



GWCT

硬质合金刀具

Cemented Carbide Tools



成都长城切削刀具有限责任公司
Chengdu Great Wall Cutting Tools Co., Ltd.

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成都长城切削刀具有限责任公司
Chengdu Great Wall Cutting Tools Co., Ltd.



品质成就未来
Quality makes the future

成都长城切削刀具有限责任公司
Chengdu Great Wall Cutting Tools Co., Ltd.

公司简介 Company profile

成都长城切削刀具有限责任公司是世界500强中国五矿集团旗下一家集产学研于一体的专业切削刀具企业。由国内硬质合金行业领先的自贡硬质合金有限责任公司和株洲钻石切削刀具股份有限公司共同增资扩股原自贡硬质合金有限责任公司下属全资子公司成都格润特新材料有限公司更名设立。

公司现有主营业务包括：

(1) 硬质合金整体刀具业务(原自硬公司全资子公司成都格润特新材料有限公司全部业务,整体并入公司下属整体刀具分厂),主要产品包括硬质合金铣削刀具、钻削刀具、铰削刀具,硬质合金丝锥、粉末冶金和高钴钢丝锥,硬质合金拉削刀具五大系列;

(2) 硬质合金数控切削刀片业务(公司新设立的数控刀片分厂,即新投资建设的高品质数控刀片产品生产线),主要产品包括通用数控车刀片、铣刀片,以及螺纹刀片等其它专用数控刀片;

(3) 硬质合金传统刀片业务(原自硬公司刀片分厂业务,整体并入公司下属传统刀片分厂),主要产品包括常规机夹刀片、焊接刀片,以及其它专用刀片。

产品品牌为行业知名的“长城牌”。公司技术、营销、制造体系完备,致力于为切削刀具产品客户提供完整解决方案,致力于成为广大客户最信赖的战略合作伙伴。

Chengdu Great Wall Cutting Tools Co., Ltd. is a professional cutting tool enterprise integrating production, teaching and research under China Minmetals group which is one of the World's Top 500 enterprises. Its original name is Chengdu Gerunte High-tech material Co.,Ltd which is a subsidiary company of Zigong Cemented Carbide Co., Ltd.It is increased investment by the leaders of domestic cemented carbide industry --- Zigong Cemented Carbide Co., Ltd. and Zhuzhou Diamond Cutting Tools Co., Ltd and changed name to Chengdu Great Wall Cutting Tools Co., Ltd.

The company's current main businesses include:

(1) Solid carbide cutting tools business, the main products include five series:carbide milling tools, drilling tools, reaming tools, carbide taps, Powder metallurgy and high cobalt steel taps, carbide broaching tools.

(2)Carbide CNC inserts business.The main products include general CNC cutting inserts, milling inserts, thread inserts and other special CNC inserts.

(3) Cemented carbide traditional inserts business.The main products include conventional clamping inserts, welding inserts, and other special inserts.

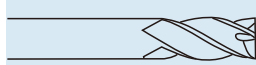

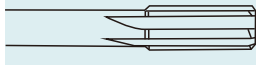

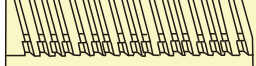

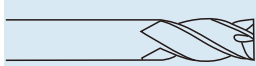

The product brand is "Great Wall" which is well known by this industry. The company has a complete system of technology, marketing and manufacturing, and is committed to providing complete solutions for customers of cutting tools products,and also committed to become the most trusted strategic partner of our clients.





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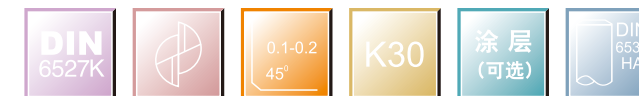
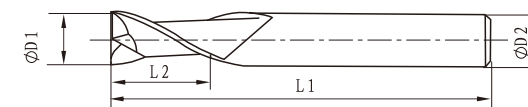
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通用立铣刀 3123K Universal end milling cutter 3123K



刃径 Cutter diameter	柄径 Shank diameter	总长 Overall length	刃长 Cutting edge length	刃数 The number of flutes	订货号 Order number	
D1 (h9)	D2 (h6)	L1	L2	Z	不涂层 Uncoating	涂层 Coating
3	4	50	4	2	3123k-030	■ 3123k-030T
4	4	50	5	2	3123k-040	■ 3123k-040T
5	6	50	6	2	3123k-050	■ 3123k-050T
6	6	50	7	2	3123k-060	■ 3123k-060T
7	8	60	8	2	3123k-070	■ 3123k-070T
8	8	60	9	2	3123k-080	■ 3123k-080T
9	10	60	10	2	3123k-090	■ 3123k-090T
10	10	60	11	2	3123k-100	■ 3123k-100T
12	12	75	12	2	3123k-120	■ 3123k-120T
14	14	75	14	2	3123k-140	■ 3123k-140T
16	16	80	16	2	3123k-160	■ 3123k-160T
18	18	80	18	2	3123k-180	■ 3123k-180T
20	20	80	20	2	3123k-200	■ 3123k-200T

○按订单生产 Production by order

铸铁

不锈钢

钛合金

耐热合金

铝合金

HB<300

HRC30-40

HRC40-45

HRC45-55

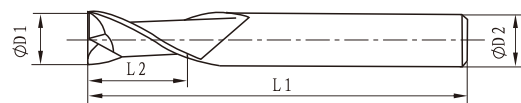
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首选

可选

不选

通用立铣刀 3123L Universal end milling cutter 3123L

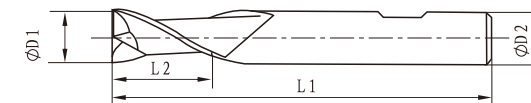


DIN 6527L
0.1-0.2 45°
K30
涂层 (可选)
DIN 6535 HA

刃径 Cutter diameter	柄径 Shank diameter	总长 Overall length	刃长 Cutting edge length	刃数 The number of flutes	订货号 Order number	
D1 (h9)	D2 (h6)	L1	L2	Z	不涂层 Uncoating	涂层 Coating
3	4	75	12	2	3123L-030	■ 3123L-030T
4	4	75	15	2	3123L-040	■ 3123L-040T
5	6	75	20	2	3123L-050	■ 3123L-050T
6	6	75	20	2	3123L-060	■ 3123L-060T
7	8	75	20	2	3123L-070	■ 3123L-070T
8	8	100	25	2	3123L-080	■ 3123L-080T
9	10	100	25	2	3123L-090	■ 3123L-090T
10	10	100	30	2	3123L-100	■ 3123L-100T
12	12	100	35	2	3123L-120	■ 3123L-120T
14	14	100	40	2	3123L-140	■ 3123L-140T
16	16	150	50	2	3123L-160	■ 3123L-160T
18	18	150	50	2	3123L-180	■ 3123L-180T
20	20	150	55	2	3123L-200	■ 3123L-200T

○按订单生产 Production by order

通用立铣刀 3123H Universal end milling cutter 3123H



DIN 6527L
0.1-0.2 45°
K30
涂层 (可选)
DIN 6535 HB

刃径 Cutter diameter	柄径 Shank diameter	总长 Overall length	刃长 Cutting edge length	刃数 The number of flutes	订货号 Order number	
D1 (h9)	D2 (h6)	L1	L2	Z	不涂层 Uncoating	涂层 Coating
3	4	75	12	2	3123H-030	■ 3123H-030T
4	4	75	15	2	3123H-040	■ 3123H-040T
5	6	75	20	2	3123H-050	■ 3123H-050T
6	6	75	20	2	3123H-060	■ 3123H-060T
7	6	75	20	2	3123H-070	■ 3123H-070T
8	8	100	25	2	3123H-080	■ 3123H-080T
9	10	100	25	2	3123H-090	■ 3123H-090T
10	10	100	30	2	3123H-100	■ 3123H-100T
12	12	100	35	2	3123H-120	■ 3123H-120T
14	14	100	40	2	3123H-140	■ 3123H-140T
16	16	150	50	2	3123H-160	■ 3123H-160T
18	18	150	50	2	3123H-180	■ 3123H-180T
20	20	150	55	2	3123H-200	■ 3123H-200T

○按订单生产 Production by order

铸铁

不锈钢

钛合金

耐热合金

铝合金

HB<300

HRC30-40

HRC40-45

HRC45-55

HRC>55

首选

可选

不选

铸铁

不锈钢

钛合金

耐热合金

铝合金

HB<300

HRC30-40

HRC40-45

HRC45-55

HRC>55

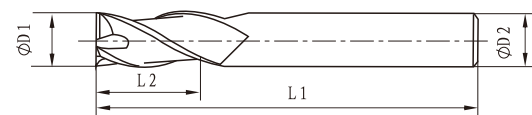
首选

可选

不选

通用立铣刀 3133K

Universal end milling cutter 3133K



DIN 6527K

0.1-0.2
45°

K30

涂层
(可选)

DIN 6535
HA

刃径 Cutter diameter	柄径 Shank diameter	总长 Overall length	刃长 Cutting edge length	刃数 The number of flutes	订货号 Order number	
D1 (h9)	D2 (h6)	L1	L2	Z	不涂层 Uncoating	涂层 Coating
3	4	50	4	3	3133K-030	■ 3133K-030T
4	4	50	5	3	3133K-040	■ 3133K-040T
5	6	50	6	3	3133K-050	■ 3133K-050T
6	6	50	7	3	3133K-060	■ 3133K-060T
7	8	60	8	3	3133K-070	■ 3133K-070T
8	8	60	9	3	3133K-080	■ 3133K-080T
9	10	60	10	3	3133K-090	■ 3133K-090T
10	10	60	11	3	3133K-100	■ 3133K-100T
12	12	75	12	3	3133K-120	■ 3133K-120T
14	14	75	14	3	3133K-140	■ 3133K-140T
16	16	80	16	3	3133K-160	■ 3133K-160T
18	18	80	18	3	3133K-180	■ 3133K-180T
20	20	80	20	3	3133K-200	■ 3133K-200T

○按订单生产 Production by order

铸铁

不锈钢

钛合金

耐热合金

铝合金

HB<300

HRC30-40

HRC40-45

HRC45-55

HRC>55

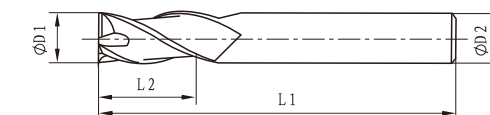
首选

可选

不选

通用立铣刀 3133L

Universal end milling cutter 3133L



DIN 6527L

0.1-0.2
45°

K30

涂层
(可选)

DIN 6535
HA

刃径 Cutter diameter	柄径 Shank diameter	总长 Overall length	刃长 Cutting edge length	刃数 The number of flutes	订货号 Order number	
D1 (h9)	D2 (h6)	L1	L2	Z	不涂层 Uncoating	涂层 Coating
3	4	75	12	3	3133L-030	■ 3133L-030T
4	4	75	15	3	3133L-040	■ 3133L-040T
5	6	75	20	3	3133L-050	■ 3133L-050T
6	6	75	20	3	3133L-060	■ 3133L-060T
7	8	75	20	3	3133L-070	■ 3133L-070T
8	8	100	25	3	3133L-080	■ 3133L-080T
9	10	100	25	3	3133L-090	■ 3133L-090T
10	10	100	30	3	3133L-100	■ 3133L-100T
12	12	100	35	3	3133L-120	■ 3133L-120T
14	14	100	40	3	3133L-140	■ 3133L-140T
16	16	150	50	3	3133L-160	■ 3133L-160T
18	18	150	50	3	3133L-180	■ 3133L-180T
20	20	150	55	3	3133L-200	■ 3133L-200T

○按订单生产 Production by order

铸铁

不锈钢

钛合金

耐热合金

铝合金

HB<300

HRC30-40

HRC40-45

HRC45-55

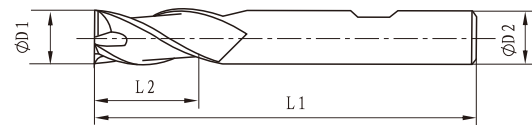
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首选

可选

不选

通用立铣刀 3133H Universal end milling cutter 3133H



DIN 6527L
0.1-0.2 45°
K30
涂层 (可选)
DIN 6535 HB

刃径 Cutter diameter	柄径 Shank diameter	总长 Overall length	刃长 Cutting edge length	刃数 The number of flutes	订货号 Order number	
D1 (h9)	D2 (h6)	L1	L2	Z	不涂层 Uncoating	涂层 Coating
3	4	75	12	3	3133H-030	■ 3133H-030T
4	4	75	15	3	3133H-040	■ 3133H-040T
5	6	75	20	3	3133H-050	■ 3133H-050T
6	6	75	20	3	3133H-060	■ 3133H-060T
7	8	75	20	3	3133H-070	■ 3133H-070T
8	8	100	25	3	3133H-080	■ 3133H-080T
9	10	100	25	3	3133H-090	■ 3133H-090T
10	10	100	30	3	3133H-100	■ 3133H-100T
12	12	100	35	3	3133H-120	■ 3133H-120T
14	14	100	40	3	3133H-140	■ 3133H-140T
16	16	150	50	3	3133H-160	■ 3133H-160T
18	18	150	50	3	3133H-180	■ 3133H-180T
20	20	150	55	3	3133H-200	■ 3133H-200T

○按订单生产 Production by order

铸铁

不锈钢

钛合金

耐热合金

铝合金

HB<300

HRC30-40

HRC40-45

HRC45-55

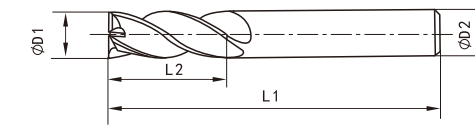
HRC>55

首选

可选

不选

通用立铣刀 3143K Universal end milling cutter 3143K



DIN 6527K
0.1-0.2 45°
K30
涂层 (可选)
DIN 6535 HA

刃径 Cutter diameter	柄径 Shank diameter	总长 Overall length	刃长 Cutting edge length	刃数 The number of flutes	订货号 Order number	
D1 (h9)	D2 (h6)	L1	L2	Z	不涂层 Uncoating	涂层 Coating
3	4	50	5	4	3143K-030	■ 3143K-030T
4	4	50	8	4	3143K-040	■ 3143K-040T
5	6	50	9	4	3143K-050	■ 3143K-050T
6	6	50	10	4	3143K-060	■ 3143K-060T
7	8	60	11	4	3143K-070	■ 3143K-070T
8	8	60	12	4	3143K-080	■ 3143K-080T
9	10	60	13	4	3143K-090	■ 3143K-090T
10	10	60	14	4	3143K-100	■ 3143K-100T
12	12	75	16	4	3143K-120	■ 3143K-120T
14	14	75	18	4	3143K-140	■ 3143K-140T
16	16	80	22	4	3143K-160	■ 3143K-160T
18	18	80	24	4	3143K-180	■ 3143K-180T
20	20	80	26	4	3143K-200	■ 3143K-200T

○按订单生产 Production by order

铸铁

不锈钢

钛合金

耐热合金

铝合金

HB<300

HRC30-40

HRC40-45

HRC45-55

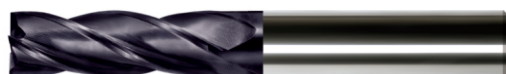
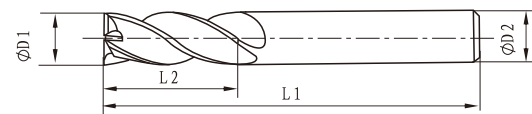
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首选

可选

不选

通用立铣刀 3143L Universal end milling cutter 3143L



DIN 6527L

0.1-0.2
45°

K30

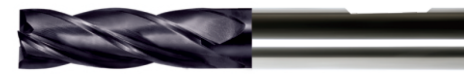
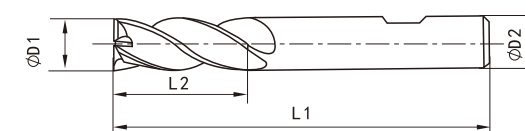
涂层
(可选)

DIN 6535
HA

刃径 Cutter diameter	柄径 Shank diameter	总长 Overall length	刃长 Cutting edge length	刃数 The number of flutes	订货号 Order number	
D1 (h9)	D2 (h6)	L1	L2	Z	不涂层 Uncoating	涂层 Coating
3	4	75	12	4	3143L-030	■ 3143L-030T
4	4	75	15	4	3143L-040	■ 3143L-040T
5	6	75	20	4	3143L-050	■ 3143L-050T
6	6	75	20	4	3143L-060	■ 3143L-060T
7	8	75	20	4	3143L-070	■ 3143L-070T
8	8	100	25	4	3143L-080	■ 3143L-080T
9	10	100	25	4	3143L-090	■ 3143L-090T
10	10	100	30	4	3143L-100	■ 3143L-100T
12	12	100	35	4	3143L-120	■ 3143L-120T
14	14	100	40	4	3143L-140	■ 3143L-140T
16	16	150	50	4	3143L-160	■ 3143L-160T
18	18	150	50	4	3143L-180	■ 3143L-180T
20	20	150	55	4	3143L-200	■ 3143L-200T

○按订单生产 Production by order

通用立铣刀 3143H Universal end milling cutter 3143H



DIN 6527L

0.1-0.2
45°

K30

涂层
(可选)

DIN 6535
HB

刃径 Cutter diameter	柄径 Shank diameter	总长 Overall length	刃长 Cutting edge length	刃数 The number of flutes	订货号 Order number	
D1 (h9)	D2 (h6)	L1	L2	Z	不涂层 Uncoating	涂层 Coating
3	4	75	12	4	3143H-030	■ 3143H-030T
4	4	75	15	4	3143H-040	■ 3143H-040T
5	6	75	20	4	3143H-050	■ 3143H-050T
6	6	75	20	4	3143H-060	■ 3143H-060T
7	8	75	20	4	3143H-070	■ 3143H-070T
8	8	100	25	4	3143H-080	■ 3143H-080T
9	10	100	25	4	3143H-090	■ 3143H-090T
10	10	100	30	4	3143H-100	■ 3143H-100T
12	12	100	35	4	3143H-120	■ 3143H-120T
14	14	100	40	4	3143H-140	■ 3143H-140T
16	16	150	50	4	3143H-160	■ 3143H-160T
18	18	150	50	4	3143H-180	■ 3143H-180T
20	20	150	55	4	3143H-200	■ 3143H-200T

○按订单生产 Production by order

铸铁 不锈钢 钛合金 耐热合金 铝合金

HB<300 HRC30-40 HRC40-45 HRC45-55 HRC>55

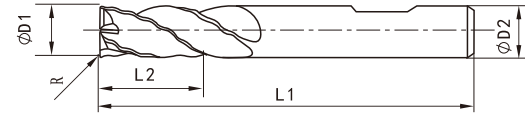
首选 可选 不选

铸铁 不锈钢 钛合金 耐热合金 铝合金

HB<300 HRC30-40 HRC40-45 HRC45-55 HRC>55

首选 可选 不选

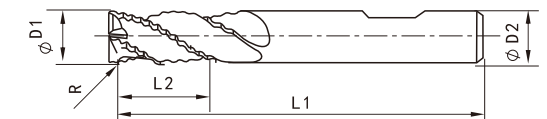
前波刃铣刀 3931L Front edge milling cutter 3931L



刃径 Cutter diameter	柄径 Shank diameter	总长 Overall length	刃长 Cutting edge length	R径 arc radius	刃数 The number of flutes	订货号 Order number	
D1 (h9)	D2 (h6)	L1	L2	R	Z	不涂层 Uncoating	涂层 Coating
8	8	63	19	1	4	3931L-080	■ 3931L-080T
10	10	72	22	1	4	3931L-100	■ 3931L-100T
12	12	83	26	1	4	3931L-120	■ 3931L-120T
14	14	83	26	1	4	3931L-140	■ 3931L-140T
16	16	92	32	1	4	3931L-160	■ 3931L-160T
18	18	92	32	1	4	3931L-180	■ 3931L-180T
20	20	104	38	1	4	3931L-200	■ 3931L-200T

○按订单生产 Production by order

四刃后波刃铣刀 3941L Four edges milling cutter 3941L



刃径 Cutter diameter	柄径 Shank diameter	总长 Overall length	刃长 Cutting edge length	R径 arc radius	刃数 The number of flutes	订货号 Order number	
D1 (h9)	D2 (h6)	L1	L2	R	Z	不涂层 Uncoating	涂层 Coating
8	8	63	19	1	4	3941L-080	■ 3941L-080T
10	10	72	22	1	4	3941L-100	■ 3941L-100T
12	12	83	26	1	4	3941L-120	■ 3941L-120T
14	14	83	26	1	4	3941L-140	■ 3941L-140T
16	16	92	32	1	4	3941L-160	■ 3941L-160T
18	18	92	32	1	4	3941L-180	■ 3941L-180T
20	20	104	38	1	4	3941L-200	■ 3941L-200T

○按订单生产 Production by order

铸铁

不锈钢

钛合金

耐热合金

铝合金

HB<300

HRC30-40

HRC40-45

HRC45-55

HRC>55

首选

可选

不选

铸铁

不锈钢

钛合金

耐热合金

铝合金

HB<300

HRC30-40

HRC40-45

HRC45-55

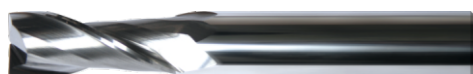
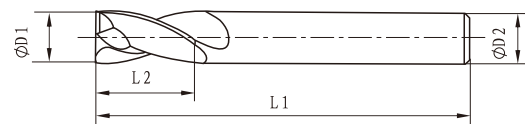
HRC>55

首选

可选

不选

键槽铣刀 3223K Key milling cutter 3223K

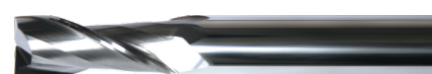
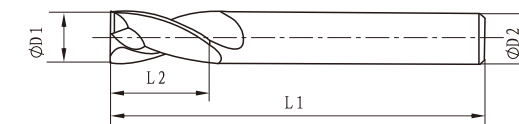


DIN 6527K
0.05-0.1 45°
K30
涂层 (可选)
DIN 6535 HA

刃径 Cutter diameter	柄径 Shank diameter	总长 Overall length	刃长 Cutting edge length	刃数 The number of flutes	订货号 Order number	
D1 (h9)	D2 (h6)	L1	L2	Z	不涂层 Uncoating	涂层 Coating
3	4	50	6	2	3223K-030	■ 3223K-030T
4	4	50	7	2	3223K-040	■ 3223K-040T
5	6	50	8	2	3223K-050	■ 3223K-050T
6	6	50	10	2	3223K-060	■ 3223K-060T
7	8	60	11	2	3223K-070	■ 3223K-070T
8	8	60	12	2	3223K-080	■ 3223K-080T
9	10	60	13	2	3223K-090	■ 3223K-090T
10	10	60	14	2	3223K-100	■ 3223K-100T
12	12	75	16	2	3223K-120	■ 3223K-120T
14	14	75	18	2	3223K-140	■ 3223K-140T
16	16	80	22	2	3223K-160	■ 3223K-160T
18	18	80	24	2	3223K-180	■ 3223K-180T
20	20	80	26	2	3223K-200	■ 3223K-200T

○按订单生产 Production by order

键槽铣刀 3223L Key milling cutter 3223L



DIN 6527L
0.05-0.1 45°
K30
涂层 (可选)
DIN 6535 HA

刃径 Cutter diameter	柄径 Shank diameter	总长 Overall length	刃长 Cutting edge length	刃数 The number of flutes	订货号 Order number	
D1 (h9)	D2 (h6)	L1	L2	Z	不涂层 Uncoating	涂层 Coating
3	4	75	12	2	3223L-030	■ 3223L-030T
4	4	75	15	2	3223L-040	■ 3223L-040T
5	6	75	20	2	3223L-050	■ 3223L-050T
6	6	75	20	2	3223L-060	■ 3223L-060T
7	8	75	20	2	3223L-070	■ 3223L-070T
8	8	100	25	2	3223L-080	■ 3223L-080T
9	10	100	25	2	3223L-090	■ 3223L-090T
10	10	100	30	2	3223L-100	■ 3223L-100T
12	12	100	35	2	3223L-120	■ 3223L-120T
14	14	100	40	2	3223L-140	■ 3223L-140T
16	16	150	50	2	3223L-160	■ 3223L-160T
18	18	150	50	2	3223L-180	■ 3223L-180T
20	20	150	55	2	3223L-200	■ 3223L-200T

○按订单生产 Production by order

铸铁

不锈钢

钛合金

耐热合金

铝合金

HB<300

HRC30-40

HRC40-45

HRC45-55

HRC>55

首选

可选

不选

铸铁

不锈钢

钛合金

耐热合金

铝合金

HB<300

HRC30-40

HRC40-45

HRC45-55

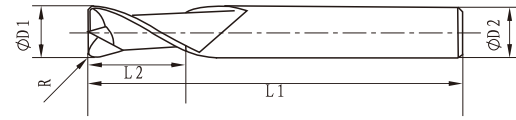
HRC>55

首选

可选

不选

二刃R铣刀 3423K Two edges R milling cutter 3423K



DIN 6527K

R 0.04

K30

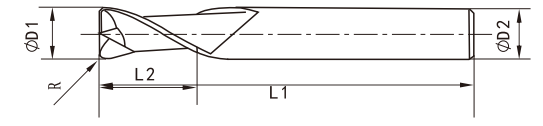
涂层 (可选)

DIN 6535 HA

刃径 Cutter diameter	柄径 Shank diameter	总长 Overall length	刃长 Cutting edge length	R径 arc radius	刃数 The number of flutes	订货号 Order number	
D1 (h9)	D2 (h6)	L1	L2	R	Z	不涂层 Uncoating	涂层 Coating
3	4	50	4	0.5	2	3423K-030	■ 3423K-030T
4	4	50	5	0.5	2	3423K-040	■ 3423K-040T
5	6	50	6	0.5	2	3423K-050	■ 3423K-050T
6	6	50	7	1.0	2	3423K-060	■ 3423K-060T
7	8	60	8	1.5	2	3423K-070	■ 3423K-070T
8	8	60	9	2.0	2	3423K-080	■ 3423K-080T
9	10	60	10	2.5	2	3423K-090	■ 3423K-090T
10	10	60	11	3.0	2	3423K-100	■ 3423K-100T
12	12	75	12	3.0	2	3423K-120	■ 3423K-120T
14	14	75	14	3.0	2	3423K-140	■ 3423K-140T
16	16	80	16	3.0	2	3423K-160	■ 3423K-160T
18	18	80	18	3.0	2	3423K-180	■ 3423K-180T
20	20	80	20	3.0	2	3423K-200	■ 3423K-200T

○按订单生产 Production by order

二刃R铣刀 3423L Two edges R milling cutter 3423L



DIN 6527L

R 0.04

K30

涂层 (可选)

DIN 6535 HA

刃径 Cutter diameter	柄径 Shank diameter	总长 Overall length	刃长 Cutting edge length	R径 arc radius	刃数 The number of flutes	订货号 Order number	
D1 (h9)	D2 (h6)	L1	L2	R	Z	不涂层 Uncoating	涂层 Coating
3	4	75	12	0.5	2	3423L-030	■ 3423L-030T
4	4	75	15	0.5	2	3423L-040	■ 3423L-040T
5	6	75	20	0.5	2	3423L-050	■ 3423L-050T
6	6	75	20	1.0	2	3423L-060	■ 3423L-060T
7	8	75	20	1.5	2	3423L-070	■ 3423L-070T
8	8	100	25	2.0	2	3423L-080	■ 3423L-080T
9	10	100	25	2.5	2	3423L-090	■ 3423L-090T
10	10	100	30	3.0	2	3423L-100	■ 3423L-100T
12	12	100	35	3.0	2	3423L-120	■ 3423L-120T
14	14	100	40	3.0	2	3423L-140	■ 3423L-140T
16	16	150	50	3.0	2	3423L-160	■ 3423L-160T
18	18	150	50	3.0	2	3423L-180	■ 3423L-180T
20	20	150	55	3.0	2	3423L-200	■ 3423L-200T

○按订单生产 Production by order

铸铁

不锈钢

钛合金

耐热合金

铝合金

HB<300

HRC30-40

HRC40-45

HRC45-55

HRC>55

首选

可选

不选

铸铁

不锈钢

钛合金

耐热合金

铝合金

HB<300

HRC30-40

HRC40-45

HRC45-55

HRC>55

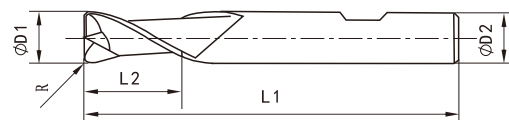
首选

可选

不选

二刃R铣刀 3423H

Two edges R milling cutter 3423H

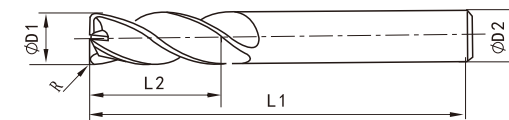


刃径 Cutter diameter	柄径 Shank diameter	总长 Overall length	刃长 Cutting edge length	R径 arc radius	刃数 The number of flutes	订货号 Order number	
D1 (h9)	D2 (h6)	L1	L2	R	Z	不涂层 Uncoating	涂层 Coating
3	4	75	12	0.5	2	3423H-030	■ 3423H-030T
4	4	75	15	0.5	2	3423H-040	■ 3423H-040T
5	6	75	20	0.5	2	3423H-050	■ 3423H-050T
6	6	75	20	1.0	2	3423H-060	■ 3423H-060T
7	8	75	20	1.5	2	3423H-070	■ 3423H-070T
8	8	100	25	2.0	2	3423H-080	■ 3423H-080T
9	10	100	25	2.5	2	3423H-090	■ 3423H-090T
10	10	100	30	3.0	2	3423H-100	■ 3423H-100T
12	12	100	35	3.0	2	3423H-120	■ 3423H-120T
14	14	100	40	3.0	2	3423H-140	■ 3423H-140T
16	16	150	50	3.0	2	3423H-160	■ 3423H-160T
18	18	150	50	3.0	2	3423H-180	■ 3423H-180T
20	20	150	55	3.0	2	3423H-200	■ 3423H-200T

○按订单生产 Production by order

四刃R铣刀 3443K

Four edges R milling cutter 3443K



刃径 Cutter diameter	柄径 Shank diameter	总长 Overall length	刃长 Cutting edge length	R径 arc radius	刃数 The number of flutes	订货号 Order number	
D1 (h9)	D2 (h6)	L1	L2	R	Z	不涂层 Uncoating	涂层 Coating
3	4	50	5	0.5	4	3443K-030	■ 3443K-030T
4	4	50	8	0.5	4	3443K-040	■ 3443K-040T
5	6	50	9	0.5	4	3443K-050	■ 3443K-050T
6	6	50	10	1.0	4	3443K-060	■ 3443K-060T
7	8	60	11	1.5	4	3443K-070	■ 3443K-070T
8	8	60	12	2.0	4	3443K-080	■ 3443K-080T
9	10	60	13	2.5	4	3443K-090	■ 3443K-090T
10	10	60	14	3.0	4	3443K-100	■ 3443K-100T
12	12	75	16	3.0	4	3443K-120	■ 3443K-120T
14	14	75	18	3.0	4	3443K-140	■ 3443K-140T
16	16	80	22	3.0	4	3443K-160	■ 3443K-160T
18	18	80	24	3.0	4	3443K-180	■ 3443K-180T
20	20	80	28	3.0	4	3443K-200	■ 3443K-200T

○按订单生产 Production by order

铸铁

不锈钢

钛合金

耐热合金

铝合金

HB<300

HRC30-40

HRC40-45

HRC45-55

HRC>55

首选

可选

不选

铸铁

不锈钢

钛合金

耐热合金

铝合金

HB<300

HRC30-40

HRC40-45

HRC45-55

HRC>55

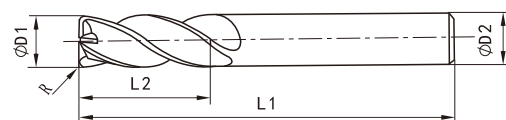
首选

可选

不选

四刃R铣刀 3443L

Four edges R milling cutter 3443L

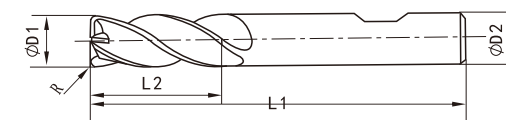


刃径 Cutter diameter	柄径 Shank diameter	总长 Overall length	刃长 Cutting edge length	R径 arc radius	刃数 The number of flutes	订货号 Order number	
D1 (h9)	D2 (h6)	L1	L2	R	Z	不涂层 Uncoating	涂层 Coating
3	4	75	12	0.5	4	3443L-030	■ 3443L-030T
4	4	75	15	0.5	4	3443L-040	■ 3443L-040T
5	6	75	20	0.5	4	3443L-050	■ 3443L-050T
6	6	75	20	1.0	4	3443L-060	■ 3443L-060T
7	8	75	20	1.5	4	3443L-070	■ 3443L-070T
8	8	100	25	2.0	4	3443L-080	■ 3443L-080T
9	10	100	25	2.5	4	3443L-090	■ 3443L-090T
10	10	100	30	3.0	4	3443L-100	■ 3443L-100T
12	12	100	35	3.0	4	3443L-120	■ 3443L-120T
14	14	100	40	3.0	4	3443L-140	■ 3443L-140T
16	16	150	50	3.0	4	3443L-160	■ 3443L-160T
18	18	150	50	3.0	4	3443L-180	■ 3443L-180T
20	20	150	55	3.0	4	3443L-200	■ 3443L-200T

○按订单生产 Production by order

四刃R铣刀 3443H

Four edges R milling cutter 3443H



刃径 Cutter diameter	柄径 Shank diameter	总长 Overall length	刃长 Cutting edge length	R径 arc radius	刃数 The number of flutes	订货号 Order number	
D1 (h9)	D2 (h6)	L1	L2	R	Z	不涂层 Uncoating	涂层 Coating
3	4	75	12	0.5	4	3443H-030	■ 3443H-030T
4	4	75	15	0.5	4	3443H-040	■ 3443H-040T
5	6	75	20	0.5	4	3443H-050	■ 3443H-050T
6	6	75	20	1.0	4	3443H-060	■ 3443H-060T
7	8	75	20	1.5	4	3443H-070	■ 3443H-070T
8	8	100	25	2.0	4	3443H-080	■ 3443H-080T
9	10	100	25	2.5	4	3443H-090	■ 3443H-090T
10	10	100	30	3.0	4	3443H-100	■ 3443H-100T
12	12	100	35	3.0	4	3443H-120	■ 3443H-120T
14	14	100	40	3.0	4	3443H-140	■ 3443H-140T
16	16	150	50	3.0	4	3443H-160	■ 3443H-160T
18	18	150	50	3.0	4	3443H-180	■ 3443H-180T
20	20	150	55	3.0	4	3443H-200	■ 3443H-200T

○按订单生产 Production by order

铸铁

不锈钢

钛合金

耐热合金

铝合金

HB<300

HRC30-40

HRC40-45

HRC45-55

HRC>55

首选

可选

不选

铸铁

不锈钢

钛合金

耐热合金

铝合金

HB<300

HRC30-40

HRC40-45

HRC45-55

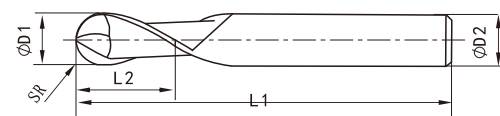
HRC>55

首选

可选

不选

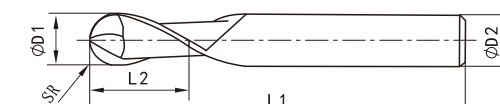
两刃球头铣刀 3323K Two edges ball head cutter 3323K



刃径 Cutter diameter	柄径 Shank diameter	总长 Overall length	刃长 Cutting edge length	SR径 Sphere radius	刃数 The number of flutes	订货号 Order number	
D1 (h9)	D2 (h6)	L1	L2	SR	Z	不涂层 Uncoating	涂层 Coating
3	4	50	4	1.5	2	3323K-030	■ 3323K-030T
4	4	50	5	2.0	2	3323K-040	■ 3323K-040T
5	6	50	6	2.5	2	3323K-050	■ 3323K-050T
6	6	50	7	3.0	2	3323K-060	■ 3323K-060T
7	8	60	8	3.5	2	3323K-070	■ 3323K-070T
8	8	60	9	4.0	2	3323K-080	■ 3323K-080T
9	10	60	10	4.5	2	3323K-090	■ 3323K-090T
10	10	60	11	5.0	2	3323K-100	■ 3323K-100T
12	12	75	12	6.0	2	3323K-120	■ 3323K-120T
14	14	75	14	7.0	2	3323K-140	■ 3323K-140T
16	16	80	16	8.0	2	3323K-160	■ 3323K-160T
18	18	80	18	9.0	2	3323K-180	■ 3323K-180T
20	20	80	20	10.0	2	3323K-200	■ 3323K-200T

○按订单生产 Production by order

两刃球头铣刀 3323L Two edges ball head cutter 3323L



刃径 Cutter diameter	柄径 Shank diameter	总长 Overall length	刃长 Cutting edge length	SR径 Sphere radius	刃数 The number of flutes	订货号 Order number	
D1 (h9)	D2 (h6)	L1	L2	SR	Z	不涂层 Uncoating	涂层 Coating
3	4	75	12	1.5	2	3323L-030	■ 3323L-030T
4	4	75	15	2.0	2	3323L-040	■ 3323L-040T
5	6	75	20	2.5	2	3323L-050	■ 3323L-050T
6	6	75	20	3.0	2	3323L-060	■ 3323L-060T
7	8	75	20	3.5	2	3323L-070	■ 3323L-070T
8	8	100	25	4.0	2	3323L-080	■ 3323L-080T
9	10	100	25	4.5	2	3323L-090	■ 3323L-090T
10	10	100	30	5.0	2	3323L-100	■ 3323L-100T
12	12	100	35	6.0	2	3323L-120	■ 3323L-120T
14	14	100	40	7.0	2	3323L-140	■ 3323L-140T
16	16	150	50	8.0	2	3323L-160	■ 3323L-160T
18	18	150	50	9.0	2	3323L-180	■ 3323L-180T
20	20	150	55	10.0	2	3323L-200	■ 3323L-200T

○按订单生产 Production by order

铸铁

不锈钢

钛合金

耐热合金

铝合金

HB<300

HRC30-40

HRC40-45

HRC45-55

HRC>55

首选

可选

不选

铸铁

不锈钢

钛合金

耐热合金

铝合金

HB<300

HRC30-40

HRC40-45

HRC45-55

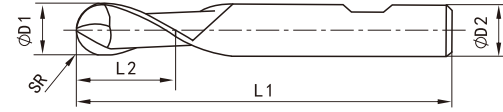
HRC>55

首选

可选

不选

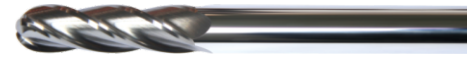
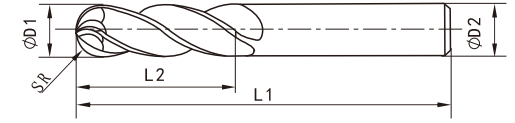
两刃球头铣刀 3323H Two edges ball head cutter 3323H



刃径 Cutter diameter	柄径 Shank diameter	总长 Overall length	刃长 Cutting edge length	SR径 Sphere radius	刃数 The number of flutes	订货号 Order number	
D1 (h9)	D2 (h6)	L1	L2	SR	Z	不涂层 Uncoating	涂层 Coating
3	4	75	12	1.5	2	3323H-030	■ 3323H-030T
4	4	75	15	2.0	2	3323H-040	■ 3323H-040T
5	6	75	20	2.5	2	3323H-050	■ 3323H-050T
6	6	75	20	3.0	2	3323H-060	■ 3323H-060T
7	8	75	20	3.5	2	3323H-070	■ 3323H-070T
8	8	100	25	4.0	2	3323H-080	■ 3323H-080T
9	10	100	25	4.5	2	3323H-090	■ 3323H-090T
10	10	100	30	5.0	2	3323H-100	■ 3323H-100T
12	12	100	35	6.0	2	3323H-120	■ 3323H-120T
14	14	100	40	7.0	2	3323H-140	■ 3323H-140T
16	16	150	50	8.0	2	3323H-160	■ 3323H-160T
18	18	150	50	9.0	2	3323H-180	■ 3323H-180T
20	20	150	55	10.0	2	3323H-200	■ 3323H-200T

○按订单生产 Production by order

四刃球头铣刀 3343K Four edges ball head milling cutter 3343K



刃径 Cutter diameter	柄径 Shank diameter	总长 Overall length	刃长 Cutting edge length	R径 arc radius	刃数 The number of flutes	订货号 Order number	
D1 (h9)	D2 (h6)	L1	L2	R	Z	不涂层 Uncoating	涂层 Coating
6	6	50	10	3	4	3343K-060	■ 3343K-060T
8	8	60	12	4	4	3343K-080	■ 3343K-080T
10	10	60	14	5	4	3343K-100	■ 3343K-100T
12	12	75	16	6	4	3343K-120	■ 3343K-120T
14	14	75	18	7	4	3343K-140	■ 3343K-140T
16	16	80	22	8	4	3343K-160	■ 3343K-160T
18	18	80	24	9	4	3343K-180	■ 3343K-180T
20	20	80	26	10	4	3343K-200	■ 3343K-200T

○按订单生产 Production by order

铸铁

不锈钢

钛合金

耐热合金

铝合金

HB<300

HRC30-40

HRC40-45

HRC45-55

HRC>55

首选

可选

不选

铸铁

不锈钢

钛合金

耐热合金

铝合金

HB<300

HRC30-40

HRC40-45

HRC45-55

HRC>55

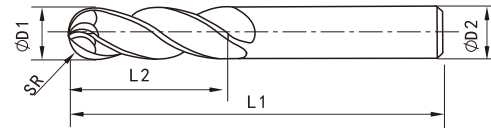
首选

可选

不选

四刃球头铣刀 3343L

Four edges ball head milling cutter 3343L



DIN 6527K

0.04

K30

涂层 (可选)

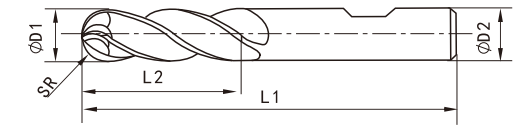
DIN 6535 HA

刃径 Cutter diameter	柄径 Shank diameter	总长 Overall length	刃长 Cutting edge length	SR径 Sphere radius	刃数 The number of flutes	订货号 Order number	
D1 (h9)	D2 (h6)	L1	L2	SR	Z	不涂层 Uncoating	涂层 Coating
6	6	75	20	3	4	3343L-060	■ 3343L-060T
8	8	100	25	4	4	3343L-080	■ 3343L-080T
10	10	100	30	5	4	3343L-100	■ 3343L-100T
12	12	100	35	6	4	3343L-120	■ 3343L-120T
14	14	100	40	7	4	3343L-140	■ 3343L-140T
16	16	150	50	8	4	3343L-160	■ 3343L-160T
18	18	150	50	9	4	3343L-180	■ 3343L-180T
20	20	150	55	10	4	3343L-200	■ 3343L-200T

○按订单生产 Production by order

四刃球头铣刀 3343H

Four edges ball head milling cutter 3343H



DIN 6527L

0.04

K30

涂层 (可选)

DIN 6535 HB

柄径 Shank diameter	总长 Overall length	刃长 Cutting edge length	半锥度 Cutting edge length	SR径 Sphere radius	刃数 The number of flutes	订货号 Order number	
D1 (h9)	D2 (h6)	L1	L2	SR	Z	不涂层 Uncoating	涂层 Coating
6	6	75	20	3	4	3343H-060	■ 3343H-060T
8	8	100	25	4	4	3343H-080	■ 3343H-080T
10	10	100	30	5	4	3343H-100	■ 3343H-100T
12	12	100	35	6	4	3343H-120	■ 3343H-120T
14	14	100	40	7	4	3343H-140	■ 3343H-140T
16	16	150	50	8	4	3343H-160	■ 3343H-160T
18	18	150	50	9	4	3343H-180	■ 3343H-180T
20	20	150	55	10	4	3343H-200	■ 3343H-200T

○按订单生产 Production by order

铸铁 不锈钢 钛合金 耐热合金 铝合金

HB<300 HRC30-40 HRC40-45 HRC45-55 HRC>55

首选 可选 不选

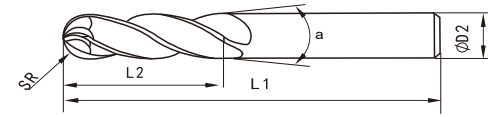
铸铁 不锈钢 钛合金 耐热合金 铝合金

HB<300 HRC30-40 HRC40-45 HRC45-55 HRC>55

首选 可选 不选

四刃锥度球头铣刀 3643S

Four edges taper ball head milling cutter 3643S

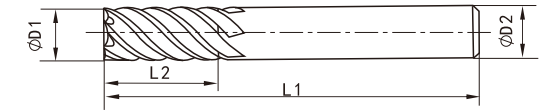


柄径 Cutter diameter	总长 Shank diameter	刃长 Overall length	半锥度 Cutting edge length	SR径 Sphere radius	刃数 The number of flutes	订货号 Order number	
D1 (h9)	D2 (h6)	L1	a/z	SR	Z	不涂层 Uncoating	涂层 Coating
10	100	45	4°	2	4	3643S-100-2	■ 3643S-100-2T
10	100	31	4°	3	4	3643S-100-3	■ 3643S-100-3T
12	110	45	4°	3	4	3643S-120-3	■ 3643S-120-3T
12	110	32	4°	4	4	3643S-120-4	■ 3643S-120-4T
16	130	61	4°	4	4	3643S-160-4	■ 3643S-160-4T
16	130	48	4°	5	4	3643S-160-5	■ 3643S-160-5T
20	130	76	4°	5	4	3643S-200-5	■ 3643S-200-5T
20	130	63	4°	6	4	3643S-200-6	■ 3643S-200-6T
20	130	35	4°	8	4	3643S-200-8	■ 3643S-200-8T

○按订单生产 Production by order

六刃精铣刀 3J63L

Six edges precision milling cutter 3J63L

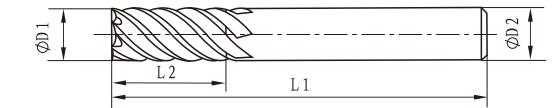


刃径 Cutter diameter	柄径 Shank diameter	总长 Overall length	刃长 Cutting edge length	刃数 The number of flutes	订货号 Order number	
D1 (h9)	D2 (h6)	L1	L2	Z	不涂层 Uncoating	涂层 Coating
6	6	57	13	6	3J63L-060	■ 3J63L-060T
8	8	63	19	6	3J63L-080	■ 3J63L-080T
10	10	72	22	6	3J63L-100	■ 3J63L-100T
12	12	75	26	6	3J63L-120	■ 3J63L-120T
14	14	83	26	6	3J63L-140	■ 3J63L-140T
16	16	92	32	6	3J63L-160	■ 3J63L-160T
18	18	92	32	6	3J63L-180	■ 3J63L-180T
20	20	104	38	6	3J63L-200	■ 3J63L-200T

○按订单生产 Production by order

八刃精铣刀 3J83L

Eight edges precision milling cutter 3J83L



刃径 Cutter diameter	柄径 Shank diameter	总长 Overall length	刃长 Cutting edge length	刃数 The number of flutes	订货号 Order number	
D1 (h9)	D2 (h6)	L1	L2	Z	不涂层 Uncoating	涂层 Coating
10	10	72	22	8	3J83L-100	■ 3J83L-100T
12	12	75	26	8	3J83L-120	■ 3J83L-120T
14	14	83	26	8	3J83L-140	■ 3J83L-140T
16	16	92	32	8	3J83L-160	■ 3J83L-160T
18	18	92	32	8	3J83L-180	■ 3J83L-180T
20	20	104	38	8	3J83L-200	■ 3J83L-200T
25	25	120	42	8	3J83L-250	■ 3J83L-250T

○按订单生产 Production by order

铸铁

不锈钢

钛合金

耐热合金

铝合金

HB<300

HRC30-40

HRC40-45

HRC45-55

HRC>55

首选

可选

不选

铸铁

不锈钢

钛合金

耐热合金

铝合金

HB<300

HRC30-40

HRC40-45

HRC45-55

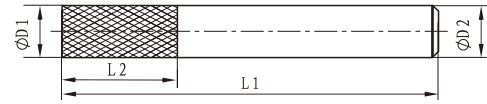
HRC>55

首选

可选

不选

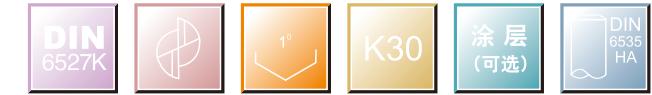
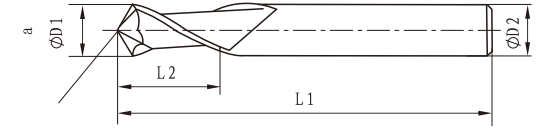
密齿铣刀 3F83K Compact tooth milling cutter 3F83K



刃径 Cutter diameter	柄径 Shank diameter	总长 Overall length	刃长 Cutting edge length	周刃刃数 outer rounded of flutes number	端刃刃数 end face of flutes number	订货号 Order number		
D1 (h9)	D2 (h6)	L1	L2	Z1 (左)	Z2 (右)	Z	不涂层 Uncoating	涂层 Coating
6	6	60	15	10	12	10	3F83K-060	■ 3F83K-060T
8	8	65	20	12	14	12	3F83K-080	■ 3F83K-080T
10	10	70	25	16	18	18	3F83K-100	■ 3F83K-100T
12	12	82	30	17	19	19	3F83K-120	■ 3F83K-120T

○按订单生产 Production by order

钻铣刀 3A23K Drill milling cutter 3A23K



刃径 Cutter diameter	柄径 Shank diameter	总长 Overall length	刃长 Cutting edge length	顶角 p angle	刃数 The number of flutes	订货号 Order number	
D1 (h9)	D2 (h6)	L1	L2	a	Z	不涂层 Uncoating	涂层 Coating
4	4	54	8	60°	2	3A23K-040-60	■ 3A23K-040T-60
6	6	54	10	60°	2	3A23K-060-60	■ 3A23K-060T-60
8	8	58	12	60°	2	3A23K-080-60	■ 3A23K-080T-60
10	10	66	16	60°	2	3A23K-100-60	■ 3A23K-100T-60
12	12	73	18	60°	2	3A23K-120-60	■ 3A23K-120T-60
4	4	54	8	90°	2	3A23K-040-90	■ 3A23K-040T-90
6	6	54	10	90°	2	3A23K-060-90	■ 3A23K-060T-90
8	8	58	12	90°	2	3A23K-080-90	■ 3A23K-080T-90
10	10	66	16	90°	2	3A23K-100-90	■ 3A23K-100T-90
12	12	73	18	90°	2	3A23K-120-90	■ 3A23K-120T-90
4	4	54	8	120°	2	3A23K-040-120	■ 3A23K-040T-120
6	6	54	10	120°	2	3A23K-060-120	■ 3A23K-060T-120
8	8	58	12	120°	2	3A23K-080-120	■ 3A23K-080T-120
10	10	66	16	120°	2	3A23K-100-120	■ 3A23K-100T-120
12	12	73	18	120°	2	3A23K-120-120	■ 3A23K-120T-120

○按订单生产 Production by order

铸铁 不锈钢 钛合金 耐热合金 铝合金

HB<300 HRC30-40 HRC40-45 HRC45-55 HRC>55

首选 可选 不选

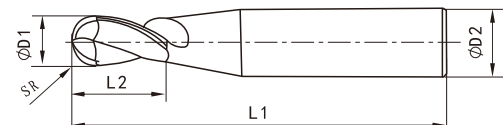
铸铁 不锈钢 钛合金 耐热合金 铝合金

HB<300 HRC30-40 HRC40-45 HRC45-55 HRC>55

首选 可选 不选

两刃高速球头铣刀 3B23S

Two edges high speed ball head milling cutter 3B23S



DIN 6527K
SR 0.04
K40
涂层 (可选)
DIN 6535 HA

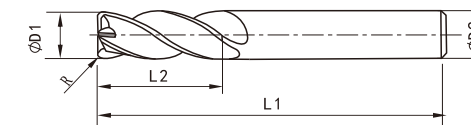
柄径 Shank diameter	总长 Overall length	刃长 Cutting edge length	半锥度 Taper half	SR径 Sphere radius	刃数 The number of flutes	订货号 Order number	
D1 (h9)	D2 (h6)	L1	L2	SR	Z	不涂层 Uncoating	涂层 Coating
3	50	6	6	1.5	2	3B23S-030	■ 3B23S-030T
4	54	6	8	2.0	2	3B23S-040	■ 3B23S-040T
6	58	10	10	3.0	2	3B23S-060	■ 3B23S-060T
8	62	12	12	4.0	2	3B23S-080	■ 3B23S-080T
10	68	14	14	5.0	2	3B23S-100	■ 3B23S-100T
12	75	16	16	6.0	2	3B23S-120	■ 3B23S-120T
16	87	20	18	8.0	2	3B23S-160	■ 3B23S-160T

○按订单生产 Production by order

不等分齿铣刀 3R43K

(航空、航天行业)

Unequal gear milling cutter 3R43K
(aviation, aerospace industry)



DIN 6527K
SR 0.04
K30
涂层 (可选)
DIN 6535 HA

刃径 Cutter diameter	柄径 Shank diameter	总长 Overall length	刃长 Cutting edge length	R径 arc radius	刃数 The number of flutes	订货号 Order number	
D1 (h9)	D2 (h6)	L1	L2	R	Z	不涂层 Uncoating	涂层 Coating
4	4	54	5	0.5	4	3R43K-040	■ 3R43K-040T
5	6	54	6	0.5	4	3R43K-050	■ 3R43K-050T
6	6	54	7	1.0	4	3R43K-060	■ 3R43K-060T
8	8	58	9	2.0	4	3R43K-080	■ 3R43K-080T
10	10	66	11	3.0	4	3R43K-100	■ 3R43K-100T
12	12	73	12	3.0	4	3R43K-120	■ 3R43K-120T
14	14	73	14	3.0	4	3R43K-140	■ 3R43K-140T
16	16	82	16	3.0	4	3R43K-160	■ 3R43K-160T
18	18	82	18	3.0	4	3R43K-180	■ 3R43K-180T
20	20	92	20	3.0	4	3R43K-200	■ 3R43K-200T

★★★★★此类刀具适合高温合金的高效铣削加工

Such tools suitable for high temperature alloys and efficiently

○按订单生产 Production by order

铸铁

不锈钢

钛合金

耐热合金

铝合金

HB<300

HRC30-40

HRC40-45

HRC45-55

HRC>55

首选

可选

不选

铸铁

不锈钢

钛合金

耐热合金

铝合金

HB<300

HRC30-40

HRC40-45

HRC45-55

HRC>55

首选

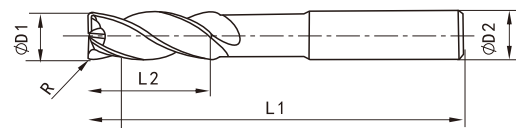
可选

不选

不等分齿铣刀 3R43L

(航空. 航天行业)

Unequal gear milling cutter 3R43L
(aviation, aerospace industry)



刃径 Cutter diameter	柄径 Shank diameter	颈径 journal diamete	总长 Overall length	刃长 Cutting edge length	工作长 Work length	R径 arc radius	刃数 The number of flutes	订货号 Order number	
D1 (h9)	D2 (h6)	D3	L1	L2	L3	R	Z	不涂层 Uncoating	涂层 Coating
8	8	7.2	68	16	32	1	4	3R43L-080	■ 3R43L-080T
10	10	9.2	82	20	42	2	4	3R43L-100	■ 3R43L-100T
12	12	11.2	87	22	42	2	4	3R43L-120	■ 3R43L-120T
14	14	13.2	92	24	47	3	4	3R43L-140	■ 3R43L-140T
16	16	15.0	100	26	52	3	4	3R43L-160	■ 3R43L-160T
18	18	17.0	110	30	62	4	4	3R43L-180	■ 3R43L-180T
20	20	19.0	122	36	72	4	4	3R43L-200	■ 3R43L-200T

★★★★★此类刀具适合钛合金 高温合金的高效铣削加工

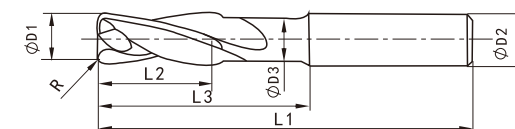
Such tools suitable for milling titanium alloys, high temperature alloys and efficiently

○按订单生产 Production by order

两刃高速铣刀 3B20A

(航空. 航天行业)

Two edges high speed milling cutter 3B20A
(aviation, aerospace industry)



刃径 Cutter diameter	柄径 Shank diameter	颈径 Shank diameter	总长 Overall length	刃长 Cutting edge length	工作长 Work length	R径 arc radius	刃数 The number of flutes	订货号 Order number	
D1 (h9)	D2 (h6)	D3	L1	L2	L3	R	Z	不涂层 Uncoating	涂层 Coating
6	6	5.5	58	10	22	1.0	2	3B20A-060A-10	■ 3B20A-060T-10
6	6	5.5	58	10	22	2.0	2	3B20A-060A-20	■ 3B20A-060T-20
6	6	5.5	68	10	32	1.0	2	3B20A-060B-10	■ 3B20A-060S-10
6	6	5.5	68	10	32	2.0	2	3B20A-060B-20	■ 3B20A-060S-20
8	8	7.5	63	10	27	1.0	2	3B20A-080A-10	■ 3B20A-080T-10
8	8	7.5	63	10	27	2.0	2	3B20A-080A-20	■ 3B20A-080T-20
8	8	7.5	63	10	27	3.0	2	3B20A-080A-30	■ 3B20A-080T-30
8	8	7.5	73	10	37	1.0	2	3B20A-080B-10	■ 3B20A-080S-10
8	8	7.5	73	10	37	2.0	2	3B20A-080B-20	■ 3B20A-080S-20
8	8	7.5	73	10	37	3.0	2	3B20A-080B-30	■ 3B20A-080S-30
10	10	9.5	72	12	32	1.0	2	3B20A-100A-10	■ 3B20A-100T-10
10	10	9.5	72	12	32	2.0	2	3B20A-100A-20	■ 3B20A-100T-20
10	10	9.5	72	12	32	2.5	2	3B20A-100A-25	■ 3B20A-100T-25
10	10	9.5	82	12	42	1.0	2	3B20A-100B-10	■ 3B20A-100S-10
10	10	9.5	82	12	42	2.0	2	3B20A-100B-20	■ 3B20A-100S-20
10	10	9.5	82	12	42	2.5	2	3B20A-100B-25	■ 3B20A-100S-25
12	12	11.2	77	14	32	2.0	2	3B20A-120A-20	■ 3B20A-120T-20
12	12	11.2	77	14	32	2.5	2	3B20A-120A-25	■ 3B20A-120T-25
12	12	11.2	77	14	32	3.0	2	3B20A-120A-30	■ 3B20A-120T-30
12	12	11.2	87	14	42	2.0	2	3B20A-120B-20	■ 3B20A-120S-20
12	12	11.2	87	14	42	2.5	2	3B20A-120B-25	■ 3B20A-120S-25
12	12	11.2	87	14	42	3.0	2	3B20A-120B-30	■ 3B20A-120S-30
12	12	11.2	97	14	52	2.0	2	3B20A-120C-20	■ 3B20A-120Z-20
12	12	11.2	97	14	52	2.5	2	3B20A-120C-25	■ 3B20A-120Z-25
12	12	11.2	97	14	52	3.0	2	3B20A-120C-30	■ 3B20A-120Z-30

★★★★★此类刀具适合航空铝合金薄壁型腔件的高速铣削加工
Such tools suitable for aerospace aluminum alloy pieces of thin-walled cavity machining at high-speed

○按订单生产 Production by order

铸铁

不锈钢

钛合金

耐热合金

铝合金

HB<300

HRC30-40

HRC40-45

HRC45-55

HRC>55

首选

可选

不选

铸铁

不锈钢

钛合金

耐热合金

铝合金

HB<300

HRC30-40

HRC40-45

HRC45-55

HRC>55

首选

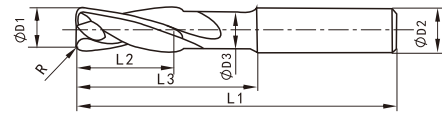
可选

不选

两刃高速铣刀 3B20A

(航空·航天行业)

Two edges high speed milling cutter 3B20A
(aviation, aerospace industry)



刃径 Cutter diameter	柄径 Shank diameter	颈径 Shank diameter	总长 Overall length	刃长 Cutting edge length	工作长 Work length	R径 Arc radius	刃数 The number of flutes	订货号 Order number	
D1 (h9)	D2 (h6)	D3	L1	L2	L3	R	Z	不涂层 Uncoating	涂层 Coating
16	16	15	90	18	42	2.0	2	3B20A-160A-20	■ 3B20A-160T-20
16	16	15	90	18	42	3.0	2	3B20A-160A-30	■ 3B20A-160T-30
16	16	15	90	18	42	4.0	2	3B20A-160A-40	■ 3B20A-160T-40
16	16	15	100	18	52	2.0	2	3B20A-160B-20	■ 3B20A-160S-20
16	16	15	100	18	52	3.0	2	3B20A-160B-30	■ 3B20A-160S-30
16	16	15	100	18	52	4.0	2	3B20A-160B-40	■ 3B20A-160S-40
16	16	15	110	18	62	2.0	2	3B20A-160C-20	■ 3B20A-160Z-20
16	16	15	110	18	62	3.0	2	3B20A-160C-30	■ 3B20A-160Z-30
16	16	15	110	18	62	4.0	2	3B20A-160C-40	■ 3B20A-160Z-40
20	20	19	92	24	42	3.0	2	3B20A-200A-30	■ 3B20A-200T-30
20	20	19	92	24	42	4.0	2	3B20A-200A-40	■ 3B20A-200T-40
20	20	19	92	24	42	5.0	2	3B20A-200A-50	■ 3B20A-200T-50
20	20	19	102	24	52	3.0	2	3B20A-200B-30	■ 3B20A-200S-30
20	20	19	102	24	52	4.0	2	3B20A-200B-40	■ 3B20A-200S-40
20	20	19	102	24	52	5.0	2	3B20A-200B-50	■ 3B20A-200S-50
20	20	19	112	24	62	3.0	2	3B20A-200C-30	■ 3B20A-200Z-30
20	20	19	112	24	62	4.0	2	3B20A-200C-40	■ 3B20A-200Z-40
20	20	19	112	24	62	5.0	2	3B20A-200C-50	■ 3B20A-200Z-50
20	20	19	122	24	72	3.0	2	3B20A-200D-30	■ 3B20A-200P-30
20	20	19	122	24	72	4.0	2	3B20A-200D-40	■ 3B20A-200P-40
20	20	19	122	24	72	5.0	2	3B20A-200D-50	■ 3B20A-200P-50
20	20	19	132	24	82	3.0	2	3B20A-200E-30	■ 3B20A-200R-30
20	20	19	132	24	82	4.0	2	3B20A-200E-40	■ 3B20A-200R-40
20	20	19	132	24	82	5.0	2	3B20A-200E-50	■ 3B20A-200R-50
20	20	19	142	24	92	3.0	2	3B20A-200F-30	■ 3B20A-200W-30
20	20	19	142	24	92	4.0	2	3B20A-200F-40	■ 3B20A-200W-40
20	20	19	142	24	92	5.0	2	3B20A-200F-50	■ 3B20A-200W-50

★★★★★此类刀具适合航空铝合金薄壁型腔件的高速铣削加工
Such tools suitable for aerospace aluminum alloy pieces
of thin-walled cavity machining at high-speed

○按订单生产 Production by order

铸铁

不锈钢

钛合金

耐热合金

铝合金

HB<300

HRC30-40

HRC40-45

HRC45-55

HRC>55

首选

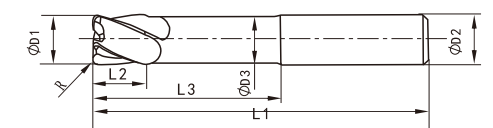
可选

不选

三刃高速铣刀 3B30A

(航空·航天行业)

Three edges high speed milling cutter 3B30A
(aviation, aerospace industry)



刃径 Cutter diameter	柄径 Shank diameter	颈径 Journal diameter	总长 Overall length	刃长 Cutting edge length	工作长 Work length	R径 Arc radius	刃数 The number of flutes	订货号 Order number	
D1 (h9)	D2 (h6)	D3	L1	L2	L3	R	Z	不涂层 Uncoating	涂层 Coating
8	8	7.5	63	10	27	1.0	3	3B20A-080A-10	■ 3B20A-080T-10
8	8	7.5	63	10	27	2.0	3	3B20A-080A-20	■ 3B20A-080T-20
8	8	7.5	63	10	27	3.0	3	3B20A-080A-30	■ 3B20A-080T-30
8	8	7.5	73	10	37	1.0	3	3B20A-080B-10	■ 3B20A-080S-10
8	8	7.5	73	10	37	2.0	3	3B20A-080B-20	■ 3B20A-080S-20
8	8	7.5	73	10	37	3.0	3	3B20A-080B-30	■ 3B20A-080S-30
10	10	9.5	72	12	32	1.0	3	3B30A-100A-10	■ 3B30A-100T-10
10	10	9.5	72	12	32	2.0	3	3B30A-100A-20	■ 3B30A-100T-20
10	10	9.5	72	12	32	2.5	3	3B30A-100A-25	■ 3B30A-100T-25
10	10	9.5	82	12	42	1.0	3	3B30A-100B-10	■ 3B30A-100S-10
10	10	9.5	82	12	42	2.0	3	3B30A-100B-20	■ 3B30A-100S-20
10	10	9.5	82	12	42	2.5	3	3B30A-100B-25	■ 3B30A-100S-25
12	12	11.2	77	14	32	2.0	3	3B30A-120A-20	■ 3B30A-120T-20
12	12	11.2	77	14	32	2.5	3	3B30A-120A-25	■ 3B30A-120T-25
12	12	11.2	77	14	32	3.0	3	3B30A-120A-30	■ 3B30A-120T-30
12	12	11.2	87	14	42	2.0	3	3B30A-120B-20	■ 3B30A-120S-20
12	12	11.2	87	14	42	2.5	3	3B30A-120B-25	■ 3B30A-120S-25
12	12	11.2	87	14	42	3.0	3	3B30A-120B-30	■ 3B30A-120S-30
12	12	11.2	97	14	52	2.0	3	3B30A-120C-20	■ 3B30A-120Z-20
12	12	11.2	97	14	52	2.5	3	3B30A-120C-25	■ 3B30A-120Z-25
12	12	11.2	97	14	52	3.0	3	3B30A-120C-30	■ 3B30A-120Z-30
16	16	15	90	18	42	2.0	3	3B30A-160A-20	■ 3B30A-160T-20
16	16	15	90	18	42	3.0	3	3B30A-160A-30	■ 3B30A-160T-30
16	16	15	90	18	42	4.0	3	3B30A-160A-40	■ 3B30A-160T-40
16	16	15	100	18	52	2.0	3	3B30A-160B-20	■ 3B30A-160S-20
16	16	15	100	18	52	3.0	3	3B30A-160B-30	■ 3B30A-160S-30
16	16	15	100	18	52	4.0	3	3B30A-160B-40	■ 3B30A-160S-40

★★★★★此类刀具适合航空铝合金薄壁型腔件的高速铣削加工
Such tools suitable for aerospace aluminum alloy pieces
of thin-walled cavity machining at high-speed

○按订单生产 Production by order

铸铁

不锈钢

钛合金

耐热合金

铝合金

HB<300

HRC30-40

HRC40-45

HRC45-55

HRC>55

首选

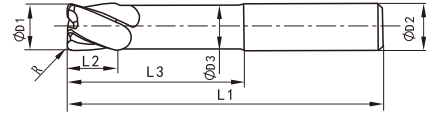
可选

不选

三刃高速铣刀 3B30A

(航空、航天行业)

Three edges high speed milling cutter 3B30A
(aviation, aerospace industry)



刀径 Cutter diameter	柄径 Shank diameter	颈径 Journal diameter	总长 Overall length	刃长 Cutting edge length	工作长 Work length	R径 arc radius	刃数 The number of flutes	订货号 Order number	
D1 (h9)	D2 (h6)	D3	L1	L2	L3	R	Z	不涂层 Uncoating	涂层 Coating
16	16	15	110	18	62	2.0	3	3B30A-160C-20	■ 3B30A-160Z-20
16	16	15	110	18	62	3.0	3	3B30A-160C-30	■ 3B30A-160Z-30
16	16	15	110	18	62	4.0	3	3B30A-160C-40	■ 3B30A-160Z-40
20	20	19	92	24	42	3.0	3	3B30A-200A-30	■ 3B30A-200T-30
20	20	19	92	24	42	4.0	3	3B30A-200A-40	■ 3B30A-200T-40
20	20	19	92	24	42	5.0	3	3B30A-200A-50	■ 3B30A-200T-50
20	20	19	102	24	52	3.0	3	3B30A-200B-30	■ 3B30A-200S-30
20	20	19	102	24	52	4.0	3	3B30A-200B-40	■ 3B30A-200S-40
20	20	19	102	24	52	5.0	3	3B30A-200B-50	■ 3B30A-200S-50
20	20	19	112	24	62	3.0	3	3B30A-200C-30	■ 3B30A-200Z-30
20	20	19	112	24	62	4.0	3	3B30A-200C-40	■ 3B30A-200Z-40
20	20	19	112	24	62	5.0	3	3B30A-200C-50	■ 3B30A-200Z-50
20	20	19	122	24	72	3.0	3	3B30A-200D-30	■ 3B30A-200P-30
20	20	19	122	24	72	4.0	3	3B30A-200D-40	■ 3B30A-200P-40
20	20	19	122	24	72	5.0	3	3B30A-200D-50	■ 3B30A-200P-50
20	20	19	132	24	82	3.0	3	3B30A-200E-30	■ 3B30A-200R-30
20	20	19	132	24	82	4.0	3	3B30A-200E-40	■ 3B30A-200R-40
20	20	19	132	24	82	5.0	3	3B30A-200E-50	■ 3B30A-200R-50
20	20	19	142	24	92	3.0	3	3B30A-200F-30	■ 3B30A-200W-30
20	20	19	142	24	92	4.0	3	3B30A-200F-40	■ 3B30A-200W-40
20	20	19	142	24	92	5.0	3	3B30A-200F-50	■ 3B30A-200W-50
32	32	30	122	30	62	3.0	3	3B30A-320A-30	■ 3B30A-320T-30
32	32	30	122	30	62	4.0	3	3B30A-320A-40	■ 3B30A-320T-40
32	32	30	122	30	62	5.0	3	3B30A-320A-50	■ 3B30A-320T-50
32	32	30	142	30	82	3.0	3	3B30A-320B-30	■ 3B30A-320S-30
32	32	30	142	30	82	4.0	3	3B30A-320B-40	■ 3B30A-320S-40
32	32	30	142	30	82	5.0	3	3B30A-320B-50	■ 3B30A-320S-50

★★★★★此类刀具适合航空铝合金薄壁型腔件的高速铣削加工
Such tools suitable for aerospace aluminum alloy pieces of thin-walled cavity machining at high-speed

○按订单生产 Production by order

铸铁

不锈钢

钛合金

耐热合金

铝合金

HB<300

HRC30-40

HRC40-45

HRC45-55

HRC>55

首选

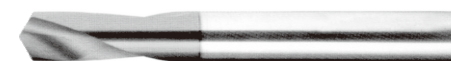
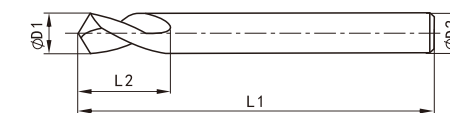
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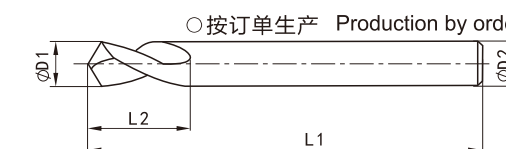


产 品 Product	名 称 Name	型 号 Type	页 码 Page NO
	120° 定心钻 120° spotting drill	1633A	B3
	90° 定心钻 90° spotting drill	1623A	B3
	扁钻 Spade drill	1810A	B4
	双头中心钻 Center drill with double heads	15A3A	B5
	麻花钻 Twist drill	1103B	B6
	内冷麻花钻 Inner cooling Twist drill	1103A	B7
	定柄麻花钻 Straight shank twist drill	1100B	B8
	内冷定柄麻花钻 Inner cooling straight shank twist drill	1100A	B9
	斜柄麻花钻 Flat shank twist drill	1102A	B10
	内冷斜柄麻花钻 Inner cooling flat shank twist drill	1102B	B11
	锥柄麻花钻 Taper shank twist drill	1106A	B12
	G钻 G drill	1203B	B13
	平底G钻 Flat-bottom G drill	1203D	B14
	内冷G钻 Inside cooling G drill	1203A	B15
	平底内冷G钻 Inner cooling flat-bottom G drill	1203C	B16
	钻铰刀 Drill reamer	1X03A	B17
	台阶钻 Step drill	1113A	B18
	三刃扩孔钻 3-cutting edges reaming	1403A	B19
	三刃钻 3-cutting edges drill	1303A	B20
	深孔麻花钻 Deep-hole twist drill	1103S	B21
	双刃带麻花钻 Four margin twist drill	1100F	B22
	内冷双刃带麻花钻 Inside-cooling double edges twist drill	1100G	B23

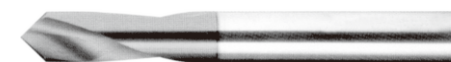
120° 定心钻 1633A 120°spotting drill 1633A



刀 径 Cutter diameter	柄 径 Shank diameter	总 长 Overall length	刃 长 Cutting edge length	订 货 号 Order number	
D 1	D 2	L 1	L 2	不 涂 层 Uncoating	涂 层 Coating
4	4	43	11	1633A-040	■ 1633A-040T
5	5	47	13	1633A-050	■ 1633A-050T
6	6	57	13	1633A-060	■ 1633A-060T
8	8	63	19	1633A-080	■ 1633A-080T
10	10	69	22	1633A-100	■ 1633A-100T
12	12	79	26	1633A-120	■ 1633A-120T
16	16	83	32	1633A-160	■ 1633A-160T
20	20	92	38	1633A-200	■ 1633A-200T



90° 定心钻 1633A 90°spotting drill 1623A



刀 径 Cutter diameter	柄 径 Shank diameter	总 长 Overall length	刃 长 Cutting edge length	订 货 号 Order number	
D 1	D 2	L 1	L 2	不 涂 层 Uncoating	涂 层 Coating
4	4	43	11	1623A-040	■ 1623A-040T
5	5	47	13	1623A-050	■ 1623A-050T
6	6	57	13	1623A-060	■ 1623A-060T
8	8	63	19	1623A-080	■ 1623A-080T
10	10	69	22	1623A-100	■ 1623A-100T
12	12	79	26	1623A-120	■ 1623A-120T
16	16	83	32	1623A-160	■ 1623A-160T
20	20	92	38	1623A-200	■ 1623A-200T

○按订单生产 Production by order

铸 铁

不 锈 钢

钛 合 金

耐 热 合 金

铝 合 金

HB<300

HRC30-40

HRC40-45

HRC45-55

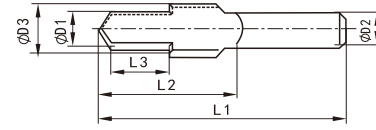
HRC>55

首 选

可 选

不 选

扁钻 1810A Spade drill 1810A



小径 Small Cutter diameter	柄径 Shank diameter	大刃径 Large Cutter diameter	总长 Overall length	槽长 Flute length	台长 Step length	订货号 Order number	
D1	D2	D3	L1	L2	L3	不涂层 Uncoating	涂层 Coating
1.5	3	2.0	35	10	3	1810A-015	■ 1810A-015T
1.8	3	2.2	35	10	3	1810A-018	■ 1810A-018T
2.0	3	2.5	35	10	3	1810A-020	■ 1810A-020T
2.2	3	2.8	40	12	3	1810A-022	■ 1810A-022T
2.5	3	3.0	40	12	3	1810A-025	■ 1810A-025T
2.8	3	3.2	40	15	3	1810A-028	■ 1810A-028T
3.0	3	3.8	40	15	3	1810A-030	■ 1810A-030T
3.5	3	4.2	45	18	3	1810A-035	■ 1810A-035T
4.0	3	4.8	45	20	3	1810A-040	■ 1810A-040T
4.5	3	5.2	50	25	3	1810A-045	■ 1810A-045T
5.0	3	6.0	50	25	3	1810A-050	■ 1810A-050T

○按订单生产 Production by order

铸铁

不锈钢

钛合金

耐热合金

铝合金

HB<300

HRC30-40

HRC40-45

HRC45-55

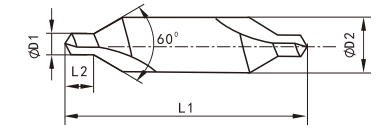
HRC>55

首选

可选

不选

双头中心钻 15A3A Center drill with double heads 15A3A



刃径 Cutter diameter	柄径 Shank diameter	总长 Overall length	台长 Step length	订货号 Order number	
D1	D2	L1	L2	不涂层 Uncoating	涂层 Coating
2.00	5.0	40	2.5	15A3A-020	■ 15A3A-020T
2.50	6.3	45	3.1	15A3A-025	■ 15A3A-025T
3.15	8.0	50	3.9	15A3A-031	■ 15A3A-031T
4.00	10.0	56	5.0	15A3A-040	■ 15A3A-040T
5.00	12.5	63	6.3	15A3A-150	■ 15A3A-150T
6.30	16.0	71	8.0	15A3A-063	■ 15A3A-063T

○按订单生产 Production by order

铸铁

不锈钢

钛合金

耐热合金

铝合金

HB<300

HRC30-40

HRC40-45

HRC45-55

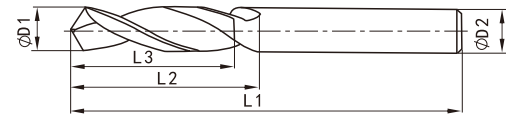
HRC>55

首选

可选

不选

麻花钻 1103B Twist drill 1103B

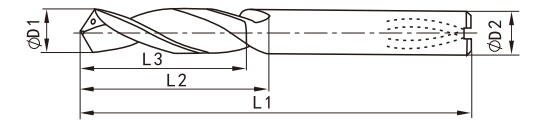


刃径 Cutter diameter	柄径 Shank diameter	总长 Overall length	槽长 Flute length	刃长 Cutting edge length	订货号 Order number	
D1	D2	L1	L2	L3	不涂层 Uncoating	涂层 Coating
3.0	3.0	46	16	12	1103B-030	■ 1103B-030T
3.5	3.5	52	20	15	1103B-035	■ 1103B-035T
4.0	4.0	55	22	16	1103B-040	■ 1103B-040T
4.5	4.5	58	24	17	1103B-045	■ 1103B-045T
5.0	5.0	62	26	19	1103B-050	■ 1103B-050T
5.5	5.5	66	28	20	1103B-055	■ 1103B-055T
6.0	6.0	66	28	19	1103B-060	■ 1103B-060T
6.8	6.8	70	31	21	1103B-068	■ 1103B-068T
7.0	7.0	74	34	24	1103B-070	■ 1103B-070T
7.5	7.5	74	34	23	1103B-075	■ 1103B-075T
8.0	8.0	79	37	25	1103B-080	■ 1103B-080T
8.5	8.5	79	37	24	1103B-085	■ 1103B-085T
8.8	8.8	79	37	24	1103B-088	■ 1103B-088T
9.0	9.0	84	40	27	1103B-090	■ 1103B-090T
9.5	9.5	84	40	26	1103B-095	■ 1103B-095T
10.0	10.0	89	43	28	1103B-100	■ 1103B-100T
11.0	11.0	95	47	31	1103B-110	■ 1103B-110T
12.0	12.0	102	51	33	1103B-120	■ 1103B-120T
14.0	14.0	107	51	33	1103B-140	■ 1103B-140T
15.0	15.0	111	56	34	1103B-150	■ 1103B-150T
16.0	16.0	115	58	34	1103B-160	■ 1103B-160T
17.5	17.5	123	62	36	1103B-175	■ 1103B-175T
18.0	18.0	123	62	35	1103B-180	■ 1103B-180T
20.0	20.0	131	66	36	1103B-200	■ 1103B-200T

○按订单生产 Production by order

铸铁	不锈钢	钛合金	耐热合金	铝合金
HB<300	HRC30-40	HRC40-45	HRC45-55	HRC>55
首选	可选	不选		

内冷麻花钻 1103A Inner cooling Twist drill 1103A

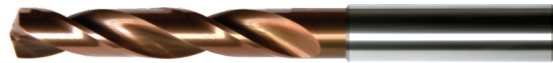
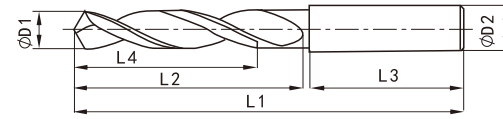


刃径 Cutter diameter	柄径 Shank diameter	总长 Overall length	槽长 Flute length	刃长 Cutting edge length	订货号 Order number	
D1	D2	L1	L2	L3	不涂层 Uncoating	涂层 Coating
3.0	3.0	46	16	12	1103A-030	■ 1103A-030T
3.5	3.5	52	20	15	1103A-035	■ 1103A-035T
4.0	4.0	55	22	16	1103A-040	■ 1103A-040T
4.5	4.5	58	24	17	1103A-045	■ 1103A-045T
5.0	5.0	62	26	19	1103A-050	■ 1103A-050T
5.5	5.5	66	28	20	1103A-055	■ 1103A-055T
6.0	6.0	66	28	19	1103A-060	■ 1103A-060T
6.8	6.8	70	31	21	1103A-068	■ 1103A-068T
7.0	7.0	74	34	24	1103A-070	■ 1103A-070T
7.5	7.5	74	34	23	1103A-075	■ 1103A-075T
8.0	8.0	79	37	25	1103A-080	■ 1103A-080T
8.5	8.5	79	37	24	1103A-085	■ 1103A-085T
8.8	8.8	79	37	24	1103A-088	■ 1103A-088T
9.0	9.0	84	40	27	1103A-090	■ 1103A-090T
9.5	9.5	84	40	26	1103A-095	■ 1103A-095T
10.0	10.0	89	43	28	1103A-100	■ 1103A-100T
11.0	11.0	95	47	31	1103A-110	■ 1103A-110T
12.0	12.0	102	51	33	1103A-120	■ 1103A-120T
14.0	14.0	107	54	33	1103A-140	■ 1103A-140T
15.0	15.0	111	56	34	1103A-150	■ 1103A-150T
16.0	16.0	115	58	34	1103A-160	■ 1103A-160T
17.5	17.5	123	62	36	1103A-175	■ 1103A-175T
18.0	18.0	123	62	35	1103A-180	■ 1103A-180T
20.0	20.0	131	66	36	1103A-200	■ 1103A-200T

○按订单生产 Production by order

铸铁	不锈钢	钛合金	耐热合金	铝合金
HB<300	HRC30-40	HRC40-45	HRC45-55	HRC>55
首选	可选	不选		

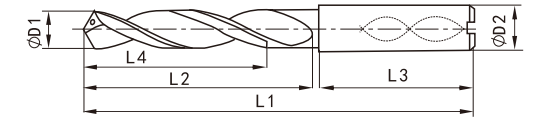
定柄麻花钻 1100B
Straight shank twist drill 1100B



刃径 Cutter diameter	柄径 Shank diameter	总长 Overall length	槽长 Flute length	柄长 Shank length	刃长 Cutting edge length	订货号 Order number	
D1	D2	L1	L2	L3	L4	不涂层 Uncoating	涂层 Coating
3	6	66	28	36	23	1100B-030	■ 1100B-030T
4	6	66	28	36	23	1100B-035	■ 1100B-035T
4	6	74	36	36	29	1100B-040	■ 1100B-040T
5	6	74	36	36	29	1100B-045	■ 1100B-045T
5	6	82	44	36	35	1100B-050	■ 1100B-050T
6	6	82	44	36	35	1100B-055	■ 1100B-055T
6	6	82	44	36	35	1100B-060	■ 1100B-060T
7	8	91	53	36	43	1100B-065	■ 1100B-065T
7	8	91	53	36	43	1100B-070	■ 1100B-070T
8	8	91	53	36	43	1100B-075	■ 1100B-075T
8	8	91	53	36	43	1100B-080	■ 1100B-080T
9	10	103	61	36	49	1100B-085	■ 1100B-085T
9	10	103	61	40	49	1100B-090	■ 1100B-090T
10	10	103	61	40	49	1100B-095	■ 1100B-095T
10	10	103	61	40	49	1100B-100	■ 1100B-100T
11	12	118	71	40	56	1100B-110	■ 1100B-110T
12	12	118	71	45	56	1100B-120	■ 1100B-120T
14	14	124	77	45	60	1100B-140	■ 1100B-140T
15	16	133	83	48	63	1100B-150	■ 1100B-150T
16	16	133	83	48	63	1100B-160	■ 1100B-160T
18	18	143	93	48	71	1100B-180	■ 1100B-180T
20	20	153	101	50	77	1100B-200	■ 1100B-200T

○按订单生产 Production by order

内冷定柄麻花钻 1100A
Inner cooling straight shank twist drill 1100A



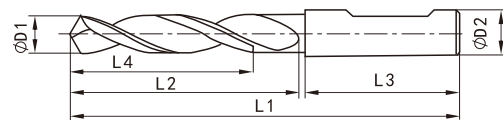
刃径 Cutter diameter	柄径 Shank diameter	总长 Overall length	槽长 Flute length	柄长 Shank length	刃长 Cutting edge length	订货号 Order number	
D1	D2	L1	L2	L3	L4	不涂层 Uncoating	涂层 Coating
3	6	66	28	36	36	1100A-030	■ 1100A-030T
4	6	66	28	36	36	1100A-035	■ 1100A-035T
4	6	74	36	36	36	1100A-040	■ 1100A-040T
5	6	74	36	36	36	1100A-045	■ 1100A-045T
5	6	82	44	36	36	1100A-050	■ 1100A-050T
6	6	82	44	36	36	1100A-055	■ 1100A-055T
6	6	82	44	36	36	1100A-060	■ 1100A-060T
7	8	91	53	36	36	1100A-065	■ 1100A-065T
7	8	91	53	36	36	1100A-070	■ 1100A-070T
8	8	91	53	36	36	1100A-075	■ 1100A-075T
8	8	91	53	36	36	1100A-080	■ 1100A-080T
9	10	103	61	40	40	1100A-085	■ 1100A-085T
9	10	103	61	40	40	1100A-090	■ 1100A-090T
10	10	103	61	40	40	1100A-095	■ 1100A-095T
10	10	103	61	40	40	1100A-100	■ 1100A-100T
11	12	118	71	45	45	1100A-110	■ 1100A-110T
12	12	118	71	45	45	1100A-120	■ 1100A-120T
14	14	124	77	45	45	1100A-140	■ 1100A-140T
15	16	133	83	48	48	1100A-150	■ 1100A-150T
16	16	133	83	48	48	1100A-160	■ 1100A-160T
18	18	143	93	48	48	1100A-180	■ 1100A-180T
20	20	153	101	50	50	1100A-200	■ 1100A-200T

○按订单生产 Production by order

铸铁 不锈钢 钛合金 耐热合金 铝合金
HB<300 HRC30-40 HRC40-45 HRC45-55 HRC>55
首选 可选 不选

铸铁 不锈钢 钛合金 耐热合金 铝合金
HB<300 HRC30-40 HRC40-45 HRC45-55 HRC>55
首选 可选 不选

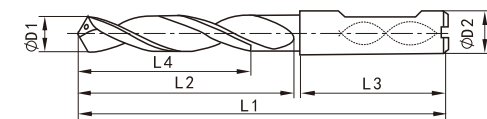
斜柄麻花钻 1102A Flat shank twist drill 1102A



刃径 Cutter diameter	柄径 Shank diameter	总长 Overall length	槽长 Flute length	柄长 Shank length	刃长 Cutting edge length	订货号 Order number	
D1	D2	L1	L2	L3	L4	不涂层 Uncoating	涂层 Coating
3	6	66	28	36	23	1102A-030	■ 1102A-030T
4	6	66	28	36	23	1102A-035	■ 1102A-035T
4	6	74	36	36	29	1102A-040	■ 1102A-040T
5	6	74	36	36	29	1102A-045	■ 1102A-045T
5	6	82	44	36	35	1102A-050	■ 1102A-050T
6	6	82	44	36	35	1102A-055	■ 1102A-055T
6	6	82	44	36	35	1102A-060	■ 1102A-060T
7	8	91	53	36	43	1102A-065	■ 1102A-065T
7	8	91	53	36	43	1102A-070	■ 1102A-070T
8	8	91	53	36	43	1102A-075	■ 1102A-075T
8	8	91	53	36	43	1102A-080	■ 1102A-080T
9	10	103	61	36	49	1102A-085	■ 1102A-085T
9	10	103	61	40	49	1102A-090	■ 1102A-090T
10	10	103	61	40	49	1102A-095	■ 1102A-095T
10	10	103	61	40	49	1102A-100	■ 1102A-100T
11	12	118	71	40	56	1102a-110	■ 1102A-110T
12	12	118	71	45	56	1102A-120	■ 1102A-120T
14	14	124	77	45	60	1102A-140	■ 1102A-140T
15	16	133	83	48	63	1102A-150	■ 1102A-150T
16	16	133	83	48	63	1102A-160	■ 1102A-160T
18	18	143	93	48	71	1102A-180	■ 1102A-180T
20	20	153	101	50	77	1102A-200	■ 1102A-200T

○按订单生产 Production by order

内冷斜柄麻花钻 1102B Inner cooling flat shank twist drill 1102B



刃径 Cutter diameter	柄径 Shank diameter	总长 Overall length	槽长 Flute length	柄长 Shank length	刃长 Cutting edge length	订货号 Order number	
D1	D2	L1	L2	L3	L4	不涂层 Uncoating	涂层 Coating
3	6	66	28	36	23	1102B-030	■ 1102B-030T
4	6	66	28	36	23	1102B-035	■ 1102B-035T
4	6	74	36	36	29	1102B-040	■ 1102B-040T
5	6	74	36	36	29	1102B-045	■ 1102B-045T
5	6	82	44	36	35	1102B-050	■ 1102B-050T
6	6	82	44	36	35	1102B-055	■ 1102B-055T
6	6	82	44	36	35	1102B-060	■ 1102B-060T
7	8	91	53	36	43	1102B-065	■ 1102B-065T
7	8	91	53	36	43	1102B-070	■ 1102B-070T
8	8	91	53	36	43	1102B-075	■ 1102B-075T
8	8	91	53	36	43	1102B-080	■ 1102B-080T
9	10	103	61	40	49	1102B-085	■ 1102B-085T
9	10	103	61	40	49	1102B-090	■ 1102B-090T
10	10	103	61	40	49	1102B-095	■ 1102B-095T
10	10	103	61	40	49	1102B-100	■ 1102B-100T
11	12	118	71	45	56	1102B-110	■ 1102B-110T
12	12	118	71	45	56	1102B-120	■ 1102B-120T
14	14	124	77	45	60	1102B-140	■ 1102B-140T
15	16	133	83	48	63	1102B-150	■ 1102B-150T
16	16	133	83	48	63	1102B-160	■ 1102B-160T
18	18	143	93	48	71	1102B-180	■ 1102B-180T
20	20	153	101	50	77	1102B-200	■ 1102B-200T

○按订单生产 Production by order

铸铁

不锈钢

钛合金

耐热合金

铝合金

HB<300

HRC30-40

HRC40-45

HRC45-55

HRC>55

首选

可选

不选

铸铁

不锈钢

钛合金

耐热合金

铝合金

HB<300

HRC30-40

HRC40-45

HRC45-55

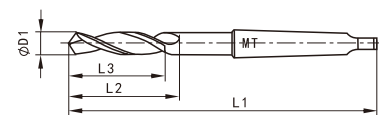
HRC>55

首选

可选

不选

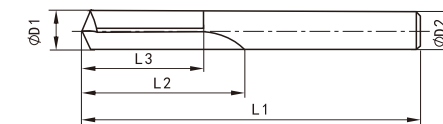
锥柄麻花钻 1106A
Taper shank twist drill 1106A



刃径 Cutter diameter	总长 Overall length	槽长 Flute length	刃长 Cutting edge length	MT	订货号 Order number	
D1	L1	L2	L3	NO	不涂层 Uncoating	涂层 Coating
8.0	135	45	33	1	1106A-080	■ 1106A-080T
8.5	135	45	32	1	1106A-085	■ 1106A-085T
9.0	135	45	32	1	1106A-090	■ 1106A-090T
9.5	135	45	31	1	1106A-095	■ 1106A-095T
10.0	140	50	35	1	1106A-100	■ 1106A-100T
11.0	140	50	34	1	1106A-110	■ 1106A-110T
12.0	146	56	38	1	1106A-120	■ 1106A-120T
14.0	168	63	42	2	1106A-140	■ 1106A-140T
15.0	168	63	41	2	1106A-150	■ 1106A-150T
16.0	175	70	46	2	1106A-160	■ 1106A-160T
18.0	185	80	53	2	1106A-180	■ 1106A-180T
20.0	215	90	60	3	1106A-200	■ 1106A-200T

○按订单生产 Production by order

G钻 1203B
G drill 1203B



刃径 Cutter diameter	柄径 Shank diameter	总长 Overall length	槽长 Flute length	刃长 Cutting edge length	订货号 Order number	
D1	D2	L1	L2	L3	不涂层 Uncoating	涂层 Coating
5.0	5.0	62	26	19	1203B-050	■ 1203B-050T
5.5	5.5	66	28	20	1203B-055	■ 1203B-055T
6.0	6.0	66	28	19	1203B-060	■ 1203B-060T
6.5	6.5	70	31	21	1203B-065	■ 1203B-065T
7.0	7.0	74	34	24	1203B-070	■ 1203B-070T
7.5	7.5	74	34	23	1203B-075	■ 1203B-075T
8.0	8.0	79	37	25	1203B-080	■ 1203B-080T
8.5	8.5	79	37	24	1203B-085	■ 1203B-085T
9.0	9.0	84	40	27	1203B-090	■ 1203B-090T
9.5	9.5	84	40	26	1203B-095	■ 1203B-095T
10.0	10.0	89	43	28	1203B-100	■ 1203B-100T
11.0	11.0	95	47	31	1203B-110	■ 1203B-110T
12.0	12.0	102	51	33	1203B-120	■ 1203B-120T
14.0	14.0	107	54	33	1203B-140	■ 1203B-140T
15.0	15.0	111	56	34	1203B-150	■ 1203B-150T
16.0	16.0	115	58	34	1203B-160	■ 1203B-160T
18.0	18.0	123	62	35	1203B-180	■ 1203B-180T
20.0	20.0	131	66	36	1203B-200	■ 1203B-200T

○按订单生产 Production by order

铸铁

不锈钢

钛合金

耐热合金

铝合金

HB<300

HRC30-40

HRC40-45

HRC45-55

HRC>55

首选

可选

不选

铸铁

不锈钢

钛合金

耐热合金

铝合金

HB<300

HRC30-40

HRC40-45

HRC45-55

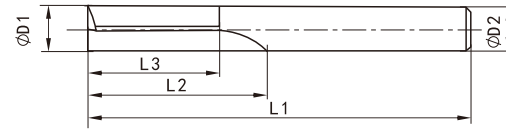
HRC>55

首选

可选

不选

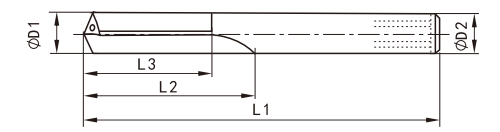
平底G钻 1203D
Flat-bottom G drill 1203D



刃径 Cutter diameter	柄径 Shank diameter	总长 Overall length	槽长 Flute length	刃长 Cutting edge length	订货号 Order number	
D1	D2	L1	L2	L3	不涂层 Uncoating	涂层 Coating
5.0	5.0	62	26	19	1203D-050	■ 1203D-050T
5.5	5.5	66	28	20	1203D-055	■ 1203D-055T
6.0	6.0	66	28	19	1203D-060	■ 1203D-060T
6.5	6.5	70	31	21	1203D-065	■ 1203D-065T
7.0	7.0	74	34	24	1203D-070	■ 1203D-070T
7.5	7.5	74	34	23	1203D-075	■ 1203D-075T
8.0	8.0	79	37	25	1203D-080	■ 1203D-080T
8.5	8.5	79	37	24	1203D-085	■ 1203D-085T
9.0	9.0	84	40	27	1203D-090	■ 1203D-090T
9.5	9.5	84	40	26	1203D-095	■ 1203D-095T
10.0	10.0	89	43	28	1203D-100	■ 1203D-100T
11.0	11.0	95	47	31	1203D-110	■ 1203D-110T
12.0	12.0	102	51	33	1203D-120	■ 1203D-120T
14.0	14.0	107	54	33	1203D-140	■ 1203D-140T
15.0	15.0	111	56	34	1203D-150	■ 1203D-150T
16.0	16.0	115	58	34	1203D-160	■ 1203D-160T
18.0	18.0	123	62	35	1203D-180	■ 1203D-180T
20.0	20.0	131	66	36	1203D-200	■ 1203D-200T

○按订单生产 Production by order

内冷G钻 1203A
Inside cooling G drill 1203A



刃径 Cutter diameter	柄径 Shank diameter	总长 Overall length	槽长 Flute length	刃长 Cutting edge length	订货号 Order number	
D1	D2	L1	L2	L3	不涂层 Uncoating	涂层 Coating
5.0	5.0	62	26	19	1203A-050	■ 1203A-050T
5.5	5.5	66	28	20	1203A-055	■ 1203A-055T
6.0	6.0	66	28	19	1203A-060	■ 1203A-060T
6.5	6.5	70	31	21	1203A-065	■ 1203A-065T
7.0	7.0	74	34	24	1203A-070	■ 1203A-070T
7.5	7.5	74	34	23	1203A-075	■ 1203A-075T
8.0	8.0	79	37	25	1203A-080	■ 1203A-080T
8.5	8.5	79	37	24	1203A-085	■ 1203A-085T
9.0	9.0	84	40	27	1203A-090	■ 1203A-090T
9.5	9.5	84	40	26	1203A-095	■ 1203A-095T
10.0	10.0	89	43	28	1203A-100	■ 1203A-100T
11.0	11.0	95	47	31	1203A-110	■ 1203A-110T
12.0	12.0	102	51	33	1203A-120	■ 1203A-120T
14.0	14.0	107	54	33	1203A-140	■ 1203A-140T
15.0	15.0	111	56	34	1203A-150	■ 1203A-150T
16.0	16.0	115	58	34	1203A-160	■ 1203A-160T
18.0	18.0	123	62	35	1203A-180	■ 1203A-180T
20.0	20.0	131	66	36	1203A-200	■ 1203A-200T

○按订单生产 Production by order

铸铁

不锈钢

钛合金

耐热合金

铝合金

HB<300

HRC30-40

HRC40-45

HRC45-55

HRC>55

首选

可选

不选

铸铁

不锈钢

钛合金

耐热合金

铝合金

HB<300

HRC30-40

HRC40-45

HRC45-55

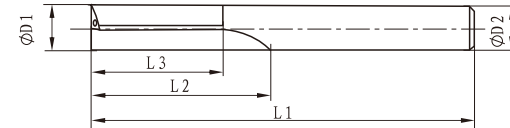
HRC>55

首选

可选

不选

平底内冷G钻 1203C Inner cooling flat-bottom G drill 1203C

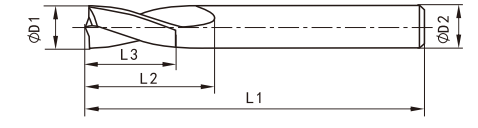


DIN 1897
K20
涂层 (可选)
DIN 6535 HA

刃径 Cutter diameter	柄径 Shank diameter	总长 Overall length	槽长 Flute length	刃长 Cutting edge length	订货号 Order number	
D1	D2	L1	L2	L3	不涂层 Uncoating	涂层 Coating
5.0	5.0	62	26	19	1203C-050	■ 1203C-050T
5.5	5.5	66	28	20	1203C-055	■ 1203C-055T
6.0	6.0	66	28	19	1203C-060	■ 1203C-060T
6.5	6.5	70	31	21	1203C-065	■ 1203C-065T
7.0	7.0	74	34	24	1203C-070	■ 1203C-070T
7.5	7.5	74	34	23	1203C-075	■ 1203C-075T
8.0	8.0	79	37	25	1203C-080	■ 1203C-080T
8.5	8.5	79	37	24	1203C-085	■ 1203C-085T
9.0	9.0	84	40	27	1203C-090	■ 1203C-090T
9.5	9.5	84	40	26	1203C-095	■ 1203C-095T
10.0	10.0	89	43	28	1203C-100	■ 1203C-100T
11.0	11.0	95	47	31	1203C-110	■ 1203C-110T
12.0	12.0	102	51	33	1203C-120	■ 1203C-120T
14.0	14.0	107	54	33	1203C-140	■ 1203C-140T
15.0	15.0	111	56	34	1203C-150	■ 1203C-150T
16.0	16.0	115	58	34	1203C-160	■ 1203C-160T
18.0	18.0	123	62	35	1203C-180	■ 1203C-180T
20.0	20.0	131	66	36	1203C-200	■ 1203C-200T

○按订单生产 Production by order

钻铰刀 1X03A Drill reamer 1X03A



ZGST
K20
140°
涂层 (可选)
DIN 6535 HA

刃径 Cutter diameter	柄径 Shank diameter	总长 Overall length	槽长 Flute length	刃长 Cutting edge length	订货号 Order number	
D1	D2	L1	L2	L3	不涂层 Uncoating	涂层 Coating
6	6	62	20	11	1X03A-060	■ 1X03A-060T
8	8	79	41	29	1X03A-080	■ 1X03A-080T
10	10	89	49	34	1X03A-100	■ 1X03A-100T
12	12	102	55	37	1X03A-120	■ 1X03A-120T
13	13	105	55	36	1X03A-130	■ 1X03A-130T
14	14	105	55	34	1X03A-140	■ 1X03A-140T
15	15	115	65	43	1X03A-150	■ 1X03A-150T
16	16	115	65	41	1X03A-160	■ 1X03A-160T
17	17	123	73	48	1X03A-170	■ 1X03A-170T
18	18	123	73	46	1X03A-180	■ 1X03A-180T
20	20	131	79	49	1X03A-200	■ 1X03A-200T
22	22	151	93	60	1X03A-220	■ 1X03A-220T
24	24	153	96	60	1X03A-240	■ 1X03A-240T

○按订单生产 Production by order

铸铁
不锈钢
钛合金
耐热合金
铝合金

HB<300
HRC30-40
HRC40-45
HRC45-55
HRC>55

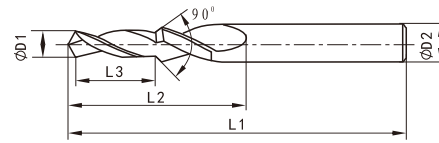
首选
可选
不选

铸铁
不锈钢
钛合金
耐热合金
铝合金

HB<300
HRC30-40
HRC40-45
HRC45-55
HRC>55

首选
可选
不选

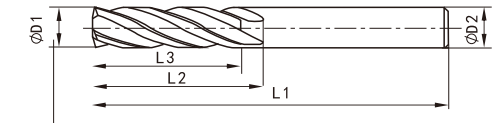
台阶钻 1113A
Step drill 1113A



刃径 Cutter diameter	柄径 Shank diameter	总长 Overall length	槽长 Flute length	刃长 Cutting edge length	订货号 Order number	
D1	D2	L1	L2	L3	不涂层 Uncoating	涂层 Coating
3.3	6	66	28	11.4	1113A-033	■ 1113A-033T
4.2	6	66	28	13.6	1113A-042	■ 1113A-042T
5.0	8	79	41	16.5	1113A-050	■ 1113A-050T
6.8	10	89	47	21.0	1113A-068	■ 1113A-068T
8.5	12	102	55	25.5	1113A-085	■ 1113A-085T
10.2	14	107	60	30.0	1113A-102	■ 1113A-102T
12.0	16	115	65	34.5	1113A-120	■ 1113A-120T
14.0	18	123	73	38.5	1113A-140	■ 1113A-140T

○按订单生产 Production by order

三刃扩孔钻 1403A
3-cutting edges reaming 1403A



刃径 Cutter diameter	柄径 Shank diameter	总长 Overall length	槽长 Flute length	刃长 Cutting edge length	订货号 Order number	
D1	D2	L1	L2	L3	不涂层 Uncoating	涂层 Coating
3	3	46	16	12	1403A-030	■ 1403A-030T
4	4	52	20	15	1403A-035	■ 1403A-035T
4	4	55	22	16	1403A-040	■ 1403A-040T
5	5	58	24	17	1403A-045	■ 1403A-045T
5	5	62	26	19	1403A-050	■ 1403A-050T
6	6	66	28	20	1403A-055	■ 1403A-055T
6	6	66	28	19	1403A-060	■ 1403A-060T
7	7	70	31	21	1403A-065	■ 1403A-068T
7	7	74	34	24	1403A-070	■ 1403A-070T
8	8	74	34	23	1403A-075	■ 1403A-075T
8	8	79	37	25	1403A-080	■ 1403A-080T
9	9	79	37	24	1403A-085	■ 1403A-085T
9	9	84	40	27	1403A-090	■ 1403A-090T
10	10	84	40	26	1403A-095	■ 1403A-095T
10	10	89	43	28	1403A-100	■ 1403A-100T
11	11	95	47	31	1403A-110	■ 1403A-110T
12	12	102	51	33	1403A-120	■ 1403A-120T
14	14	107	54	33	1403A-040	■ 1403A-040T
15	15	111	56	34	1403A-150	■ 1403A-150T
16	16	115	58	34	1403A-160	■ 1403A-160T
18	18	123	62	35	1403A-180	■ 1403A-180T
20	20	131	66	36	1403A-200	■ 1403A-200T

○按订单生产 Production by order

铸铁 不锈钢 钛合金 耐热合金 铝合金

HB<300 HRC30-40 HRC40-45 HRC45-55 HRC>55

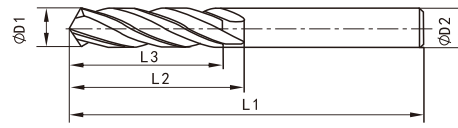
首选 可选 不选

铸铁 不锈钢 钛合金 耐热合金 铝合金

HB<300 HRC30-40 HRC40-45 HRC45-55 HRC>55

首选 可选 不选

三刃钻 1303A
3-cutting edges drill 1303A



刃径 Cutter diameter	柄径 Shank diameter	总长 Overall length	槽长 Flute length	刃长 Cutting edge length	订货号 Order number	
D1	D2	L1	L2	L3	不涂层 Uncoating	涂层 Coating
3	3	46	16	12	1403A-030	■ 1403A-030T
4	4	52	20	15	1403A-035	■ 1403A-035T
4	4	55	22	16	1403A-040	■ 1403A-040T
5	5	58	24	17	1403A-045	■ 1403A-045T
5	5	62	26	19	1403A-050	■ 1403A-050T
6	6	66	28	20	1403A-055	■ 1403A-055T
6	6	66	28	19	1403A-060	■ 1403A-060T
7	7	70	31	21	1403A-065	■ 1403A-068T
7	7	74	34	24	1403A-070	■ 1403A-070T
8	8	74	34	23	1403A-075	■ 1403A-075T
8	8	79	37	25	1403A-080	■ 1403A-080T
9	9	79	37	24	1403A-085	■ 1403A-085T
9	9	84	40	27	1403A-090	■ 1403A-090T
10	10	84	40	26	1403A-095	■ 1403A-095T
10	10	89	43	28	1403A-100	■ 1403A-100T
11	11	95	47	31	1403A-110	■ 1403A-110T
12	12	102	51	33	1403A-120	■ 1403A-120T
14	14	107	54	33	1403A-040	■ 1403A-040T
15	15	111	56	34	1403A-150	■ 1403A-150T
16	16	115	58	34	1403A-160	■ 1403A-160T
18	18	123	62	35	1403A-180	■ 1403A-180T
20	20	131	66	36	1403A-200	■ 1403A-200T

○按订单生产 Production by order

铸铁

不锈钢

钛合金

耐热合金

铝合金

HB<300

HRC30-40

HRC40-45

HRC45-55

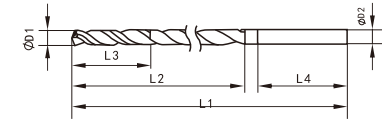
HRC>55

首选

可选

不选

深孔麻花钻 1103S
Deep-hole twist drill 1103S



刃径 Cutter diameter	柄径 Shank diameter	总长 Overall length	槽长 Flute length	刃长 Cutting edge length	柄长 Shank length	订货号 Order number	
D1	D2	L1	L2	L3	L4	不涂层 Uncoating	涂层 Coating
6.0	6	95	57	48	36	1103S-060	■ 1103S-060T
6.5	8	114	76	64	36	1103S-065	■ 1103S-065T
7.0	8	114	76	64	36	1103S-070	■ 1103S-070T
7.5	8	114	76	64	36	1103S-075	■ 1103S-075T
8.0	8	114	76	64	36	1103S-080	■ 1103S-080T
8.5	10	142	95	80	40	1103S-085	■ 1103S-085T
9.0	10	142	95	80	40	1103S-090	■ 1103S-090T
9.5	10	142	95	80	40	1103S-095	■ 1103S-095T
10.0	10	142	95	80	40	1103S-100	■ 1103S-100T
10.5	12	162	114	96	45	1103S-105	■ 1103S-105T
11.0	12	162	114	96	45	1103S-110	■ 1103S-110T
11.5	12	162	114	96	45	1103S-115	■ 1103S-115T
12.0	12	162	114	96	45	1103S-120	■ 1103S-120T
12.5	14	178	133	112	45	1103S-125	■ 1103S-125T
13.0	14	178	133	112	45	1103S-130	■ 1103S-130T
13.5	14	178	133	112	45	1103S-135	■ 1103S-135T
14.0	14	178	133	112	45	1103S-140	■ 1103S-140T
14.5	16	203	152	128	48	1103S-145	■ 1103S-145T
15.0	16	203	152	128	48	1103S-150	■ 1103S-150T
15.5	16	203	152	128	48	1103S-155	■ 1103S-155T
16.0	16	203	152	128	48	1103S-160	■ 1103S-160T
17.0	18	222	171	144	48	1103S-170	■ 1103S-170T
18.0	18	222	171	144	48	1103S-180	■ 1103S-180T
19.0	20	243	190	160	50	1103S-190	■ 1103S-190T
20.0	20	243	190	160	50	1103S-200	■ 1103S-200T

○按订单生产 Production by order

铸铁

不锈钢

钛合金

耐热合金

铝合金

HB<300

HRC30-40

HRC40-45

HRC45-55

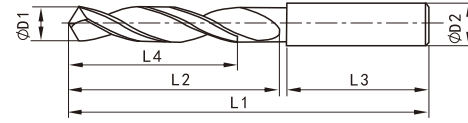
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首选

可选

不选

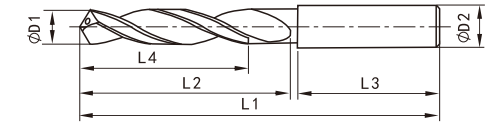
双刃带麻花钻 1100F
Four margin twist drill 1100F



刃径 Cutter diameter	柄径 Shank diameter	总长 Overall length	槽长 Flute length	柄长 Shank length	刃长 Cutting edge length	订货号 Order number	
D1	D2	L1	L2	L3	L4	不涂层 Uncoating	涂层 Coating
3	6	66	28	36	23	1100F-030	■ 1100F-030T
4	6	66	28	36	23	1100F-035	■ 1100F-035T
4	6	74	36	36	29	1100F-040	■ 1100F-040T
5	6	74	36	36	29	1100F-045	■ 1100F-045T
5	6	82	44	36	35	1100F-050	■ 1100F-050T
6	6	82	44	36	35	1100F-055	■ 1100F-055T
6	6	82	44	36	35	1100F-060	■ 1100F-060T
7	8	91	53	36	43	1100F-065	■ 1100F-065T
7	8	91	53	36	43	1100F-070	■ 1100F-070T
8	8	91	53	36	43	1100F-075	■ 1100F-075T
8	8	91	53	36	43	1100F-080	■ 1100F-080T
9	10	103	61	40	49	1100F-085	■ 1100F-085T
9	10	103	61	40	49	1100F-090	■ 1100F-090T
10	10	103	61	40	49	1100F-095	■ 1100F-095T
10	10	103	61	40	49	1100F-100	■ 1100F-100T
11	12	118	71	45	56	1100F-110	■ 1100F-110T
12	12	118	71	45	56	1100F-120	■ 1100F-120T
14	14	124	77	45	60	1100F-140	■ 1100F-140T
15	16	133	83	48	63	1100F-150	■ 1100F-150T
16	16	133	83	48	63	1100F-160	■ 1100F-160T
18	18	143	93	48	71	1100F-180	■ 1100F-180T
20	20	153	101	50	77	1100F-200	■ 1100F-200T

○按订单生产 Production by order

内冷双刃带麻花钻 1100G
Inside-cooling double edges twist drill 1100G



刃径 Cutter diameter	柄径 Shank diameter	总长 Overall length	槽长 Flute length	刃长 Cutting edge length	柄长 Shank length	订货号 Order number	
D1	D2	L1	L2	L3	L4	不涂层 Uncoating	涂层 Coating
3	6	66	28	36	23	1100G-030	■ 1100G-030T
4	6	66	28	36	23	1100G-035	■ 1100G-035T
4	6	74	36	36	29	1100G-040	■ 1100G-040T
5	6	74	36	36	29	1100G-045	■ 1100G-045T
5	6	82	44	36	35	1100G-050	■ 1100G-050T
6	6	82	44	36	35	1100G-055	■ 1100G-055T
6	6	82	44	36	35	1100G-060	■ 1100G-060T
7	8	91	53	36	43	1100G-065	■ 1100G-065T
7	8	91	53	36	43	1100G-070	■ 1100G-070T
8	8	91	53	36	43	1100G-075	■ 1100G-075T
8	8	91	53	36	43	1100G-080	■ 1100G-080T
9	10	103	61	40	49	1100G-085	■ 1100G-085T
9	10	103	61	40	49	1100G-090	■ 1100G-090T
10	10	103	61	40	49	1100G-095	■ 1100G-095T
10	10	103	61	40	49	1100G-100	■ 1100G-100T
11	12	118	71	45	56	1100G-110	■ 1100G-110T
12	12	118	71	45	56	1100G-120	■ 1100G-120T
14	14	124	77	48	60	1100G-140	■ 1100G-140T
15	16	133	83	48	63	1100G-150	■ 1100G-150T
16	16	133	83	48	63	1100G-160	■ 1100G-160T
18	18	143	93	48	71	1100G-180	■ 1100G-180T
20	20	153	101	50	77	1100G-200	■ 1100G-200T

○按订单生产 Production by order

铸铁

不锈钢

钛合金

耐热合金

铝合金

HB<300

HRC30-40

HRC40-45

HRC45-55

HRC>55

首选

可选

不选

铸铁

不锈钢

钛合金

耐热合金

铝合金

HB<300

HRC30-40

HRC40-45

HRC45-55

HRC>55

首选

可选

不选



® 铰削刀具

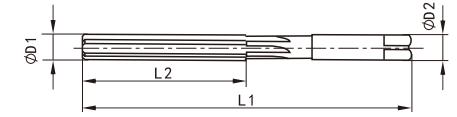


Cutter tool



产品 Product	名称 Name	型号 Type	页码 Page NO
	手用铰刀 Hand reamer	2105A	C3
	机用铰刀 Machined reamer	2103A	C4
	机用长铰刀 Long mechanical reamer	2103L	C5
	内冷机用铰刀 Inner-cooling mechanical reamer	2103N	C6
	锥柄机用铰刀 Taper shank mechanical reamer	2106A	C7
	锥柄机用铰刀 Taper shank mechanical reamer	2126A	C8
	锥柄短刃机用铰刀 Taper shank machine reamer with short cutting edge	2156A	C9
	锥柄机用铰刀 Taper shank mechanical reamer	2106B	C10
	锥柄短刃机用铰刀 Taper shank machine reamer with short cutting edge	2126B	C11
	直柄机用铰刀 Straight shank mechanical reamer	2100A	C12
	直柄机用铰刀 Straight shank mechanical reamer	2120A	C13
	直柄短刃机用铰刀 Straight shank mechanical reamer with short cutting edge	2100B	C14
	直柄短刃机用铰刀 Straight shank mechanical reamer with short cutting edge	2120B	C15
	机用铰刀 Machined reamer	2103K	C16
	机用铰刀 Machined reamer	2123K	C17
	枪铰刀 Gun reamer	2320K	C18
	枪铰刀 Gun reamer	2320L	C19

手用铰刀 2105A Hand reamer 2105A



刃径 Cutter diameter	柄径 Shank diameter	总长 Overall length	刃长 Cutting edge length	扁尾 Flat tail	刃数 The number of flutes	订货号 Order number	
D1	D2	L1	L2	SW	Z	不涂层 Uncoating	涂层 Coating
5	5	87	44	3.8	4	2105A-050	■ 2105A-050T
6	6	93	47	4.9	4	2105A-060	■ 2105A-060T
7	7	107	54	5.5	4	2105A-070	■ 2105A-070T
8	8	115	58	6.2	4	2105A-080	■ 2105A-080T
9	9	124	62	7.0	4	2105A-090	■ 2105A-090T
10	10	133	66	8.0	6	2105A-100	■ 2105A-100T
11	11	142	71	9.0	6	2105A-110	■ 2105A-110T
12	12	152	76	9.0	6	2105A-120	■ 2105A-120T
13	13	152	76	10.0	6	2105A-130	■ 2105A-130T
14	14	163	81	11.0	6	2105A-140	■ 2105A-140T
15	15	163	81	12.0	6	2105A-150	■ 2105A-150T
16	16	175	87	12.0	6	2105A-160	■ 2105A-160T
17	17	175	87	13.0	6	2105A-170	■ 2105A-170T
18	18	188	93	14.5	6	2105A-180	■ 2105A-180T
19	19	188	93	14.5	6	2105A-190	■ 2105A-190T
20	20	201	100	16.0	6	2105A-200	■ 2105A-200T

○按订单生产 Production by order

铸铁

不锈钢

钛合金

耐热合金

铝合金

HB<300

HRC30-40

HRC40-45

HRC45-55

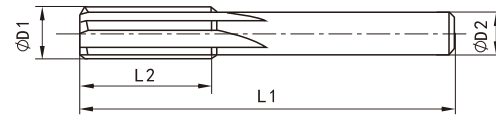
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可选

不选

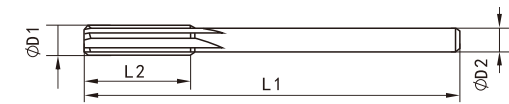
机用铰刀 2103A
Machined reamer 2103A



刃径 Cutter diameter	柄径 Shank diameter	总长 Overall length	刃长 Cutting edge length	刃数 The number of flutes	订货号 Order number	
D1	D2	L1	L2	Z	不涂层 Uncoating	涂层 Coating
5	4.0	63	22	4	2103A-050	■ 2103A-050T
6	5.0	63	22	4	2103A-060	■ 2103A-060T
7	6.3	71	25	4	2103A-070	■ 2103A-070T
8	6.3	71	25	4	2103A-080	■ 2103A-080T
9	8.0	71	25	4	2103A-090	■ 2103A-090T
10	8.0	71	25	6	2103A-100	■ 2103A-100T
11	10.0	80	28	6	2103A-110	■ 2103A-110T
12	10.0	80	28	6	2103A-120	■ 2103A-120T
14	12.5	90	32	6	2103A-140	■ 2103A-140T
15	12.5	90	32	6	2103A-150	■ 2103A-150T
16	12.5	90	32	6	2103A-160	■ 2103A-160T
18	16.0	100	36	6	2103A-180	■ 2103A-180T
20	16.0	100	36	6	2103A-200	■ 2103A-200T

○按订单生产 Production by order

机用长铰刀 2103L
Long mechanical reamer 2103L



刃径 Cutter diameter	柄径 Shank diameter	总长 Overall length	刃长 Cutting edge length	刃数 The number of flutes	订货号 Order number	
D1	D2	L1	L2	Z	不涂层 Uncoating	涂层 Coating
5	4.0	93	26	4	2103A-050	■ 2103A-050T
6	5.0	93	26	4	2103A-060	■ 2103A-060T
7	6.3	109	31	4	2103A-070	■ 2103A-070T
8	6.3	117	33	4	2103A-080	■ 2103A-080T
9	8.0	125	36	4	2103A-090	■ 2103A-090T
10	8.0	133	38	6	2103A-100	■ 2103A-100T
11	10.0	142	41	6	2103A-110	■ 2103A-110T
12	10.0	151	44	6	2103A-120	■ 2103A-120T
14	12.5	160	47	6	2103A-140	■ 2103A-140T
15	12.5	162	50	6	2103A-150	■ 2103A-150T
16	12.5	170	52	6	2103A-160	■ 2103A-160T
18	16.0	182	56	6	2103A-180	■ 2103A-180T
20	16.0	192	60	6	2103A-200	■ 2103A-200T

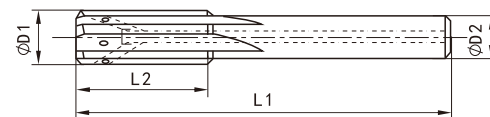
○按订单生产 Production by order

铸铁	不锈钢	钛合金	耐热合金	铝合金
HB<300	HRC30-40	HRC40-45	HRC45-55	HRC>55
首选	可选	不选		

铸铁	不锈钢	钛合金	耐热合金	铝合金
HB<300	HRC30-40	HRC40-45	HRC45-55	HRC>55
首选	可选	不选		

内冷机用铰刀 2103N

Inner-cooling mechanical reamer 2103N

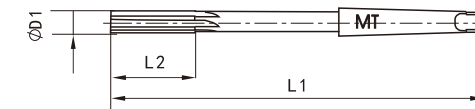


刃径 Cutter diameter	柄径 Shank diameter	总长 Overall length	刃长 Cutting edge length	刃数 The number of flutes	订货号 Order number	
D1	D2	L1	L2	Z	不涂层 Uncoating	涂层 Coating
5	4.0	63	22	4	2103N-050	■ 2103N-050T
6	5.0	63	22	4	2103N-060	■ 2103N-060T
7	6.3	71	25	4	2103N-070	■ 2103N-070T
8	6.3	71	25	4	2103N-080	■ 2103N-080T
9	8.0	71	25	4	2103N-090	■ 2103N-090T
10	8.0	71	25	6	2103N-100	■ 2103N-100T
11	10.0	80	28	6	2103N-110	■ 2103N-110T
12	10.0	80	28	6	2103N-120	■ 2103N-120T
14	12.5	90	32	6	2103N-140	■ 2103N-140T
15	12.5	90	32	6	2103N-150	■ 2103N-150T
16	12.5	90	32	6	2103N-160	■ 2103N-160T
18	16.0	100	36	6	2103N-180	■ 2103N-180T
20	16.0	100	36	6	2103N-200	■ 2103N-200T

○按订单生产 Production by order

锥柄机用铰刀 2106A

Taper shank mechanical reamer 2106A



刃径 Cutter diameter	总长 Overall length	刃长 Cutting edge length	MT	刃数 The number of flutes	订货号 Order number	
D1	L1	L2	NO.	Z	不涂层 Uncoating	涂层 Coating
5	133	23	1	4	2106A-050	■ 2106A-050T
6	138	26	1	4	2106A-060	■ 2106A-060T
7	150	31	1	4	2106A-070	■ 2106A-070T
8	156	33	1	4	2106A-080	■ 2106A-080T
9	162	36	1	4	2106A-090	■ 2106A-090T
10	168	38	1	6	2106A-100	■ 2106A-100T
11	175	41	1	6	2106A-110	■ 2106A-110T
12	182	44	1	6	2106A-120	■ 2106A-120T
13	182	44	1	6	2106A-130	■ 2106A-130T
14	189	47	1	6	2106A-140	■ 2106A-140T
15	204	50	2	6	2106A-150	■ 2106A-150T
16	210	52	2	6	2106A-160	■ 2106A-160T
17	214	54	2	6	2106A-170	■ 2106A-170T
18	219	56	2	6	2106A-180	■ 2106A-180T
19	223	58	2	6	2106A-190	■ 2106A-190T
20	228	60	2	6	2106A-200	■ 2106A-200T

○按订单生产 Production by order

铸铁

不锈钢

钛合金

耐热合金

铝合金

HB<300

HRC30-40

HRC40-45

HRC45-55

HRC>55

首选

可选

不选

铸铁

不锈钢

钛合金

耐热合金

铝合金

HB<300

HRC30-40

HRC40-45

HRC45-55

HRC>55

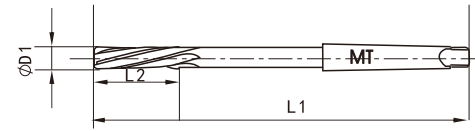
首选

可选

不选

锥柄机用铰刀 2126A

Taper shank mechanical reamer 2126A



刃径 Cutter diameter	总长 Overall length	刃长 Cutting edge length	MT	刃数 The number of flutes	订货号 Order number	
D1	L1	L2	NO.	Z	不涂层 Uncoating	涂层 Coating
5	133	23	1	4	2126A-050	■ 2126A-050T
6	138	26	1	4	2126A-060	■ 2126A-060T
7	150	31	1	4	2126A-070	■ 2126A-070T
8	156	33	1	4	2126A-080	■ 2126A-080T
9	162	36	1	4	2126A-090	■ 2126A-090T
10	168	38	1	6	2126A-100	■ 2126A-100T
11	175	41	1	6	2126A-110	■ 2126A-110T
12	182	44	1	6	2126A-120	■ 2126A-120T
13	182	44	1	6	2126A-130	■ 2126A-130T
14	189	47	1	6	2126A-140	■ 2126A-140T
15	204	50	2	6	2126A-150	■ 2126A-150T
16	210	52	2	6	2126A-160	■ 2126A-160T
17	214	54	2	6	2126A-170	■ 2126A-170T
18	219	56	2	6	2126A-180	■ 2126A-180T
19	223	58	2	6	2126A-190	■ 2126A-190T
20	228	60	2	6	2126A-200	■ 2126A-200T

○按订单生产 Production by order

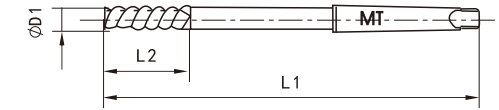
铸铁 不锈钢 钛合金 耐热合金 铝合金

HB<300 HRC30-40 HRC40-45 HRC45-55 HRC>55

首选 可选 不选

锥柄机用铰刀 2156A

Taper shank mechanical reamer 2156A



刃径 Cutter diameter	总长 Overall length	刃长 Cutting edge length	MT	刃数 The number of flutes	订货号 Order number	
D1	L1	L2	NO.	Z	不涂层 Uncoating	涂层 Coating
5	133	23	1	3	2156A-050	■ 2156A-050T
6	138	26	1	3	2156A-060	■ 2156A-060T
7	150	31	1	3	2156A-070	■ 2156A-070T
8	156	33	1	3	2156A-080	■ 2156A-080T
9	162	36	1	3	2156A-090	■ 2156A-090T
10	168	38	1	3	2156A-100	■ 2156A-100T
11	175	41	1	3	2156A-110	■ 2156A-110T
12	182	44	1	3	2156A-120	■ 2156A-120T
13	182	44	1	3	2156A-130	■ 2156A-130T
14	189	47	1	3	2156A-140	■ 2156A-140T
15	204	50	2	3	2156A-150	■ 2156A-150T
16	210	52	2	3	2156A-160	■ 2156A-160T
17	214	54	2	3	2156A-170	■ 2156A-170T
18	219	56	2	3	2156A-180	■ 2156A-180T
19	223	58	2	3	2156A-190	■ 2156A-190T
20	228	60	2	3	2156A-200	■ 2156A-200T

○按订单生产 Production by order

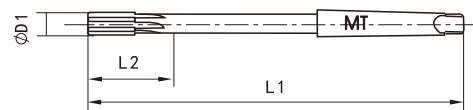
铸铁 不锈钢 钛合金 耐热合金 铝合金

HB<300 HRC30-40 HRC40-45 HRC45-55 HRC>55

首选 可选 不选

锥柄短刃机用铰刀 2106B

Taper shank machine reamer with short cutting edge 2106B



刃径 Cutter diameter	总长 Overall length	刃长 Cutting edge length	MT	刃数 The number of flutes	订货号 Order number	
D1	L1	L2	NO.	Z	不涂层 Uncoating	涂层 Coating
5	133	12	1	4	2106B-050	■ 2106B-050T
6	138	12	1	4	2106B-060	■ 2106B-060T
7	150	16	1	4	2106B-070	■ 2106B-070T
8	156	19	1	4	2106B-080	■ 2106B-080T
9	162	19	1	4	2106B-090	■ 2106B-090T
10	168	20	1	6	2106B-100	■ 2106B-100T
11	175	20	1	6	2106B-110	■ 2106B-110T
12	182	20	1	6	2106B-120	■ 2106B-120T
13	182	20	1	6	2106B-130	■ 2106B-130T
14	189	20	1	6	2106B-140	■ 2106B-140T
15	204	20	2	6	2106B-150	■ 2106B-150T
16	210	22	2	6	2106B-160	■ 2106B-160T
17	214	22	2	6	2106B-170	■ 2106B-170T
18	219	22	2	6	2106B-180	■ 2106B-180T
19	223	22	2	6	2106B-190	■ 2106B-190T
20	228	22	2	6	2106B-200	■ 2106B-200T

○按订单生产 Production by order

锥柄短刃机用铰刀 2126B

Taper shank machine reamer with short cutting edge 2126B



刃径 Cutter diameter	总长 Overall length	刃长 Cutting edge length	MT	刃数 The number of flutes	订货号 Order number	
D1	L1	L2	NO.	Z	不涂层 Uncoating	涂层 Coating
5	133	12	1	4	2126B-050	■ 2126B-050T
6	138	12	1	4	2126B-060	■ 2126B-060T
7	150	16	1	4	2126B-070	■ 2126B-070T
8	156	19	1	4	2126B-080	■ 2126B-080T
9	162	19	1	4	2126B-090	■ 2126B-090T
10	168	20	1	6	2126B-100	■ 2126B-100T
11	175	20	1	6	2126B-110	■ 2126B-110T
12	182	20	1	6	2126B-120	■ 2126B-120T
13	182	20	1	6	2126B-130	■ 2126B-130T
14	189	20	1	6	2126B-140	■ 2126B-140T
15	204	20	2	6	2126B-150	■ 2126B-150T
16	210	22	2	6	2126B-160	■ 2126B-160T
17	214	22	2	6	2126B-170	■ 2126B-170T
18	219	22	2	6	2126B-180	■ 2126B-180T
19	223	22	2	6	2126B-190	■ 2126B-190T
20	228	22	2	6	2126B-200	■ 2126B-200T

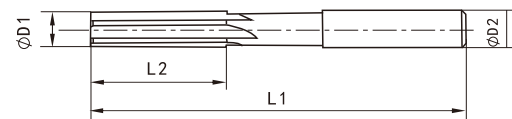
○按订单生产 Production by order

铸铁	不锈钢	钛合金	耐热合金	铝合金
HB<300	HRC30-40	HRC40-45	HRC45-55	HRC>55
首选	可选	不选		

铸铁	不锈钢	钛合金	耐热合金	铝合金
HB<300	HRC30-40	HRC40-45	HRC45-55	HRC>55
首选	可选	不选		

直柄机用铰刀 2100A

Straight shank mechanical reamer 2100A



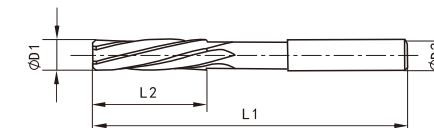
DIN 212-C
K10
45°
涂层 (可选)
DIN 6535 HA

刃径 Cutter diameter	柄径 Overall length	总长 Cutting edge length	刃长 Cutting edge length	刃数 The number of flutes	订货号 Order number	
D1	D2	L1	L2	Z	不涂层 Uncoating	涂层 Coating
5	5	80	23	4	2100A-050	■ 2100A-050T
6	6	93	26	4	2100A-060	■ 2100A-060T
7	7	109	31	4	2100A-070	■ 2100A-070T
8	8	117	33	4	2100A-080	■ 2100A-080T
9	9	125	36	4	2100A-090	■ 2100A-090T
10	10	133	38	6	2100A-100	■ 2100A-100T
11	11	142	41	6	2100A-110	■ 2100A-110T
12	12	151	44	6	2100A-120	■ 2100A-120T
13	13	151	44	6	2100A-130	■ 2100A-130T
14	14	160	47	6	2100A-140	■ 2100A-140T
15	15	162	50	6	2100A-150	■ 2100A-150T
16	16	170	52	6	2100A-160	■ 2100A-160T
17	17	175	54	6	2100A-170	■ 2100A-170T
18	18	182	56	6	2100A-180	■ 2100A-180T
19	19	189	58	6	2100A-190	■ 2100A-190T
20	20	195	60	6	2100A-200	■ 2100A-200T

○按订单生产 Production by order

直柄机用铰刀 2120A

Straight shank mechanical reamer 2120A



DIN 212-D
K10
45°
涂层 (可选)
DIN 6535 HA

刃径 Cutter diameter	柄径 Shank diameter	总长 Overall length	刃长 Cutting edge length	刃数 The number of flutes	订货号 Order number	
D1	D2	L1	L2	Z	不涂层 Uncoating	涂层 Coating
5	5	80	23	4	2120A-050	■ 2120A-050T
6	6	93	26	4	2120A-060	■ 2120A-060T
7	7	109	31	4	2120A-070	■ 2120A-070T
8	8	117	33	4	2120A-080	■ 2120A-080T
9	9	125	36	4	2120A-090	■ 2120A-090T
10	10	133	38	6	2120A-100	■ 2120A-100T
11	11	142	41	6	2120A-110	■ 2120A-110T
12	12	151	44	6	2120A-120	■ 2120A-120T
13	13	151	44	6	2120A-130	■ 2120A-130T
14	14	160	47	6	2120A-140	■ 2120A-140T
15	15	162	50	6	2120A-150	■ 2120A-150T
16	16	170	52	6	2120A-160	■ 2120A-160T
17	17	175	54	6	2120A-170	■ 2120A-170T
18	18	182	56	6	2120A-180	■ 2120A-180T
19	19	189	58	6	2120A-190	■ 2120A-190T
20	20	195	60	6	2120A-200	■ 2120A-200T

○按订单生产 Production by order

铸铁

不锈钢

钛合金

耐热合金

铝合金

HB<300

HRC30-40

HRC40-45

HRC45-55

HRC>55

首选

可选

不选

铸铁

不锈钢

钛合金

耐热合金

铝合金

HB<300

HRC30-40

HRC40-45

HRC45-55

HRC>55

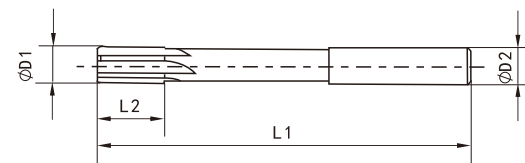
首选

可选

不选

直柄短刃机用铰刀 2100B

Straight shank mechanical reamer with short cutting edge 2100B

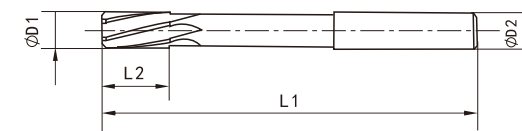


刃径 Cutter diameter	柄径 Shank diameter	总长 Overall length	刃长 Cutting edge length	刃数 The number of flutes	订货号 Order number	
D1	D2	L1	L2	Z	不涂层 Uncoating	涂层 Coating
5	5	86	12	4	2100B-050	■ 2100B-050T
6	6	93	12	4	2100B-060	■ 2100B-060T
7	7	109	16	4	2100B-070	■ 2100B-070T
8	8	117	16	4	2100B-080	■ 2100B-080T
9	9	125	19	4	2100B-090	■ 2100B-090T
10	10	133	19	6	2100B-100	■ 2100B-100T
11	11	142	19	6	2100B-110	■ 2100B-110T
12	12	151	19	6	2100B-120	■ 2100B-120T
13	13	151	19	6	2100B-130	■ 2100B-130T
14	14	160	19	6	2100B-140	■ 2100B-140T
15	15	162	19	6	2100B-150	■ 2100B-150T
16	16	170	22	6	2100B-160	■ 2100B-160T
17	17	175	22	6	2100B-170	■ 2100B-170T
18	18	182	22	6	2100B-180	■ 2100B-180T
19	19	189	22	6	2100B-190	■ 2100B-190T
20	20	195	22	6	2100B-200	■ 2100B-200T

○按订单生产 Production by order

直柄短刃机用铰刀 2120B

Straight shank mechanical reamer with short cutting edge 2120B



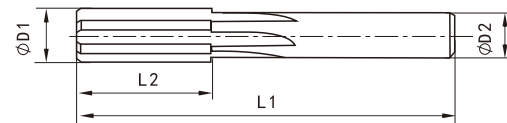
刃径 Cutter diameter	柄径 Shank diameter	总长 Overall length	刃长 Cutting edge length	刃数 The number of flutes	订货号 Order number	
D1	D2	L1	L2	Z	不涂层 Uncoating	涂层 Coating
5	5	86	12	4	2120B-050	■ 2120B-050T
6	6	93	12	4	2120B-060	■ 2120B-060T
7	7	109	16	4	2120B-070	■ 2120B-070T
8	8	117	16	4	2120B-080	■ 2120B-080T
9	9	125	19	4	2120B-090	■ 2120B-090T
10	10	133	19	6	2120B-100	■ 2120B-100T
11	11	142	19	6	2120B-110	■ 2120B-110T
12	12	151	19	6	2120B-120	■ 2120B-120T
13	13	151	19	6	2120B-130	■ 2120B-130T
14	14	160	19	6	2120B-140	■ 2120B-140T
15	15	162	19	6	2120B-150	■ 2120B-150T
16	16	170	22	6	2120B-160	■ 2120B-160T
17	17	175	22	6	2120B-170	■ 2120B-170T
18	18	182	22	6	2120B-180	■ 2120B-180T
19	19	189	22	6	2120B-190	■ 2120B-190T
20	20	195	22	6	2120B-200	■ 2120B-200T

○按订单生产 Production by order

铸铁	不锈钢	钛合金	耐热合金	铝合金
HB<300	HRC30-40	HRC40-45	HRC45-55	HRC>55
首选	可选	不选		

铸铁	不锈钢	钛合金	耐热合金	铝合金
HB<300	HRC30-40	HRC40-45	HRC45-55	HRC>55
首选	可选	不选		

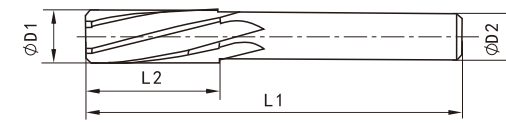
机用铰刀 2103K
Machined reamer 2103K



刃径 Cutter diameter	柄径 Shank diameter	总长 Overall length	刃长 Cutting edge length	刃数 The number of flutes	订货号 Order number	
D1	D2	L1	L2	Z	不涂层 Uncoating	涂层 Coating
4	3	56	20	4	2103K-040	■ 2103K-040T
5	4	63	22	4	2103K-050	■ 2103K-050T
6	5	63	22	4	2103K-060	■ 2103K-060T
7	6	71	25	4	2103K-070	■ 2103K-070T
8	7	71	25	4	2103K-080	■ 2103K-080T
9	8	71	25	4	2103K-090	■ 2103K-090T
10	8	71	25	6	2103K-100	■ 2103K-100T
11	10	80	28	6	2103K-110	■ 2103K-110T
12	10	80	28	6	2103K-120	■ 2103K-120T
13	10	80	28	6	2103K-130	■ 2103K-130T
14	13	90	32	6	2103K-140	■ 2103K-140T
15	13	90	32	6	2103K-150	■ 2103K-150T
16	13	90	32	6	2103K-160	■ 2103K-160T
17	13	90	32	6	2103K-170	■ 2103K-170T
18	16	100	36	6	2103K-180	■ 2103K-180T
19	16	100	36	6	2103K-190	■ 2103K-190T
20	16	100	36	6	2103K-200	■ 2103K-200T

○按订单生产 Production by order

机用铰刀 2123K
Machined reamer 2123K



刃径 Cutter diameter	柄径 Shank diameter	总长 Overall length	刃长 Cutting edge length	刃数 The number of flutes	订货号 Order number	
D1	L1	L2	L2	Z	不涂层 Uncoating	涂层 Coating
5	5	63	22	4	2123K-050	■ 2123K-050T
6	6	63	22	4	2123K-060	■ 2123K-060T
7	7	71	25	4	2123K-070	■ 2123K-070T
8	8	71	25	4	2123K-080	■ 2123K-080T
9	9	71	25	4	2123K-090	■ 2123K-090T
10	10	71	25	6	2123K-100	■ 2123K-100T
11	11	80	28	6	2123K-110	■ 2123K-110T
12	12	80	28	6	2123K-120	■ 2123K-120T
13	13	80	28	6	2123K-130	■ 2123K-130T
14	14	90	32	6	2123K-140	■ 2123K-140T
15	15	90	32	6	2123K-150	■ 2123K-150T
16	16	90	32	6	2123K-160	■ 2123K-160T
17	17	90	32	6	2123K-170	■ 2123K-170T
18	18	100	36	6	2123K-180	■ 2123K-180T
19	19	100	36	6	2123K-190	■ 2123K-190T
20	20	100	36	6	2123K-200	■ 2123K-200T

○按订单生产 Production by order

铸铁

不锈钢

钛合金

耐热合金

铝合金

HB<300

HRC30-40

HRC40-45

HRC45-55

HRC>55

首选

可选

不选

铸铁

不锈钢

钛合金

耐热合金

铝合金

HB<300

HRC30-40

HRC40-45

HRC45-55

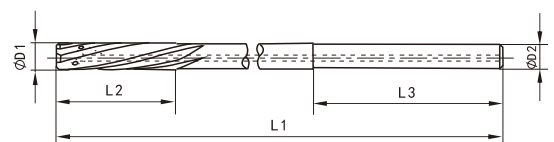
HRC>55

首选

可选

不选

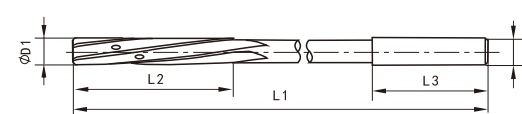
枪铰刀 2320K
Gun reamer 2320K



刃径 Cutter diameter	柄径 Shank diameter	总长 Overall length	刃长 Cutting edge length	柄长 Shank length	刃数 The number of flutes	订货号 Order number	
D1	D2	L1	L2	L3	Z	不涂层 Uncoating	涂层 Coating
6	5.6	240~320	40~60	100	6	2320K-060	■ 2320K-060T
7	6.3	240~320	40~60	100	6	2320K-070	■ 2320K-070T
8	7.1	240~320	40~60	100	6	2320K-080	■ 2320K-080T
9	8.0	240~320	40~60	100	6	2320K-090	■ 2320K-090T
10	9.0	240~320	40~60	100	6	2320K-100	■ 2320K-100T
11	10.0	240~320	40~60	100	6	2320K-110	■ 2320K-110T
12	10.0	240~320	40~60	100	6	2320K-120	■ 2320K-120T
13	10.0	240~320	40~60	100	6	2320K-130	■ 2320K-130T
14	12.5	240~320	40~60	100	6	2320K-140	■ 2320K-140T
15	12.5	240~320	40~60	100	6	2320K-150	■ 2320K-150T
16	12.5	240~320	40~60	100	6	2320K-160	■ 2320K-160T
17	14.0	240~320	40~60	100	6	2320K-170	■ 2320K-170T

○按订单生产 Production by order

枪铰刀 2320L
Gun reamer 2320L



刃径 Cutter diameter	柄径 Shank diameter	总长 Overall length	刃长 Cutting edge length	柄长 Shank length	刃数 The number of flutes	订货号 Order number	
D1	D2	L1	L2	L3	Z	不涂层 Uncoating	涂层 Coating
6	5.6	240~320	40~60	100	6	2320L-060	■ 2320L-060T
7	6.3	240~320	40~60	100	6	2320L-070	■ 2320L-070T
8	7.1	240~320	40~60	100	6	2320L-080	■ 2320L-080T
9	8.0	240~320	40~60	100	6	2320L-090	■ 2320L-090T
10	9.0	240~320	40~60	100	6	2320L-100	■ 2320L-100T
11	10.0	240~320	40~60	100	6	2320L-110	■ 2320L-110T
12	10.0	240~320	40~60	100	6	2320L-120	■ 2320L-120T
13	10.0	240~320	40~60	100	6	2320L-130	■ 2320L-130T
14	12.5	240~320	40~60	100	6	2320L-140	■ 2320L-140T
15	12.5	240~320	40~60	100	6	2320L-150	■ 2320L-150T
16	12.5	240~320	40~60	100	6	2320L-160	■ 2320L-160T
17	14.0	240~320	40~60	100	6	2320L-170	■ 2320L-170T

○按订单生产 Production by order

铸铁

不锈钢

钛合金

耐热合金

铝合金

HB<300

HRC30-40

HRC40-45

HRC45-55

HRC>55

首选

可选

不选

铸铁

不锈钢

钛合金

耐热合金

铝合金

HB<300

HRC30-40

HRC40-45

HRC45-55

HRC>55

首选

可选

不选



® 螺纹刀具

Thread cutter

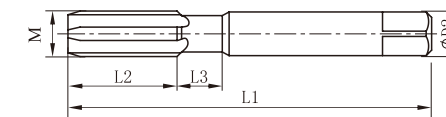
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产品 Product	名称 name	型号 type	页码 page number
	普通粗柄丝锥 Big diameter shank standard tap	4035	D3
	普通细柄丝锥 Small diameter shank standard tap	4135	D4~D5
	螺旋槽丝锥 Spiral fluted tap	41B5	D6
	螺旋槽丝锥 Spiral fluted tap	41C5	D7
	挤压细柄丝锥 Small diameter shank extrusion tap	4605	D8~D9
	挤压粗柄丝锥 Big diameter shank extrusion tap	4505	D10
	美制丝锥 American standard tap	4935	D11
	英制丝锥 British standard tap	4735	D12
	刃倾角丝锥 Spiral pointed tap	4R35	D13
	60°圆锥管螺纹丝锥 60° taper pipe thread tap	4N35	D14
	55°圆锥管螺纹丝锥 55° taper pipe thread tap	4G35	D15
	中心内冷公制螺纹铣刀 Center cooling thread milling cutter metric	LZ-ISO-T	D16
	中心内冷美制统一螺纹铣刀 Center cooling american standard thread milling cutter	LZ-UN-T	D17
	中心内冷美制干密封管螺纹铣刀 Center cooling american standard sealing pipe thread milling cutter	LZ-NPTF-T	D18
	中心内冷美制密封管螺纹铣刀 Center cooling american sealing pipe thread milling cutter	LZ-NPT-T	D18
	公制螺纹铣刀 Thread milling cutter metric	LZ-ISO-N	D19
	美制统一螺纹铣刀 American standard thread milling cutter	LZ-UN-N	D20
	美制密封管螺纹铣刀 American standard sealing pipe thread milling cutter	LZ-NPT-N	D21
	美制干密封管螺纹铣刀 American standard stem sealing pipe thread milling cutter	LZ-NPTF-N	D21
	美制密封管螺纹铣刀 American standard sealing pipe thread milling cutter	ZZ-NPT-N	D22
	美制干密封管螺纹铣刀 American standard stem sealing pipe thread milling cutter	ZZ-NPTF-N	D22
	公制螺纹铣刀 Thread milling cutter metric	ZZ-ISO-N	D23
	美制统一螺纹铣刀 American standard thread milling cutter	ZZ-UN-N	D24
	螺纹铣刀 Thread milling cutter	D1: M5—M27	D25
常见螺纹的底孔直径推荐尺寸 The recommend size of bottom bore diameter for common thread			D26~D28
切削加工时冷却润滑液的选用 The selection of machining cooling lubricating liquid			D29

普通粗柄丝锥 4035

Big diameter shank standard tap 4035



螺纹 thread	螺距 pitch	刃数 the number of flutes	总长 overall length	螺纹长 thread length	柄径 shank diameter	颈长 neck length	订货号 order number	
M	P	Z	L1	L2	D2	L3	不涂层 Uncoating	涂层 Coating
M3	0.50	3	48	11	3.15	7	4035-030A	4035T-030A
M3.5	0.60	3	50	13	3.55	7	4035-035B	4035T-035B
M4	0.70	3	53	13	4.00	8	4035-040C	4035T-040C
M4.5	0.75	3	53	13	4.50	8	4035-045D	4035T-045D
M4.5X0.5	0.50	3	53	13	4.50	8	4035-045A	4035T-045A
M4X0.5	0.50	3	53	13	4.00	8	4035-040A	4035T-040A
M5	0.80	3	58	16	5.00	9	4035-050E	4035T-050E
M5.5X0.5	0.50	3	62	17	5.60	9	4035-055A	4035T-055A
M5X0.5	0.50	3	58	16	5.00	9	4035-050A	4035T-050A
M6	1.00	3	66	19	6.30	11	4035-060F	4035T-060F
M6X0.5	0.50	3	66	19	6.30	11	4035-060A	4035T-060A
M6X0.75	0.75	3	66	19	6.30	11	4035-060D	4035T-060D
M7	1.00	4	66	19	7.10	11	4045-070F	4045T-070F
M7X0.75	0.75	4	66	19	7.10	11	4045-070D	4045T-070D
M8	1.25	4	72	22	8.00	13	4045-080G	4045T-080G
M8X0.5	0.50	4	66	19	8.00	13	4045-080A	4045T-080A
M8X0.75	0.75	4	66	19	8.00	13	4045-080D	4045T-080D
M8X1	1.00	4	72	22	8.00	13	4045-080F	4045T-080F
M9	1.25	4	72	22	9.00	14	4045-090G	4045T-090G
M9X0.75	0.75	4	66	19	9.00	14	4045-090D	4045T-090D
M9X1	1.00	4	72	22	9.00	14	4045-090F	4045T-090F
M10	1.50	4	80	24	10.00	15	4045-100H	4045T-100H
M10X0.75	0.75	4	73	20	10.00	15	4045-100D	4045T-100D
M10X1	1.00	4	80	24	10.00	15	4045-100F	4045T-100F
M10X1.25	1.25	4	80	24	10.00	15	4045-100G	4045T-100G

○按订单生产 Production by order

铸铁

不锈钢

钛合金

耐热合金

铝合金

HB<300

HRC30-40

HRC40-45

HRC45-55

HRC>55

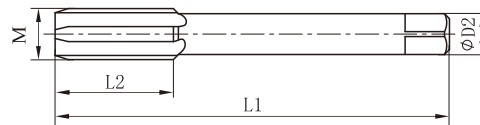
首选

可选

不选

普通细柄丝锥 4135

Small diameter shank standard tap 4135



螺纹 thread	螺距 pitch	刃数 the number of flutes	总长 overall length	螺纹长 thread length	柄径 shank diameter	订货号 order number	
M	P	Z	L1	L2	D2	不涂层 uncoating	涂层 coating
M3	0.50	3	48	11	2.24	4135-030A	■ 4135T-030A
M3.5	0.60	3	50	13	2.50	4135-035B	■ 4135T-035B
M4	0.70	3	53	13	3.15	4135-040C	■ 4135T-040C
M4X0.5	0.50	3	53	13	3.15	4135-040A	■ 4135T-040A
M4.5	0.75	3	53	13	3.55	4135-045D	■ 4135T-045D
M4.5X0.5	0.50	3	53	13	3.55	4135-045A	■ 4135T-045A
M5	0.80	3	58	16	4.00	4135-050E	■ 4135T-050E
M5X0.5	0.50	3	58	16	4.00	4135-050A	■ 4135T-050A
M5.5X0.5	0.50	3	62	17	4.00	4135-055A	■ 4135T-055A
M6	1.00	3	66	19	4.50	4135-060F	■ 4135T-060F
M6X0.75	0.75	3	66	19	4.50	4135-060D	■ 4135T-060D
M7	1.00	4	66	19	5.60	4135-070F	■ 4135T-070F
M7X0.75	0.75	4	66	19	5.60	4135-070D	■ 4135T-070D
M8	1.25	4	72	22	6.30	4135-080G	■ 4135T-080G
M8X0.75	0.75	4	66	19	6.30	4135-080D	■ 4135T-080D
M8X1	1.00	4	72	22	6.30	4135-080F	■ 4135T-080F
M9	1.25	4	72	22	7.10	4135-090G	■ 4135T-090G
M9X0.75	0.75	4	66	19	7.10	4135-090D	■ 4135T-090D
M9X1	1.00	4	72	22	7.10	4135-090F	■ 4135T-090F
M10	1.50	4	80	24	8.00	4135-100H	■ 4135T-100H
M10X0.75	0.75	4	73	20	8.00	4135-100D	■ 4135T-100D
M10X1	1.00	4	80	24	8.00	4135-100F	■ 4135T-100F
M10X1.25	1.25	4	80	24	8.00	4135-100G	■ 4135T-100G
M11	1.50	4	85	25	8.00	4135-110H	■ 4135T-110H

○按订单生产 Production by order

铸铁

不锈钢

钛合金

耐热合金

铝合金

HB<300

HRC30-40

HRC40-45

HRC45-55

HRC>55

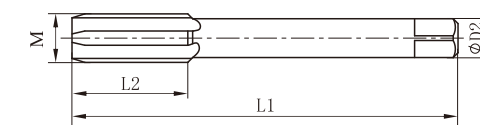
首选

可选

不选

普通细柄丝锥 4135

Small diameter shank standard tap 4135



螺纹 thread	螺距 pitch	刃数 the number of flutes	总长 overall length	螺纹长 thread length	柄径 shank diameter	订货号 order number	
M	P	Z	L1	L2	D2	不涂层 uncoating	涂层 coating
M11X0.75	0.75	4	80	22	8.0	4135-110D	■ 4135T-110D
M11X1	1.00	4	80	22	8.0	4135-110F	■ 4135T-110F
M12	1.75	4	89	29	9.0	4135-120I	■ 4135T-120I
M12X1	1.00	4	80	22	9.0	4135-120F	■ 4135T-120F
M12X1.25	1.25	4	89	29	9.0	4135-120G	■ 4135T-120G
M12X1.5	1.50	4	89	29	9.0	4135-120H	■ 4135T-120H
M14	2.00	4	95	30	11.2	4135-140I	■ 4135T-140I
M14X1	1.00	4	87	22	11.2	4135-140F	■ 4135T-140F
M14X1.25	1.25	4	95	30	11.2	4135-140G	■ 4135T-140G
M14X1.5	1.50	4	95	30	11.2	4135-140H	■ 4135T-140H
M15X1.5	1.50	4	95	30	11.5	4135-150H	■ 4135T-150H
M16	2.00	4	102	32	12.5	4135-160J	■ 4135T-160J
M16X1	1.00	4	92	22	12.5	4135-160F	■ 4135T-160F
M16X1.5	1.50	4	102	32	12.5	4135-160H	■ 4135T-160H
M17X1.5	1.50	4	102	32	12.5	4135-170H	■ 4135T-170H
M18	2.50	4	112	37	14.0	4135-180K	■ 4135T-180K
M18X1	1.00	4	97	22	14.0	4135-180F	■ 4135T-180F
M18X1.5	2.00	4	112	37	14.0	4135-180H	■ 4135T-180H
M18X2	2.00	4	112	37	14.0	4135-180J	■ 4135T-180J
M20	2.50	4	112	37	14.0	4135-200K	■ 4135T-200K
M20X1	1.00	4	102	22	14.0	4135-200F	■ 4135T-200F
M20X1.5	1.50	4	104	37	14.0	4135-200H	■ 4135T-200H
M20X2	2.00	4	112	37	14.0	4135-200J	■ 4135T-200J

○按订单生产 Production by order

铸铁

不锈钢

钛合金

耐热合金

铝合金

HB<300

HRC30-40

HRC40-45

HRC45-55

HRC>55

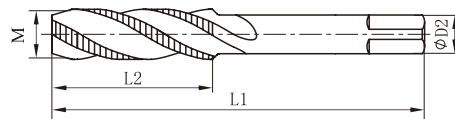
首选

可选

不选

螺旋槽丝锥 41B5

Spiral fluted tap 41B5



螺纹 thread	螺距 pitch	刃数 the number of flutes	总长 overall length	螺纹长 thread length	柄径 shank diameter	订货号 order number	
M	P	Z	L1	L2	D2	不涂层 uncoating	涂层 coating
M3	0.50	3	50	11	3.15	41B5-030A	■ 41B5T-030A
M3.5	0.60	3	50	13	3.55	41B5-035B	■ 41B5T-035B
M4	0.70	3	53	13	4.00	41B5-040C	■ 41B5T-040C
M4.5	0.75	3	53	13	4.50	41B5-045D	■ 41B5T-045D
M5	0.80	3	58	16	5.00	41B5-050E	■ 41B5T-050E
M5X0.5	0.50	3	58	16	5.00	41B5-050A	■ 41B5T-050A
M6	1.00	3	66	16	6.30	41B5-060F	■ 41B5T-060F
M6X0.75	0.75	3	66	19	6.30	41B5-060D	■ 41B5T-060D
M7	1.00	3	66	19	5.60	41B5-070F	■ 41B5T-070F
M7X0.75	0.75	3	66	19	5.60	41B5-070D	■ 41B5T-070D
M8	1.25	3	72	22	6.30	41B5-080G	■ 41B5T-080G
M8X1	1.00	3	69	19	6.30	41B5-080F	■ 41B5T-080F
M9	1.25	3	72	22	7.10	41B5-090G	■ 41B5T-090G
M9X1	1.00	3	69	19	7.10	41B5-090F	■ 41B5T-090F
M10	1.50	3	80	24	8.00	41B5-100H	■ 41B5T-100H
M10X1	1.00	3	80	20	8.00	41B5-100F	■ 41B5T-100F
M10X1.25	1.25	3	80	20	8.00	41B5-100G	■ 41B5T-100G

○按订单生产 Production by order

铸铁

不锈钢

钛合金

耐热合金

铝合金

HB<300

HRC30-40

HRC40-45

HRC45-55

HRC>55

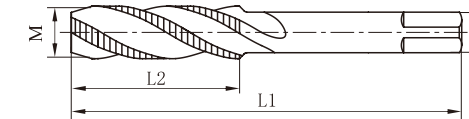
首选

可选

不选

螺旋槽丝锥 41C5

Spiral fluted tap 41C5



螺纹 thread	螺距 pitch	刃数 the number of flutes	总长 overall length	螺纹长 thread length	柄径 shank diameter	订货号 order number	
M	P	Z	L1	L2	D2	不涂层 uncoating	涂层 coating
M11	1.50	4	85	25	8.0	41B5-110H	■ 41C5T-110H
M12	1.75	4	89	29	9.0	41B5-120I	■ 41C5T-120I
M12X1.25	1.25	4	89	24	9.0	41B5-120G	■ 41C5T-120G
M12X1.5	1.50	4	89	29	9.0	41B5-120H	■ 41C5T-120H
M14	2.00	4	95	30	11.2	41B5-140J	■ 41C5T-140J
M14X1.25	1.25	4	95	25	11.2	41B5-140G	■ 41C5T-140G
M14X1.5	1.50	4	95	30	11.2	41B5-140H	■ 41C5T-140H
M15X1.5	1.50	4	95	30	11.5	41B5-150H	■ 41C5T-150H
M16	2.00	4	102	32	12.5	41B5-160J	■ 41C5T-160J
M16X1.5	1.50	4	102	32	12.5	41B5-160H	■ 41C5T-160H
M17X1.5	1.50	4	102	32	12.5	41B5-170H	■ 41C5T-170H
M18	2.50	4	112	37	14.0	41B5-180K	■ 41C5T-180K
M18X1.5	2.00	4	112	29	14.0	41B5-180H	■ 41C5T-180H
M18X2	2.00	4	112	37	14.0	41B5-180J	■ 41C5T-180J
M20	2.50	4	112	37	14.0	41B5-200K	■ 41C5T-200K
M20X1.5	1.50	4	104	29	14.0	41B5-200H	■ 41C5T-200H
M20X2	2.00	4	112	37	14.0	41B5-200J	■ 41C5T-200J
M22	2.50	4	118	38	16.0	41B5-220K	■ 41C5T-220K
M22X1.5	1.50	4	113	33	16.0	41B5-220H	■ 41C5T-220H
M22X2	2.00	4	118	38	16.0	41B5-220J	■ 41C5T-220J
M24	3.00	4	130	45	18.0	41B5-240L	■ 41C5T-240L
M24X1.5	1.50	4	120	35	18.0	41B5-240H	■ 41C5T-240H
M24X2	2.00	4	120	35	18.0	41B5-240J	■ 41C5T-240J

○按订单生产 Production by order

铸铁

不锈钢

钛合金

耐热合金

铝合金

HB<300

HRC30-40

HRC40-45

HRC45-55

HRC>55

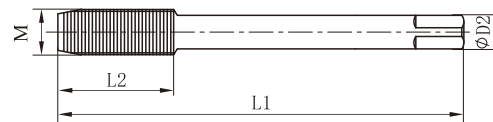
首选

可选

不选

挤压细柄丝锥 4605

Small diameter shank extrusion tap 4605

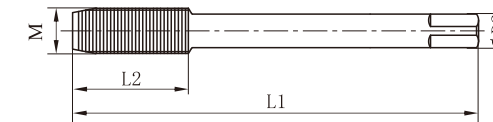


螺纹 thread	螺距 pitch	总长 overall length	螺纹长 thread length	柄径 shank diameter	订货号 order number	
M	P	L1	L2	D2	不涂层 uncoating	涂层 coating
M5	0.80	58	16	4.0	4605-050E	4605T-050E
M5X0.5	0.50	58	16	4.0	4605-050A	4605T-050A
M5.5X0.5	0.50	62	17	4.0	4605-055A	4605T-055A
M6	1.00	66	19	4.5	4605-060F	4605T-060F
M6X0.75	0.75	66	19	4.5	4605-060D	4605T-060D
M7	1.00	66	19	5.6	4605-070F	4605T-070F
M7X0.75	0.75	66	19	5.6	4605-070D	4605T-070D
M8	1.25	72	22	6.3	4605-080G	4605T-080G
M8X0.75	0.75	66	19	6.3	4605-080D	4605T-080D
M8X1	1.00	69	19	6.3	4605-080F	4605T-080F
M9	1.25	72	22	7.1	4605-090G	4605T-090G
M9X0.75	1.00	66	19	7.1	4605-090D	4605T-090D
M9X1	1.00	69	19	7.1	4605-090F	4605T-090F
M10	1.50	80	24	8.0	4605-100H	4605T-100H
M10X0.75	0.75	73	20	8.0	4605-100D	4605T-100D
M10X1	1.00	76	20	8.0	4605-100F	4605T-100F
M10X1.25	1.25	76	20	8.0	4605-100G	4605T-100G
M11	1.50	85	25	8.0	4605-110H	4605T-110H
M11X0.75	0.75	80	22	8.0	4605-110D	4605T-110D
M11X1	1.00	80	22	8.0	4605-110F	4605T-110F
M12	1.75	89	29	9.0	4605-120I	4605T-120I

○按订单生产 Production by order

挤压细柄丝锥 4605

Small diameter shank extrusion tap 4605



螺纹 thread	螺距 pitch	总长 overall length	螺纹长 thread length	柄径 shank diameter	订货号 order number	
M	P	L1	L2	D2	不涂层 uncoating	涂层 coating
M12X1	1.00	80	22	9.0	4605-120F	4605T-120F
M12X1.25	1.25	84	24	9.0	4605-120G	4605T-120G
M12X1.5	1.50	89	29	9.0	4605-120H	4605T-120H
M14	2.00	95	30	11.2	4605-140J	4605T-140J
M14X1	1.00	87	22	11.2	4605-140F	4605T-140F
M14X1.25	1.25	90	25	11.2	4605-140G	4605T-140G
M14X1.5	1.50	95	30	11.2	4605-140H	4605T-140H
M15X1.5	1.50	95	30	11.2	4605-150H	4605T-150H
M16	2.00	102	32	12.5	4605-160J	4605T-160J
M16X1	1.00	92	22	12.5	4605-160F	4605T-160F
M16X1.5	1.50	102	32	12.5	4605-160H	4605T-160H
M17X1.5	1.50	102	32	12.5	4605-170H	4605T-170H
M18	2.50	112	37	14.0	4605-180K	4605T-180K
M18X1	1.00	97	22	14.0	4605-180F	4605T-180F
M18X1.5	1.50	104	29	14.0	4605-180H	4605T-180H
M18X2	2.00	112	37	14.0	4605-180J	4605T-180J
M20	2.50	112	37	14.0	4605-200K	4605T-200K
M20X1	1.00	102	22	14.0	4605-200F	4605T-200F
M20X1.5	1.50	104	29	14.0	4605-200H	4605T-200H
M20X2	2.00	112	37	14.0	4605-200J	4605T-200J

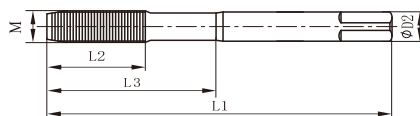
○按订单生产 Production by order

铸铁	不锈钢	钛合金	耐热合金	铝合金
HB<300	HRC30-40	HRC40-45	HRC45-55	HRC>55
首选	可选	不选		

铸铁	不锈钢	钛合金	耐热合金	铝合金
HB<300	HRC30-40	HRC40-45	HRC45-55	HRC>55
首选	可选	不选		

挤压粗柄丝锥 4505

Big diameter shank extrusion tap 4505



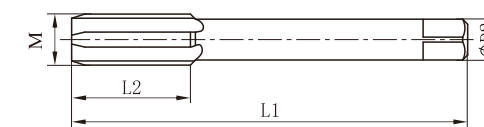
M
6H
60°
涂层 (可选)
GB/T 4267

螺纹 thread	螺距 pitch	总长 overall length	螺纹长 thread length	工作长 Work length	柄径 shank diameter	订货号 order number	
M	P	L1	L2	L3	D2	不涂层 uncoating	涂层 coating
M5	0.80	58	9	16	5.0	4505-050E	■ 4505T-050E
M5X0.5	0.50	58	9	16	5.0	4505-050A	■ 4505T-050A
M5.5X0.5	0.50	62	9	17	5.6	4505-055A	■ 4505T-055A
M6	1.00	66	11	19	6.3	4505-060F	■ 4505T-060F
M6X0.5	0.50	66	11	19	6.3	4505-060A	■ 4505T-060A
M6X0.75	0.75	66	11	19	6.3	4505-060D	■ 4505T-060D
M7	1.00	66	11	19	7.1	4505-070F	■ 4505T-070F
M7X0.75	0.75	66	11	19	7.1	4505-070D	■ 4505T-070D
M8	1.25	72	13	22	8.0	4505-080G	■ 4505T-080G
M8X0.5	0.50	66	13	19	8.0	4505-080A	■ 4505T-080A
M8X0.75	0.75	69	13	19	8.0	4505-080D	■ 4505T-080D
M8X1	1.00	69	13	19	8.0	4505-080F	■ 4505T-080F
M9	1.25	72	14	22	9.0	4505-090G	■ 4505T-090G
M9X0.75	0.75	66	14	19	9.0	4505-090D	■ 4505T-090D
M9X1	1.00	69	14	19	9.0	4505-090F	■ 4505T-090F
M10	1.50	80	15	24	10.0	4505-100H	■ 4505T-100H
M10X0.75	0.75	73	15	20	10.0	4505-100D	■ 4505T-100D
M10X1	1.00	76	15	20	10.0	4505-100F	■ 4505T-100F
M10X1.25	1.25	76	15	20	10.0	4505-100G	■ 4505T-100G

○按订单生产 Production by order

美制丝锥 4935

American standard tap 4935



UN
2B
60°
涂层 (可选)
GB/T 4267

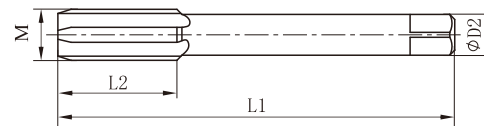
螺纹 thread	公称直径 nominal diameter	牙数/1" number of flutes	刃数 the number of flutes	总长 overall length	螺纹长 thread length	柄径 shank diameter	订货号 order number	
M		Z		L1	L2	D2	不涂层 uncoating	涂层 coating
No5	3.2	40	3	48	11	2.24	4935-032Z	■ 4935T-032Z
No6	3.5	32	3	50	13	2.50	4935-035Y	■ 4935T-035Y
No8	4.2	32	3	53	13	3.15	4935-042Y	■ 4935T-042Y
No10	4.8	24	3	58	16	3.55	4935-048X	■ 4935T-048X
1/4	6.4	20	3	66	19	45.00	4935-064W	■ 4935T-064W
5/16	7.9	18	4	72	22	6.30	4945-079V	■ 4945T-079V
3/8	9.5	16	4	80	24	7.10	4945-095U	■ 4945T-095U
7/16	11.1	14	4	85	25	8.00	4945-111T	■ 4945T-111T
1/2	12.7	12	4	89	29	9.00	4945-127R	■ 4945T-127R
9/16	14.3	12	4	95	30	11.20	4945-143R	■ 4945T-143R
5/8	15.9	11	4	102	32	12.50	4945-159Q	■ 4945T-159Q
3/4	19.1	10	4	112	37	14.00	4945-191P	■ 4945T-191P
7/8	22.2	9	4	118	38	16.00	4945-222O	■ 4945T-222O
1"	25.4	8	4	130	45	18.00	4945-254N	■ 4945T-254N

○按订单生产 Production by order

铸铁 不锈钢 钛合金 耐热合金 铝合金
HB<300 HRC30-40 HRC40-45 HRC45-55 HRC>55
首选 可选 不选

铸铁 不锈钢 钛合金 耐热合金 铝合金
HB<300 HRC30-40 HRC40-45 HRC45-55 HRC>55
首选 可选 不选

英制丝锥 4735
British standard tap 4735

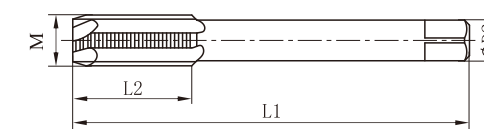


W 普通 60° 涂层 (可选) GB/T 4267

螺纹 thread	公称直径 nominal diameter	牙数/1" number of flutes	刃数 the number of flutes	总长 overall length	螺纹长 thread length	柄径 shank diameter	订货号 order number	
M		Z	L1	L2	D2	不涂层 uncoating	涂层 coating	
1/8	3.2	40	3	50	16.5	3.15	4735-032Z	■ 4735T-032Z
3/16	4.8	24	3	58	20.5	5.00	4735-048X	■ 4735T-048X
1/4	6.4	20	3	66	24.5	6.30	4735-064W	■ 4735T-064W
5/16	7.9	18	4	72	22.0	5.60	4745-079V	■ 4745T-079V
3/8	9.5	16	4	80	24.0	7.10	4745-095U	■ 4745T-095U
7/16	11.1	14	4	85	25.0	8.00	4745-111T	■ 4745T-111T
1/2	12.7	12	4	89	29.0	9.00	4745-127R	■ 4745T-127R
9/16	14.3	12	4	95	30.0	11.20	4745-143R	■ 4745T-143R
5/8	15.9	11	4	102	32.0	12.50	4745-159Q	■ 4745T-159Q
3/4	19.1	10	4	112	37.0	14.00	4745-191P	■ 4745T-191P
7/8	22.2	9	4	118	38.0	16.00	4745-222O	■ 4745T-222O
1"	25.4	8	4	130	45.0	18.00	4745-254N	■ 4745T-254N

○按订单生产 Production by order

刃倾角丝锥 4R35
Spiral pointed tap 4R35



M 6H 60° 涂层 (可选) GB/T 4267

螺纹 thread	螺距 pitch	刃数 the number of flutes	总长 overall length	螺纹长 thread length	柄径 shank diameter	订货号 order number	
M	P	Z	L1	L2	D2	不涂层 uncoating	涂层 coating
M3	0.50	3	48	11	2.24	4R35-030A	■ 4R35T-030A
M4	0.70	3	53	13	3.15	4R35-040C	■ 4R35T-040C
M5	0.80	3	58	16	4.00	4R35-050E	■ 4R35T-050E
M6	1.00	3	66	19	4.50	4R35-060F	■ 4R35T-060F
M7	1.00	3	66	19	5.60	4R35-070F	■ 4R35T-070F
M8	1.25	3	72	22	6.30	4R35-080G	■ 4R35T-080G
M9	1.25	3	72	22	7.10	4R35-090G	■ 4R35T-090G
M10	1.50	3	80	24	8.00	4R35-100H	■ 4R35T-100H
M11	1.50	3	85	25	8.00	4R35-110H	■ 4R35T-110H
M12	1.75	3	89	29	9.00	4R35-120I	■ 4R35T-120I
M14	2.00	4	95	30	11.20	4R45-140J	■ 4R45T-140J
M16	2.00	4	102	32	12.50	4R45-160J	■ 4R45T-160J
M18	2.50	4	112	37	14.00	4R45-180K	■ 4R45T-180K
M20	2.50	4	112	37	14.00	4R45-200K	■ 4R45T-200K

○按订单生产 Production by order

铸铁

不锈钢

钛合金

耐热合金

铝合金

HB<300

HRC30-40

HRC40-45

HRC45-55

HRC>55

首选

可选

不选

铸铁

不锈钢

钛合金

耐热合金

铝合金

HB<300

HRC30-40

HRC40-45

HRC45-55

HRC>55

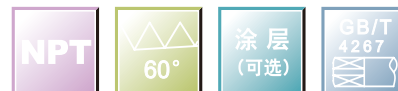
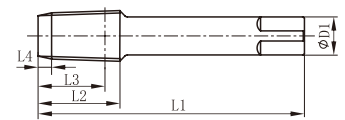
首选

可选

不选

60° 圆锥管螺纹丝锥 4N35

60° taper pipe thread tap 4N35

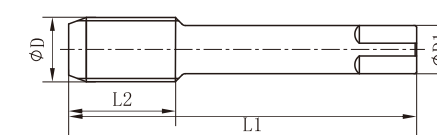


代号 code	基本直径 base diameter	牙数 number of flutes	螺距 pitch	尺寸 size				订货号 order number	
NPT	D1	每25.4mm内	P	L1	L2	L3	L4	不涂层 uncoating	涂层 coating
1/16	8.0	27.0	0.941	56	17	11	2.8	4N35-080F	■ 4N35T-080F
1/8	8.0	27.0	0.941	56	19	11	2.8	4N35-081F	■ 4N35T-081F
1/4	11.2	18.0	1.411	62	27	16	4.3	4N35-112H	■ 4N35T-112H
3/8	14.0	18.0	1.411	65	27	16	4.3	4N45-140H	■ 4N45T-140H
1/2	18.0	14.0	1.814	79	35	21	5.5	4N45-180J	■ 4N45T-180J
3/4	22.4	14.0	1.814	83	35	21	5.5	4N45-224J	■ 4N45T-224J
1	28.0	11.5	2.209	95	44	26	6.7	4N45-280K	■ 4N45T-280K

○按订单生产 Production by order

55° 圆柱管螺纹丝锥 4G35

55° parallel pipe thread tap 4G35



代号 code	基本直径 base diameter	牙数 number of flutes	螺距 pitch	尺寸 size			订货号 order number			
	D	25.4mm	P	D1	L1	L2	不涂层 uncoating	涂层 coating		
G1/16	G1/16D	Rp1/16	7.723	28	0.970	5.6	55	14	4G35-077F	■ 4G35T-077F
G1/8	G1/8D	Rp1/8	9.728	28	0.970	8.0	59	15	4G35-097F	■ 4G35T-097F
G1/4	G1/4D	Rp1/4	13.157	19	1.337	10.0	67	19	4G35-131G	■ 4G35T-131G
G3/8	G3/8D	Rp3/8	16.662	19	1.337	12.5	75	21	4G45-166G	■ 4G45T-166G
G1/2	G1/2D	Rp1/2	20.955	14	1.814	16.0	87	26	4G45-209J	■ 4G45T-209J
G3/4	G3/4D	Rp3/4	26.441	14	1.814	20.0	96	28	4G45-264J	■ 4G45T-264J
G1	G1D	Rp1	33.249	11	2.309	25.0	109	33	4G45-264K	■ 4G45T-264K

○按订单生产 Production by order

铸铁 不锈钢 钛合金 耐热合金 铝合金

HB<300 HRC30-40 HRC40-45 HRC45-55 HRC>55

首选 可选 不选

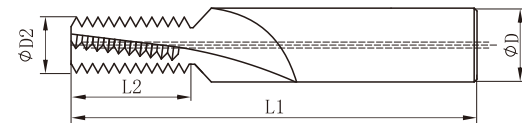
铸铁 不锈钢 钛合金 耐热合金 铝合金

HB<300 HRC30-40 HRC40-45 HRC45-55 HRC>55

首选 可选 不选

中心内冷公制螺纹铣刀-LZ-ISO-T

Center cooling thread milling cutter metric-LZ-ISO-T



螺纹 thread		螺距 pitch	尺寸 size				最小加工孔径 minimum processing screw thread hole	订货号 order number
粗牙 coarse thread	细牙 fine thread	P	D	D2	L1	L2	内螺纹刀 screw thread milling cutter	
M3x0.5	M3.5-M16x0.5	0.50	4	2.40	46	6.0	2.5	LZ04024L06-N0.50ISO
	M4x0.5	0.50	4	3.20	46	8.0	3.5	LZ04032L08-N0.50ISO
	M5x0.5	0.50	6	4.20	58	10.0	4.5	LZ06042L10-N0.50ISO
M4x0.7		0.70	4	3.15	46	8.4	3.3	LZ04031L08-N0.70ISO
	M6x0.75	0.75	6	5.00	58	12.0	5.3	LZ06050L12-N0.75ISO
M5x0.8		0.80	4	3.90	46	10.4	4.2	LZ04039L10-N0.80ISO
M6x1.0	M8-M40x1.0	1.00	6	4.80	58	12.0	5.0	LZ06048L12-N1.00ISO
	M8x1.0	1.00	8	6.70	62	16.0	7.0	LZ08067L16-N1.00ISO
	M10x1.0	1.00	10	8.70	74	20.0	9.0	LZ10087L20-N1.00ISO
	M12x1.0	1.00	12	10.70	74	24.0	11.0	LZ12107L24-N1.00ISO
M8x1.25		1.25	8	6.50	62	16.2	6.8	LZ08065L16-N1.25ISO
	M10x1.25		10	8.50	74	20.0	8.8	LZ10085L20-N1.25ISO
M10x1.5	M12-M48x1.5	1.50	10	8.20	74	19.5	8.5	LZ10082L20-N1.50ISO
	M12x1.5	1.50	10	9.90	74	24.0	10.5	LZ10099L24-N1.50ISO
	M14x1.5	1.50	12	11.90	81	28.5	12.5	LZ12119L29-N1.50ISO
	M16x1.5	1.50	14	13.90	93	31.5	14.5	LZ14139L32-N1.50ISO
M12x1.75		1.75	10	9.90	74	24.5	10.3	LZ10099L25-N1.75ISO
M14x2.0	M17-M801x2.0	2.00	12	11.60	81	28.0	12.0	LZ12116L29-N2.00ISO
M16x2.0	M17-M80x2.0	2.00	14	13.60	93	32.0	14.0	LZ14136L33-N2.00ISO
M18x2.5		2.50	16	14.80	93	35.0	15.2	LZ16148L36-N2.50ISO
M20x2.5		2.50	18	17.10	103	40.0	17.5	LZ18171L41-N2.50ISO
M24x3.0		3.00	20	19.90	103	48.0	21.0	LZ20199L49-N3.00ISO

○按订单生产 Production by order

铸铁

不锈钢

钛合金

耐热合金

铝合金

HB<300

HRC30-40

HRC40-45

HRC45-55

HRC>55

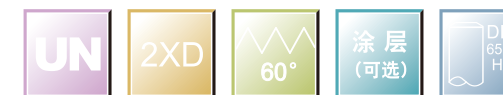
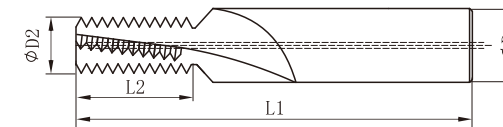
首选

可选

不选

中心内冷美制统一螺纹铣刀-LZ-UN-T

Center cooling american standard thread milling cutter-LZ-UN-T



螺纹 thread			螺距 pitch	尺寸 size				最小加工孔径 minimum processing screw thread hole	订货号 order number
UNC	UNF	UNEF	tpi	D	D2	L1	L2	mm	内螺纹刀 screw thread milling cutter
	No.10x32	No.12-3/8x32	32	4	3.80	46	9.5	4.0	LZ 04038L09-N32UNF
		No.12-3/8x32	32	6	4.40	58	11.1	4.7	LZ 06044L11-N32UNEF
	No.12, 1/4x28	7/16"; 1/2"x28	28	6	4.30	58	10.9	4.6	LZ 06043L11-N28UNF
	1/4"x28	7/16"; 1/2"x28	28	6	5.15	58	12.7	5.5	LZ 06052L13-N28UNF
		7/16"; 1/2"x28	28	10	9.90	74	21.8	10.2	LZ 10099L22-N28UNEF
No.10x24	5/16", 3/8"x24	9/16"-11/16"x24	24	4	3.58	46	9.5	3.8	LZ 04035L10-N24UNC
No.12x24	5/16", 3/8"x24	9/16"-11/16"x24	24	6	4.15	58	10.6	4.5	LZ 06041L11-N24UNC
	5/16", 3/8"x24	9/16"-11/16"x24	24	8	6.68	62	15.9	6.9	LZ 08066L16-N24UNF
	3/8"x24	9/16"-11/16"x24	24	10	8.20	74	19.0	8.5	LZ 10082L19-N24UNF
		9/16"-11/16"x24	24	14	12.90	93	28.6	13.2	LZ 14129L29-N24UNEF
1/4"x20	7/16", 1/2"x20	3/4"-1"x20	20	6	4.88	58	12.7	5.1	LZ 06048L13-N20UNC
	7/16", 1/2"x20	3/4"-1"x20	20	10	9.60	74	21.6	9.9	LZ 10096L22-N20UNF
	1/2"x20	3/4"-1"x20	20	12	11.10	81	25.4	11.5	LZ 12111L26-N20UNF
		3/4"-1"x20	20	18	17.40	103	38.1	17.8	LZ 18174L38-N20UNEF
5/16"x18	9/16", 5/8"x18	11/16"-1 11/16"x18	18	8	6.15	62	15.5	6.6	LZ 08061L16-N18UNC
	9/16", 5/8"x18	11/16"-1 11/16"x18	18	14	12.50	93	28.2	13.0	LZ 14125L28-N18UNF
	5/8"x18	11/16"-1 11/16"x18	18	16	14.10	93	31.0	14.6	LZ 16141L31-N18UNF
3/8"x16	3/4"x16		16	8	7.65	62	19.0	8.0	LZ 08076L19-N16UNC
	3/4"x16		16	18	17.00	103	38.1	17.5	LZ 18170L38-N16UNF
7/16"x14	7/8"x14		14	10	9.00	74	21.8	9.4	LZ 10090L22-N14UNC
	7/8"x14		14	20	19.90	103	43.5	20.5	LZ 20199L44-N14UNF
1/2"x13			13	12	10.35	81	25.4	10.9	LZ 12104L26-N13UNC
9/16"x12	1"-1 1/2"x12		12	12	11.80	81	27.5	12.3	LZ 12118L28-N12UNC
	1"-1 1/2"x12		12	20	19.90	103	50.8	23.5	LZ 20199L51-N12UNF
5/8"x11			11	14	13.10	93	32.3	13.7	LZ 14131L33-N11UNC
3/4"x10			10	16	15.90	93	38.1	16.7	LZ 16159L39-N10UNC
7/8"x9			9	20	19.00	103	45.2	19.5	LZ 20190L46-N9UNC
1"x8			8	20	19.90	103	50.8	22.0	LZ 20199L52-N8UNC

○按订单生产 Production by order

铸铁

不锈钢

钛合金

耐热合金

铝合金

HB<300

HRC30-40

HRC40-45

HRC45-55

HRC>55

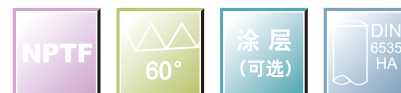
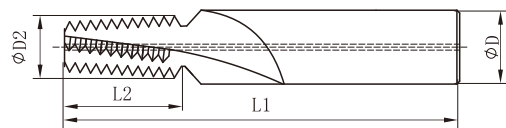
首选

可选

不选

中心内冷美制干密封管螺纹铣刀-LZ-NPTF-T

Center cooling american standard sealing pipe thread milling cutter-LZ-NPTF-T

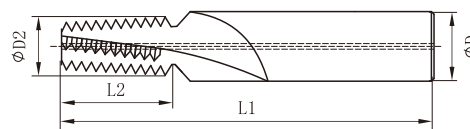


螺纹 thread	螺距 pitch	尺寸 size				最小加工孔径 minimum processing screw thread hole	订货号 order number
		P	D	D2	L1		
1/16x27	27.0	6	5.90	58	9.4	6.1	LZ06059L09-WN27NPTF
1/8x27	27.0	8	7.65	62	9.4	8.4	LZ08076L09-WN27NPTF
1/4x18	18.0	10	9.90	74	14.1	11.1	LZ10099L14-WN18NPTF
3/8x18	18.0	12	11.15	74	14.1	14.3	LZ12111L14-WN18NPTF
1/2, 3/4x14	14.0	16	14.25	93	18.1	17.9, 23.0	LZ16142L19-WN14NPTF
1, 1 1/4, 1 1/2, 2x11.5	11.5	20	19.60	103	22.1	29.0, 37.7, 43.7	LZ20196L23-WN11.5NPTF
2 1/2x8; 3x8	8.0	20	19.60	103	31.7	66.3, 82.1	LZ20196L33-WN8NPTF

○按订单生产 Production by order

中心内冷美制密封管螺纹铣刀-LZ-NPT-T

Center cooling american standard sealing pipe thread milling cutter-LZ-NPT-T



螺纹 Thread	螺距 Pitch	尺寸 Size				最小加工孔径 minimum processing screw thread hole	订货号 order number
		P	D	D2	L1		
1/16x27	27.0	6	5.90	58	9.4	6.2	LZ06059L09-WN27NPT
1/8x27	27.0	8	7.65	62	9.4	8.4	LZ08076L09-WN27NPT
1/4x18	18.0	10	9.90	74	14.1	11.1	LZ10099L14-WN18NPT
3/8x18	18.0	12	11.15	74	14.1	14.3	LZ12111L14-WN18NPT
1/2, 3/4x14	14.0	16	14.25	93	18.1	17.9, 23.0	LZ16142L19-WN14NPT
1, 1 1/4, 1 1/2, 2x11.5	11.5	20	19.60	103	22.1	29.0, 37.7, 44.0	LZ20196L23-WN11.5NPT
2 1/2x8	8.0	20	19.60	103	31.7	66.7, 82.1	LZ20196L33-WN8NPT

○按订单生产 Production by order

铸铁

不锈钢

钛合金

耐热合金

铝合金

HB<300

HRC30-40

HRC40-45

HRC45-55

HRC>55

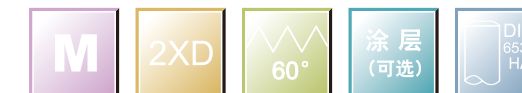
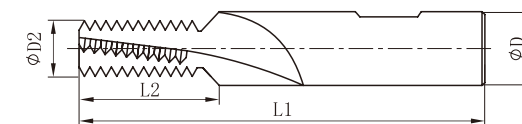
首选

可选

不选

公制螺纹铣刀 LZ-ISO-N

Thread milling cutter metric LZ-ISO-N



粗牙 coarse thread	细牙 fine thread	螺距 pitch	尺寸 size				最小加工孔径 minimum processing screw thread hole	订货号 order number
			P	D	D2	L1		
	M5x0.75	0.75	6	3.6	58	10.5	4.2	LZ06036-N0.75ISO
M5x0.8		0.80	6	3.5	58	10.4	4.2	LZ06035-N0.80ISO
M6x1.0		1.00	8	4.1	64	12.0	5.0	LZ08041-N1.0ISO
	M8x1.0	1.00	10	6.0	74	16.0	7.0	LZ10060-N1.0ISO
M8x1.25		1.25	10	5.8	74	16.3	6.8	LZ10058-N1.25ISO
	M10x1.0	1.00	10	7.9	74	20.0	9.0	LZ10079-N1.0ISO
	M10x1.25	1.25	10	7.7	74	20.0	8.8	LZ10077-N1.25ISO
M10x1.5		1.50	10	7.7	74	21.0	8.5	LZ10077-N1.5ISO
	M12x1.0	1.00	12	9.6	84	24.0	11.0	LZ12096-N1.0ISO
	M12x1.25	1.25	12	9.4	84	25.0	10.8	LZ12094-N1.25ISO
	M12x1.5	1.50	12	9.4	84	24.0	10.5	LZ12094-N1.5ISO
M12x1.75		1.75	12	8.7	84	24.5	10.2	LZ12087-N1.75ISO
	M14x1.0	1.00	16	11.5	93	28.0	13.0	LZ16115-N1.0ISO
	M14x1.5	1.50	16	11.2	93	28.5	12.5	LZ16112-N1.5ISO
M14x2.0		2.00	16	10.2	93	28.0	12.0	LZ16102-N2.0ISO
	M16x1.5	1.50	16	13.0	93	33.0	14.5	LZ16130-N1.5ISO
M16x2.0		2.00	16	12.2	93	32.0	14.0	LZ16122-N2.0ISO
	M18x1.5	1.50	16	14.8	93	36.0	16.5	LZ16148-N1.5ISO
M18x2.5		2.50	20	12.9	105	37.5	15.5	LZ20129-N2.5ISO
	M20x1.5	1.50	20	16.5	105	40.5	18.5	LZ20165-N1.5ISO
M20x2.5		2.50	20	14.8	105	40.0	17.5	LZ20148-N2.5ISO
M24x3.0		3.00	20	16.2	105	42.0	21.0	LZ20162-N3.0ISO

○按订单生产 Production by order

铸铁

不锈钢

钛合金

耐热合金

铝合金

HB<300

HRC30-40

HRC40-45

HRC45-55

HRC>55

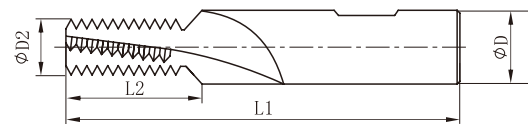
首选

可选

不选

美制统一螺纹铣刀 LZ-UN-N

American standard thread milling cutter LZ-UN-N

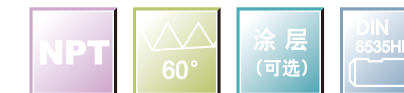
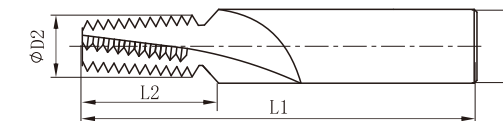


螺纹 thread		螺距 pitch	尺寸 size			最小加工孔径 minimum processing screw thread hole	订货号 order number	
UNC	UNF	tpi	D	D2	L1	L2	mm	内螺纹刀 screw thread milling cutter
	No.10x32	32	6	3.3	57	10.3	4.0	LZ06033-N32UNF
No.10x24		24	6	2.9	57	10.6	3.8	LZ06029-N24UNC
	No.12x28	28	8	3.8	63	11.8	4.6	LZ08038-N28UNF
No.12x24		24	8	3.5	63	11.6	4.5	LZ08035-N24UNC
	1/4"x28	28	8	4.6	63	12.7	5.5	LZ08046-N28UNF
1/4"x20		20	8	4.0	63	12.7	5.2	LZ08040-N20UNC
	5/16"x24	24	10	5.7	73	15.9	6.8	LZ10057-N24UNF
5/16"x18		18	10	5.2	73	16.9	6.5	LZ10052-N18UNC
	3/8"x24	24	10	7.4	73	19.1	8.5	LZ10074-N24UNF
3/8"x16		16	10	6.7	73	19.1	8.0	LZ10067-N16UNC
	7/16"x14	14	12	7.6	83	23.6	9.3	LZ12076-N14UNC
	7/16"x20	20	12	8.5	83	22.9	9.8	LZ12085-N20UNF
1/2"x13		13	12	8.9	83	25.4	10.8	LZ12089-N13UNC
	1/2"x20	20	12	10.1	83	25.4	11.5	LZ12101-N20UNF
9/16"x12		12	16	10.3	92	29.6	12.3	LZ16103-N12UNC
	9/16"x18	18	16	11.3	92	29.6	12.8	LZ16113-N18UNF
5/8"x11		11	16	11.0	92	32.3	13.5	LZ16110-N11UNC
	5/8"x18	18	16	12.8	92	32.5	14.5	LZ16128-N18UNF
3/4"x10		10	20	13.5	104	38.1	16.5	LZ20135-N10UNC
7/8"x9		9	20	15.2	104	42.3	19.5	LZ20152-N9UNC
1"x8		8	20	17.0	104	41.3	22.3	LZ20170-N8UNC

○按订单生产 Production by order

美制密封管螺纹铣刀 LZ-NPT-N

American standard sealing pipe thread milling cutter LZ-NPT-N

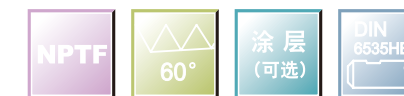
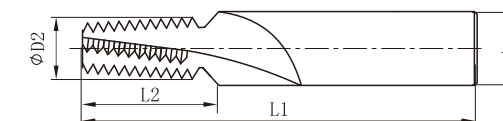


螺纹 thread		螺距 pitch	尺寸 size			最小加工孔径 minimum processing screw thread hole	订货号 order number
Standard	tpi	D	D2	L1	L2	mm	
1/16"X27	27.0	10	5.3	73	9.4	6.3	LZ10053-WN27NPT
1/8"X27	27.0	12	7.5	83	9.4	8.5	LZ12075-WN27NPT
1/4"X18	18.0	16	9.4	92	14.1	11.1	LZ16094-WN18NPT
3/8"X18	18.0	16	12.7	92	14.1	14.5	LZ16127-WN18NPT
1/2"X14, 3/4"X14	14.0	20	15.5	104	25.4	17.7, 23.0	LZ20155-WN14NPT
1"-2"X11.5	11.5	20	19.9	104	33.1	29.0 - 56.0	LZ20199-WN11.5NPT
2 1/2"X8	8.0	20	19.9	104	38.1	66.5	LZ20199-WN8NPT

○按订单生产 Production by order

美制干密封管螺纹铣刀 LZ-NPTF-N

American standard stem sealing pipe thread milling cutter LZ-NPTF-N



螺纹 thread		螺距 pitch	尺寸 size			最小加工孔径 minimum processing screw thread hole	订货号 order number
Standard	tpi	D	D2	L1	L2	mm	
1/16"X27	27.0	10	5.3	73	9.4	6.3	LZ 10053-WN27NPTF
1/8"X27	27.0	12	7.50	83	9.4	8.4	LZ 12075-WN27NPTF
1/4"X18	18.0	16	9.40	92	14.1	11.1	LZ 16094-WN18NPTF
3/8"X18	18.0	16	12.70	92	14.1	14.7	LZ 16127-WN18NPTF
1/2"X14, 3/4"X14	14.0	20	15.50	104	25.4	17.9, 23.4	LZ 20155-WN14NPTF
1"-2"X11.5	11.5	20	19.90	104	33.1	29.4 - 56.2	LZ 20199-WN11.5NPTF
2 1/2"X8	8.0	20	19.90	104	38.1	67	LZ 20199-WN8NPTF

○按订单生产 Production by order

铸铁 不锈钢 钛合金 耐热合金 铝合金

HB<300 HRC30-40 HRC40-45 HRC45-55 HRC>55

首选 可选 不选

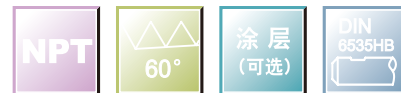
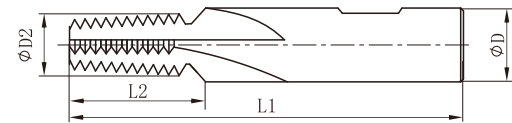
铸铁 不锈钢 钛合金 耐热合金 铝合金

HB<300 HRC30-40 HRC40-45 HRC45-55 HRC>55

首选 可选 不选

美制密封管螺纹铣刀 ZZ-NPT-N

American standard sealing pipe thread milling cutter ZZ-NPT-N

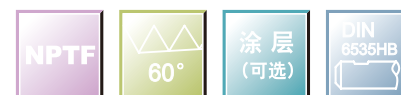
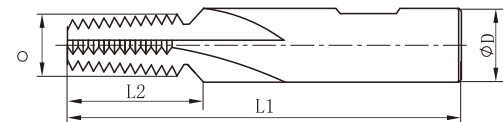


螺纹 thread		尺寸 size				牙高 thread high	订货号 order number
tpi	Min. Dia.	D	D2	L1	L2	H	
27.0	1/16"	6	5.9	57	9.41	0.66	ZZ06059-WN27NPT
18.0	1/4"	8	7.9	63	14.11	1.01	ZZ08079-WN18NPT
14.0	1/2"	12	11.9	83	19.96	1.33	ZZ12119-WN14NPT
11.5	1"	16	15.9	92	26.51	1.64	ZZ16159-WN11.5NPT
8.0	2 1/2"	16	15.9	92	38.10	2.42	ZZ16159-WN8NPT

○按订单生产 Production by order

美制干密封管螺纹铣刀 ZZ-NPTF-N

American standard stem sealing pipe thread milling cutter ZZ-NPTF-N



螺纹 thread		尺寸 size				牙高 thread high	订货号 order number
tpi	Min. Dia.	D	D2	L1	L2	H	
27.0	1/16"	6	5.9	58	9.41	0.64	ZZ06059-WN27NPTF
18.0	1/4"	8	7.9	64	14.11	1.00	ZZ08079-WN18NPTF
14.0	1/2"	12	11.9	84	19.96	1.35	ZZ12119-WN14NPTF
11.5	1"	16	15.9	93	26.51	1.63	ZZ16159-WN11.5NPTF
8.0	2 1/2"	16	15.9	93	38.10	2.38	ZZ16159-WN8NPTF

○按订单生产 Production by order

铸铁

不锈钢

钛合金

耐热合金

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HB<300

HRC30-40

HRC40-45

HRC45-55

HRC>55

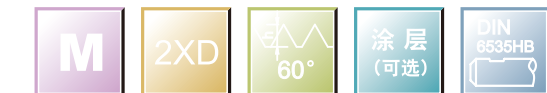
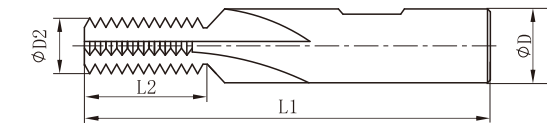
首选

可选

不选

公制螺纹铣刀 ZZ-ISO-N

Thread milling cutter metric ZZ-ISO-N



螺纹 thread		尺寸 size				牙高 thread high	订货号 order number
螺距 P pitch	Min. Dia.	D	D2	L1	L2	H	外螺纹刀 external thread milling cutter
0.50	M 3	6	5.9	58	15.0	0.31	ZZ06059-W0.5ISO
0.75	M 4.5	8	7.9	64	19.5	0.46	ZZ08079-W0.75ISO
1.00	M 6	10	9.9	73	24.0	0.61	ZZ10099-W1.0ISO
1.50	M 10	12	11.9	84	30.0	0.92	ZZ12119-W1.5ISO
2.00	M 14	12	11.9	84	30.0	1.23	ZZ12119-W2.0ISO
3.00	M 24	16	15.9	93	36.0	1.84	ZZ16159-W3.0ISO
4.00	M 36	16	15.9	93	40.0	2.45	ZZ16159-W4.0ISO
6.00	M 64	20	19.9	105	36.0	3.68	ZZ20199-W6.0ISO

螺纹 thread		尺寸 size				牙高 thread high	订货号 order number
螺距 P pitch	Min. Dia.	D	D2	L1	L2	H	内螺纹刀 screw thread milling cutter
0.75	M 4.5	4	3.0	43	6.7	0.43	ZZ04030-N0.75ISO
0.75	M 8	6	5.9	58	15.0	0.43	ZZ06059-N0.75ISO
0.80	M 5	4	3.6	43	8.0	0.46	ZZ04036-N0.8ISO
1.00	M 6	6	4.0	58	9.0	0.58	ZZ06040-N1.0ISO
1.00	M 12	8	7.9	64	20.0	0.58	ZZ08079-N1.0ISO
1.25	M 8	6	5.0	58	12.5	0.72	ZZ06050-N1.25ISO
1.25	M 10	6	5.9	58	15.0	0.87	ZZ06059-N1.5ISO
1.50	M 14	10	9.9	73	24.0	0.87	ZZ10099-N1.5ISO
1.50	M 18	12	11.9	84	30.0	0.87	ZZ12119-N1.5ISO
1.75	M 12	8	7.9	64	19.2	1.01	ZZ08079-N1.75ISO
2.00	M 16	10	9.9	73	24.0	1.15	ZZ10099-N2.0ISO
2.00	M 18	12	11.9	84	30.0	1.15	ZZ12119-N2.0ISO
2.50	M 20	12	11.9	84	30.0	1.44	ZZ12119-N2.5ISO
3.00	M 24	16	15.9	93	36.0	1.73	ZZ16159-N3.0ISO
3.50	M 30	16	15.9	93	38.5	2.02	ZZ16159-N3.5ISO
4.00	M 36	16	15.9	93	40.0	2.31	ZZ16159-N4.0ISO
5.00	M 48	20	19.9	105	40.0	2.89	ZZ20199-N5.0ISO
6.00	M 64	20	19.9	105	36.0	3.46	ZZ20199-N6.0ISO

○按订单生产 Production by order

铸铁

不锈钢

钛合金

耐热合金

铝合金

HB<300

HRC30-40

HRC40-45

HRC45-55

HRC>55

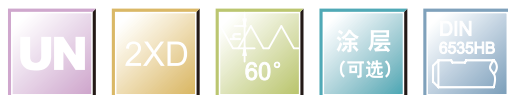
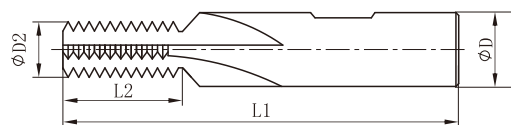
首选

可选

不选

美制统一螺纹铣刀 ZZ-UN-N

American standard thread milling cutter ZZ-UN-N



螺纹 thread		尺寸 size				牙高 thread high	订货号 order number
tpi	Min. Dia.	D	D2	L1	L2	H	外螺纹刀 external thread milling cutter
32	No. 6	6	5.9	57	14.3	0.49	ZZ06059-W32UN
28	No. 12	8	7.9	63	19.9	0.56	ZZ08079-W28UN
20	1/4"	10	9.9	72	22.9	0.78	ZZ10099-W20UN
18	5/16"	10	9.9	72	24.0	0.87	ZZ10099-W18UN
16	3/8"	12	11.9	83	28.6	0.97	ZZ12119-W16UN
12	9/16"	12	11.9	83	29.6	1.30	ZZ12119-W12UN
8	1"	16	15.9	92	38.1	1.95	ZZ16159-W8UN
6	1 3/8"	20	19.9	104	38.1	2.60	ZZ20199-W6UN

螺纹 thread		尺寸 size				牙高 thread high	订货号 order number
tpi	Min. Dia.	D	D2	L1	L2	H	内螺纹刀 screw thread milling cutter
36	No. 8	4	3.0	42	6.3	0.41	ZZ04030-N36UN
32	No. 8	4	3.0	42	6.3	0.46	ZZ04030-N32UN
32	5/16"	6	5.9	57	14.3	0.46	ZZ06059-N32UN
28	No. 12	4	3.6	42	8.2	0.52	ZZ04036-N28UN
28	7/16"	8	7.9	63	19.9	0.52	ZZ08079-N28UN
24	No. 12	6	4.0	57	8.5	0.61	ZZ06040-N24UN
20	1/4"	6	4.0	57	10.2	0.73	ZZ06040-N20UN
20	9/16"	10	9.9	72	22.9	0.73	ZZ10099-N20UN
18	5/16"	6	5.0	57	12.7	0.81	ZZ06050-N18UN
18	9/16"	10	9.9	72	24.0	0.81	ZZ10099-N18UN
16	3/8"	6	5.9	57	14.3	0.92	ZZ06059-N16UN
16	13/16"	12	11.9	83	28.6	0.92	ZZ12119-N16UN
14	7/16"	8	7.9	63	18.1	1.05	ZZ08079-N14UN
13	1/2"	8	7.9	63	19.5	1.13	ZZ08079-N13UN
12	9/16"	10	9.9	72	23.3	1.22	ZZ10099-N12UN
12	1"	12	11.9	83	29.6	1.22	ZZ12119-N12UN
11	5/8"	10	9.9	72	23.1	1.33	ZZ10099-N11UN
10	3/4"	12	11.9	83	27.9	1.47	ZZ12119-N10UN
9	7/8"	16	15.9	92	33.3	1.63	ZZ16159-N9UN
8	1"	16	15.9	92	38.1	1.83	ZZ16159-N8UN
7	1 1/8"	16	15.9	92	36.3	2.09	ZZ16159-N7UN
6	1 3/8"	20	19.9	104	38.1	2.44	ZZ20199-N6UN
5	1 3/4"	20	19.9	104	40.6	2.93	ZZ20199-N5UN
4.5	2"	20	19.9	104	39.5	3.26	ZZ20199-N4.5UN

○按订单生产 Production by order

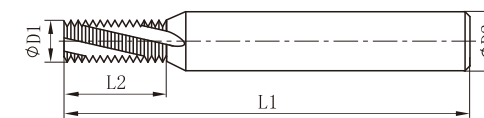
铸铁 不锈钢 钛合金 耐热合金 铝合金

HB<300 HRC30-40 HRC40-45 HRC45-55 HRC>55

首选 可选 不选

螺纹铣刀 (D1: M5—M27)

Thread milling cutter(D1:M5-M27)



螺纹 thread					柄径 shank diameter	刃径 cutter diameter	总长 overall length	刃长 thread length	订货号 order number
螺距 P pitch	M粗牙 coarse thread	M粗牙 coarse thread	M细牙 fine thread	M细牙 fine thread	D2	D1	L1	L2	
0.50	M3	3	4	$\Phi \geq 4$	6	2.2	58	5.3	MLX06022050
0.50			5	$\Phi \geq 5$	6	3.8	58	10.3	MLX06038050
0.70	M4	4	5	$\Phi \geq 5$	6	3.1	58	7.4	MLX06031070
0.75			6	$\Phi \geq 6$	6	4.5	58	10.1	MLX06045075
0.80	M5	5	6	$\Phi \geq 6$	6	3.6	58	9.2	MLX06036080
1.00	M6	6	7	$\Phi \geq 7$	6	4.0	58	10.5	MLX06040100
1.00	M6	6	7	$\Phi \geq 7$	6	4.0	58	14.5	MLX06040100
1.00			9	$\Phi \geq 9$	6	6.0	58	12.5	MLX06060100
1.00			10	$\Phi \geq 10$	8	8.0	64	16.5	MLX08080100
1.25	M8	8	10	$\Phi \geq 10$	6	5.0	58	14.4	MLX06050125
1.25	M8	8	10	$\Phi \geq 10$	6	5.0	58	19.4	MLX06050125
1.50	M10	10	12	$\Phi \geq 12$	8	7.0	64	17.3	MLX08070150
1.50	M10	10	12	$\Phi \geq 12$	8	7.0	76	24.8	MLX08070150
1.50			14	$\Phi \geq 14$	10	10.0	73	21.8	MLX10100150
1.50			20	$\Phi \geq 20$	16	16.0	105	33.8	MLX16160150
1.75	M12	12	14	$\Phi \geq 14$	8	8.0	64	20.1	MLX08080175
1.75	M12	12	14	$\Phi \geq 14$	8	8.0	76	28.9	MLX08080175
2.00	M16	16	17	$\Phi \geq 17$	10	10.0	73	27.0	MLX10100200
2.00	M16	16	17	$\Phi \geq 17$	10	10.0	105	39.0	MLX10100200
2.00			18	$\Phi \geq 18$	12	12.0	84	27.0	MLX12120200
2.00			26	$\Phi \geq 26$	20	20.0	105	41.0	MLX20200200
2.50	M20	20	22	$\Phi \geq 22$	14	14.0	84	33.8	MLX14140250
2.50	M20	20	22	$\Phi \geq 22$	14	14.0	105	48.8	MLX14140250
3.00	M24	24	25	$\Phi \geq 25$	16	16.0	105	40.5	MLX16160300
3.00	M24	24	25	$\Phi \geq 25$	16	16.0	120	58.5	MLX16160300
3.00	M27	27	28	$\Phi \geq 28$	20	20.0	105	43.5	MLX20200300

○按订单生产 Production by order

铸铁 不锈钢 钛合金 耐热合金 铝合金

HB<300 HRC30-40 HRC40-45 HRC45-55 HRC>55

首选 可选 不选

常见螺纹的底孔直径推荐尺寸

The recommend size of bottom bore diameter for common thread

一、统一螺纹（见表1、表2）

The unified thread (Table 1 Table 2)

表1 统一粗牙螺纹（UNC）底孔直径

Table 1. The unified national coarse thread bottom bore diameter

mm

螺纹规格 thread specification	钻头直径 the drilling diameter	底孔直径 the bottom bore diameter	
		最小 minimum	最大 maximum
No.1-64	1.55	1.425	1.582
No.2-56	1.85	1.694	1.872
No.3-48	2.10	1.941	2.146
No.4-40	2.35	2.156	2.385
No.5-40	2.65	2.487	2.697
No. 6-32	2.85	2.642	2.896
No.8-32	3.50	3.302	3.531
No.10-24	3.90	3.683	3.962
No.12-24	4.50	4.343	4.597
1/4-20	5.10	4.976	5.268
5/16-18	6.60	6.411	6.734
3/8-16	8.00	7.805	8.164
7/16-14	9.40	9.149	9.550
1/2-13	10.80	10.584	11.013
9/16-12	12.20	11.996	12.456
5/8-11	13.50	13.376	13.868
3/4-10	16.50	16.299	16.833
7/8-9	19.50	19.169	19.748
1-8	22.25	21.963	22.598
1 1/8-7	25.00	24.648	25.348
1 1/4-7	28.00	27.823	28.524
1 3/8-6	30.75	30.343	31.120
1 1/2-6	34.00	33.518	34.295

表2 统一细牙螺纹（UNF）底孔直径

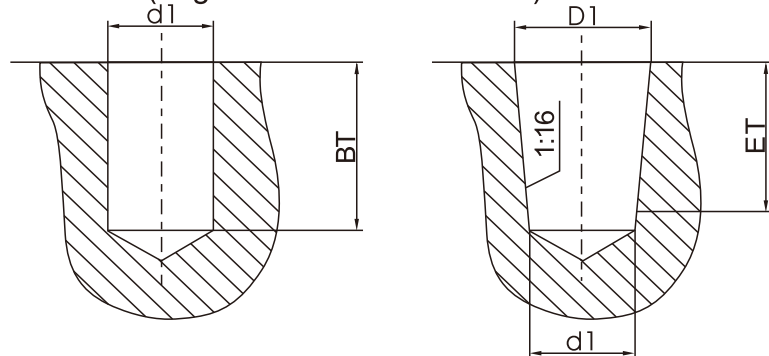
mm

Table 2. The unified national fine thread bottom bore diameter

螺纹规格 thread specification	钻头直径 the drilling diameter	底孔直径 the bottom bore diameter	
		最小 minimum	最大 maximum
No.0-80	1.25	1.181	1.306
No.1-72	1.55	1.473	1.613
No.2-64	1.85	1.755	1.913
No.3-56	2.15	2.024	2.197
No.4-48	2.40	2.271	2.459
No. 5-44	2.70	2.550	2.714
No.6-40	2.95	2.819	3.023
No.8-36	3.50	3.404	3.607
No.10-32	4.10	3.962	4.166
No.12-28	4.60	4.496	4.724
1/4-28	5.50	5.367	5.580
5/16-24	6.90	6.792	7.038
3/8-24	8.50	8.379	8.626
7/16-20	9.90	9.738	10.030
1/2-20	11.50	11.326	11.618
9/16-18	12.90	12.761	13.084
5/8-18	14.50	14.348	14.671
3/4-16	17.50	17.330	17.689
7/8-14	20.40	20.262	20.633
1-12	23.25	23.109	23.569
1 1/8-12	26.50	26.284	26.744
1 1/4-12	29.50	29.459	29.919
1 3/8-12	33.00	32.634	33.094
1 1/2-12	36.00	35.809	36.269

二、锥管螺纹 (见图1、见表3、表4)

Taper pipe thread (Figure 1 Table 3 Table 4)



a) 不用铰刀 Without reaming cutter

b) 用铰刀 With reaming cutter

图1. 锥管螺纹底孔示意图

Figure 1. The taper pipe thread bottom bore

表3 美国标准锥管螺纹 (NPT) 底孔直径

mm

Table 3. National (American) taper pipe thread bottom bore diameter

螺纹规格 Thread specification	d_1	D_1	最大钻深BT Maximum drilling depth bt	螺纹深度ET Thread depth et
1/16-27	6.15	6.39	10.7	9.29
1/8-27	8.40	8.74	10.8	9.32
1/4-18	11.10	11.36	15.6	13.52
3/8-18	14.30	14.80	16.0	13.83
1/2-14	17.90	18.32	20.8	18.07
3/4-14	23.30	23.67	21.3	18.55
1-11 1/2	29.00	29.69	25.6	22.29
1 1/4-11 1/2	37.70	38.45	26.1	22.80
1 1/2-11 1/2	43.70	44.52	26.1	22.80
2-11 1/2	55.60	56.56	26.5	23.20
2 1/2-8	66.30	67.62	36.3	31.57
3-8	82.30	83.52	38.5	33.74

表4 英制圆锥管螺纹 (RC) 底孔直径

mm

Table 4. The inch conical pipe thread bottom bore diameter

螺纹规格 Thread specification	d_1	D_1	最大钻深BT Maximum drilling depth bt	螺纹深度ET Thread depth et
1/16-28	6.30	6.49	10.1	8.31
1/8-28	8.30	8.50	10.1	8.31
1/4-19	11.00	11.35	15.0	12.77
3/8-19	14.50	14.85	15.4	12.77
1/2-14	18.10	18.49	20.5	16.83
3/4-14	23.50	23.98	21.8	18.13
1-11	29.60	30.11	26.0	21.42
1 1/4-11	38.10	38.78	28.3	23.72
1 1/2-11	44.00	44.67	28.3	23.72
2-11	55.60	56.48	32.6	28.02
2 1/2-11	71.10	72.00	37.1	31.32
3-11	83.60	84.71	40.2	34.42

切削加工时冷却润滑液的选用 (见表5)

The selection of machining cooling lubricating liquid (Table 5)

表5 冷却润滑液的选用

mm

Table 5. The selection of cooling lubricating liquid

加工条件 Machining conditions		推荐的冷却润滑液 The recommend cooling lubricating liquid
加工方法 Machining methods	粗加工 Rough machining	冷却润滑液为主的化学合成切削液和低浓度乳化液 The chemical synthesis cutting fluid and low concentration emulsion that are for major cooling and lubricating.
	精加工 Finish machining	润滑性好的切削油和极压切削液 Well lubricated cutting oil and extreme pressure cutting liquid
	丝锥攻丝 Thread tapping	一般用硫化油或乳化液 Usually use vulcanized oil or emulsion
	圆板牙切螺纹 Circular die cut thread	手工操作时一般用硫化油, 机床上加工一般用乳化液 Usually use vulcanized oil when manual work, use emulsion when machine process
	滚丝轮滚压螺纹 Rolling wheels rolled thread	一般用机械油 Usually use machinery oil
	搓丝板搓制螺纹 Screw plate kneaded thread	一般用机械油或乳化液 Usually use machinery oil or emulsion
	螺纹铣刀铣制螺纹 Thread milling cutter milled thread	一般用硫化油或乳化液 Usually use vulcanized oil or emulsion
刀具材料 Tool material	一般刀具 Common tools	根据不同的加工方法和条件选用化学合成液, 乳化液, 切削油和极压切削油 Select chemical synthesis cutting fluid, emulsion, cutting oil and extreme pressure cutting oil according to various machining methods and conditions
	低速切削 (1m/min ~ 3m/min) Low speed cutting(1m/min~3m/min)	电解质水溶液、2%~3%乳化液或高度活性油液 Electrolyte solution、2%~3% emulsion or highly active oil
	中速切削 Medium speed cutting	高浓度乳化液或润滑性好的极压油 High concentration emulsion or well lubricated extreme pressure oil
	高速钢刀具切削 High speed steel tools cutting (切削速度小于60 m/min) (Cutting speed is less than 60 m/min)	切削油、极压切削油和极压乳化液 Cutting oil、extreme pressure cutting oil and extreme pressure emulsion
切削用量 Cutting consumption	硬质合金刀具切削 Cemented carbide tools cutting (高速切削、大进给量) (High speed cutting、Big feed rate)	低浓度乳化液、化学合成液, 大流量不中断供应 Low concentration emulsion、chemical synthesis cutting fluid, supplying in high flow continuously
	碳钢 Carbon steels	硫化油 Vulcanized oil
被加工材料 To-be machined material	工具钢 Tool steels	植物油 Vegetable oil
	不锈钢 Stainless steels	极压切削油或攻丝液 Extreme pressure cutting oil or tapping liquid
	铸铁 Cast iron	硫化油或乳化液 Vulcanized oil or emulsion
	铝合金 Aluminum alloys	煤油或乳化液 Coal oil or emulsion
	铜 Copper	植物油或乳化液 Vegetable oil or emulsion
	高温合金 Heat-resistant steels	极压乳化液、合成化学液、极压切削油 Extreme pressure emulsion、chemical synthesis cutting fluid、extreme pressure cutting oil
	钛合金 Titanium alloys	极压性好的化学合成液、极压乳化液和极压切削油 Well extreme pressed chemical synthesis cutting fluid、extreme pressure emulsion and extreme pressure cutting oil

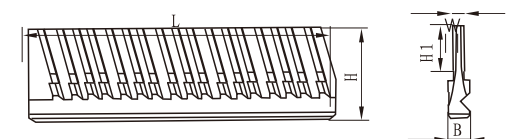




产品 Products	名称 Name	型号 Type	页码 Pageination
	平面拉刀 Plane broaches	ZCLP	E 3
	焊接拉刀 Brazed broach	WCLP	E 3
	内倒角拉刀 Inside chamfer broach	ZCLN	E 4
	外倒角拉刀 Outside chamfer broach	ZCLW	E 4
	槽拉刀 Groove broach	ZCLC	E 5
	推刀 Push knives	ZCT	E 6



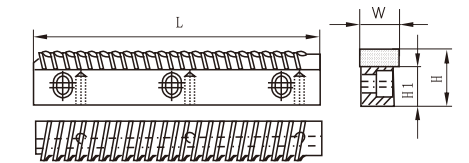
平面拉刀 ZCLP
Plane broaches ZCLP



刃宽 Edge width	有效刃长 Effective edge length	柄宽 Handle width	总长 Overall length	总高 Total tooth height	订货号 Order number
W	H1	B	L	H	无涂层 Uncoating
3.100	19	9.000	120	36.5	ZCLPA3100190365
3.200	19	9.000	150	38.0	ZCLPA3200190380
3.250	15	9.000	120	35.5	ZCLPA3250015355
4.00	21	10.000	130	44.0	ZCLPA4000021440
4.700	26	9.000	183	45.0	ZCLPA4700026450
4.777	19	9.000	130	39.0	ZCLPA4777019390
4.800	18	9.525	150	40.0	ZCLPA4800180400
5.300	23	9.000	150	46.0	ZCLPA5300230460

○按订单生产 Production by order

焊接拉刀 WCLP
Brazed broach WCLP



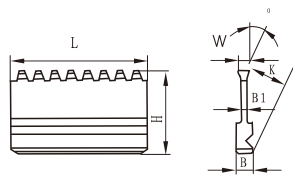
刃宽 Edge width	刃高 Blade height	总长 Overall length	有效齿高 Effective working depth	订货号 Order number
W	H	L	H1	无涂层 Uncoating
31	45	190	33	WCLPA314533
33	38	155	26	WCLPA333826
34	45	250	33	WCLPA344533
35	48	240	36	WCLPA354836
36	51	260	39	WCLPA365139
39	35	350	23	WCLPA393523
51	36	262	24	WCLPA513624

○按订单生产 Production by order

铸铁 不锈钢 钛合金 耐热合金 铝合金
HB<300 HRC30-40 HRC40-45 HRC45-55 HRC>55
首选 可选 不选



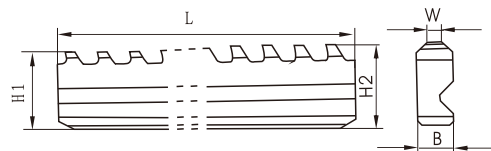
内倒角拉刀 ZCLN
Inside chamfer broach ZCLN



倒角 Chamfer	柄宽 Handle width	总长 Overall length	总高 Total tooth height	齿顶宽 Tooth top width	倒角 Chamfer	消气厚 Getter thickness	订货号 Order number
K	B	L	H	W	β	B1	无涂层 Uncoating
20.679	9	75	45.0	6.000	26	3.2	ZCLN2067904507509
19.579	9	75	43.0	6.000	26	3.2	ZCLN1957904307509
28.643	10	150	50.0	7.000	35	4.5	ZCLN2864305015010
34.137	10	85	50.0	6.507	45	4.5	ZCLN3413705008510
12.190	9	75	38.5	4.500	15	2.8	ZCLN1219038507509
13.504	9	115	47.5	6.500	15	4.8	ZCLN1350447511509

○按订单生产 Production by order

外倒角拉刀 ZCLW
Outside chamfer broach ZCLW



齿顶宽 Tooth top width	柄宽 Handle width	总长 Overall length	总高 Total tooth height	一齿高 One tooth height	订货号 Order number
W	B	L	H2	H1	无涂层 Uncoating
4.247	9.000	145	21.250	19.465	ZCLWA42472125
5.187	9.000	90	25.730	24.300	ZCLWA51872573
2.808	9.000	115	22.760	21.000	ZCLWA28082276

○按订单生产 Production by order

铸铁

不锈钢

钛合金

耐热合金

铝合金

HB<300

HRC30-40

HRC40-45

HRC45-55

HRC>55

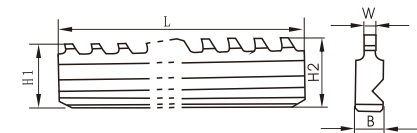
首选

可选

不选



槽拉刀 ZCLC
Groove broach ZCLC



一齿高 One tooth height	总高 Total tooth height	柄宽 Handle width	总长 Overall length	齿顶宽 Tooth top width	订货号 Order number
H1	H2	B	L	W	无涂层 Uncoating
21.100	24.650	9	210	3.85	ZCLCA21100355-385
24.650	28.200	9	210	3.85	ZCLCA24650355-385
28.200	31.750	9	210	3.85	ZCLCA28200355-385
31.750	35.300	9	210	3.85	ZCLCA31750355-385
35.300	38.850	9	210	3.85	ZCLCA35300355-385
38.850	42.400	9	210	3.85	ZCLCA38850355-385

22.760	26.550	9	230	3.00	ZCLCA22760379-300
26.550	30.340	9	230	3.00	ZCLCA26550379-300
30.340	34.130	9	230	3.00	ZCLCA30340379-300
34.130	37.920	9	230	3.00	ZCLCA34130379-300

25.730	29.732	9	240	5.10	ZCLCA25734002-510
29.732	33.734	9	240	5.10	ZCLCA29734002-510
33.734	37.736	9	240	5.10	ZCLCA33734002-510
37.736	41.738	9	240	5.10	ZCLCA33744002-510
41.738	45.740	9	240	5.10	ZCLCA41744002-510

○按订单生产 Production by order

铸铁

不锈钢

钛合金

耐热合金

铝合金

HB<300

HRC30-40

HRC40-45

HRC45-55

HRC>55

首选

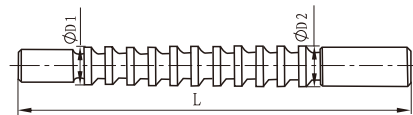
可选

不选



拉削刀具 Pull cutting tool

推刀 ZCT
Push knives ZCT



刃径 Edge dia meter	小刃径 Small edge diameter	总长 Overall length	订货号 Order number
D1	D2	L	无涂层 Uncoating
2.45	2.50	30	ZCTA0250005030
4.95	5.00	60	ZCTA0500005060
7.95	8.00	120	ZCTA0800005120
9.95	10.00	150	ZCTA1000005150
11.95	12.00	200	ZCTA1200005200
13.95	14.00	250	ZCTA1400005250
15.95	16.00	250	ZCTA1600005250
18.95	19.00	320	ZCTA1900005320
19.95	20.00	320	ZCTA2000005320
20.95	21.00	320	ZCTA2100005320

○按订单生产 Production by order

铸铁

不锈钢

钛合金

耐热合金

铝合金

HB<300

HRC30-40

HRC40-45

HRC45-55

HRC>55

首选

可选

不选



异型刀具

Profiled cutter

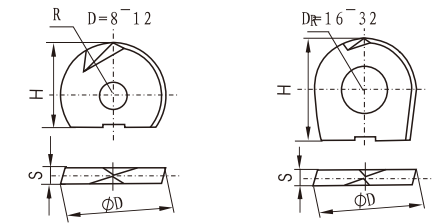
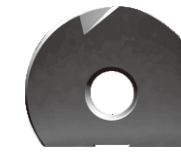


F



产品 Products	名称 Name	型号 Type	页码 Page
	模具铣刀片 Mould milling insert		F3~F4
	模具铣刀 Mould milling cutter		F5
	小金刚立铣刀 Small end milling cutter	5L3M	F6
		5L6M	F6
	小金刚球头铣刀 Small ball head milling cutter	5Q4M	F7
	阀座成型刀 Valve seat forming cutter	1E00A	F8
	小金刚刀杆 Small cutter holder		F9
	精密刀导套 Precision cutter guide sleeve		F9
	成型铣刀 Forming milling cutter	3C43T	F10
	圣诞树铣刀 christmas tree milling cutter	3Z46S	F11
	镜面铣刀 Mirror milling cutter	3X93L	F12
	单刃铣刀 Single edge milling cutter	3013P	F13
	燕尾槽铣刀 Dovetail milling cutter	3Y40K	F14
	T型槽铣刀 T-groove cutter	3T90K	F15
	盘铣刀 Disk milling cutter	ZCP	F16
	锯片铣刀 Saw blade milling cutter	ZCP-Q	F17

模具铣刀片 Mould milling insert



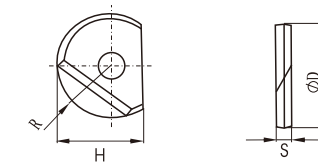
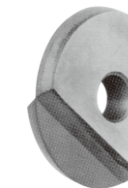
产品型号	R精度	涂层	硬质合金	刀片尺寸 Dimensions mm			
Type	Arc accuracy	Coating	Carbide	R	S	● D	H
SRC0802A	±0.01	PVD	K	4.0	2.0	8	9.5
SRC1002A	±0.01	PVD	K	5.0	2.5	10	11.5
SRC1202A	±0.01	PVD	K	6.0	2.5	12	12.0
SRC1603A	±0.01	PVD	K	8.0	3.0	16	14.0
SRC2003A	±0.01	PVD	K	10.0	3.0	20	16.0
SRC2503A	±0.01	PVD	K	12.5	4.0	25	21.5
SRC3005A	±0.01	PVD	K	15.0	5.0	30	25.0
SRC3205A	±0.01	PVD	K	16.0	5.0	32	26.0

注：订货号与产品型号相同

Note: the order number is the same as the product model.

○按订单生产 Production by order

模具铣刀片 Mould milling insert



产品型号	R精度	涂层	硬质合金	刀片尺寸 Dimensions mm			
Type	Arc accuracy	Coating	Carbide	R	S	D	H
DSRC08002	±0.01	PVD	K	4.0	2.4	8	7.0
DSRC10002	±0.01	PVD	K	5.0	2.6	10	8.5
DSRC12003	±0.01	PVD	K	6.0	3.0	12	10.0
DSRC16004	±0.01	PVD	K	8.0	4.0	16	12.0
DSRC20005	±0.01	PVD	K	10.0	5.0	20	15.0
DSRC25006	±0.01	PVD	K	12.5	6.0	25	18.5
DSRC30007	±0.01	PVD	K	15.0	7.0	30	22.5

注：订货号与产品型号相同

Note: the order number is the same as the product model.

○按订单生产 Production by order

铸铁

不锈钢

钛合金

耐热合金

铝合金

HB<300

HRC30-40

HRC40-45

HRC45-55

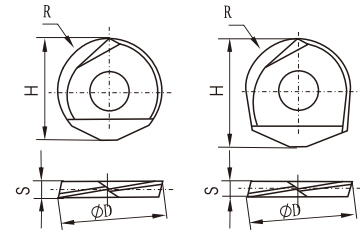
HRC>55

首选

可选

不选

模具铣刀片
Mould milling insert



产品型号	R精度	涂层	硬质合金	刀片尺寸 Dimensions mm			
Type	Arc accuracy	Coating	Carbide	R	S	φD	H
SRC08002	±0.01	PVD	K	4.0	2.1	8	9.7
SRC10002	±0.01	PVD	K	5.0	2.7	10	12.1
SRC12003	±0.01	PVD	K	6.0	3.2	12	14.6
SRC16004	±0.01	PVD	K	8.0	4.2	16	16.6
SRC20005	±0.01	PVD	K	10.0	5.2	20	20.3
SRC25006	±0.01	PVD	K	12.5	6.2	25	24.0
SRC30007	±0.01	PVD	K	15.0	7.2	30	29.2

注：订货号与产品型号相同
Note: the order number is the same as the product model.

○按订单生产 Production by order

铸铁

不锈钢

钛合金

耐热合金

铝合金

HB<300

HRC30-40

HRC40-45

HRC45-55

HRC>55

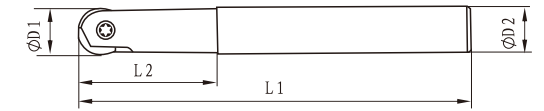
首选

可选

不选



模具铣刀
Mould milling cutter



刃径 Cutter diameter	柄径 Shank diameter	工作长 Work length	总长 Overall length	刃数 The number of flutes	订货号 Order number			
D1	D2	L2	L1	Z				
8	10	25	110	2	SRC0802A	S230	T397	FS2510-110-08A
10	12	30	130	2	SRC1002A	S229	T390	FS3012-130-10A
12	12	32	130	2	SRC1202A	S228	T391	FS3212-130-12A
16	16	36	140	2	SRC1603A	S228	T392	FS3616-140-16A
20	20	45	160	2	SRC2003A	S228	T393	FS4520-160-20A
25	25	45	160	2	SRC2504A	S228	T394	FS4525-160-25A
30	32	56	175	2	SRC3005A	S396	T395	FS5630-175-30A
32	32	56	175	2	SRC3205A	S396	T395	FS5632-175-32A

○按订单生产 Production by order

铸铁

不锈钢

钛合金

耐热合金

铝合金

HB<300

HRC30-40

HRC40-45

HRC45-55

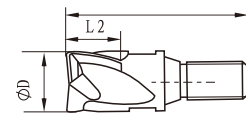
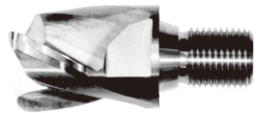
HRC>55

首选

可选

不选

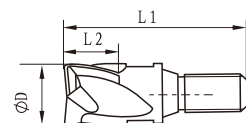
小金刚立铣刀 5L3M
Small end milling cutter 5L3M



刃径 Cutter diameter	总长 Overall length	刃长 Cutting edge length	刃数 The number of flutes	订货号 Order number	
				不涂层 Uncoating	涂层 Coating
D	L1	L2	Z		
10	40	10	3	5L3M-100	5L3M-100T
12	40	12	3	5L3M-120	5L3M-120T
16	50	16	3	5L3M-160	5L3M-160T
18	50	18	3	5L3M-180	5L3M-180T
20	50	20	3	5L3M-200	5L3M-200T

○按订单生产 Production by order

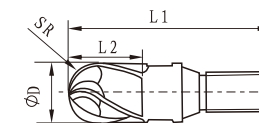
小金刚立铣刀 5L6M
Small end milling cutter 5L6M



刃径 Cutter diameter	总长 Overall length	刃长 Cutting edge length	刃数 The number of flutes	订货号 Order number	
				不涂层 Uncoating	涂层 Coating
D	L1	L2	Z		
10	40	10	6	5L6M-100	5L6M-100T
12	40	12	6	5L6M-120	5L6M-120T
16	50	16	6	5L6M-160	5L6M-160T
18	50	18	6	5L6M-180	5L6M-180T
20	50	20	6	5L6M-200	5L6M-200T

○按订单生产 Production by order

小金刚球头铣刀 5Q4M
Small ball head milling cutter 5Q4M



刃径 Cutter diameter	Sr径 Sphere radius	总长 Overall length	刃长 Cutting edge length	刃数 The number of flutes	订货号 Order number	
					不涂层 Uncoating	涂层 Coating
D	SR	L1	L2	Z		
10	5.0	40	10	4	5Q4M-100	5Q4M-100T
12	6.0	40	12	4	5Q4M-120	5Q4M-120T
16	8.0	50	16	4	5Q4M-160	5Q4M-160T
18	9.0	50	18	4	5Q4M-180	5Q4M-180T
20	10.0	50	20	4	5Q4M-200	5Q4M-200T

○按订单生产 Production by order

铸铁

不锈钢

钛合金

耐热合金

铝合金

HB<300

HRC30-40

HRC40-45

HRC45-55

HRC>55

首选

可选

不选

铸铁

不锈钢

钛合金

耐热合金

铝合金

HB<300

HRC30-40

HRC40-45

HRC45-55

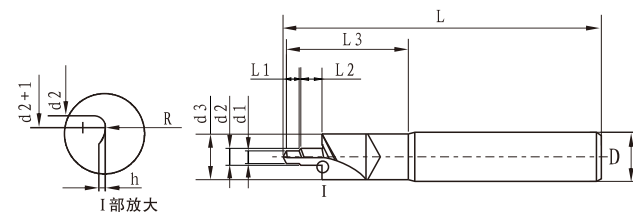
HRC>55

首选

可选

不选

阀座成型刀 1E00A
Valve seat forming cutter 1E00A



小径 Small diameter	中径 In diameter	大径 Large diameter	柄径 Shank diameter	小径长 Small diameter long	中径长 In diameter long	大径长 Large diameter long	总长 Overall length	成型面 Forming surface	
d1	d2	d3	D	L1	L2	L3	L	R	h
3.7	5.5	15	16	3.5	7	35.5	115	1	0.3
3.7	7.5	15	16	3.5	7	40.5	115	1	0.3
3.7	8	15	16	4.5	5	34.5	115	1	0.3
4.15	6.5	15	16	4	7	26	115	1	0.3
5.15	11	17	16	4	8	42	115	1	0.3

○按订单生产 Production by order

铸铁

不锈钢

钛合金

耐热合金

铝合金

HB<300

HRC30-40

HRC40-45

HRC45-55

HRC>55

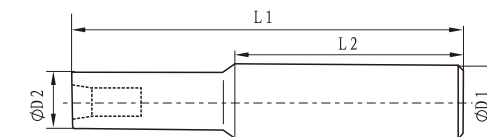
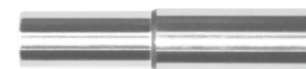
首选

可选

不选



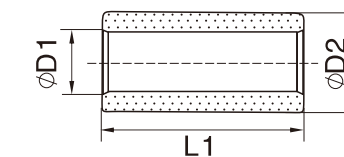
小金刚刀杆
Small cutter holder



柄径 Shank diameter	颈径 journal diameter	总长 Overall length	柄长 Shank length	订货号 Order number
D1	D2	L1	L2	不涂层 Uncoating
16	15	55	45	BM161555
16	16	65	48	BM161665
20	18	65	50	BM201865
20	18	98	50	BM201898

○按订单生产 Production by order

精密刀导套
Precision cutter guide sleeve



内径 Inside diameter	外径 Outside diameter	总长 Overall length
D1	D2	L1
5	10	10
6	12	15
7	12	20
8	14	25
9	15	30
10	16	35
11	20	40
12	20	45
13	23	45
14	25	50
15	25	50

○按订单生产 Production by order

铸铁

不锈钢

钛合金

耐热合金

铝合金

HB<300

HRC30-40

HRC40-45

HRC45-55

HRC>55

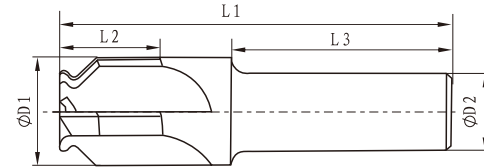
首选

可选

不选



成型铣刀 3C43T
Forming milling cutter 3C43T



刃径 Cutter diameter	柄径 Shank diameter	总长 Overall length	刃长 Cutting edge length	柄长 Shank length	刃数 The number of flutes	订货号 Order number	
D1	D2	L1	L2	L3	Z	不涂层 Uncoating	涂层 Coating
20	16	75	12	45	4	3C43T-200	■ 3C43T-200T
22	20	80	12	45	4	3C43T-220	■ 3C43T-220T
25	20	80	15	45	4	3C43T-250	■ 3C43T-250T
30	20	100	25	60	4	3C43T-300	■ 3C43T-300T
35	20	100	25	60	4	3C43T-350	■ 3C43T-350T

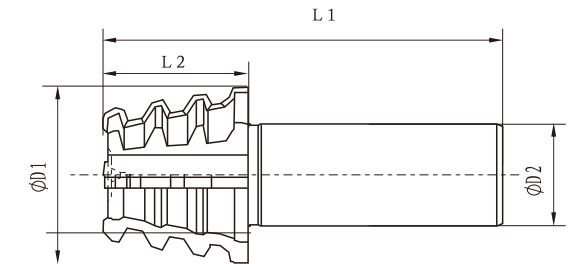
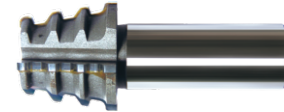
注：此类刀具成型面尺寸需根据被加工工件尺寸而定

Note: the size of the forming surface of the tool should be determined according to the size of the workpiece.

○按订单生产 Production by order



圣诞树铣刀 3Z46S
christmas tree milling cutter 3Z46S



刃径 Cutter diameter	柄径 Shank diameter	总长 Overall length	刃长 Cutting edge length	刃数 The number of flutes	订货号 Order number	
D1	D2	L1	L2	Z	不涂层 Uncoating	涂层 Coating
44	25	90	28	4	3Z46S-440	■ 3Z46S-440T
54	32	94	34	4	3Z46S-540	■ 3Z46S-540T
64	32	98	36	4	3Z46S-640	■ 3Z46S-640T
72	32	102	38	4	3Z46S-720	■ 3Z46S-720T
82	32	102	38	4	3Z46S-820	■ 3Z46S-820T

○按订单生产 Production by order

铸铁

不锈钢

钛合金

耐热合金

铝合金

HB<300

HRC30-40

HRC40-45

HRC45-55

HRC>55

首选

可选

不选

铸铁

不锈钢

钛合金

耐热合金

铝合金

HB<300

HRC30-40

HRC40-45

HRC45-55

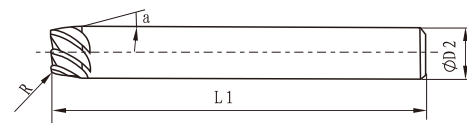
HRC>55

首选

可选

不选

镜面铣刀 3X93L
Mirror milling cutter 3X93L

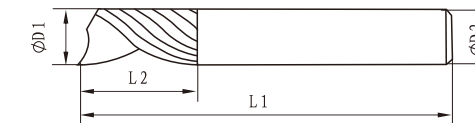


柄径 Shank diameter	总长 Overall length	半锥度 Taper half	R径 arc radius	刃数 The number of flutes	订货号 Order number	
D (h6)	L1	a	R	Z	不涂层 Uncoating	涂层 Coating
8	80	8°	0.5	6	3X93L-080	■ 3X93L-080T
10	82	8°	1.0	8	3X93L-100	■ 3X93L-100T
12	90	8°	1.0	8	3X93L-120	■ 3X93L-120T
16	110	8°	1.0	10	3X93L-160	■ 3X93L-160T
20	120	8°	1.0	12	3X93L-200	■ 3X93L-200T

○按订单生产 Production by order



单刃铣刀 3013P
Singleside milling cutter 3013P



刃径 Cutter diameter	柄径 Shank diameter	总长 Overall length	刃长 Cutting edge length	刃数 The number of flutes	订货号 Order number	
D1 (h9)	D2 (h6)	L1	L2	Z	不涂层 Uncoating	涂层 Coating
3	4	50	6	1	3013P-030	■ 3013P-030T
4	4	50	6	1	3013P-040	■ 3013P-040T
5	6	54	8	1	3013P-050	■ 3013P-050T
6	6	54	8	1	3013P-060	■ 3013P-060T
8	8	58	10	1	3013P-080	■ 3013P-080T
10	10	66	12	1	3013P-100	■ 3013P-100T
12	12	73	16	1	3013P-120	■ 3013P-120T
16	16	82	20	1	3013P-160	■ 3013P-160T
20	20	92	24	1	3013P-200	■ 3013P-200T

★★★主要用于加工塑料眼镜框架的毛边
Mainly used for flash processing of plastic spectacle frames

○按订单生产 Production by order

铸铁

不锈钢

钛合金

耐热合金

铝合金

HB<300

HRC30-40

HRC40-45

HRC45-55

HRC>55

首选

可选

不选

铸铁

不锈钢

钛合金

耐热合金

铝合金

HB<300

HRC30-40

HRC40-45

HRC45-55

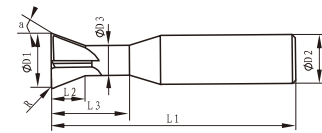
HRC>55

首选

可选

不选

燕尾槽铣刀 3Y40K
Dovetail milling cutter 3Y40K

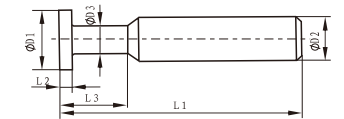


刃径 Cutter diameter	柄径 Shank diameter	颈径 journal diamete	总长 Overall length	刃长 Cutting edge length	颈长 Neck length	半角 Semiangle	R径 arc radius	刃数 The number of flutes	订货号 Order number	
D1 (h9)	D2 (h6)	D3	L1	L2	L3	a	R	Z	不涂层 Uncoating	涂层 Coating
8	6	4	54	2~7	12	15°~45°	0.5	4	3Y40K-080-a	■ 3Y40K-080T-a
10	8	6	60	2~7	12	15°~45°	0.5	4	3Y40K-100-a	■ 3Y40K-100T-a
12	10	7	68	2~7	14	15°~45°	0.5	4	3Y40K-120-a	■ 3Y40K-120T-a
16	12	8	75	2~7	16	15°~45°	0.5	4	3Y40K-160-a	■ 3Y40K-160T-a
20	16	10	82	2~7	18	15°~45°	0.5	4	3Y40K-200-a	■ 3Y40K-200T-a

○按订单生产 Production by order



T型槽铣刀 3T90K
T-groove cutter 3T90K



刃径 Cutter diameter	柄径 Shank diameter	颈径 journal diamete	总长 Overall length	刃宽 blade width	颈长 Neck length	订货号 Order number	
D1 (h9)	D2 (h6)	D3	L1	L2	L3	不涂层 Uncoating	涂层 Coating
8	6	4	54	2~5	12	3T90K-080	■ 3T90K-080T
10	8	6	60	2~5	15	3T90K-100	■ 3T90K-100T
12	10	7	68	2~5	18	3T90K-120	■ 3T90K-120T
16	12	8	75	2~5	20	3T90K-160	■ 3T90K-160T
20	16	10	82	2~5	25	3T90K-200	■ 3T90K-200T
25	20	12	92	2~5	30	3T90K-250	■ 3T90K-250T

○按订单生产 Production by order

铸铁

不锈钢

钛合金

耐热合金

铝合金

HB<300

HRC30-40

HRC40-45

HRC45-55

HRC>55

首选

可选

不选

铸铁

不锈钢

钛合金

耐热合金

铝合金

HB<300

HRC30-40

HRC40-45

HRC45-55

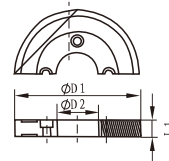
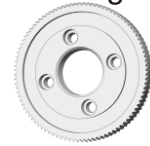
HRC>55

首选

可选

不选

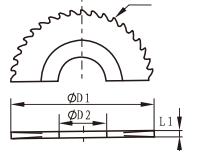
盘铣刀 ZCP
Disk milling cutter ZCP



刃径 Cutter diameter	小刃径 Small edge diameter	总长 Overall length	订货号 Order number
D1	D3	L1	无涂层 Uncoating
150	22	15	ZCPA150022015
150	38	15	ZCPA150038015
150	50	16	ZCPA150050016
150	50	18	ZCPA150050018
150	50	20	ZCPA150050020

○按订单生产 Production by order

锯片铣刀 ZCP-Q
Saw blade milling cutter ZCP-Q



外径 Outside diameter	内径 Inside diameter	宽度 Width	齿数 Number of teeth	订货号 Order number
D1	D2	L1	Z	无涂层 Uncoating
20	5	0.4	18	ZCP-QA2005004
20	5	0.6	18	ZCP-QA2005006
25	8	0.4	24	ZCP-QA2508004
25	8	0.6	24	ZCP-QA2508006
32	8	0.5	30	ZCP-QA3208005
32	8	0.8	30	ZCP-QA3208008
40	10	0.5	40	ZCP-QA4008005
40	10	0.8	40	ZCP-QA4010008
50	13	0.8	48	ZCP-QA5013008
50	13	1.0	48	ZCP-QA5013010
63	16	1.0	60	ZCP-QA6316010
63	16	1.2	60	ZCP-QA6316012
80	22	1.6	64	ZCP-QA8022016
80	22	2.0	64	ZCP-QA8022020

○按订单生产 Production by order

铸铁

不锈钢

钛合金

耐热合金

铝合金

HB<300

HRC30-40

HRC40-45

HRC45-55

HRC>55

首选

可选

不选

铸铁

不锈钢

钛合金

耐热合金

铝合金

HB<300

HRC30-40

HRC40-45

HRC45-55

HRC>55

首选

可选

不选



标准铣刀
Standard milling cutter



产 品	名 称	型 号	页 码
	直柄平头立铣刀—ZGM Straight shank flat end milling	ZGM	G4~G5
	直柄R铣刀—ZGM Straight shank R end milling	ZGM	G6~G7
	直柄球头铣刀—ZGM Straight shank ball end milling	ZGM	G8~G9
	直柄平头立铣刀—ZPM Straight shank flat end milling	ZPM	G11~G12
	直柄R铣刀—ZPM Straight shank R end milling	ZPM	G13~G14
	直柄球头铣刀—ZPM Straight shank ball end milling	ZPM	G15~G16
	直柄平头立铣刀—ZSM Straight shank flat end milling	ZSM	G18~G19
	直柄R铣刀—ZSM Straight shank R end milling	ZSM	G20~G21
	直柄球头铣刀—ZSM Straight shank ball end milling	ZSM	G22~G23
	直柄平头立铣刀—ZHM Straight shank flat end milling	ZHM	G25~G26
	直柄R铣刀—ZHM Straight shank R end milling	ZHM	G27~G28
	直柄球头铣刀—ZHM Straight shank ball end milling	ZHM	G29~G30
	直柄平头立铣刀—ZAM Straight shank flat end milling	ZAM	G32~G33
	直柄R铣刀—ZAM Straight shank R end milling	ZAM	G34~G35
	直柄球头铣刀—ZAM Straight shank ball end milling	ZAM	G36~G37

标准铣刀 Standard milling cutter

ZGM

系列

ZGM槽型

ZGM槽型

SR ±0.02

0-0.05 45°

30HRC 40HRC 50HRC 55HRC 68HRC

最适合加工区域 可加工区域

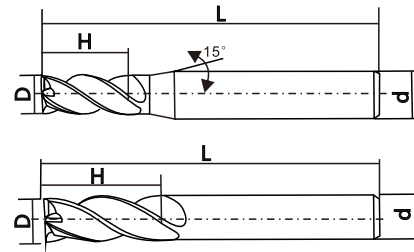
周刃与球刃实现无缝连接；合理的球刃中心设计，极大地提高表面质量。

尖角保护型，刀尖强度高，不容易崩刀。

ZGM描述:

- 应用范围:** 刀具可满足普通钢到预硬钢及铸铁的高效切削加工。
- 刀具结构:** 锋利的切削刃和与之匹配的设计结构，使切削更顺畅，刀具寿命更长。
- 切削方式:** 刀具能实现高效率的开槽和粗加工方式，同时能进行高表面质量的精加工。
- 刃部涂层:** 刀具刃部均作高性能复合涂层处理，有效提高刀具切削性能。

直柄平头立铣刀—ZGM Straight shank flat end milling



四刃刀具 螺旋角 D ≥ 4 45° D < 4 35°	两刃刀具 螺旋角 D ≥ 4 45° D < 4 35°	刃口公差 D ≥ 12.0 ~ 0.03 D < 12.0 ~ 0.02
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基本尺寸 (mm) Basic dimensions				齿数Z The number of teeth		订货号 Order number	
D	d(h6)	H	L			两刃订货号 Two edges order number	四刃订货号 Four edges order number
1	4	3	50	2	4	ZGM-3123K-D1.0ST	ZGM-3143K-D1.0ST •
1.5	4	4	50	2	4	ZGM-3123K-D1.5ST	ZGM-3143K-D1.5ST
2	4	6	50	2	4	ZGM-3123K-D2.0ST	ZGM-3143K-D2.0ST •
2.5	4	8	50	2	4	ZGM-3123K-D2.5ST	ZGM-3143K-D2.5ST
3	4	8	50	2	4	ZGM-3123K-D3.0ST	ZGM-3143K-D3.0ST •
3.5	4	10	50	2	4	ZGM-3123K-D3.5ST	ZGM-3143K-D3.5ST
4	4	11	50	2	4	ZGM-3123K-D4.0ST •	ZGM-3143K-D4.0ST •
4	4	15	75	2	4	ZGM-3123K-D4.0ST	ZGM-3143K-D4.0ST
1	6	3	50	2	4	ZGM-3123K-D1.0T	ZGM-3143K-D1.0T
1.5	6	4	50	2	4	ZGM-3123K-D1.5T	ZGM-3143K-D1.5T
2	6	6	50	2	4	ZGM-3123K-D2.0T	ZGM-3143K-D2.0T
2.5	6	8	50	2	4	ZGM-3123K-D2.5T	ZGM-3143K-D2.5T
3	6	8	50	2	4	ZGM-3123K-D3.0T	ZGM-3143K-D3.0T
3.5	6	10	50	2	4	ZGM-3123K-D3.5T	ZGM-3143K-D3.5T
4	6	11	50	2	4	ZGM-3123K-D4.0ST	ZGM-3143K-D4.0ST
4	6	15	75	2	4	ZGM-3123K-D4.0T	ZGM-3143K-D4.0T
5	6	13	50	2	4	ZGM-3123K-D5.0ST	ZGM-3143K-D5.0ST
5	6	20	60	2	4	ZGM-3123K-D5.0ST	ZGM-3143K-D5.0ST
6	6	16	50	2	4	ZGM-3123K-D6.0T •	ZGM-3143K-D6.0T •
6	6	20	75	2	4	ZGM-3123K-D6.0T	ZGM-3143K-D6.0T
6	6	20	100	2	4	ZGM-3123K-D6.0T	ZGM-3143K-D6.0T
8	8	20	60	2	4	ZGM-3123K-D8.0T	ZGM-3143K-D8.0T
8	8	25	75	2	4	ZGM-3123K-D8.0T •	ZGM-3143K-D8.0T •

• 为常备库存。此外，其它规格也可另行订制。 The "•" specifications are standing stock. In addition, other specifications can be customized.

ZGM 系列适用 ZGM Suitable series	被加工材料适用表 Test sheet for processed material											
	碳素钢 carbon steel		合金钢 Alloy steel		预硬钢、淬硬钢 Pre hardened steel, hardened steel		不锈钢 stainless steel	铸铁球墨铸铁 Cast iron nodular cast iron	铜合金 copper alloy	铝合金 aluminium alloy	钛合金 titanium alloy	耐热合金 heat-resisting alloy
	○	○	○	○	○	○	○	○	○	○	○	○

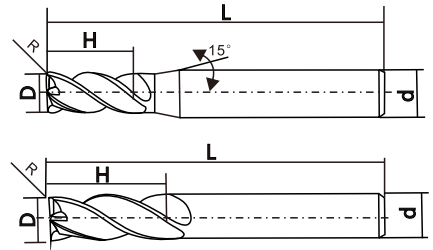
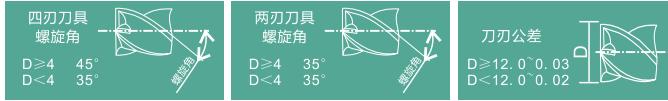
基本尺寸 (mm) Basic dimensions				齿数Z The number of teeth		订货号 Order number	
D	d(h6)	H	L			两刃订货号 Two edges order number	四刃订货号 Four edges order number
8	8	25	100	2	4	ZGM-3123L-D8.0T	ZGM-3143L-D8.0T
10	10	25	75	2	4	ZGM-3123K-D10.0T •	ZGM-3143K-D10.0T •
10	10	30	100	2	4	ZGM-3123L-D10.0T	ZGM-3143L-D10.0T
12	12	30	75	2	4	ZGM-3123K-D12.0T •	ZGM-3143K-D12.0T •
12	12	35	100	2	4	ZGM-3123L-D12.0T	ZGM-3143L-D12.0T
14	14	32	75	2	4	ZGM-3123K-D14.0T	ZGM-3143K-D14.0T
14	14	40	100	2	4	ZGM-3123L-D14.0T	ZGM-3143L-D14.0T
16	16	45	100	2	4	ZGM-3123K-D16.0T	ZGM-3143K-D16.0T
16	16	50	150	2	4	ZGM-3123L-D16.0T	ZGM-3143L-D16.0T
18	18	45	100	2	4	ZGM-3123K-D18.0T	ZGM-3143K-D18.0T
18	18	55	150	2	4	ZGM-3123L-D18.0T	ZGM-3143L-D18.0T
20	20	45	100	2	4	ZGM-3123K-D20.0T	ZGM-3143K-D20.0T
20	20	55	150	2	4	ZGM-3123L-D20.0T	ZGM-3143L-D20.0T

• 为常备库存。此外，其它规格也可另行订制。 The "•" specifications are standing stock. In addition, other specifications can be customized.

ZGM 系列适用 ZGM Suitable series	被加工材料适用表 Test sheet for processed material										
	碳素钢 carbon steel		合金钢 Alloy steel		预硬钢、淬硬钢 Pre hardened steel, hardened steel		不锈钢 stainless steel	铸铁球墨铸铁 Cast iron nodular cast iron	铜合金 copper alloy	铝合金 aluminium alloy	钛合金 titanium alloy
	○	○	○	○	○	○	○	○	○	○	○

直柄R铣刀—ZGM

Straight shank R end milling



基本尺寸 (mm) Basic dimensions					齿数Z The number of teeth		订货号 Order number	
D	R±0.02	d (h6)	H	L			两刃订货号 Two edges order number	四刃订货号 Four edges order number
1	0.2	4	3	50	2	4	ZGM-3423K-D1.0ST-R0.2	ZGM-3443K-D1.0ST-R0.2
2	0.2	4	6	50	2	4	ZGM-3423K-D2.0ST-R0.2	ZGM-3443K-D2.0ST-R0.2
3	0.2	4	8	50	2	4	ZGM-3423K-D3.0ST-R0.2	ZGM-3443K-D3.0ST-R0.2
3	0.5	4	8	50	2	4	ZGM-3423K-D3.0ST-R0.5	ZGM-3443K-D3.0ST-R0.5
4	0.3	4	11	50	2	4	ZGM-3423K-D4.0T-R0.3	ZGM-3443K-D4.0T-R0.3 •
4	0.5	4	11	50	2	4	ZGM-3423K-D4.0T-R0.5	ZGM-3443K-D4.0T-R0.5
1	0.2	6	3	50	2	4	ZGM-3423K-D1.0T-R0.2	ZGM-3443K-D1.0T-R0.2
2	0.2	6	6	50	2	4	ZGM-3423K-D2.0T-R0.2	ZGM-3443K-D2.0T-R0.2
3	0.2	6	8	50	2	4	ZGM-3423K-D3.0T-R0.2	ZGM-3443K-D3.0T-R0.2
4	0.3	6	11	50	2	4	ZGM-3423K-D4.0ST-R0.3	ZGM-3443K-D4.0ST-R0.3
4	0.5	6	11	50	2	4	ZGM-3423K-D4.0ST-R0.5	ZGM-3443K-D4.0ST-R0.5
5	0.5	6	13	50	2	4	ZGM-3423K-D5.0T-R0.5	ZGM-3443K-D5.0T-R0.5
5	1.0	6	13	50	2	4	ZGM-3423K-D5.0T-R1.0	ZGM-3443K-D5.0T-R1.0
6	0.3	6	16	50	2	4	ZGM-3423K-D6.0T-R0.3	ZGM-3443K-D6.0T-R0.3 •
6	0.5	6	16	50	2	4	ZGM-3423K-D6.0T-R0.5	ZGM-3443K-D6.0T-R0.5
6	1.0	6	16	50	2	4	ZGM-3423K-D6.0T-R1.0	ZGM-3443K-D6.0T-R1.0
6	0.5	6	20	75	2	4	ZGM-3423L-D6.0T-R0.5	ZGM-3443L-D6.0T-R0.5
6	1.0	6	20	75	2	4	ZGM-3423L-D6.0T-R1.0	ZGM-3443L-D6.0T-R1.0
8	0.3	8	20	60	2	4	ZGM-3423K-D8.0T-R0.3	ZGM-3443K-D8.0T-R0.3 •
8	0.5	8	20	60	2	4	ZGM-3423K-D8.0T-R0.5	ZGM-3443K-D8.0T-R0.5
8	1.0	8	20	60	2	4	ZGM-3423K-D8.0T-R1.0	ZGM-3443K-D8.0T-R1.0
8	0.5	8	25	75	2	4	ZGM-3423Z-D8.0T-R0.5	ZGM-3443Z-D8.0T-R0.5
8	1.0	8	25	75	2	4	ZGM-3423Z-D8.0T-R1.0	ZGM-3443Z-D8.0T-R1.0

• 为常备库存。此外，其它规格也可另行订制。 The "•" specifications are standing stock. In addition, other specifications can be customized.

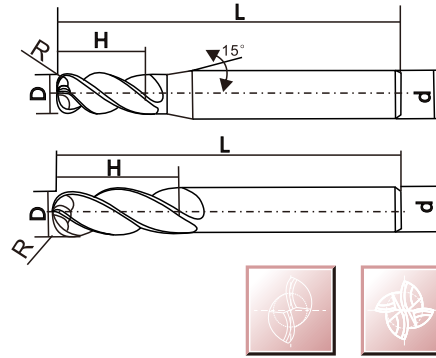
ZGM 系列适合 ZGM Suitable series	被加工材料适用表 Test sheet for processed material									
	非常合适 fit as a pudding for a friar's mouth					适合 appropriate				
	碳素钢 carbon steel	合金钢 Alloy steel	预硬钢、淬硬钢 Pre hardened steel, hardened steel		不锈钢 stainless steel	铸铁球墨铸铁 Cast iron nodular cast iron	铜合金 copper alloy	铝合金 aluminium alloy	钛合金 titanium alloy	耐热合金 heat-resisting alloy
~40HRC			~50HRC	○						

基本尺寸 (mm) Basic dimensions					齿数Z The number of teeth		订货号 Order number	
D (h9)	R	d (h6)	H	L			两刃订货号 Two edges order number	四刃订货号 Four edges order number
8	0.5	8	25	100	2	4	ZGM-3423L-D8.0T-R0.5	ZGM-3443L-D8.0T-R0.5
8	1.0	8	25	100	2	4	ZGM-3423L-D8.0T-R1.0	ZGM-3443L-D8.0T-R1.0
10	0.5	10	25	75	2	4	ZGM-3423K-D10.0T-R0.5	ZGM-3443K-D10.0T-R0.5
10	1.0	10	25	75	2	4	ZGM-3423K-D10.0T-R1.0	ZGM-3443K-D10.0T-R1.0
10	2.0	10	25	75	2	4	ZGM-3423K-D10.0T-R2.0	ZGM-3443K-D10.0T-R2.0
10	0.5	10	30	100	2	4	ZGM-3423L-D10.0T-R0.5	ZGM-3443L-D10.0T-R0.5
10	1.0	10	30	100	2	4	ZGM-3423L-D10.0T-R1.0	ZGM-3443L-D10.0T-R1.0
10	2.0	10	30	100	2	4	ZGM-3423L-D10.0T-R2.0	ZGM-3443L-D10.0T-R2.0
12	0.5	12	32	75	2	4	ZGM-3423K-D12.0T-R0.5	ZGM-3443K-D12.0T-R0.5
12	1.0	12	32	75	2	4	ZGM-3423K-D12.0T-R1.0	ZGM-3443K-D12.0T-R1.0
14	0.5	14	35	75	2	4	ZGM-3423K-D14.0T-R0.5	ZGM-3443K-D14.0T-R0.5
14	1.0	14	35	75	2	4	ZGM-3423K-D14.0T-R1.0	ZGM-3443K-D14.0T-R1.0
16	1.0	16	45	100	2	4	ZGM-3423K-D16.0T-R1.0	ZGM-3443K-D16.0T-R1.0
16	2.0	16	45	100	2	4	ZGM-3423K-D16.0T-R2.0	ZGM-3443K-D16.0T-R2.0
16	3.0	16	45	100	2	4	ZGM-3423K-D16.0T-R3.0	ZGM-3443K-D16.0T-R3.0
16	1.0	16	50	150	2	4	ZGM-3423L-D16.0T-R1.0	ZGM-3443L-D16.0T-R1.0
16	2.0	16	50	150	2	4	ZGM-3423L-D16.0T-R2.0	ZGM-3443L-D16.0T-R2.0
16	3.0	16	50	150	2	4	ZGM-3423L-D16.0T-R3.0	ZGM-3443L-D16.0T-R3.0
18	1.0	18	45	100	2	4	ZGM-3423K-D18.0T-R1.0	ZGM-3443K-D18.0T-R1.0
18	2.0	18	45	100	2	4	ZGM-3423K-D18.0T-R2.0	ZGM-3443K-D18.0T-R2.0
20	1.0	20	45	100	2	4	ZGM-3423K-D20.0T-R1.0	ZGM-3443K-D20.0T-R1.0
20	2.0	20	45	100	2	4	ZGM-3423K-D20.0T-R2.0	ZGM-3443K-D20.0T-R2.0
20	3.0	20	45	100	2	4	ZGM-3423K-D20.0T-R3.0	ZGM-3443K-D20.0T-R3.0
20	1.0	20	55	150	2	4	ZGM-3423L-D20.0T-R1.0	ZGM-3443L-D20.0T-R1.0
20	2.0	20	55	150	2	4	ZGM-3423L-D20.0T-R2.0	ZGM-3443L-D20.0T-R2.0
20	3.0	20	55	150	2	4	ZGM-3423L-D20.0T-R3.0	ZGM-3443L-D20.0T-R3.0

• 为常备库存。此外，其它规格也可另行订制。 The "•" specifications are standing stock. In addition, other specifications can be customized.

ZGM 系列适合 ZGM Suitable series	被加工材料适用表 Test sheet for processed material									
	非常合适 fit as a pudding for a friar's mouth					适合 appropriate				
	碳素钢 carbon steel	合金钢 Alloy steel	预硬钢、淬硬钢 Pre hardened steel, hardened steel		不锈钢 stainless steel	铸铁球墨铸铁 Cast iron nodular cast iron	铜合金 copper alloy	铝合金 aluminium alloy	钛合金 titanium alloy	耐热合金 heat-resisting alloy
~40HRC			~50HRC	○						

直柄球头铣刀—ZGM Straight shank ball end milling



基本尺寸 (mm) Basic dimensions					齿数Z The number of teeth		订货号 Order number	
D	R	d (h6)	H	L			两刃订货号 Two edges order number	四刃订货号 Four edges order number
1	0.5	4	2	50	2	4	ZGM-3323-R0.5ST	ZGM-3343-R0.5ST
1.5	1.75	4	3	50	2	4	ZGM-3323-R0.75ST	ZGM-3443-R0.75ST
2	1.0	4	4	50	2	4	ZGM-3323-R1.0ST	ZGM-3443-R1.0ST
2.5	1.25	4	5	50	2	4	ZGM-3323-R1.25ST	ZGM-3443-R1.25ST
3	1.5	4	6	50	2	4	ZGM-3323-R1.5ST	ZGM-3443-R1.5ST
4	2.0	4	8	50	2	4	ZGM-3323-R2.0ST	ZGM-3443-R2.0ST
3.5	1.75	4	7	50	2	4	ZGM-3323-R1.75ST	ZGM-3443-R1.75ST
1	0.5	6	2	50	2	4	ZGM-3323-R0.5T	ZGM-3443-R0.5T
1.5	1.75	6	3	50	2	4	ZGM-3323-R0.75T	ZGM-3443-R0.75T
2	1.0	6	4	50	2	4	ZGM-3323-R1.0T	ZGM-3443-R1.0T
2.5	1.25	6	5	50	2	4	ZGM-3323-R1.25T	ZGM-3443-R1.25T
3	1.5	6	6	50	2	4	ZGM-3323-R1.5T	ZGM-3443-R1.5T
3.5	1.75	6	7	50	2	4	ZGM-3323-R1.75T	ZGM-3443-R1.75T
4	2.0	6	8	50	2	4	ZGM-3323-R2.0T	ZGM-3443-R2.0T
5	2.5	6	10	50	2	4	ZGM-3323-R2.5T	ZGM-3443-R2.5T
6	3.0	6	12	50	2	4	ZGM-3323-R3.0T	ZGM-3443-R3.0T
6	3.0	6	12	75	2	4	ZGM-3323L-R3.0T	ZGM-3343L-R3.0T
8	4.0	8	16	60	2	4	ZGM-3323-R4.0T	ZGM-3343-R4.0T
8	4.0	8	16	75	2	4	ZGM-3323Z-R4.0T	ZGM-3343Z-R4.0T
8	4.0	8	16	100	2	4	ZGM-3323L-R4.0T	ZGM-3343L-R4.0T
10	5.0	10	20	75	2	4	ZGM-3323-R5.0T	ZGM-3343-R5.0T
10	5.0	10	20	100	2	4	ZGM-3323L-R5.0T	ZGM-3343L-R5.0T
12	6.0	12	24	75	2	4	ZGM-3323-R6.0T	ZGM-3443-R6.0T
12	6.0	12	24	100	2	4	ZGM-3323L-R6.0T	ZGM-3443L-R6.0T

● 为常备库存。此外，其它规格也可另行订制。 The "●" specifications are standing stock. In addition, other specifications can be customized.

ZGM 系列适合 ZGM Suitable series	被加工材料适用表 Test sheet for processed material									
	非常合适 fit as a pudding for a friar's mouth					合适 appropriate				
	碳素钢 carbon steel	合金钢 Alloy steel	预硬钢、淬硬钢 Pre hardened steel, hardened steel		不锈钢 stainless steel	铸铁球墨铸铁 Cast iron nodular cast iron	铜合金 copper alloy	铝合金 aluminium alloy	钛合金 titanium alloy	耐热合金 heat-resisting alloy
~40HRC			~50HRC	●						

基本尺寸 (mm) Basic dimensions					齿数Z The number of teeth		订货号 Order number	
D	R	d (h6)	H	L			两刃订货号 Two edges order number	四刃订货号 Four edges order number
14	7.0	14	28	75	2	4	ZGM-3323-R7.0T	ZGM-3343-R7.0T
14	7.0	14	28	100	2	4	ZGM-3323L-R7.0T	ZGM-3343L-R7.0T
16	8.0	16	32	100	2	4	ZGM-3323-R8.0T	ZGM-3343-R8.0T
16	8.0	16	32	150	2	4	ZGM-3323L-R8.0T	ZGM-3343L-R8.0T
18	9.0	18	36	100	2	4	ZGM-3323-R9.0T	ZGM-3343-R9.0T
18	9.0	18	36	150	2	4	ZGM-3323L-R9.0T	ZGM-3343L-R9.0T
20	10.0	20	40	100	2	4	ZGM-3323-R10.0T	ZGM-3343-R10.0T
20	10.0	20	40	150	2	4	ZGM-3323L-R10.0T	ZGM-3343L-R10.0T

● 为常备库存。此外，其它规格也可另行订制。 The "●" specifications are standing stock. In addition, other specifications can be customized.

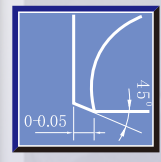
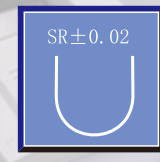
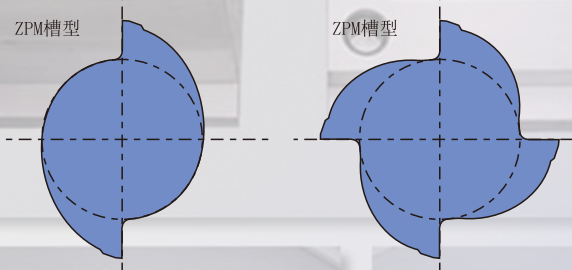
ZGM 系列适合 ZGM Suitable series	被加工材料适用表 Test sheet for processed material									
	非常合适 fit as a pudding for a friar's mouth					合适 appropriate				
	碳素钢 carbon steel	合金钢 Alloy steel	预硬钢、淬硬钢 Pre hardened steel, hardened steel		不锈钢 stainless steel	铸铁球墨铸铁 Cast iron nodular cast iron	铜合金 copper alloy	铝合金 aluminium alloy	钛合金 titanium alloy	耐热合金 heat-resisting alloy
~40HRC			~50HRC	●						



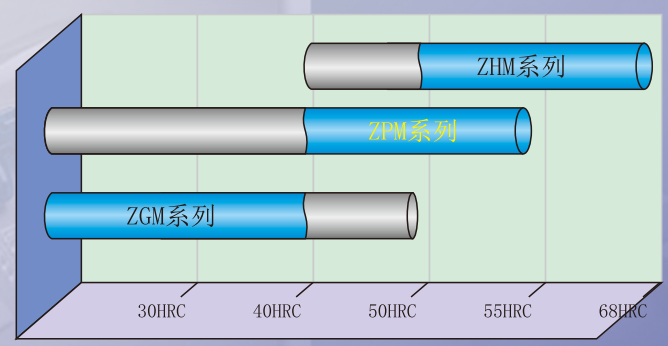
标准铣刀 Standard millingcutter



ZPM

系列



周刃与球刃实现无缝连接；合理的球刃中心设计，极大地提高表面质量。
尖角保护型，刀尖强度高，不容易崩刀。



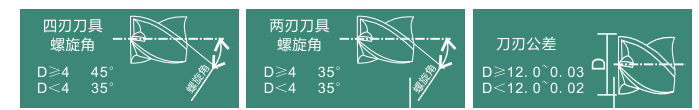
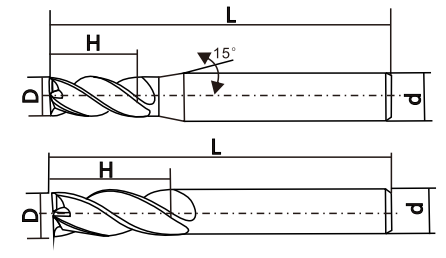
 最适合加工区域  可加工区域

ZPM描述：

- 应用范围：刀具可满足淬火钢，高硬度钢的切削加工。
- 刀具结构：针对高硬度的被加工材料，设计高强度的结构和特殊刀口的处理，使刀具具有优越的加工性能。
- 切削方式：刀具能实现多用途的平面铣及侧铣加工，在粗、精加工之间完美转换。
- 刃部涂层：刀具刃部均作高性能复合涂层处理，有效提高刀具切削性能。

直柄平头立铣刀—ZPM

Straight shank flat end milling



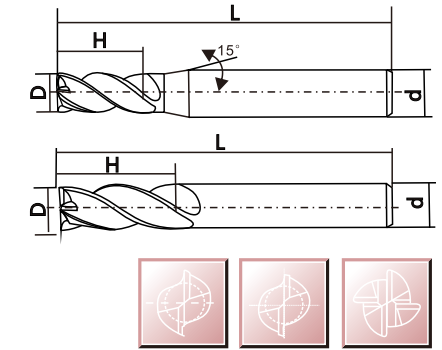
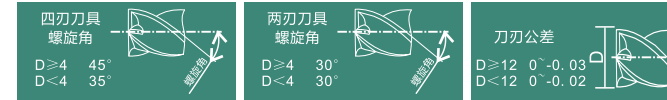
基本尺寸 (mm) Basic dimensions				齿数Z The number of teeth		订货号 Order number	
D	d (h6)	H	L			两刃订货号 Two edges order number	四刃订货号 Four edges order number
1	4	3	50	2	4	ZPM-3123K-D1.0ST	ZPM-3143K-D1.0ST •
1.5	4	4	50	2	4	ZPM-3123K-D1.5ST	ZPM-3143K-D1.5ST
2	4	6	50	2	4	ZPM-3123K-D2.0ST	ZPM-3143K-D2.0ST •
2.5	4	8	50	2	4	ZPM-3123K-D2.5ST	ZPM-3143K-D2.5ST
3	4	8	50	2	4	ZPM-3123K-D3.0ST	ZPM-3143K-D3.0ST
3.5	4	10	50	2	4	ZPM-3123K-D3.5ST	ZPM-3143K-D3.5ST
4	4	11	50	2	4	ZPM-3123K-D4.0ST •	ZPM-3143K-D4.0ST •
4	4	15	75	2	4	ZPM-3123L-D4.0ST	ZPM-3143L-D4.0ST
1	6	3	50	2	4	ZPM-3123K-D1.0T	ZPM-3143K-D1.0T
1.5	6	4	50	2	4	ZPM-3123K-D1.5T	ZPM-3143K-D1.5T
2	6	6	50	2	4	ZPM-3123K-D2.0T	ZPM-3143K-D2.0T
2.5	6	8	50	2	4	ZPM-3123K-D2.5T	ZPM-3143K-D2.5T
3	6	8	50	2	4	ZPM-3123K-D3.0T	ZPM-3143K-D3.0T
3.5	6	10	50	2	4	ZPM-3123K-D3.5T	ZPM-3143K-D3.5T
4	6	11	50	2	4	ZPM-3123K-D4.0ST	ZPM-3143K-D4.0ST
4	6	16	60	2	4	ZPM-3123Z-D4.0T	ZPM-3143Z-D4.0T
4	6	15	75	2	4	ZPM-3123L-D4.0T	ZPM-3143L-D4.0T
5	6	13	50	2	4	ZPM-3123K-D5.0ST	ZPM-3143K-D5.0ST
5	6	20	60	2	4	ZPM-3123Z-D5.0ST	ZPM-3143Z-D5.0ST
6	6	16	50	2	4	ZPM-3123K-D6.0T •	ZPM-3143K-D6.0T •
6	6	20	75	2	4	ZPM-3123L-D6.0T	ZPM-3143L-D6.0T
6	6	20	100	2	4	ZPM-3123M-D6.0T	ZPM-3143M-D6.0T
8	8	20	60	2	4	ZPM-3123K-D8.0T •	ZPM-3143K-D8.0T •
8	8	25	75	2	4	ZPM-3123Z-D8.0T	ZPM-3143Z-D8.0T

• 为常备库存。此外，其它规格也可另行订制。 The "•" specifications are standing stock. In addition, other specifications can be customized.

ZGM 系列适合 ZGM Suitable series	被加工材料适用表 Test sheet for processed material					非常合适 fit as a pudding for a friar's mouth		适合 appropriate			
	碳素钢 carbon steel	合金钢 Alloy steel	预硬钢、淬硬钢 Pre hardened steel, hardened steel		不锈钢 stainless steel	铸铁球墨铸铁 Cast iron nodular cast iron	铜合金 copper alloy	铝合金 aluminium alloy	钛合金 titanium alloy	耐热合金 heat-resisting alloy	
	●	●	●	●	●	●					

基本尺寸 (mm) Basic dimensions				齿数Z The number of teeth		订货号 Order number	
D	d (h6)	H	L			两刃订货号 Two edges order number	四刃订货号 Four edges order number
8	8	25	100	2	4	ZPM-3123L-D8.0T	ZPM-3143L-D8.0T
10	10	25	75	2	4	ZPM-3123K-D10.0T •	ZPM-3143K-D10.0T •
10	10	30	100	2	4	ZPM-3123L-D10.0T	ZPM-3143L-D10.0T
12	12	30	75	2	4	ZPM-3123K-D12.0T •	ZPM-3143K-D12.0T •
12	12	35	100	2	4	ZPM-3123L-D12.0T	ZPM-3143L-D12.0T
14	14	32	75	2	4	ZPM-3123K-D14.0T	ZPM-3143K-D14.0T
14	14	40	100	2	4	ZPM-3123L-D14.0T	ZPM-3143L-D14.0T
16	16	45	100	2	4	ZPM-3123K-D16.0T	ZPM-3143K-D16.0T
16	16	50	150	2	4	ZPM-3123L-D16.0T	ZPM-3143L-D16.0T
18	18	45	100	2	4	ZPM-3123K-D18.0T	ZPM-3143K-D18.0T
18	18	55	150	2	4	ZPM-3123L-D18.0T	ZPM-3143L-D18.0T
20	20	45	100	2	4	ZPM-3123K-D20.0T	ZPM-3143K-D20.0T
20	20	55	150	2	4	ZPM-3123L-D20.0T	ZPM-3143L-D20.0T

直柄R铣刀—ZPM Straight shank R end milling



基本尺寸 (mm) Basic dimensions					齿数Z The number of teeth		订货号 Order number	
D	R±0.02	d (h6)	H	L			两刃订货号 Two edges order number	四刃订货号 Four edges order number
1	0.2	4	3	50	2	4	ZPM-3423K-D1.0ST-R0.2	ZPM-3443K-D1.0ST-R0.2
2	0.2	4	6	50	2	4	ZPM-3423K-D2.0ST-R0.2	ZPM-3443K-D2.0ST-R0.2
3	0.2	4	8	50	2	4	ZPM-3423K-D3.0ST-R0.2	ZPM-3443K-D3.0ST-R0.2
3	0.5	4	8	50	2	4	ZPM-3423K-D3.0ST-R0.5	ZPM-3443K-D3.0ST-R0.5
4	0.3	4	11	50	2	4	ZPM-3423K-D4.0T-R0.3	ZPM-3443K-D4.0T-R0.3 •
4	0.5	4	11	50	2	4	ZPM-3423K-D4.0T-R0.5	ZPM-3443K-D4.0T-R0.5
1	0.2	6	3	50	2	4	ZPM-3423K-D1.0T-R0.2	ZPM-3443K-D1.0T-R0.2
2	0.2	6	6	50	2	4	ZPM-3423K-D2.0T-R0.2	ZPM-3443K-D2.0T-R0.2
3	0.2	6	8	50	2	4	ZPM-3423K-D3.0T-R0.2	ZPM-3443K-D3.0T-R0.2
4	0.3	6	11	50	2	4	ZPM-3423K-D4.0ST-R0.3	ZPM-3443K-D4.0ST-R0.3
4	0.5	6	11	50	2	4	ZPM-3423K-D4.0ST-R0.5	ZPM-3443K-D4.0ST-R0.5
5	0.5	6	13	50	2	4	ZPM-3423K-D5.0T-R0.5	ZPM-3443K-D5.0T-R0.5
5	1.0	6	13	50	2	4	ZPM-3423K-D5.0T-R1.0	ZPM-3443K-D5.0T-R1.0
6	0.3	6	16	50	2	4	ZPM-3423K-D6.0T-R0.3	ZPM-3443K-D6.0T-R0.3 •
6	0.5	6	16	50	2	4	ZPM-3423K-D6.0T-R0.5	ZPM-3443K-D6.0T-R0.5
6	1.0	6	16	50	2	4	ZPM-3423K-D6.0T-R1.0	ZPM-3443K-D6.0T-R1.0
6	0.5	6	20	75	2	4	ZPM-3423L-D6.0T-R0.5	ZPM-3443L-D6.0T-R0.5
6	1.0	6	20	75	2	4	ZPM-3423L-D6.0T-R1.0	ZPM-3443L-D6.0T-R1.0
8	0.3	8	20	60	2	4	ZPM-3423K-D8.0T-R0.3	ZPM-3443K-D8.0T-R0.3 •
8	0.5	8	20	60	2	4	ZPM-3423K-D8.0T-R0.5	ZPM-3443K-D8.0T-R0.5
8	1.0	8	20	60	2	4	ZPM-3423K-D8.0T-R1.0	ZPM-3443K-D8.0T-R1.0
8	0.5	8	25	75	2	4	ZPM-3423Z-D8.0T-R0.5	ZPM-3443Z-D8.0T-R0.5
8	1.0	8	25	75	2	4	ZPM-3423Z-D8.0T-R1.0	ZPM-3443Z-D8.0T-R1.0
8	0.5	8	25	100	2	4	ZPM-3423L-D8.0T-R0.5	ZPM-3443L-D8.0T-R0.5

• 为常备库存。此外，其它规格也可另行订制。 The "•" specifications are standing stock. In addition, other specifications can be customized.

ZPM 系列适合 ZPM Suitable series	被加工材料适用表 Test sheet for processed material									
	非常合适 fit as a pudding for a friar's mouth					适合 appropriate				
	碳素钢 carbon steel	合金钢 Alloy steel	预硬钢、淬硬钢 Pre hardened steel, hardened steel			不锈钢 stainless steel	铸铁球墨铸铁 Cast iron nodular cast iron	铜合金 copper alloy	铝合金 aluminium alloy	钛合金 titanium alloy
~40HRC			~50HRC							

• 为常备库存。此外，其它规格也可另行订制。 The "•" specifications are standing stock. In addition, other specifications can be customized.

ZGM 系列适合 ZGM Suitable series	被加工材料适用表 Test sheet for processed material									
	非常合适 fit as a pudding for a friar's mouth					适合 appropriate				
	碳素钢 carbon steel	合金钢 Alloy steel	预硬钢、淬硬钢 Pre hardened steel, hardened steel			不锈钢 stainless steel	铸铁球墨铸铁 Cast iron nodular cast iron	铜合金 copper alloy	铝合金 aluminium alloy	钛合金 titanium alloy
~40HRC			~50HRC	~55HRC						

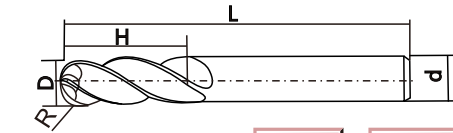
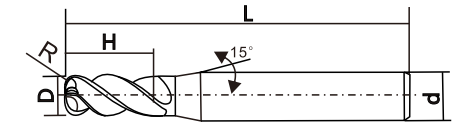
基本尺寸 (mm) Basic dimensions					齿数Z The number of teeth		订货号 Order number	
D	R±0.02	d (h6)	H	L			两刃订货号 Two edges order number	四刃订货号 Four edges order number
8	1.0	8	25	100	2	4	ZPM-3423L-D8.0T-R1.0	ZPM-3443L-D8.0T-R1.0
10	0.5	10	25	75	2	4	ZPM-3423K-D10.0T-R0.5	ZPM-3443K-D10.0T-R0.5
10	1.0	10	25	75	2	4	ZPM-3423K-D10.0T-R1.0	ZPM-3443K-D10.0T-R1.0
10	2.0	10	25	75	2	4	ZPM-3423K-D10.0T-R2.0	ZPM-3443K-D10.0T-R2.0
10	0.5	10	30	100	2	4	ZPM-3423L-D10.0T-R0.5	ZPM-3443L-D10.0T-R0.5
10	1.0	10	30	100	2	4	ZPM-3423L-D10.0T-R1.0	ZPM-3443L-D10.0T-R1.0
10	2.0	10	30	100	2	4	ZPM-3423L-D10.0T-R2.0	ZPM-3443L-D10.0T-R2.0
12	0.5	12	30	75	2	4	ZPM-3423K-D12.0T-R0.5	ZPM-3443K-D12.0T-R0.5
12	1.0	12	30	75	2	4	ZPM-3423K-D12.0T-R1.0	ZPM-3443K-D12.0T-R1.0
14	0.5	14	35	75	2	4	ZPM-3423K-D14.0T-R0.5	ZPM-3443K-D14.0T-R0.5
14	1.0	14	35	75	2	4	ZPM-3423K-D14.0T-R1.0	ZPM-3443K-D14.0T-R1.0
16	1.0	16	45	100	2	4	ZPM-3423K-D16.0T-R1.0	ZPM-3443K-D16.0T-R1.0
16	1.0	16	45	100	2	4	ZPM-3423K-D16.0T-R2.0	ZPM-3443K-D16.0T-R2.0
16	2.0	16	45	100	2	4	ZPM-3423K-D16.0T-R3.0	ZPM-3443K-D16.0T-R3.0
16	1.0	16	50	150	2	4	ZPM-3423L-D16.0T-R1.0	ZPM-3443L-D16.0T-R1.0
16	2.0	16	50	150	2	4	ZPM-3423L-D16.0T-R2.0	ZPM-3443L-D16.0T-R2.0
16	3.0	16	50	150	2	4	ZPM-3423L-D16.0T-R3.0	ZPM-3443L-D16.0T-R3.0
18	1.0	18	45	100	2	4	ZPM-3423K-D18.0T-R1.0	ZPM-3443K-D18.0T-R1.0
18	2.0	18	45	100	2	4	ZPM-3423K-D18.0T-R2.0	ZPM-3443K-D18.0T-R2.0
20	1.0	20	45	100	2	4	ZPM-3423K-D20.0T-R1.0	ZPM-3443K-D20.0T-R1.0
20	2.0	20	45	100	2	4	ZPM-3423K-D20.0T-R2.0	ZPM-3443K-D20.0T-R2.0
20	3.0	20	45	100	2	4	ZPM-3423K-D20.0T-R3.0	ZPM-3443K-D20.0T-R3.0
20	1.0	20	55	150	2	4	ZPM-3423L-D20.0T-R1.0	ZPM-3443L-D20.0T-R1.0
20	2.0	20	55	150	2	4	ZPM-3423L-D20.0T-R2.0	ZPM-3443L-D20.0T-R2.0
20	3.0	20	55	150	2	4	ZPM-3423L-D20.0T-R3.0	ZPM-3443L-D20.0T-R3.0

● 为常备库存。此外，其它规格也可另行订制。 The "●" specifications are standing stock. In addition, other specifications can be customized.

ZGM 系列适合 ZGM Suitable series	被加工材料适用表 Test sheet for processed material									
	非常合适 fit as a pudding for a friar's mouth					合适 appropriate				
	碳素钢 carbon steel	合金钢 Alloy steel	预硬钢、淬硬钢 Pre hardened steel, hardened steel			不锈钢 stainless steel	铸铁球墨铸铁 Cast iron nodular cast iron	铜合金 copper alloy	铝合金 aluminium alloy	钛合金 titanium alloy
~40HRC			~50HRC	~55HRC	●					

直柄球头铣刀—ZPM

Straight shank ball end milling



基本尺寸 (mm) Basic dimensions					齿数Z The number of teeth		订货号 Order number	
D	R	d (h6)	H	L			两刃订货号 Two edges order number	四刃订货号 Four edges order number
1	0.5	4	2	50	2	4	ZPM-3323-R0.5ST	ZPM-3343-R0.5ST
1.5	1.75	4	3	50	2	4	ZPM-3323-R0.75ST	ZPM-3443-R0.75ST
2	1.0	4	4	50	2	4	ZPM-3323-R1.0ST	ZPM-3443-R1.0ST
2.5	1.25	4	5	50	2	4	ZPM-3323-R1.25ST	ZPM-3443-R1.25ST
3	1.5	4	6	50	2	4	ZPM-3323-R1.5ST	ZPM-3443-R1.5ST
4	2.0	4	8	50	2	4	ZPM-3323-R2.0ST	ZPM-3443-R2.0ST
3.5	1.75	4	7	50	2	4	ZPM-3323-R1.75ST	ZPM-3443-R1.75ST
1	0.5	6	2	50	2	4	ZPM-3323-R0.5T	ZPM-3443-R0.5T
1.5	1.75	6	3	50	2	4	ZPM-3323-R0.75T	ZPM-3443-R0.75T
2	1.0	6	4	50	2	4	ZPM-3323-R1.0T	ZPM-3443-R1.0T
2.5	1.25	6	5	50	2	4	ZPM-3323-R1.25T	ZPM-3443-R1.25T
3	1.5	6	6	50	2	4	ZPM-3323-R1.5T	ZPM-3443-R1.5T
3.5	1.75	6	7	50	2	4	ZPM-3323-R1.75T	ZPM-3443-R1.75T
4	2.0	6	8	50	2	4	ZPM-3323-R2.0T	ZPM-3443-R2.0T
5	2.5	6	10	50	2	4	ZPM-3323-R2.5T	ZPM-3443-R2.5T
6	3.0	6	12	50	2	4	ZPM-3323-R3.0T	ZPM-3443-R3.0T
6	3.0	6	12	75	2	4	ZPM-3323L-R3.0T	ZPM-3343L-R3.0T
8	4.0	8	16	60	2	4	ZPM-3323-R4.0T	ZPM-3343-R4.0T
8	4.0	8	16	75	2	4	ZPM-3323Z-R4.0T	ZPM-3343Z-R4.0T
8	4.0	8	16	100	2	4	ZPM-3323L-R4.0T	ZPM-3343L-R4.0T
10	5.0	10	20	75	2	4	ZPM-3323-R5.0T	ZPM-3343-R5.0T
10	5.0	10	20	100	2	4	ZPM-3323L-R5.0T	ZPM-3343L-R5.0T
12	6.0	12	24	75	2	4	ZPM-3323-R6.0T	ZPM-3343-R6.0T

● 为常备库存。此外，其它规格也可另行订制。 The "●" specifications are standing stock. In addition, other specifications can be customized.

ZGM 系列适合 ZGM Suitable series	被加工材料适用表 Test sheet for processed material									
	非常合适 fit as a pudding for a friar's mouth					合适 appropriate				
	碳素钢 carbon steel	合金钢 Alloy steel	预硬钢、淬硬钢 Pre hardened steel, hardened steel			不锈钢 stainless steel	铸铁球墨铸铁 Cast iron nodular cast iron	铜合金 copper alloy	铝合金 aluminium alloy	钛合金 titanium alloy
~40HRC			~50HRC	~55HRC	●					

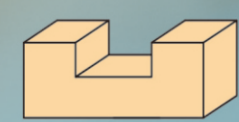
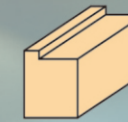
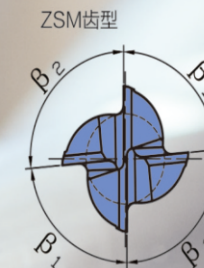
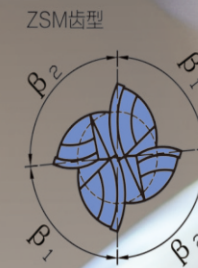


基本尺寸 (mm) Basic dimensions					齿数Z The number of teeth		订货号 Order number	
D	R	d (h6)	H	L			两刃订货号 Two edges order number	四刃订货号 Four edges order number
12	6.0	12	24	100	2	4	ZPM-3323L-R6.0T	ZPM-3343L-R6.0T
14	7.0	14	28	75	2	4	ZPM-3323-R7.0T	ZPM-3343-R7.0T
14	7.0	14	28	100	2	4	ZPM-3323L-R7.0T	ZPM-3343L-R7.0T
16	8.0	16	32	100	2	4	ZPM-3323-R8.0T	ZGM-3343-R8.0T
16	8.0	16	32	150	2	4	ZPM-3323L-R8.0T	ZGM-3343L-R8.0T
18	9.0	18	36	100	2	4	ZPM-3323-R9.0T	ZPM-3343-R9.0T
18	9.0	18	36	150	2	4	ZPM-3323L-R9.0T	ZPM-3343L-R9.0T
20	10.0	20	40	100	2	4	ZPM-3323-R10.0T	ZPM-3343-R10.0T
20	10.0	20	40	150	2	4	ZPM-3323L-R10.0T	ZPM-3343L-R10.0T



标准铣刀 Standard milling cutter

ZSM 系列



侧铣加工

端铣加工

槽铣加工

周刃与球刃实现无缝连接；合理的球刃中心设计，极大地提高表面质量。
尖角保护型，刀尖强度高，不容易崩刀。



ZSM描述:

- 1.应用范围: 刀具能满足不锈钢、钛合金类难加工材质的切削加工。
- 2.刀具结构: 刀具的不等螺旋和不等齿距结构设计, 减少加工震颤; 增强型周刃栏宽结合锋利刀口保证切削轻快和抗冲击性, 提高刀具寿命。
- 3.切削方式: 刀具可在其有效切削范围内进行侧铣、端铣、槽铣的粗、精加工。
- 4.刃部涂层: 刀具刃部选用低摩擦系数、抗红硬性的复合涂层处理, 满足难加工材料切削。

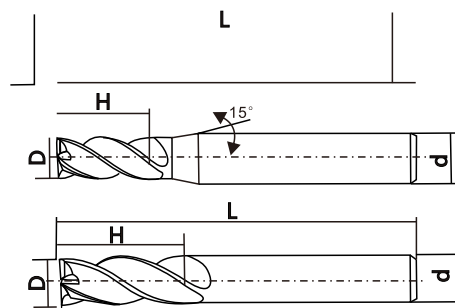
● 为常备库存。此外, 其它规格也可另行订制。 The "●" specifications are standing stock. In addition, other specifications can be customized.

ZPM 系列适用 ZPM Suitable series	被加工材料适用表 Test sheet for processed material										
	● 非常适合 fit as a pudding for a friar's mouth					● 适合 appropriate					
碳素钢 carbon steel	合金钢 Alloy steel	预硬钢、淬硬钢 Pre hardened steel, hardened steel		不锈钢 stainless steel	铸铁球墨铸铁 Cast iron nodular cast iron	铜合金 copper alloy	铝合金 aluminium alloy	钛合金 titanium alloy	耐热合金 heat-resisting alloy	~40HRC	~50HRC
		●	●							●	●



直柄平头立铣刀—ZSM

Straight shank flat end milling



四刃刀具 螺旋角 D ≥ 4 38/41° D < 4 35°	两刃刀具 螺旋角 D ≥ 4 45° D < 4 35°	刀刃公差 D ≥ 12.0 -0.03 D < 12.0 -0.02
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基本尺寸 (mm) Basic dimensions				齿数Z The number of teeth		订货号 Order number	
D	d(h6)	H	L			两刃订货号 Two edges order number	四刃订货号 Four edges order number
1	4	3	50	2	4	ZSM-3123K-D1.0ST	ZSM-3143K-D1.0ST
1.5	4	4	50	2	4	ZSM-3123K-D1.5ST	ZSM-3143K-D1.5ST
2	4	6	50	2	4	ZSM-3123K-D2.0ST	ZSM-3143K-D2.0ST
2.5	4	8	50	2	4	ZSM-3123K-D2.5ST	ZSM-3143K-D2.5ST
3	4	8	50	2	4	ZSM-3123K-D3.0ST	ZSM-3143K-D3.0ST
3.5	4	10	50	2	4	ZSM-3123K-D3.5ST	ZSM-3143K-D3.5ST
4	4	11	50	2	4	ZSM-3123K-D4.0ST	ZSM-3143K-D4.0ST •
4	4	15	75	2	4	ZSM-3123L-D4.0ST	ZSM-3143L-D4.0ST
1	6	3	50	2	4	ZSM-3123K-D1.0T	ZSM-3143K-D1.0T
1.5	6	4	50	2	4	ZSM-3123K-D1.5T	ZSM-3143K-D1.5T
2	6	6	50	2	4	ZSM-3123K-D2.0T	ZSM-3143K-D2.0T
2.5	6	8	50	2	4	ZSM-3123K-D2.5T	ZSM-3143K-D2.5T
3	6	8	50	2	4	ZSM-3123K-D3.0T	ZSM-3143K-D3.0T
3.5	6	10	50	2	4	ZSM-3123K-D3.5T	ZSM-3143K-D3.5T
4	6	11	50	2	4	ZSM-3123K-D4.0ST	ZSM-3143K-D4.0ST
4	6	16	60	2	4	ZSM-3123Z-D4.0T	ZSM-3143Z-D4.0T
4	6	15	75	2	4	ZSM-3123L-D4.0T	ZSM-3143L-D4.0T
5	6	13	50	2	4	ZSM-3123K-D5.0ST	ZSM-3143K-D5.0ST
5	6	20	60	2	4	ZSM-3123Z-D5.0ST	ZSM-3143Z-D5.0ST
6	6	16	50	2	4	ZSM-3123K-D6.0T	ZSM-3143K-D6.0T •
6	6	20	75	2	4	ZSM-3123L-D6.0T	ZSM-3143L-D6.0T
6	6	20	100	2	4	ZSM-3123M-D6.0T	ZSM-3143M-D6.0T
8	8	20	60	2	4	ZSM-3123K-D8.0T	ZSM-3143K-D8.0T •
8	8	25	75	2	4	ZSM-3123Z-D8.0T	ZSM-3143Z-D8.0T

• 为常备库存。此外，其它规格也可另行订制。 The "•" specifications are standing stock. In addition, other specifications can be customized.

ZSM 系列适合 ZSM Suitable series	被加工材料适用表 Test sheet for processed material										
	非常合适 fit as a pudding for a friar's mouth					合适 appropriate					
	碳素钢 carbon steel	合金钢 Alloy steel	预硬钢、淬硬钢 Pre hardened steel, hardened steel			不锈钢 stainless steel	铸铁球墨铸铁 Cast iron nodular cast iron	铜合金 copper alloy	铝合金 aluminium alloy	钛合金 titanium alloy	耐热合金 heat-resisting alloy
	④	④	④	④	④	④	④	④	④	④	



基本尺寸 (mm) Basic dimensions				齿数Z The number of teeth		订货号 Order number	
D	d(h6)	H	L			两刃订货号 Two edges order number	四刃订货号 Four edges order number
8	8	25	100	2	4	ZSM-3123L-D8.0T	ZSM-3143L-D8.0T
10	10	25	75	2	4	ZSM-3123K-D10.0T •	ZSM-3143K-D10.0T •
10	10	30	100	2	4	ZSM-3123L-D10.0T	ZSM-3143L-D10.0T
12	12	30	75	2	4	ZSM-3123K-D12.0T •	ZSM-3143K-D12.0T •
12	12	35	100	2	4	ZSM-3123L-D12.0T	ZSM-3143L-D12.0T
14	14	32	75	2	4	ZSM-3123K-D14.0T	ZSM-3143K-D14.0T
14	14	40	100	2	4	ZSM-3123L-D14.0T	ZSM-3143L-D14.0T
16	16	45	100	2	4	ZSM-3123K-D16.0T	ZSM-3143K-D16.0T
16	16	50	150	2	4	ZSM-3123L-D16.0T	ZSM-3143L-D16.0T
18	18	45	100	2	4	ZSM-3123K-D18.0T	ZSM-3143K-D18.0T
18	18	55	150	2	4	ZSM-3123L-D18.0T	ZSM-3143L-D18.0T
20	20	45	100	2	4	ZSM-3123K-D20.0T	ZSM-3143K-D20.0T
20	20	55	150	2	4	ZSM-3123L-D20.0T	ZSM-3143L-D20.0T

• 为常备库存。此外，其它规格也可另行订制。 The "•" specifications are standing stock. In addition, other specifications can be customized.

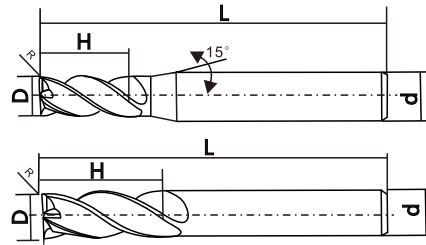
ZSM 系列适合 ZSM Suitable series	被加工材料适用表 Test sheet for processed material										
	非常合适 fit as a pudding for a friar's mouth					合适 appropriate					
	碳素钢 carbon steel	合金钢 Alloy steel	预硬钢、淬硬钢 Pre hardened steel, hardened steel			不锈钢 stainless steel	铸铁球墨铸铁 Cast iron nodular cast iron	铜合金 copper alloy	铝合金 aluminium alloy	钛合金 titanium alloy	耐热合金 heat-resisting alloy
	④	④	④	④	④	④	④	④	④	④	

直柄R铣刀—ZSM

Straight shank R end milling



四刃刀具 螺旋角 D ≥ 4 38/41° D < 4 35°	两刃刀具 螺旋角 D ≥ 4 45° D < 4 35°	刃口公差 D ≥ 12.0 ~ 0.03 D < 12.0 ~ 0.02
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基本尺寸 (mm) Basic dimensions					齿数Z The number of teeth		订货号 Order number	
D	R±0.02	d (h6)	H	L			两刃订货号 Two edges order number	四刃订货号 Four edges order number
1	0.2	4	3	50	2	4	ZSM-3423K-D1.0ST-R0.2	ZSM-3443K-D1.0ST-R0.2
2	0.2	4	6	50	2	4	ZSM-3423K-D2.0ST-R0.2	ZSM-3443K-D2.0ST-R0.2
3	0.2	4	8	50	2	4	ZSM-3423K-D3.0ST-R0.2	ZSM-3443K-D3.0ST-R0.2
3	0.5	4	8	50	2	4	ZSM-3423K-D3.0ST-R0.5	ZSM-3443K-D3.0ST-R0.5
4	0.3	4	11	50	2	4	ZSM-3423K-D4.0T-R0.3	ZSM-3443K-D4.0T-R0.3
4	0.5	4	11	50	2	4	ZSM-3423K-D4.0T-R0.5	ZSM-3443K-D4.0T-R0.5
1	0.2	6	3	50	2	4	ZSM-3423K-D1.0T-R0.2	ZSM-3443K-D1.0T-R0.2
2	0.2	6	6	50	2	4	ZSM-3423K-D2.0T-R0.2	ZSM-3443K-D2.0T-R0.2
3	0.2	6	8	50	2	4	ZSM-3423K-D3.0T-R0.2	ZSM-3443K-D3.0T-R0.2
4	0.3	6	11	50	2	4	ZSM-3423K-D4.0ST-R0.3	ZSM-3443K-D4.0ST-R0.3
4	0.5	6	11	50	2	4	ZSM-3423K-D4.0ST-R0.5	ZSM-3443K-D4.0ST-R0.5
5	0.5	6	13	50	2	4	ZSM-3423K-D5.0T-R0.5	ZSM-3443K-D5.0T-R0.5
5	1.0	6	13	50	2	4	ZSM-3423K-D5.0T-R1.0	ZSM-3443K-D5.0T-R1.0
6	0.3	6	16	50	2	4	ZSM-3423K-D6.0T-R0.3	ZSM-3443K-D6.0T-R0.3
6	0.5	6	16	50	2	4	ZSM-3423K-D6.0T-R0.5	ZSM-3443K-D6.0T-R0.5
6	1.0	6	16	50	2	4	ZSM-3423K-D6.0T-R1.0	ZSM-3443K-D6.0T-R1.0
6	0.5	6	20	75	2	4	ZSM-3423L-D6.0T-R0.5	ZSM-3443L-D6.0T-R0.5
6	1.0	6	20	75	2	4	ZSM-3423L-D6.0T-R1.0	ZSM-3443L-D6.0T-R1.0
8	0.3	8	20	60	2	4	ZSM-3423K-D8.0T-R0.3	ZSM-3443K-D8.0T-R0.3
8	0.5	8	20	60	2	4	ZSM-3423K-D8.0T-R0.5	ZSM-3443K-D8.0T-R0.5
8	1.0	8	20	60	2	4	ZSM-3423K-D8.0T-R1.0	ZSM-3443K-D8.0T-R1.0
8	0.5	8	25	75	2	4	ZSM-3423Z-D8.0T-R0.5	ZSM-3443Z-D8.0T-R0.5
8	1.0	8	25	75	2	4	ZSM-3423Z-D8.0T-R1.0	ZSM-3443Z-D8.0T-R1.0
8	0.5	8	25	100	2	4	ZSM-3423Z-D8.0T-R0.5	ZPM-3443L-D8.0T-R0.5

●为常备库存。此外，其它规格也可另行订制。 The "●"specifications are standing stock. In addition, other specifications can be customized.

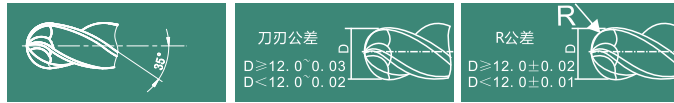
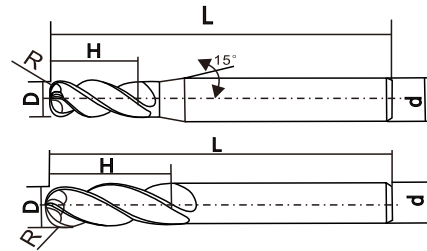
ZSM 系列适合 ZSM Suitable series	被加工材料适用表 Test sheet for processed material									
	非常合适 fit as a pudding for a friar's mouth					适合 appropriate				
	碳素钢 carbon steel	合金钢 Alloy steel	预硬钢、淬硬钢 Pre hardened steel, hardened steel			不锈钢 stainless steel	铸铁球墨铸铁 Cast iron nodular cast iron	铜合金 copper alloy	铝合金 aluminium alloy	钛合金 titanium alloy
	●	●	●	●	●	●	●	●	●	●

基本尺寸 (mm) Basic dimensions					齿数Z The number of teeth		订货号 Order number	
D	R±0.02	d (h6)	H	L			两刃订货号 Two edges order number	四刃订货号 Four edges order number
8	1.0	8	25	100	2	4	ZSM-3423L-D8.0T-R1.0	ZSM-3443L-D8.0T-R1.0
10	0.5	10	25	75	2	4	ZSM-3423K-D10.0T-R0.5	ZSM-3443K-D10.0ST-R0.5
10	1.0	10	25	75	2	4	ZSM-3423K-D10.0T-R1.0	ZSM-3443K-D10.0T-R1.0
10	2.0	10	25	75	2	4	ZSM-3423K-D10.0T-R2.0	ZSM-3443K-D10.0T-R2.0
10	0.5	10	30	100	2	4	ZSM-3423L-D10.0T-R0.5	ZSM-3443L-D10.0T-R0.5
10	1.0	10	30	100	2	4	ZSM-3423L-D10.0T-R1.0	ZSM-3443L-D10.0T-R1.0
10	2.0	10	30	100	2	4	ZSM-3423L-D10.0T-R2.0	ZSM-3443L-D10.0T-R2.0
12	0.5	12	30	75	2	4	ZSM-3423K-D12.0T-R0.5	ZSM-3443K-D12.0T-R0.5
12	1.0	12	30	75	2	4	ZSM-3423K-D12.0T-R1.0	ZSM-3443K-D12.0T-R1.0
14	0.5	14	35	75	2	4	ZSM-3423K-D14.0T-R0.5	ZSM-3443K-D14.0T-R0.5
14	1.0	14	35	75	2	4	ZSM-3423K-D14.0T-R1.0	ZSM-3443K-D14.0T-R1.0
16	1.0	16	45	100	2	4	ZSM-3423K-D16.0T-R1.0	ZSM-3443K-D16.0T-R1.0
16	2.0	16	45	100	2	4	ZSM-3423K-D16.0T-R2.0	ZSM-3443K-D16.0T-R2.0
16	3.0	16	45	100	2	4	ZSM-3423K-D16.0T-R3.0	ZSM-3443K-D16.0T-R3.0
16	1.0	16	50	150	2	4	ZSM-3423L-D16.0T-R1.0	ZSM-3443L-D16.0T-R1.0
16	2.0	16	50	150	2	4	ZSM-3423L-D16.0T-R2.0	ZSM-3443L-D16.0T-R2.0
16	3.0	16	50	150	2	4	ZSM-3423L-D16.0T-R3.0	ZSM-3443L-D16.0T-R3.0
18	1.0	18	45	100	2	4	ZSM-3423K-D18.0T-R1.0	ZSM-3443K-D18.0T-R1.0
18	2.0	18	45	100	2	4	ZSM-3423K-D18.0T-R2.0	ZSM-3443K-D18.0T-R2.0
20	1.0	20	45	100	2	4	ZSM-3423K-D20.0T-R1.0	ZSM-3443K-D20.0T-R1.0
20	2.0	20	45	100	2	4	ZSM-3423K-D20.0T-R2.0	ZSM-3443K-D20.0T-R2.0
20	3.0	20	45	100	2	4	ZSM-3423K-D20.0T-R3.0	ZSM-3443K-D20.0T-R3.0
20	1.0	20	55	150	2	4	ZSM-3423L-D20.0T-R1.0	ZSM-3443L-D20.0T-R1.0
20	3.0	20	55	150	2	4	ZSM-3423L-D20.0T-R3.0	ZPM-3443L-D20.0T-R3.0

●为常备库存。此外，其它规格也可另行订制。 The "●"specifications are standing stock. In addition, other specifications can be customized.

ZSM 系列适合 ZSM Suitable series	被加工材料适用表 Test sheet for processed material									
	非常合适 fit as a pudding for a friar's mouth					适合 appropriate				
	碳素钢 carbon steel	合金钢 Alloy steel	预硬钢、淬硬钢 Pre hardened steel, hardened steel			不锈钢 stainless steel	铸铁球墨铸铁 Cast iron nodular cast iron	铜合金 copper alloy	铝合金 aluminium alloy	钛合金 titanium alloy
	●	●	●	●	●	●	●	●	●	●

直柄球头铣刀—ZSM Straight shank ball end milling



基本尺寸 (mm) Basic dimensions					齿数Z The number of teeth		订货号 Order number	
D	R	d (h6)	H	L			两刃订货号 Two edges order number	四刃订货号 Four edges order number
1	0.5	4	2	50	2	4	ZSM-3323-R0.5ST•	ZSM-3343-R0.5ST
1.5	1.75	4	3	50	2	4	ZSM-3323-R0.75ST	ZSM-3443-R0.75ST
2	1.0	4	4	50	2	4	ZSM-3323-R1.0ST•	ZSM-3443-R1.0ST
2.5	1.25	4	5	50	2	4	ZSM-3323-R1.25ST	ZSM-3443-R1.25ST
3	1.5	4	6	50	2	4	ZSM-3323-R1.5ST	ZPM-3443-R1.5ST
4	2.0	4	8	50	2	4	ZSM-3323-R2.0ST•	ZPM-3443-R2.0ST
3.5	1.75	4	7	50	2	4	ZSM-3323-R1.75ST	ZPM-3443-R1.75ST
1	0.5	6	2	50	2	4	ZSM-3323-R0.5T	ZPM-3443-R0.5T
1.5	1.75	6	3	50	2	4	ZSM-3323-R0.75T	ZPM-3443-R0.75T
2	1.0	6	4	50	2	4	ZSM-3323-R1.0T	ZPM-3443-R1.0T
2.5	1.25	6	5	50	2	4	ZSM-3323-R1.25T	ZPM-3443-R1.25T
3	1.5	6	6	50	2	4	ZSM-3323-R1.5T	ZPM-3443-R1.5T
3.5	1.75	6	7	50	2	4	ZSM-3323-R1.75T	ZPM-3443-R1.75T
4	2.0	6	8	50	2	4	ZSM-3323-R2.0T	ZPM-3443-R2.0T
5	2.5	6	10	50	2	4	ZSM-3323-R2.5T	ZPM-3443-R2.5T
6	3.0	6	12	50	2	4	ZSM-3323-R3.0T•	ZPM-3443-R3.0T
6	3.0	6	12	75	2	4	ZSM-3323L-R3.0T	ZPM-3343L-R3.0T
8	4.0	8	16	60	2	4	ZSM-3323-R4.0T•	ZPM-3343-R4.0T
8	4.0	8	16	75	2	4	ZSM-3323Z-R4.0T	ZPM-3343Z-R4.0T
8	4.0	8	16	100	2	4	ZSM-3323L-R4.0T	ZPM-3343L-R4.0T
10	5.0	10	20	75	2	4	ZSM-3323-R5.0T•	ZPM-3343-R5.0T
10	5.0	10	20	100	2	4	ZSM-3323L-R5.0T	ZPM-3343L-R5.0T
12	6.0	12	24	75	2	4	ZSM-3323-R6.0T•	ZPM-3443-R6.0T
12	6.0	12	24	100	2	4	ZSM-3323L-R6.0T	ZPM-3343L-R6.0T

• 为常备库存。此外，其它规格也可另行订制。 The "•" specifications are standing stock. In addition, other specifications can be customized.

ZSM 系列适合 ZSM Suitable series	被加工材料适用表 Test sheet for processed material									
	非常适合 fit as a pudding for a friar's mouth					适合 appropriate				
	碳素钢 carbon steel	合金钢 Alloy steel	预硬钢、淬硬钢 Pre hardened steel, hardened steel			不锈钢 stainless steel	铸铁球墨铸铁 Cast iron nodular cast iron	铜合金 copper alloy	铝合金 aluminium alloy	钛合金 titanium alloy
	○	○	○	○	○	○	○	○	○	○

基本尺寸 (mm) Basic dimensions					齿数Z The number of teeth		订货号 Order number	
D	R	d (h6)	H	L			两刃订货号 Two edges order number	四刃订货号 Four edges order number
14	7.0	14	28	75	2	4	ZSM-3323-R7.0T	ZSM-3343-R7.0T
14	7.0	14	28	100	2	4	ZSM-3323L-R7.0T	ZSM-3443L-R7.0T
16	8.0	16	32	100	2	4	ZSM-3323-R8.0T	ZSM-3443L-R8.0T
16	8.0	16	32	100	2	4	ZSM-3323L-R8.0T	ZSM-3443-R8.0T
18	9.0	18	36	100	2	4	ZSM-3323-R9.0T	ZSM-3443-R9.0T
18	9.0	18	36	150	2	4	ZSM-3323L-R9.0T	ZSM-3443L-R9.0T
20	10.0	20	40	100	2	4	ZSM-3323-R10.0T	ZSM-3443-R10.0T
20	10.0	20	40	150	2	4	ZSM-3323L-R10.0T	ZSM-3443L-R10.0T

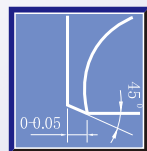
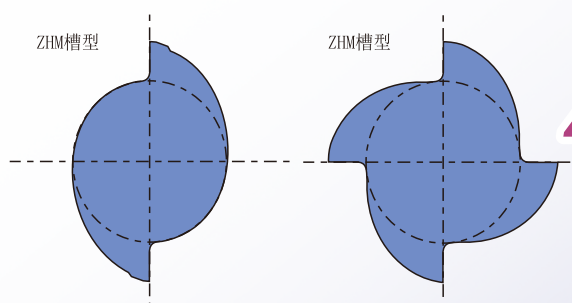
• 为常备库存。此外，其它规格也可另行订制。 The "•" specifications are standing stock. In addition, other specifications can be customized.

ZSM 系列适合 ZSM Suitable series	被加工材料适用表 Test sheet for processed material									
	非常适合 fit as a pudding for a friar's mouth					适合 appropriate				
	碳素钢 carbon steel	合金钢 Alloy steel	预硬钢、淬硬钢 Pre hardened steel, hardened steel			不锈钢 stainless steel	铸铁球墨铸铁 Cast iron nodular cast iron	铜合金 copper alloy	铝合金 aluminium alloy	钛合金 titanium alloy
	○	○	○	○	○	○	○	○	○	○



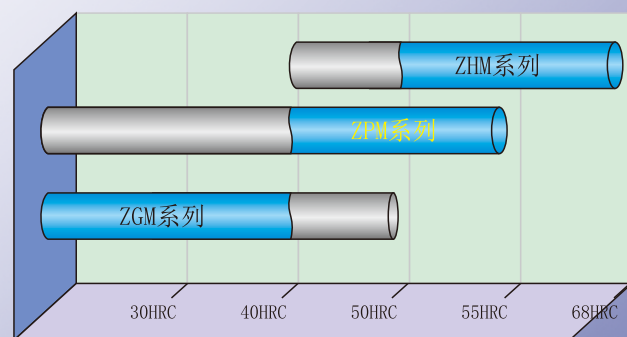
标准铣刀 Standard millingcutter

ZHM 系列



周刃与球刃实现无缝连接；合理的球刃中心设计，极大地提高表面质量。

尖角保护型，刀尖强度高，不容易崩刀。



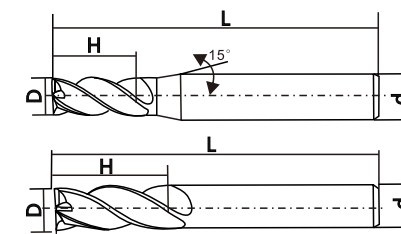
最适合加工区域 可加工区域

ZHM 描述:

- 应用范围：刀具可满足HRC50~HRC65高硬度淬硬钢、模具钢的切削加工。
- 刀具结构：针对高硬度材料切削特点，刀具螺旋角、刃口几何角度合理匹配，同时结合刃口及刀尖处理完美体现刀具切削性能。
- 切削方式：刀具可在中、高切削速度下完成零件半精、精加工，在铣削过程中具有稳定性好、震动小、切削力小、抗崩缺性佳的特点。
- 刃部涂层：刀具采用最新针对高硬度模具钢开发的复合纳米涂层，该涂层具有高硬度、高红硬性和抗冲击的特点、耐磨性和耐高温性优异。

直柄平头立铣刀—ZHM

Straight shank flat end milling



四刃刀具 螺旋角 D ≥ 4 38/41° D < 4 35°	两刃刀具 螺旋角 D ≥ 4 45° D < 4 35°	刃口公差 D ≥ 12.0 ~ 0.03 D < 12.0 ~ 0.02
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基本尺寸 (mm) Basic dimensions				齿数Z The number of teeth		订货号 Order number	
D	d(h6)	H	L			两刃订货号 Two edges order number	四刃订货号 Four edges order number
1	4	3	50	2	4	ZHM-3123K-D1.0ST	ZHM-3143K-D1.0ST
1.5	4	4	50	2	4	ZHM-3123K-D1.5ST	ZHM-3143K-D1.5ST
2	4	6	50	2	4	ZHM-3123K-D2.0ST	ZHM-3143K-D2.0ST
2.5	4	8	50	2	4	ZHM-3123K-D2.5ST	ZHM-3143K-D2.5ST
3	4	8	50	2	4	ZHM-3123K-D3.0ST	ZHM-3143K-D3.0ST
3.5	4	10	50	2	4	ZHM-3123K-D3.5ST	ZHM-3143K-D3.5ST
4	4	11	50	2	4	ZHM-3123K-D4.0ST	ZHM-3143K-D4.0ST
4	4	15	75	2	4	ZHM-3123L-D4.0ST	ZHM-3143L-D4.0ST
1	6	3	50	2	4	ZHM-3123K-D1.0T	ZHM-3143K-D1.0T
1.5	6	4	50	2	4	ZHM-3123K-D1.5T	ZHM-3143K-D1.5T
2	6	6	50	2	4	ZHM-3123K-D2.0T	ZHM-3143K-D2.0T
2.5	6	8	50	2	4	ZHM-3123K-D2.5T	ZHM-3143K-D2.5T
3	6	8	50	2	4	ZHM-3123K-D3.0T	ZHM-3143K-D3.0T
3.5	6	10	50	2	4	ZHM-3123K-D3.5T	ZHM-3143K-D3.5T
4	6	11	50	2	4	ZHM-3123K-D4.0ST	ZHM-3143K-D4.0ST
4	6	16	60	2	4	ZHM-3123Z-D4.0T	ZHM-3143Z-D4.0T
4	6	15	75	2	4	ZHM-3123L-D4.0T	ZHM-3143L-D4.0T
5	6	13	50	2	4	ZHM-3123K-D5.0ST	ZHM-3143K-D5.0ST
5	6	20	60	2	4	ZHM-3123Z-D5.0ST	ZHM-3143Z-D5.0ST
6	6	16	50	2	4	ZHM-3123K-D6.0T	ZHM-3143K-D6.0T
6	6	20	75	2	4	ZHM-3123L-D6.0T	ZHM-3143L-D6.0T
6	6	20	100	2	4	ZHM-3123M-D6.0T	ZHM-3143M-D6.0T
8	8	20	60	2	4	ZHM-3123K-D8.0T	ZHM-3143K-D8.0T
8	8	25	75	2	4	ZHM-3123Z-D8.0T	ZHM-3143Z-D8.0T

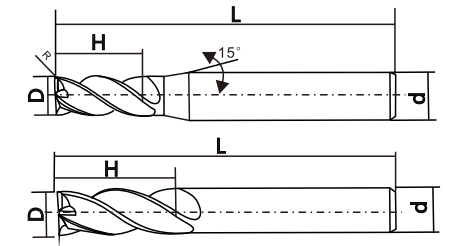
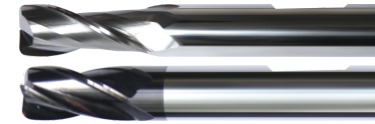
●为常备库存。此外，其它规格也可另行订制。 The "●" specifications are standing stock. In addition, other specifications can be customized.

ZHM 系列适合 ZGM Suitable series	被加工材料适用表 Test sheet for processed material					非常合适 fit as a pudding for a friar's mouth			合适 appropriate		
	碳素钢 carbon steel	合金钢 Alloy steel	预硬钢、淬硬钢 Pre hardened steel, hardened steel			不锈钢 stainless steel	铸铁球墨铸铁 Cast iron nodular cast iron	铜合金 copper alloy	铝合金 aluminium alloy	钛合金 titanium alloy	耐热合金 heat-resisting alloy
			~40HRC	~50HRC	~55HRC						
			●	●	●						

基本尺寸 (mm) Basic dimensions				齿数Z The number of teeth		订货号 Order number	
D	d (h6)	H	L			两刃订货号 Two edges order number	四刃订货号 Four edges order number
8	8	25	100	2	4	ZHM-3123L-D8.0T	ZHM-3143L-D8.0T
10	10	25	75	2	4	ZHM-3123K-D10.0T	ZHM-3143K-D10.0T
10	10	30	100	2	4	ZHM-3123L-D10.0T	ZHM-3143L-D10.0T
12	12	30	75	2	4	ZHM-3123K-D12.0T	ZHM-3143K-D12.0T
12	12	35	100	2	4	ZHM-3123L-D12.0T	ZHM-3143L-D12.0T
14	14	32	75	2	4	ZHM-3123K-D14.0T	ZHM-3143K-D14.0T
14	14	40	100	2	4	ZHM-3123L-D14.0T	ZHM-3143L-D14.0T
16	16	45	100	2	4	ZHM-3123K-D16.0T	ZHM-3143K-D16.0T
16	16	50	150	2	4	ZHM-3123L-D16.0T	ZHM-3143L-D16.0T
18	18	45	100	2	4	ZHM-3123K-D18.0T	ZHM-3143K-D18.0T
18	18	55	150	2	4	ZHM-3123L-D18.0T	ZHM-3143L-D18.0T
20	20	45	100	2	4	ZHM-3123K-D20.0T	ZHM-3143K-D20.0T
20	20	55	150	2	4	ZHM-3123L-D20.0T	ZHM-3143L-D20.0T

直柄R铣刀—ZHM

Straight shank R end milling



基本尺寸 (mm) Basic dimensions					齿数Z The number of teeth		订货号 Order number	
D	R±0.02	d (h6)	H	L			两刃订货号 Two edges order number	四刃订货号 Four edges order number
1	0.2	4	3	50	2	4	ZHM-3423K-D1.0T-R0.2	ZHM-3443K-D1.0T-R0.2
2	0.2	4	6	50	2	4	ZHM-3423K-D2.0T-R0.2	ZHM-3443K-D2.0T-R0.2
3	0.2	4	8	50	2	4	ZHM-3423K-D3.0T-R0.2	ZHM-3443K-D3.0T-R0.2
3	0.5	4	8	50	2	4	ZHM-3423K-D3.0T-R0.2	ZHM-3443K-D3.0T-R0.5
4	0.3	4	11	50	2	4	ZHM-3423K-D3.0T-R0.5	ZHM-3443K-D4.0T-R0.3
4	0.5	4	11	50	2	4	ZHM-3423K-D4.0T-R0.3	ZHM-3443K-D4.0T-R0.5
1	0.2	6	3	50	2	4	ZHM-3423K-D4.0T-R0.5	ZHM-3443K-D1.0T-R0.2
2	0.2	6	6	50	2	4	ZHM-3423K-D1.0T-R0.2	ZHM-3443K-D2.0T-R0.2
3	0.2	6	8	50	2	4	ZHM-3423K-D2.0T-R0.2	ZHM-3443K-D3.0T-R0.2
4	0.3	6	11	50	2	4	ZHM-3423K-D3.0T-R0.2	ZHM-3443K-D4.0T-R0.3
4	0.5	6	11	50	2	4	ZHM-3423K-D4.0T-R0.3	ZHM-3443K-D4.0T-R0.5
5	0.5	6	13	50	2	4	ZHM-3423K-D4.0T-R0.5	ZHM-3443K-D5.0T-R0.5
5	1.0	6	13	50	2	4	ZHM-3423K-D5.0T-R0.5	ZHM-3443K-D5.0T-R1.0
6	0.3	6	16	50	2	4	ZHM-3423K-D5.0T-R1.0	ZHM-3443K-D6.0T-R0.3
6	0.5	6	16	50	2	4	ZHM-3423K-D6.0T-R0.3	ZHM-3443K-D6.0T-R0.5
6	1.0	6	16	50	2	4	ZHM-3423K-D6.0T-R0.5	ZHM-3443K-D6.0T-R1.0
6	0.5	6	20	75	2	4	ZHM-3423K-D6.0T-R1.0	ZHM-3443L-D6.0T-R0.5
6	1.0	6	20	75	2	4	ZHM-3423L-D6.0T-R0.5	ZHM-3443L-D6.0T-R1.0
8	0.3	8	20	60	2	4	ZHM-3423L-D6.0T-R1.0	ZHM-3443K-D8.0T-R0.3
8	0.5	8	20	60	2	4	ZHM-3423K-D8.0T-R0.3	ZHM-3443K-D8.0T-R0.5
8	1.0	8	20	60	2	4	ZHM-3423K-D8.0T-R1.0	ZHM-3443K-D8.0T-R1.0
8	0.5	8	25	75	2	4	ZHM-3423Z-D8.0T-R0.5	ZHM-3443Z-D8.0T-R0.5
8	1.0	8	25	75	2	4	ZHM-3423Z-D8.0T-R1.0	ZHM-3443Z-D8.0T-R1.0
8	0.5	8	25	100	2	4	ZHM-3423L-D8.0T-R0.5	ZHM-3443L-D8.0T-R0.5

●为常备库存。此外，其它规格也可另行订制。 The "●"specifications are standing stock. In addition, other specifications can be customized.

ZHM 系列适合 ZHM Suitable series	被加工材料适用表 Test sheet for processed material									
	● 非常适合 fit as a pudding for a friar's mouth					● 适合 appropriate				
	碳素钢 carbon steel	合金钢 Alloy steel	预硬钢、淬硬钢 Pre hardened steel, hardened steel			不锈钢 stainless steel	铸铁球墨铸铁 Cast iron nodular cast iron	铜合金 copper alloy	铝合金 aluminium alloy	钛合金 titanium alloy
~40HRC			~50HRC	~55HRC	●					

●为常备库存。此外，其它规格也可另行订制。 The "●"specifications are standing stock. In addition, other specifications can be customized.

ZSM 系列适合 ZSM Suitable series	被加工材料适用表 Test sheet for processed material									
	● 非常适合 fit as a pudding for a friar's mouth					● 适合 appropriate				
	碳素钢 carbon steel	合金钢 Alloy steel	预硬钢、淬硬钢 Pre hardened steel, hardened steel			不锈钢 stainless steel	铸铁球墨铸铁 Cast iron nodular cast iron	铜合金 copper alloy	铝合金 aluminium alloy	钛合金 titanium alloy
~40HRC			~50HRC	~55HRC	●					



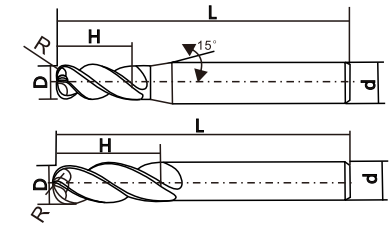
基本尺寸 (mm) Basic dimensions					齿数Z The number of teeth		订货号 Order number	
D	R±0.02	d (h6)	H	L			两刃订货号 Two edges order number	四刃订货号 Four edges order number
8	1.0	8	25	100	2	4	ZHM-3423L-D8.0T-R1.0	ZHM-3443L-D8.0T-R1.0
10	0.5	10	25	75	2	4	ZHM-3423K-D10.0T-R0.5	ZHM-3443K-D10.0ST-R0.5
10	1.0	10	25	75	2	4	ZHM-3423K-D10.0T-R1.0	ZHM-3443K-D10.0T-R1.0
10	2.0	10	25	75	2	4	ZHM-3423K-D10.0T-R2.0	ZHM-3443K-D10.0T-R2.0
10	0.5	10	30	100	2	4	ZHM-3423L-D10.0T-R0.5	ZHM-3443L-D10.0T-R0.5
10	1.0	10	30	100	2	4	ZHM-3423L-D10.0T-R1.0	ZHM-3443L-D10.0T-R1.0
10	2.0	10	30	100	2	4	ZHM-3423L-D10.0T-R2.0	ZHM-3443L-D10.0T-R2.0
12	0.5	12	30	75	2	4	ZHM-3423K-D12.0T-R0.5	ZHM-3443K-D12.0T-R0.5
12	1.0	12	30	75	2	4	ZHM-3423K-D12.0T-R1.0	ZHM-3443K-D12.0T-R1.0
14	0.5	14	35	75	2	4	ZHM-3423K-D14.0T-R0.5	ZHM-3443K-D14.0T-R0.5
14	1.0	14	35	75	2	4	ZHM-3423K-D14.0T-R1.0	ZHM-3443K-D14.0T-R1.0
16	1.0	16	45	100	2	4	ZHM-3423K-D16.0T-R1.0	ZHM-3443K-D16.0T-R1.0
16	2.0	16	45	100	2	4	ZHM-3423K-D16.0T-R2.0	ZHM-3443K-D16.0T-R2.0
16	3.0	16	45	100	2	4	ZHM-3423K-D16.0T-R3.0	ZHM-3443K-D16.0T-R3.0
16	1.0	16	50	150	2	4	ZHM-3423L-D16.0T-R1.0	ZHM-3443L-D16.0T-R1.0
16	2.0	16	50	150	2	4	ZHM-3423L-D16.0T-R2.0	ZHM-3443L-D16.0T-R2.0
16	3.0	16	50	150	2	4	ZHM-3423L-D16.0T-R3.0	ZHM-3443L-D16.0T-R3.0
18	1.0	18	45	100	2	4	ZHM-3423K-D18.0T-R1.0	ZHM-3443K-D18.0T-R1.0
18	2.0	18	45	100	2	4	ZHM-3423K-D18.0T-R2.0	ZHM-3443K-D18.0T-R2.0
20	1.0	20	45	100	2	4	ZHM-3423K-D20.0T-R1.0	ZHM-3443K-D20.0T-R1.0
20	2.0	20	45	100	2	4	ZHM-3423K-D20.0T-R2.0	ZHM-3443K-D20.0T-R2.0
20	3.0	20	45	100	2	4	ZHM-3423K-D20.0T-R3.0	ZHM-3443K-D20.0T-R3.0
20	1.0	20	55	150	2	4	ZHM-3423L-D20.0T-R1.0	ZHM-3443L-D20.0T-R1.0
20	3.0	20	55	150	2	4	ZHM-3423L-D20.0T-R3.0	ZHM-3443L-D20.0T-R3.0

●为常备库存。此外，其它规格也可另行订制。 The "●"specifications are standing stock. In addition, other specifications can be customized.

ZHM 系列适合 ZHM Suitable series	被加工材料适用表 Test sheet for processed material									
	非常合适 fit as a pudding for a friar's mouth					合适 appropriate				
	碳素钢 carbon steel	合金钢 Alloy steel	预硬钢、淬硬钢 Pre hardened steel, hardened steel			不锈钢 stainless steel	铸铁球墨铸铁 Cast iron nodular cast iron	铜合金 copper alloy	铝合金 aluminium alloy	钛合金 titanium alloy
~40HRC			~50HRC	~55HRC	●					



直柄球头铣刀—ZHM Straight shank ball end milling



基本尺寸 (mm) Basic dimensions					齿数Z The number of teeth		订货号 Order number	
D	R	d (h6)	H	L			两刃订货号 Two edges order number	四刃订货号 Four edges order number
1	0.5	4	2	50	2	4	ZHM-3323-R0.5ST	ZHM-3343-R0.5ST
1.5	1.75	4	3	50	2	4	ZHM-3323-R0.75ST	ZHM-3443-R0.75ST
2	1.0	4	4	50	2	4	ZHM-3323-R1.0ST	ZHM-3443-R1.0ST
2.5	1.25	4	5	50	2	4	ZHM-3323-R1.25ST	ZHM-3443-R1.25ST
3	1.5	4	6	50	2	4	ZHM-3323-R1.5ST	ZHM-3443-R1.5ST
4	2.0	4	8	50	2	4	ZHM-3323-R2.0ST●	ZHM-3443-R2.0ST
3.5	1.75	4	7	50	2	4	ZHM-3323-R1.75ST	ZHM-3443-R1.75ST
1	0.5	6	2	50	2	4	ZHM-3323-R0.5T	ZHM-3443-R0.5T
1.5	1.75	6	3	50	2	4	ZHM-3323-R0.75T	ZHM-3443-R0.75T
2	1.0	6	4	50	2	4	ZHM-3323-R1.0T	ZHM-3443-R1.0T
2.5	1.25	6	5	50	2	4	ZHM-3323-R1.25T	ZHM-3443-R1.25T
3	1.5	6	6	50	2	4	ZHM-3323-R1.5T	ZHM-3443-R1.5T
3.5	1.75	6	7	50	2	4	ZHM-3323-R1.75T	ZHM-3443-R1.75T
4	2.0	6	8	50	2	4	ZHM-3323-R2.0T	ZHM-3443-R2.0T
5	2.5	6	10	50	2	4	ZHM-3323-R2.5T	ZHM-3443-R2.5T
6	3.0	6	12	50	2	4	ZHM-3323-R3.0T●	ZHM-3443-R3.0T
6	3.0	6	12	75	2	4	ZHM-3323L-R3.0T	ZHM-3343L-R3.0T
8	4.0	8	16	60	2	4	ZHM-3323-R4.0T●	ZHM-3343-R4.0T
8	4.0	8	16	75	2	4	ZHM-3323Z-R4.0T	ZHM-3343Z-R4.0T
8	4.0	8	16	100	2	4	ZHM-3323L-R4.0T	ZHM-3343L-R4.0T
10	5.0	10	20	75	2	4	ZHM-3323-R5.0T●	ZHM-3343-R5.0T
10	5.0	10	20	100	2	4	ZHM-3323L-R5.0T	ZHM-3343L-R5.0T
12	6.0	12	24	75	2	4	ZHM-3323-R6.0T●	ZHM-3443-R6.0T
12	6.0	12	24	100	2	4	ZHM-3323L-R6.0T	ZHM-3343L-R6.0T

●为常备库存。此外，其它规格也可另行订制。 The "●"specifications are standing stock. In addition, other specifications can be customized.

ZHM 系列适合 ZHM Suitable series	被加工材料适用表 Test sheet for processed material									
	非常合适 fit as a pudding for a friar's mouth					合适 appropriate				
	碳素钢 carbon steel	合金钢 Alloy steel	预硬钢、淬硬钢 Pre hardened steel, hardened steel			不锈钢 stainless steel	铸铁球墨铸铁 Cast iron nodular cast iron	铜合金 copper alloy	铝合金 aluminium alloy	钛合金 titanium alloy
~40HRC			~50HRC	~55HRC	●					



基本尺寸 (mm) Basic dimensions					齿数Z The number of teeth		订货号 Order number	
D	R	d (h6)	H	L			两刃订货号 Two edges order number	四刃订货号 Four edges order number
14	7.0	14	28	75	2	4	ZHM-3323-R7.0T	ZHM-3343-R7.0T
14	7.0	14	28	100	2	4	ZHM-3323L-R7.0T	ZHM-3443L-R7.0T
16	8.0	16	32	100	2	4	ZHM-3323-R8.0T	ZHM-3443L-R8.0T
16	8.0	16	32	100	2	4	ZHM-3323L-R8.0T	ZHM-3443-R8.0T
18	9.0	18	36	100	2	4	ZHM-3323-R9.0T	ZHM-3443-R9.0T
18	9.0	18	36	150	2	4	ZHM-3323L-R9.0T	ZHM-3443L-R9.0T
20	10.0	20	40	100	2	4	ZHM-3323-R10.0T	ZHM-3443-R10.0T
20	10.0	20	40	150	2	4	ZHM-3323L-R10.0T	ZHM-3443L-R10.0T

标准铣刀 Standard milling cutter

ZAM

系列

SR±0.02

0-0.05 45°

侧铣加工 端铣加工 槽铣加工

周刃与球刃实现无缝连接；合理的球刃中心设计，极大地提高表面质量。

尖角保护型，刀尖强度高，不容易崩刀。

端刃齿隙容屑槽圆弧提刀，在拥有足够的容屑空间时保证刀刃强度。

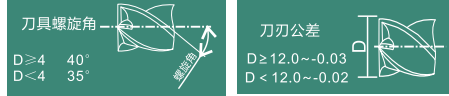
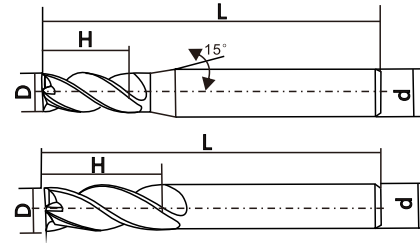
ZAM描述:

- 应用范围:** 刀具能满足铸造铝合金、锻造铝合金及航空类铝合金的切削加工。
- 刀具结构:** 1.锋利的切削刃口结合大螺旋角设计，切削轻快，减少加工震颤；端刃及周刃均采用圆滑的过渡轮廓面，排屑更流畅。
- 刃口特点:** 刀具刃口进行微缺控制，保证使用寿命和稳定性；前刀面精抛光处理，减小铝屑摩擦力，排屑更流畅，满足高转速和大进给切削。
- 切削方式:** 刀具可在其有效切削范围内进行侧铣、端铣、槽铣的粗、精加工。

●为常备库存。此外，其它规格也可另行订制。 The "●" specifications are standing stock. In addition, other specifications can be customized.

ZSM 系列适合 ZSM Suitable series	被加工材料适用表 Test sheet for processed material									
	非常合适 fit as a pudding for a friar's mouth					适合 appropriate				
	碳素钢 carbon steel	合金钢 Alloy steel	预硬钢、淬硬钢 Pre hardened steel, hardened steel			不锈钢 stainless steel	铸铁球墨铸铁 Cast iron nodular cast iron	铜合金 copper alloy	铝合金 aluminium alloy	钛合金 titanium alloy
~40HRC			~50HRC	~55HRC	●					

直柄平头立铣刀—ZAM Straight shank flat end milling



基本尺寸 (mm) Basic dimensions				齿数Z The number of teeth		订货号 Order number	
D	d(h6)	H	L			两刃订货号 Two edges order number	三刃订货号 Four edges order number
1	4	3	50	2	3	ZAM-3123K-D1.0ST	ZAM-3133K-D1.0ST
1.5	4	4	50	2	3	ZAM-3123K-D1.5ST	ZAM-3133K-D1.5ST
2	4	6	50	2	3	ZAM-3123K-D2.0ST	ZAM-3133K-D2.0ST
2.5	4	7	50	2	3	ZAM-3123K-D2.5ST	ZAM-3133K-D2.5ST
3	4	8	50	2	3	ZAM-3123K-D3.0ST	ZAM-3133K-D3.0ST
3.5	4	10	50	2	3	ZAM-3123K-D3.5ST	ZAM-3133K-D3.5ST
4	4	11	50	2	3	ZAM-3123K-D4.0T	ZAM-3133K-D4.0T •
1	6	3	50	2	3	ZAM-3123K-D1.0T	ZAM-3133K-D1.0T
1.5	6	4	50	2	3	ZAM-3123K-D1.5T	ZAM-3133K-D1.5T
2	6	6	50	2	3	ZAM-3123K-D2.0T	ZAM-3133K-D2.0T
2.5	6	7	50	2	3	ZAM-3123K-D2.5T	ZAM-3133K-D2.5T
3	6	8	50	2	3	ZAM-3123K-D3.0T	ZAM-3133K-D3.0T
3.5	6	10	50	2	3	ZAM-3123K-D3.5T	ZAM-3133K-D3.5T
4	6	11	50	2	3	ZAM-3123K-D4.0ST	ZAM-3133K-D4.0ST
4	6	16	60	2	3	ZAM-3123Z-D4.0ST	ZAM-3133Z-D4.0ST
5	6	13	50	2	3	ZAM-3123K-D5.0ST	ZAM-3133K-D5.0ST
5	6	20	60	2	3	ZAM-3123Z-D5.0ST	ZAM-3133Z-D5.0ST
6	6	18	60	2	3	ZAM-3123K-D6.0T	ZAM-3133K-D6.0T
6	6	25	75	2	3	ZAM-3123L-D6.0T	ZAM-3133K-D6.0T •
8	8	20	60	2	3	ZAM-3123K-D8.0T	ZAM-3133L-D8.0T
8	8	30	75	2	3	ZAM-3123Z-D8.0T	ZAM-3133Z-D8.0T
8	8	30	100	2	3	ZAM-3123L-D8.0T	ZAM-3133L-D8.0T •
10	10	30	75	2	3	ZAM-3123K-D10.0T	ZAM-3133K-D10.0T
10	10	35	100	2	3	ZAM-3123L-D10.0T	ZAM-3133L-D10.0T

• 为常备库存。此外，其它规格也可另行订制。 The "•" specifications are standing stock. In addition, other specifications can be customized.

ZAM 系列适合 ZAM Suitable series	被加工材料适用表 Test sheet for processed material									
	非常合适 fit as a pudding for a friar's mouth					适合 appropriate				
	碳素钢 carbon steel	合金钢 Alloy steel	预硬钢、淬硬钢 Pre hardened steel, hardened steel			不锈钢 stainless steel	铸铁球墨铸铁 Cast iron nodular cast iron	铜合金 copper alloy	铝合金 aluminium alloy	钛合金 titanium alloy
~40HRC			~50HRC	~55HRC						

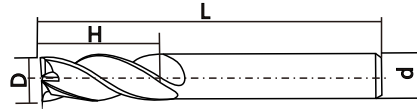
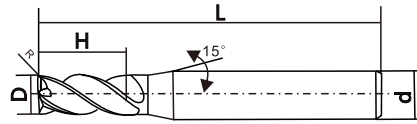
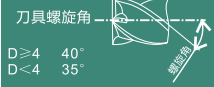
基本尺寸 (mm) Basic dimensions				齿数Z The number of teeth		订货号 Order number	
D (h9)	d (h6)	H	L			两刃订货号 Two edges order number	三刃订货号 Three edges order number
12	12	32	75	2	3	ZAM-3123K-D12.0T	ZAM-3133K-D12.0T •
12	12	40	100	2	3	ZAM-3123L-D12.0T	ZAM-3133L-D12.0T
14	14	35	75	2	3	ZAM-3123K-D14.0T	ZAM-3133K-D14.0T
14	14	40	100	2	3	ZAM-3123L-D14.0T	ZAM-3133L-D14.0T
16	16	45	100	2	3	ZAM-3123K-D16.0T	ZAM-3133K-D16.0T
16	16	50	150	2	3	ZAM-3123L-D16.0T	ZAM-3133L-D16.0T
20	20	45	100	2	3	ZAM-3123K-D20.0T	ZAM-3133K-D20.0T
20	20	55	150	2	3	ZAM-3123L-D20.0T	ZAM-3133L-D20.0T

• 为常备库存。此外，其它规格也可另行订制。 The "•" specifications are standing stock. In addition, other specifications can be customized.

ZAM 系列适合 ZAM Suitable series	被加工材料适用表 Test sheet for processed material									
	非常合适 fit as a pudding for a friar's mouth					适合 appropriate				
	碳素钢 carbon steel	合金钢 Alloy steel	预硬钢、淬硬钢 Pre hardened steel, hardened steel			不锈钢 stainless steel	铸铁球墨铸铁 Cast iron nodular cast iron	铜合金 copper alloy	铝合金 aluminium alloy	钛合金 titanium alloy
~40HRC			~50HRC	~55HRC						

直柄R铣刀—ZAM

Straight shank R end milling



基本尺寸 (mm) Basic dimensions					齿数Z The number of teeth		订货号 Order number	
D	R	d (h6)	H	L			两刃订货号 Two edges order number	三刃订货号 Three edges order number
1	0.2	4	3	50	2	3	ZAM-3423K-D1.0ST-R0.2	ZAM-3433K-D1.0ST-R0.2
2	0.2	4	6	50	2	3	ZAM-3423K-D2.0ST-R0.2	ZAM-3433K-D2.0ST-R0.2
3	0.2	4	8	50	2	3	ZAM-3423K-D3.0ST-R0.2	ZAM-3433K-D3.0ST-R0.2
3	0.5	4	8	50	2	3	ZAM-3423K-D3.0ST-R0.5	ZAM-3433K-D3.0ST-R0.5
4	0.3	4	11	50	2	3	ZAM-3423K-D4.0ST-R0.3	ZAM-3433K-D4.0ST-R0.3 •
1	0.2	6	3	50	2	3	ZAM-3423K-D1.0T-R0.2	ZAM-3433K-D1.0T-R0.2
2	0.2	6	6	50	2	3	ZAM-3423K-D2.0T-R0.2	ZAM-3433K-D2.0T-R0.2
3	0.2	6	8	50	2	3	ZAM-3423K-D3.0T-R0.2	ZAM-3433K-D3.0T-R0.2
4	0.3	6	11	50	2	3	ZAM-3423K-D4.0T-R0.3	ZAM-3433K-D4.0T-R0.3
6	0.3	6	18	60	2	3	ZAM-3423K-D6.0T-R0.3	ZAM-3433K-D6.0T-R0.3
6	0.5	6	18	60	2	3	ZAM-3423K-D6.0T-R0.5	ZAM-3433K-D6.0T-R0.5
6	1.0	6	18	60	2	3	ZAM-3423K-D6.0T-R1.0	ZAM-3433K-D6.0T-R1.0
6	1.0	6	25	75	2	3	ZAM-3423L-D6.0T-R1.0	ZAM-3433L-D6.0T-R1.0
8	0.3	8	20	60	2	3	ZAM-3423K-D8.0T-R0.3	ZAM-3433K-D8.0T-R0.3 •
8	0.5	8	20	60	2	3	ZAM-3423K-D8.0T-R0.5	ZAM-3433K-D8.0T-R0.5
8	1.0	8	20	60	2	3	ZAM-3423K-D8.0T-R1.0	ZAM-3433K-D8.0T-R1.0
8	1.0	8	30	75	2	3	ZAM-3423L-D8.0T-R1.0	ZAM-3433L-D8.0T-R1.0
10	0.5	10	30	75	2	3	ZAM-3423K-D10.0T-R0.5	ZAM-3433K-D10.0T-R0.5 •
10	1.0	10	30	75	2	3	ZAM-3423K-D10.0T-R1.0	ZAM-3433K-D10.0T-R1.0
10	2.0	10	35	75	2	3	ZAM-3423K-D10.0T-R2.0	ZAM-3433K-D10.0T-R2.0
10	1.0	10	35	100	2	3	ZAM-3423L-D10.0T-R1.0	ZAM-3433L-D10.0T-R1.0
10	2.0	10	35	100	2	3	ZAM-3423L-D10.0T-R2.0	ZAM-3433L-D10.0T-R2.0
12	0.5	12	32	75	2	3	ZAM-3423K-D12.0T-R0.5	ZAM-3433K-D12.0T-R0.5 •
12	1.0	12	32	75	2	3	ZAM-3423K-D12.0T-R1.0	ZAM-3433K-D12.0T-R1.0

• 为常备库存。此外，其它规格也可另行订制。 The "•" specifications are standing stock. In addition, other specifications can be customized.

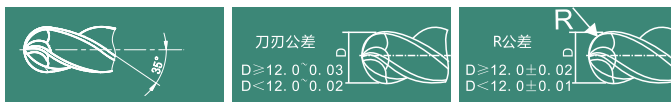
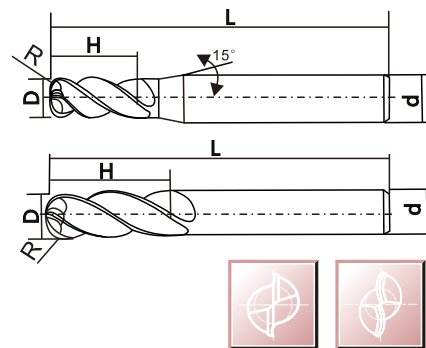
ZSM 系列适合 ZSM Suitable series	被加工材料适用表 Test sheet for processed material									
	非常合适 fit as a pudding for a friar's mouth					合适 appropriate				
	碳素钢 carbon steel	合金钢 Alloy steel	预硬钢、淬硬钢 Pre hardened steel, hardened steel			不锈钢 stainless steel	铸铁球墨铸铁 Cast iron nodular cast iron	铜合金 copper alloy	铝合金 aluminium alloy	钛合金 titanium alloy
~40HRC			~50HRC	~55HRC						

基本尺寸 (mm) Basic dimensions				齿数Z The number of teeth		订货号 Order number		
D	R ± 0.02 d (h6)	H	L			两刃订货号 Two edges order number	三刃订货号 Three edges order number	
14	0.5	14	35	75	2	3	ZAM-3423K-D14.0T-R0.5	ZAM-3433K-D14.0T-R0.5
14	1.0	14	35	75	2	3	ZAM-3423K-D14.0T-R1.0	ZAM-3433K-D14.0T-R1.0
16	1.0	16	45	100	2	3	ZAM-3423K-D16.0T-R1.0	ZAM-3433K-D16.0T-R1.0
16	2.0	16	45	100	2	3	ZAM-3423K-D16.0T-R2.0	ZAM-3433K-D16.0T-R2.0
16	3.0	16	50	100	2	3	ZAM-3423K-D16.0T-R3.0	ZAM-3433K-D16.0T-R3.0
16	1.0	16	50	150	2	3	ZAM-3423L-D16.0T-R1.0	ZAM-3433L-D16.0T-R1.0
16	2.0	16	50	150	2	3	ZAM-3424L-D16.0T-R2.0	ZAM-3433L-D16.0T-R2.0
16	3.0	16	45	150	2	3	ZAM-3423L-D16.0T-R3.0	ZAM-3433L-D16.0T-R3.0
18	1.0	18	45	100	2	3	ZAM-3423K-D18.0T-R1.0	ZAM-3433K-D18.0T-R1.0
18	2.0	18	45	100	2	3	ZAM-3423K-D18.0T-R2.0	ZAM-3433K-D18.0T-R2.0
20	1.0	20	45	100	2	3	ZAM-3423K-D20.0T-R1.0	ZAM-3433K-D20.0T-R1.0
20	2.0	20	45	100	2	3	ZAM-3423K-D20.0T-R2.0	ZAM-3433K-D20.0T-R2.0
20	3.0	20	45	100	2	3	ZAM-3423K-D20.2T-R3.0	ZAM-3433K-D20.2T-R3.0
20	1.0	20	55	150	2	3	ZAM-3423L-D20.0T-R1.0	ZAM-3433L-D20.0T-R1.0
20	2.0	20	55	150	2	3	ZAM-3423L-D20.0T-R2.0	ZAM-3433L-D20.0T-R2.0
20	3.0	20	55	150	2	3	ZAM-3423L-D20.0T-R3.0	ZAM-3433L-D20.0T-R3.0

• 为常备库存。此外，其它规格也可另行订制。 The "•" specifications are standing stock. In addition, other specifications can be customized.

ZSM 系列适合 ZSM Suitable series	被加工材料适用表 Test sheet for processed material									
	非常合适 fit as a pudding for a friar's mouth					合适 appropriate				
	碳素钢 carbon steel	合金钢 Alloy steel	预硬钢、淬硬钢 Pre hardened steel, hardened steel			不锈钢 stainless steel	铸铁球墨铸铁 Cast iron nodular cast iron	铜合金 copper alloy	铝合金 aluminium alloy	钛合金 titanium alloy
~40HRC			~50HRC	~55HRC						

直柄球头铣刀—ZAM Straight shank ball end milling



基本尺寸 (mm) Basic dimensions					齿数Z The number of teeth		订货号 Order number	
D	R	d (h6)	H	L			两刃订货号 Two edges order number	四刃订货号 Four edges order number
1	0.5	4	2	50	2	4	ZAM-3323K-R0.5ST	ZAM-3343K-R0.5ST
1.5	1.75	4	3	50	2	4	ZAM-3323K-R0.75ST	ZAM-3343K-R0.75ST
2	1.0	4	4	50	2	4	ZAM-3323K-R1.0ST	ZAM-3343K-R1.0ST
2.5	1.25	4	5	50	2	4	ZAM-3323K-R1.25ST	ZAM-3343K-R1.25ST
3	1.5	4	6	50	2	4	ZAM-3323K-R1.5ST	ZAM-3343K-R1.5ST
4	2.0	4	8	50	2	4	ZAM-3323K-R2.0ST •	ZAM-3343K-R2.0ST
3.5	1.75	4	7	50	2	4	ZAM-3323K-R1.75ST	ZAM-3343K-R1.75ST
1	0.5	6	2	50	2	4	ZAM-3323K-R0.5T	ZAM-3343K-R0.5T
1.5	1.75	6	3	50	2	4	ZAM-3323K-R0.75T	ZAM-3343K-R0.75T
2	1.0	6	4	50	2	4	ZAM-3323K-R1.0T	ZAM-3343K-R1.0T
2.5	1.25	6	5	50	2	4	ZAM-3323K-R1.25T	ZAM-3343K-R1.25T
3	1.5	6	6	50	2	4	ZAM-3323K-R1.5T	ZAM-3343K-R1.5T
3.5	1.75	6	7	50	2	4	ZAM-3323K-R1.75T	ZAM-3343K-R1.75T
4	2.0	6	8	60	2	4	ZAM-3323K-R2.0T	ZAM-3343K-R2.0T
5	2.5	6	10	60	2	4	ZAM-3323K-R2.5T	ZAM-3343K-R2.5T
6	3.0	6	12	60	2	4	ZAM-3323K-R3.0T •	ZAM-3343K-R3.0T
6	3.0	6	12	75	2	4	ZAM-3323L-R3.0T	ZAM-3343L-R3.0T
8	4.0	8	16	60	2	4	ZAM-3323K-R4.0T •	ZAM-3343K-R4.0T
8	4.0	8	16	75	2	4	ZAM-3323Z-R4.0T	ZAM-3343Z-R4.0T
8	4.0	8	16	100	2	4	ZAM-3323L-R4.0T	ZAM-3343L-R4.0T
10	5.0	10	20	75	2	4	ZAM-3323K-R5.0T •	ZAM-3343K-R5.0T
10	5.0	10	20	100	2	4	ZAM-3323L-R5.0T	ZAM-3343L-R5.0T
12	6.0	12	24	75	2	4	ZAM-3323K-R6.0T •	ZAM-3443K-R6.0T
12	6.0	12	24	100	2	4	ZAM-3323L-R6.0T	ZAM-3343L-R6.0T

• 为常备库存。此外，其它规格也可另行订制。 The "•" specifications are standing stock. In addition, other specifications can be customized.

ZAM 系列适合 ZAM Suitable series	被加工材料适用表 Test sheet for processed material								
	非常合适 fit as a pudding for a friar's mouth			合适 appropriate					
	碳素钢 carbon steel	合金钢 Alloy steel	预硬钢、淬硬钢 Pre hardened steel, hardened steel	不锈钢 stainless steel	铸铁球墨铸铁 Cast iron nodular cast iron	铜合金 copper alloy	铝合金 aluminium alloy	钛合金 titanium alloy	耐热合金 heat-resisting alloy
			~40HRC ~50HRC ~55HRC						

基本尺寸 (mm) Basic dimensions					齿数Z The number of teeth		订货号 Order number	
D (h9)	R	d (h6)	H	L			两刃订货号 Two edges order number	四刃订货号 Four edges order number
14	7.0	14	28	75	2	4	ZAM-3323K-R7.0T	ZAM-3343K-R7.0T
14	7.0	14	28	100	2	4	ZAM-3323L-R7.0T	ZAM-3343L-R7.0T
16	8.0	16	32	100	2	4	ZAM-3323K-R8.0T	ZAM-3343K-R8.0T
16	8.0	16	32	150	2	4	ZAM-3323L-R8.0T	ZAM-3343L-R8.0T
18	9.0	18	36	100	2	4	ZAM-3323K-R9.0T	ZAM-3343K-R9.0T
18	9.0	18	36	150	2	4	ZAM-3323L-R9.0T	ZAM-3343L-R9.0T
20	10.0	20	40	100	2	4	ZAM-3323K-R10.0T	ZAM-3343K-R10.0T
20	10.0	20	40	150	2	4	ZAM-3323L-R10.0T	ZAM-3343L-R10.0T

• 以上规格均为常备库存。此外，其它规格也可另行订制。 The above specifications are standing stock. In addition, other specifications can be customized.

ZAM 系列适合 ZAM Suitable series	被加工材料适用表 Test sheet for processed material								
	非常合适 fit as a pudding for a friar's mouth			合适 appropriate					
	碳素钢 carbon steel	合金钢 Alloy steel	预硬钢、淬硬钢 Pre hardened steel, hardened steel	不锈钢 stainless steel	铸铁球墨铸铁 Cast iron nodular cast iron	铜合金 copper alloy	铝合金 aluminium alloy	钛合金 titanium alloy	耐热合金 heat-resisting alloy
			~40HRC ~50HRC ~55HRC						



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硬质合金牌号及性能

Cemented carbide grades and properties

ISO应用分组 ISO application group	牌号 Grade	WC	CO	平均粒度 Average grain size	密度 Density	抗弯强度 Transverse rupture strength	威氏硬度 Vickers hardness	洛氏硬度 Rockwell hardness
		(%)	(%)	(μm)	(g/cm^3)	(N/mm^2)	HV30	HRA
K10	K10-1				14.9	2000		93.0
	K10-2							
K20/K30	K30-1		8.0	0.7	14.5	4300	1710	92.1
	K30-2	90.5			14.6	3200		92.2
	K30-3				14.9	2500		91.5
	K30-4		12.0	0.7			1610	
K40	K40-1	86.7			14.5	3600		91.7

各类涂层

Various coatings

涂层种类 Coating types	特性 Characteristic	颜色 Color	颜色符号 Color symbols	硬度 Hardness	涂层厚度 Coating thickness	摩擦系数 Frictional coefficient	应用温度 Application temperature
				HV	μm		$^{\circ}\text{C}$
TiAlN Single-layer	高抗热,高性能。适用于淬硬钢、合金钢、不锈钢的高速切削及干切削。 High heat resistance, high performance, suitable for hardened steel, alloy steel, stainless steel, high-speed cutting and dry cutting.	紫-黑 Purple-black		3500	1-4	0.50	850
TiAlN Multi-layer	高抗热,高性能。适用于淬硬钢、合金钢、不锈钢的高速切削及干切削、重载切削。 High heat resistance, high performance, suitable for hardened steel, alloy steel, stainless steel, high-speed cutting and dry cutting, High duty cutting.	紫-黑 Purple-black		2800	1-3	0.60	750
TiCN	高韧性涂层。适用于铣削、攻丝和滚齿。 High toughness coating, suitable for milling, tapping and hobbing.	蓝-灰 blue-grey		3700	1-4	0.35	350
TiN	普通用途涂层。适用于低速铣削、铰削钢材。 General purpose coating suitable for milling, cutting steel at a low speed.	金 golden		2400	1-4	0.50	700
AlTiN	特殊涂层,高铝元素含量,极高抗热性及高硬度,适用于高速加工。 Special coating, high aluminum content, high heat resistance and high hardness, suitable for high speed machining.	黑 black		3800	1-3	0.70	850
CrN	适用于航空材料等加工。 Suitable for aviation materials machining.	银 silvery		1500	1-3	0.40	750
TiAlN Nano meter	各种材料。 Various materials	紫-黑 Purple-black		3800	1-3	0.45	880

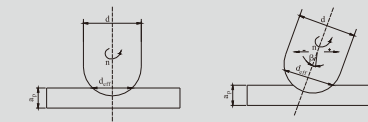
切削加工常用计算公式

Common calculation formula for cutting process

公 制			
描述 Description	表示符号 Symbol	单位 Unit	计算公式 Calculation formula
切削速度 Cutting speed	V_c	(m/min)	$V_c = \frac{\pi \times d \times n}{1000}$
转速 Rotating speed	n	(rev/min)	$n = \frac{V_c \times 1000}{\pi \times d}$
进给速度 Feed speed	V_f	(mm/min)	$V_f = f_z \times Z \times n$
每转进给量 Feed per revolution	f	(mm/rev)	$f = f_z \times Z$
每齿进给量 Feed per tooth	f_z	(mm)	$f_z = \frac{V_f}{Z \times n}$

英 制			
描述 Description	表示符号 Symbol	单位 Unit	计算公式 Calculation formula
切削速度 Cutting speed	V_c	(inch/min)	$V_c = \frac{\pi \times d \times n}{12}$
转速 Rotating speed	n	(rev/min)	$n = \frac{V_c \times 12}{\pi \times d}$
进给速度 Feed speed	V_f	(mm/min)	$V_f = f_z \times Z \times n$
每转进给量 Feed per revolution	f	(inch/rev)	$f = f_z \times Z$
每齿进给量 Feed per tooth	f_z	(inch)	$f_z = \frac{V_f}{Z \times n}$

铣刀的有效直径
Effective diameter of milling cutter



$$d_{\text{eff}} = 2 \cdot \sqrt{d \cdot a_p - a_p^2}$$

$$\beta = 0$$

$$d_{\text{eff}} = d \cdot \sin[\beta \cdot \arccos(\frac{d - 2a_p}{d})]$$

有效的切削速度
Effective cutting speed

$$v_{\text{ceff}} = \frac{2 \cdot \pi \cdot n}{1000} \cdot \sqrt{d \cdot a_p - a_p^2}$$

$$\beta = 0$$

$$v_{\text{ceff}} = \frac{\pi \cdot n \cdot d}{1000} \cdot \sin[\beta \cdot \arccos(\frac{d - 2a_p}{d})]$$

平均切削速度
Average cutting speed

$$h_m = \frac{2}{\Delta\Phi} \cdot \frac{a_e}{d} \cdot f_z \cdot \sqrt{\frac{a_e}{d}} \cdot f_z$$

常用公差带极限偏差

Common tolerance range of limit deviation

尺寸Φmm						
公差带 Tolerance range	<3	3~6	6~10	10~18	18~30	30~50
d8	-20	-30	-40	-50	-65	-80
	-34	-48	-62	-77	-98	-119
e8	-14	-20	-25	-32	-40	-50
	-28	-38	-47	-59	-73	-89
h5	0	0	0	0	0	0
	-4	-5	-6	-8	-9	-11
h6	0	0	0	0	0	0
	-6	-8	-9	-11	-13	-16
h7	0	0	0	0	0	0
	-10	-12	-15	-18	-21	-25
h8	0	0	0	0	0	0
	-14	-18	-22	-27	-33	-39
h10	0	0	0	0	0	0
	-40	-48	-58	-70	-84	-100
h12	0	0	0	0	0	0
	-100	-120	-150	-180	-210	-250
js11	±30	±37	±45	±55	±65	±80
	±125	±150	±180	±215	±260	±310
js14	±300	±375	±450	±550	±650	±800
	±125	±150	±180	±215	±260	±310
H5	+4	+5	+6	+8	+9	+11
	0	0	0	0	0	0
H6	+6	+8	+9	+11	+13	+16
	0	0	0	0	0	0
H7	+10	+12	+15	+18	+21	+25
	0	0	0	0	0	0
H8	+14	+18	+22	+27	+33	+39
	0	0	0	0	0	0
H9	+25	+30	+36	+43	+52	+62
	0	0	0	0	0	0
H10	+40	+48	+58	+70	+84	+100
	0	0	0	0	0	0
H12	+100	+120	+150	+180	+210	+250
	0	0	0	0	0	0

硬度对比表

Hardness comparison table

Rm[N/mm ²]	HV10	HB	HRC
240	75	71	
255	80	76	
270	85	81	
285	90	86	
305	95	90	
320	100	95	
335	105	100	
350	110	105	
370	115	109	
385	120	114	
400	125	119	
415	130	124	
430	135	128	
450	140	133	
465	145	138	
480	150	143	
495	155	147	
510	160	152	
530	165	157	
545	170	162	
560	175	166	
575	180	171	
595	185	176	
610	190	181	
625	195	185	
640	200	190	
660	205	195	
675	210	199	
690	215	204	
705	220	209	
720	225	214	
740	230	219	
755	235	223	
770	240	228	
785	245	233	
800	250	238	22

整体硬质合金刀具切削参数

钻头

被切削材质	低碳钢		中碳钢		模具钢	
硬度			~ 300HB		~ 300HB	
刃径D	Vc(m/min)	fz(mm)	Vc(m/min)	fz(mm)	Vc(m/min)	fz(mm)
2.0	30~50	0.05~0.08	30~40	0.05~0.1	10~30	0.05~0.1
3.0	30~50	0.05~0.08	30~40	0.05~0.1	10~30	0.05~0.1
4.0	40~70	0.08~0.20	40~60	0.08~0.15	30~60	0.05~0.15
5.0	40~70	0.08~0.20	40~60	0.08~0.15	30~60	0.05~0.15
6.0	40~70	0.08~0.20	40~60	0.08~0.15	30~60	0.05~0.15
8.0	50~100	0.10~0.30	50~100	0.10~0.25	30~60	0.10~0.25
10.0	50~100	0.10~0.30	50~100	0.10~0.25	30~60	0.10~0.25
12.0	50~100	0.15~0.40	50~100	0.15~0.40	40~80	0.15~0.30
16.0	60~120	0.20~0.50	50~120	0.20~0.50	40~100	0.15~0.40
18.0	60~120	0.20~0.50	50~120	0.20~0.50	40~100	0.15~0.40
20.0	60~120	0.20~0.50	50~120	0.20~0.50	40~100	0.15~0.40

被切削材质	高硬度钢		钛合金		铝合金	
硬度	HRC40 ~ 50		HB ≥ 300			
刃径D	Vc(m/min)	fz(mm)	Vc(m/min)	fz(mm)	Vc(m/min)	fz(mm)
2.0	5~20	0.03~0.08	10~25	0.015~0.03	100~200	0.030~0.074
3.0	5~20	0.03~0.08	10~25	0.015~0.03	100~200	0.045~0.077
4.0	0~40	0.03~0.10	20~30	0.015~0.040	100~200	0.066~0.088
5.0	10~40	0.03~0.10	20~30	0.015~0.040	100~200	0.080~0.100
6.0	10~40	0.03~0.10	20~30	0.015~0.040	100~200	0.092~0.123
8.0	10~40	0.05~0.15	20~30	0.015~0.040	100~200	0.120~0.160
10.0	10~40	0.05~0.15	20~30	0.015~0.040	100~200	0.150~0.200
12.0	15~40	0.08~0.20	20~30	0.035~0.055	100~200	0.180~0.240
16.0	20~50	0.10~0.25	20~30	0.040~0.060	100~200	0.225~0.300
18.0	20~50	0.10~0.25	20~30	0.050~0.080	100~200	0.250~0.350
20.0	20~50	0.10~0.25	20~30	0.050~0.080	100~200	0.300~0.400

整体硬质合金刀具切削参数

钻头

被切削材质	铸铁		不锈钢		镍基高温合金钢	
硬度			~ 200HB		HB ≥ 300	
刃径D	Vc(m/min)	fz(mm)	Vc(m/min)	fz(mm)	Vc(m/min)	fz(mm)
2.0	20~50	0.05~0.1	10~20	0.015~0.03	8~20	0.03~0.08
3.0	20~50	0.05~0.1	10~20	0.015~0.03	8~20	0.03~0.08
4.0	40~80	0.08~0.15	20~40	0.015~0.040	10~40	0.03~0.10
5.0	40~80	0.08~0.15	20~40	0.015~0.040	10~40	0.03~0.10
6.0	40~80	0.08~0.15	20~40	0.015~0.040	10~40	0.03~0.10
8.0	50~100	0.10~0.30	20~40	0.015~0.040	10~40	0.05~0.15
10.0	50~100	0.10~0.30	20~40	0.015~0.040	10~40	0.05~0.15
12.0	50~100	0.15~0.40	20~40	0.035~0.055	15~40	0.08~0.20
16.0	50~100	0.20~0.50	20~40	0.045~0.080	20~50	0.10~0.25
18.0	50~100	0.20~0.50	20~40	0.075~0.100	20~50	0.10~0.25
20.0	50~100	0.20~0.50	20~40	0.075~0.100	20~50	0.10~0.25

整体硬质合金刀具切削参数

两刃高速铣刀

被切削材质	航空铝合金7075、7050、2024			
硬度	硬度30~35HRC			
刃径D	N(rev/min)	fz(mm)	N(rev/min)	fz(mm)
6.0	28000	0.06~0.08	24000	0.04~0.06
8.0	28000	0.08~0.10	27000	0.06~0.08
10.0	25000	0.10~0.12	22200	0.08~0.10
12.0	25000	0.12~0.14	19900	0.10~0.12
16.0	23000	0.14~0.16	17000	0.12~0.14
20.0	20000	0.16~0.20	15000	0.14~0.16

加工方式:	侧面铣削		铣槽加工	
		$ae < 0.2D$ $ap < 1.5D$		$D < \phi 3: ae=D \quad ap \leq 0.2D$ $D \geq \phi 3: ae=D \quad ap \leq 0.5D$

三刃高速铣刀

被切削材质	航空铝合金7075、7050、2024			
硬度	硬度30~35HRC			
刃径D	N(rev/min)	fz(mm)	N(rev/min)	fz(mm)
6.0	28000	0.06~0.08	24000	0.03~0.04
8.0	28000	0.08~0.10	27000	0.04~0.06
10.0	25000	0.10~0.12	22200	0.06~0.08
12.0	25000	0.12~0.14	19900	0.06~0.08
16.0	23000	0.14~0.16	17000	0.08~0.10
20.0	20000	0.16~0.20	15000	0.10~0.12

加工方式:	侧面铣削		铣槽加工	
		$ae < 0.2D$ $ap < 1.5D$		$D < \phi 3: ae=D \quad ap \leq 0.2D$ $D \geq \phi 3: ae=D \quad ap \leq 0.5D$

- 说明:
1. 选用刚性好精度高的机床和夹头。
 2. 单边铣削时建议采用顺铣方法。
 3. 使用适合切削材质的切削液，并注意防火。
 4. 工件或机器有振动或异常声音发生时，请随加工条件更换切削条件。
 5. 干式切削时转速及进给速度建议使用正常切削条件的70%。
 6. 如采用加长刀具时，请正确降低转速及进给。
 7. 切削量少时可提高回转速度及进给速度。

整体硬质合金刀具切削参数

立铣刀

被切削材质	碳素钢、合金钢、工具钢		合金钢、工具钢	
	180~250HB		25~38HRC	
硬度				
刃径D	N(rev/min)	fz(mm)	N(rev/min)	fz(mm)
3	4600	0.02~0.03	4300	0.02~0.03
4	3980	0.02~0.03	3680	0.02~0.03
5	3820	0.03~0.04	3520	0.03~0.04
6	3450	0.03~0.04	3150	0.03~0.04
8	2780	0.04~0.06	2480	0.04~0.06
10	2380	0.04~0.06	2080	0.04~0.06
12	2120	0.05~0.08	1820	0.05~0.08
16	1590	0.05~0.08	1290	0.05~0.08
18	1410	0.05~0.08	1110	0.05~0.08
20	1270	0.05~0.08	970	0.05~0.08
25	1020	0.05~0.08	720	0.05~0.08

加工方式:	铣槽加工	
		$ae < 0.2D$ $ap < 1.5D$

被切削材质	合金钢、工具钢、不锈钢		淬火钢、钛合金、高温合金	
	38~45HRC		45~55HRC	
硬度				
刃径D	N(rev/min)	fz(mm)	N(rev/min)	fz(mm)
3	4300	0.015~0.03	4250	0.015~0.03
4	3680	0.015~0.03	3630	0.015~0.03
5	3520	0.03~0.04	3470	0.03~0.04
6	3150	0.03~0.04	3100	0.03~0.04
8	2480	0.04~0.06	2430	0.04~0.06
10	2080	0.04~0.06	2030	0.04~0.06
12	1820	0.05~0.08	1770	0.05~0.08
16	1290	0.05~0.08	1240	0.05~0.08
18	1110	0.05~0.08	1060	0.05~0.08
20	970	0.05~0.08	920	0.05~0.08
25	720	0.05~0.08	670	0.05~0.08

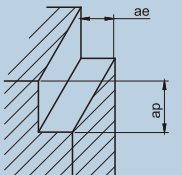
加工方式:	铣槽加工	
		$D < \phi 3: ae=D \quad ap \leq 0.2D$ $D \geq \phi 3: ae=D \quad ap \leq 0.5D$

- 说明:
1. 选用刚性好精度高的机床和夹头。
 2. 单边铣削时建议采用顺铣方法。
 3. 工件或机器有振动或异常声音发生时，请随加工条件更换切削条件。
 4. 干式切削时转速及进给速度建议使用正常切削条件的70%。
 5. 如采用加长刀具时，请正确降低转速及进给。
 6. 切削量少时可提高回转速度及进给速度。

整体硬质合金刀具切削参数

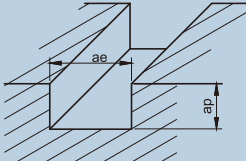
立铣刀

被切削材质	铝合金		铸铁	
硬度				
刃径D	N(rev/min)	fz(mm)	N(rev/min)	fz(mm)
3	8000	0.03~0.04	5000	0.02~0.03
4	7500	0.03~0.05	4500	0.02~0.03
5	7200	0.03~0.06	4000	0.04~0.05
6	7000	0.05~0.07	3800	0.04~0.05
8	6800	0.06~0.08	3500	0.04~0.06
10	6300	0.07~0.09	3200	0.04~0.06
12	6000	0.08~0.10	2800	0.05~0.07
16	5600	0.09~0.11	2300	0.05~0.07
18	5200	0.12~0.15	1800	0.05~0.07
20	5000	0.15~0.18	1500	0.05~0.08
25	4000	0.18~0.20	1270	0.07~0.09



ae < 0.2D ap < 1.5D

被切削材质	铝合金		铸铁	
硬度				
刃径D	N(rev/min)	fz(mm)	N(rev/min)	fz(mm)
3	8000	0.01~0.02	5000	0.01~0.02
4	7500	0.01~0.02	4500	0.01~0.02
5	7200	0.02~0.03	4000	0.02~0.03
6	7000	0.03~0.04	3800	0.02~0.03
8	6800	0.03~0.05	3500	0.03~0.03
10	6300	0.04~0.06	3200	0.04~0.05
12	6000	0.05~0.07	2800	0.05~0.06
16	5600	0.06~0.08	2300	0.05~0.06
18	5200	0.07~0.09	1800	0.06~0.07
20	5000	0.08~0.10	1500	0.06~0.07
25	4000	0.10~0.12	1270	0.06~0.07

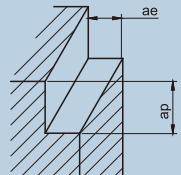


D < φ3: ae=D ap ≤ 0.2D
D ≥ φ3: ae=D ap ≤ 0.5D

整体硬质合金刀具切削参数

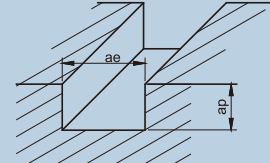
立铣刀

被切削材质	不锈钢		钛合金	
硬度	38-45HRC		38-45HRC	
刃径D	N(rev/min)	fz(mm)	N(rev/min)	fz(mm)
3	4200	0.015~0.03	4000	0.015~0.03
4	3180	0.015~0.03	2980	0.015~0.03
5	2550	0.015~0.03	2350	0.015~0.03
6	2120	0.015~0.03	1920	0.015~0.03
8	2380	0.03~0.06	2180	0.03~0.06
10	1910	0.03~0.06	1710	0.03~0.06
12	1600	0.03~0.06	1400	0.03~0.06
16	1200	0.03~0.06	1000	0.03~0.06
18	1100	0.03~0.06	900	0.03~0.06
20	1000	0.03~0.06	880	0.03~0.06
25	800	0.03~0.06	800	0.03~0.06



ae < 0.2D ap < 1.5D

被切削材质	不锈钢		钛合金	
硬度	38-45HRC		38-45HRC	
刃径D	N(rev/min)	fz(mm)	N(rev/min)	fz(mm)
3	4200	0.013~0.03	4000	0.01~0.03
4	3180	0.013~0.03	2980	0.01~0.03
5	2550	0.013~0.03	2350	0.01~0.03
6	2120	0.013~0.03	1920	0.01~0.03
8	2380	0.03~0.05	2180	0.03~0.05
10	1910	0.03~0.05	1710	0.03~0.05
12	1600	0.03~0.05	1400	0.03~0.05
16	1200	0.05~0.08	1000	0.05~0.08
18	1100	0.05~0.08	900	0.05~0.08
20	1000	0.05~0.08	880	0.05~0.08
25	800	0.05~0.10	800	0.05~0.10



D < φ3: ae=D ap ≤ 0.2D
D ≥ φ3: ae=D ap ≤ 0.5D

整体硬质合金刀具切削参数

Cutting parameters of solid carbide cutting tools

立铣刀 milling

被切削材质 Material to be cut	高温合金 High temperature alloy		淬硬钢 Hardened steel	
硬度 hardness	38 ~ 45HRC		55 ~ 62HRC	
刃径D Cutter diameter D	N(rev/min)	F(mm/rev)	N(rev/min)	F(mm/rev)
3	2120	0.015~0.035	6900	0.013~0.018
4	1990	0.015~0.035	5170	0.013~0.018
5	1590	0.015~0.035	4140	0.013~0.018
6	1590	0.015~0.035	3450	0.02~0.036
8	1190	0.025~0.04	2590	0.02~0.036
10	960	0.025~0.04	2070	0.02~0.036
12	790	0.025~0.04	1720	0.02~0.036
16	600	0.025~0.04	1480	0.02~0.036
18	530	0.025~0.04	1290	0.02~0.036
20	480	0.03~0.05	1030	0.05~0.08
25	380	0.03~0.06	830	0.05~0.09

加工方式: Processing method	<p>侧面铣削 Flank cutting</p> <p>$ae < 0.2D$ $ap < 1.5D$</p>			
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被切削材质 Material to be cut	高温合金 High temperature alloy		淬硬钢 Hardened steel	
硬度 hardness	38 ~ 45HRC		55 ~ 62HRC	
刃径D Cutter diameter D	N(rev/min)	F(mm/rev)	N(rev/min)	F(mm/rev)
3	2120	0.01~0.025	5310	0.005~0.008
4	1990	0.01~0.025	3980	0.005~0.008
5	1590	0.01~0.025	3680	0.005~0.008
6	1590	0.01~0.025	3180	0.005~0.008
8	1190	0.02~0.035	2650	0.012~0.032
10	960	0.02~0.035	1990	0.012~0.032
12	790	0.02~0.035	1590	0.012~0.032
16	600	0.02~0.035	1330	0.012~0.032
18	530	0.02~0.035	990	0.012~0.032
20	480	0.035~0.05	800	0.03~0.05
25	380	0.035~0.06	640	0.03~0.05

加工方式: Processing method	<p>铣槽加工 Groove milling</p> <p>$D < \phi 3: ae=D, ap \leq 0.2D$ $D \geq \phi 3: ae=D, ap \leq 0.5D$</p>			
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- 说明: 1.选用刚性好精度高的机床和夹头。
2.单边铣削时建议采用顺铣方法。
3.工件或机器有振动或异常声音发生时,请随加工条件更换切削条件。
4.干式切削时转速及进给速度建议使用正常切削条件的70%。
5.如采用加长刀具时,请正确降低转速。
6.切削量少时可提高回转速

- Explain: 1.Choose machine tool and clamp of good rigidity and high precision.
2.The Recommended method of Unilateral milling is climb milling.
3.When the workpieces or the machine has a vibration or abnormal sound, please change the cutting conditions according to the processing conditions.
4.70% of the normal cutting speed and feed rate is advised for dry cutting.
5.Using extended tool,please reduce the cutting speed and feed rate correctly.
6.The rotating speed and feed rate may be increased in the condition of a small cutting volume.

刀具应用知识

Tool application knowledge

铣刀加工异常原因及对策 (Troubleshooting in Milling)

情况 Trouble	原因 Occurences	对策 Countermeasures
崩刃 Chipping	进给量太大 Too high feed	降低进给量 Reduce feed
	逆铣 (向上切削) Up milling	顺铣 (向下切削) Change down milling
	切削刃太锋利 Sharp cutting edge	修磨切削刃-必要时倒角或圆角 Honing at the cutting edge- chanfering or rounding if needed
	震动 Chattering	向下调整主轴转速 Check spindle speed down
	刀具突出量太长 Too much overhang	将刀具突出量调整为最小 Adjust to minimize overhang
	铣刀未牢固夹紧 Unfixed chucking of End mill	调整夹具精度 Check the precision of chuck and collet
磨损 Wear	切削速度过高 High Cutting speed	降低切削速度 Decrease Cutting speed
	进给量太小 Low feed	增加进给量 Increase feed
	逆铣 (向上切削) Up milling	顺铣 (向下切削) Change down milling
刀具折断 Tool Breakage	材质硬度过高 High-hardened work piece	选用特殊镀膜的铣刀 Choosing special coating end mill
	切削量太大 Too much cutting force	减少切削量 Decrease cutting amount
	切削力过大 High cutting force	降低进给; 提高转速 Feed down; spindle speed up
表面粗糙度 Surface Roughness	刀具突出量太长 Too much overhang	将刀具突出量调整为最小 Adjust to minimize overhang
	震动 Chattering	改变切削条件 Change the cutting condition
	排屑不良 Generation of built-up edge	提升切削速度&进给率或顺铣 Increasing cutting speed & Feed rate or down milling
加工精度 Accuracy of finished work piece	高进给, 低切削速度 High feed, low speed	降低进给提高切削速度 Reduce feed & Increase speed
	刃数不够 Incorrect Unmbers of flute	更换多刃铣刀 Replace more flutes End mill
	刀具偏差 Deflection of Tool	使用大刃径和突出量减至最小 Using big diameter tool & Minimize the overhang

刀具应用知识

Tool application knowledge

铣削应用要点

(特殊刀具参见专门的说明。)

Key points of milling application

(Special cutting tools see the Corresponding description.)

刀具

- 为获得最佳刚性，应尽量选择直径最大、槽长最短和总长最短的立铣刀；
- 长刃铣刀不适用于型腔铣削、开槽或强力仿形—限定Rw为0.02D；
- 高性能刀具具有较短的加工时间，较长的使用寿命。

Cutting Tools

- An end milling cutter with the largest diameter, the shortest groove and total length should be selected as far as possible in order to get the best rigidity.
- Long edge milling cutter is not suitable for cavity milling、grooving or a heavy profile cutting—Rw is 0.02D；
- High performance cutting tools have a shorter processing time, longer service life.

刀柄

- 刀柄需要具有足够夹持力和足够小的回转跳动；
- 对于强力切削推荐使用短而粗的实体刀柄或者零长度的弹性夹头刀柄；
- 使用实体刀柄时，不推荐使用手动螺丝扳手。

Tool shank

- The tool shank should have enough clamping force and small rotating runout；
- For heavy cutting it is recommended to use a short and thick solid tool shank or zero length collet tool shank；
- When using the solid tool shank, a manual screw wrench is not recommended.

工件

- 牢固夹紧工件将会减少震颤和偏转。

Workpiece

- Firm grip will Reduce tremor and deflection.

机床

- 为保证刀柄跳动精确性并使刀具寿命达到最大，主轴必须处于最佳状态；
- 为实现推荐的速度和进给量，要求机床应具备充足的功率；
- 为防止工件或刀具的损伤，对于低功率机床应降低进给率。

Machine tool

- For a smallest diameter runout or tool shank and a maximum tool life, the spindle must be in the best condition；
- The machining equipment should have enough power to reach the recommended cutting speed and feed rate.
- The feed rate must be reduced for a low-power machining equipment to avoid the damage of cutting tools and working pieces.

冷却

- 利用喷气法或液体冷却液避免发生切屑“二次铣削”；
- 保持冷却液的清洁并具有适当的浓度；
- 一般建议：
 - 水溶性油或喷气法：工具钢、模具钢、碳钢或合金钢；
 - 水溶性油：不锈钢、钛、高温合金、有色金属。

Cooling

- Jet method or liquid coolant can avoid the chip to be cut once again.
- Keep the coolant clean and with proper concentration；

proposals:

- Water soluble oil or air jet method: tool steel, mould steel, carbon steel or alloy steel；
- Water soluble oil: stainless steel, titanium, high temperature alloy, nonferrous metals.

方法

- 建议使用顺铣；
- 留意编程细节、刀柄、跳动、平衡、夹具等。改善刀具性能和延长刀具寿命。

Methods

- Climb milling is recommended
- Pay attention to programming details, tool shanks, runout, balance, fixture etc. improve tool performance and prolong tool life.

刀具应用知识

Tool application knowledge

铣削应用要点

(特殊刀具参见专门的说明。)

d_1 =切削直径

l_2 =槽长

不同切削类型的速度和进给量由径向切削宽度 (Rw) 和轴向切削深度 (Ad) 确定。

对于锥形立铣刀, 其切削速度由接触工件的最大直径确定。

出现下列情况时必须减小切削速度和进给量:

- Rw 和 Ad 超出建议值;
- 使用长刃或者加长刀具;
- 使用长刀柄;
- 加工比推荐表中材料硬度大的工件时;

Key points of milling application

(Special tools see the Corresponding description.)

d_1 = Cutting diameter

l_2 = Groove length

The speed and feed rate of different cutting types are determined by the radial cutting width (Rw) and the axial cutting depth (Ad).

For tapered end mills, the cutting speed is determined by the maximum diameter in contact with the workpiece.

The cutting speed and feed rate must be reduced when the following conditions appear:

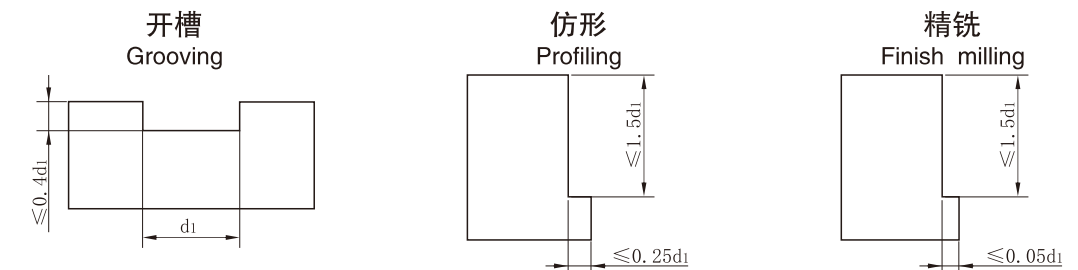
- Rw and Ad exceeded the recommended value;
- Use long cutting edge or lengthening cutting tool ;
- Use the long tool shank ;
- When the hardness of the material is more than the recommended value ;

通用刀具的切削类型

(特制刀具在没有专门限制时也可使用本参数)

Cutting types of universal cutting tools

(This parameter can also be used for a special cutting tool when there is no especial limitation)



进刀方式

Feed Mode

预钻孔进刀 Pre drill feed	螺旋进刀 Spiral feed	斜向进刀 Oblique feed	垂直进刀 Vertical feed
<p>大多数应用建议采用预钻孔进刀</p> <p>For most applications pre drill feed is recommended</p>	<p>螺旋进刀和斜向进刀作为备选方案, 下刀时使用开槽速度和25%至50%开槽进给量。通用刀具的进刀角为5°, 高性能刀具的进刀角为$5^\circ \sim 10^\circ$</p> <p>The spiral feed and oblique feed may be as an alternative, grooving speed and 25% to 50% feed volume can be used at the beginning. 5 degree feed angle can be used for universal cutting tools and 5 to 10 degree feed angle for high performance cutting tools.</p>		<p>仅在切削有色金属和短屑材料时才能选择垂直进刀方式, 下刀时使用开槽速度和25%开槽进给量</p> <p>Vertical feed is only used for cutting non-ferrous metal materials and short chip materials, at the beginning, grooving speed and 25% feed can be used.</p>

刀具应用知识

Tool application knowledge

钻头加工异常原因及对策 Troubleshooting in Drilling

情况 Trouble	原因 Occurences	对策 Countermeasures
钻孔成椭圆 Deformation of hole	形成螺纹刮痕 Becoming thread scratch in the hole	1、使用适合的钻套 Check for Suitable Guide-Bush 2、减少间隙角度 Reduce relief angle 3、检查钻头尖端角度及两边长度是否对称 Check for proper point angle & length of lips
	产生颤动、振动 Generation of chattering & vibration	1、减少间隙角度 Reduce relief angle 2、腹板削薄 Grind web thinning 3、缩短钻头长度，增加刚性 Shortening length of drill 4、检查钻头角度研磨是否正确 Check for proper drill 5、检查夹具与钻头接触情形 Check for chuck & collet & socket 6、预先钻好中心孔 Pre-centering 7、提高工作机械的刚性 Inspect rigidity of the Drill Machine
	切屑排出不易 Poor chip evacuation	1、加大每周进给量 Increase Feed 2、选择正确螺旋角 Check for proper helix angle 3、加大槽宽比 Check for proper chip space 4、采用间歇式进给 Using Step feed
钻孔倾斜 Deflection of hole	刚切入时不良 Drill won't enter work	1、使用适合的钻套 Check for Suitable Guide-Bush 2、减少切入时的每周进给量 Reduce Feed 3、预先钻好中心孔 Pre-centering
	钻头刚性不良 Insufficient rigidity of drill	缩短钻头长度，增加刚性 Shortening length of drill
	钻头角度不对 Unsuitable angle	再研磨 Regrinding
外角磨损 Excessive wear of cutting edge	切削速度太快 Cutting speed too high	1、降低切削速度 Reduce cutting speed 2、加大间隙角 Check Lip Relief 3、充分供给切削液 Increase Coolant Flow 4、提高钻头的材质 Check for proper material

刀具应用知识

Tool application knowledge

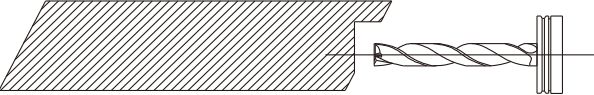
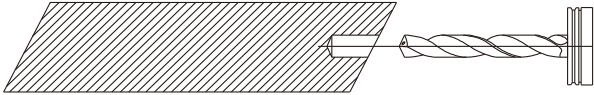
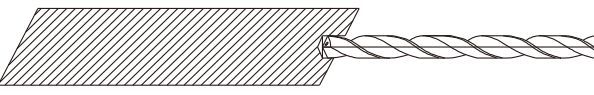
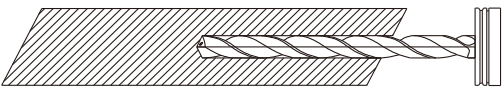
钻头加工异常原因及对策 Troubleshooting in Drilling

情况 Trouble	原因 Occurences	对策 Countermeasures
孔壁粗糙 Poor surface conditions of work piece	刀刃磨损太大 Excessive wear of cutting edge	再研磨 Regrinding
	进刀速度太大 Too much Feed	降低进刀速度 Decrease feed
	切削阻塞 Chips clog in hole	增加退刀次数 Add number of exit
切削中钻头折断 Breakage	进给量太大 Feed too heavy	减少每道进给量 Decrease feed rate
	切削阻塞 Chips clog in hole	1、加大槽宽比 Check for proper chip space 2、选择合适的螺旋角度 Check for proper helix angle
	钻头刚性不足 Insufficient rigidity of drill	1、减少每周进给量 Reduce feed 2、缩短钻头长度。增加刚性 Shortening length of drill 3、腹板厚度加大 Increasing Web thickness
切削刃崩刃 Chipping	进给速度太快 Feed speed too high	1、降低贯穿时的每周进给量 Reduce feed while throughout drilling 2、工作保持固定 Check Set Up Rigidity 3、提高工作机械的刚性 Inspect Drill Machine
	切刃强度不足 Cutting edge strength	减少每周进给量 Decrease feed rate
	使用在扩孔作业时 During oversize operation	1、减少间隙角度 Reduce Lip Relief Angle 2、降低贯空时的每周进给量 Reduce feed in drilling 3、工作保持固定 Check Set Up Rigidity
孔径超差 Hole oversize	尖端角度未对称或刃大小不一 Point angle is not properly, Large chip of one flute; small chip of other flute.	1、再研磨 Regrinding 2、腹板削薄 Thin web 3、减少尖端角度 Properly grind point angle 4、使用钻套 Guide-bush

刀具应用知识

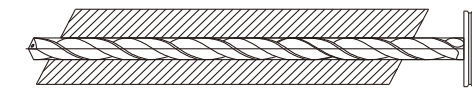
Tool application knowledge

包括断续的加工情况(加工部位为倾斜面或异形时。钻通部位为倾斜面或异形时)。
Interrupted machining(irregular/angled hole entrance or exit)

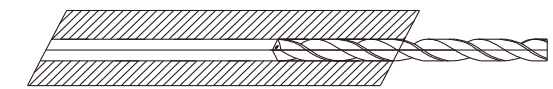
<p>1、铤孔加工 Spotface</p>	<p>2、导孔加工 Work a pilot hole</p>
 <p>1、用立铣刀或能进行铤孔加工的钻头把倾斜面加工成平坦面。此时的铤孔直径为长钻头切削刃直径±0.1mm的范围内。 Machine a flat using an end mill or drill. The diameter of the end mill is as same as the diameter of the deep hole drill</p>	 <p>1、导孔加工用钻头的顶角角度需确保不小于长钻头的顶角140°。 The top angle of pilot drill must be bigger than the top angle the deep hole drill.</p> <p>2、确保良好的导孔精度(圆度)。 Ensure the accuracy of the pilot hole(roundness).</p> <p>3、孔深1D左右即可。 (请根据长钻头的长度调整导孔深度。) The depth of the pilot hole is about 1D. (Please adjust the depth of the pilot hole according the length of the deep hole drill)</p>
<p>3、深孔加工 (插进导孔内) Deep hole working (insert into the pilot hole)</p>	<p>4、深孔加工 (加工开始、钻通前) Deep hole working (start and through)</p>
 <p>1、请在低转速条件下插进导孔内。 (切削速度20~30m/min、进给量0.2~0.3mm/rev左右) Insert the deep hole drill into the pilot hole in the condition of the low speed. (20~30m/min, feed rate 0.2~0.3mm/rev)</p> <p>2、插至距导孔底部1~3mm左右的位置。 (确保切削刃肩部全部插入) The distance between the hole bottom and the hole is 1~3mm. (make sure all the point of the drill is in the pilot hole)</p>	 <p>1、开始旋转、进给加工。 (非步进加工) Start rotating, feed. (not step by step)</p> <p>2、钻通前用通常的进给速度。 Using the normal feed rate before drilling through.</p>

5、深孔加工 (钻通时断续切削)
Machining deep hole(interrupted cutting at drilling through)

6、深孔加工 (退回)
Deep hole working(move back)



- 1、钻通时的断续切削易损伤切削刃。
Interrupted cutting will cause the damage of cutting edges easily at drilling through.
- 2、钻通时进给量推荐0.05~0.1mm/rev。
The recommended feed rate is 0.05~0.1mm/rev at drilling through.



- 1、将钻头以3000mm/min的进给速度退回到开始加工的位置。
Moving the drill back to the initial working position with the feed rate 3000mm/min.
- 2、钻通后请降低转速。
(切削速度20~30m/min左右)
Reducing the cutting speed after drilling through.
(cutting speed 20~30m/min)

刀具应用知识

Tool application knowledge

钻头装夹 Drill clamping	确定装夹钻头长度的方法 The method to determining clamping length of the drill	安装注意事项 Notice of setup	
使用推力轴承型的弹簧夹头可确保夹紧 Using thrust bearing collect chucks can ensure clamping	圈中的A尺寸要确保D1X1.5以上 The dimension "A" in the drawing should be longer than D1 x 1.5	不能把钻头的沟槽部位夹住 De not clamp the flute	跳动应在0.03mm以内。 Keep run out < 0.03mm

供液方法 The method of coolant feed	切削液的管理 Coolant administration	阶梯孔钻削 Drill the step hole	将钻通时出现毛刺、塌陷 Burr and chips on
<p>主轴供应型 旋转供液型 供液 供液</p> <p>Coolant feed from spindle Rotating coolant feed</p>	<p>1) 供液系统必须安装切削液过滤网。细小的切屑颗粒等会堵塞冷却孔。特别是使用小直径钻头，应尽量选用细目滤网。</p> <p>Coolant supply system must contain filter screen, because the small chip will block up cooling hole. Especially choose the fine mesh filter screen should be chosen as far as possible for using the small drill.</p> <p>2) 切削液用久后，液中的细小杂物会附在冷却孔内，导致供液不畅。应及早更换。</p> <p>After long use, the oil should be changed early, because the small chip could block up the cooling hole.</p>		
<p>切削液工作压力 0.5MPa~7MPa</p> <p>Coolant working pressure 0.5MPa~7MPa</p>		<p>1、可分两个工序钻削。 It could be drilled by two process steps.</p> <p>2、先钻削大直径部分。 Drill the bigger hole section first.</p>	<p>1、将钻通时应降低进给量。 Reduce the feed rate on</p> <p>2、出口处加工成倒角。 Chamfer the exit of the hole</p> <p>3、改变钻头顶角。 Change the top angle of the drill</p>

刀具应用知识

Tool application knowledge

加工部位为平面的加工(加工盲孔时)

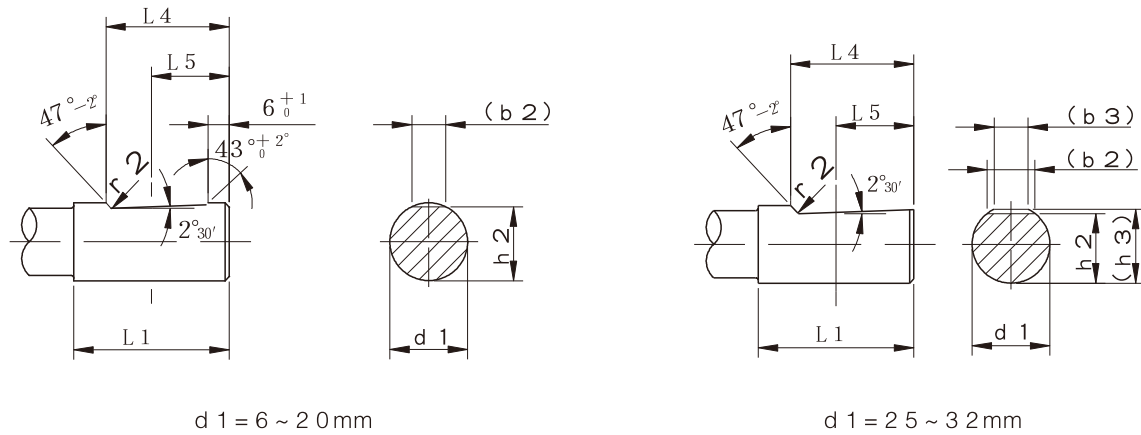
The section to be machined is flat (by working a blind hole)

1、导孔加工 work a pilot hole	2、深孔加工 (插进导孔内) Deep hole working (insert into the pilot hole)
<p>1、导孔加工用钻头的顶角角度需确保不小于长钻头的顶角140°。 The top angle of pilot drill must be bigger than the top angle the deep hole drill.</p> <p>2、确保良好的导孔精度(圆度)。 Ensure the accuracy of the pilot hole(roundness).</p> <p>3、孔深1D左右即可。 (请根据长钻头的长度调整导孔深度。) The depth of the pilot hole is about 1D. (Please adjust the depth of the pilot hole according the length of the deep hole drill)</p>	<p>1、请在低转速条件下插进导孔内。 (切削速度20~30m/min、进给量0.2~0.3mm/rev左右) Insert the deep hole drill into the pilot hole in the condition of the low speed. (20~30m/min, feed rate 0.2~0.3mm/rev)</p> <p>2、插至距孔底部1~3mm左右的位置。 (确保切削刃肩部全部插入) The distance between the hole bottom and the hole is 1~3mm. (make sure all the point of the drill is in the pilot hole)</p>
3、深孔加工 (加工开始、结束) Deep hole working (start and finish)	4、深孔加工 (退回) Deep hole working(move back)
<p>1、开始旋转、进给加工 (非步进加工) Start rotating, feed(not step by step)</p>	<p>1、加工结束后，在距孔底1~2mm的位置降低转速。 (切削速度20~30m/min左右) Reducing the speed after drilling when the deep hole drill is at the position of 1~2mm away from the bottom of the hole. (20~30m/min, feed rate)</p> <p>2、将钻头以3000mm/min的进给速度退回到开始加工的位置。 Moving the drill back to the initial working position with the feed rate 3000mm/min.</p> <p>3、以与插进导孔时同样的条件退出。 Moving the drill back in the same condition as that for inserting it into the pilot hole.</p>

刀具柄部类型及标准

Types and standards of tool shank

DIN6535-HE

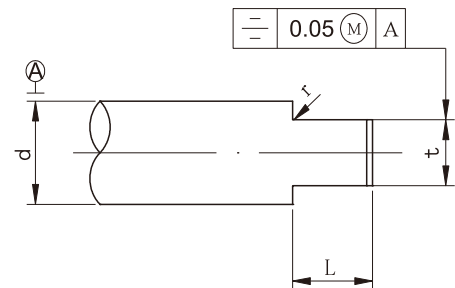


d 1 = 6 ~ 20 mm

d 1 = 2.5 ~ 3.2 mm

d1	(b2)	(b3)	(h2)	(h3)	L1	L4	L5	r2
6.0	4.3		5.1		36.0	25.0	18.0	1.2
8.0	5.5		6.9		40.0	28.0	20.0	
10.0	7.1		8.5		45.0	33.0	22.5	
12.0	8.2		10.4		48.0	36.0	24.0	
14.0	8.1		12.7		50.0	38.0	25.0	
16.0	10.1		14.2		56.0	44.0	32.0	
18.0	10.8		16.2		60.0	48.0	35.0	1.6
20.0	11.4	9.3	18.2	24.1				
25.0	13.6	9.3	23.0	31.2				
32.0	15.5	9.9	30.0	31.2				

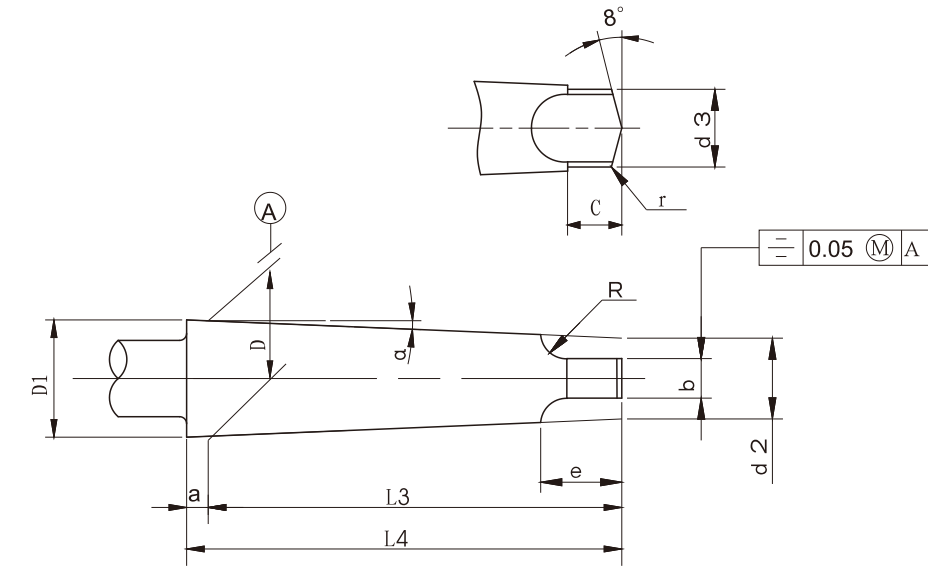
扁尾: Flat tail



d		t		L	r _{max}
大于 GT/bigger than	至 to	基本 尺寸 Basic dimension	偏差 Deviation		
3	3.75	2.12	0	6.0	0.2
3.75	4.75	2.65	-0.10	7.0	0.2
4.75	6	3.35	0	8.0	0.2
6	7.5	4.25	-0.12	9.0	0.3
7.5	9.5	5.3	0	10.0	0.3
9.5	11.8	6.7	0	11.5	0.4
11.8	15	8.5	-0.15	13.0	0.4
15	19	10.6	0	15.0	0.4
19	23.6	13.2	-0.18	17.0	0.5

带扁尾的莫氏工具圆锥的尺寸和极限偏差

Size and limit deviations of Morse's cone with a flat tail



莫氏工具圆锥号 Morse taper tool	MT0	MT1	MT2	MT3	MT4	MT5
锥度 Nominal dimension	1: 19.212	1: 20.047	1: 20.020	1: 19.922	1: 19.254	1: 19.002
Taper Limit deviation	+0-0005	+0-0004	+0-0004	+0-0003	+0-0003	+0-0002
2α Nominal dimension	2° 58' 54"	2° 51' 26"	2° 51' 41"	2° 52' 32"	2° 58' 31"	3° 00' 53"
D Nominal dimension	9-045	12-065	17-78	23-825	31-267	44-399
a Nominal dimension	3	3-5	5	5	6-5	6-5
D ₁ ≈ Nominal dimension	9-2	12-2	18	24-1	31-6	44-7
d ₂ ≈ Nominal dimension	6-1	9	14	19-1	25-2	36-5
d _{3max} Nominal dimension	6	8-7	13-5	18-5	24-5	35-7
L ₃	公称尺寸 Nominal dimension	56-5	62	75	94	117-5
	极限偏差 Limit deviation	+0-4	+0-5	+0-5	+0-6	+0-7
L _{4max}	公称尺寸 Nominal dimension	59-5	65-5	80	99	124
	极限偏差 Limit deviation	-1-2	-1-4	-1-6	-1-8	-2-0
b	公称尺寸 Nominal dimension	3-9	5-2	6-3	7-9	11-9
	极限偏差 Limit deviation	-0-18	-0-18	-0-22	-0-22	-0-27
C _{max}	公称尺寸 Nominal dimension	6-5	8-5	10	13	16
e _{max}	公称尺寸 Nominal dimension	10-5	13-5	16	20	24
R _{max}	公称尺寸 Nominal dimension	4	5	6	7	8
r	公称尺寸 Nominal dimension	1	1-2	1-6	2	2-5