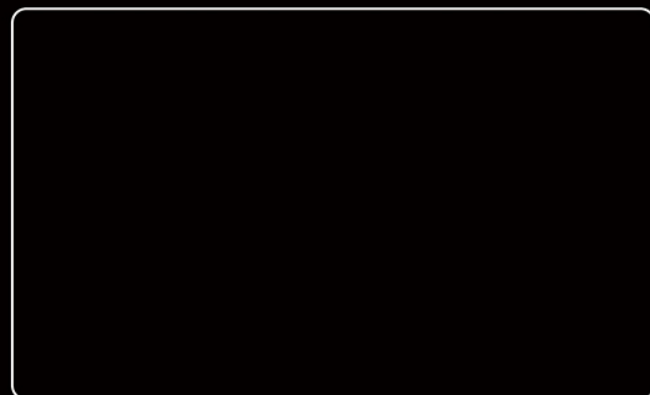




江苏维香工具制造有限公司  
Jiangsu Weixiang Tool Manufacturing Co.,Ltd.

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PROFESSIONAL  
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**江苏维香工具制造有限公司**是一家集生产, 销售, 研发于一体的综合性刀具制造销售商。公司拥有30年的整体硬质合金刀具生产和销售经验, 优质的信誉, 过硬的产品质量和高性价比是公司生存和发展的根本原因。

公司地处美丽的长江边的蓬勃发展的国家级经济开发区——大港经济开发区, 邻镇泰高速公路入口仅5公里, 拥有瓦尔特 (WALTER) 和安卡(ANCA)等全进口五轴数控加工中心十余台, 使用先进德国ZOLLER检测设备。库存上千种产品和规格, 以保证客户订购所需。国内销售门市在济南, 无锡和昆山, 东莞, 成都等地。同时公司已有10年外贸经验, 产品远销欧美, 东南亚等国家。

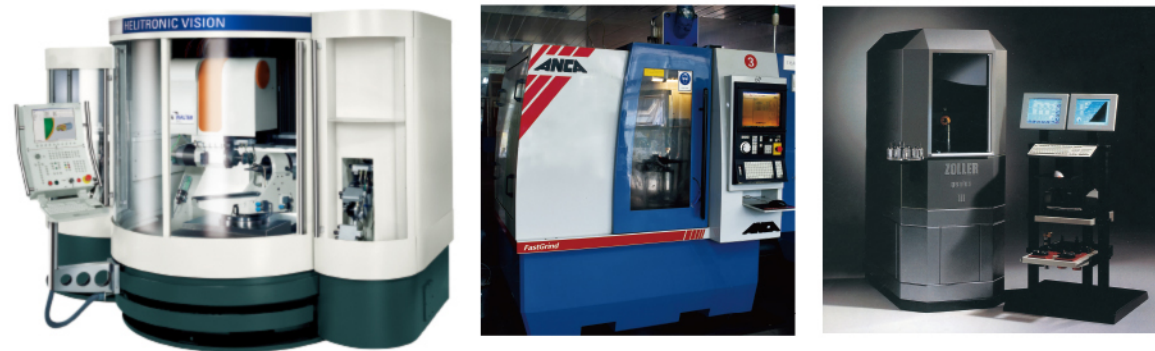
公司不断对现有的复杂刀具生产线进行改造, 增加产品品种、规格、提高产品档次, 为一流刀具的国产化做出我们的努力。在充斥着国外供应商的竞争环境中, 唯有这样的服务才达到可持续发展的。公司已通过ISO9001质量管理体系, 为公司的产品质量提供更加科学、规范的管理保证。

主要产品: 整体合金模具钢用立铣刀、球头铣刀、圆鼻刀、深沟刀; 铝合金专用铣刀、不锈钢专用刀; 钻削刀具 (麻花钻、定心钻、中心钻) 等, 并承接各种非标刀具定做。公司保证在最短交货期内, 保证质量, 不满意退货退款。欢迎来料、来样加工, 量大优惠!

Jiangsu Weixiang Tool Manufacturing Co.,Ltd is a comprehensive carbide tool manufacturer with production, sale and R&D. Within 30 years of industry operation, we believe that high reputation, good quality and the overall high value of product and service are the vital elements for long term development.

Located in the state level economic development zone of Dagang, beside the beautiful Yangzi River, company is only 5 km to Tai-zhen highway entrance. For years of improvement, we are now have CNC machine from ANCA and WALTER more than 10 pcs, in line with the ZOLLER inspection equipment. Stock has always been kept in thousands quantity and specification to meet customer orders everyday. Until 2014, sales branches have reached to Shandong, Jiangsu, Guangdong and Sichuan province. Meanwhile we are granted for 10 years experience of OEM, with customers from Europe, USA and Southeast Asian countries etc.

Our mainstream product ranges are : Solide Carbide end mills with 2/3/4/6 flutes, ball nose end mills, corner radius end mills, long flute short neck end mills, and aluminum processing end mills, stainless steel processing end mills. Beside, we also produce high quality center drill, spotting drill, and drill bits. We guarantee that within the shortest delivery time we provide you with the best value products. We sincerely welcome other global customers to order from us, nevertheless processing your supplied materials is also accepted.



## 材质 Tool Materials

**MG** 超微粒硬质合金材料  
Micro Grain Carbide is used in the tool material.

**SMG** 极细微粒硬质合金材料  
Super Micro Grain Carbide is used in the tool material.

## 螺旋角 Helix Angle

**30°** 螺旋角度为30°  
Helix angle is 30°

**35°** 螺旋角度为35°  
Helix angle is 35°

**38°** 螺旋角度为38°  
Helix angle is 38°

**45°** 螺旋角度为45°  
Helix angle is 45°

**55°** 螺旋角度为55°  
Helix angle is 55°

## 涂层名称 Coating Name

**AlTiN** 涂层名称是AlTiN  
Coating Name is AlTiN

**TiSiN** 涂层名称是TiSiN  
Coating Name is TiSiN

**NaNo Blue** 涂层名称是NaNo Blue  
Coating Name is NaNo Blue

**BALNIT X** 涂层名称是BALNIT X  
Coating Name is BALNIT X

## 切削硬度 Cutting Hardness

**HRC 45** 切削硬度为HRC ≤ 45°  
Cutting Hardness is HRC ≤ 45°

**HRC 50** 切削硬度为HRC ≤ 50°  
Cutting Hardness is HRC ≤ 50°

**HRC 55** 切削硬度为HRC ≤ 55°  
Cutting Hardness is HRC ≤ 55°

**HRC 63** 切削硬度为HRC ≤ 63°  
Cutting Hardness is HRC ≤ 63°

## 刃数 Number of Flute

**2** 刃数为2刃  
Number of Flute is 2

**3** 刃数为3刃  
Number of Flute is 3

**4** 刃数为4刃  
Number of Flute is 4

**6** 刃数为6刃  
Number of Flute is 6

## 加工方式 The Types of Milling






**侧铣** Suitable for Side Milling

**沟槽铣** Suitable for Slotting

**曲面铣** Suitable for Curved Surface Milling

铣刀系列 Milling Tool Series

HRC≤45°

2刃平头立铣刀/2Flutes Square End Mill 4刃平头立铣刀/4Flutes Square End Mill		<b>P7</b>
2刃球头立铣刀/2Flutes Ball Nose End Mill 2刃加长球头立铣刀/4Flutes Extra Long Ball Nose End Mill		<b>P8</b>
2刃圆鼻立铣刀/2Flutes Corner Radius End Mill 4刃圆鼻立铣刀/4Flutes Corner Radius End Mill		<b>P9</b>
2刃长颈短刃立铣刀/2Flutes Long Neck Short Flute End Mill 2刃长颈短刃球头立铣刀/2Flutes Long Neck Short Flute Ball Nose End Mill		<b>P10</b>
2/4刃斜度立铣刀/2/4Flutes Taper Square End Mill 2/4刃球型斜度立铣刀/2/4Flutes Taper Ball Nose End Mill		<b>P11</b>



HRC≤50°

2刃微小径立铣刀/2Flutes Micro Flute End Mill 2刃微小径球头立铣刀/2Flutes Micro Flute Ball Nose End Mill		<b>P13</b>
2刃平头立铣刀/2Flutes Square End Mill 4刃平头立铣刀/4Flutes Square End Mill		<b>P14</b>
2刃球头铣刀/2Flutes Ball Nose End Mill 2刃加长球头铣刀/2Flutes Extra Long Ball Nose End Mill		<b>P15</b>
2刃圆鼻立铣刀/2Flutes Corner Radius End Mill 4刃圆鼻立铣刀/4Flutes Corner Radius End Mill		<b>P16</b>




HRC≤55° HRC≤63°

2刃平头立铣刀/2Flutes Square End Mill 4刃平头立铣刀/4Flutes Square End Mill		<b>P18</b>
2刃球头铣刀/2Flutes Ball Nose End Mill 2刃加长型球头铣刀/2Flutes Extra Long Ball Nose End Mill		<b>P19</b>
2刃圆鼻立铣刀/2Flutes Corner Radius End Mill 4刃圆鼻立铣刀/4Flutes Corner Radius End Mill		<b>P20</b>
6刃平头立铣刀/6Flutes Square End Mill 6刃加长平头立铣刀/6Flutes Extra Long Square End Mill		<b>P21</b>




铝合金专用 For Aluminum Alloy Processing

2刃平头立铣刀/2Flutes Square End Mill 3刃平头立铣刀/3Flutes Square End Mill		<b>P23</b>
2刃球头立铣刀/2Flutes Ball Nose End Mill 2刃加长球头立铣刀/2Flutes Extra Long Ball Nose End Mill		<b>P24</b>

不锈钢专用 For Stainless Steel Processing

2刃平头立铣刀/2Flutes Square End Mill 4刃平头立铣刀/4Flutes Square End Mill		<b>P26</b>
2刃球头立铣刀/2Flutes Ball Nose End Mill 2刃加长球头立铣刀/4Flutes Extra Long Ball Nose End Mill		<b>P27</b>
2刃圆鼻立铣刀/2Flutes Corner Radius End Mill 4刃圆鼻立铣刀/4Flutes Corner Radius End Mill		<b>P28</b>

钻铰系列 Drilling & Reaming Tool Series

高性能麻花钻/High Performance Drill Bit 高性能麻花钻(涂层)/High Performance Drill Bit (with coating)		<b>P30</b>
60度中心钻/60° Center Drill 60度,90度,120度2刃定心钻/60°,90°,120° 2Flutes Spotting Drill		<b>P31</b>
高性能直槽铰刀/High Performance Straight Flute Reamer 高性能螺旋槽铰刀/High Performance Helical Flute Reamer		<b>P32</b>

特制刀具系列 Specially Produced Tool Series

4刃波刃立铣刀/4 Flutes Roughing End Mill 钨钢圆棒/Solid Carbide Rods	<b>P34</b>
T型刀/T-slot Milling Cutter 2刃内R铣刀/2flutes R Inner Corner End Mill 单刃铣刀/Single Flute End Mill 直柄燕尾槽铣刀/Straight shank Dovetail End Mill	<b>P35</b>

木工刀具系列 Woodworking Tool Series

整头合金排钻-A型 Gang Drill with Solid Carbide Head -Type A 整体硬质合金复合波纹粗铣刀 Solid Carbide Composite Corrugated Roughing End Mill 整头合金排钻-B型 Gang Drill with Solid Carbide Head -Type B 整体硬质合金直刀 Solid Carbide Straight Tool	<b>P35</b>
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非标刀具系列 Non-standard Cutting Tool Series P36

切削数据表 Cutting Data Parameters P37-40

铣刀技术信息 Technology Information of End Mill P40-43

# 铣刀系列



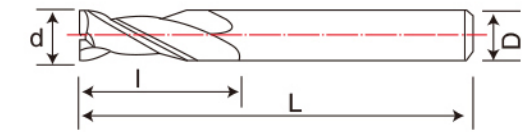
## Milling Tool Series HRC≤45°

- 适用于碳素钢、合金钢、HRC45° 以下钢件切削  
Apply to cutting carbon steel, alloy steel and below HRC45° steel
- 通过特殊设计, 使切削过程更轻快, 刀具刚性好, 使用寿命更长  
Via special design smoothen cutting process, better tool rigidity thus longer working life
- 能实现从高金属去除量的粗加工到高精度, 高表面质量的精加工  
Can realize from roughing machining with high metal removal rate to finishing machining with high surface quality
- 能实现产品规格最小至0.2毫米, 即使零件的最细微部分加工都能轻松完成  
Minimum product diameter to 0.2mm, even the subtle part processing of component can be easily accomplished
- 采用专门针对HRC45° 以下钢件的涂层种类  
Use the coating type specialized to process hardness below HRC45° steel.

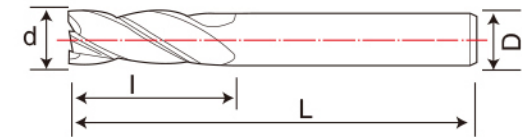


HRC≤45° WEIX®

2刃平头立铣刀 2Flutes Square End Mill



4刃平头立铣刀 4Flutes Square End Mill



长度 Length	刃径 Flute Diameter(d)	柄径 Shank Diameter(D)	刃长 Flute Length(l)	全长 Overall Length(L)
标准型 Standard	1	4	3	50
	1.5	4	4	50
	2	4	5	50
	2.5	4	6	50
	3	4	8	50
	3.5	4	10	50
	4	4	11	50
	1	6	3	50
	1.5	6	4	50
	2	6	5	50
	2.5	6	6	50
	3	6	8	50
	3.5	6	10	50
	4	6	11	50
	5	6	13	50
	6	6	15	50
	7	8	17	60
	8	8	20	60
	10	10	25	75
	12	12	30	75
14	14	35	100	
16	16	40	100	
18	18	40	100	
20	20	40	100	
加长型 Extra Long	4	4	20	75
	6	6	25	75
	7	8	25	75
	8	8	30	75
	4	4	25	100
	6	6	30	100
	8	8	35	100
	10	10	40	100
	12	12	45	100
	8	8	40	150
	10	10	50	150
	12	12	50	150
	16	16	70	150
	18	18	80	150
	20	20	80	150

**2刃球头立铣刀 2Flutes Ball Nose End Mill**



**2刃加长球头立铣刀 2Flutes Extra Long Ball Nose End Mill**



长度 Length	刃径 Flute Diameter(d)	柄径 Shank Diameter(D)	刃长 Flute Length(l)	全长 Overall Length(L)
标准型 Standard	R0.5	4	2	50
	R0.75	4	3	50
	R1	4	4	50
	R1.25	4	5	50
	R1.5	4	6	50
	R1.75	4	7	50
	R2	4	8	50
	0.5	6	2	50
	R0.75	6	3	50
	R1	6	4	50
	R1.5	6	6	50
	R2	6	8	50
	R2.5	6	10	50
	R3	6	12	50
	R4	8	16	60
	R5	10	20	75
	R6	12	24	75
	R8	16	30	100
	R10	20	30	100
	加长型 Extra Long	R0.5	4	2
R0.75		4	3	75
R1		4	4	75
R1.5		4	6	75
R2		4	8	75
R0.5		6	2	75
R0.75		6	3	75
R1		6	4	75
R1.5		6	6	75
R2		6	8	75
R2.5		6	10	75
R3		6	12	75
R2		4	8	100
R3		6	12	100
R4		8	16	100
R5		10	20	100
R6		12	24	100
R8		16	30	150
R10		20	30	150

**2刃圆鼻立铣刀 2Flutes Corner Radius End Mill**

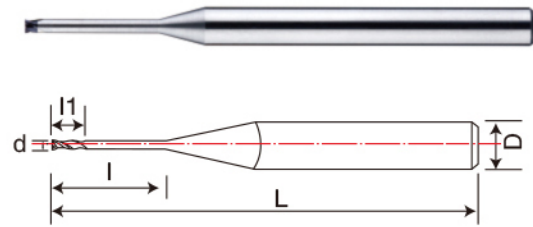


**4刃圆鼻立铣刀 4Flutes Corner Radius End Mill**

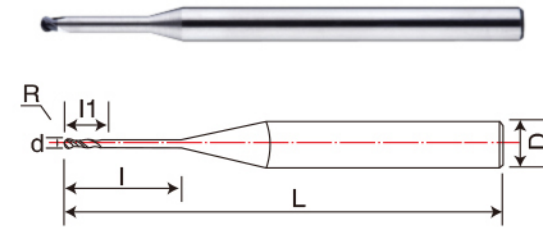


长度 Length	刃径 Flute Diameter(d)	R径 Radius(R)	柄径 Shank Diameter(D)	刃长 Flute Length(l)	全长 Overall Length(L)
标准型 Standard	4	R0.2	4	8	50
	4	R0.5	4	8	50
	4	R1	4	8	50
	6	R0.2	6	12	50
	6	R0.5	6	12	50
	6	R1	6	12	50
	8	R0.5	8	16	60
	8	R1	8	16	60
	8	R1.5	8	16	60
	10	R0.5	10	20	75
	10	R1	10	20	75
	10	R1.5	10	20	75
	10	R2	10	20	75
	10	R2.5	10	20	75
	10	R3	10	20	75
	12	R0.5	12	24	75
	12	R1	12	24	75
	12	R1.5	12	24	75
	12	R2	12	24	75
	加长型 Extra Long	4	R0.2	4	8
4		R0.5	4	8	75
4		R1	4	8	75
6		R0.2	6	12	75
6		R0.5	6	12	75
6		R1	6	12	75
6		R1.5	6	12	75
8		R0.5	8	16	100
8		R1	8	16	100
8		R1.5	8	16	100
8		R2	8	16	100
10		R0.5	10	20	100
10		R1	10	20	100
10		R1.5	10	20	100
10		R2	10	20	100
10		R2.5	10	20	100
10		R3	10	20	100
12		R0.5	12	24	100
12		R1	12	24	100
12		R1.5	12	24	100
12	R2	12	24	100	
12	R2.5	12	24	100	
12	R3	12	24	100	

**2刃长颈短刃立铣刀**  
2Flutes Long Neck Short Flute End Mill



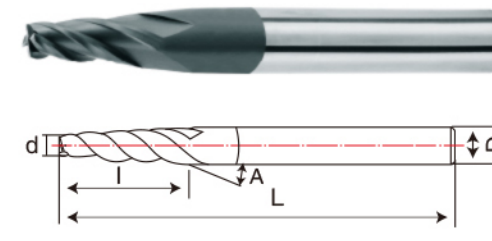
**2刃长颈短刃球头立铣刀**  
2Flutes Long Neck Short Flute Ball Nose End Mill



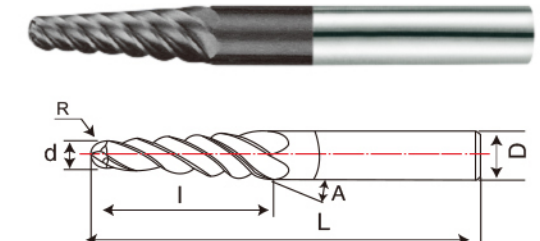
刃径 Flute Diameter(d)	柄径 Shank Diameter(D)	刃长 Flute Length(l1)	有效长 Effectabe Length(l)	全长 Overall Length(L)
0.4	4	0.6	2	50
0.4	4	0.6	4	50
0.5	4	0.8	2	50
0.5	4	0.8	4	50
0.5	4	0.8	6	50
0.6	4	1	2	50
0.6	4	1	4	50
0.6	4	1	6	50
0.6	4	1	8	50
0.8	4	1.2	3	50
0.8	4	1.2	4	50
0.8	4	1.2	6	50
0.8	4	1.2	8	50
0.8	4	1.2	10	50
1	4	1.2	4	50
1	4	1.2	6	50
1	4	1.2	8	50
1	4	1.2	10	50
1	4	1.2	12	50
1.5	4	1.7	4	50
1.5	4	1.7	6	50
1.5	4	1.7	8	50
1.5	4	1.7	10	50
1.5	4	1.7	12	50
2	4	2.2	6	50
2	4	2.2	8	50
2	4	2.2	10	50
2	4	2.2	12	50
2	4	2.2	14	50
2	4	2.2	16	75
3	4	3.2	8	50
3	4	3.2	10	50
3	4	3.2	12	50
3	4	3.2	14	50
3	4	3.2	16	75
3	4	3.2	20	75
4	6	4.2	12	50
4	6	4.2	14	50
4	6	4.2	16	75
4	6	4.2	20	75
4	6	4.2	25	75

刃径 Flute Diameter(d)	柄径 Shank Diameter(D)	刃长 Flute Length(l1)	有效长 Effectabe Length(l)	全长 Overall Length(L)
R0.2	4	0.6	2	50
R0.2	4	0.6	4	50
R0.25	4	0.8	2	50
R0.25	4	0.8	4	50
R0.25	4	0.8	6	50
R0.3	4	1	2	50
R0.3	4	1	4	50
R0.3	4	1	6	50
R0.3	4	1	8	50
R0.4	4	1.2	3	50
R0.4	4	1.2	4	50
R0.4	4	1.2	6	50
R0.4	4	1.2	8	50
R0.4	4	1.2	10	50
R0.5	4	1.2	4	50
R0.5	4	1.2	6	50
R0.5	4	1.2	8	50
R0.5	4	1.2	10	50
R0.5	4	1.2	12	50
R0.75	4	1.7	4	50
R0.75	4	1.7	6	50
R0.75	4	1.7	8	50
R0.75	4	1.7	10	50
R0.75	4	1.7	12	50
R1.0	4	2.2	6	50
R1.0	4	2.2	8	50
R1.0	4	2.2	10	50
R1.0	4	2.2	12	50
R1.0	4	2.2	14	50
R1.0	4	2.2	16	75
R1.5	4	3.2	8	50
R1.5	4	3.2	10	50
R1.5	4	3.2	12	50
R1.5	4	3.2	14	50
R1.5	4	3.2	16	75
R1.5	4	3.2	20	75
R2.0	6	4.2	12	50
R2.0	6	4.2	14	50
R2.0	6	4.2	16	75
R2.0	6	4.2	20	75
R2.0	6	4.2	25	75

**2/4刃斜度立铣刀**  
2/4Flutes Taper Square End Mill



**2/4刃球型斜度立铣刀**  
2/4 Flutes Taper Ball Nose End Mill



刃径 Flute Diameter(d)	粗端径 Wide Diameter	柄径 Shank Diameter(D)	A度 A°	全长 Overall Length(L)
1.0/R0.5	1.07	4	0.5	50
1.0/R0.5	1.14	4	1	50
1.0/R0.5	1.21	4	1.5	50
1.0/R0.5	1.28	4	2	50
1.0/R0.5	1.35	4	2.5	50
1.0/R0.5	1.42	4	3	50
1.0/R0.5	1.7	4	5	50
1.0/R0.5	1.98	4	7	50
1.0/R0.5	2.41	4	10	50
1.5/R0.75	1.59	4	0.5	50
1.5/R0.75	1.68	4	1	50
1.5/R0.75	1.76	4	1.5	50
1.5/R0.75	1.85	4	2	50
1.5/R0.75	1.93	4	2.5	50
1.5/R0.75	2.02	4	3	50
1.5/R0.75	2.37	4	5	50
2.0/R1.0	2.1	4	0.5	50
2.0/R1.0	2.21	4	1	50
2.0/R1.0	2.31	4	1.5	50
2.0/R1.0	2.41	4	2	50
2.0/R1.0	2.52	4	2.5	50
2.0/R1.0	2.62	4	3	50
2.0/R1.0	3.05	4	5	50
2.0/R1.0	3.47	4	7	50
2.0/R1.0	1.11	6	10	50
2.5/R1.25	2.64	4	0.5	50
2.5/R1.25	2.78	4	1	50
2.5/R1.25	2.91	4	1.5	50
2.5/R1.25	3.05	4	2	50
2.5/R1.25	3.2	4	2.5	50
2.5/R1.25	3.33	4	3	50
2.5/R1.25	3.9	4	5	50
3.0/R1.5	3.17	6	0.5	50
3.0/R1.5	3.35	6	1	50
3.0/R1.5	3.52	6	1.5	50
3.0/R1.5	3.69	6	2	50
3.0/R1.5	3.87	6	2.5	50
3.0/R1.5	4.05	6	3	50
3.0/R1.5	4.75	6	5	50
3.0/R1.5	6	6	7	50
3.0/R1.5	6.52	8	10	50
4.0/R2.0	4.26	6	0.5	50

刃径 Flute Diameter(d)	粗端径 Wide Diameter	柄径 Shank Diameter(D)	A度 A°	全长 Overall Length(L)
4.0/R2.0	4.52	6	1	50
4.0/R2.0	4.79	6	1.5	50
4.0/R2.0	5.02	6	2	50
4.0/R2.0	5.31	6	2.5	50
4.0/R2.0	5.37	6	3	50
4.0/R2.0	6.62	8	5	60
4.0/R2.0	8	8	7	60
4.0/R2.0	10	10	10	75
5.0/R2.5	5.34	6	0.5	60
5.0/R2.5	5.7	6	1	60
5.0/R2.5	6	6	1.5	60
5.0/R2.5	6.39	8	2	60
5.0/R2.5	6.74	8	2.5	60
5.0/R2.5	7.1	8	3	60
5.0/R2.5	8.5	10	5	75
5.0/R2.5	10	10	7	75
5.0/R2.5	12	12	10	75
6.0/R3.0	6.33	8	0.5	60
6.0/R3.0	6.7	8	1	60
6.0/R3.0	7.05	8	1.5	60
6.0/R3.0	7.4	8	2	60
6.0/R3.0	7.75	8	2.5	60
6.0/R3.0	8.1	10	3	75
6.0/R3.0	9.5	10	5	75
6.0/R3.0	11	12	7	75
6.0/R3.0	14	14	10	75
8.0/R4.0	8.44	10	0.5	75
8.0/R4.0	8.87	10	1	75
8.0/R4.0	9.32	10	1.5	75
8.0/R4.0	9.75	10	2	75
8.0/R4.0	10.62	12	3	75
8.0/R4.0	12.37	14	5	75
8.0/R4.0	14	16	7	100
8.0/R4.0	18	18	10	100
10.0/R5.0	10.61	12	0.5	75
10.0/R5.0	11.22	12	1	75
10.0/R5.0	11.83	12	1.5	75
10.0/R5.0	13.06	14	2	75
10.0/R5.0	13.67	14	3	75
10.0/R5.0	16	16	5	100

# 铣刀系列



## Milling Tool Series

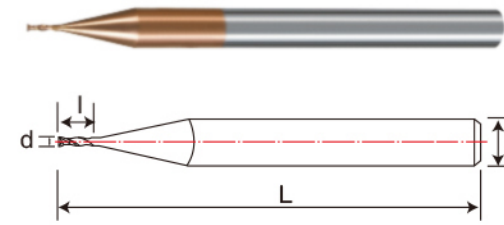
HRC≤50°

- 适用于高硬度模具钢 (HRC≤50°) 材料的铣削  
Apply to High hardness mold steel (HRC≤50°) materials
- 排屑槽、螺旋角的设计, 大幅提高刀具度排屑性, 保证高速加工时度稳定性  
The design of Chip groove, Helix angle has highly improved the ability of chip removal, meanwhile stabilized tool during high speed machining.
- 最小0.2mm, 即使零件的最细微部分加工都能轻松实现  
Minimum product diameter 0.2mm, even the subtle part of work piece can be easily accomplished.
- 采用专门针对高硬材料加工的纳米古铜涂层  
Specialized Nano TiSiN coating to process high hardness mold material



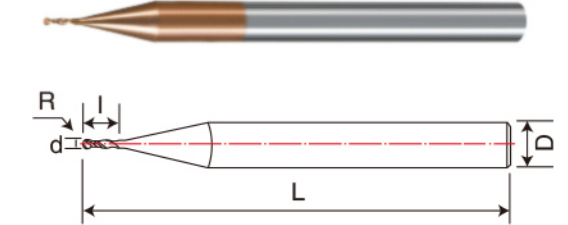
HRC≤50° TERY®

2刃微小径立铣刀  
2Flutes Micro Flute End Mill



刃径 Flute Diameter(d)	柄径 Shank Diameter(D)	刃长 Flute Length(l)	全长 Overall Length(L)
0.2	4	0.4	50
0.3	4	0.6	50
0.4	4	0.8	50
0.5	4	1.0	50
0.6	4	1.2	50
0.7	4	1.4	50
0.8	4	1.6	50
0.9	4	1.8	50

2刃微小径球头立铣刀  
2Flutes Micro Flute Ball Nose End Mill



刃径 Flute Diameter(d)	柄径 Shank Diameter(D)	刃长 Flute Length(l)	全长 Overall Length(L)
R0.1	4	0.4	50
R0.15	4	0.6	50
R0.4	4	0.8	50
R0.25	4	1.0	50
R0.3	4	1.2	50
R0.35	4	1.4	50
R0.4	4	1.6	50
R0.45	4	1.8	50

**2刃平头立铣刀 2Flutes Square End Mill**



**4刃平头立铣刀 4Flutes Square End Mill**



长度 Length	刃径 Flute Diameter(d)	柄径 Shank Diameter(D)	刃长 Flute Length(l)	全长 Overall Length(L)
标准型 Standard	1	4	3	50
	1.5	4	4	50
	2	4	5	50
	2.5	4	6	50
	3	4	8	50
	3.5	4	10	50
	4	4	11	50
	1	6	3	50
	1.5	6	4	50
	2	6	5	50
	2.5	6	6	50
	3	6	8	50
	3.5	6	10	50
	4	6	11	50
	5	6	13	50
	6	6	15	50
	7	8	17	60
	8	8	20	60
	10	10	25	75
	12	12	30	75
14	14	35	100	
16	16	40	100	
18	18	40	100	
20	20	40	100	
加长型 Extra Long	4	4	20	75
	6	6	25	75
	7	8	25	75
	8	8	30	75
	4	4	25	100
	6	6	30	100
	8	8	35	100
	10	10	40	100
	12	12	45	100
	8	8	40	150
	10	10	50	150
	12	12	50	150
	16	16	70	150
	18	18	80	150
	20	20	80	150

**2刃球头铣刀 2Flutes Ball Nose End Mill**



**2刃加长球头铣刀 2Flutes Extra Long Ball Nose End Mill**

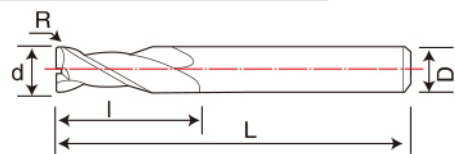


长度 Length	刃径 Flute Diameter(d)	柄径 Shank Diameter(D)	刃长 Flute Length(l)	全长 Overall Length(L)
标准型 Standard	R0.5	4	2	50
	R0.75	4	3	50
	R1	4	4	50
	R1.25	4	5	50
	R1.5	4	6	50
	R1.75	4	7	50
	R2	4	8	50
	0.5	6	2	50
	R0.75	6	3	50
	R1	6	4	50
	R1.5	6	6	50
	R2	6	8	50
	R2.5	6	10	50
	R3	6	12	50
	R4	8	16	60
	R5	10	20	75
	R6	12	24	75
	R8	16	30	100
	R10	20	30	100
	加长型 Extra Long	R0.5	4	2
R0.75		4	3	75
R1		4	4	75
1.5		4	6	75
R2		4	8	75
R0.5		6	2	75
R0.75		6	3	75
R1		6	4	75
R1.5		6	6	75
R2		6	8	75
R2.5		6	10	75
R3		6	12	75
R2		4	8	100
R3		6	12	100
R4		8	16	100
R5		10	20	100
R6		12	24	100
R8		16	30	150
R10		20	30	150



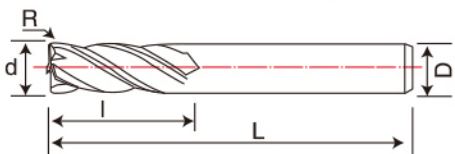
2刃圆鼻立铣刀

2Flutes Corner Radius End Mill



4刃圆鼻立铣刀

4Flutes Corner Radius End Mill



长度 Length	刃径 Flute Diameter(d)	R径 Radius((R)	柄径 Shank Diameter(D)	刃长 Flute Length(l)	全长 Overall Length(L)
标准型 Standard	4	R0.2	4	8	50
	4	R0.5	4	8	50
	4	R1	4	8	50
	6	R0.2	6	12	50
	6	R0.5	6	12	50
	6	R1	6	12	50
	8	R0.5	8	16	60
	8	R1	8	16	60
	8	R1.5	8	16	60
	10	R0.5	10	20	75
	10	R1	10	20	75
	10	R1.5	10	20	75
	10	R2	10	20	75
	10	R2.5	10	20	75
	10	R3	10	20	75
	12	R0.5	12	24	75
	12	R1	12	24	75
	12	R1.5	12	24	75
12	R2	12	24	75	
12	R2.5	12	24	75	
12	R3	12	24	75	
加长型 Extra Long	4	R0.2	4	8	75
	4	R0.5	4	8	75
	4	R1	4	8	75
	6	R0.2	6	12	75
	6	R0.5	6	12	75
	6	R1	6	12	75
	6	R1.5	6	12	75
	8	R0.5	8	16	100
	8	R1	8	16	100
	8	R1.5	8	16	100
	8	R2	8	16	100
	10	R0.5	10	20	100
	10	R1	10	20	100
	10	R1.5	10	20	100
	10	R2	10	20	100
	10	R2.5	10	20	100
	10	R3	10	20	100
	12	R0.5	12	24	100
	12	R1	12	24	100
	12	R1.5	12	24	100
	12	R2	12	24	100
	12	R2.5	12	24	100
	12	R3	12	24	100

铣刀系列

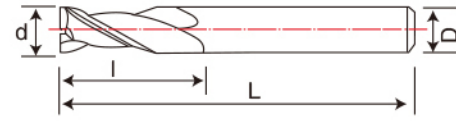
Milling Tool Series

HRC≤55° HRC≤63°

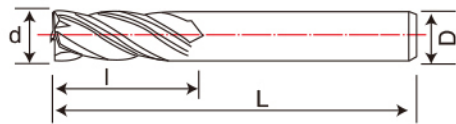
- 适用于HRC≤55° 钢件、超高硬度模具钢 (HRC≤63° ) 材料的铣削  
Apply to super hardness HRC≤55°、HRC≤63° steel milling
- 极细颗粒的硬质合金基体，使刀具的耐磨性和切削刃强度得到完美结合  
Solide carbide alloy matrix of super fine particle, combined the abrasive resistance and cutting blade intensity of the cutting perfectly
- 在保证足够容屑空间的条件下，采用了大芯径，兼顾了刀具的刚性及排屑功能，严格和科学的槽型控制，使得刀具的切削与排屑更加稳定  
Under the premise of sufficient room for chip removal, adopting big core diameter, balancing the rigidity and chip removing function, under strict and scientific groove control, making cutting and chip removing more stable.
- 采用高质量的专门针对高硬材质切削的钢件的BALINIT X涂层  
Use high quality BALINIT X coating type specialized to process super hard steel.



2刃平头立铣刀 2Flutes Square End Mill

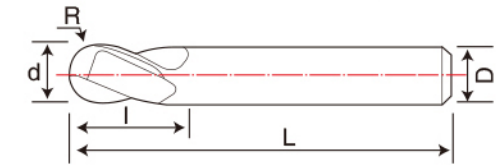


4刃平头立铣刀 4Flutes Square End Mill

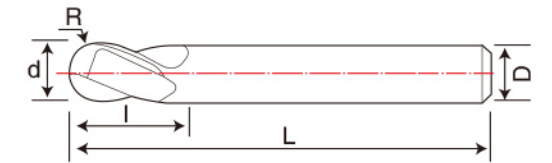


长度 Length	刃径 Flute Diameter(d)	柄径 Shank Diameter(D)	刃长 Flute Length(l)	全长 Overall Length(L)
标准型 Standard	1	4	3	50
	1.5	4	4	50
	2	4	5	50
	2.5	4	6	50
	3	4	8	50
	3.5	4	10	50
	4	4	11	50
	1	6	3	50
	1.5	6	4	50
	2	6	5	50
	2.5	6	6	50
	3	6	8	50
	3.5	6	10	50
	4	6	11	50
	5	6	13	50
	6	6	15	50
	7	8	17	60
	8	8	20	60
	10	10	25	75
	12	12	30	75
14	14	35	100	
16	16	40	100	
18	18	40	100	
20	20	40	100	
加长型 Extra Long	4	4	20	75
	6	6	25	75
	7	8	25	75
	8	8	30	75
	4	4	25	100
	6	6	30	100
	8	8	35	100
	10	10	40	100
	12	12	45	100
	8	8	40	150
	10	10	50	150
	12	12	50	150
	16	16	70	150
	18	18	80	150
	20	20	80	150

2刃球头铣刀 2Flutes Ball Nose End Mill



2刃加长型球头铣刀 2Flutes Extra Long Ball Nose End Mill



长度 Length	刃径 Flute Diameter(d)	柄径 Shank Diameter(D)	刃长 Flute Length(l)	全长 Overall Length(L)
标准型 Standard	R0.5	4	2	50
	R0.75	4	3	50
	R1	4	4	50
	R1.25	4	5	50
	R1.5	4	6	50
	R1.75	4	7	50
	R2	4	8	50
	0.5	6	2	50
	R0.75	6	3	50
	R1	6	4	50
	R1.5	6	6	50
	R2	6	8	50
	R2.5	6	10	50
	R3	6	12	50
	R4	8	16	60
	R5	10	20	75
	R6	12	24	75
	R8	16	30	100
	R10	20	30	100
	加长型 Extra Long	R0.5	4	2
R0.75		4	3	75
R1		4	4	75
1.5		4	6	75
R2		4	8	75
R0.5		6	2	75
R0.75		6	3	75
R1		6	4	75
R1.5		6	6	75
R2		6	8	75
R2.5		6	10	75
R3		6	12	75
R2		4	8	100
R3		6	12	100
R4		8	16	100
R5		10	20	100
R6		12	24	100
R8		16	30	150
R10		20	30	150

2刃圆鼻立铣刀 2Flutes Corner Radius End Mill



4刃圆鼻立铣刀 4Flutes Corner Radius End Mill



长度 Length	刃径 Flute Diameter(d)	R径 Radius(R)	柄径 Shank Diameter(D)	刃长 Flute Length(l)	全长 Overall Length(L)
标准型 Standard	4	R0.2	4	8	50
	4	R0.5	4	8	50
	4	R1	4	8	50
	6	R0.2	6	12	50
	6	R0.5	6	12	50
	6	R1	6	12	50
	8	R0.5	8	16	60
	8	R1	8	16	60
	8	R1.5	8	16	60
	10	R0.5	10	20	75
	10	R1	10	20	75
	10	R1.5	10	20	75
	10	R2	10	20	75
	10	R2.5	10	20	75
	10	R3	10	20	75
	12	R0.5	12	24	75
	12	R1	12	24	75
	12	R1.5	12	24	75
12	R2	12	24	75	
12	R2.5	12	24	75	
12	R3	12	24	75	
加长型 Extra Long	4	R0.2	4	8	75
	4	R0.5	4	8	75
	4	R1	4	8	75
	6	R0.2	6	12	75
	6	R0.5	6	12	75
	6	R1	6	12	75
	6	R1.5	6	12	75
	8	R0.5	8	16	100
	8	R1	8	16	100
	8	R1.5	8	16	100
	8	R2	8	16	100
	10	R0.5	10	20	100
	10	R1	10	20	100
	10	R1.5	10	20	100
	10	R2	10	20	100
	10	R2.5	10	20	100
	10	R3	10	20	100
	12	R0.5	12	24	100
	12	R1	12	24	100
	12	R1.5	12	24	100
	12	R2	12	24	100
	12	R2.5	12	24	100
	12	R3	12	24	100

6刃平头立铣刀 6Flutes Square End Mill



6刃加长平头立铣刀 6Flutes Extra Long Square End Mill



长度 Length	刃径 Flute Diameter(d)	柄径 Shank Diameter(D)	刃长 Flute Length(l)	全长 Overall Length(L)
标准型 Standard	1	4	3	50
	1.5	4	4	50
	2	4	5	50
	2.5	4	6	50
	3	4	8	50
	3.5	4	10	50
	4	4	11	50
	1	6	3	50
	1.5	6	4	50
	2	6	5	50
	2.5	6	6	50
	3	6	8	50
	3.5	6	10	50
	4	6	11	50
	5	6	13	50
	6	6	15	50
	7	8	17	60
	8	8	20	60
	10	10	25	75
	12	12	30	75
	14	14	35	100
	16	16	40	100
	18	18	40	100
	20	20	40	100
加长型 Extra Long	4	4	20	75
	6	6	25	75
	7	8	25	75
	8	8	30	75
	4	4	25	100
	6	6	30	100
	8	8	35	100
	10	10	40	100
	12	12	45	100
	8	8	40	150
	10	10	50	150
	12	12	50	150
	16	16	70	150
	18	18	80	150
	20	20	80	150

# 铣刀系列



## Milling Tool Series

铝合金专用

For Aluminum Alloy Processing

- 适用于航空航天、汽车、电子、机床等铝合金材料加工  
Apply to process aluminum alloy used in aerospace, IT, machine etc.
- 特别设计的端齿结构, 排屑流畅; 特殊的槽型截面, 增加强度和刚性;  
Special design of the flute structure for better chip removal; Special helical groove for increasing intensity and rigidity
- 端齿容屑空间更大, 特别适合型腔高效加工  
Bigger chip space that suits cavity processing well

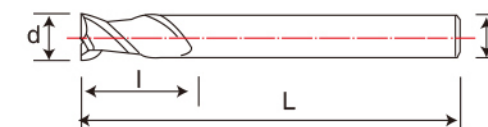


铝合金专用 For Aluminum Alloy Processing



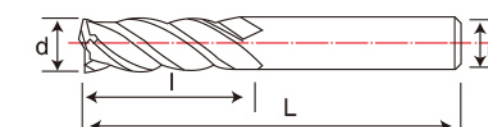
2刃平头立铣刀

2Flutes Square End Mill



3刃平头立铣刀

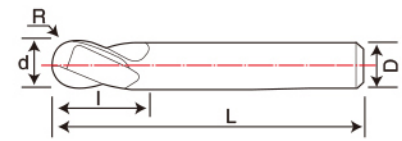
3Flutes Square End Mill



长度 Length	刃径 Flute Diameter(d)	柄径 Shank Diameter(D)	刃长 Flute Length(l)	全长 Overall Length(L)
标准型 Standard	1	4	3	50
	1.5	4	4.5	50
	2	4	6	50
	2.5	4	7	50
	3	4	8	50
	4	4	11	50
	5	6	13	50
	6	6	15	50
	7	8	18	60
	8	8	20	60
	9	10	23	75
	10	10	25	75
	11	12	28	75
	12	12	30	75
	16	16	40	100
	20	20	40	100
加长型 Extra Long	4	4	16	75
	5	6	20	75
	6	6	25	75
	8	8	30	75
	4	4	20	100
	5	6	25	100
	6	6	30	100
	8	8	35	100
	10	10	40	100
	12	12	45	100
	8	8	40	150
	10	10	50	150
	12	12	50	150
	16	16	70	150
	20	20	80	150

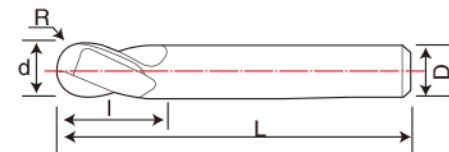
2刃球头立铣刀

2Flutes Ball Nose End Mill



2刃加长球头立铣刀

2Flutes Extra Long Ball Nose End Mill



长度 Length	刃径 Flute Diameter(d)	柄径 Shank Diameter(D)	刃长 Flute Length(l)	全长 Overall Length(L)
标准型 Standard	R0.5	4	2	50
	R0.75	4	3	50
	R1	4	4	50
	R1.25	4	5	50
	R1.5	4	6	50
	R1.75	4	7	50
	R2	4	8	50
	0.5	6	2	50
	R0.75	6	3	50
	R1	6	4	50
	R1.5	6	6	50
	R2	6	8	50
	R2.5	6	10	50
	R3	6	12	50
	R4	8	16	60
	R5	10	20	75
	R6	12	24	75
	R8	16	30	100
	R10	20	30	100
	加长型 Extra Long	R0.5	4	2
R0.75		4	3	75
R1		4	4	75
1.5		4	6	75
R2		4	8	75
R0.5		6	2	75
R0.75		6	3	75
R1		6	4	75
R1.5		6	6	75
R2		6	8	75
R2.5		6	10	75
R3		6	12	75
R2		4	8	100
R3		6	12	100
R4		8	16	100
R5		10	20	100
R6		12	24	100
R8		16	30	150
R10		20	30	150

# 铣刀系列

## Milling Tool Series 不锈钢专用 For Stainless Steel Processing

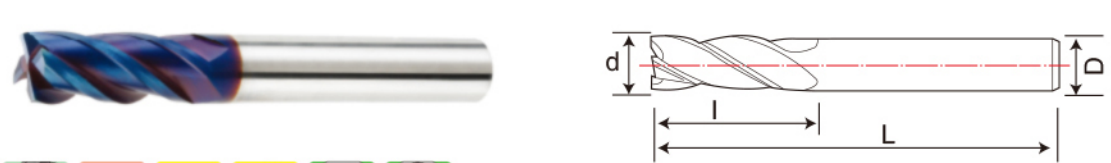
- 适用于航空航天不锈钢、高温合金、钛合金等难加工材料的铣削  
Apply to milling stainless steel、high temperature alloy、hard-to-process material etc. in aerospace industry.
- 大螺旋角和前角设计，切削刃锋利，独特的刀刃形状可抑制切削热对刀尖的影响，大幅提升耐磨性  
Big helical angel and rake design sharpen cutting edge and special edge shape can resist the influence of cutting heat to tool nose, promoting the wear resistance significantly
- 能实现高精度、高表面质量的精加工，加工方式多样，通用性强  
Can realise high precision、high surface quality driven finishing, widely used in various processing methods
- 专用的涂层选择(Specialized coating option)  
采用专门针对不锈钢加工材料的纳米复合涂层  
Use Nano Blue coating specialized to process stainless steel materials



2刃平头立铣刀 2Flutes Square End Mill



4刃平头立铣刀 4Flutes Square End Mill

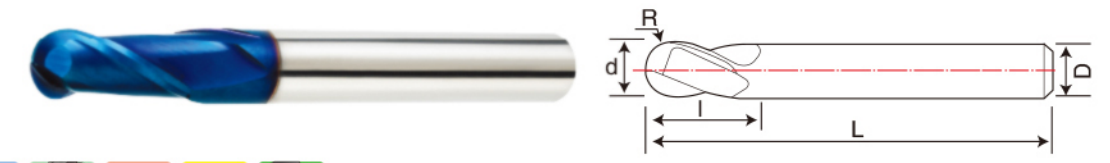


长度 Length	刃径 Flute Diameter(d)	柄径 Shank Diameter(D)	刃长 Flute Length(l)	全长 Overall Length(L)
标准型 Standard	1	4	3	50
	1.5	4	4	50
	2	4	5	50
	2.5	4	6	50
	3	4	8	50
	3.5	4	10	50
	4	4	11	50
	1	6	3	50
	1.5	6	4	50
	2	6	5	50
	2.5	6	6	50
	3	6	8	50
	3.5	6	10	50
	4	6	11	50
	5	6	13	50
	6	6	15	50
	7	8	17	60
	8	8	20	60
	10	10	25	75
	12	12	30	75
14	14	35	100	
16	16	40	100	
18	18	40	100	
20	20	40	100	
加长型 Extra Long	4	4	20	75
	6	6	25	75
	7	8	25	75
	8	8	30	75
	4	4	25	100
	6	6	30	100
	8	8	35	100
	10	10	40	100
	12	12	45	100
	8	8	40	150
	10	10	50	150
	12	12	50	150
	16	16	70	150
	18	18	80	150
	20	20	80	150

2刃球头立铣刀 2Flutes Ball Nose End Mill



2刃加长球头立铣刀 4Flutes Extra Long Ball Nose End Mill

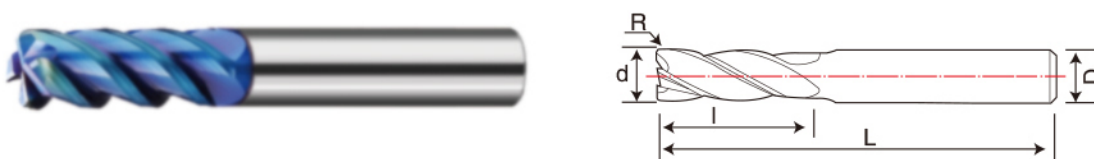


长度 Length	刃径 Flute Diameter(d)	柄径 Shank Diameter(D)	刃长 Flute Length(l)	全长 Overall Length(L)
标准型 Standard	R0.5	4	2	50
	R0.75	4	3	50
	R1	4	4	50
	R1.25	4	5	50
	R1.5	4	6	50
	R1.75	4	7	50
	R2	4	8	50
	0.5	6	2	50
	R0.75	6	3	50
	R1	6	4	50
	R1.5	6	6	50
	R2	6	8	50
	R2.5	6	10	50
	R3	6	12	50
	R4	8	16	60
	R5	10	20	75
	R6	12	24	75
	R8	16	30	100
	R10	20	30	100
	加长型 Extra Long	R0.5	4	2
R0.75		4	3	75
R1		4	4	75
1.5		4	6	75
R2		4	8	75
R0.5		6	2	75
R0.75		6	3	75
R1		6	4	75
R1.5		6	6	75
R2		6	8	75
R2.5		6	10	75
R3		6	12	75
R2		4	8	100
R3		6	12	100
R4		8	16	100
R5		10	20	100
R6		12	24	100
R8		16	30	150
R10		20	30	150

2刃圆鼻立铣刀 2Flutes Corner Radius End Mill



4刃圆鼻立铣刀 4Flutes Corner Radius End Mill



长度 Length	刃径 Flute Diameter(d)	R径 Radius(R)	柄径 Shank Diameter(D)	刃长 Flute Length(l)	全长 Overall Length(L)
标准型 Standard	4	R0.2	4	8	50
	4	R0.5	4	8	50
	4	R1	4	8	50
	6	R0.2	6	12	50
	6	R0.5	6	12	50
	6	R1	6	12	50
	8	R0.5	8	16	60
	8	R1	8	16	60
	8	R1.5	8	16	60
	10	R0.5	10	20	75
	10	R1	10	20	75
	10	R1.5	10	20	75
	10	R2	10	20	75
	10	R2.5	10	20	75
	10	R3	10	20	75
	12	R0.5	12	24	75
	12	R1	12	24	75
	12	R1.5	12	24	75
12	R2	12	24	75	
12	R2.5	12	24	75	
12	R3	12	24	75	
加长型 Extra Long	4	R0.2	4	8	75
	4	R0.5	4	8	75
	4	R1	4	8	75
	6	R0.2	6	12	75
	6	R0.5	6	12	75
	6	R1	6	12	75
	6	R1.5	6	12	75
	8	R0.5	8	16	100
	8	R1	8	16	100
	8	R1.5	8	16	100
	8	R2	8	16	100
	10	R0.5	10	20	100
	10	R1	10	20	100
	10	R1.5	10	20	100
	10	R2	10	20	100
	10	R2.5	10	20	100
	10	R3	10	20	100
	12	R0.5	12	24	100
12	R1	12	24	100	
12	R1.5	12	24	100	
12	R2	12	24	100	
12	R2.5	12	24	100	
12	R3	12	24	100	

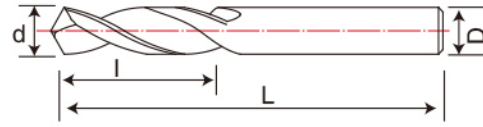
# 钻铰系列

## Drilling & Reaming Tool Series



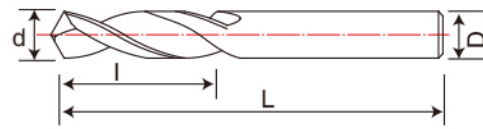
高性能麻花钻

High Performance Drill Bit



高性能麻花钻 (涂层)

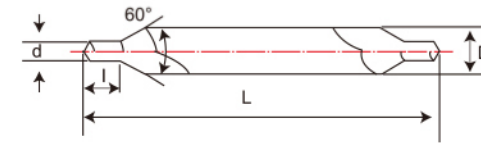
High Performance Drill Bit (with coating)



规格 Size(mm)	规格 Size(mm)
0.4	4.4
0.5	4.5
0.6	4.6
0.7	4.7
0.8	4.8
0.9	4.9
1.0	5.0
1.1	5.1
1.2	5.2
1.3	5.3
1.4	5.4
1.5	5.5
1.6	6.0
1.7	6.5
1.8	7.0
1.9	7.5
2.0	8.0
2.1	8.5
2.2	9.0
2.3	9.5
2.4	10.0
2.5	10.5
2.6	11.0
2.7	11.5
2.8	12.0
2.9	12.5
3.0	13.0
3.1	13.5
3.2	14.0
3.3	15.0
3.4	16.0
3.5	17.0
3.6	18.0
3.7	19.0
3.8	20.0
3.9	21.0
4.0	22.0
4.1	23.0
4.2	24.0
4.3	25.0

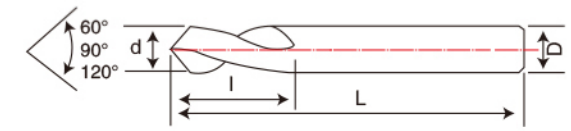
60度中心钻

60° Center Drill



刃径 Flute Diameter(d)	柄径 Shank Diameter(D)	刃长 Flute Length(l)	全长 Overall Length(L)
0.5	3	0.8	50
0.8	3	1.3	50
1.0	4	1.6	50
1.25	4	2.0	50
1.5	4	2.5	50
2.0	6	3.0	50
2.5	6	3.5	50
3.0	8	4.0	60
3.15	8	4.0	60
4.0	10	5.0	75
5.0	12	6.5	75

60度,90度,120度2刃定心钻  
60° ,90° ,120° 2Flutes Spotting Drill



刃径 Flute Diameter(d)	柄径 Shank Diameter(D)	刃长 Flute Length(l)	全长 Overall Length(L)
2.0	2	4	50
3.0	3	6	50
4.0	4	8	50
5.0	5	10	50
6.0	6	12	50
8.0	8	16	60
10.0	10	20	75
12.0	12	20	75
3.0	3	6	75
4.0	4	8	75
5.0	5	10	75
6.0	6	12	75
8.0	8	16	75
4.0	4	8	100
5.0	5	10	100
6.0	6	12	100
8.0	8	16	100
10.0	10	20	100
12.0	12	20	100
6.0	6	12	150
8.0	8	16	150
10.0	10	20	150
12.0	12	20	150
16.0	16	25	150
20.0	20	25	150



高性能铰刀 High Performance Reamer

高性能直槽铰刀 High Performance Straight Flute Reamer



高性能螺旋槽铰刀 High Performance Helical Flute Reamer



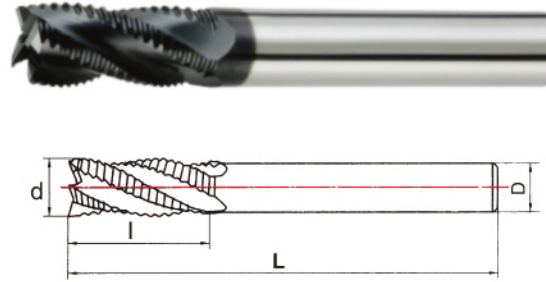
MG HRC ▶ 45 HRC ▶ 55 HRC ▶ 63

规格 Size(mm)	规格 Size(mm)
0.5	4.5
0.6	4.6
0.7	4.7
0.8	4.8
0.9	4.9
1.0	5.0
1.1	5.1
1.2	5.2
1.3	5.3
1.4	5.4
1.5	5.5
1.6	6.0
1.7	6.5
1.8	7.0
1.9	7.5
2.0	8.0
2.1	8.5
2.2	9.0
2.3	9.5
2.4	10.0
2.5	10.5
2.6	11.0
2.7	11.5
2.8	12.0
2.9	12.5
3.0	13.0
3.1	13.5
3.2	14.0
3.3	15.0
3.4	16.0
3.5	17.0
3.6	18.0
3.7	19.0
3.8	20.0
3.9	21.0
4.0	22.0
4.1	23.0
4.2	24.0
4.3	25.0
4.4	

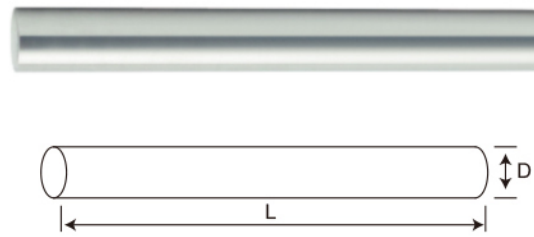
# Specially Produced Tools Woodworking Tools



**4刃波刃立铣刀**  
4 Flutes Roughing End Mill



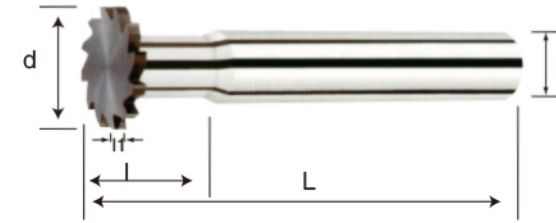
**钨钢圆棒**  
Solid Carbide Rods



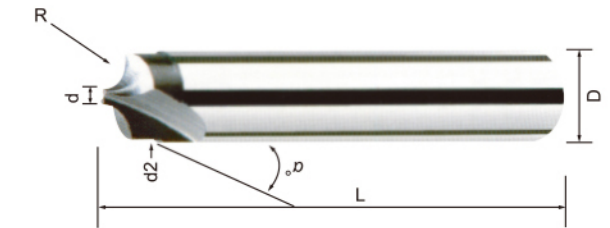
刃径 Flute Diameter(d)	柄径 Shank Diameter(D)	刃长 Flute Length(l)	全长 Overall Length(L)
4.0	4	12	50
4.0	4	16	75
4.0	4	25	100
6.0	6	18	50
6.0	6	24	75
6.0	6	30	100
8.0	8	20	60
8.0	8	35	100
10.0	10	25	75
10.0	10	40	100
12.0	12	30	75
12.0	12	45	100
16.0	16	40	100
16.0	16	70	150
20.0	20	40	100
20.0	20	80	150

柄径 Shank Diameter(D)	全长(1) Overall Length 1 (L)	全长(2) Overall Length 2 (L)
3.0	50	100
4.0	50	100
5.0	50	100
6.0	50	100
8.0	50	100
10.0	50	100
12.0	50	100
英制 Imperial units		
1/8	50	100
3/16	50	100
1/4	50	100
5/16	50	100
3/8	50	100
1/2	50	100
柄径 Shank Diameter(D)	全长(3) Overall Length 3 (L)	全长(4) Overall Length 4 (L)
3.0	150	300
4.0	150	300
5.0	150	300
6.0	150	300
8.0	150	300
10.0	150	300
12.0	150	300
英制 Imperial units		
1/8	150	300
3/16	150	300
1/4	150	300
5/16	150	300
3/8	150	300
1/2	150	300

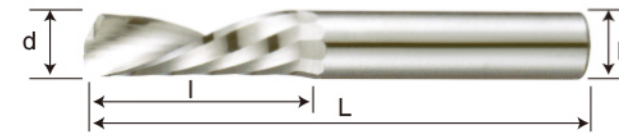
**T型刀** T-slot milling cutter



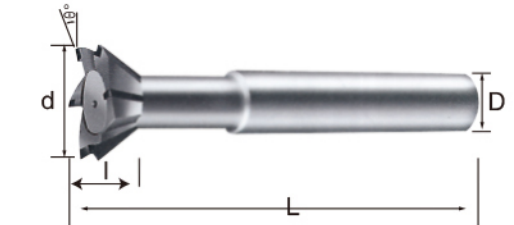
**2刃内R铣刀** 2flutes R Inner Corner End Mill



**单刃铣刀** Single Flute End Mill



**直柄燕尾槽铣刀** Straight shank Dovetail End Mill



规格:按客户来图来样定制 Specification:Do Customer Design

**New** 木工刀具系列 Woodworking Tool Series

**整头合金排钻-A型**  
Gang Drill with Solid Carbide Head -Type A



**整头合金排钻-B型**  
Gang Drill with Solid Carbide Head -Type B



**整体硬质合金复合型波纹粗铣刀**  
Solid Carbide Composite Corrugated Roughing End Mill



**整体硬质合金直刀**  
Solid Carbide Straight Tools



# 非标刀具系列



## Non-standard Cutting Tool Series



### 切削数据表 Cutting Data Parameters



#### 1) 侧面铣削 标准型2刃、4刃 Side Milling Standard 2/4Flutes

加工形态 Shape of cut							$Ae \leq 0.1D (D \leq \Phi 3)$ $Ae \leq 0.2D (D > \Phi 3)$ $Ap \leq 1.5D$				$Ae \leq 0.05D$ $AP \leq 1.00D$	
加工材料 Work material	碳素钢、铸铁 Carbon steel, Castiron AISI 1049, SCM, FC250 ( $\sim 30HRC$ )				合金钢、模具钢、预硬钢 Alloy steel, Die steel, Pre-hardened steel AISI H13, NAK ( $< 45HRC$ )				淬火钢 Hardened steel AISI H13 ( $< 52HRC$ )			
直径 $\Phi D$ (mm)	转速 Rev( $min^{-1}$ )	切削速度Cutting speed(mm/min)		转速 Rev( $min^{-1}$ )	切削速度Cutting speed(mm/min)		转速 Rev( $min^{-1}$ )	切削速度Cutting speed(mm/min)		转速 Rev( $min^{-1}$ )	切削速度Cutting speed(mm/min)	
		2刃 2Flutes	4刃 4Flutes		2刃 2Flutes	4刃 4Flutes		2刃 2Flutes	4刃 4Flutes		2刃 2Flutes	4刃 4Flutes
1	24000	480	720	16000	320	480	12000	96	144			
2	12000	480	720	8000	320	480	6400	96	144			
3	8000	480	720	5600	320	480	4000	96	144			
4	6000	480	720	4160	320	480	3200	96	144			
5	4800	480	720	3360	320	480	2560	96	144			
6	4000	480	720	2800	320	480	2160	96	144			
8	3200	416	624	2240	280	416	1600	88	128			
10	2560	360	544	1760	240	360	1280	80	112			
12	2160	328	496	1520	216	328	1040	80	96			
16	1600	288	440	1120	184	288	800	104	136			
20	1280	256	392	880	176	272	640	88	112			

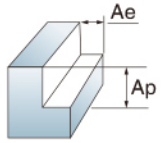
#### 2) 沟槽铣削 标准型2刃、4刃 Slotting Standard 2/4Flutes

加工形态 Shape of cut							$Ae = D (D \leq \Phi 3)$ $Ae \leq 0.1D (D > \Phi 2)$ $Ap \leq 0.2D (D > \Phi 2)$				$Ae = D$ $AP \leq 0.05D (\Phi 0.5 \leq D \leq \Phi 2)$ $AP \leq 0.10D (D > \Phi 2)$	
加工材料 Work material	碳素钢、铸铁 Carbon steel, Castiron AISI 1049, SCM, FC250 ( $\sim 30HRC$ )				合金钢、模具钢、预硬钢 Alloy steel, Die steel, Pre-hardened steel AISI H13, NAK ( $< 45HRC$ )				淬火钢 Hardened steel AISI H13 ( $< 52HRC$ )			
直径 $\Phi D$ (mm)	转速 Rev( $min^{-1}$ )	切削速度Cutting speed(mm/min)		转速 Rev( $min^{-1}$ )	切削速度Cutting speed(mm/min)		转速 Rev( $min^{-1}$ )	切削速度Cutting speed(mm/min)		转速 Rev( $min^{-1}$ )	切削速度Cutting speed(mm/min)	
		2刃 2Flutes	4刃 4Flutes		2刃 2Flutes	4刃 4Flutes		2刃 2Flutes	4刃 4Flutes		2刃 2Flutes	4刃 4Flutes
1	24000	384	576	16000	256	384	12000	77	116			
2	12000	384	576	8000	256	384	6400	77	116			
3	8000	384	576	5600	256	384	4000	77	116			
4	6000	384	576	4160	256	384	3200	77	116			
5	4800	384	576	3360	256	384	2560	77	116			
6	4000	384	576	2800	256	384	2160	77	116			
8	3200	333	500	2240	224	333	1600	71	103			
10	2560	288	436	1760	192	288	1280	64	90			
12	2160	363	397	1520	173	263	1040	64	77			
16	1600	231	352	1120	148	224	800	84	109			
20	1280	205	314	880	141	218	640	71	90			

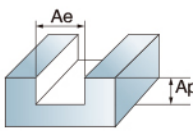
#### 使用中的注意事项

1. 请使用精度高、刚性好的设备和夹具。
  2. 如果加工设备或工具的夹持刚性不足而出现震动或杂音时，请适度降低转速或进给速度。
  3. 纵向进给时，进给速度请设定为上表1/3以下。
  4. 切削不锈钢时，请用湿式加工；切削奥氏体不锈钢时，使用非水溶性切削液效果好。
1. Use rigid and precise machine and tool holder. 2. If chattering and noise occur due to the rigidity of machine or the work material installation is very low, please reduce the revolution and the feed rate proportionately.
3. In drilling, please set the feed rate at 1/3 or below.
4. When cutting stainless steel, please use fluid; when cutting Austenitic stainless steel, non-water-soluble cutting fluid is very effective.

1)侧面铣削 加长型2刃、4刃 Side Milling Extra Long 2/4Flutes

加工形态 Shape of cut	 <p><math>Ae \leq 0.1D (D \leq \Phi 3)</math>  <math>Ae \leq 0.2D (D &gt; \Phi 3)</math>  <math>Ap \leq 1.5D</math></p>						<p><math>Ae \leq 0.05D</math>  <math>AP \leq 1.00D</math></p>		
加工材料 Work material	碳素钢、铸铁 Carbon steel, Castiron AISI 1049, SCM,FC250 ( $\sim 30HRC$ )		合金钢、模具钢、预硬钢 Alloy steel, Die steel, Pre-hardened steel AISI H13, NAK ( $< 45HRC$ )			淬火钢 Hardened steel AISI H13 ( $< 52HRC$ )			
直径 $\Phi D$ (mm)	转速 Rev( $min^{-1}$ )	切削速度Cutting speed(mm/min)		转速 Rev( $min^{-1}$ )	切削速度Cutting speed(mm/min)		转速 Rev( $min^{-1}$ )	切削速度Cutting speed(mm/min)	
		2刃 2Flutes	4刃 4Flutes		2刃 2Flutes	4刃 4Flutes		2刃 2Flutes	4刃 4Flutes
1	15000	300	450	10000	200	300	7500	60	90
2	7500	300	450	5000	200	300	4000	60	90
3	5000	300	450	3500	200	300	2500	60	90
4	3750	300	450	2600	200	300	2000	60	90
5	3000	300	450	2100	200	300	1600	60	90
6	2500	300	450	1750	200	300	1350	60	90
8	2000	260	390	1400	175	260	1000	55	80
10	1600	225	340	1100	150	225	800	50	70
12	1350	205	310	950	135	205	650	50	60
16	1000	180	275	700	115	175	500	65	85
20	800	160	245	550	110	170	400	55	70

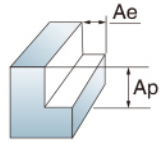
2)沟槽铣削 加长型2刃、4刃 Slotting Extra Long 2/4Flutes

加工形态 Shape of cut	 <p><math>Ae = D (D \leq \Phi 3)</math>  <math>Ae \leq 0.1D (D &gt; \Phi 2)</math>  <math>Ap \leq 0.2D (D &gt; \Phi 2)</math></p>						<p><math>Ae = D</math>  <math>AP \leq 0.05D (\Phi 0.5 \leq D \leq \Phi 2)</math>  <math>AP \leq 0.10D (D &gt; \Phi 2)</math></p>		
加工材料 Work material	碳素钢、铸铁 Carbon steel, Castiron AISI 1049, SCM,FC250 ( $\sim 30HRC$ )		合金钢、模具钢、预硬钢 Alloy steel, Die steel, Pre-hardened steel AISI H13, NAK ( $< 45HRC$ )			淬火钢 Hardened steel AISI H13 ( $< 52HRC$ )			
直径 $\Phi D$ (mm)	转速 Rev( $min^{-1}$ )	切削速度Cutting speed(mm/min)		转速 Rev( $min^{-1}$ )	切削速度Cutting speed(mm/min)		转速 Rev( $min^{-1}$ )	切削速度Cutting speed(mm/min)	
		2刃 2Flutes	4刃 4Flutes		2刃 2Flutes	4刃 4Flutes		2刃 2Flutes	4刃 4Flutes
1	15000	240	360	10000	160	240	7500	48	72
2	7500	240	360	5000	160	240	4000	48	72
3	5000	240	360	3500	160	240	2500	48	72
4	3750	240	360	2600	160	240	2000	48	72
5	3000	240	360	2100	160	240	1600	48	72
6	2500	240	360	1750	160	240	1350	48	72
8	2000	208	312	1400	140	208	1000	44	64
10	1600	180	272	1100	120	180	800	40	56
12	1350	164	248	950	108	164	650	40	48
16	1000	144	220	700	92	140	500	52	68
20	800	128	196	550	88	136	400	44	56

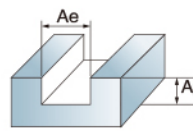
使用中的注意事项

1. 请使用精度高、刚性好的设备和夹具。
  2. 如果加工设备或工具的夹持刚性不足而出现震动或杂音时，请适度降低转速或进给速度。
  3. 纵向进给时，进给速度请设定为上表1/3以下。
  4. 切削不锈钢时，请用湿式加工；切削奥氏体不锈钢时，使用非水溶性切削液效果好。
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1)侧面铣削 标准型2刃、4刃 Side Milling Standard 2/4Flutes

加工形态 Shape of cut	 <p><math>Ae \leq 0.1D (D \leq \Phi 3)</math>  <math>Ae \leq 0.2D (D &gt; \Phi 3)</math>  <math>Ap \leq 1.5D</math></p>											
加工材料 Work material	铝合金、铜 Aluminum Alloy, cuprum		碳素钢、铸铁 Carbon steel, Castiron AISI 1049, SCM,FC250 ( $\sim 30HRC$ )		合金钢、模具钢 Alloy steel, Die steel ( $< 35HRC$ )		不锈钢 Stainless steel AISI 1304, AISI1316					
直径 $\Phi D$ (mm)	转速 Rev( $min^{-1}$ )	切削速度Cutting speed(mm/min)		转速 Rev( $min^{-1}$ )	切削速度Cutting speed(mm/min)		转速 Rev( $min^{-1}$ )	切削速度Cutting speed(mm/min)		转速 Rev( $min^{-1}$ )	切削速度Cutting speed(mm/min)	
		2刃 2Flutes	4刃 4Flutes		2刃 2Flutes	4刃 4Flutes		2刃 2Flutes	4刃 4Flutes		2刃 2Flutes	4刃 4Flutes
1	30400	240	480	16000	96	192	9600	56	112	8000	48	96
2	17600	352	640	8800	144	216	5760	88	136	4800	75	112
3	13600	384	696	6800	160	240	4240	104	160	3520	88	136
4	11200	584	880	5760	288	432	3520	176	264	2960	144	216
5	9600	688	1040	4800	304	456	2880	184	280	2400	152	232
6	8800	792	1200	4240	336	504	2560	192	288	2160	168	256
8	6400	800	1200	3200	360	544	1920	192	288	1600	176	264
10	5120	720	1080	2560	312	472	1520	152	232	1280	152	232
12	4240	592	880	2160	264	400	1280	128	192	1040	120	184
16	3200	448	672	1600	192	288	960	96	144	800	96	144
20	2560	360	544	1280	160	240	800	80	120	640	76	112

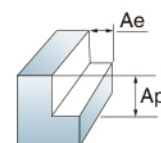
2)沟槽铣削 标准型2刃、4刃 Slotting Standard 2/4Flutes

加工形态 Shape of cut	 <p>2刃 <math>Ae = D</math>  <math>Ap \leq 0.1D (D &lt; \Phi 2)</math>  <math>Ap \leq 0.3D (\Phi 2 \leq D \leq \Phi 3)</math>  <math>Ap \leq 0.5D (D &gt; \Phi 3)</math></p> <p>4刃 <math>Ae = D</math>  <math>Ap \leq 0.3D (D \leq \Phi 3)</math>  <math>Ap \leq 0.5D (D &gt; \Phi 3)</math></p>											
加工材料 Work material	铝合金、铜 Aluminum Alloy, cuprum		碳素钢、铸铁 Carbon steel, Castiron AISI 1049, SCM,FC250 ( $\sim 30HRC$ )		合金钢、模具钢 Alloy steel, Die steel ( $< 35HRC$ )		不锈钢 Stainless steel AISI 1304, AISI1316					
直径 $\Phi D$ (mm)	转速 Rev( $min^{-1}$ )	切削速度Cutting speed(mm/min)		转速 Rev( $min^{-1}$ )	切削速度Cutting speed(mm/min)		转速 Rev( $min^{-1}$ )	切削速度Cutting speed(mm/min)		转速 Rev( $min^{-1}$ )	切削速度Cutting speed(mm/min)	
		2刃 2Flutes	4刃 4Flutes		2刃 2Flutes	4刃 4Flutes		2刃 2Flutes	4刃 4Flutes		2刃 2Flutes	4刃 4Flutes
1	30400	240	384	16000	96	154	9600	56	90	8000	48	77
2	17600	352	512	8800	144	173	5760	88	109	4800	72	90
3	13600	384	560	6800	160	192	4240	104	128	3520	88	109
4	11200	464	704	5760	232	346	3520	144	212	2400	88	173
5	9600	552	832	4800	240	365	2880	144	224	1920	88	186
6	8800	632	960	4240	272	404	2560	152	231	1760	104	205
8	6400	640	960	3200	288	436	1920	152	231	1280	104	212
10	5120	576	864	2560	248	378	1520	120	186	1040	88	186
12	3200	472	704	2160	208	320	1280	104	154	800	72	148
16	2560	360	538	1600	152	231	960	80	116	640	56	116
20	2000	288	436	1280	128	192	800	64	96	512	48	90

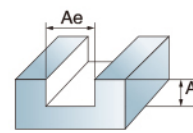
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1)侧面铣削 加长型2刃、4刃 Side Milling Extra Long 2/4Flutes

加工形态 Shape of cut	 <p><math>Ae \leq 0.1D (D \leq \Phi 3)</math>  <math>Ae \leq 0.2D (D &gt; \Phi 3)</math>  <math>Ap \leq 1.5D</math></p>										
加工材料 Work material	铝合金, 铜 Aluminum Alloy, cuprum		碳素钢、铸铁 Carbon steel, Castiron AISI 1049, SCM,FC250 (30HRC)			合金钢、模具钢 Alloy steel, Die steel ( $< 35HRC$ )			不锈钢 Stainless steel AISI 1304, AISI1316		
直径 $\Phi D$ (mm)	转速 Rev.(min <sup>-1</sup> )	切削速度Cutting speed(mm/min) 2刃 2Flutes 4刃 4Flutes	转速 Rev.(min <sup>-1</sup> )	切削速度Cutting speed(mm/min) 2刃 2Flutes 4刃 4Flutes	转速 Rev.(min <sup>-1</sup> )	切削速度Cutting speed(mm/min) 2刃 2Flutes 4刃 4Flutes	转速 Rev.(min <sup>-1</sup> )	切削速度Cutting speed(mm/min) 2刃 2Flutes 4刃 4Flutes	转速 Rev.(min <sup>-1</sup> )	切削速度Cutting speed(mm/min) 2刃 2Flutes 4刃 4Flutes	
1	19000	50 300	10000	60 120	6000	35 70	5000	30 60			
2	11000	220 400	5500	90 135	3600	55 85	3000	45 70			
3	8500	240 435	4250	100 150	2650	65 100	2200	55 85			
4	7000	365 550	3600	180 270	2200	110 165	1850	90 135			
5	6000	430 650	3000	190 185	1800	115 175	1500	95 145			
6	5500	495 750	2650	210 315	1600	120 180	1350	105 160			
8	4000	500 750	2000	225 340	1200	120 180	1000	110 165			
10	3200	450 675	1600	195 295	950	95 145	800	95 145			
12	2560	370 550	1350	165 250	800	80 120	650	75 115			
16	2000	280 420	1000	120 180	600	60 90	500	60 90			
20	1600	225 340	800	100 150	500	50 75	400	48 70			

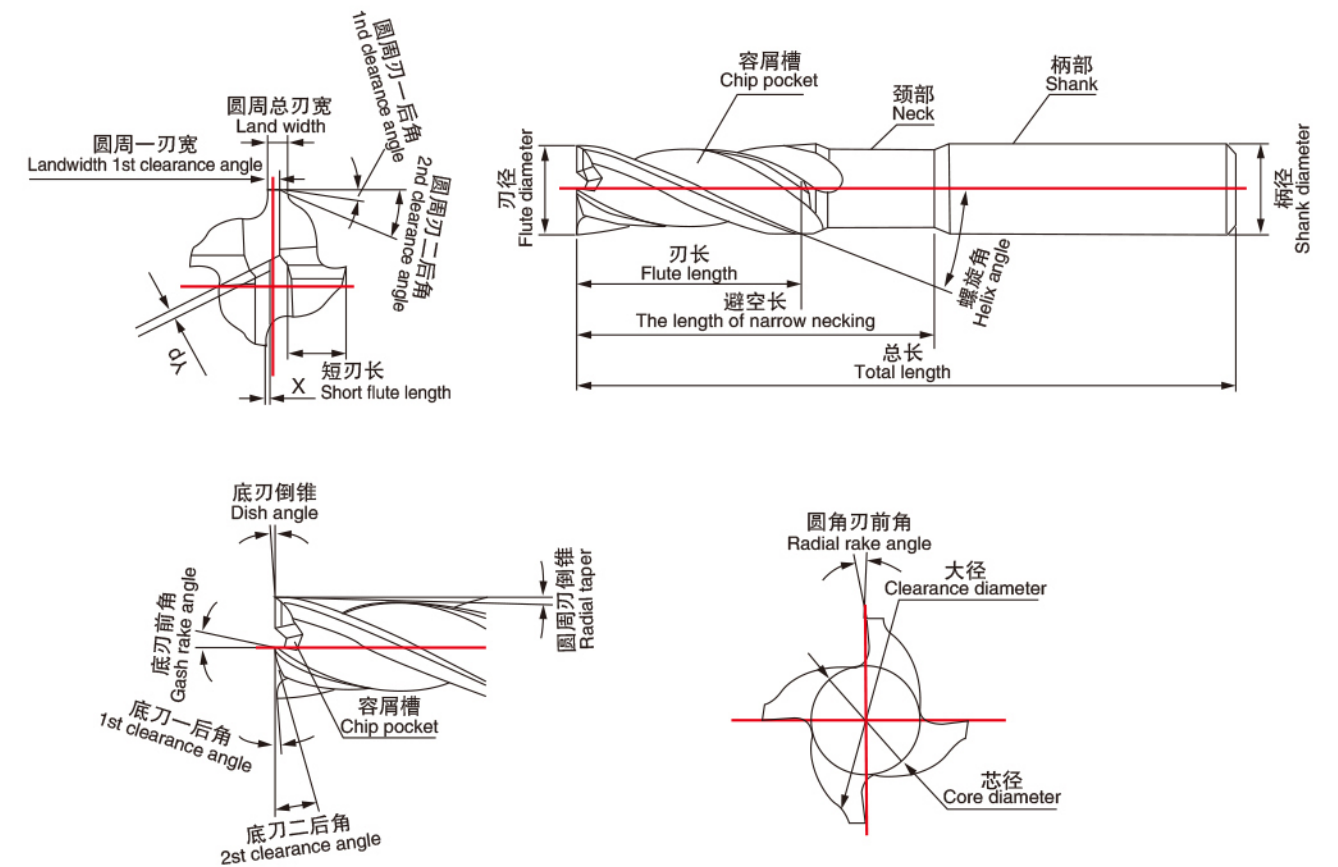
2)沟槽铣削 加长型2刃、4刃 Slotting Extra Long 2/4Flutes

加工形态 Shape of cut	 <p>2刃 <math>Ae=D</math> <math>Ap \leq 0.1D (D &lt; \Phi 2)</math>  <math>Ap \leq 0.3D (\Phi 2 \leq D \leq \Phi 3)</math>  <math>Ap \leq 0.5D (D &gt; \Phi 3)</math>          4刃 <math>Ae=D</math> <math>Ap \leq 0.3D (D \leq \Phi 3)</math>  <math>Ap \leq 0.5D (D &gt; \Phi 3)</math></p>										
加工材料 Work material	铝合金, 铜 Aluminum Alloy, cuprum		碳素钢、铸铁 Carbon steel, Castiron AISI 1049, SCM,FC250 (30HRC)			合金钢、模具钢 Alloy steel, Die steel ( $< 35HRC$ )			不锈钢 Stainless steel AISI 1304, AISI1316		
直径 $\Phi D$ (mm)	转速 Rev.(min <sup>-1</sup> )	切削速度Cutting speed(mm/min) 2刃 2Flutes 4刃 4Flutes	转速 Rev.(min <sup>-1</sup> )	切削速度Cutting speed(mm/min) 2刃 2Flutes 4刃 4Flutes	转速 Rev.(min <sup>-1</sup> )	切削速度Cutting speed(mm/min) 2刃 2Flutes 4刃 4Flutes	转速 Rev.(min <sup>-1</sup> )	切削速度Cutting speed(mm/min) 2刃 2Flutes 4刃 4Flutes	转速 Rev.(min <sup>-1</sup> )	切削速度Cutting speed(mm/min) 2刃 2Flutes 4刃 4Flutes	
1	19000	150 240	10000	60 96	6000	35 56	5000	30 48			
2	11000	220 320	5500	90 108	3600	55 68	3000	45 56			
3	8500	240 350	4250	100 120	2650	65 80	2200	55 68			
4	7000	290 440	3600	145 216	2200	90 132	1500	55 108			
5	6000	345 520	3000	150 228	1800	90 140	1200	55 116			
6	5500	395 600	2650	170 252	1600	95 144	1100	65 128			
8	4000	400 600	2000	180 272	1200	95 144	800	65 132			
10	3200	360 540	1600	155 236	950	75 116	650	55 116			
12	2560	295 440	1350	130 200	800	65 96	500	45 92			
16	2000	225 336	1000	95 144	600	50 72	400	35 72			
20	1600	180 272	800	80 120	500	40 60	320	30 56			






使用中的注意事项

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  2. 如果加工设备或工具的夹持刚性不足而出现震动或杂音时, 请适度降低转速或进给速度。
  3. 纵向进给时, 进给速度请设定为上表1/3以下。
  4. 切削不锈钢时, 请用湿式加工; 切削奥氏体不锈钢时, 使用非水溶性切削液效果好。
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铣刀各部分名称 Name of End Mill Parts



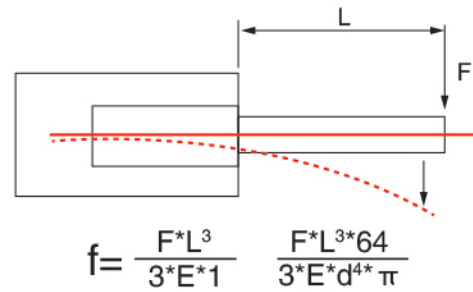
铣刀系列 Series of End Mill

铣刀种类 End mill type	铣刀形状 End mill shape
◆ 平头铣刀 Square End mill	
◆ 圆鼻铣刀 Corner Radius End mill	
◆ 球头铣刀 Ball End mill	
◆ 波刃铣刀 Roughing End mill	
◆ 锥度铣刀 Taper End mill	

悬长(悬伸)和刃径 Relation Between Flute Length and Radius

立铣刀悬长(悬伸)越短,刚性越高,在切削过程中不容易产生弯曲和振动,提高加工精度,悬长(悬伸)增加1倍,挠曲度f变为原来的8倍。

The shorter overhanging length, the higher rigidity. That ensured the cutter will not likely curved and shaken while cutting process, and also enhanced processing precision. The overhang length to be doubled, the deflection degree(f) turned into eight times.

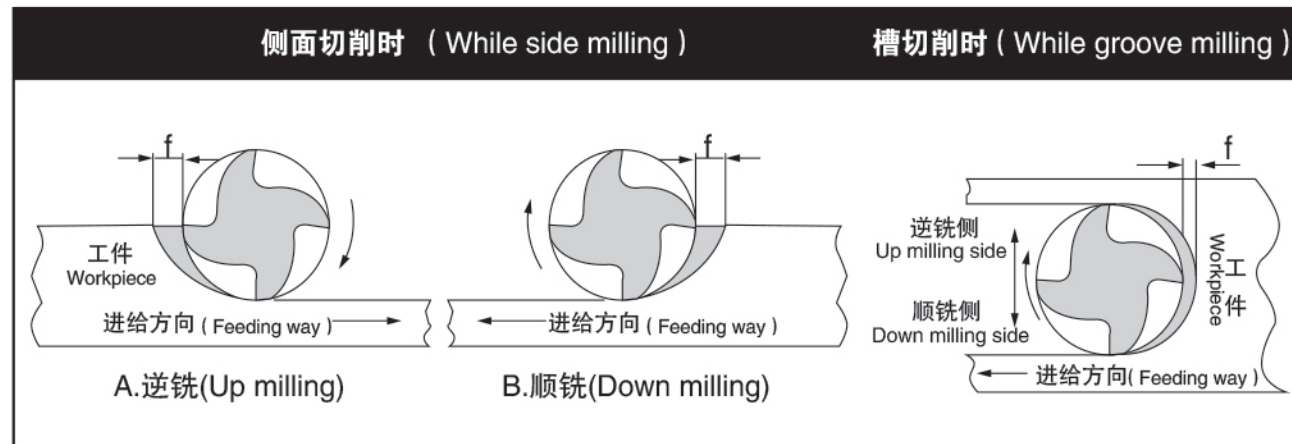


- ◆ 悬长(悬伸)L减少20%, 挠曲度f减少50%  
The overhang length(L) reduced 20%, the deflection degree(f) reduced 50%
- ◆ 刀具直径d增大20%, 挠曲度f减少50%  
The cutter diameter(d) increased 20%, the deflection degree(f) reduced 50%

刃数, 容屑槽和刀具刚性 Number of Flute, Chip groove, Rigidity

刃数 Number of flute		2刃 2 flutes	3刃 3 flutes	4刃 4 flutes
截面形状 Cross-section shape				
横截面所占比例 The proportion of cross section area		54%	56%	60%
特征 Features	优点 Advantage	容屑空间大切削容易排出 Big chip space makes the chips easily out	切削排出容易, 表面光洁度良好 Easily chip removal, better surface fineness	刚性好, 表面光洁度良好 Better rigidity and surface fineness
	缺点 Disadvantage	刚性差 Poor rigidity	外径测定较困难 Hard measuring of outer diameter	切削排除不畅 Bad chip removal
用途 Application		1.切槽加工(groove processing) 2.侧面加工(Side processing) 3.孔加工(Spot facing processing)	1.切槽加工(groove processing) 2.侧面加工(Side processing) 3.重切削(Heavy machining) 4.精加工(Finish machining)	1.切槽加工(groove processing) 2.侧面加工(Side processing) 3.精加工(Finish machining)

顺铣和逆铣 Climb Milling and Conventional Milling



立铣刀常见问题及解决方案 FAQ&Solution Plan Regarding End Mill

解决方法 Solution	常见问题 Common issues	刀具材料选择 Cutter material choice		切削条件 Cutting condition					刀具形状 Cutter shape		机床装夹 Machint tool clamping				
		选择涂层材料 Coating material choice	切削速度 Cutting speed	进给量 Feeding amount	切削深度 Cutting depth	切削方向(顺铣/逆铣) Cutting direction(down milling/up milling)	切削液 Cutting fluid	螺旋角 Helix angle	刃数 No. of Flute	铣刀直径 Flute diameter	减少刀具悬伸量 Reduce cutter overhanging volume	提高刀具安装精度 Magnify tool installation precision	更换夹头 Replace chuck	提高夹紧力 Improve clamping force	提高工件安装刚性 Magnify the install rigidity workpiece
刀具折断 Cutter break	立铣刀折断 End-mill break			↓	↓					↓	↑	√	√		
切削刃磨损 Attrition of cutting blade	切削刃磨损较快 Faster attrition of cutting blade	√	↓	↑	顺铣 Down milling	√				↑					
	崩刃 Blade break		↓	↓	顺铣 Down milling		干式 Dry type					√	√	√	
	切削粘结严重 Serious cutting bond	√				√	湿式 Wet type		↑						
加工精度 Processing precision	表面质量差 Bad surface quality		↑	↓	↓		√	湿式 Wet type						√	
	起伏 Rise and fall			↓	↓				↓	↑	↑		√	√	
	侧面不平 Uneven side			↓	↓	逆铣 Up milling	√		↑	↑	↑	√			
	毛刺及崩碎、剥落 Burrs, broken and spalling			↓	↓				↓						
	振动较大 Big vibration		↓	↑					↑	↓		√	√	√	√
切削处理 Milling dispose	切削排除不畅 Poor chip removal			↓	↓		√			↓					
其它 Others		1、刀尖磨损过大时, 容易导致铣刀折断加工面精度较差, 此时需要对刀具进行重磨 While the oversized attrition of tool nose can easily lead to broken cutters poor processing surface precision, then the cutter need regrinding 2、刀具悬伸量应尽可能短 Make the cutter overhanging amount as small as possible													