---|
| mm | mm | mm | mm | |
| 4 | 0.5 | 4 | 50 | NRD-LY-4F-040050450 |
| 4 | 0.75 | 4 | 50 | NRD-LY-4F-0400750450 |
| 4 | 1 | 4 | 50 | NRD-LY-4F-04010450 |
| 6 | 1.5 | 6 | 50 | NRD-LY-4F-060150650 |
| 6 | 2 | 6 | 50 | NRD-LY-4F-06020650 |
| 6 | 2.5 | 6 | 50 | NRD-LY-4F-060250650 |
| 8 | 3 | 8 | 60 | NRD-LY-4F-08030860 |
| 10 | 4 | 10 | 60 | NRD-LY-4F-10041060 |
| 12 | 5 | 12 | 60 | NRD-LY-4F-12051260 |
| 14 | 6 | 14 | 75 | NRD-LY-4F-14601475 |
| 16 | 7 | 16 | 75 | NRD-LY-4F-16071675 |

| ISO | 被加工材料 Workpiece Material | 切削量 (mm) Depth of cut | Vc m/min | | 刃径 tool Diameter (mm) 1 | 2 | 4 | 6 | 8 | 10 | 12 | 16 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N | 锻造及铸造铝合金(SI<12%) Forging and casting aluminum alloy 铜合金(<200HB) Copper alloy | ap≤1.5D | 150 (60~350) | 转速 rote speed (min-1) | 16000 | 13000 | 12000 | 10600 | 10000 | 9500 | 9280 | 7000 | 5600 |
| | | ap≤0.2D | | 进给转速 feed velocity (mm/min) | 650 | 850 | 1430 | 1530 | 1670 | 2050 | 2800 | 3000 | 3150 |
| | | ap≤1.5D | 150 (60~350) | 转速 rote speed (min-1) | 16000 | 13000 | 12000 | 10600 | 10000 | 9500 | 9280 | 7000 | 5600 |
| | | ap≤0.2D | | 进给转速 feed velocity (mm/min) | 720 | 900 | 1200 | 1200 | 1500 | 1800 | 2225 | 2500 | 3000 |

| ISO | 被加工材料 Workpiece Material | 切削量 (mm) Depth of cut | Vc m/min | | 刃径 tool Diameter (mm) 1 | 2 | 4 | 6 | 8 | 10 | 12 | 16 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N | 锻造及铸造铝合金(SI<12%) Forging and casting aluminum alloy 铜合金(<200HB) Copper alloy | ap≤1.5D | 150 (60~350) | 转速 rote speed (min-1) | 16000 | 10000 | 9000 | 8000 | 7800 | 8000 | 6800 | 5000 | 4000 |
| | | ap≤0.2D | | 进给转速 feed velocity (mm/min) | 450 | 570 | 960 | 1050 | 1300 | 1500 | 1620 | 1680 | 1800 |
| | | ap≤1.5D | 150 (60~350) | 转速 rote speed (min-1) | 16000 | 10000 | 9000 | 8000 | 7800 | 8000 | 6800 | 5000 | 4000 |
| | | ap≤0.2D | | 进给转速 feed velocity (mm/min) | 450 | 520 | 860 | 830 | 9600 | 1240 | 1500 | 1500 | 1510 |

# T型/燕尾立铣刀
# T-Shaped/Dovetail End Mill

- 具有缩短的颈部，适用于长距离加工操作
- 圆角半径轮廓可提高强度
- 整体硬质合金，经久耐用
- Features shortened neck for long distance machining operations
- Rounded corner radius profile increases strength
- Solid carbide for durability

特殊的刃口设计，有效解决刀具刃口沾屑问题

Special edge design, effectively solve the problem of sticky

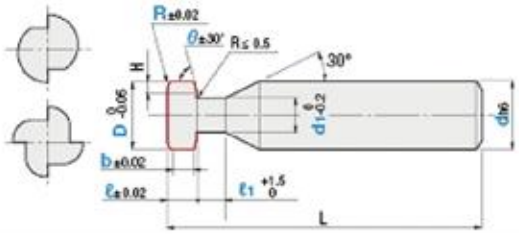
全球合作伙伴-WORLDWIDE RELIABL PARTNERS

# T-Slot End Mill (Standard)

| TXD | AlTiN | HRC 55 | | 35° | S |
|---|---|---|---|---|---|

| 单位Unit | (mm) |
|---|---|
| D | D |
| 公差Tol | ±0.01 |

| | |
|---|---|
| P | ● |
| M | |
| K | ● |
| N | |
| S | |
| H | |




| Diameter D | Blade Thickness L | Shank D2 | Overall Length L2 |
|---|---|---|---|
| mm | mm | mm | mm |
| 3 | 0.5/1/1.5/2 | 4 | 50 |
| 4 | 0.5/1/1.5/2 | 4 | 50 |
| 6 | 0.5/1/1.5/2/2.5/3 | 6 | 50 |
| 8 | 0.5/1/1.5/2/2.5/3 | 8 | 50 |
| 10 | 1/1.5/2/2.5/3/4/5 | 10 | 60 |
| 12 | 1/1.5/2/2.5/3/4/5 | 12 | 60 |
| 14 | 1/1.5/2/2.5/3/4/5 | 14 | 75 |
| 16 | 1/1.5/2/2.5/3/4/5 | 16 | 75 |

| Ordering Code |
|---|
| TXD-4F-030050450 |
| TXD-4F-040050450 |
| TXD-4F-060050650 |
| TXD-4F-080050850 |
| TXD-4F-10011060 |
| TXD-4F-12041260 |
| TXD-4F-14011475 |
| TXD-4F-16011675 |

| ISO | 被加工材料 Workpiece Material | 切削量 (mm) Depth of cut | Vc m/min | | 刃径 Tool Diameter (mm) 0.8 | 0.9 | 1.0 | 1.2 | 1.4 | 1.6 | 1.8 | 2.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 碳钢合金 (<45HRC)<br>Carbon steel alloy steel<br>合金钢 (50HRC)<br>Alloy Steel | ap≤0.5D<br>ap≤0.05D | 90 | 转速 rote speed (min-1)<br>进给转速 feed velocity (mm/min) | 35830<br>1150 | 31850<br>1150 | 28600<br>1150 | 23890<br>1100 | 20470<br>1110 | 17910<br>1070 | 15920<br>1110 | 5840<br>2800 |
| | | ap≤0.5D<br>ap≤0.05D | 70 | 转速 rote speed (min-1)<br>进给转速 feed velocity (mm/min) | 27870<br>840 | 24770<br>840 | 22290<br>850 | 18580<br>820 | 15920<br>800 | 13930<br>780 | 12380<br>820 | 4780<br>2000 |
| K | 灰铸铁，球墨铸铁 (<32HRC)<br>Gry cast iron，nodular cast iron<br>高合金铸铁 (35-45HRC)<br>High alloy cast iron | ap≤0.5D<br>ap≤0.05D | 90 | 转速 rote speed (min-1)<br>进给转速 feed velocity (mm/min) | 35830<br>1150 | 31850<br>1150 | 28660<br>1150 | 23890<br>1100 | 20470<br>1100 | 17910<br>1070 | 15920<br>1110 | 5840<br>2530 |
| | | ap≤0.5D<br>ap≤0.05D | 80 | 转速 rote speed (min-1)<br>进给转速 feed velocity (mm/min) | 31850<br>830 | 28310<br>850 | 25480<br>820 | 21230<br>760 | 18200<br>800 | 15920<br>860 | 14150<br>910 | 5840<br>2440 |

上表是侧铣加工的标准值，刀具切槽时，转速要以上表的50%~70%，进给速度要以40%~60%为标准值。

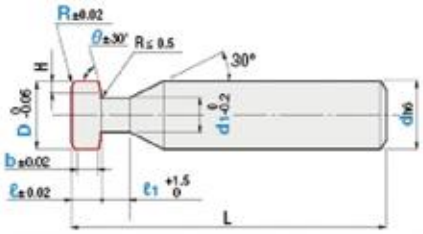
Above table is the standard cutting data for side milling maching, if for groove cuttingtheVC should reach 50%-70%and the feed should reach 40%-60% based on the table.

# T-Slot End Mill（Standard）

| LYTXD | AL | HRC 55 | | 35° | S |
|---|---|---|---|---|---|

| 单位Unit | (mm) |
|---|---|
| D | D |
| 公差Tol | ±0.01 |

| | |
|---|---|
| P | |
| M | |
| K | |
| N | ● |
| S | |
| H | |




| Diameter D | Blade Thickness L | Shank D2 | Overall Length L2 |
|---|---|---|---|
| mm | mm | mm | mm |
| 3 | 0.5/1/1.5/2 | 4 | 50 |
| 4 | 0.5/1/1.5/2 | 4 | 50 |
| 6 | 0.5/1/1.5/2/2.5/3 | 6 | 50 |
| 8 | 0.5/1/1.5/2/2.5/3 | 8 | 50 |
| 10 | 1/1.5/2/2.5/3/4/5 | 10 | 60 |
| 12 | 1/1.5/2/2.5/3/4/5 | 12 | 60 |
| 14 | 1/1.5/2/2.5/3/4/5 | 14 | 75 |
| 16 | 1/1.5/2/2.5/3/4/5 | 16 | 75 |

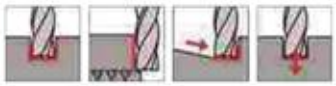
| Ordering Code |
|---|
| TXD-LY-4F-030050450 |
| TXD-LY-4F-040050450 |
| TXD-LY-4F-060050650 |
| TXD-LY-4F-080050850 |
| TXD-LY-4F-10011060 |
| TXD-LY-4F-12041260 |
| TXD-LY-4F-14011475 |
| TXD-LY-4F-16011675 |

| ISO | 被加工材料 Workpiece Material | 切削量（mm） Depth of cut | Vc m/min | | 刃径 tool Diameter（mm） 1 | 2 | 4 | 6 | 8 | 10 | 12 | 16 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N | 锻造及铸造铝合金(Si<12%) Forging and casting aluminum alloy 铜合金(<200HB) Copper alloy | ap≤1.5D | 150 (60~350) | 转速 rote speed（min-1） | 16000 | 13000 | 12000 | 10600 | 10000 | 9500 | 9280 | 7000 | 5600 |
| | | ap≤0.2D | | 进给转速 feed velocity（mm/min） | 650 | 850 | 1430 | 1530 | 1670 | 2050 | 2800 | 3000 | 3150 |
| | | ap≤1.5D | 150 (60~350) | 转速 rote speed（min-1） | 16000 | 13000 | 12000 | 10600 | 10000 | 9500 | 9280 | 7000 | 5600 |
| | | ap≤0.2D | | 进给转速 feed velocity（mm/min） | 720 | 900 | 1200 | 1200 | 1500 | 1800 | 2225 | 2500 | 3000 |

| ISO | 被加工材料 Workpiece Material | 切削量（mm） Depth of cut | Vc m/min | | 刃径 tool Diameter（mm） 1 | 2 | 4 | 6 | 8 | 10 | 12 | 16 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N | 锻造及铸造铝合金(Si<12%) Forging and casting aluminum alloy 铜合金(<200HB) Copper alloy | ap≤1.5D | 150 (60~350) | 转速 rote speed（min-1） | 16000 | 10000 | 9000 | 8000 | 7800 | 8000 | 6800 | 5000 | 4000 |
| | | ap≤0.2D | | 进给转速 feed velocity（mm/min） | 450 | 570 | 960 | 1050 | 1300 | 1500 | 1620 | 1680 | 1800 |
| | | ap≤1.5D | 150 (60~350) | 转速 rote speed（min-1） | 16000 | 10000 | 9000 | 8000 | 7800 | 8000 | 6800 | 5000 | 4000 |
| | | ap≤0.2D | | 进给转速 feed velocity（mm/min） | 450 | 520 | 860 | 830 | 9600 | 1240 | 1500 | 1500 | 1510 |

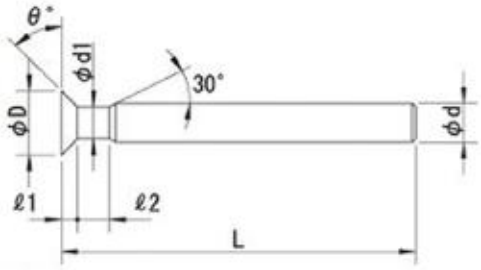
# Dovetail End Mill（Standard）

YWXD | TiAlN | HRC 55 | 35° | S



| 单位Unit | (mm) |
|---|---|
| D | D |
| 公差Tol | 0 |
| | -0.015 |

| | |
|---|---|
| P | ● |
| M | |
| K | ● |
| N | |
| S | |
| H | |




| Diameter D | Angle | Shank D2 | Overall Length L2 | Ordering Code |
|---|---|---|---|---|
| mm | | mm | mm | |
| 1 | 30° | 4 | 50 | YWXD-4F-01300450 |
| 1.5 | 30° | 4 | 50 | YWXD-4F-015300450 |
| 2 | 30° | 4 | 50 | YWXD-4F-02300450 |
| 2.5 | 30° | 4 | 50 | YWXD-4F-025302450 |
| 3 | 30° | 4 | 50 | YWXD-4F-03300450 |
| 4 | 30° | 4 | 50 | YWXD-4F-04300450 |
| 6 | 30° | 6 | 50 | YWXD-4F-06300350 |
| 8 | 30° | 8 | 60 | YWXD-4F-08300860 |
| 10 | 30° | 10 | 75 | YWXD-4F-10301075 |
| 1 | 45° | 4 | 50 | YWXD-4F-01450450 |
| 1.5 | 45° | 4 | 50 | YWXD-4F-015450450 |
| 2 | 45° | 4 | 50 | YWXD-4F-02450450 |
| 2.5 | 45° | 4 | 50 | YWXD-4F-025450450 |
| 3 | 45° | 4 | 50 | YWXD-4F-03450450 |
| 4 | 45° | 4 | 50 | YWXD-4F-04450450 |
| 6 | 45° | 6 | 50 | YWXD-4F-06450650 |
| 8 | 45° | 8 | 60 | YWXD-4F-08450860 |
| 10 | 45° | 10 | 75 | YWXD-4F-10451075 |

| ISO | 被加工材料 Workpiece Material | 切削量（mm） Depth of cut | Vc m/min | | 刃径 Tool Diameter（mm） 3 | 4 | 6 | 8 | 10 | 12 | 16 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 碳钢合金（<45HRC） Carbon steel alloy steel | ap≤1.5D ap≤0.15D | 200 | 转速 rote speed（min-1） 进给转速 feed velocity（mm/min） | 21230 2040 | 15920 1960 | 10620 1690 | 7960 1670 | 6370 1620 | 5310 1590 | 3980 1490 | 3190 1480 |
| | 合金钢（50HRC） Alloy Steel | ap≤1D ap≤0.12D | 150 | 转速 rote speed（min-1） 进给转速 feed velocity（mm/min） | 15920 1290 | 10350 1180 | 7960 1080 | 5970 1160 | 4780 1050 | 3980 930 | 2990 760 | 2390 680 |
| K | 灰铸铁，球墨铸铁（<32HRC） Gry cast iron，nodular cast iron | ap≤1.5D ap≤0.15D | 170 | 转速 rote speed（min-1） 进给转速 feed velocity（mm/min） | 18050 1620 | 13540 1500 | 9020 1440 | 6770 1330 | 5410 1200 | 4510 1150 | 3380 1020 | 2710 930 |
| | 高合金铸铁（35-45HRC） High alloy cast iron | ap≤1D ap≤0.12D | 150 | 转速 rote speed（min-1） 进给转速 feed velocity（mm/min） | 15920 1290 | 11940 1250 | 7960 1190 | 5970 1090 | 4780 1000 | 3980 960 | 2990 850 | 2390 770 |

上表是侧铣加工的标准值，刀具切槽时，转速要以上表的50%~70%，进给速度要以40%~60%为标准值。

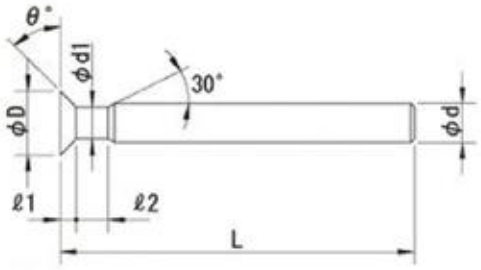
Above table is the standard cutting data for side milling maching, if for groove cuttingtheVC should reach 50%-70%and the feed should reach 40%-60% based on the table.

# Dovetail End Mill (Standard)

YWXD | AL | HRC 55 | S

| 单位Unit | (mm) |
|---|---|
| D | D |
| 公差Tol | 0 |
| | -0.015 |

P
M
K
N ●
S
H




| Diameter D | Angle | Shank D2 | Overall Length L2 | Ordering Code |
|---|---|---|---|---|
| mm | | mm | mm | |
| 1 | 30° | 4 | 50 | YWXD-LY-4F-01300450 |
| 1.5 | 30° | 4 | 50 | YWXD-LY-4F-015300450 |
| 2 | 30° | 4 | 50 | YWXD-LY-4F-02300450 |
| 2.5 | 30° | 4 | 50 | YWXD-LY-4F-025302450 |
| 3 | 30° | 4 | 50 | YWXD-LY-4F-03300450 |
| 4 | 30° | 4 | 50 | YWXD-LY-4F-04300450 |
| 6 | 30° | 6 | 50 | YWXD-LY-4F-06300350 |
| 8 | 30° | 8 | 60 | YWXD-LY-4F-08300860 |
| 10 | 30° | 10 | 75 | YWXD-LY-4F-10301075 |
| 1 | 45° | 4 | 50 | YWXD-LY-4F-01450450 |
| 1.5 | 45° | 4 | 50 | YWXD-LY-4F-015450450 |
| 2 | 45° | 4 | 50 | YWXD-LY-4F-02450450 |
| 2.5 | 45° | 4 | 50 | YWXD-LY-4F-025450450 |
| 3 | 45° | 4 | 50 | YWXD-LY-4F-03450450 |
| 4 | 45° | 4 | 50 | YWXD-LY-4F-04450450 |
| 6 | 45° | 6 | 50 | YWXD-LY-4F-06450650 |
| 8 | 45° | 8 | 60 | YWXD-LY-4F-08450860 |
| 10 | 45° | 10 | 75 | YWXD-LY-4F-10451075 |

| ISO | 被加工材料 Workpiece Material | 切削量 (mm) Depth of cut | Vc m/min | | 刃径 tool Diameter (mm) 1 | 2 | 4 | 6 | 8 | 10 | 12 | 16 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N | 锻造及铸造铝合金(Si<12%) Forging and casting aluminum alloy 铜合金(<200HB) Copper alloy | ap≤1.5D | 150 (60~350) | 转速 rote speed (min-1) | 16000 | 13000 | 12000 | 10600 | 10000 | 9500 | 9280 | 7000 | 5600 |
| | | ap≤0.2D | | 进给转速 feed velocity (mm/min) | 650 | 850 | 1430 | 1530 | 1670 | 2050 | 2800 | 3000 | 3150 |
| | | ap≤1.5D | 150 (60~350) | 转速 rote speed (min-1) | 16000 | 13000 | 12000 | 10600 | 10000 | 9500 | 9280 | 7000 | 5600 |
| | | ap≤0.2D | | 进给转速 feed velocity (mm/min) | 720 | 900 | 1200 | 1200 | 1500 | 1800 | 2225 | 2500 | 3000 |

| ISO | 被加工材料 Workpiece Material | 切削量 (mm) Depth of cut | Vc m/min | | 刃径 tool Diameter (mm) 1 | 2 | 4 | 6 | 8 | 10 | 12 | 16 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N | 锻造及铸造铝合金(Si<12%) Forging and casting aluminum alloy 铜合金(<200HB) Copper alloy | ap≤1.5D | 150 (60~350) | 转速 rote speed (min-1) | 16000 | 10000 | 9000 | 8000 | 7800 | 8000 | 6800 | 5000 | 4000 |
| | | ap≤0.2D | | 进给转速 feed velocity (mm/min) | 450 | 570 | 960 | 1050 | 1300 | 1500 | 1620 | 1680 | 1800 |
| | | ap≤1.5D | 150 (60~350) | 转速 rote speed (min-1) | 16000 | 10000 | 9000 | 8000 | 7800 | 8000 | 6800 | 5000 | 4000 |
| | | ap≤0.2D | | 进给转速 feed velocity (mm/min) | 450 | 520 | 860 | 830 | 9600 | 1240 | 1500 | 1500 | 1510 |

# 螺纹铣刀 - 硬质合金
# Thread End Mills - Carbide

- 适用于不锈钢、热处理模具钢等各种高硬钢件材料
- 结合全磨圆弧刃锋利刃口，高耐磨专业铣削设计
- Suitable for stainless steel, heat-treated mold steel and other high-hardness steel materials
- Combined with fully ground arc sharp edges, high wear-resistant professional milling design

刃口耐磨性和刀具刚性提升

Improved edge wear resistance and tool rigidity

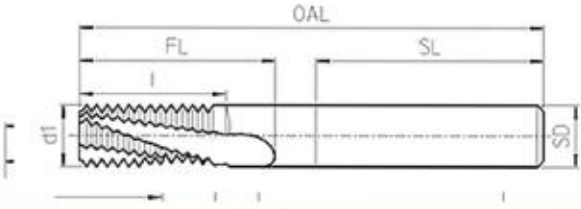
全球合作伙伴-WORLDWIDE RELIABL PARTNERS

# Thread End Mill (standard)

LWXD | TiAlN | HRC 55 | 3 | 35° | S

| 单位Unit | (mm) |
|---|---|
| D | D |
| 公差Tol | 0 |
| | -0.015 |

| | |
|---|---|
| P | ● |
| M | |
| K | ● |
| N | |
| S | |
| H | |




| Model (pitch P) | Diameter D | Cutting Length L | Shank D2 | Overall Length L2 |
|---|---|---|---|---|
| | mm | mm | mm | mm |
| M3*P0.5 | 2.3 | 6 | 4 | 50 |
| M6*P0.5 | 4 | 10 | 4 | 50 |
| M8-M12*P0.5 | 6 | 13 | 6 | 60 |
| M3.5*P0.6 | 2.7 | 7 | 4 | 50 |
| M4*P0.7 | 3 | 8 | 4 | 50 |
| M4.5*P0.75 | 3.4 | 9 | 4 | 50 |
| M6*P0.75 | 4.8 | 12 | 6 | 60 |
| M8*P0.75 | 6 | 16 | 6 | 60 |
| M10-M12*P0.75 | 8 | 20 | 8 | 60 |
| M5*P0.8 | 4 | 10 | 4 | 50 |
| M6*P1 | 4.8 | 12 | 6 | 60 |
| M8*P1 | 6 | 16 | 6 | 60 |
| M10*P1 | 8 | 20 | 8 | 60 |
| M12-M14*P1 | 10 | 22 | 10 | 75 |
| M16*P1 | 12 | 30 | 12 | 75 |
| M20-M48*P1 | 16 | 30 | 16 | 90 |
| M8*P1.25 | 6 | 16 | 6 | 60 |
| M10*P1.25 | 8 | 20 | 8 | 60 |
| M12-M14*P1.25 | 10 | 25 | 10 | 75 |
| M10*P1.5 | 8 | 20 | 8 | 60 |
| M12-M20*P1.5 | 10 | 28 | 10 | 75 |
| M14-M24*P1.5 | 12 | 28 | 12 | 75 |
| M20-M48*P1.5 | 16 | 30 | 16 | 90 |
| M12*P1.75 | 9.8 | 30 | 10 | 75 |
| M14*P2.0 | 10 | 30 | 10 | 75 |
| M16*P2.0 | 12 | 30 | 12 | 75 |
| M20-M80*P2.0 | 16 | 40 | 16 | 100 |
| M18-M20*P2.5 | 14 | 36 | 14 | 100 |
| M20-M80*P2.5 | 16 | 40 | 16 | 100 |
| M24*P3.0 | 16 | 42 | 16 | 100 |

## Ordering Code

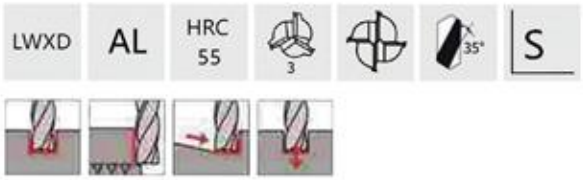
| Ordering Code |
|---|
| LWXD-3F-023060450 |
| LWXD-3F-04100450 |
| LWXD-3F-06130660 |
| LWXD-3F-027070450 |
| LWXD-3F-03080450 |
| LWXD-3F-034090450 |
| LWXD-3F-048120660 |
| LWXD-3F-06160660 |
| LWXD-3F-08200860 |
| LWXD-3F-04100450 |
| LWXD-3F-048120660 |
| LWXD-3F-06160660 |
| LWXD-3F-08200860 |
| LWXD-4F-10221075 |
| LWXD-4F-12301275 |
| LWXD-4F-16301690 |
| LWXD-3F-06160660 |
| LWXD-3F-08200860 |
| LWXD-4F-10251075 |
| LWXD-3F-08200860 |
| LWXD-4F-10281075 |
| LWXD-4F-12281275 |
| LWXD-4F-16301690 |
| LWXD-4F-098301075 |
| LWXD-4F-10301075 |
| LWXD-4F-12301275 |
| LWXD-4F-164016100 |
| LWXD-4F-143614100 |
| LWXD-4F-164016100 |
| LWXD-4F-164216100 |

| ISO | 被加工材料 Workpiece Material | 切削量 (mm) Depth of cut | Vc m/min | | 刃径 Tool Diameter (mm) 0.8 | 0.9 | 1.0 | 1.2 | 1.4 | 1.6 | 1.8 | 2.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 碳钢合金 (<45HRC) Carbon steel alloy steel 合金钢 (50HRC) Alloy Steel | ap≤0.5D ap≤0.05D | 90 | 转速 rote speed (min-1) 进给转速 feed velocity (mm/min) | 35830 1150 | 31850 1150 | 28600 1150 | 23890 1100 | 20470 1110 | 17910 1070 | 15920 1110 | 5840 2800 |
| | | ap≤0.5D ap≤0.05D | 70 | 转速 rote speed (min-1) 进给转速 feed velocity (mm/min) | 27870 840 | 24770 840 | 22290 850 | 18580 820 | 15920 800 | 13930 780 | 12380 820 | 4780 2000 |
| K | 灰铸铁，球墨铸铁 (<32HRC) Gry cast iron，nodular cast iron 高合金铸铁 (35-45HRC) High alloy cast iron | ap≤0.5D ap≤0.05D | 90 | 转速 rote speed (min-1) 进给转速 feed velocity (mm/min) | 35830 1150 | 31850 1150 | 28660 1150 | 23890 1100 | 20470 1100 | 17910 1070 | 15920 1110 | 5840 2530 |
| | | ap≤0.5D ap≤0.05D | 80 | 转速 rote speed (min-1) 进给转速 feed velocity (mm/min) | 31850 830 | 28310 850 | 25480 820 | 21230 760 | 18200 800 | 15920 860 | 14150 910 | 5840 2440 |

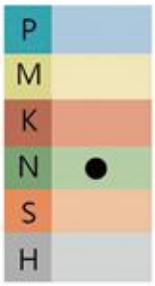
上表是侧铣加工的标准值，刀具切槽时，转速要以上表的50%~70%，进给速度要以40%~60%为标准值。

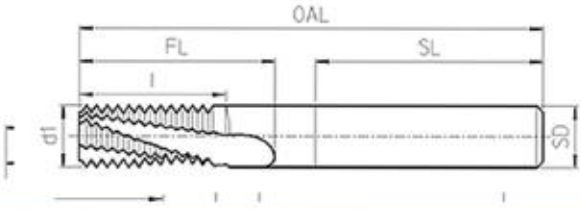
Above table is the standard cutting data for side milling maching, if for groove cuttingtheVC should reach 50%-70%and the feed should reach 40%-60% based on the table.

# Thread End Mill（standard）




| 单位Unit | (mm) |
|---|---|
| D | D |
| 公差Tol | 0 |
| | -0.015 |




| Model (pitch P) | Diameter D | Cutting Length L | Shank D2 | Overall Length L2 |
|---|---|---|---|---|
| | mm | mm | mm | mm |
| M3*P0.5 | 2.3 | 6 | 4 | 50 |
| M6*P0.5 | 4 | 10 | 4 | 50 |
| M8-M12*P0.5 | 6 | 13 | 6 | 60 |
| M3.5*P0.6 | 2.7 | 7 | 4 | 50 |
| M4*P0.7 | 3 | 8 | 4 | 50 |
| M4.5*P0.75 | 3.4 | 9 | 4 | 50 |
| M6*P0.75 | 4.8 | 12 | 6 | 60 |
| M8*P0.75 | 6 | 16 | 6 | 60 |
| M10-M12*P0.75 | 8 | 20 | 8 | 60 |
| M5*P0.8 | 4 | 10 | 4 | 50 |
| M6*P1 | 4.8 | 12 | 6 | 60 |
| M8*P1 | 6 | 16 | 6 | 60 |
| M10*P1 | 8 | 20 | 8 | 60 |
| M12-M14*P1 | 10 | 22 | 10 | 75 |
| M16*P1 | 12 | 30 | 12 | 75 |
| M20-M48*P1 | 16 | 30 | 16 | 90 |
| M8*P1.25 | 6 | 16 | 6 | 60 |
| M10*P1.25 | 8 | 20 | 8 | 60 |
| M12-M14*P1.25 | 10 | 25 | 10 | 75 |
| M10*P1.5 | 8 | 20 | 8 | 60 |
| M12-M20*P1.5 | 10 | 28 | 10 | 75 |
| M14-M24*P1.5 | 12 | 28 | 12 | 75 |
| M20-M48*P1.5 | 16 | 30 | 16 | 90 |
| M12*P1.75 | 9.8 | 30 | 10 | 75 |
| M14*P2.0 | 10 | 30 | 10 | 75 |
| M16*P2.0 | 12 | 30 | 12 | 75 |
| M20-M80*P2.0 | 16 | 40 | 16 | 100 |
| M18-M20*P2.5 | 14 | 36 | 14 | 100 |
| M20-M80*P2.5 | 16 | 40 | 16 | 100 |
| M24*P3.0 | 16 | 42 | 16 | 100 |

## Ordering Code

| Ordering Code |
|---|
| LWXD-3F-YL023060450 |
| LWXD-3F-YL04100450 |
| LWXD-3F-YL06130660 |
| LWXD-3F-YL027070450 |
| LWXD-3F-YL03080450 |
| LWXD-3F-YL034090450 |
| LWXD-3F-YL048120660 |
| LWXD-3F-YL06160660 |
| LWXD-3F-YL08200860 |
| LWXD-3F-YL04100450 |
| LWXD-3F-YL048120660 |
| LWXD-3F-YL06160660 |
| LWXD-3F-YL08200860 |
| LWXD-4F-YL10221075 |
| LWXD-4F-YL12301275 |
| LWXD-4F-YL16301690 |
| LWXD-3F-YL06160660 |
| LWXD-3F-YL08200860 |
| LWXD-4F-YL10251075 |
| LWXD-3F-YL08200860 |
| LWXD-4F-YL10281075 |
| LWXD-4F-YL12281275 |
| LWXD-4F-YL16301690 |
| LWXD-4F-YL098301075 |
| LWXD-4F-YL10301075 |
| LWXD-4F-YL12301275 |
| LWXD-4F-YL164016100 |
| LWXD-4F-YL143614100 |
| LWXD-4F-YL164016100 |
| LWXD-4F-YL164216100 |

| ISO | 被加工材料 Workpiece Material | 切削量 (mm) Depth of cut | Vc m/min | | 刃径 tool Diameter (mm) 1 | 2 | 4 | 6 | 8 | 10 | 12 | 16 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N | 锻造及铸造铝合金(Si<12%) Forging and casting aluminum alloy | ap≤0.5D | 150 | 转速 rote speed (min-1) | 16000 | 10000 | 9000 | 8000 | 7800 | 8000 | 6800 | 5000 | 4000 |
| | 铜合金(<200HB) Copper alloy | ap≤1D | (60~350) | 进给转速 feed velocity (mm/min) | 400 | 500 | 810 | 920 | 1100 | 1280 | 1300 | 1310 | 1200 |
| | | ap≤0.5D | 150 | 转速 rote speed (min-1) | 16000 | 10000 | 9000 | 8000 | 7800 | 8000 | 6800 | 5000 | 4000 |
| | | ap≤1D | (60~350) | 进给转速 feed velocity (mm/min) | 380 | 450 | 800 | 830 | 1000 | 1150 | 1130 | 1000 | 1080 |

# 钻头系列

## CNC进口整体钨钢钻头
## CNC imported solid tungsten steel drill

- 0.4μm微颗粒钨钢原料，具有更高的耐磨性和更高硬度的高速切削
- 适用于钢材类，铝合金，不锈钢，铸铁，短切屑有色金属及镍基合金，钛合金等大多数材料的加工。
- 0.4μm micro-particle tungsten steel raw material has higher wear resistance and higher hardness for high-speed cutting.
- Suitable for steel, aluminum alloy, stainless steel, cast iron, short-chip non-ferrous metals, nickel-based alloys, and titanium alloys.

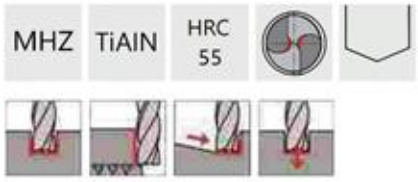
特殊的刃口设计，有效解决刀具刃口沾屑问题

Special edge design, effectively solve the problem of sticky

全球合作伙伴-WORLDWIDE RELIABL PARTNERS

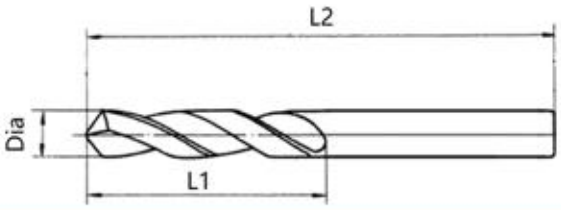
# Twist Drill (Standard)

MHZ | TiAlN | HRC 55



| 单位Unit | (mm) |
|---|---|
| D | D |
| 公差Tol | 0 |
| | -0.015 |

| | |
|---|---|
| P | ● |
| M | |
| K | ● |
| N | |
| S | |
| H | |




| Diameter D | Cutting Length L1 | Shank D2 | Overall Length L2 | Ordering Code |
|---|---|---|---|---|
| mm | mm | mm | mm | |
| 1-2 | LOC=1/2 OAL | 1-2 | 40 | MHZ-2F-010140 |
| 2.1-2.9 | | 2.1-2.9 | 40 | MHZ-2F-02102140 |
| 3-4 | | 3-4 | 50 | MHZ-2F-03203250 |
| 4.1-5 | | 4.1-5 | 50 | MHZ-2F-04104150 |
| 5.1-6 | | 5.1-6 | 50 | MHZ-2F-05105150 |
| 6.1-7.1 | | 6.1-7.1 | 50 | MHZ-2F-06106150 |
| 7.2-8.1 | | 7.2-8.1 | 60 | MHZ-2F-07207260 |
| 8.2-9.1 | | 8.2-9.1 | 75 | MHZ-2F-08208275 |
| 9.2-10.1 | | 9.2-10.1 | 75 | MHZ-2F-09209275 |
| 10.2-11.1 | | 10.2-11.1 | 75 | MHZ-2F-10210275 |
| 11.2-12.1 | | 11.2-12.1 | 75 | MHZ-2F-11211275 |
| 12.2-13.1 | | 12.2-13.1 | 75 | MHZ-2F-12212275 |
| 13.2-14 | | 13.2-14 | 100 | MHZ-2F-132132100 |
| 14.1-15.1 | | 14.1-15.1 | 100 | MHZ-2F-141141100 |
| 15.2-16.1 | | 15.2-16.1 | 100 | MHZ-2F-152152100 |
| 16.2-17.1 | | 16.2-17.1 | 100 | MHZ-2F-162162100 |
| 17.2-18.1 | | 17.2-18.1 | 100 | MHZ-2F-172172100 |
| 18.2-19.1 | | 18.2-19.1 | 100 | MHZ-2F-182182100 |
| 19.2-20 | | 19.2-20 | 100 | MHZ-2F-192192100 |

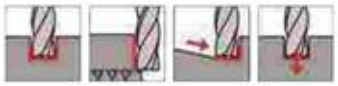
| ISO | 被加工材料 Workpiece Material | 切削量 (mm) Depth of cut | Vc m/min | | 刃径 Tool Diameter (mm) 0.8 | 0.9 | 1.0 | 1.2 | 1.4 | 1.6 | 1.8 | 2.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 碳钢合金 (<45HRC)<br>Carbon steel alloy steel<br>合金钢 (50HRC)<br>Alloy Steel | ap≤0.5D<br>ap≤0.05D | 90 | 转速 rote speed (min-1)<br>进给转速 feed velocity (mm/min) | 35830<br>1150 | 31850<br>1150 | 28600<br>1150 | 23890<br>1100 | 20470<br>1110 | 17910<br>1070 | 15920<br>1110 | 5840<br>2800 |
| | | ap≤0.5D<br>ap≤0.05D | 70 | 转速 rote speed (min-1)<br>进给转速 feed velocity (mm/min) | 27870<br>840 | 24770<br>840 | 22290<br>850 | 18580<br>820 | 15920<br>800 | 13930<br>780 | 12380<br>820 | 4780<br>2000 |
| K | 灰铸铜，球墨铸铁 (<32HRC)<br>Gry cast iron，nodular cast iron<br>高合金铸铁 (35-45HRC)<br>High alloy cast iron | ap≤0.5D<br>ap≤0.05D | 90 | 转速 rote speed (min-1)<br>进给转速 feed velocity (mm/min) | 35830<br>1150 | 31850<br>1150 | 28660<br>1150 | 23890<br>1100 | 20470<br>1100 | 17910<br>1070 | 15920<br>1110 | 5840<br>2530 |
| | | ap≤0.5D<br>ap≤0.05D | 80 | 转速 rote speed (min-1)<br>进给转速 feed velocity (mm/min) | 31850<br>830 | 28310<br>850 | 25480<br>820 | 21230<br>760 | 18200<br>800 | 15920<br>860 | 14150<br>910 | 5840<br>2440 |

上表是侧铣加工的标准值，刀具切槽时，转速要以上表的50%~70%，进给速度要以40%~60%为标准值。

Above table is the standard cutting data for side milling maching, if for groove cuttingtheVC should reach 50%-70%and the feed should reach 40%-60% based on the table.

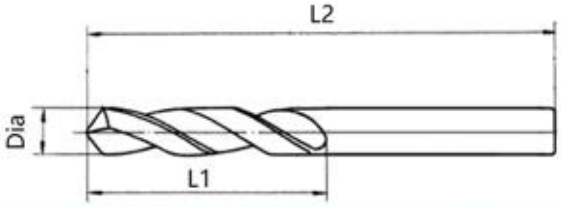
# Twist Drill (Extra Long)

| MHZ | TiAlN | HRC 55 |
|---|---|---|



| | |
|---|---|
| P | ● |
| M | |
| K | ● |
| N | |
| S | |
| H | |

| 单位Unit | (mm) |
|---|---|
| D | D |
| 公差Tol | 0 |
| | -0.015 |




| Diameter D | Cutting Length L1 | Shank D2 | Overall Length L2 | Ordering Code |
|---|---|---|---|---|
| mm | mm | mm | mm | |
| 3-4 | LOC=1/2 OAL | 3-4 | 100 | MHZ-2F-0303100 |
| 4.1-5 | | 4.1-5 | 100 | MHZ-2F-041041100 |
| 5.1-6 | | 5.1-6 | 100 | MHZ-2F-051051100 |
| 6.1-7.1 | | 6.1-7.1 | 100 | MHZ-2F-061061100 |
| 7.2-8.1 | | 7.2-8.1 | 100 | MHZ-2F-072072100 |
| 8.2-9.1 | | 8.2-9.1 | 100 | MHZ0-2F-082082100 |
| 9.2-10.1 | | 9.2-10.1 | 100 | MHZ-2F-092092100 |
| 10.2-11.1 | | 10.2-11.1 | 100 | MHZ-2F-102102100 |
| 11.2-12.1 | | 11.2-12.1 | 100 | MHZ-2F-112112100 |
| 12.2-13.1 | | 12.2-13.1 | 100 | MHZ-2F-122122100 |

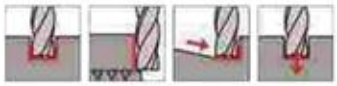
| ISO | 被加工材料 Workpiece Material | 切削量 (mm) Depth of cut | Vc m/min | | 刃径 Tool Diameter (mm) 0.8 | 0.9 | 1.0 | 1.2 | 1.4 | 1.6 | 1.8 | 2.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 碳钢合金（<45HRC）<br>Carbon steel alloy steel<br>合金钢（50HRC）<br>Alloy Steel | ap≤0.5D<br>ap≤0.05D | 90 | 转速 rote speed (min-1)<br>进给转速 feed velocity (mm/min) | 35830<br>1150 | 31850<br>1150 | 28600<br>1150 | 23890<br>1100 | 20470<br>1110 | 17910<br>1070 | 15920<br>1110 | 5840<br>2800 |
| | | ap≤0.5D<br>ap≤0.05D | 70 | 转速 rote speed (min-1)<br>进给转速 feed velocity (mm/min) | 27870<br>840 | 24770<br>840 | 22290<br>850 | 18580<br>820 | 15920<br>800 | 13930<br>780 | 12380<br>820 | 4780<br>2000 |
| K | 灰铸铜，球墨铸铁（<32HRC）<br>Gry cast iron，nodular cast iron<br>高合金铸铁（35-45HRC）<br>High alloy cast iron | ap≤0.5D<br>ap≤0.05D | 90 | 转速 rote speed (min-1)<br>进给转速 feed velocity (mm/min) | 35830<br>1150 | 31850<br>1150 | 28660<br>1150 | 23890<br>1100 | 20470<br>1100 | 17910<br>1070 | 15920<br>1110 | 5840<br>2530 |
| | | ap≤0.5D<br>ap≤0.05D | 80 | 转速 rote speed (min-1)<br>进给转速 feed velocity (mm/min) | 31850<br>830 | 28310<br>850 | 25480<br>820 | 21230<br>760 | 18200<br>800 | 15920<br>860 | 14150<br>910 | 5840<br>2440 |

上表是侧铣加工的标准值，刀具切槽时，转速要以上表的50%~70%，进给速度要以40%~60%为标准值。

Above table is the standard cutting data for side milling maching, if for groove cuttingtheVC should reach 50%-70%and the feed should reach 40%-60% based on the table.

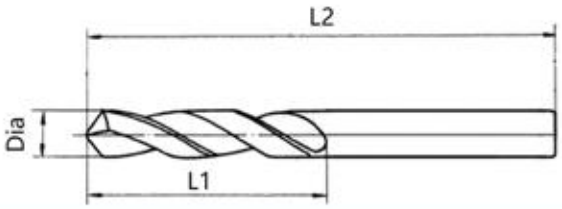
# Twist Drill（Standard）

| WGZT | TiAlN | HRC 65 |
|---|---|---|



| 单位Unit | (mm) |
|---|---|
| D | D |
| 公差Tol | 0 |
| | -0.015 |

| | |
|---|---|
| P | ● |
| M | ● |
| K | ● |
| N | |
| S | |
| H | ● |




| Diameter D | Cutting Length L1 | Shank D2 | Overall Length L2 | Ordering Code |
|---|---|---|---|---|
| mm | mm | mm | mm | |
| 1-2 | LOC=1/2 OAL | 1-2 | 40 | WGZT-2F-010140 |
| 2.1-2.9 | | 2.1-2.9 | 40 | WGZT-2F-02102140 |
| 3-4 | | 3-4 | 50 | WGZT-2F-03203250 |
| 4.1-5 | | 4.1-5 | 50 | WGZT-2F-04104150 |
| 5.1-6 | | 5.1-6 | 50 | WGZT-2F-05105150 |
| 6.1-7.1 | | 6.1-7.1 | 50 | WGZT-2F-06106150 |
| 7.2-8.1 | | 7.2-8.1 | 60 | WGZT-2F-07207260 |
| 8.2-9.1 | | 8.2-9.1 | 75 | WGZT-2F-08208275 |
| 9.2-10.1 | | 9.2-10.1 | 75 | WGZT-2F-09209275 |
| 10.2-11.1 | | 10.2-11.1 | 75 | WGZT-2F-10210275 |
| 11.2-12.1 | | 11.2-12.1 | 75 | WGZT-2F-11211275 |
| 12.2-13.1 | | 12.2-13.1 | 75 | WGZT-2F-12212275 |
| 13.2-14 | | 13.2-14 | 100 | WGZT-2F-132132100 |
| 14.1-15.1 | | 14.1-15.1 | 100 | WGZT-2F-141141100 |
| 15.2-16.1 | | 15.2-16.1 | 100 | WGZT-2F-152152100 |
| 16.2-17.1 | | 16.2-17.1 | 100 | WGZT-2F-162162100 |
| 17.2-18.1 | | 17.2-18.1 | 100 | WGZT-2F-172172100 |
| 18.2-19.1 | | 18.2-19.1 | 100 | WGZT-2F-182182100 |
| 19.2-20 | | 19.2-20 | 100 | WGZT-2F-192192100 |

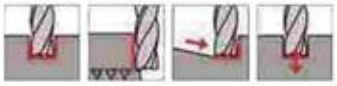
| ISO | 被加工材料 Workpiece Material | 切削量（mm） Depth of cut | Vc m/min | | 刃径 Tool Diameter（mm） 2 | 4 | 6 | 8 | 10 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|
| H | 合金钢、淬硬钢(<60HAC) Alloy steel,hardened steel | ap≤1D ap≤0.05D | 120 | 转速 rote speed（min-1） 进给转速 feed velocity（mm/min） | 19110 380 | 9550 380 | 6370 380 | 7170 930 | 4780 380 | 3490 360 |
| | 合金钢、淬硬钢(65HRC) Alloy steel, hardened stee | ap≤0.7D ap≤0.03D | 90 | 转速 rote speed（min-1） 进给转速 feed velocity（mm/min） | 15920 260 | 11940 360 | 7960 370 | 5180 620 | 4780 370 | 3980 340 |

上表是侧铣加工的标准值，刀具切槽时，转速要以上表格的50%~70%，进给速度要以40%~60%为标准值。

Above table is the standard cutting data for side milling maching, if for groove cutting , the VC should reach 50%~70% and the feed should reach 40%~60% based on the table.

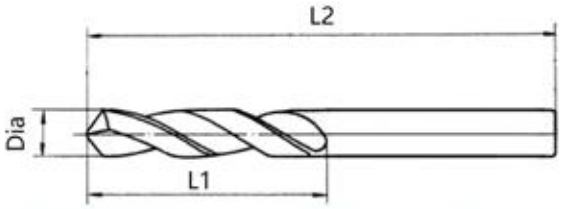
# Twist Drill (Extra Long)

| WGZT | TiAlN | HRC 65 |
|---|---|---|



| 单位Unit | (mm) |
|---|---|
| D | D |
| 公差Tol | 0 |
| | -0.015 |

| | |
|---|---|
| P | ● |
| M | ● |
| K | ● |
| N | |
| S | |
| H | ● |




| Diameter D | Cutting Length L1 | Shank D2 | Overall Length L2 | Ordering Code |
|---|---|---|---|---|
| mm | mm | mm | mm | |
| 3-4 | LOC=1/2 OAL | 3-4 | 100 | WGZT-2F-0303100 |
| 4.1-5 | | 4.1-5 | 100 | WGZT-2F-041041100 |
| 5.1-6 | | 5.1-6 | 100 | WGZT-2F-051051100 |
| 6.1-7.1 | | 6.1-7.1 | 100 | WGZT-2F-061061100 |
| 7.2-8.1 | | 7.2-8.1 | 100 | WGZT-2F-072072100 |
| 8.2-9.1 | | 8.2-9.1 | 100 | WGZT-2F-082082100 |
| 9.2-10.1 | | 9.2-10.1 | 100 | WGZT-2F-092092100 |
| 10.2-11.1 | | 10.2-11.1 | 100 | WGZT-2F-102102100 |
| 11.2-12.1 | | 11.2-12.1 | 100 | WGZT-2F-112112100 |
| 12.2-13.1 | | 12.2-13.1 | 100 | WGZT-2F-122122100 |

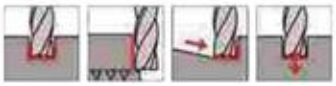
| ISO | 被加工材料 Workpiece Material | 切削量 (mm) Depth of cut | Vc m/min | | 刃径 Tool Diameter (mm) 2 | 4 | 6 | 8 | 10 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|
| H | 合金钢、淬硬钢(<60HAC) Alloy steel,hardened steel | ap≤1D ap≤0.05D | 120 | 转速 rote speed (min-1) 进给转速 feed velocity (mm/min) | 19110 380 | 9550 380 | 6370 380 | 7170 930 | 4780 380 | 3490 360 |
| | 合金钢、淬硬钢(65HRC) Alloy steel, hardened stee | ap≤0.7D ap≤0.03D | 90 | 转速 rote speed (min-1) 进给转速 feed velocity (mm/min) | 15920 260 | 11940 360 | 7960 370 | 5180 620 | 4780 370 | 3980 340 |

上表是侧铣加工的标准值，刀具切槽时，转速要以上表格的50%~70%，进给速度要以40%~60%为标准值。

Above table is the standard cutting data for side milling maching, if for groove cutting , the VC should reach 50%~70% and the feed should reach 40%~60% based on the table.

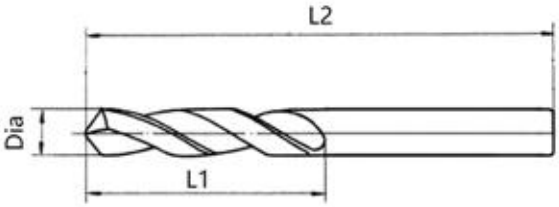
# Twist Drill（Standard）

| LYMHZ | AL | HRC 55 |
|---|---|---|



| 单位Unit | (mm) |
|---|---|
| D | D |
| 公差Tol | 0 |
| | -0.015 |

| | |
|---|---|
| P | |
| M | |
| K | |
| N | ● |
| S | |
| H | |



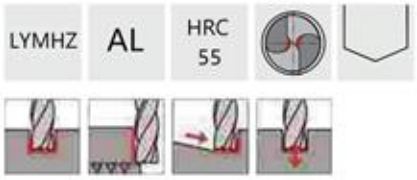

| Diameter D | Cutting Length L1 | Shank D2 | Overall Length L2 |
|---|---|---|---|
| mm | mm | mm | mm |
| 1-2 | LOC=1/2 OAL | 1-2 | 40 |
| 2.1-2.9 | | 2.1-2.9 | 40 |
| 3-4 | | 3-4 | 50 |
| 4.1-5 | | 4.1-5 | 50 |
| 5.1-6 | | 5.1-6 | 50 |
| 6.1-7.1 | | 6.1-7.1 | 50 |
| 7.2-8.1 | | 7.2-8.1 | 60 |
| 8.2-9.1 | | 8.2-9.1 | 75 |
| 9.2-10.1 | | 9.2-10.1 | 75 |
| 10.2-11.1 | | 10.2-11.1 | 75 |
| 11.2-12.1 | | 11.2-12.1 | 75 |
| 12.2-13.1 | | 12.2-13.1 | 75 |
| 13.2-14 | | 13.2-14 | 100 |
| 14.1-15.1 | | 14.1-15.1 | 100 |
| 15.2-16.1 | | 15.2-16.1 | 100 |
| 16.2-17.1 | | 16.2-17.1 | 100 |
| 17.2-18.1 | | 17.2-18.1 | 100 |
| 18.2-19.1 | | 18.2-19.1 | 100 |
| 19.2-20 | | 19.2-20 | 100 |

| Ordering Code |
|---|
| LYMHZ-2F-010140 |
| LYMHZ-2F-02102140 |
| LYMHZ-2F-03203250 |
| LYMHZ-2F-04104150 |
| LYMHZ-2F-05105150 |
| LYMHZ-2F-06106150 |
| LYMHZ-2F-07207260 |
| LYMHZ-2F-08208275 |
| LYMHZ-2F-09209275 |
| LYMHZ-2F-10210275 |
| LYMHZ-2F-11211275 |
| LYMHZ-2F-12212275 |
| LYMHZ-2F-132132100 |
| LYMHZ-2F-141141100 |
| LYMHZ-2F-152152100 |
| LYMHZ-2F-162162100 |
| LYMHZ-2F-172172100 |
| LYMHZ-2F-182182100 |
| LYMHZ-2F-192192100 |

| ISO | 被加工材料 Workpiece Material | 切削量（mm） Depth of cut | Vc m/min | | 刃径 tool Diameter（mm） 1 | 2 | 4 | 6 | 8 | 10 | 12 | 16 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N | 锻造及铸造铝合金(Si<12%) Forging and casting aluminum alloy<br>铜合金(<200HB) Copper alloy | ap≤0.5D | 150 (60~350) | 转速 rote speed（min-1） | 16000 | 10000 | 9000 | 8000 | 7800 | 8000 | 6800 | 5000 | 4000 |
| | | ap≤1D | | 进给转速 feed velocity（mm/min） | 400 | 500 | 810 | 920 | 1100 | 1280 | 1300 | 1310 | 1200 |
| | | ap≤0.5D | 150 (60~350) | 转速 rote speed（min-1） | 16000 | 10000 | 9000 | 8000 | 7800 | 8000 | 6800 | 5000 | 4000 |
| | | ap≤1D | | 进给转速 feed velocity（mm/min） | 380 | 450 | 800 | 830 | 1000 | 1150 | 1130 | 1000 | 1080 |

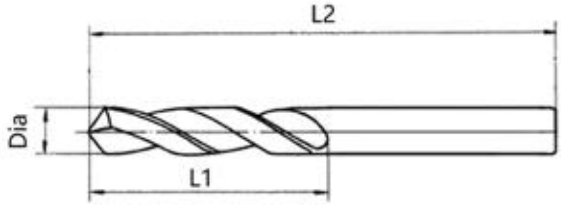
# Twist Drill (Extra Long)

LYMHZ | AL | HRC 55



| 单位Unit | (mm) |
|---|---|
| D | D |
| 公差Tol | 0 |
| | -0.015 |

| | |
|---|---|
| P | |
| M | |
| K | |
| N | ● |
| S | |
| H | |




| Diameter D | Cutting Length L1 | Shank D2 | Overall Length L2 | Ordering Code |
|---|---|---|---|---|
| mm | mm | mm | mm | |
| 3-4 | LOC=1/2 OAL | 3-4 | 100 | LYMHZ-2F-0303100 |
| 4.1-5 | | 4.1-5 | 100 | LYMHZ-2F-041041100 |
| 5.1-6 | | 5.1-6 | 100 | LYMHZ-2F-051051100 |
| 6.1-7.1 | | 6.1-7.1 | 100 | LYMHZ-2F-061061100 |
| 7.2-8.1 | | 7.2-8.1 | 100 | LYMHZ-2F-072072100 |
| 8.2-9.1 | | 8.2-9.1 | 100 | LYMHZ-2F-082082100 |
| 9.2-10.1 | | 9.2-10.1 | 100 | LYMHZ-2F-092092100 |
| 10.2-11.1 | | 10.2-11.1 | 100 | LYMHZ-2F-102102100 |
| 11.2-12.1 | | 11.2-12.1 | 100 | LYMHZ-2F-112112100 |
| 12.2-13.1 | | 12.2-13.1 | 100 | LYMHZ-2F-122122100 |

| ISO | 被加工材料 Workpiece Material | 切削量 (mm) Depth of cut | Vc m/min | | 刃径 tool Diameter (mm) 1 | 2 | 4 | 6 | 8 | 10 | 12 | 16 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N | 锻造及铸造铝合金(Si<12%) Forging and casting aluminum alloy<br>铜合金(<200HB) Copper alloy | ap≤0.5D | 150 (60~350) | 转速 rote speed (min-1) | 16000 | 10000 | 9000 | 8000 | 7800 | 8000 | 6800 | 5000 | 4000 |
| | | ap≤1D | | 进给转速 feed velocity (mm/min) | 400 | 500 | 810 | 920 | 1100 | 1280 | 1300 | 1310 | 1200 |
| | | ap≤0.5D | 150 (60~350) | 转速 rote speed (min-1) | 16000 | 10000 | 9000 | 8000 | 7800 | 8000 | 6800 | 5000 | 4000 |
| | | ap≤1D | | 进给转速 feed velocity (mm/min) | 380 | 450 | 800 | 830 | 1000 | 1150 | 1130 | 1000 | 1080 |

# 普通车削刀片

## 车削刀片型号预览

### ● 负角车削刀片

CNMG*-MT CMNG*-M CNMG*-GT CNMA* CNMG* CNMG*-GH CNMG*-BF CNMG*-BM CNMG*-S CNMG*-MA CNMG*-MS

DNMG*-MT DNMG*-GT DNMA* DNMG* DNMG*-BF DNMG*-BM DNMG*-S

SNMG*-MT SNMG*-M SNMG*-GT SNMA* SNMG* SNMG*-BF SNMG*-BM SNMG*-S SNMG*-MA SNMG*-MS

TNMG*-MT TNMG*-M TNMG*-GT TNMA* TNMG* TNMG*-BF TNMG*-BM TNMG*-S TNMG*-MA TNMG*-MS

VNMG*-MT VNMG*-GT VNMA* VNMG* VNMG*-BF VNMG*-BM

WNMG*-MT WNMG*-M WNMG*-GT WNMA* WNMG* WNMG*-GH WNMG*-BF WNMG*-BM

### ● 正角车削刀片

E-CCMT* E-DCMT-MV E-SCMT E-TCMT E-VBMT-MV

HANDERK

常州市鹏锦精密工具有限公司
Changzhou Handerk Precision Tools Co., Ltd.

# Contact


Whatsapp: +86 13815069640
Email: sherry@hdktool.com

Wechat
微信: +86 13815069640

No. 26, Lingshan Middle Road, Xixiashu Town, Xinbei District, Changzhou City, Jiangsu Province, China

江苏省常州市新北区镇西夏墅灵山中路26号

Working Hours: 09:00 - 18:00

工作时间: 09:00 - 18:00