






Make it Simple

TOTIME

Boring | Gun Drill | Tap



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A

○ BORING TOOLS

B

○ TOOL SYSTEM

C

○ ACCESSORIES



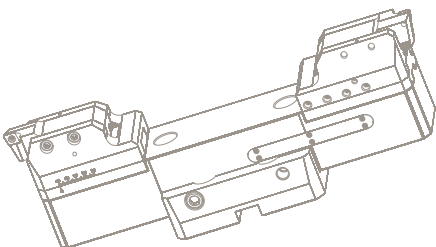
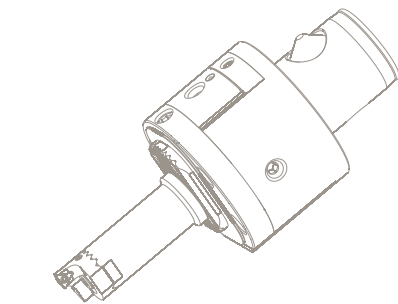
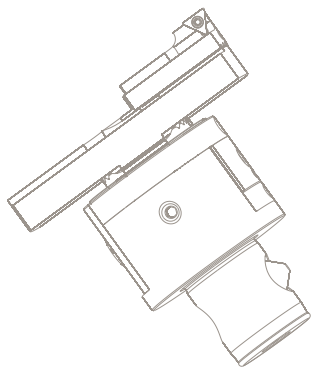
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BORING TOOLS

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TOOL SYSTEM

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A



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MB Micro-adjustable Fine Boring Unit MB微调精镗单元	A57
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A72

A 镗孔刀具 Boring Tools



A 镗孔刀具 Boring Tools

孔加工切削方案和镗刀选择

φ 3- φ 1000内孔粗加工或精加工刀具选择 internal hole roughing or fine tool selection

Hole making solution and boring tool selection

TMG21系列



A16

SMP小孔径微调精镗刀
镗孔范围3-88mm
SMP Small Micro-adjustable
Fine Boring Tools
Boring Range3-88mm



A7

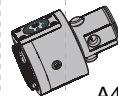
HBA双刃粗镗刀
镗孔范围19.8-224mm
HBA Double Edge Rough
Boring Tools
Boring Range19.8-224mm



A23

HBM微调精镗刀
镗孔范围20-200mm
HBM Micro-adjustable
Fine Boring Tools
Boring Range20-200mm

KB系列



A46

SMP小孔径微调精镗刀
镗孔范围3-88mm
SMP Small Micro-adjustable
Fine Boring Tools
Boring Range3-88mm



A43

HBA双刃粗镗刀
镗孔范围19.8-224mm
HBA Double Edge Rough
Boring Tools
Boring Range19.8-224mm



A47

HBM微调精镗刀
镗孔范围20-200mm
HBM Micro-adjustable
Fine Boring Tools
Boring Range20-200mm



A11

HBH大直径粗镗刀
镗孔范围150-1060mm
HBH Large Diameter Rough Boring Tools
Boring Range150-1060mm



A26

HBH大直径微调精镗刀
镗孔范围150-1060mm
HBH Large Diameter Fine Boring Tools
Boring Range150-1060mm



A44



A48

镗削单元

非标组合镗刀的必备选择 Essential choice for Non-standard boring tools combination

Boring Unit



A66

标准刀夹
最小镗孔直径20mm
Standard Tool Holder
Minimum boring diameter20mm



A63

MAC微调小刀夹
最小镗孔直径28mm
MAC Micro-adjustable Cartridge
Minimum boring diameter28mm



A58

MB微调精镗单元
最小镗孔直径25.7mm
MB Micro-adjustable Fine Boring Unit
Minimum boring diameter25.7mm

0 25 50 150 200 250 300 500 550 600 900 1000

特殊定制 直径 mm

A 镗孔刀具 Boring Tools

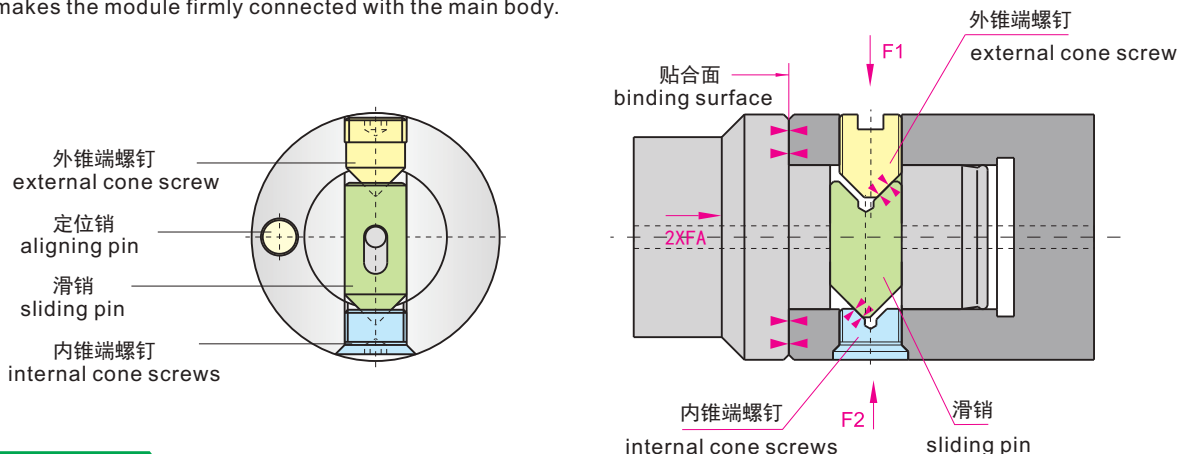
TMG21模块式镗刀系统-自由组合成最适合的镗削刀具 TMG21 Modular Boring System

高精度、高刚性、高灵活性-镗削刀具连接方式

High precision, high rigidity, high flexibility - boring tool connection

高刚性 High rigidity

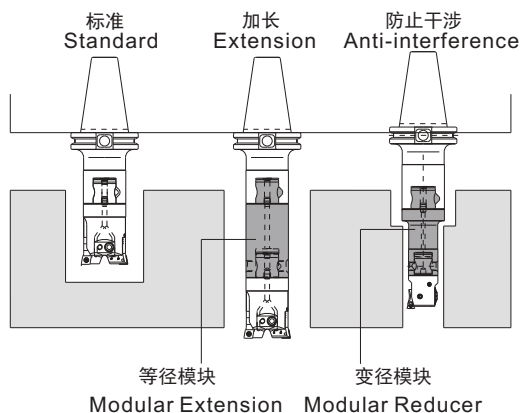
内锥端螺钉、外锥端螺钉和滑销的锥形楔块作用，使模块与主体紧固连接。可以进行粗镗等高扭矩加工。
Conical wedge action of internal cone screws, external cone screw and the sliding pin, makes the module firmly connected with the main body.



高灵活性 High flexibility

灵活设定加工直径和有效加工深度
针对不同的工件形状，可以使用等径中间模块加长或利用变径中间模块减小加工直径，保证刚性同时防止刀具干涉。

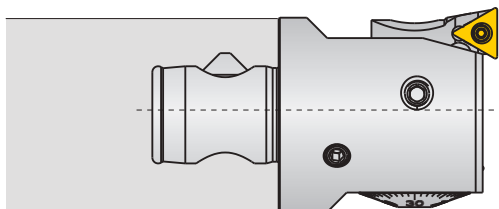
Flexible setting of processing diameter and effective processing depth
For different workpiece shapes, the equal-diameter intermediate module can be used to lengthen or the variable-diameter intermediate module can be used to reduce the machining diameter to ensure rigidity and prevent tool interference.



高精度 High precision

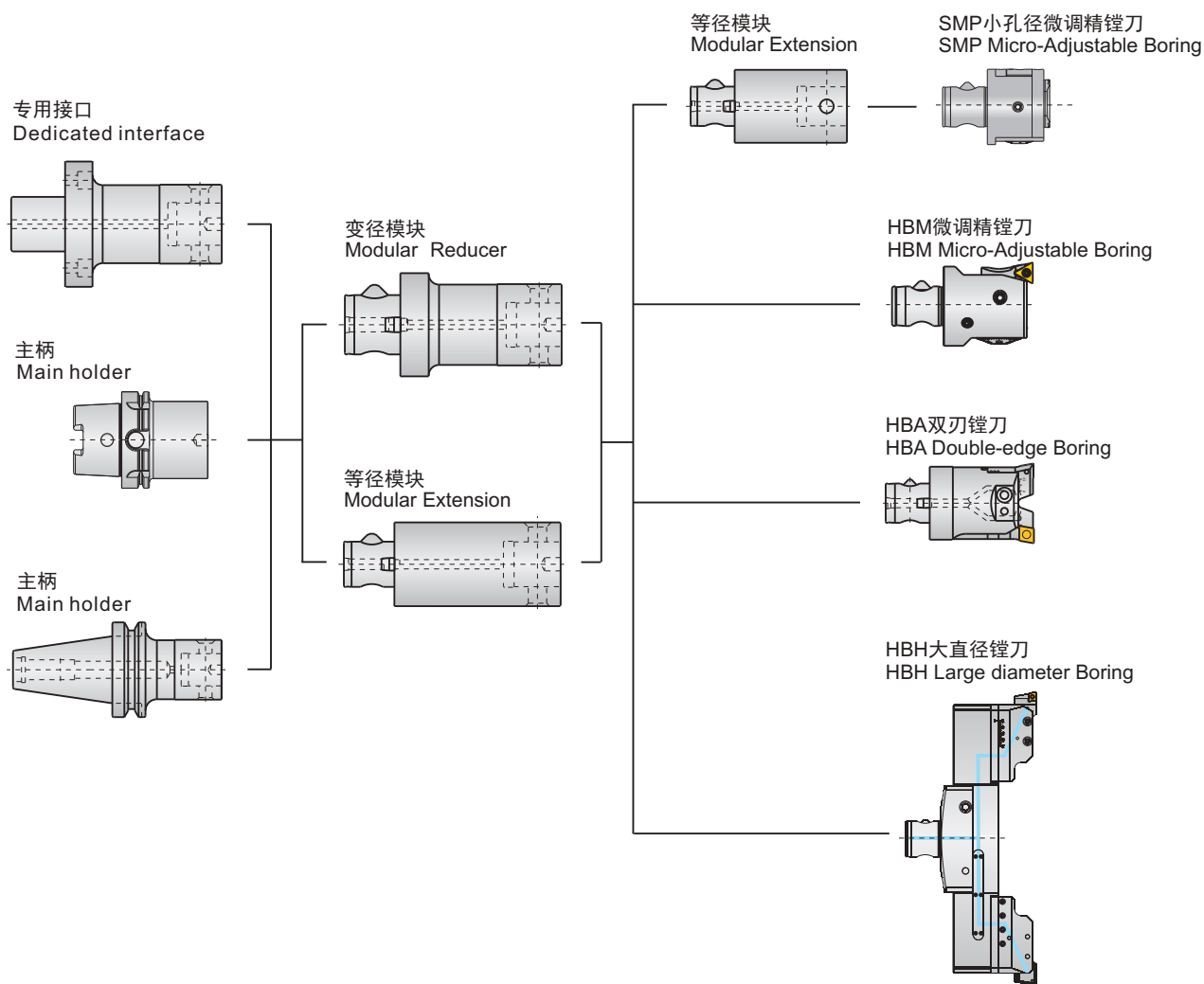
重复连接精度2-3um,同一镗刀工作模块多次重复装、拆。刀尖位置误差不超过3um，从而保证获得稳定的加工精度。

The repeated connection accuracy is 2-3um, and the same boring tool working module is repeatedly assembled and disassembled. The position error of the tool tip does not exceed 3um, to ensure stable machining accuracy.



A 镗孔刀具 Boring Tools

TMG21 模块式镗刀系统-自由组合成最适合的镗削刀具 TMG21 Modular Boring System



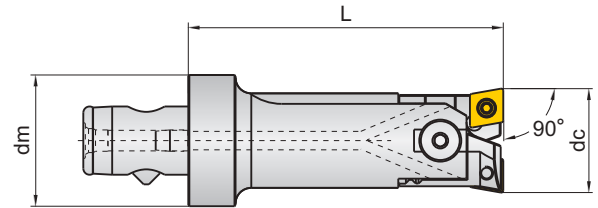
A 镗孔刀具 Boring Tools

HBA双刃粗镗刀-CC..

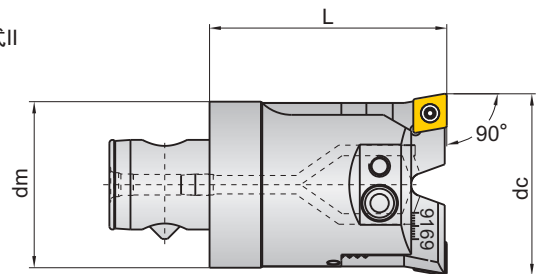
HBA Double Edge Rough Boring Tools-CC..



型式I



型式II



刀片 Inserts	螺钉 Screw	扳手 Wrench
CC..060204	SIC025065	370 T7x35
CC..09T308	SIC035080	365 T15x45
CC..120408	SID040110	365 T15x45



型号 Type	库存 Stock	柄部型式 Module size	尺寸(mm) Dimension			镗刀头 Boring head	阶梯镗刀头 Boring head	刀片 Inserts	型式 Model	重量 (kg)
			dc	dm	L					
21CD25-HBA20-60	●	21CD25	19.8-27	25	60	HBA20	-	CC..060204	I	0.14
21CD25-HBA27-50	●	21CD25	27-36	25	50	HBA27	-	CC..060204	II	0.18
21CD32-HBA35-60	●	21CD32	35-45	32	60	HBA35	-	CC..060204	II	0.34
21CD40-HBA44-70	●	21CD40	44-56	40	70	HBA44	HBA44-S*	CC..09T308	II	0.60
21CD50-HBA55-80	●	21CD50	55-71	50	80	HBA55	HBA55-S*	CC..120408	II	1.06
21CD63-HBA69-90	●	21CD63	69-91	63	90	HBA69	HBA69-S*	CC..120408	II	1.93
21CD63-HBA90-100	●	21CD63	90-122	63	100	HBA90	HBA90-S*	CC..120408	II	2.66
21CD80-HBA90-100	●	21CD80	90-122	80	100	HBA90	HBA90-S*	CC..120408	II	3.49
21CD63-HBA120-100D	●	21CD63	120-162	63	100	HBA120D	HBA120D-S*	CC..120408	II	3.76
21CD80-HBA120-100D	●	21CD80	120-162	80	100	HBA120D	HBA120D-S*	CC..120408	II	4.47
21CD100-HBA160-100D	●	21CD100	160-224	100	100	HBA160D	HBA160D-S*	CC..120408	II	7.32

带*配件为阶梯镗选用镗头或刀夹，需单独订购
The * are the boring heads or insert holders required forstep boring, and need to be ordered separately.
使用方法详见产品使用说明书。
Please refer to the instruction manual for use.

● 常备库存
Unallocated stock

○ 可备库存
Available stock

○ 订单生产
Order production

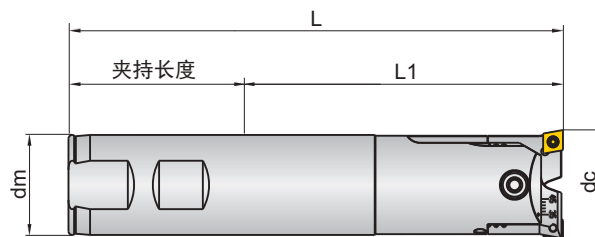
A 镗孔刀具 Boring Tools

HBA双刃粗镗刀

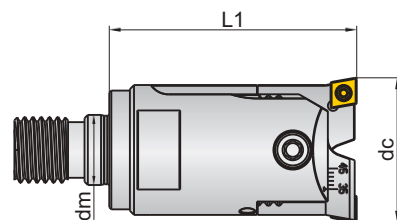
HBA Double Edge Rough Boring Tools



型式I



型式II



刀片 Inserts	螺钉 Screw	扳手 Wrench
CC..060204	SIC025065	370 T7x35

型号 Type	库存 Stock	柄部型式 Holder size	尺寸(mm) Dimension				镗刀头 Boring head	刀片 Inserts	型式 Model	重量 (kg)
			dc	dm	L1	L				
B20-HBA20-80	●	B20	19.8-27	20	80	130	HBA20	CC..060204	I	0.28
B25-HBA27-100	●	B25	27-36	25	100	156	HBA27	CC..060204	I	0.56
B32-HBA35-125	●	B32	35-45	32	125	185	HBA35	CC..060204	I	1.09
DM10-HBA20-60	●	DM10	19.8-27	10.5	60	-	HBA20	CC..060204	II	0.11
DM12-HBA27-50	●	DM12	27-36	12.5	50	-	HBA27	CC..060204	II	0.16
DM16-HBA35-60	●	DM16	35-45	17	60	-	HBA35	CC..060204	II	0.32

→ 使用方法详见产品使用说明书。
Please refer to the instruction manual for use.

● 常备库存
Unallocated stock

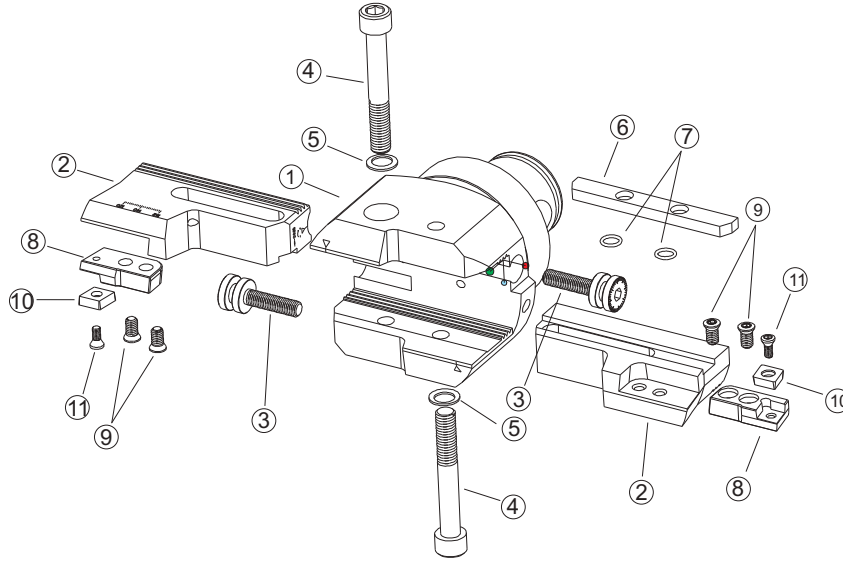
◐ 可备库存
Available stock

○ 订单生产
Order production

A 镗孔刀具 Boring Tools

HBA双刃粗镗刀

HBA Double Edge Rough Boring Tools



型号 Type	②镗刀头 Boring head	③微调螺钉 Adjusting screw	④压紧螺钉 Clamping screw	⑤弹簧垫圈 Spring washer	⑥垫块 Location block
....HBA20....	HBA20	SSC030050	SIC040175AB	-	HB20-DK
....HBA27....	HBA27	HBMS-0	SCC040200	TD04	-
....HBA35....	HBA35	HBMS-1	SCC050250	TD05	-
....HBA44....	HBA44	HBMS-1	SCC060320	TD06	-
....HBA55....	HBA55	HBMS-2	SCC080400	TD08	-
....HBA69....	HBA69	HBMS-2	SCC080450	TD08	HB69-DK
....HBA90....	HBA90	HBMS-3	SCC080600	TD08	HB90-DK
....HBA120....	HB120D	HBMS-3	SCC100650	TD10	HB120-DK
....HBA160....	HB160D	HBMS-3	SCC120750	TD12	HB160-DK

型号 Type	⑦垫圈 Sealer	⑧小刀夹 Cartridge	⑨压紧螺钉 Clamping screw	⑩刀片 Insert	⑪刀片螺钉 Insert screw
....HBA20....	-	-	-	CC..060204	SIC025065
....HBA27....	-	-	-	CC..060204	SIC025065
....HBA35....	-	-	-	CC..060204	SIC025065
....HBA44....	-	-	-	CC..09T308	SIC035080
....HBA55....	-	-	-	CC..120408	SID040110
....HBA69....	HB69/90-DR	-	-	CC..120408	SID040110
....HBA90....	HB69/90-DR	-	-	CC..120408	SID040110
....HBA120....	HB120-DR	SCFCR12CA-HBA	SCC060100	CC..120408	SID040110
....HBA160....	HB160-DR	SCFCR12CA-HBA	SCC060100	CC..120408	SID040110

→ 使用方法详见产品使用说明书。
Please refer to the instruction manual for use.

A 镗孔刀具 Boring Tools

HBA双刃粗镗刀

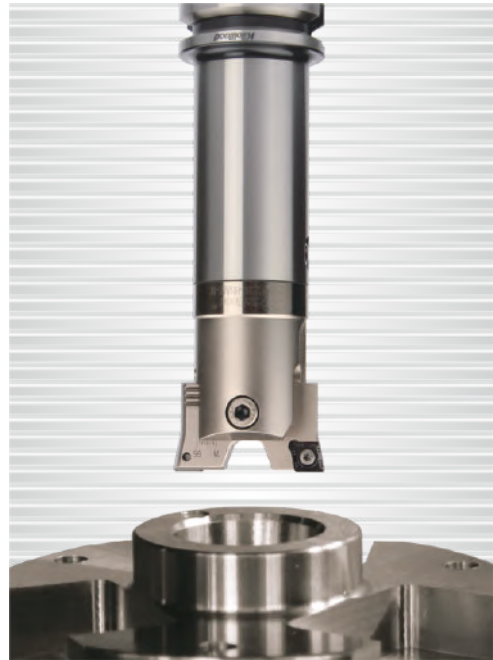
HBA Double Edge Rough Boring Tools

加工示例

Processing direction

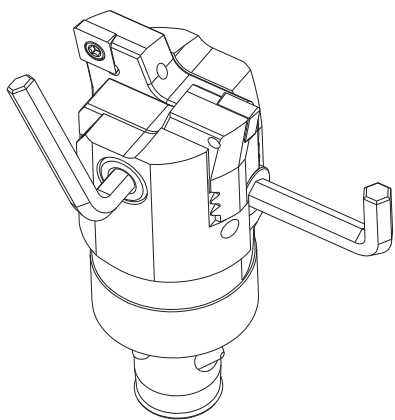
使用刀具 Tool	21CD63-HBA69-90
使用刀片 Insert	CCMT120408-UM CPT25
加工材料 Workpiece	45#
材料硬度 Material hardness	300HB
加工深度 Processing depth	60mm
镗孔直径 Boring diameter	70mm
机床接口 Machine interface	BT40
切削液 Cutting fluid	水溶液

切削速度 V_c	154 m/min
主轴转速 n	700 r/min
进给速度 F	210 mm/min
每齿进给 F_z	0.15 mm/z
切削宽度 ap	5 mm



HBA双刃粗镗刀使用说明

Instructions for HBA double edge rough boring cutter



- 安装前须将各配合面（包括：主体齿纹槽，主体调节螺钉孔及接口部分）清理干净，不得有粉尘、铁屑等残留。否则可能会导致刀具不能有效夹持，调节不够平滑，甚至划伤配合面。
- 刀具使用前应确保已充分夹紧，各配合面贴合紧密无间隙（可采用塞尺、透光等方法检验）必要时可使用加力杆。
- 调节尺寸前应有必要的预紧力，刀头滑动松紧适度，以避免夹紧后尺寸发生变化。
- 刀具预调时应保证有较好的径向跳动，以获得预期的表面粗糙度（一般应控制在0.05mm内）。
- 为获得理想的轴向跳动，所有刀头均需成对更换。
- 立式加工中心加工较深孔时建议采用高压内冷，以获得较好的排屑效果。推荐使用Kilowood品牌刀片，获得更佳切削效果。

Before installation, all parts (including: main body tooth groove, main body adjusting screw hole and interface part) should be cleaned up, and there should be no dust, iron filings or other residues. Otherwise, the tool may not be clamped effectively, the adjustment may not be smooth enough, and even the mating surface may be scratched.

Before the tool is used, it should be fully tightened, and the mating surfaces are tightly fitted without gaps (can be checked by feeler gauge, light transmission, etc.) and a booster rod can be used if necessary.

Before adjusting the size, there should be the necessary pre-tightening force, and the sliding of the cutter head should be moderately tight, to avoid the size change after clamping.

When the tool is pre-adjusted, a good radial runout should be ensured to obtain the expected surface roughness (generally should be controlled within 0.05mm)

It is recommended to use high-pressure internal cooling when machining deep holes on vertical machining centers to obtain better chip removal effects.

It is recommended to use Kilowood inserts for better cutting effect.

A 镗孔刀具 Boring Tools

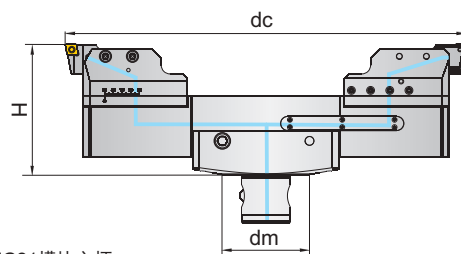
HBH大直径粗镗刀-CC..

HBH Large Diameter Rough Boring Tools-CC..

Internal cooling



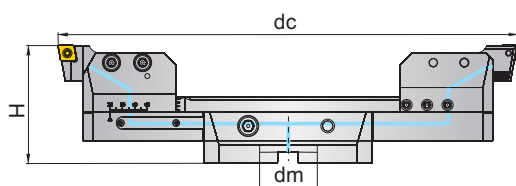
型式I



适用刀柄: TMG21模块主柄
Matching Tool Holder: TMG21 Module Tool Holder.



型式II



适用刀柄: 面铣刀刀柄
Matching Tool Holder: Shell Mill Tool Holder.



刀片 Inserts	螺钉 Screw	扳手 Wrench
CC..120408	SID040110	365 T15x45

型号 Type	库存 Stock	尺寸(mm) Dimension			刀片 Inserts	型式 Model	重量 (kg)
		dc	dm	H			
21CD63-HBH150C	●	φ 150- φ 215	63	85	CC..120408	I	3.70
S32-HBH150C	●	φ 150- φ 215	32	110	CC..120408	II	4.44
21CD63-HBH215C	●	φ 215- φ 280	63	85	CC..120408	I	4.29
S32-HBH215C	●	φ 215- φ 280	32	110	CC..120408	II	5.03
21CD80-HBH280C	●	φ 280- φ 370	80	95	CC..120408	I	7.58
T40-HBH280C	●	φ 280- φ 370	40	95	CC..120408	II	7.49
21CD80-HBH370C	●	φ 370- φ 460	80	95	CC..120408	I	8.44
T40-HBH370C	●	φ 370- φ 460	40	95	CC..120408	II	8.35
21CD100-HBH460ALC	●	φ 460- φ 580	100	150	CC..120408	I	17.54
T60-HBH460ALC	●	φ 460- φ 580	60	150	CC..120408	II	17.13
21CD100-HBH580ALC	○	φ 580- φ 700	100	155	CC..120408	I	19.77
T60-HBH580ALC	○	φ 580- φ 700	60	155	CC..120408	II	18.76
21CD100-HBH700ALC	○	φ 700- φ 820	100	160	CC..120408	I	22.22
T60-HBH700ALC	○	φ 700- φ 820	60	160	CC..120408	II	21.81
21CD100-HBH820ALC	○	φ 820- φ 940	100	165	CC..120408	I	25.72
T60-HBH820ALC	○	φ 820- φ 940	60	165	CC..120408	II	25.31
21CD100-HBH940ALC	○	φ 940- φ 1060	100	170	CC..120408	I	27.77
T60-HBH940ALC	○	φ 940- φ 1060	60	170	CC..120408	II	27.36

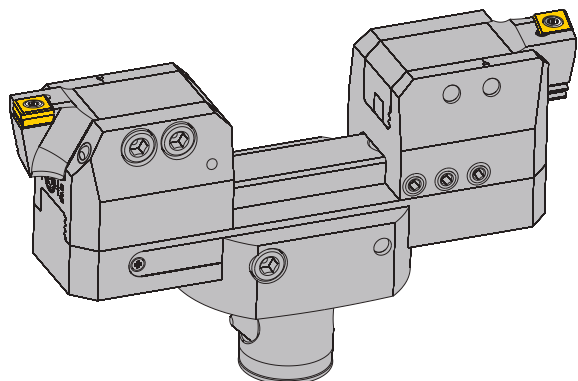
→ 使用方法详见产品使用说明书。
Please refer to the instruction manual for use.
→ 可选阶梯镗用镗头, 订货型号: HBH-..R-S*
Optional boring head for step boring, order model: HBH-..R-S*.

● 常备库存 Unallocated stock ○ 可备库存 Available stock ○ 订单生产 Order production

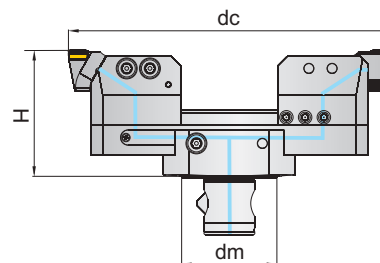
A 镗孔刀具 Boring Tools

HBH大直径粗镗刀 (立装刀片)-CNHQ
HBH Large Diameter Rough Boring Tools-CNHQ

Internal cooling



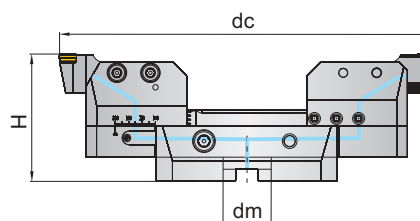
型式I



适用刀柄: TMG21模块主柄
Matching Tool Holder: TMG21 Module Tool Holder.



型式II



适用刀柄: 面铣刀刀柄
Matching Tool Holder: Shell Mill Tool Holder.



刀片 Inserts	螺钉 Screw	扳手 Wrench
CNHQ1206..	SIC050108	365 T20x45

型号 Type	库存 Stock	尺寸(mm) Dimension			镗刀头 Boring head	刀片 Inserts	型式 Model	重量 (kg)
		dc	dm	H				
21CD63-HBH150C.CN12	●	φ 150-φ 215	63	85	HBH-65R.CN12	CNHQ1206.L.	I	
S32-HBH150C.CN12	●	φ 150-φ 215	32	110	HBH-65R.CN12	CNHQ1206.L.	II	
21CD63-HBH215C.CN12	●	φ 215-φ 280	63	85	HBH-65R.CN12	CNHQ1206.L.	I	
S32-HBH215C.CN12	●	φ 215-φ 280	32	110	HBH-65R.CN12	CNHQ1206.L.	II	
21CD80-HBH280C.CN12	●	φ 280-φ 370	80	95	HBH-90R.CN12	CNHQ1206.L.	I	
T40-HBH280C.CN12	●	φ 280-φ 370	40	95	HBH-90R.CN12	CNHQ1206.L.	II	
21CD80-HBH370C.CN12	●	φ 370-φ 460	80	95	HBH-90R.CN12	CNHQ1206.L.	I	
T40-HBH370C.CN12	●	φ 370-φ 460	40	95	HBH-90R.CN12	CNHQ1206.L.	II	
21CD100-HBH460ALC.CN12	●	φ 460-φ 580	100	150	HBH-120R.CN12	CNHQ1206.L.	I	
T60-HBH460ALC.CN12	●	φ 460-φ 580	60	150	HBH-120R.CN12	CNHQ1206.L.	II	
21CD100-HBH580ALC.CN12	⊙	φ 580-φ 700	100	155	HBH-120R.CN12	CNHQ1206.L.	I	
T60-HBH580ALC.CN12	⊙	φ 580-φ 700	60	155	HBH-120R.CN12	CNHQ1206.L.	II	
21CD100-HBH700ALC.CN12	⊙	φ 700-φ 820	100	160	HBH-120R.CN12	CNHQ1206.L.	I	
T60-HBH700ALC.CN12	⊙	φ 700-φ 820	60	160	HBH-120R.CN12	CNHQ1206.L.	II	
21CD100-HBH820ALC.CN12	⊙	φ 820-φ 940	100	165	HBH-120R.CN12	CNHQ1206.L.	I	
T60-HBH820ALC.CN12	⊙	φ 820-φ 940	60	165	HBH-120R.CN12	CNHQ1206.L.	II	
21CD100-HBH940ALC.CN12	⊙	φ 940-φ 1060	100	170	HBH-120R.CN12	CNHQ1206.L.	I	
T60-HBH940ALC.CN12	⊙	φ 940-φ 1060	60	170	HBH-120R.CN12	CNHQ1206.L.	II	

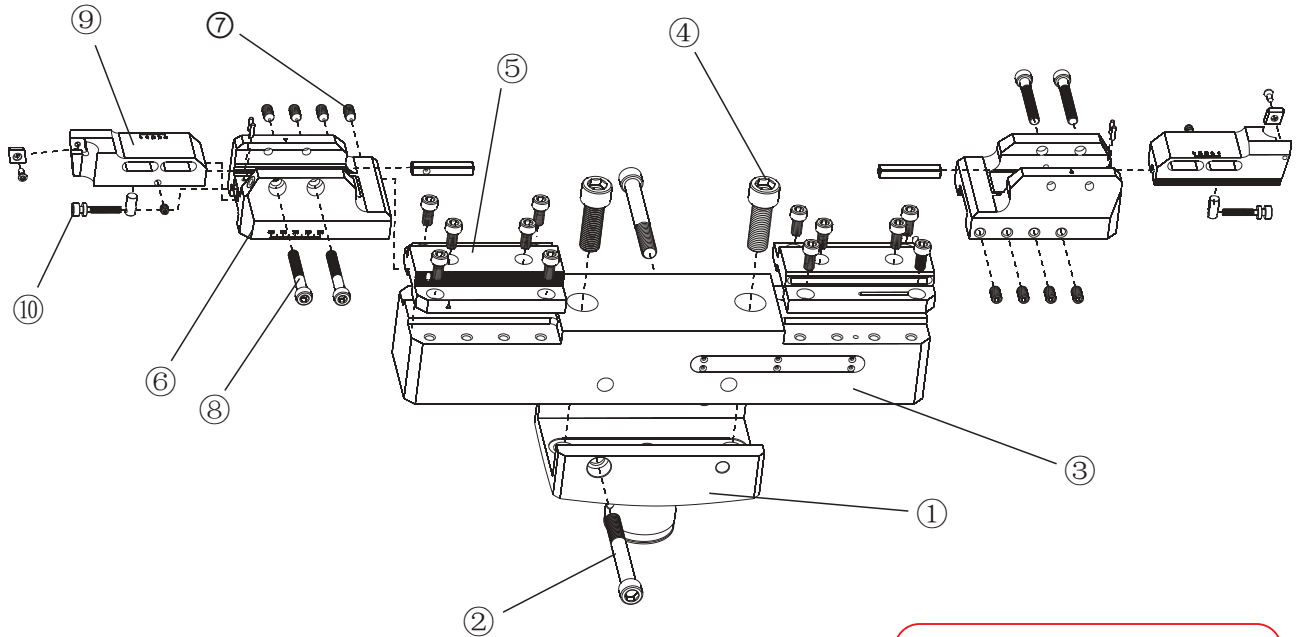
使用方法详见产品使用说明书。
Please refer to the instruction manual for use.
可选阶梯镗用镗头, 订货型号: HBH-..R.CN12-S*.
Optional boring head for step boring, order model: HBH-..R.CN12-S*.

● 常备库存 Unallocated stock ⊙ 可备库存 Available stock ○ 订单生产 Order production

A 镗孔刀具 Boring Tools

HBH大直径粗镗刀

HBH Large Diameter Rough Boring Tools



成对更换刀头以获得理想的轴向跳动。
Change the boring heads in pairs to obtain desired axial runout.

型号 Type	①接柄 Connection holder	②螺钉 Screw	扳手 Wrench	③主体 Body	④螺钉 Screw	扳手 Wrench	⑤连接块 Connection block
21CD63-HBH150C	21CD63-HBH	SCC080630	S6	HBH150C	SCC080300	S6	-
S32-HBH150C	S32-HBH			HBH215C			
21CD63-HBH215C	21CD63-HBH	SCC100750	S8	HBH280C	SCC120350	S10	-
S32-HBH215C	S32-HBH			HBH370C			
21CD80-HBH280C	21CD80-HBH	SCC120950	S10	HBH460ALC	SCC160450	S14	HBH-120SC
T40-HBH280C	T40-HBH			HBH580ALC			
21CD80-HBH370C	21CD80-HBH	SCC120950	S10	HBH700ALC	SCC160450	S14	HBH-120SC
T40-HBH370C	T40-HBH			HBH820ALC			
21CD100-HBH460ALC	21CD100-HBH	SCC120950	S10	HBH940ALC	SCC160450	S14	HBH-120SC
T60-HBH460ALC	T60-HBH			HBH820ALC			
21CD100-HBH580ALC	21CD100-HBH	SCC120950	S10	HBH700ALC	SCC160450	S14	HBH-120SC
T60-HBH580ALC	T60-HBH			HBH820ALC			
21CD100-HBH700ALC	21CD100-HBH	SCC120950	S10	HBH820ALC	SCC160450	S14	HBH-120SC
T60-HBH700ALC	T60-HBH			HBH940ALC			
21CD100-HBH820ALC	21CD100-HBH	SCC120950	S10	HBH940ALC	SCC160450	S14	HBH-120SC
T60-HBH820ALC	T60-HBH			HBH940ALC			
21CD100-HBH940ALC	21CD100-HBH	SCC120950	S10	HBH940ALC	SCC160450	S14	HBH-120SC
T60-HBH940ALC	T60-HBH			HBH940ALC			

➔ 使用方法详见产品使用说明书。
Please refer to the instruction manual for use.

● 常备库存
Unallocated stock

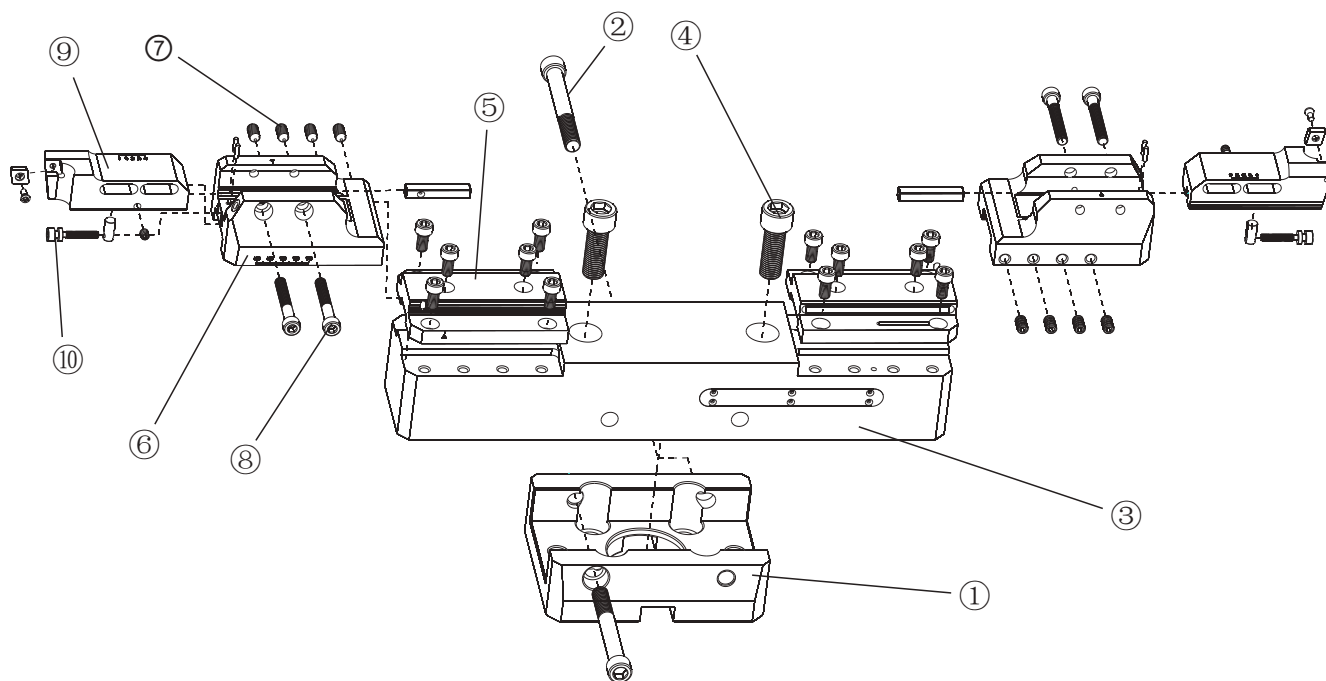
○ 可备库存
Available stock

○ 订单生产
Order production

A 镗孔刀具 Boring Tools

HBH大直径粗镗刀

HBH Large Diameter Rough Boring Tools

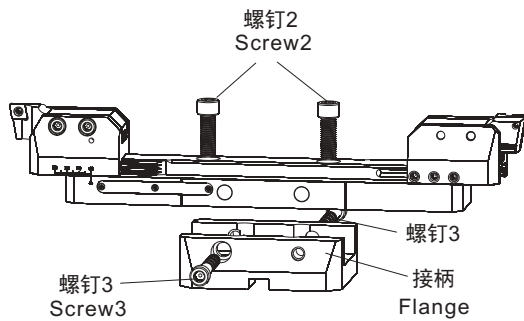


⑥刀座 Supporting chasis	⑦螺钉 Screw	扳手 Wrench	⑧螺钉 Screw	扳手 Wrench	⑨粗镗刀头 Rough head	⑩微调螺钉 Adjusting screw
HBH-65ZC			SCC080350		HBH-65R	
HBH-90ZC			SCC080400		HBH-90R	
HBH-120ZC	SHBH	TS4	SCC080500	S6	HBH-120R	HBMS-2-28

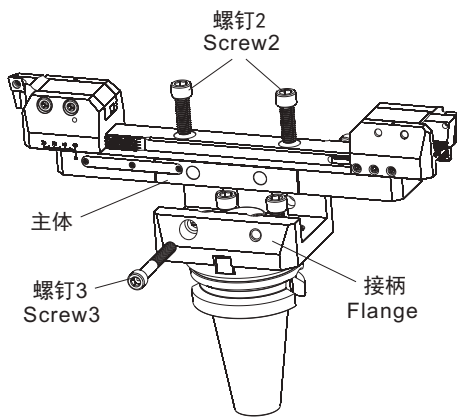
A 镗孔刀具 Boring Tools

面铣刀接柄大直径镗刀安装说明

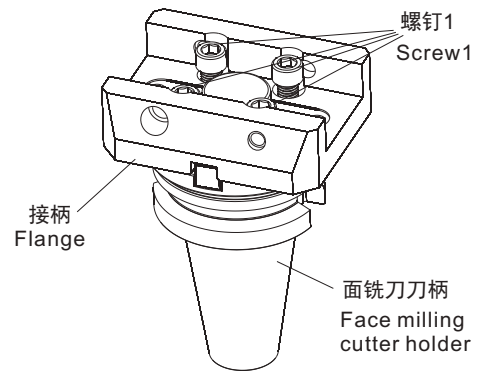
Direction for installation of large diameter boring tools with face mill connector



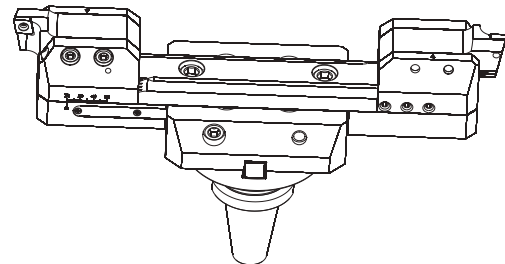
1. 松开螺钉2和螺钉3, 卸下接柄;
Loosen screw 2 and screw 3, remove the flange



3. 清理各贴合面, 将主体装入接柄中, 锁紧螺钉2和螺钉3;
Clean up the mating surfaces, put the main body into the flange, and lock screw 2 and screw 3;



2. 清理各贴合面, 将接柄装入面铣刀刀柄, 锁紧螺钉1;
Clean up the mating surfaces, put the flange into the face milling cutter holder, and lock the screw 1;

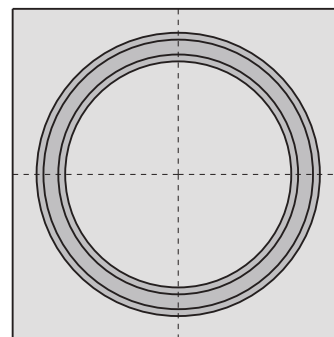
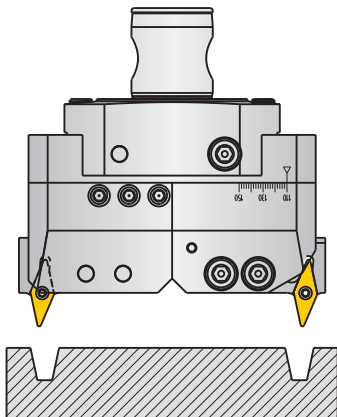


4. 完成安装。
Complete the installation.

镗刀头灵活定制, 可根据客户加工需求定制不同主偏角刀头, 可针对客户具体加工状况制作特殊功能刀头。
下图为插补铣端面锥度圆弧槽定制刀头刀具。

The boring cutter head can be customized flexibly. Different cutting angle cutter heads can be customized according to the customer's processing needs, and special function cutter heads can be made according to the specific processing conditions of customers.

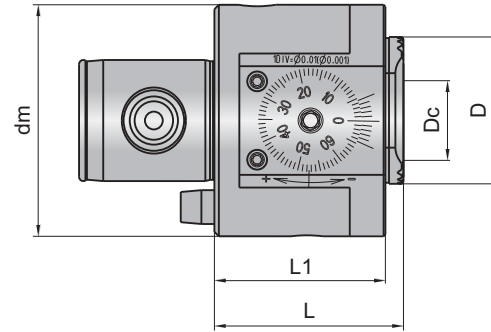
The figure below shows the customized head tool for interpolation milling end face taper arc groove.



A 镗孔刀具 Boring Tools

SMP小孔径微调精镗刀

SMP Small Micro-adjustable Fine Boring Tools



型号 Type	库存 Stock	配合主轴接口 Modular holder	尺寸(mm) Dimension					镗孔范围(mm) Boring range	调节行程(mm) Adjustment	调节精度(mm) Adjustment accuracy	配合游标精度(mm) Vernier accuracy	锁紧螺钉 Locking screw	重量 (kg)
			Dc	dm	D	L1	L						
21CD63-SMP	●	TMG21-63	16	64	40	48	53	φ 3-88	-0.5~25	φ 0.01	φ 0.001	SRC080140	1.3

➔ 使用方法详见产品使用说明书。
Please refer to the instruction manual for use.

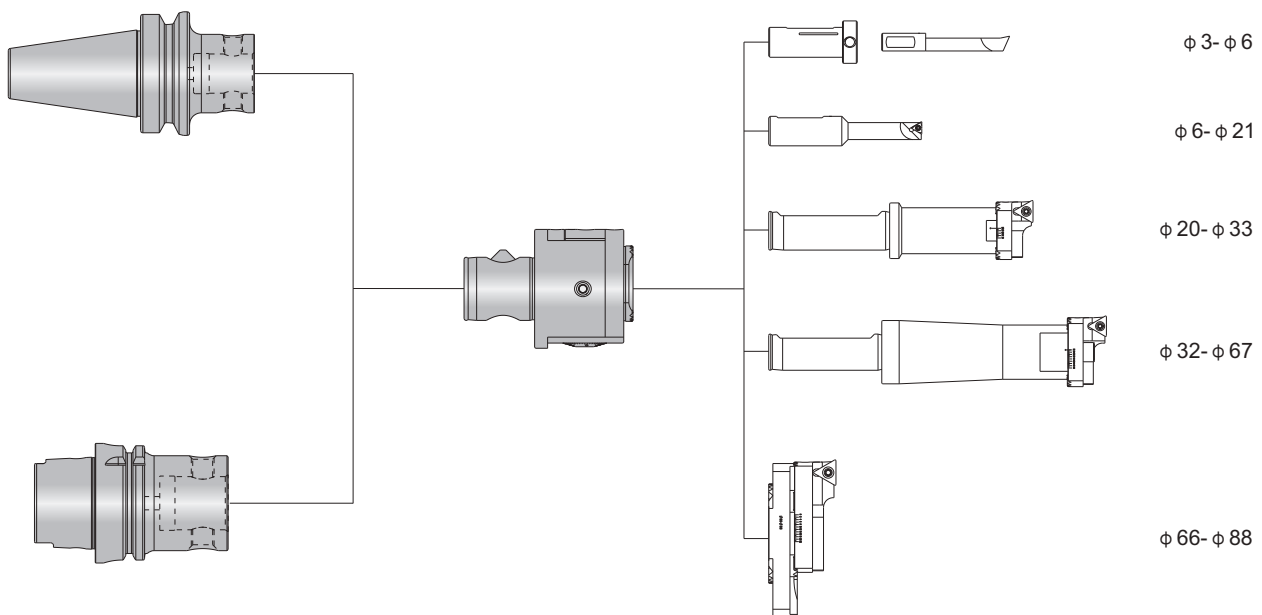
● 常备库存
Unallocated stock

◐ 可备库存
Available stock

○ 订单生产
Order production

使用配置图

Configuration diagram



A 镗孔刀具 Boring Tools

SMP小孔径微调精镗刀

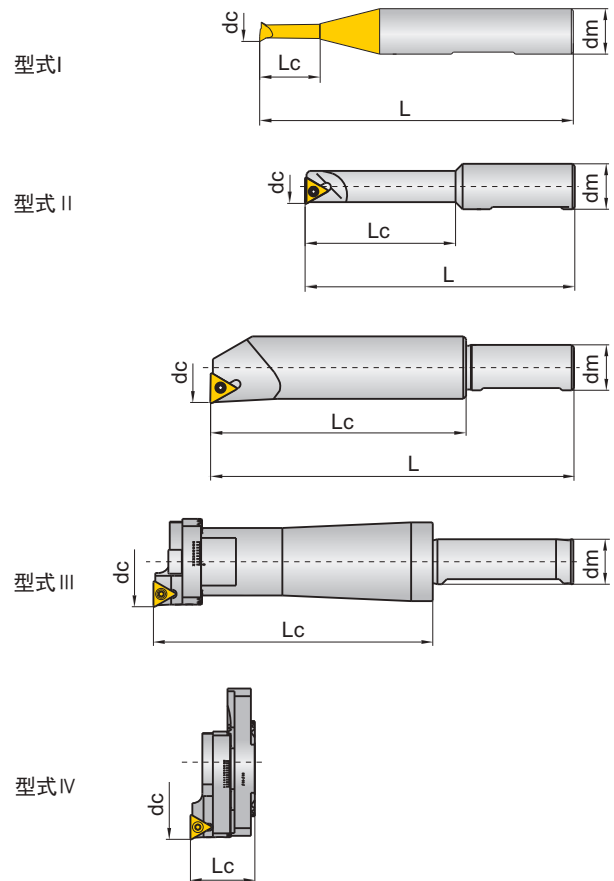
SMP Small Micro-adjustable Fine Boring Tools

SBJ镗刀杆(适用于21CD63-SMP&KB6-SMP)

SBJ boring bar(Adapt to 21CD63-SMP&KB6-SMP)



刀片 Inserts	螺钉 Screw	扳手 Wrench
WB..060102	SIC020037	370 T6x35
TB..060102	SIC020037	370 T6x35
TP..090204(*1612*)	SIC025050	370 T7x35
TP..090204(*1616*)	SIC025065	370 T7x35
TP..110304	SIC030072	370 T9x40



型号 Type	库存 Stock	尺寸(mm) Dimension					刀片 Inserts	镗杆/桥体 Boring bar/Bridge	镗刀头 Boring head	型式 Model	重量 (kg)
		dc	dm	Lc	L1	L					
SBJ-0803-14	●	3	8	14	-	46	-	-	-	I	
SBJ-0804-17	●	4	8	17	-	49	-	-	-	I	
SBJ-0805-22	●	5	8	22	-	54	-	-	-	I	
SBJ-1606-24	●	6-9	16	24	69	69	WB**060102	-	-	II	0.07
SBJ-1608-16	●	8-11	16	16	58	58	TB**060102	-	-	II	0.06
SBJ-1608-32	●	8-11	16	32	77	77	TB**060102	-	-	II	0.08
SBJ-1610-20	●	10-13	16	20	62	62	TB**060102	-	-	II	0.07
SBJ-1610-40	●	10-13	16	40	83	83	TB**060102	-	-	II	0.09
SBJ-1612-24	●	12-17	16	24	66	66	TP**090204L	-	-	II	0.08
SBJ-1612-53	●	12-17	16	53	95	95	TP**090204L	-	-	II	0.1
SBJ-1616-32	●	16-21	16	32	74	74	TP**090204L	-	-	II	0.1
SBJ-1616-68	●	16-21	16	68	108	108	TP**090204L	-	-	II	0.13
SMP-1620-60*	●	20-26	16	60	-	-	TB**060102	SMP-16BP-45	SMP-16CA-20	III	0.19
SMP-1625-60*	●	25-33	16	60	-	-	TP**090204	SMP-16BP-45	SMP-16CA-25	III	0.2
SMP-1632-99*	●	32-48	16	99	-	-	TP**090204	SMP-16BP-85	SMP-16CA-32	III	0.43
SMP-1647-99*	●	47-67	16	99	-	-	TP**110304	SMP-16BP-85	SMP-16CA-47	III	0.45
SMP-1666-25*	●	66-88	-	25	-	-	TP**110304	SMP-BR-66	SMP-16CA-47	IV	0.16

使用方法详见产品使用说明书。

Please refer to the instruction manual for use.

● 常备库存

Unallocated stock

○ 可备库存

Available stock

○ 订单生产

Order production

带有*符号的型号不接受订货, 如需订购对应尺寸的产品, 购买对应的桥体与镗刀头即可。

Orders are not accepted for models with * symbol. If you need to order the corresponding size of the product, you can buy the corresponding bridge body and boring head.

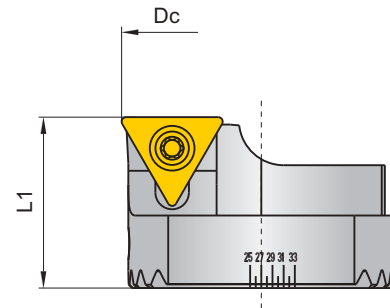
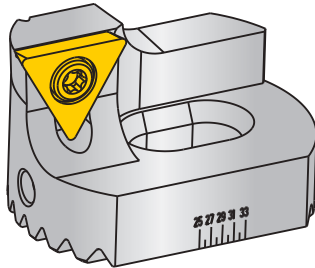
A 镗孔刀具 Boring Tools

SMP小孔径微调精镗刀

SMP Small Micro-adjustable Fine Boring Tools

SMP镗刀头

SMP Boring head



型号 Type	库存 Stock	尺寸(mm) Dimension		刀片 Inserts	螺钉 Screw	扳手 Wrench	重量 (kg)
		dc	L1				
SMP-16CA-20	●	20-26	15	TB060102	SIC020037	370 T6x35	0.01
SMP-16CA-25	●	25-33	15	TP090204	SIC025065	370 T7x35	0.02
SMP-16CA-32	●	32-48	17	TP090204	SIC025065	370 T7x35	0.03
SMP-16CA-47	●	47-67	17	TP110304	SIC030072	370 T9x40	0.05

使用方法详见产品使用说明书。
Please refer to the instruction manual for use.

● 常备库存
Unallocated stock

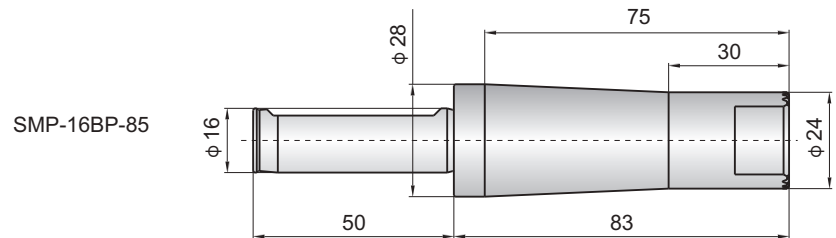
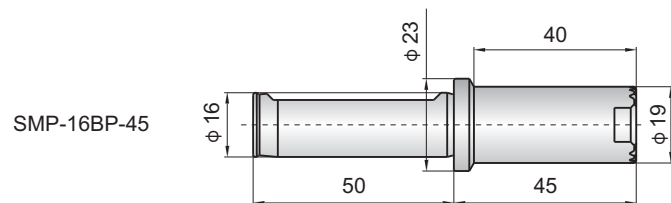
○ 可备库存
Available stock

○ 订单生产
Order production

SMP接杆

SMP Boring bar

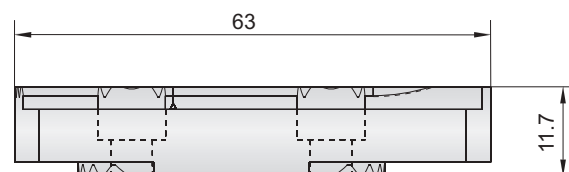
型号 Type	库存 Stock	重量 (kg)
SMP-16BP-45	●	0.18
SMP-16BP-85	●	0.4



SMP桥体

SMP Bridge

型号 Type	库存 Stock	重量 (kg)
SMP-BR-66	●	0.1



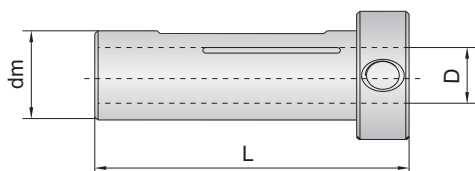
A 镗孔刀具 Boring Tools

SMP小孔径微调精镗刀

SMP Small Micro-adjustable Fine Boring Tools

转接套(适用于21CD63-SMP&KB6-SMP)

Switching Sleeve(Adapt to 21CD63-SMP&KB6-SMP)



型号 Type	库存 Stock	尺寸(mm) Dimension			重量 (kg)
		dm	D	L	
SMB16-06	●	16	6	40	
SMB16-07	●	16	7	40	
SMB16-08	●	16	8	40	
SMB16-10	●	16	10	40	
SMB16-12	●	16	12	40	

● 常备库存 Unallocated stock ● 可备库存 Available stock ○ 订单生产 Order production
 ➔ 使用方法详见产品使用说明书。
 Please refer to the instruction manual for use.

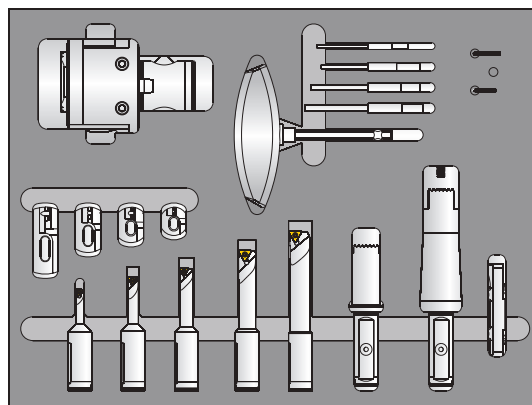
SMP小孔径微调精镗刀套装订货型号：TZ-21CD63-SMP)

SMP small micro-adjustase fine boring set(order type TZ-21CD63-SMP)

序号 No.	名称 Name	型号 Type	数量 Qty	镗孔尺寸 (mm) Boring Dimension	镗孔深度 (mm) Depth of Boring
1	SMP精镗刀	21CD63-SMP	1		
2	SBJ镗杆	SBJ-1606-24	1	6-9	24
3	SBJ镗杆	SBJ-1608-32	1	8-11	32
4	SBJ镗杆	SBJ-1610-40	1	10-13	40
5	SBJ镗杆	SBJ-1612-53	1	12-16	53
6	SBJ镗杆	SBJ-1616-68	1	16-20	68
7	SMP接杆	SMP-16BP-45	1	-	-
8	SMP接杆	SMP-16BP-85	1	-	-
9	SMP镗刀头	SMP-16CA-20	1	20-26	-
10	SMP镗刀头	SMP-16CA-25	1	25-33	-
11	SMP镗刀头	SMP-16CA-32	1	32-48	-
12	SMP镗刀头	SMP-16CA-47	1	47-67	-
13	SMP桥体	SMP-BR-66	1	66-68*	-

➔ 带*须配合镗刀头。
 The belt * must be matched with the boring hesd.

小孔径微调精镗刀套装配多种镗杆
 完美解决 $\phi 3 - \phi 88$ 小孔镗削问题
 减小刀具采购成本



A 镗孔刀具 Boring Tools

SMP小孔径微调精镗刀

SMP Small Micro-adjustable Fine Boring Tools

加工示例

Example

使用刀柄	21A.BT50.63-80	机床	VMC1270立加
使用刀具	21CD63-SMP	冷却	外冷
使用镗杆	SBJ-1625-90	线速度	40 m/s
使用刀片	TPGH110304L-S TP110	进给速度 Fz	0.12 mm/z
加工材料	H13	切削深度 ap	0.1mm
材料硬度	52HRC	最大调节误差	0.003
加工深度	60mm	最大锥度	0.004
镗孔直径	25mm	稳定调刀频次	每7孔调节一次



转接套(适用于21CD63-SMP&KB6-SMP)

Switching Sleeve(Adapt to 21CD63-SMP&KB6-SMP)

小孔精镗加工常见问题及解决办法

Problem solutions

Tool vibrate during boring

Check press position of tool
Reduce number of revolution
Use dynamic balance adjusting ring

镗孔时刀具震动

检查刀具压紧位置
降低转速
添加动平衡调节环

Surface of the hole is not perfect

Reduce cutting feed
Reduce the tip radius of inserts
Increase spindle speed

内孔表面质量不高

降低进给
减小刀尖半径
增大主轴转速

The hole is tapered

Check the machining allowance of bottom hole.If the hole has a large margin,increase the size of bottom, otherwise,reduce the size.
Reduce the tip radius of Inserts
Raise cutting feed

内孔有锥度

检查底孔加工余量, 若余量多则加大底孔, 若余量小则减小底孔
减小刀尖半径
提高进给

使用注意事项 :

Caution :

为保护微调机构, 调整时不要用力过猛。

锁紧螺钉未松开前, 请勿转动刻度盘, 否则会损坏微调机构

当微调刻度盘旋转阻力很大或无法旋转时, 请检查是否超出调节行程或锁紧螺钉是否松开。

镗孔时选择中心偏移最小的镗杆有利于使用高切削速度。

为保证使用效果, 使用一段时间后, 请通过注油杯向微调机构添加润滑油, 建议使用轻质润滑油。

请注意防锈, 不用时请涂抹防锈油防锈, 严禁将小孔径微调精镗刀完全浸入防锈油中。

镗孔后退刀时注意退刀方向和退刀距离, 否则会损坏机床和刀具

刀具上的锁紧螺钉需压紧在镗杆的压紧平面上, 否则会破坏配合面, 使镗杆取出困难。

推荐使用Kilowood品牌刀片, 获得更佳切削效果。

Slowly adjust,avoid excessive adjust.

Do not turn dial before loosen locking screw for adjustment

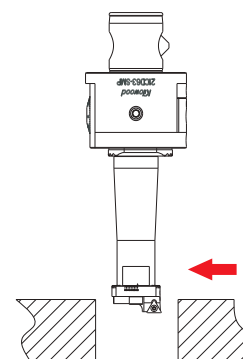
When it's hard to turn dial,please check max. adjustment or lock screw for adjustment

Selecting boring bar of the minimum center offset is helpful to use high cutting speed

In order to ensure the accuracy, please add lubricating oil every once in a while, through oil cup, light oil recommended.

pay attention to rust, please daub anti-rust oil, it was prohibited that cutting tools completely immersed in anti-rust oil

It is recommended to use Kilowood inserts for better cutting effect.



退刀方向

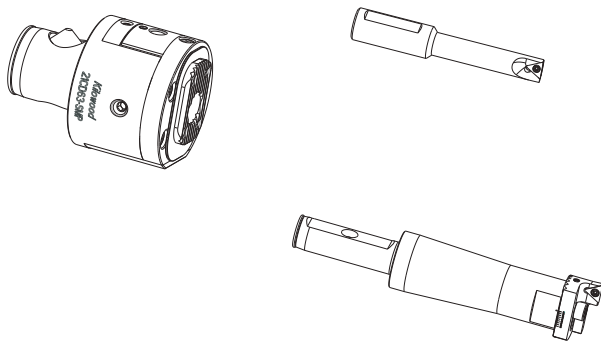
A 镗孔刀具 Boring Tools

SMP小孔径微调精镗刀

SMP Small Micro-adjustable Fine Boring Tools

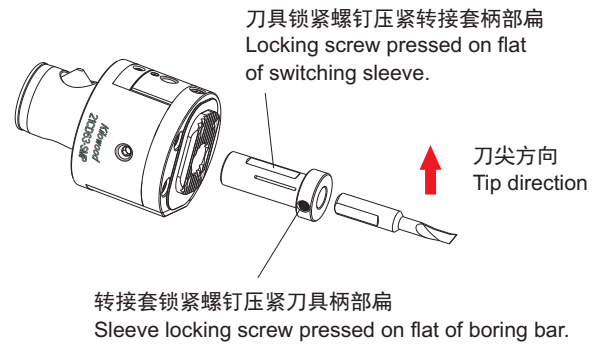
镗杆安装示意

Installation of boring bar



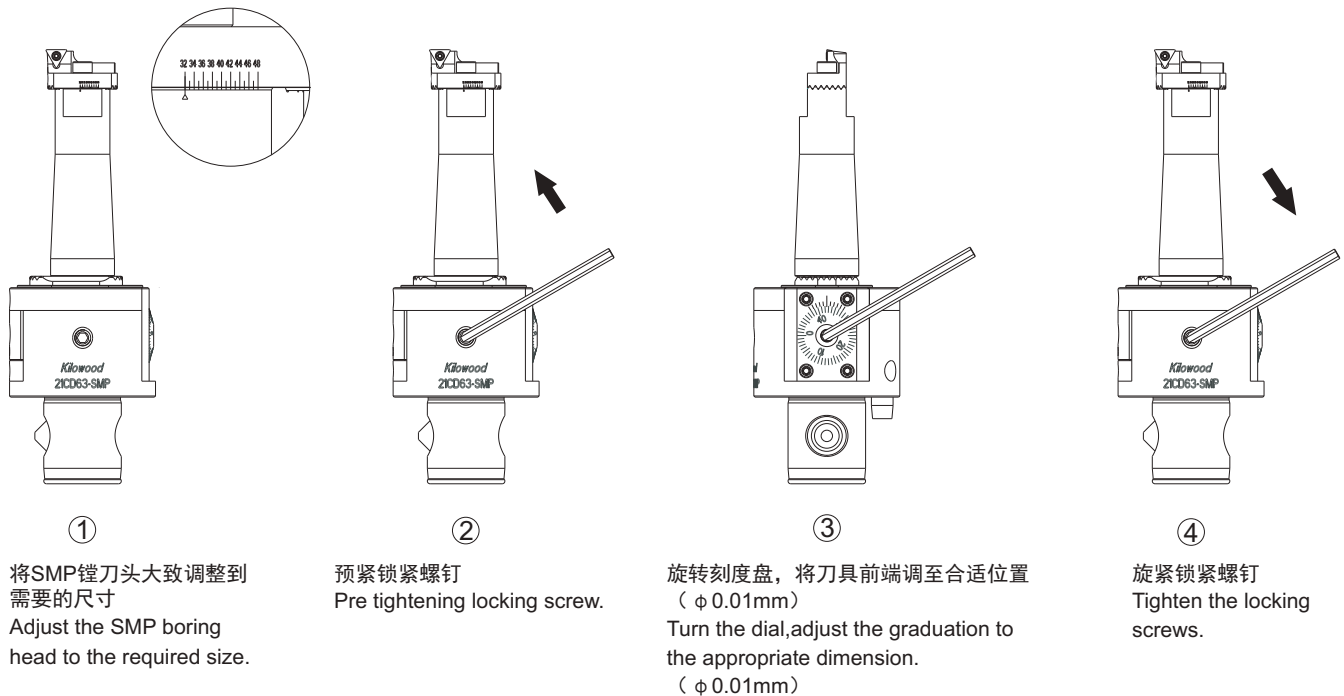
转接套使用示意

Using schematic for switching sleeve



SMP 小孔径微调精镗刀调节指南

Adjusting steps for SMP small micro-adjustable fine boring cutter



A 镗孔刀具 Boring Tools

HBM 微调精镗刀

HBM Micro-adjustable Fine Boring Tools

镗孔范围: $\phi 20 \sim \phi 200\text{mm}$

Boring range

调节精度0.01mm

Adjustment accuracy

TMG21高刚性接口、螺纹接口、直柄接口、KB接口

TMG21 high rigidity connector, threaded connector, straight shank connector, KB connector

镗头可换 Adjustable boring head

只需要更换镗刀头，即可增大加工范围，同时可根据加工需求组合镗刀头与刀体，增大镗刀刀体与孔壁间的空隙，改善排屑性能。

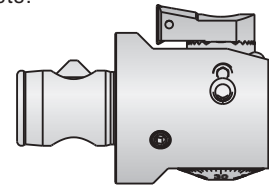
Only replace the boring head to increase the machining range; could also combine the boring head and the boring body according to the processing requirement, increase the gap between the boring body and the hole wall, improve the chip removal performance.



反镗加工 Back boring

在加工工件背面的孔时，一般需要将工件反装，这不仅很难保证前后加工孔的同轴度，而且增加装夹次数，降低加工效率，HBM微调精镗刀只需要将镗刀头反装即可进行反镗加工，节约装夹时间，降低生产成本。

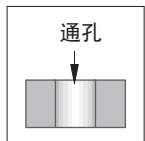
When machining the hole on the back of the workpiece, it normally requires to reverse install the workpiece, which is not only difficult to ensure the coaxiality of the hole on the front and back, but also increase the clamping times and reduce the processing efficiency. HBM Micro-adjustable Fine Boring Tools only need to reverse the boring head to start back boring, save the clamping time and reduce the production costs.



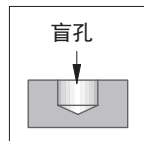
反镗时主轴需反转

加工方式多样 Multi-processing methods

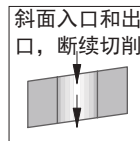
使用方式多样，可镗通孔、盲孔等 Multiple using methods, could be used to bore through holes, blind holes and etc.



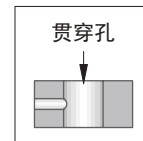
Through hole



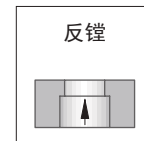
Blind hole



Entry and exit on the inclined surface, interrupted cutting



Penetrate hole



Back boring

调节方法 Adjustment method

1. 预紧锁紧螺钉 ①
 2. 旋转微调螺钉 ②，设定目标直径
 3. 拧紧锁紧螺钉 ①
1. Pre-tightened locking screw
 2. Turn the fine adjustment screw, set the target diameter
 3. Tighten the locking screw

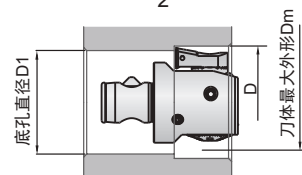


反镗底孔计算 Back boring base hole calculation

反镗加工计算 Back boring calculation

底孔直径 $D1$ Base hole diameter
 刀体最大外形 Dm Body diameter maximum
 加工直径 D Bore diameter

$$D1 > \frac{Dm + D}{2} + 0,5$$



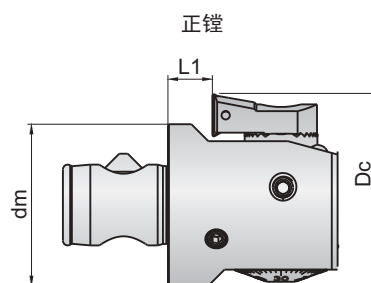
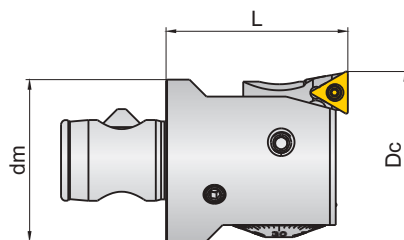
注意：切勿在未松开锁紧螺钉情况下旋转微调螺钉，否则微调机构容易损坏

Notice: Please do not turn the fine adjustment screw without untighten the locking screw, otherwise the fine adjustment mechanism will be easily damaged.

A 镗孔刀具 Boring Tools

HBM 微调精镗刀

HBM Micro-adjustable Fine Boring Tools



正镗

反镗

刀片 Inserts	螺钉 Screw	扳手 Wrench
TB..060102	SIC020050A	370 T6x35
TC..090204	SIC022063	370 T7x35
TP..090204	SIC025065	370 T7x35
TC..110204	SIC025065	370 T7x35
TP..110304	SIC030072	370 T9x40



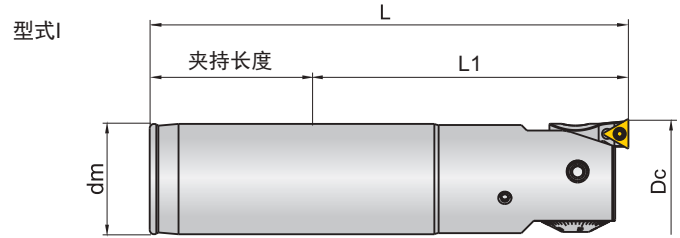
型号 Type	尺寸(mm) Dimension					标准配件		可选配件		重量 (kg)
	Dc		dm	L1	L	镗刀头 Fine boring head	刀片 Inserts	镗刀头 Fine boring head	刀片 Inserts	
	正镗范围	反镗范围								
21CD25-HBM27-35	27-35	-	25	-	35	HBM27-27	TB..060102	-	-	0.13
	34-42	40-42				7				
21CD32-HBM35-40	35-44	42-44	32	8	40	HBM35-35	TC..090204	HBM35-35-TP09*	TP..090204	0.23
	43-52	50-52				HBM35-43*		HBM35-43-TP09*		
21CD40-HBM44-45	44-55	52-55	40	9	45	HBM44-44	TC..110204	HBM44-44-TP11*	TP..110304	0.43
	54-65	61-65				HBM44-54*		HBM44-54-TP11*		
21CD50-HBM55-50	55-71	65-71	50	10	50	HBM55-55	TC..110204	HBM55-55-TP11*	TP..110304	0.80
	68-84	77-84				HBM55-68*		HBM55-68-TP11*		
21CD63-HBM69-60	69-99	80-99	63	12	60	HBM69-69	TC..110204	HBM69-69-TP11*	TP..110304	1.53
	91-121	100-121				HBM69-91*		HBM69-91-TP11*		
21CD63-HBM90-70	90-140	101-140	63	22	70	HBM69-69	TC..110204	HBM69-69-TP11*	TP..110304	2.74
	120-170	128-170				HBM90-120*		HBM90-120-TP11*		
21CD80-HBM90-70	90-140	101-140	80	22	70	HBM69-69	TC..110204	HBM69-69-TP11*	TP..110304	3.22
	120-170	128-170				HBM90-120*		HBM90-120-TP11*		
21CD80-HBM120-80	120-170	124-170	80	32	80	HBM69-69	TC..110204	HBM69-69-TP11*	TP..110304	3.38
	150-200	158-200				HBM90-120*		HBM90-120-TP11*		
21CD100-HBM120-80	120-170	124-170	100	32	80	HBM69-69	TC..110204	HBM69-69-TP11*	TP..110304	4.53
	150-200	158-200				HBM90-120*		HBM90-120-TP11*		

带*镗刀头需单独订购
Boring heads with*need to be ordered separately.
使用方法详见产品使用说明书。
Please refer to the instruction manual for use.

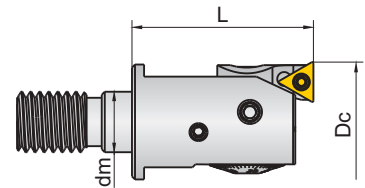
A 镗孔刀具 Boring Tools

HBM 微调精镗刀

HBM Micro-adjustable Fine Boring Tools



型式II (不能用于反镗)
(Cannot be used for back boring)



刀片 Inserts	螺钉 Screw	扳手 Wrench
TB..060102	SIC020050A	370 T6x35
TC..090204	SIC022063	370 T7x35
TP..090204	SIC025065	370 T7x35

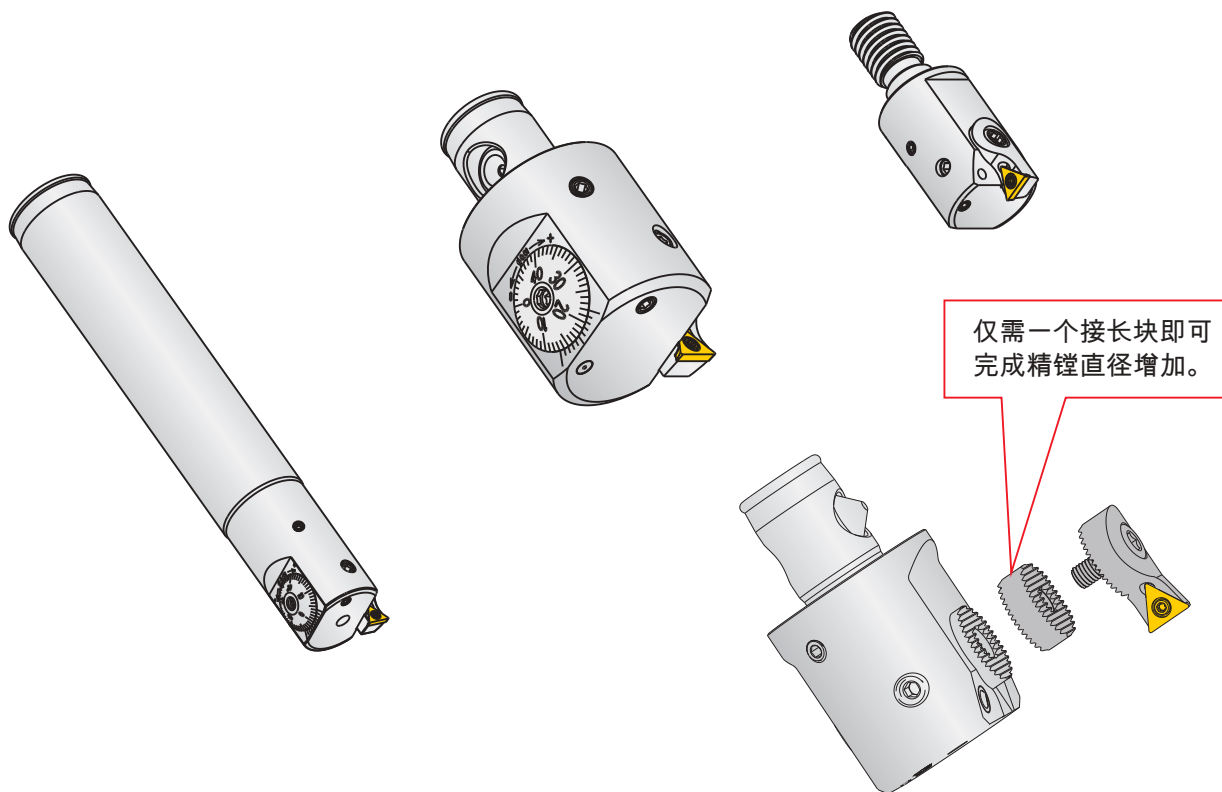
型号 Type	尺寸(mm) Dimension					标准配件		可选配件		型式 Model	重量 (kg)
	Dc		dm	L1	L	镗刀头 Fine boring head	刀片 Inserts	镗刀头 Fine boring head	刀片 Inserts		
	正镗范围	反镗范围									
A20-HBM20-80	20-25	-	20	80	130	HBM20-20	TB..060102	-	-	I	
	24-29	-				HBM20-24*					
A20-HBM20-100	20-25	-	20	100	150	HBM20-20	TB..060102	-	-	I	0.29
	24-29	-				HBM20-24*					
A25-HBM27-125	27-35	-	25	125	181	HBM27-27	TB..060102	-	-	I	0.60
	34-42	40-42				HBM27-34*					
A32-HBM35-160	35-44	42-44	32	160	220	HBM35-35	TC..090204	HBM35-35-TP09*	TP..090204	I	1.23
	43-52	50-52				HBM35-43*		HBM35-43-TP09*			
DM10-HBM20-35	20-25	-	10.5	-	35	HBM20-20	TB..060102	-	-	II	0.06
	24-29	-				HBM20-24*					
DM12-HBM27-35	27-35	-	12.5	-	35	HBM27-27	TB..060102	-	-	II	0.13
	34-42	-				HBM27-34*					
DM16-HBM35-40	35-44	-	17	-	40	HBM35-35	TC..090204	HBM35-35-TP09*	TP..090204	II	0.18
	43-52	-				HBM35-43*		HBM35-43-TP09*			

带*镗刀头需单独订购
Boring heads with *need to be ordered separately.
使用方法详见产品使用说明书。
Please refer to the instruction manual for use.

A 镗孔刀具 Boring Tools

HBM 微调精镗刀

HBM Micro-adjustable Fine Boring Tools



型号 Type	微调单元 Micro-adjustable unit	喷嘴 Nozzle	锁紧螺钉 Screw for lock	扳手 Wrench	接长块Extended washer 	
					型号Type	直径增加量
...-HBM20-...	HBM20	-	SSC040040	S2	-	-
...-HBM27-...	HBM27	-	SSC040050	S2.5	HBM27-7*	6
...-HBM35-...	HBM35	NOZZLE6	SFC060060	TS3	HBM35-7*	7
...-HBM44-...	HBM44	NOZZLE6	SFC060080	TS3	HBM44-7*	7
...-HBM55-...	HBM55	NOZZLE8	SFC080120	TS4	HBM55-7*	9
...-HBM69-...	HBM69	NOZZLE8	SFC080120	TS4	HBM69-7*	9
...-HBM90-...	HBM90	NOZZLE10	SFC080120	TS4	HBM69-7*	9
...-HBM120-...	HBM120	NOZZLE10	SFC080120	TS4	HBM69-7*	9

带*接长块需单独订购
Extended washer with*need to be ordered separately.
使用方法详见产品使用说明书。
Please refer to the instruction manual for use.

A 镗孔刀具 Boring Tools

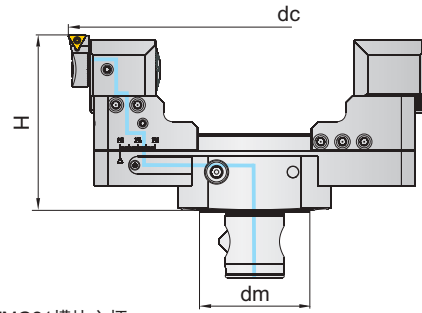
HBH大直径精镗刀

HBH Large Diameter Fine Boring Tools

Internal cooling



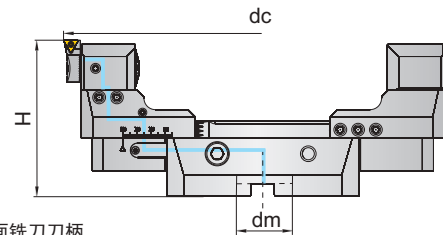
型式I



适用刀柄: TMG21模块主柄
Matching Tool Holder: TMG21 Module Tool Holder.



型式II



适用刀柄: 面铣刀刀柄
Matching Tool Holder: Shell Mill Tool Holder.



刀片 Inserts	螺钉 Screw	扳手 Wrench
TC..110204	SIC025065	370 T7x35

型号 Type	库存 Stock	尺寸(mm) Dimension			刀片 Inserts	型式 Model	重量 (kg)
		dc	dm	H			
21CD63-HBH150MMC	●	φ 150- φ 215	63	102	TC..110204	I	3.74
S32-HBH150MMC	●	φ 150- φ 215	32	127	TC..110204	II	4.48
21CD63-HBH215MMC	●	φ 215- φ 280	63	102	TC..110204	I	4.33
S32-HBH215MMC	●	φ 215- φ 280	32	127	TC..110204	II	5.07
21CD80-HBH280MMC	●	φ 280- φ 370	80	110	TC..110204	I	7.61
T40-HBH280MMC	●	φ 280- φ 370	40	110	TC..110204	II	7.52
21CD80-HBH370MMC	●	φ 370- φ 460	80	110	TC..110204	I	8.47
T40-HBH370MMC	●	φ 370- φ 460	40	110	TC..110204	II	8.38
21CD100-HBH460ALMMC	●	φ 460- φ 580	100	160	TC..110204	I	17.61
T60-HBH460ALMMC	●	φ 460- φ 580	60	160	TC..110204	II	17.20
21CD100-HBH580ALMMC	○	φ 580- φ 700	100	165	TC..110204	I	19.84
T60-HBH580ALMMC	○	φ 580- φ 700	60	165	TC..110204	II	19.43
21CD100-HBH700ALMMC	○	φ 700- φ 820	100	170	TC..110204	I	22.29
T60-HBH700ALMMC	○	φ 700- φ 820	60	170	TC..110204	II	21.88
21CD100-HBH820ALMMC	○	φ 820- φ 940	100	175	TC..110204	I	25.79
T60-HBH820ALMMC	○	φ 820- φ 940	60	175	TC..110204	II	25.38
21CD100-HBH940ALMMC	○	φ 940- φ 1060	100	180	TC..110204	I	27.84
T60-HBH940ALMMC	○	φ 940- φ 1060	60	180	TC..110204	II	27.43

使用方法详见产品使用说明书。
Please refer to the instruction manual for use.
镗刀订货示例(使用TP..110304刀片): 21CD80-HBH370MM. TP11
Order example: 21CD80-HBH370MM. TP11

● 常备库存
Unallocated stock

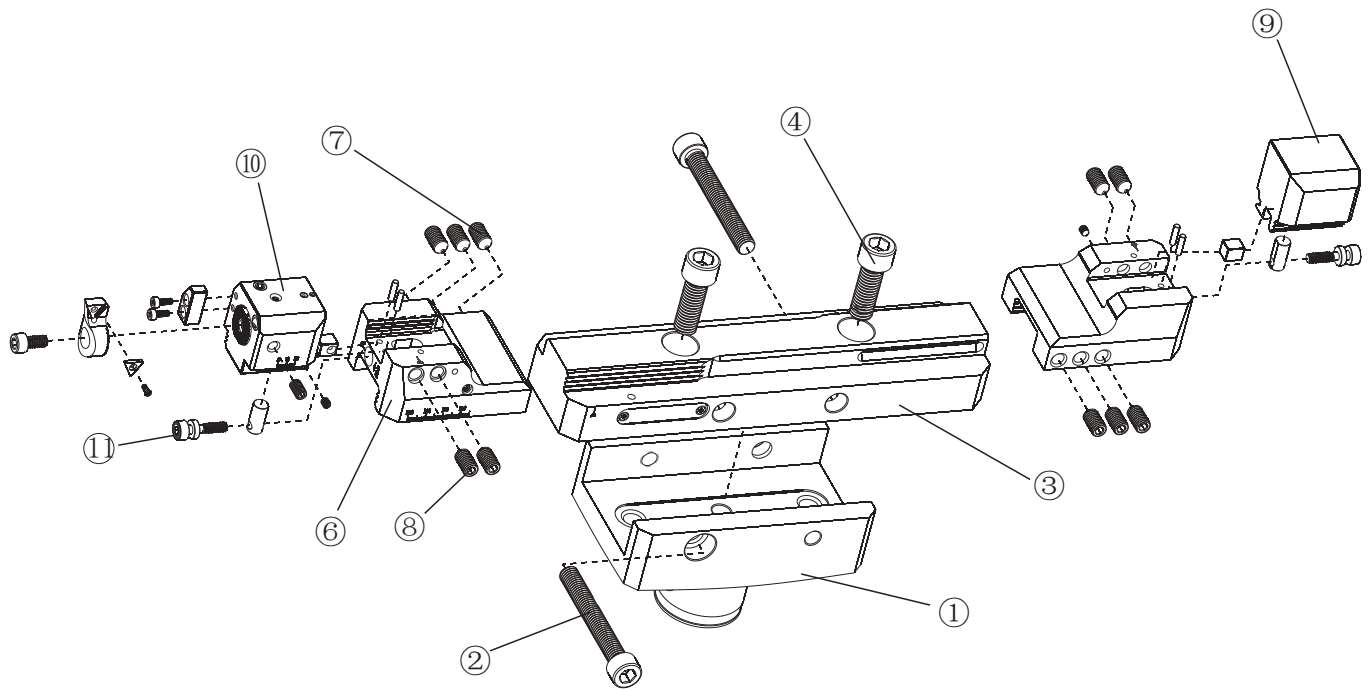
○ 可备库存
Available stock

○ 订单生产
Order production

A 镗孔刀具 Boring Tools

HBH大直径精镗刀

HBH Large Diameter Fine Boring Tools



型号 Type	①接柄 Connection holder	②螺钉 Screw	扳手 Wrench	③主体 Body	④螺钉 Screw	扳手 Wrench	⑤连接块 Connection block
21CD63-HBH150MMC	21CD63-HBH	SCC080630	S6	HBH150C	SCC080300	S6	-
S32-HBH150MMC	S32-HBH			HBH215C			
21CD63-HBH215MMC	21CD63-HBH	SCC100750	S8	HBH280C	SCC120350	S10	-
S32-HBH215MMC	S32-HBH			HBH370C			
21CD80-HBH280MMC	21CD80-HBH	SCC120950	S10	HBH460ALC	SCC160450	S14	HBH-120SC
T40-HBH280MMC	T40-HBH			HBH580ALC			
21CD80-HBH370MMC	21CD80-HBH	SCC120950	S10	HBH700ALC	SCC160450	S14	HBH-120SC
T40-HBH370MMC	T40-HBH			HBH820ALC			
21CD100-HBH460ALMMC	21CD100-HBH	SCC120950	S10	HBH940ALC	SCC160450	S14	HBH-120SC
T60-HBH460ALMMC	T60-HBH			HBH820ALC			
21CD100-HBH580ALMMC	21CD100-HBH	SCC120950	S10	HBH940ALC	SCC160450	S14	HBH-120SC
T60-HBH580ALMMC	T60-HBH			HBH820ALC			
21CD100-HBH700ALMMC	21CD100-HBH	SCC120950	S10	HBH940ALC	SCC160450	S14	HBH-120SC
T60-HBH700ALMMC	T60-HBH			HBH820ALC			
21CD100-HBH820ALMMC	21CD100-HBH	SCC120950	S10	HBH940ALC	SCC160450	S14	HBH-120SC
T60-HBH820ALMMC	T60-HBH			HBH820ALC			
21CD100-HBH940ALMMC	21CD100-HBH	SCC120950	S10	HBH940ALC	SCC160450	S14	HBH-120SC
T60-HBH940ALMMC	T60-HBH			HBH820ALC			

➔ 使用方法详见产品使用说明书。
Please refer to the instruction manual for use.

● 常备库存
Unallocated stock

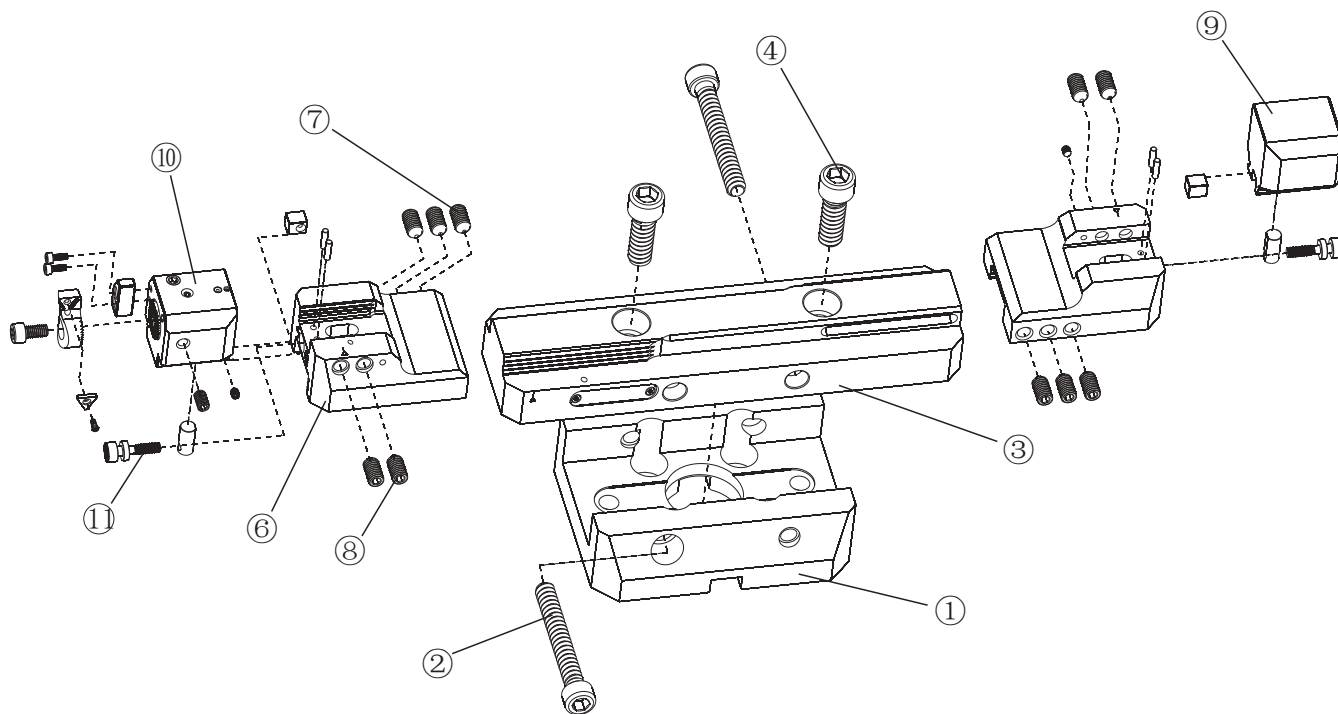
○ 可备库存
Available stock

○ 订单生产
Order production

A 镗孔刀具 Boring Tools

HBH大直径精镗刀

HBH Large Diameter Fine Boring Tools

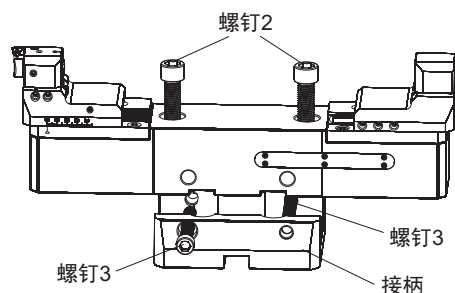


⑥精镗刀座 Supporting chasis	⑦螺钉 Screw	扳手 Wrench	⑧螺钉 Screw	扳手 Wrench	⑨配重块 Balance block	⑩精镗刀头 Fine boring head	⑪微调螺钉 Adjusting screw
HBH-65ZMC			SCC080350				
HBH-90ZMC			SCC080400				
HBH-120ZMC	SHBH	TS4	SCC080500	S6	HBH-WM	HBH-MMC	HBMS-2

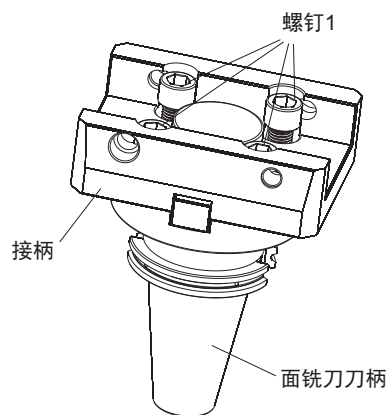
A 镗孔刀具 Boring Tools

面铣刀接柄大直径镗刀安装说明

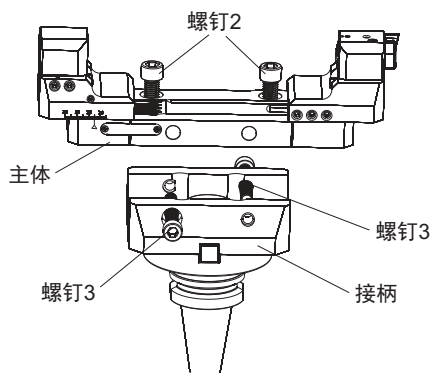
Direction for installation of large diameter boring tools with face mill connector



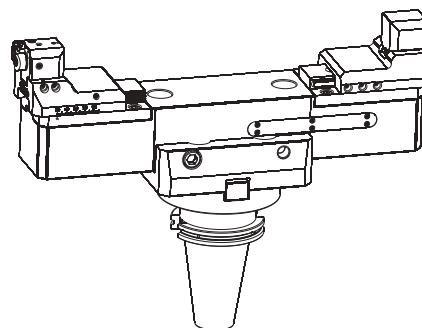
1. 松开螺钉2和螺钉3, 卸下接柄;
1. Release the screw2 and screw3, unload the connect shank



2. 清理各贴合面, 将接柄装入面铣刀刀柄, 锁紧螺钉1;
2. Clean each connection surface, install the shank with the face mill holder, tighten screw1



3. 清理各贴合面, 将主体装入接柄中, 锁紧螺钉2和螺钉3;
3. Clean each connection surface, install the holder with the shank, tighten screw2 and screw3



4. 完成安装。
4. Finish the installation



试切示例: Trial cut example

刀具型号: Model	T60-HBH460AL. CNHQ19
设备: Dvice	BT50 卧加 Horizontal processing
工件材质: Workpiece material	QT500
镗孔直径: Boring hole diameter	460mm
硬度: Ridigity	HB230
切削宽度: Cutting width	ap=20mm
切削速度: Cutting speed	Vc=150m/min
转速: Turning speed	n=108r/min
每齿进给: Feed per tooth	Fz=0.2mm/z
单个零件加工用时: Processing time of single piece	15min/件 piece

A 镗孔刀具 Boring Tools

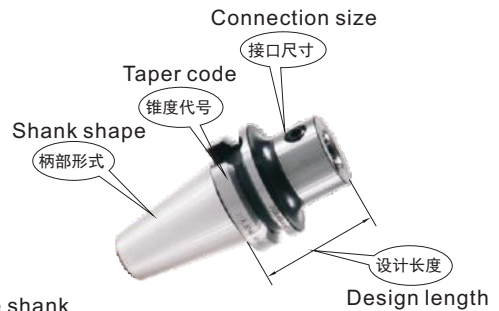
TMG21模块工具系统型号编制 Code System for TMG21 Module Tool System

TMG21主柄模块型号编制说明

Direction for TMG21 holder module code system

21 A. □ □ . □ - □
① ② ③ ④ ⑤ ⑥

- 1、TMG21工具系统。TMG21 Module Tool System
- 2、A表示此模块为主柄。A indicate this module is the holder
- 3、用两个字母表示柄部形式。Two letters to indicate the shank shape
- 4、用两位数字表示柄部的锥度代号。Two numbers to indicate the taper code of the shank
- 5、表示模块联结处的直径。Indicate the diameter of the module connector
- 6、表示从圆锥大端直径到前端面的距离。Indicate the distance from the diameter of the large end of the cone to the front face

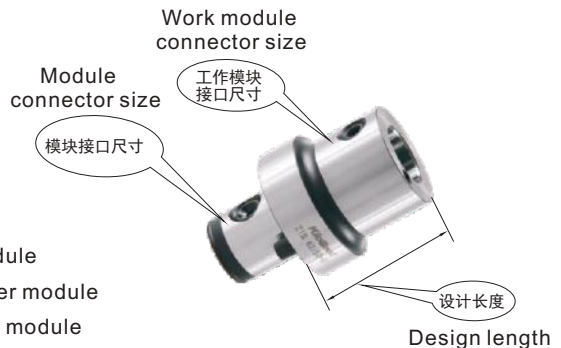


中间模块型号编制说明

Direction for intermediate module code system

21 B. □ / □ - □
① ② ③ ④ ⑤

- 1、TMG21工具系统。TMG21 Module Tool System
- 2、B表示此模块为中间模块。B indicate this module is the intermediate module
- 3、表示近主柄模块接口模块外径。Indicate the outer diameter near the holder module
- 4、表示近工作模块接口模块外径。Indicate the outer diameter near the work module
- 5、表示此中间模块的接长长度。Indicate the connect length of this intermediate module



工作模块型号编制说明

Direction for work module code system

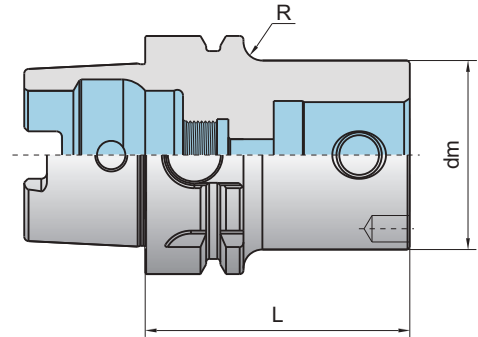
21 C. □ - □ - □
① ② ③ ④ ⑤

- 1、TMG21工具系统。TMG21 Module Tool System
- 2、C表示此模块为工作模块。用来装夹不同的刀具。C indicate this module is the work module, for clamping different tools
- 3、表示模块接口处的外径。Indicate the outer diameter of module connector
- 4、表示此工作模块的用途。Indicate the application of this work module
- 5、表示此工作模块接长长度。Indicate the connect length of this work module



A 镗孔刀具 Boring Tools

TMG21模块主柄-HSK63A
TMG21 Modular Arbors



型号 Type	库存 Stock	锥柄型式 Taper type	尺寸(mm) Dimension			外锥端螺钉 Outer taper screw	扳手 Wrench	内锥端螺钉 Inner taper screw	扳手 Wrench	重量 (kg)
			dm	L	R					
21A.HSK63A.25-50	⊙	HSK63A	25	50	8	21A25-E1	S3	21A25-E2	S2	
21A.HSK63A.25-100	●	HSK63A	25	100	8	21A25-E1	S3	21A25-E2	S2	
21A.HSK63A.25-130	⊙	HSK63A	25	130	8	21A25-E1	S3	21A25-E2	S2	
21A.HSK63A.32-50	⊙	HSK63A	32	50	4	21A32-E1	S4	21A32-E2	S2.5	
21A.HSK63A.32-85	●	HSK63A	32	85	10	21A32-E1	S4	21A32-E2	S2.5	
21A.HSK63A.32-110	●	HSK63A	32	110	8	21A32-E1	S4	21A32-E2	S2.5	
21A.HSK63A.32-140	●	HSK63A	32	140	8	21A32-E1	S4	21A32-E2	S2.5	
21A.HSK63A.40-60	⊙	HSK63A	40	60	6	21A40-E1	S5	21A40-E2	S3	
21A.HSK63A.40-90	⊙	HSK63A	40	90	6	21A40-E1	S5	21A40-E2	S3	
21A.HSK63A.40-120	⊙	HSK63A	40	120	6	21A40-E1	S5	21A40-E2	S3	
21A.HSK63A.40-150	⊙	HSK63A	40	150	6	21A40-E1	S5	21A40-E2	S3	
21A.HSK63A.50-70	⊙	HSK63A	50	70	-	21A50-E1	S6	21A50-E2	S4	
21A.HSK63A.50-95	⊙	HSK63A	50	95	-	21A50-E1	S6	21A50-E2	S4	
21A.HSK63A.50-125	●	HSK63A	50	125	-	21A50-E1	S6	21A50-E2	S4	
21A.HSK63A.50-165	●	HSK63A	50	165	-	21A50-E1	S6	21A50-E2	S4	
21A.HSK63A.63-80	●	HSK63A	63	80	-	21A63-E1	S8	21A63-E2	S5	
21A.HSK63A.63-105	⊙	HSK63A	63	105	-	21A63-E1	S8	21A63-E2	S5	
21A.HSK63A.63-145	⊙	HSK63A	63	145	-	21A63-E1	S8	21A63-E2	S5	
21A.HSK63A.63-180	⊙	HSK63A	63	180	-	21A63-E1	S8	21A63-E2	S5	
21A.HSK63A.80-100	⊙	HSK63A	80	100	-	21A80-E1	S10	21A80-E2	S6	

订货示例: 21A.HSK63A.25-50
Order example: 21A.HSK63A.25-50

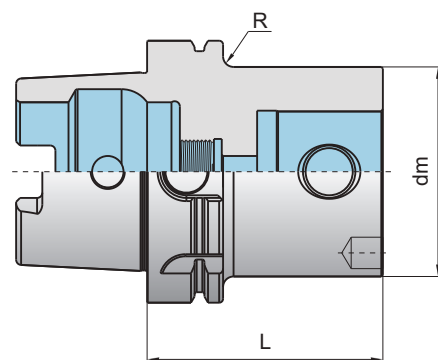
● 常备库存
Unallocated stock





⊙ 可备库存
Available stock

○ 订单生产
Order production

A 镗孔刀具 Boring Tools

TMG21模块主柄-HSK100A
TMG21 Modular Arbors



型号 Type	库存 Stock	锥柄型式 Taper type	尺寸(mm) Dimension			外锥端螺钉 Outer taper screw	扳手 Wrench	内锥端螺钉 Inner taper screw	扳手 Wrench	重量 (kg)
			dm	L	R					
21A.HSK100A.25-60	○	HSK100A	25	60	-	21A25-E1	S3	21A25-E2	S2	
21A.HSK100A.25-100	○	HSK100A	25	100	-	21A25-E1	S3	21A25-E2	S2	
21A.HSK100A.25-125	○	HSK100A	25	125	-	21A25-E1	S3	21A25-E2	S2	
21A.HSK100A.25-150	○	HSK100A	25	150	-	21A25-E1	S3	21A25-E2	S2	
21A.HSK100A.32-60	○	HSK100A	32	60	-	21A32-E1	S4	21A32-E2	S2.5	
21A.HSK100A.32-100	○	HSK100A	32	100	-	21A32-E1	S4	21A32-E2	S2.5	
21A.HSK100A.32-130	●	HSK100A	32	130	-	21A32-E1	S4	21A32-E2	S2.5	
21A.HSK100A.32-160	○	HSK100A	32	160	-	21A32-E1	S4	21A32-E2	S2.5	
21A.HSK100A.32-190	●	HSK100A	32	190	-	21A32-E1	S4	21A32-E2	S2.5	
21A.HSK100A.40-80	●	HSK100A	40	80	12	21A40-E1	S5	21A40-E2	S3	
21A.HSK100A.40-105	○	HSK100A	40	105	16	21A40-E1	S5	21A40-E2	S3	
21A.HSK100A.40-140	○	HSK100A	40	140	16	21A40-E1	S5	21A40-E2	S3	
21A.HSK100A.40-175	●	HSK100A	40	175	16	21A40-E1	S5	21A40-E2	S3	
21A.HSK100A.40-210	○	HSK100A	40	210	16	21A40-E1	S5	21A40-E2	S3	
21A.HSK100A.50-80	○	HSK100A	50	80	12	21A50-E1	S6	21A50-E2	S4	
21A.HSK100A.50-105	●	HSK100A	50	105	16	21A50-E1	S6	21A50-E2	S4	
21A.HSK100A.50-145	●	HSK100A	50	145	16	21A50-E1	S6	21A50-E2	S4	
21A.HSK100A.50-185	○	HSK100A	50	185	16	21A50-E1	S6	21A50-E2	S4	
21A.HSK100A.50-230	○	HSK100A	50	230	16	21A50-E1	S6	21A50-E2	S4	
21A.HSK100A.50-280	●	HSK100A	50	280	16	21A50-E1	S6	21A50-E2	S4	

订货示例: 21A.HSK100A.25-60
Order example: 21A.HSK100A.25-60

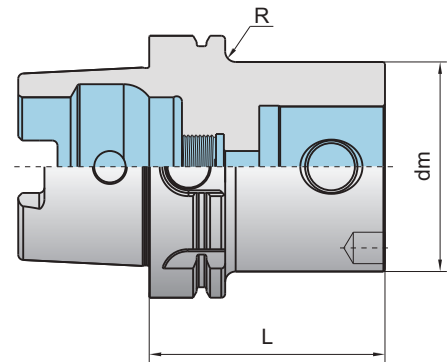
● 常备库存
Unallocated stock

● 可备库存
Available stock

○ 订单生产
Order production

A 镗孔刀具 Boring Tools

TMG21模块主柄-HSK100A
TMG21 Modular Arbors



型号 Type	库存 Stock	锥柄型式 Taper type	尺寸(mm) Dimension			外锥端螺钉 Outer taper screw	扳手 Wrench	内锥端螺钉 Inner taper screw	扳手 Wrench	重量 (kg)
			dm	L	R					
21A.HSK100A.63-80	●	HSK100A	63	80	12	21A63-E1	S8	21A63-E2	S5	
21A.HSK100A.63-120	●	HSK100A	63	120	12	21A63-E1	S8	21A63-E2	S5	
21A.HSK100A.63-165	○	HSK100A	63	165	12	21A63-E1	S8	21A63-E2	S5	
21A.HSK100A.63-210	○	HSK100A	63	210	12	21A63-E1	S8	21A63-E2	S5	
21A.HSK100A.63-260	○	HSK100A	63	260	12	21A63-E1	S8	21A63-E2	S5	
21A.HSK100A.63-310	○	HSK100A	63	310	12	21A63-E1	S8	21A63-E2	S5	
21A.HSK100A.63-360	○	HSK100A	63	360	12	21A63-E1	S8	21A63-E2	S5	
21A.HSK100A.80-90	●	HSK100A	80	90	4	21A80-E1	S10	21A80-E2	S6	
21A.HSK100A.80-175	●	HSK100A	80	175	4	21A80-E1	S10	21A80-E2	S6	
21A.HSK100A.80-235	○	HSK100A	80	235	4	21A80-E1	S10	21A80-E2	S6	
21A.HSK100A.80-300	○	HSK100A	80	300	4	21A80-E1	S10	21A80-E2	S6	
21A.HSK100A.80-380	○	HSK100A	80	380	4	21A80-E1	S10	21A80-E2	S6	
21A.HSK100A.100-100	○	HSK100A	100	100	-	21A100-E1	S12	21A100-E2	S8	
21A.HSK100A.100-200	○	HSK100A	100	200	-	21A100-E1	S12	21A100-E2	S8	

订货示例: 21A.HSK100A.63-80
Order example: 21A.HSK100A.63-80

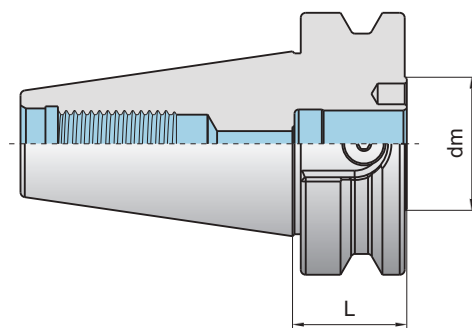
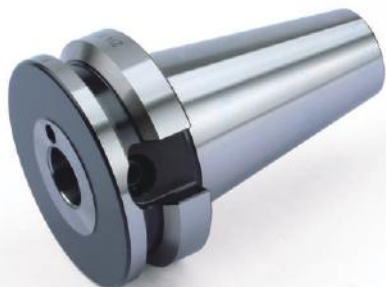
● 常备库存
Unallocated stock

● 可备库存
Available stock

○ 订单生产
Order production

A 镗孔刀具 Boring Tools

TMG21模块主柄-BT40/BT50
TMG21 Modular Arbors



型号 Type	库存 Stock	锥柄型式 Taper type	尺寸(mm) Dimension		外锥端螺钉 Outer taper screw	扳手 Wrench	内锥端螺钉 Inner taper screw	扳手 Wrench	重量 (kg)
			dm	L					
21A.BT40.25-27.5	○	BT40	25	27.5	21A25-E1	S3	21A25-E2	S2	0.96
21A.BT40.32-27.5	○	BT40	32	27.5	21A32-E1	S4	21A32-E2	S2.5	0.95
21A.BT40.40-27.5	◐	BT40	40	27.5	21A40-E1	S5	21A40-E2	S3	0.9
21A.BT50.32-38.5	●	BT50	32	38.5	21A32-E1	S4	21A32-E2	S2.5	3.54
21A.BT50.40-38.5	◐	BT50	40	38.5	21A40-E1	S5	21A40-E2	S3	3.5
21A.BT50.50-38.5	○	BT50	50	38.5	21A50-E1	S6	21A50-E2	S4	3.39
21A.BT50.63-38.5	●	BT50	63	38.5	21A63-E1	S8	21A63-E2	S5	3.28

订货示例: 21A.BT40.25-27.5
Order example: 21A.BT40.25-27.5

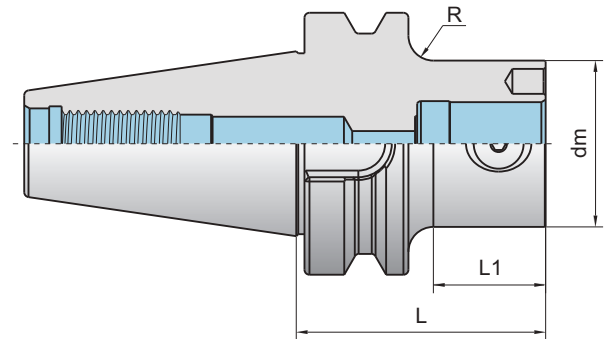
● 常备库存
Unallocated stock

◐ 可备库存
Available stock

○ 订单生产
Order production

A 镗孔刀具 Boring Tools

TMG21模块主柄-BT30/BT40
TMG21 Modular Arbors



型号 Type	库存 Stock	锥柄型式 Taper type	尺寸(mm) Dimension				外锥端螺钉 Outer taper screw	扳手 Wrench	内锥端螺钉 Inner taper screw	扳手 Wrench	重量 (kg)
			dm	L1	L	R					
21A.BT30.25-40	●	BT30	25	15	40	4	21A25-E1	S3	21A25-E2	S2	0.42
21A.BT30.32-50	◐	BT30	32	25	50	4	21A32-E1	S4	21A32-E2	S2.5	0.51
21A.BT30.40-50	●	BT30	40	27.5	50	1	21A40-E1	S5	21A40-E2	S3	0.57
21A.BT40.25-60	●	BT40	25	26.5	60	8	21A25-E1	S3	21A25-E2	S2	1.05
21A.BT40.25-100	●	BT40	25	61	100	12	21A25-E1	S3	21A25-E2	S2	1.22
21A.BT40.25-130	●	BT40	25	91	130	12	21A25-E1	S3	21A25-E2	S2	1.38
21A.BT40.32-60	●	BT40	32	26.5	60	8	21A32-E1	S4	21A32-E2	S2.5	1.1
21A.BT40.32-85	●	BT40	32	50	85	8	21A32-E1	S4	21A32-E2	S2.5	1.24
21A.BT40.32-110	●	BT40	32	73	110	10	21A32-E1	S4	21A32-E2	S2.5	1.43
21A.BT40.32-140	●	BT40	32	103	140	10	21A32-E1	S4	21A32-E2	S2.5	1.61
21A.BT40.40-60	●	BT40	40	26.5	60	8	21A40-E1	S5	21A40-E2	S3	1.2
21A.BT40.40-90	●	BT40	40	55	90	8	21A40-E1	S5	21A40-E2	S3	1.47
21A.BT40.40-120	●	BT40	40	85	120	8	21A40-E1	S5	21A40-E2	S3	1.75
21A.BT40.40-150	●	BT40	40	115	150	8	21A40-E1	S5	21A40-E2	S3	2.02
21A.BT40.50-60	●	BT40	50	30	60	4	21A50-E1	S6	21A50-E2	S4	1.26
21A.BT40.50-95	●	BT40	50	64	95	4	21A50-E1	S6	21A50-E2	S4	1.74
21A.BT40.50-125	●	BT40	50	94	125	4	21A50-E1	S6	21A50-E2	S4	2.22
21A.BT40.50-165	●	BT40	50	134	165	4	21A50-E1	S6	21A50-E2	S4	2.7
21A.BT40.63-70	●	BT40	63	41	70	-	21A63-E1	S8	21A63-E2	S5	1.66
21A.BT40.63-105	●	BT40	63	76	105	-	21A63-E1	S8	21A63-E2	S5	2.41
21A.BT40.63-145	●	BT40	63	116	145	-	21A63-E1	S8	21A63-E2	S5	3.16
21A.BT40.63-180	●	BT40	63	151	180	-	21A63-E1	S8	21A63-E2	S5	3.97

订货示例: 21A.BT30.25-40
Order example: 21A.BT30.25-40

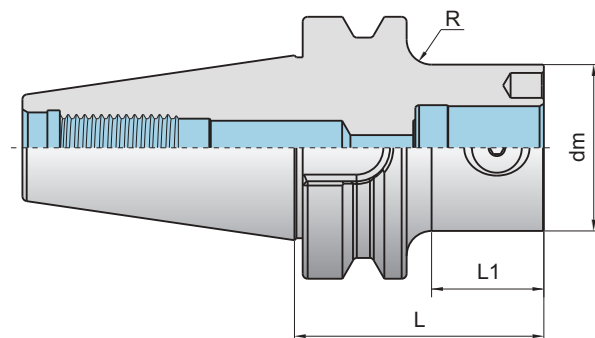
● 常备库存
Unallocated stock

◐ 可备库存
Available stock

○ 订单生产
Order production

A 镗孔刀具 Boring Tools

TMG21模块主柄-BT50
TMG21 Modular Arbors



型号 Type	库存 Stock	锥柄型式 Taper type	尺寸(mm) Dimension				外锥端螺钉 Outer taper screw	扳手 Wrench	内锥端螺钉 Inner taper screw	扳手 Wrench	重量 (kg)
			dm	L1	L	R					
21A.BT50.25-70	●	BT50	25	25.5	70	8	21A25-E1	S3	21A25-E2	S2	3.6
21A.BT50.25-100	●	BT50	25	50	100	12	21A25-E1	S3	21A25-E2	S2	3.72
21A.BT50.25-125	●	BT50	25	67	125	20	21A25-E1	S3	21A25-E2	S2	3.87
21A.BT50.25-150	●	BT50	25	92	150	20	21A25-E1	S3	21A25-E2	S2	3.99
21A.BT50.32-70	●	BT50	32	25.5	70	8	21A32-E1	S4	21A32-E2	S2.5	3.67
21A.BT50.32-100	●	BT50	32	52	100	10	21A32-E1	S4	21A32-E2	S2.5	3.87
21A.BT50.32-130	●	BT50	32	76	130	16	21A32-E1	S4	21A32-E2	S2.5	4.07
21A.BT50.32-160	●	BT50	32	106	160	16	21A32-E1	S4	21A32-E2	S2.5	4.27
21A.BT50.32-190	●	BT50	32	136	190	16	21A32-E1	S4	21A32-E2	S2.5	4.47
21A.BT50.40-70	●	BT50	40	25.5	70	8	21A40-E1	S5	21A40-E2	S3	3.74
21A.BT50.40-105	●	BT50	40	51	105	16	21A40-E1	S5	21A40-E2	S3	4.09
21A.BT50.40-140	●	BT50	40	86	140	16	21A40-E1	S5	21A40-E2	S3	4.45
21A.BT50.40-175	●	BT50	40	121	175	16	21A40-E1	S5	21A40-E2	S3	4.8
21A.BT50.40-210	●	BT50	40	156	210	16	21A40-E1	S5	21A40-E2	S3	5.15
21A.BT50.50-70	●	BT50	50	25.5	70	8	21A50-E1	S6	21A50-E2	S4	4.7
21A.BT50.50-105	●	BT50	50	51	105	16	21A50-E1	S6	21A50-E2	S4	4.81
21A.BT50.50-145	●	BT50	50	91	145	16	21A50-E1	S6	21A50-E2	S4	4.92
21A.BT50.50-185	●	BT50	50	131	185	16	21A50-E1	S6	21A50-E2	S4	5.03
21A.BT50.50-230	●	BT50	50	176	230	16	21A50-E1	S6	21A50-E2	S4	5.14
21A.BT50.50-280	⊙	BT50	50	226	280	16	21A50-E1	S6	21A50-E2	S4	5.25

订货示例: 21A.BT50.25-70
Order example: 21A.BT50.25-70

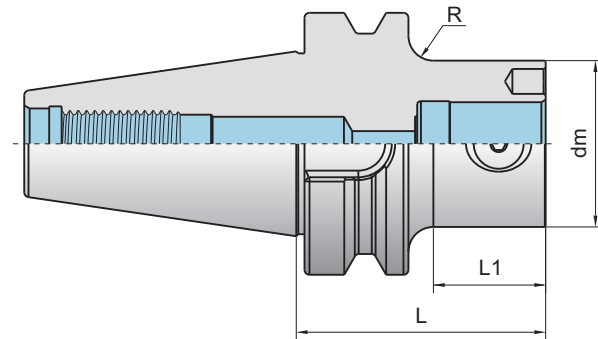
● 常备库存
Unallocated stock

⊙ 可备库存
Available stock

○ 订单生产
Order production

A 镗孔刀具 Boring Tools

TMG21模块主柄-BT50
TMG21 Modular Arbors



型号 Type	库存 Stock	锥柄型式 Taper type	尺寸(mm) Dimension				外锥端螺钉 Outer taper screw	扳手 Wrench	内锥端螺钉 Inner taper screw	扳手 Wrench	重量 (kg)
			dm	L1	L	R					
21A.BT50.63-80	●	BT50	63	35.5	80	8	21A63-E1	S8	21A63-E2	S5	4.22
21A.BT50.63-120	●	BT50	63	70	120	12	21A63-E1	S8	21A63-E2	S5	5.12
21A.BT50.63-165	●	BT50	63	115	165	12	21A63-E1	S8	21A63-E2	S5	6.17
21A.BT50.63-210	●	BT50	63	160	210	12	21A63-E1	S8	21A63-E2	S5	7.07
21A.BT50.63-260	●	BT50	63	210	260	12	21A63-E1	S8	21A63-E2	S5	7.92
21A.BT50.63-310	●	BT50	63	260	310	12	21A63-E1	S8	21A63-E2	S5	8.84
21A.BT50.63-360	⊙	BT50	63	310	360	12	21A63-E1	S8	21A63-E2	S5	9.71
21A.BT50.80-100	●	BT50	80	55.5	100	8	21A80-E1	S10	21A80-E2	S6	5.28
21A.BT50.80-175	●	BT50	80	129	175	8	21A80-E1	S10	21A80-E2	S6	8.03
21A.BT50.80-235	●	BT50	80	189	235	8	21A80-E1	S10	21A80-E2	S6	10.78
21A.BT50.80-300	●	BT50	80	254	300	8	21A80-E1	S10	21A80-E2	S6	13.53
21A.BT50.80-380	●	BT50	80	334	380	8	21A80-E1	S10	21A80-E2	S6	16.38
21A.BT50.100-110	●	BT50	100	71	110	0.7	21A100-E1	S12	21A100-E2	S8	6.54
21A.BT50.100-200	●	BT50	100	161	200	0.7	21A100-E1	S12	21A100-E2	S8	11.31

订货示例: 21A.BT50.63-80
Order example: 21A.BT50.63-80

● 常备库存
Unallocated stock

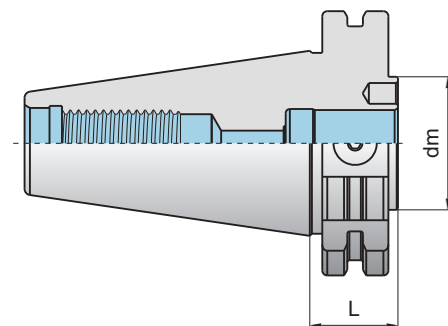
⊙ 可备库存
Available stock

○ 订单生产
Order production

A 镗孔刀具 Boring Tools

TMG21模块主柄-JT40/JT50
TMG21 Modular Arbors

JIS B
6339



型号 Type	库存 Stock	锥柄型式 Taper type	尺寸(mm) Dimension		外锥端螺钉 Outer taper screw	扳手 Wrench	内锥端螺钉 Inner taper screw	扳手 Wrench	重量 (kg)
			dm	L					
21A..JT40.25-19.4	○	JT40	25	19.4	21A25-E1	S3	21A25-E2	S2	0.86
21A..JT40.32-21.4	○	JT40	32	21.4	21A32-E1	S4	21A32-E2	S2.5	0.85
21A..JT40.40-22.4	○	JT40	40	22.4	21A40-E1	S5	21A40-E2	S3	0.82
21A..JT40.50-24.4	○	JT40	50	24.4	21A50-E1	S6	21A50-E2	S4	0.8
21A..JT50.25-19.4	○	JT50	25	19.4	21A25-E1	S3	21A25-E2	S2	3.34
21A..JT50.32-21.4	○	JT50	32	21.4	21A32-E1	S4	21A32-E2	S2.5	3.28
21A..JT50.40-22.4	○	JT50	40	22.4	21A40-E1	S5	21A40-E2	S3	3.15
21A..JT50.50-24.4	○	JT50	50	24.4	21A50-E1	S6	21A50-E2	S4	3.06

订货示例: 21A.JT40.25-19.4
Order example: 21A.JT40.25-19.4

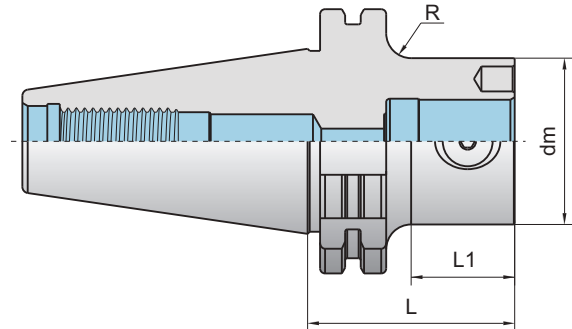
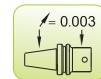
● 常备库存
Unallocated stock

◐ 可备库存
Available stock

○ 订单生产
Order production

A 镗孔刀具 Boring Tools

TMG21模块主柄-JT40/JT50
TMG21 Modular Arbors



型号 Type	库存 Stock	锥柄型式 Taper type	尺寸(mm) Dimension				外锥端螺钉 Outer taper screw	扳手 Wrench	内锥端螺钉 Inner taper screw	扳手 Wrench	重量 (kg)
			dm	L1	L	R					
21A.JT40.25-50	○	JT40	25	25.5	50	6	21A25-E1	S3	21A25-E2	S2	0.88
21A.JT40.25-95	●	JT40	25	63	95	12	21A25-E1	S3	21A25-E2	S2	1.09
21A.JT40.32-50	○	JT40	32	25.5	50	6	21A32-E1	S4	21A32-E2	S2.5	0.94
21A.JT40.32-100	●	JT40	32	72	100	8	21A32-E1	S4	21A32-E2	S2.5	1.25
21A.JT40.40-50	○	JT40	40	27	50	4	21A40-E1	S5	21A40-E2	S3	1.01
21A.JT40.40-110	●	JT40	40	86	110	4	21A40-E1	S5	21A40-E2	S3	1.59
21A.JT40.50-50	○	JT40	50	29	50	-	21A50-E1	S6	21A50-E2	S4	1.1
21A.JT40.50-115	○	JT40	50	94	115	-	21A50-E1	S6	21A50-E2	S4	1.98
21A.JT40.63-90	●	JT40	63	89	90	-	21A63-E1	S8	21A63-E2	S5	2
21A.JT40.63-175	○	JT40	63	154	175	-	21A63-E1	S8	21A63-E2	S5	3.19
21A.JT50.25-60	●	JT50	25	32	60	10	21A25-E1	S3	21A25-E2	S2	2.67
21A.JT50.25-105	○	JT50	25	65	105	20	21A25-E1	S3	21A25-E2	S2	2.9
21A.JT50.32-60	○	JT50	32	32	60	10	21A32-E1	S4	21A32-E2	S2.5	2.76
21A.JT50.32-110	○	JT50	32	74	110	16	21A32-E1	S4	21A32-E2	S2.5	3.1
21A.JT50.40-60	●	JT50	40	32	60	10	21A40-E1	S5	21A40-E2	S3	2.86
21A.JT50.40-120	●	JT50	40	84	120	16	21A40-E1	S5	21A40-E2	S3	3.54
21A.JT50.50-60	●	JT50	50	32	60	10	21A50-E1	S6	21A50-E2	S4	3
21A.JT50.50-125	●	JT50	50	93	125	12	21A50-E1	S6	21A50-E2	S4	3.96
21A.JT50.63-60	●	JT50	63	32	60	8	21A63-E1	S8	21A63-E2	S5	3.24
21A.JT50.63-145	●	JT50	63	119	145	6	21A63-E1	S8	21A63-E2	S5	5.15
21A.JT50.80-70	●	JT50	80	49	70	-	21A80-E1	S10	21A80-E2	S6	3.86
21A.JT50.80-155	●	JT50	80	134	155	-	21A80-E1	S10	21A80-E2	S6	6.99
21A.JT50.100-115	○	JT50	100	94	115	-	21A100-E1	S12	21A100-E2	S8	6.59
21A.JT50.100-200	○	JT50	100	179	200	-	21A100-E1	S12	21A100-E2	S8	9.77
21A.JT50.125-145	○	JT50	125	124	145	-	21A125-E1	S14	21A125-E2	S10	7.62

订货示例: 21A.JT40.25-50
Order example: 21A.JT40.25-50

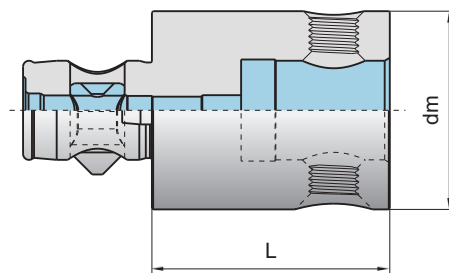
● 常备库存
Unallocated stock

◐ 可备库存
Available stock

○ 订单生产
Order production

A 镗孔刀具 Boring Tools

等径中间模块
Modular Extension



型号 Type	库存 Stock	尺寸(mm) Dimension		外锥端螺钉 Outertaperscrew	扳手 Wrench	内锥端螺钉 Innertaperscrew	扳手 Wrench	滑销 Slide pin	定位销 Location pin	冷却管 Coolanthose	重量 (kg)
		dm	L								
21B.25/25-45	●	25	45	21A25-E1	S3	21A25-E2	S2	21A25-E3	21A25-E4	21A25-E6	0.19
21B.25/25-60	●	25	60	21A25-E1	S3	21A25-E2	S2	21A25-E3	21A25-E4	21A25-E6	0.22
21B.32/32-35	●	32	35	21A32-E1	S4	21A32-E2	S2.5	21A32-E3	21A32-E4	21A32-E6	0.21
21B.32/32-50	●	32	50	21A32-E1	S4	21A32-E2	S2.5	21A32-E3	21A32-E4	21A32-E6	0.3
21B.32/32-70	●	32	70	21A32-E1	S4	21A32-E2	S2.5	21A32-E3	21A32-E4	21A32-E6	0.42
21B.40/40-40	●	40	40	21A40-E1	S5	21A40-E2	S3	21A40-E3	21A40-E4	21A40-E6	0.37
21B.40/40-60	●	40	60	21A40-E1	S5	21A40-E2	S3	21A40-E3	21A40-E4	21A40-E6	0.56
21B.40/40-90	●	40	90	21A40-E1	S5	21A40-E2	S3	21A40-E3	21A40-E4	21A40-E6	0.86
21B.50/50-50	●	50	50	21A50-E1	S6	21A50-E2	S4	21A50-E3	21A50-E4	21A50-E6	0.72
21B.50/50-65	●	50	65	21A50-E1	S6	21A50-E2	S4	21A50-E3	21A50-E4	21A50-E6	0.95
21B.50/50-100	●	50	100	21A50-E1	S6	21A50-E2	S4	21A50-E3	21A50-E4	21A50-E6	1.47
21B.50/50-150	◐	50	150	21A50-E1	S6	21A50-E2	S4	21A50-E3	21A50-E4	21A50-E6	2.23
21B.63/63-60	●	63	60	21A63-E1	S8	21A63-E2	S5	21A50-E3	21A63-E4	21A63-E6	1.38
21B.63/63-85	●	63	85	21A63-E1	S8	21A63-E2	S5	21A63-E3	21A63-E4	21A63-E6	1.98
21B.63/63-125	●	63	125	21A63-E1	S8	21A63-E2	S5	21A63-E3	21A63-E4	21A63-E6	2.93
21B.63/63-190	◐	63	190	21A63-E1	S8	21A63-E2	S5	21A63-E3	21A63-E4	21A63-E6	4.98
21B.80/80-70	◐	80	70	21A80-E1	S10	21A80-E2	S6	21A80-E3	21A80-E4	21A80-E6	2.59
21B.80/80-85	●	80	85	21A80-E1	S10	21A80-E2	S6	21A80-E3	21A80-E4	21A80-E6	3.16
21B.80/80-125	●	80	125	21A80-E1	S10	21A80-E2	S6	21A80-E3	21A80-E4	21A80-E6	4.69
21B.80/80-240	◐	80	240	21A80-E1	S10	21A80-E2	S6	21A80-E3	21A80-E4	21A80-E6	9.13
21B.100/100-85	◐	100	85	21A100-E1	S12	21A100-E2	S8	21A100-E3	21A100-E4	21A100-E6	4.91
21B.100/100-125	◐	100	125	21A100-E1	S12	21A100-E2	S8	21A100-E3	21A100-E4	21A100-E6	7.32
21B.100/100-160	◐	100	160	21A100-E1	S12	21A100-E2	S8	21A100-E3	21A100-E4	21A100-E6	9.43
21B.125/125-160	◐	125	160	21A125-E1	S14	21A125-E2	S10	21A125-E3	21A125-E4	21A125-E6	14.7
21B.125/125-200	◐	125	200	21A125-E1	S14	21A125-E2	S10	21A125-E3	21A125-E4	21A125-E6	18.46

订货示例: 21B.25/25-45
Order example: 21B.25/25-45

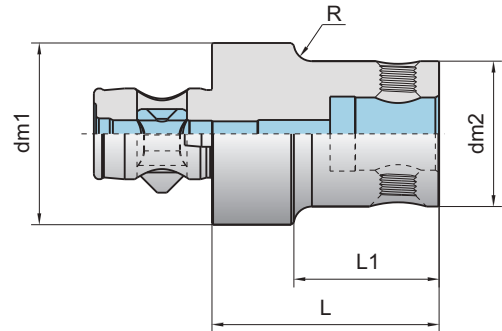
● 常备库存
Unallocated stock

◐ 可备库存
Available stock

○ 订单生产
Order production

A 镗孔刀具 Boring Tools

变径中间模块 Modular Reducer



型号 Type	库存 Stock	尺寸(mm) Dimension					外锥端螺钉 Outer taper screw	扳手 Wrench	内锥端螺钉 Inner taper screw	扳手 Wrench	滑销 Slide pin	定位销 Location pin	冷却管 Coolant hose	重量 (kg)
		dm1	dm2	L1	L	R								
21B.32/25-40	●	32	25	30	40	2	21A25-E1	S3	21A25-E2	S2	21A32-E3	21A32-E4	21A32-E6	0.18
21B.40/25-40	●	40	25	28	40	6	21A25-E1	S3	21A25-E2	S2	21A40-E3	21A40-E4	21A40-E6	0.26
21B.40/32-40	●	40	32	28	40	2	21A32-E1	S4	21A32-E2	S2.5	21A40-E3	21A40-E4	21A40-E6	0.3
21B.50/25-50	●	50	25	35	50	8	21A25-E1	S3	21A25-E2	S2	21A50-E3	21A50-E4	21A50-E6	0.49
21B.50/32-50	●	50	32	35	50	6	21A32-E1	S4	21A32-E2	S2.5	21A50-E3	21A50-E4	21A50-E6	0.54
21B.50/40-50	●	50	40	35	50	4	21A40-E1	S5	21A40-E2	S3	21A50-E3	21A50-E4	21A50-E6	0.63
21B.63/25-60	●	63	25	40	60	10	21A25-E1	S3	21A25-E2	S2	21A63-E3	21A63-E4	21A63-E6	0.88
21B.63/32-60	●	63	32	40	60	10	21A32-E1	S4	21A32-E2	S2.5	21A63-E3	21A63-E4	21A63-E6	0.96
21B.63/40-60	●	63	40	40	60	10	21A40-E1	S5	21A40-E2	S3	21A63-E3	21A63-E4	21A63-E6	1.05
21B.63/50-60	●	63	50	40	60	6	21A50-E1	S6	21A50-E2	S4	21A63-E3	21A63-E4	21A63-E6	1.17
21B.80/32-60	●	80	32	35	60	8	21A32-E1	S4	21A32-E2	S2.5	21A80-E3	21A80-E4	21A80-E6	1.56
21B.80/40-60	●	80	40	35	60	8	21A40-E1	S5	21A40-E2	S3	21A80-E3	21A80-E4	21A80-E6	1.67
21B.80/50-60	●	80	50	35	60	8	21A50-E1	S6	21A50-E2	S4	21A80-E3	21A80-E4	21A80-E6	1.78
21B.80/63-60	●	80	63	35	60	8	21A63-E1	S8	21A63-E2	S5	21A80-E3	21A80-E4	21A80-E6	1.98
21B.100/40-80	●	100	40	50	80	12	21A40-E1	S5	21A40-E2	S3	21A100-E3	21A100-E4	21A100-E6	2.99
21B.100/50-80	○	100	50	50	80	12	21A50-E1	S6	21A50-E2	S4	21A100-E3	21A100-E4	21A100-E6	3.18
21B.100/63-80	○	100	63	50	80	12	21A63-E1	S8	21A63-E2	S5	21A100-E3	21A100-E4	21A100-E6	3.58
21B.100/80-80	●	100	80	50	80	8	21A80-E1	S10	21A80-E2	S6	21A100-E3	21A100-E4	21A100-E6	4.03
21B.125/40-100	○	125	40	50	100	16	21A40-E1	S5	21A40-E2	S3	21A125-E3	21A125-E4	21A125-E6	5.6
21B.125/50-100	●	125	50	50	100	16	21A50-E1	S6	21A50-E2	S4	21A125-E3	21A125-E4	21A125-E6	5.88
21B.125/63-100	○	125	63	50	100	16	21A63-E1	S8	21A63-E2	S5	21A125-E3	21A125-E4	21A125-E6	6.37
21B.125/80-100	○	125	80	50	100	16	21A80-E1	S10	21A80-E2	S6	21A125-E3	21A125-E4	21A125-E6	7.07
21B.125/100-100	○	125	100	50	100	10	21A100-E1	S12	21A100-E2	S8	21A125-E3	21A125-E4	21A125-E6	7.91

订货示例: 21B.32/25-40
Order example: 21B.32/25-40

● 常备库存
Unallocated stock

● 可备库存
Available stock

○ 订单生产
Order production

A 镗孔刀具 Boring Tools

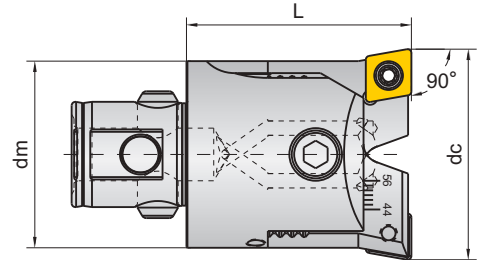
KB 模块式镗刀系统 KB Modular Boring System



A 镗孔刀具 Boring Tools

HBA双刃粗镗刀-CC..

HBA Double Edge Rough Boring Tools-CC..



刀片 Inserts	螺钉 Screw	扳手 Wrench
CC..060204	SIC025065	370 T7x35
CC..09T308	SIC035080	365 T15x45
CC..120408	SID040110	365 T15x45



型号 Type	库存 Stock	柄部型式 Module size	尺寸(mm) Dimension			镗刀头 Boring head	阶梯镗刀头 Boring head	刀片 Inserts	重量 (kg)
			dc	dm	L				
KB1-HBA20-32.5	●	KB1	20-27	19	32.5	HBA20	-	CC..060204	
KB2-HBA27-35.5	●	KB2	27-36	24	35.5	HBA27	-	CC..060204	
KB3-HBA35-40	●	KB3	35-45	31	40	HBA35	-	CC..060204	
KB4-HBA44-47	●	KB4	44-56	39	47	HBA44	HBA44-S*	CC..09T308	
KB5-HBA55-57	●	KB5	55-71	50	57	HBA55	HBA55-S*	CC..120408	
KB6-HBA69-71	●	KB6	69-91	64	71	HBA69	HBA69-S*	CC..120408	
KB6-HBA90-71	●	KB6	90-122	64	71	HBA90	HBA90-S*	CC..120408	
KB7-HBA90-87	●	KB7	90-122	90	87	HBA90	HBA90-S*	CC..120408	
KB6-HBA120-71	●	KB6	120-162	64	71	HBA120D	HBA120D-S*	CC..120408	
KB7-HBA120-87	●	KB7	120-162	90	87	HBA120D	HBA120D-S*	CC..120408	
KB7-HBA160-117	●	KB7	160-224	90	117	HBA160D	HBA160D-S*	CC..120408	

带*配件为阶梯镗选用镗头或刀夹，需单独订购
They are the boring heads or insert holders required for step boring, and need to be ordered separately.
使用方法详见产品使用说明书。
Please refer to the instruction manual for use.

● 常备库存
Unallocated stock

◐ 可备库存
Available stock

○ 订单生产
Order production

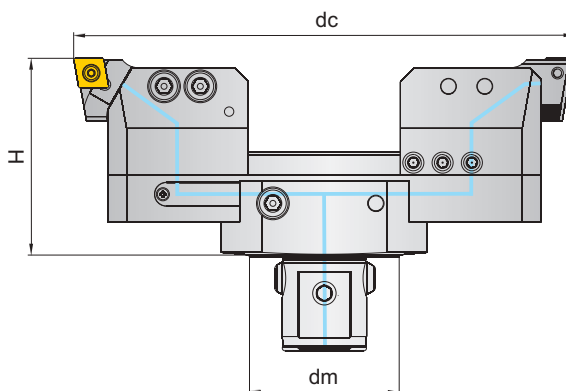
A 镗孔刀具 Boring Tools

HBH大直径粗镗刀-CC..

HBH Large Diameter Rough Boring Tools-CC..




Internal cooling



适用刀柄：KB模块主柄
Matching Tool Holder: KB Module Tool Holder.

刀片 Inserts	螺钉 Screw 	扳手 Wrench 
CC..120408	SID040110	365 T15x45



型号 Type	库存 Stock	柄部型式 Module size	尺寸(mm) Dimension			刀片 Inserts 	重量 (kg)
			dc	dm	H		
KB6-HBH150C	●	KB6	φ 150- φ 215	64	85	CC..120408	
KB6-HBH215C	●	KB6	φ 215- φ 280	64	85	CC..120408	
KB7-HBH280C	●	KB7	φ 280- φ 370	90	95	CC..120408	
KB7-HBH370C	●	KB7	φ 370- φ 460	90	95	CC..120408	
KB7-HBH460ALC	●	KB7	φ 460- φ 580	90	150	CC..120408	
KB7-HBH580ALC	◐	KB7	φ 580- φ 700	90	155	CC..120408	
KB7-HBH700ALC	◐	KB7	φ 700- φ 820	90	160	CC..120408	
KB7-HBH820ALC	◐	KB7	φ 820- φ 940	90	165	CC..120408	
KB7-HBH940ALC	◐	KB7	φ 940- φ 1060	90	170	CC..120408	

→ 使用方法详见产品使用说明书。
Please refer to the instruction manual for use.
→ 可选阶梯镗用镗头，订货型号：HBH-..R-S*。
Optional boring head for step boring, order model: HBH-..R-S*.

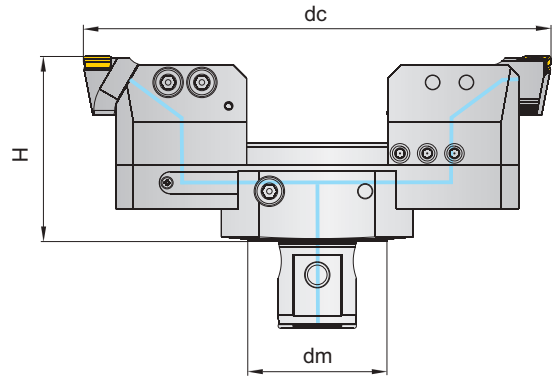
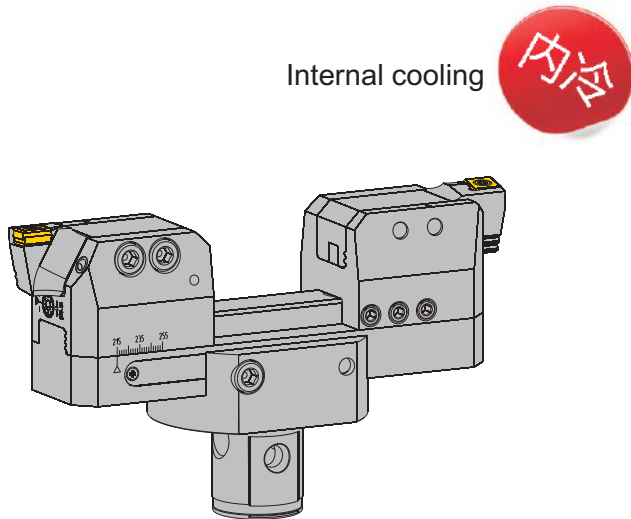
● 常备库存
Unallocated stock

◐ 可备库存
Available stock

○ 订单生产
Order production

A 镗孔刀具 Boring Tools



HBH大直径粗镗刀 (立装刀片)-CNHQ
HBH Large Diameter Rough Boring Tools-CNHQ



适用刀柄: KB模块手柄
Matching Tool Holder: KB Module Tool Holder.

刀片 Inserts	螺钉 Screw 	扳手 Wrench 
CNHQ1206..	SIC050108	365 T20x45



型号 Type	库存 Stock	柄部型式 Module size	尺寸(mm) Dimension			镗刀头 Boring head 	刀片 Inserts 	重量 (kg)
			dc	dm	H			
KB6-HBH150C.CN12	●	KB6	φ 150- φ 215	64	85	HBH-65R.CN12	CNHQ1206.L.	
KB6-HBH215C.CN12	●	KB6	φ 215- φ 280	64	85	HBH-65R.CN12	CNHQ1206.L.	
KB7-HBH280C.CN12	●	KB7	φ 280- φ 370	90	95	HBH-90R.CN12	CNHQ1206.L.	
KB7-HBH370C.CN12	●	KB7	φ 370- φ 460	90	95	HBH-90R.CN12	CNHQ1206.L.	
KB7-HBH460ALC.CN12	●	KB7	φ 460- φ 580	90	150	HBH-120R.CN12	CNHQ1206.L.	
KB7-HBH580ALC.CN12	○	KB7	φ 580- φ 700	90	155	HBH-120R.CN12	CNHQ1206.L.	
KB7-HBH700ALC.CN12	○	KB7	φ 700- φ 820	90	160	HBH-120R.CN12	CNHQ1206.L.	
KB7-HBH820ALC.CN12	○	KB7	φ 820- φ 940	90	165	HBH-120R.CN12	CNHQ1206.L.	
KB7-HBH940 ALC.CN12	○	KB7	φ 940- φ 1060	90	170	HBH-120R.CN12	CNHQ1206.L.	

→ 使用方法详见产品使用说明书。
Please refer to the instruction manual for use.
→ 可选阶梯镗用镗头, 订货型号: HBH-..R.CN12-S*.
Optional boring head for step boring, order model: HBH-..R.CN12-S*.

● 常备库存
Unallocated stock

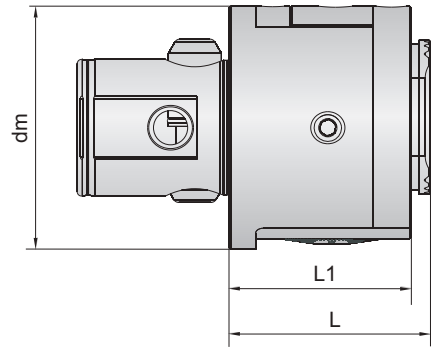
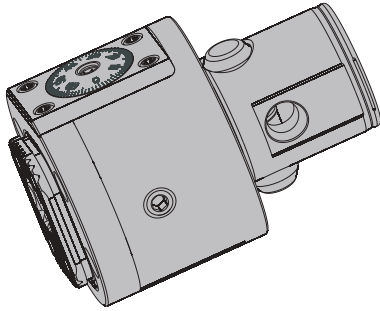
○ 可备库存
Available stock

○ 订单生产
Order production

A 镗孔刀具 Boring Tools

SMP小孔径微调精镗刀

SMP Small Micro-adjustable Fine Boring Tools



型号 Type	库存 Stock	配合主轴接口 Modular holder	尺寸(mm) Dimension					镗孔范围(mm) Boring range	调节行程(mm) Adjustment	调节精度(mm) Adjustment accuracy	配合游标精度(mm) Vernier accuracy	锁紧螺钉 Locking screw	重量 (kg)
			Dc	dm	D	L1	L						
KB6-SMP	●	KB6	16	64	40	48	53	φ 3-88	-0.5~25	φ 0.01	φ 0.001	SRC080140	1.3

➔ 使用方法详见产品使用说明书。
Please refer to the instruction manual for use.

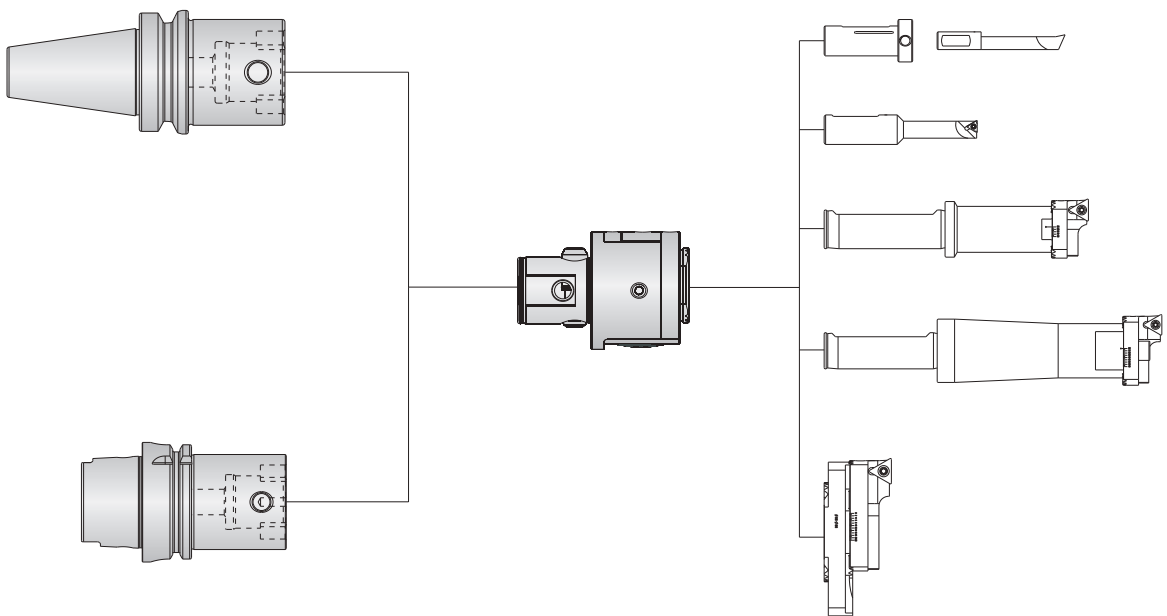
● 常备库存
Unallocated stock

◐ 可备库存
Available stock

○ 订单生产
Order production

使用配置图

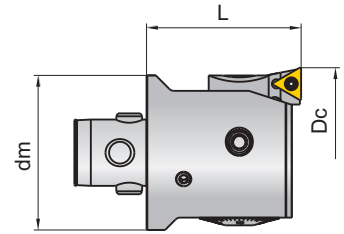
Configuration diagram



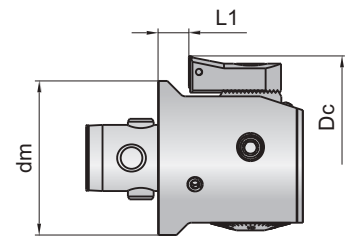
A 镗孔刀具 Boring Tools

HBM 微调精镗刀

HBM Micro-adjustable Fine Boring Tools



正镗



反镗



刀片 Inserts	螺钉 Screw	扳手 Wrench 
TB..060102	SIC020050A	370 T6x35
TC..090204	SIC022063	370 T7x35
TP..090204	SIC025065	370 T7x35
TC..110204	SIC025065	370 T7x35
TP..110304	SIC030072	370 T9x40

型号 Type	库存 Stock	柄部型式 Module size	尺寸(mm) Demension			标准配件		可选配件		重量 (kg)		
			Dc		dm	L1	L	镗刀头 Fine boring head	刀片 Inserts		镗刀头 Fine boring head	刀片 Inserts
			正镗范围	反镗范围								
KB1-HBM20-32.5	●	KB1	20-25	-	19	-	32.5	HBM20-20	TB..060102	-	-	
			24-29	-								
KB2-HBM27-35.5	●	KB2	27-35	-	25	-	35.5	HBM27-27	TB..060102	-	-	
			34-42	40-42								
KB3-HBM35-40	●	KB3	35-44	42-44	32	8	40	HBM35-35	TC..090204	HBM35-35-TP09*	TP..090204	
			43-52	50-52								
KB4-HBM44-47	●	KB4	44-55	52-55	40	11	47	HBM44-44	TC..110204	HBM44-44-TP11*	TP..110304	
			54-65	61-65								
KB5-HBM55-57	●	KB5	55-71	65-71	50	17	57	HBM55-55	TC..110204	HBM55-55-TP11*	TP..110304	
			68-84	77-84								
KB6-HBM69-71	●	KB6	69-99	80-99	64	23	71	HBM69-69	TC..110204	HBM69-69-TP11*	TP..110304	
			91-121	100-121								
KB6-HBM90-71	●	KB6	90-140	101-140	64	23	71	HBM69-69	TC..110204	HBM69-69-TP11*	TP..110304	
			120-170	128-170								
KB7-HBM120-87	●	KB7	120-170	124-170	90	39	87	HBM69-69	TC..110204	HBM69-69-TP11*	TP..110304	
			150-200	158-200								

带*镗刀头需单独订购
Boring heads with *need to be ordered separately.
使用方法详见产品使用说明书。
Please refer to the instruction manual for use.

● 常备库存
Unallocated stock

○ 可备库存
Available stock

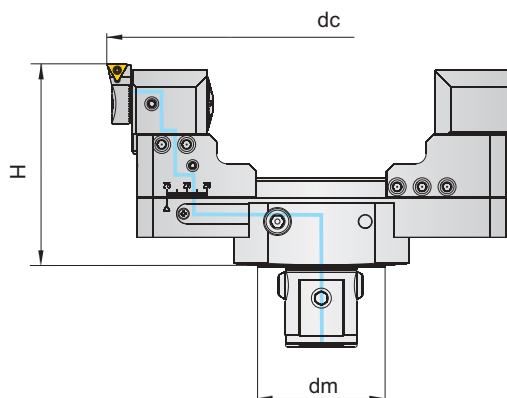
○ 订单生产
Order production

A 镗孔刀具 Boring Tools

HBH大直径精镗刀

HBH Large Diameter Fine Boring Tools

Internal cooling



适用刀柄：KB模块主柄
Matching Tool Holder: KB Module Tool Holder.

刀片 Inserts	螺钉 Screw 	扳手 Wrench
TC..110204	SIC022065	370 T7x35



型号 Type	库存 Stock	柄部型式 Module size	尺寸(mm) Dimension			刀片 Inserts 	重量 (kg)
			dc	dm	H		
KB6-HBH150MMC	●	KB6	φ 150- φ 215	64	102	TC..110204	
KB6-HBH215MMC	●	KB6	φ 215- φ 280	64	102	TC..110204	
KB7-HBH280MMC	●	KB7	φ 280- φ 370	90	110	TC..110204	
KB7-HBH370MMC	●	KB7	φ 370- φ 460	90	110	TC..110204	
KB7-HBH460ALMMC	●	KB7	φ 460- φ 580	90	160	TC..110204	
KB7-HBH580ALMMC	⦿	KB7	φ 580- φ 700	90	165	TC..110204	
KB7-HBH700ALMMC	⦿	KB7	φ 700- φ 820	90	170	TC..110204	
KB7-HBH820ALMMC	⦿	KB7	φ 820- φ 940	90	175	TC..110204	
KB7-HBH940ALMMC	⦿	KB7	φ 940- φ 1060	90	180	TC..110204	

使用方法详见产品使用说明书。
Please refer to the instruction manual for use.
镗刀订货示例(使用TP..110304刀片): KB7-HBH370M. TP11
Order example:KB7-HBH370M. TP11

● 常备库存
Unallocated stock

⦿ 可备库存
Available stock

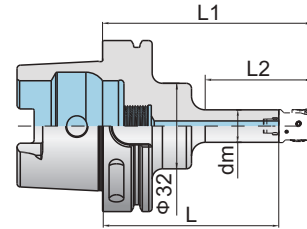
○ 订单生产
Order production

A 镗孔刀具 Boring Tools

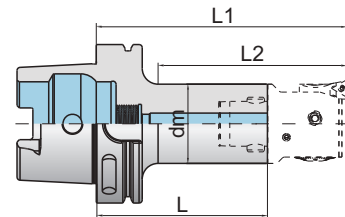
KB模块主柄-HSK63A
KB Modular Arbors



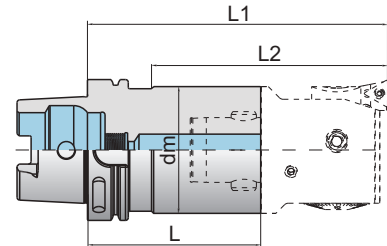
型式I



型式II



型式III



备注:L2-有效加工深度
Tips:L2-Effective boring depth

型号 Type	库存 Stock	头部型式 Module size	尺寸(mm) Dimension				螺钉 Screw	扳手 Wrench	型式 Model	重量 (kg)
			dm	L	L1	L2				
HSK63A-KB1-77.5	●	KB1	19	77.5	110	73	SKB1	S2	I	0.9
HSK63A-KB2-89.5	●	KB2	24	89.5	125	88	SKB2	S2.5	I	1.0
HSK63A-KB3-100	●	KB3	31	100	140	103	SKB3	S3	II	1.1
HSK63A-KB3-130	◐	KB3	31	130	170	133	SKB3	S3	II	1.3
HSK63A-KB4-93	●	KB4	39	93	140	103	SKB4	S4	II	1.2
HSK63A-KB4-123	◐	KB4	39	123	170	133	SKB4	S4	II	1.5
HSK63A-KB5-83	●	KB5	50	83	140	105	SKB5	S5	II	1.3
HSK63A-KB5-113	◐	KB5	50	113	170	135	SKB5	S5	II	1.8
HSK63A-KB6-79	●	KB6	64	79	150	-	SKB6	S6	III	1.5
HSK63A-KB6-109	◐	KB6	64	109	180	-	SKB6	S6	III	2.3

订货示例: HSK63A-KB1-77.5
Order example: HSK63A-KB1-77.5

● 常备库存
Unallocated stock

◐ 可备库存
Available stock

○ 订单生产
Order production

A 镗孔刀具 Boring Tools

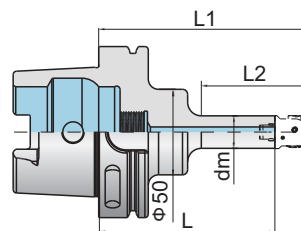
KB模块主柄-HSK100A
KB Modular Arbors



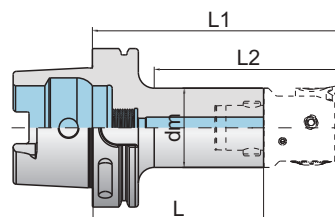
NEW



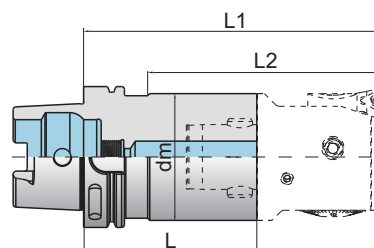
型式I



型式II



型式III



备注: L2-有效加工深度
Tips: L2-Effective boring depth

型号 Type	库存 Stock	头部型式 Module size	尺寸(mm) Dimension				螺钉 Screw	扳手 Wrench	型式 Model	重量 (kg)
			dm	L	L1	L2				
HSK100A-KB1-102.5	○	KB1	19	102.5	135	73	SKB1	S2	I	2.5
HSK100A-KB2-114.5	○	KB2	24	114.5	150	107	SKB2	S2.5	I	2.6
HSK100A-KB3-125	○	KB3	31	125	165	122	SKB3	S3	I	2.8
HSK100A-KB4-118	○	KB4	39	118	165	122	SKB4	S4	I	3.0
HSK100A-KB4-178	○	KB4	39	178	225	182	SKB4	S4	I	3.5
HSK100A-KB5-108	○	KB5	50	108	165	122	SKB5	S5	II	3.3
HSK100A-KB5-183	○	KB5	50	183	240	197	SKB5	S5	II	4.4
HSK100A-KB6-94	○	KB6	64	94	165	122	SKB6	S6	II	3.4
HSK100A-KB6-169	○	KB6	64	169	240	197	SKB6	S6	II	5.3
HSK100A-KB7-123	○	KB7	90	123	210	181	SKB7	S10	III	5.8
HSK100A-KB7-213	○	KB7	90	213	300	271	SKB7	S10	III	10.2

订货示例: HSK100A-KB1-102.5
Order example: HSK100A-KB1-102.5

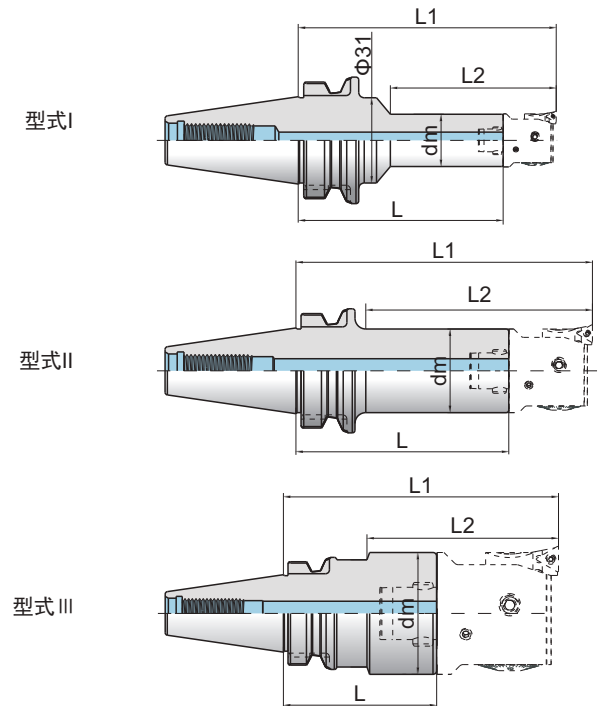
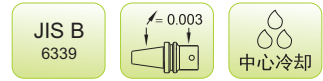
● 常备库存
Unallocated stock

○ 可备库存
Available stock

○ 订单生产
Order production

A 镗孔刀具 Boring Tools

KB模块主柄-BT30
KB Modular Arbors



备注: L2-有效加工深度
Tips: L2-Effective boring depth

型号 Type	库存 Stock	头部型式 Module size	尺寸(mm) Dimension				螺钉 Screw	扳手 Wrench	型式 Model	重量 (kg)
			dm	L	L1	L2				
BT30-KB1-72	●	KB1	19	72	104.5	73	SKB1	S2	I	0.5
BT30-KB2-37.5	●	KB2	24	37.5	73	48	SKB2	S2.5	II	0.4
BT30-KB2-82.5	◐	KB2	24	82.5	118	93	SKB2	S2.5	II	0.6
BT30-KB3-39	●	KB3	31	39	79	53	SKB3	S3	II	0.5
BT30-KB3-79	●	KB3	31	79	119	93	SKB3	S3	II	0.7
BT30-KB4-38	●	KB4	39	38	85	58	SKB4	S4	II	0.5
BT30-KB4-73	●	KB4	39	73	120	93	SKB4	S4	II	0.8
BT30-KB5-63	●	KB5	50	63	120	93	SKB5	S5	III	0.8

接受BBT刀柄订货, 订货示例:BBT30-KB1-72
BBT tool holders are available. Order example:BBT30-KB1-72

● 常备库存
Unallocated stock

◐ 可备库存
Available stock

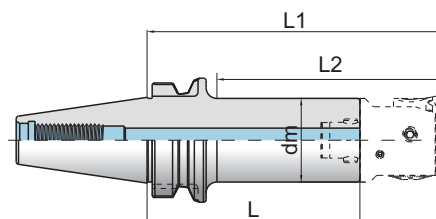
○ 订单生产
Order production

A 镗孔刀具 Boring Tools

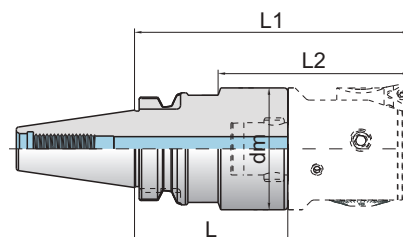
KB模块手柄-BT40
KB Modular Arbors



型式I



型式II



备注: L2-有效加工深度
Tips: L2-Effective boring depth

型号 Type	库存 Stock	头部型式 Module size	尺寸(mm) Dimension				螺钉 Screw	扳手 Wrench	型式 Model	重量 (kg)
			dm	L	L1	L2				
BT40-KB1-72	●	KB1	19	72	104.5	73	SKB1	S2	I	1.1
BT40-KB2-42.5	●	KB2	24	42.5	78	48	SKB2	S2.5	I	1.0
BT40-KB2-82.5	●	KB2	24	82.5	118	88	SKB2	S2.5	I	1.2
BT40-KB3-44	●	KB3	31	44	84	53	SKB3	S3	I	1.1
BT40-KB3-94	●	KB3	31	94	134	103	SKB3	S3	I	1.3
BT40-KB3-124	●	KB3	31	124	164	133	SKB3	S3	I	1.5
BT40-KB4-43	●	KB4	39	43	90	58	SKB4	S4	I	1.2
BT40-KB4-88	●	KB4	39	88	135	103	SKB4	S4	I	1.5
BT40-KB4-118	●	KB4	39	118	165	133	SKB4	S4	I	1.8
BT40-KB4-148	●	KB4	39	148	195	163	SKB4	S4	I	2.1
BT40-KB4-170	●	KB4	39	170	217	185	SKB4	S4	I	2.3
BT40-KB5-48	●	KB5	50	48	105	73	SKB5	S5	I	1.2
BT40-KB5-78	●	KB5	50	78	135	103	SKB5	S5	I	1.6
BT40-KB5-108	●	KB5	50	108	165	133	SKB5	S5	I	2.0
BT40-KB5-138	●	KB5	50	138	195	163	SKB5	S5	I	2.4
BT40-KB5-180	●	KB5	50	180	237	205	SKB5	S5	I	2.9
BT40-KB6-64	●	KB6	64	64	135	103	SKB6	S6	II	1.6
BT40-KB6-94	●	KB6	64	94	165	133	SKB6	S6	II	2.1
BT40-KB6-124	●	KB6	64	124	195	163	SKB6	S6	II	2.8
BT40-KB6-180	●	KB6	64	180	251	219	SKB6	S6	II	4.2

接受BBT刀柄订货, 订货示例:BBT40-KB1-72
BBT tool holders are available. Order example:BBT40-KB1-72

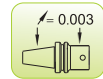
● 常备库存
Unallocated stock

◐ 可备库存
Available stock

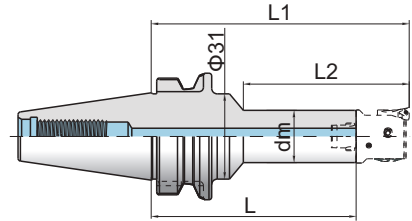
○ 订单生产
Order production

A 镗孔刀具 Boring Tools

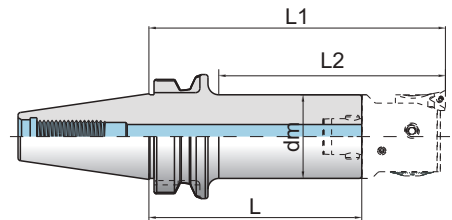
KB模块主柄-BT50
KB Modular Arbors



型式I



型式II



备注: L2-有效加工深度
Tips: L2-Effective boring depth

型号 Type	库存 Stock	头部型式 Module size	尺寸(mm) Dimension				螺钉 Screw	扳手 Wrench	型式 Model	重量 (kg)
			dm	L	L1	L2				
BT50-KB1-102	●	KB1	19	102	134.5	73	SKB1	S2	I	3.1
BT50-KB2-52.5	●	KB2	24	52.5	88	47	SKB2	S2.5	II	3.8
BT50-KB2-112.5	◐	KB2	24	112.5	148	107	SKB2	S2.5	II	4.0
BT50-KB3-54	●	KB3	31	54	94	52	SKB3	S3	II	3.9
BT50-KB3-124	◐	KB3	31	124	164	122	SKB3	S3	II	4.3
BT50-KB4-58	●	KB4	39	58	105	62	SKB4	S4	II	4.3
BT50-KB4-118	◐	KB4	39	118	165	122	SKB4	S4	II	4.5
BT50-KB4-178	◐	KB4	39	178	225	182	SKB4	S4	II	4.9
BT50-KB5-63	●	KB5	50	63	120	77	SKB5	S5	II	4.0
BT50-KB5-108	◐	KB5	50	108	165	122	SKB5	S5	II	4.7
BT50-KB5-183	◐	KB5	50	183	240	197	SKB5	S5	II	5.9
BT50-KB5-228	○	KB5	50	228	285	242	SKB5	S5	II	6.5
BT50-KB6-94	●	KB6	64	94	165	122	SKB6	S6	II	4.8
BT50-KB6-169	◐	KB6	64	169	240	197	SKB6	S6	II	6.7
BT50-KB6-229	○	KB6	64	229	300	257	SKB6	S6	II	8.2
BT50-KB7-93	●	KB7	90	93	180	137	SKB7	S10	II	5.6
BT50-KB7-183	◐	KB7	90	183	270	227	SKB7	S10	II	9.9
BT50-KB7-243	○	KB7	90	243	330	287	SKB7	S10	II	12.7

接受BBT刀柄订货, 订货示例:BBT50-KB1-102
BBT tool holders are available. Order example:BBT50-KB1-102

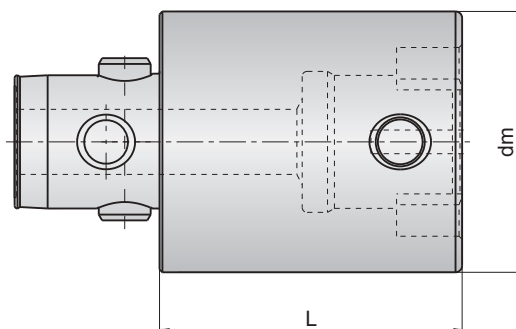
● 常备库存
Unallocated stock

◐ 可备库存
Available stock

○ 订单生产
Order production

A 镗孔刀具 Boring Tools

等径中间模块
Modular Extension



型号 Type	库存 Stock	头部型式 Module size	尺寸(mm) Dimension		滑销 Slide pin	螺钉 Screw	扳手 Wrench	重量 (kg)
			dm	L				
KB11-30	●	KB1	19	30	SPKB1	SKB1	S2	0.1
KB22-45	●	KB2	24	45	SPKB2	SKB2	S2.5	0.2
KB33-45	●	KB3	31	45	SPKB3	SKB3	S3	0.3
KB44-60	●	KB4	39	60	SPKB4	SKB4	S4	0.5
KB55-90	●	KB5	50	90	SPKB5	SKB5	S5	1.3
KB66-100	●	KB6	64	100	SPKB6	SKB6	S6	2.3
KB77-105	●	KB7	90	105	SPKB7	SKB7	S10	5.3

→ 订货示例:KB11-30
Order example:KB11-30

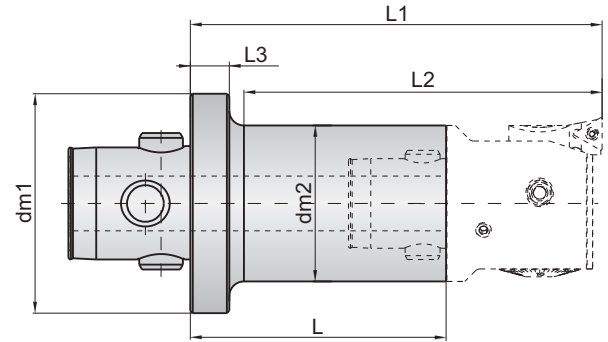
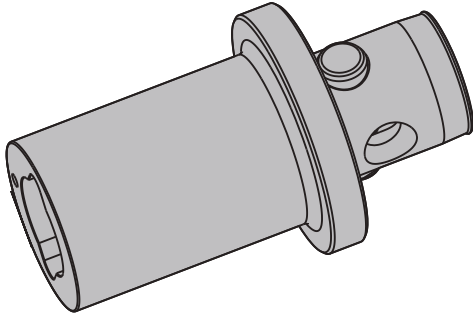
● 常备库存
Unallocated stock

◐ 可备库存
Available stock

○ 订单生产
Order production

A 镗孔刀具 Boring Tools

变径中间模块
Modular Reducer



备注: L2-有效加工深度
Tips: L2-Effective boring depth

型号 Type	库存 Stock	柄部型式 Module size	头部型式 Module size	尺寸(mm) Dimension						滑销 Slide pin	螺钉 Screw	扳手 Wrench	重量 (kg)
				dm1	dm2	L	L1	L2	L3				
KB32-34.5	○	KB3	KB2	31	24	34.5	70	60	10	SPKB3	SKB2	S2.5	0.2
KB43-47	○	KB4	KB3	39	31	47	87	75	12	SPKB4	SKB3	S3	0.3
KB54-40	○	KB5	KB4	50	39	40	87	70	17	SPKB5	SKB4	S4	0.5
KB64-49	○	KB6	KB4	64	39	49	96	80	16	SPKB6	SKB4	S4	0.8
KB65-39	●	KB6	KB5	64	50	39	96	80	16	SPKB6	SKB5	S5	0.9
KB76-106	●	KB7	KB6	90	64	106	177	160	17	SPKB7	SKB6	S6	3.1

订货示例: KB32-34.5
Order example: KB32-34.5

● 常备库存
Unallocated stock

○ 可备库存
Available stock

○ 订单生产
Order production

A 镗孔刀具 Boring Tools

MB 微调精镗单元

MB Micro-adjustable Fine Boring Unit

创新螺纹副涂层工艺

回程误差小于0.005mm

组合镗刀的精密切削单元

- Innovation thread pair coating process
- The return error is less than 0.005 mm
- Precision cutting unit of combined boring cutter



A 镗孔刀具 Boring Tools

MB 微调精镗单元 MB Micro-adjustable Fine Boring Unit

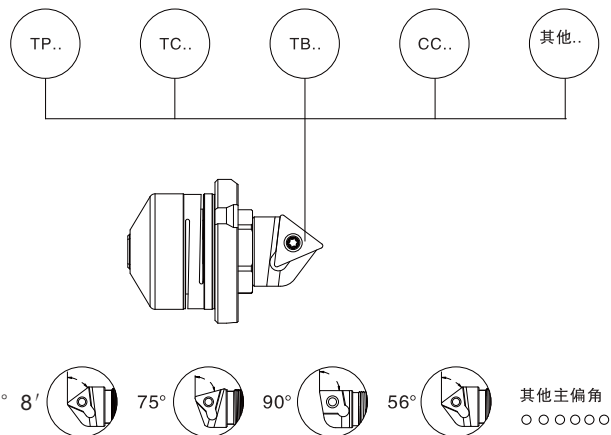
创新涂层 Innovative Coating

针对微调精镗单元专门开发的创新涂层，更好的耐磨性与润滑性显著增加微调精镗单元使用寿命
Coating designed specially for micro-adjustable fine boring unit, better anti-wear and lubricity properties prolong service life of boring unit.

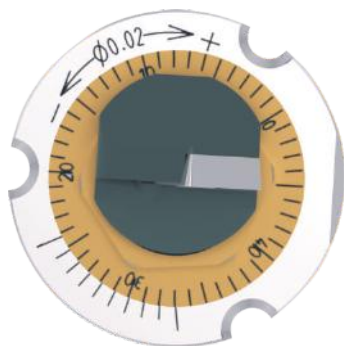


多变刀头 Changeable Cutter Head

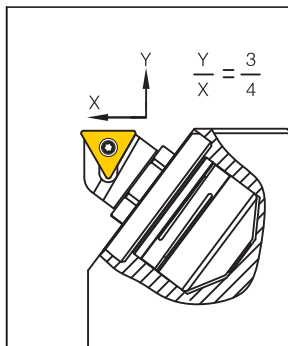
可根据客户刀片定制微调精镗单元
可提供多种主偏角微调精镗单元
螺杆可单独订购，并提供更换服务
Fine boring unit can be customized for customer's inserts
variety of cutting edge angle can be provided
changeable Screw can be ordered separately with installation service.



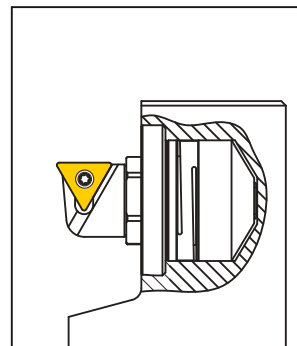
高效调节 Efficient Adjustment



角度安装 Angular Mounting



直角安装 Right Angle Mounting



完美自锁
调节前无需解锁
调节后无需锁定
Perfect self-lock system
No need for lock and unlock during adjustment

调节精度 $\phi 0.02\text{mm}/\text{格}$
配合游标可达到 $\phi 0.002\text{mm}$ 每游标格
Adjustment precision is $0.02\text{mm}/\text{grid}$
Can be achieved at $0.002\text{mm}/\text{grid}$ with the vernier

角度安装方式调节尺寸换算简便
Size conversion easily for angular mounting
明确的调节方向标识减少错误调节
Clearly adjustment sign avoids errors

前端调节
Front-end adjustment

A 镗孔刀具 Boring Tools

MB 微调精镗单元

MB Micro-adjustable Fine Boring Unit

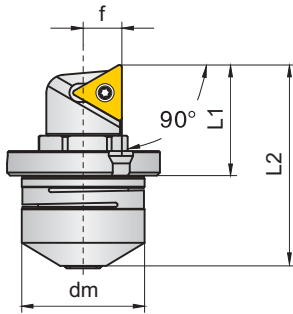


Fig.1

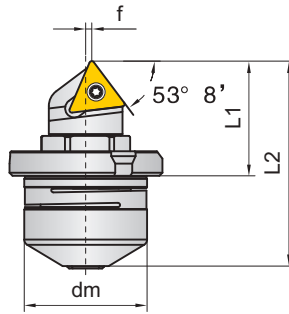
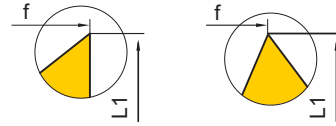


Fig.2



刀尖圆弧r=0
Tip diameter r=0

图示精镗单元为左刀 Picture shows left hand version

型号 Type		库存 Stock		Fig.	尺寸(mm) Dimension					刀片 Inserts	重量 (kg)
左刀 Left hand	右刀 Right hand	左 Left	右 Right		dm	L1	L2	f	Dmin		
MB-11-CC06L	MB-11-CC06R	●	●	1	16	13.3	24.1	5.1	27	CC..060204	0.02
MB-11-TB06L	MB-11-TB06R	◐	◐		16	13.3	24.1	5.1	27	TB..060102	0.02
MB-12-TC09L	MB-12-TC09R	●	●		20	18.3	32.9	6.3	36.5	TC..090204	0.05
MB-12-TP09L	MB-12-TP09R	●	◐		20	18.3	32.9	6.3	36.5	TP..090204	0.05
MB-13-TC11L	MB-13-TC11R	●	●		22	22.1	44.3	7.2	48.5	TC..110204	0.10
MB-13-TP11L	MB-13-TP11R	◐	◐		22	22.1	44.3	7.2	48.5	TP..110304	0.10
MB-14-TC16L	MB-14-TC16R	○	○		32	32	62.7	10.3	68.4	TC..16T308	0.29
MB-14-TP11L	MB-14-TP11R	○	○		32	32	62.7	10.3	68.4	TP..110304	0.29
MB-31-CC06L	MB-31-CC06R	●	●	2	16	14.3	25.15	0.45	25.2	CC..060204	0.02
MB-31-TB06L	MB-31-TB06R	●	●		16	14.3	25	0.2	24.8	TB..060102	0.02
MB-32-TC09L	MB-32-TC09R	●	●		20	19.1	33.7	0.9	32.5	TC..090204	0.05
MB-32-TP09L	MB-32-TP09R	●	◐		20	19.1	33.7	0.9	32.5	TP..090204	0.05
MB-33-TC11L	MB-33-TC11R	●	●		22	23	45.3	1.1	42	TC..110204	0.10
MB-33-TP11L	MB-33-TP11R	●	◐		22	23	45.3	1.1	42	TP..110304	0.10
MB-34-TC16L	MB-34-TC16R	●	○		32	33.3	62.3	1.2	59.4	TC..16T308	0.29
MB-34-TP11L	MB-34-TP11R	○	○		32	33.3	62.3	1.2	59.4	TP..110304	0.29

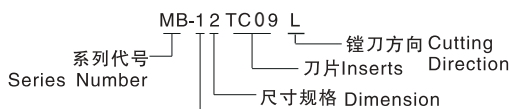
使用方法详见产品使用说明书。
Please refer to the instruction manual for use.

● 常备库存
Unallocated stock

◐ 可备库存
Available stock

○ 订单生产
Order production

编号规则
Rule for Designation



刀头角度
Angle of cutter head

1:90° 2:75° 3:53° 8'
4:38° 5:56°

A 镗孔刀具 Boring Tools

MB 微调精镗单元

MB Micro-adjustable Fine Boring Unit



备件 Spare parts

刀片 Inserts	螺钉 Screw 	扳手 Wrench 
CC..060204	SIC025065	370 T7x35
TB..060102	SIC020050A	370 T6x35
TC..090204	SIC022063	370 T7x35
TP..090204	SIC025065	370 T7x35
TC..110204	SIC025065	370 T7x35
TP..110304	SIC030072	370 T9x40
TC..16T308	SIC035080	365 T15x45

备件 Spare parts

型号 Type	定位螺钉 Location screw 	螺钉扳手 Screw wrench 	微调扳手 Adjusting wrench 
MB-*1-****	SIC030072A	370 T9x40	MB-1-3
MB-*2-****	SIC030072A	370 T9x40	MB-2-3
MB-*3-****	SIC040084	365 T15x45	MB-3-3
MB-*4-****	SKC050120	S3	MB-4-3

A 镗孔刀具 Boring Tools

MB 微调精镗单元

MB Micro-adjustable Fine Boring Unit

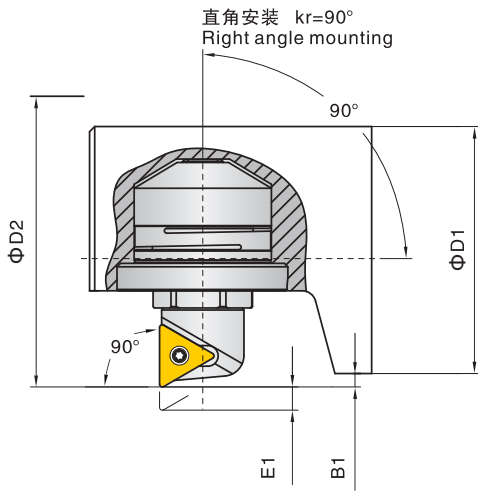


Fig. 1

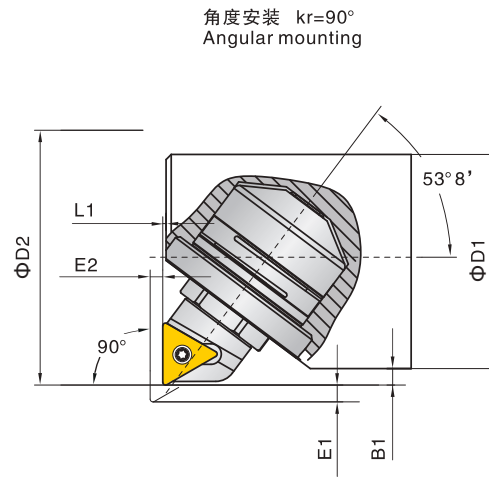


Fig. 2

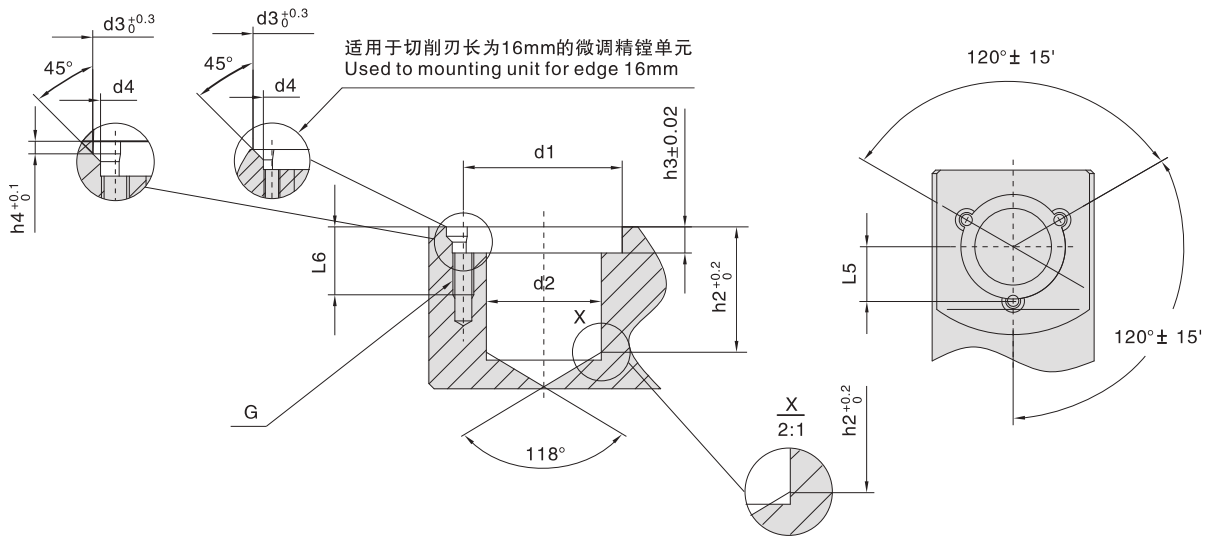
型号 Type		Fig.	刀尖圆弧 Tip diameter	尺寸(mm) Dimension					
左刀 Left hand	右刀 Right hand			D1min	D2min	B1min	E1max	E2max	L1
MB-11-CC06L	MB-11-CC06R	1	0.4	26	27.6	0.55	2.5	-	-
MB-11-TB06L	MB-11-TB06R		0.2	26	27.9	0.6	2.5	-	-
MB-12-TC09L	MB-12-TC09R		0.4	34.5	37.1	1.3	3.5	-	-
MB-12-TP09L	MB-12-TP09R		0.4	34.5	37.1	1.3	3.5	-	-
MB-13-TC11L	MB-13-TC11R		0.4	46.5	49.1	1.3	6	-	-
MB-13-TP11L	MB-13-TP11R		0.4	46.5	49.1	1.3	6	-	-
MB-14-TC16L	MB-14-TC16R		0.8	67	69	1	10	-	-
MB-14-TP11L	MB-14-TP11R		0.4	67	69.6	1.3	10	-	-
MB-31-CC06L	MB-31-CC06R	2	0.4	22	25.9	1.65	2	1.5	0.5
MB-31-TB06L	MB-31-TB06R		0.2	22	25.7	1.5	2	1.5	0.5
MB-32-TP09L	MB-32-TP09R		0.4	28.5	33.1	2.3	2.8	2.1	0.5
MB-32-TC09L	MB-32-TC09R		0.4	28.5	33.1	2.3	2.8	2.1	0.5
MB-33-TC11L	MB-33-TC11R		0.4	38	42.6	2.3	4.8	3.6	0.5
MB-33-TP11L	MB-33-TP11R		0.4	38	42.6	2.3	4.8	3.6	0.5
MB-34-TC16L	MB-34-TC16R		0.8	55	60	2.5	8	6	0.5
MB-34-TP11L	MB-34-TP11R		0.4	55	60.6	2.8	8	6	0.5

使用方法详见产品使用说明书。
Please refer to the instruction manual for use.

A 镗孔刀具 Boring Tools

MB 微调精镗单元

MB Micro-adjustable Fine Boring Unit



型号 Type	尺寸(mm) Dimension									
	h2	h3	h4	d1	d2	d3	d4	G	L6	L5
MB-1-****	11.5	2.8	1.6	19	16	4.6	3.2	M3	9	9.65 ± 0.02
MB-2-****	15.5	4	1.6	25	20	4.6	3.2	M3	9	12.5 ± 0.02
MB-3-****	24	5	1.8	30	22	6.5	4.3	M4	13	15.4 ± 0.02
MB-4-****	33	6.3	-	46	32	11.9	5.4	M5	16	23.0 ± 0.02

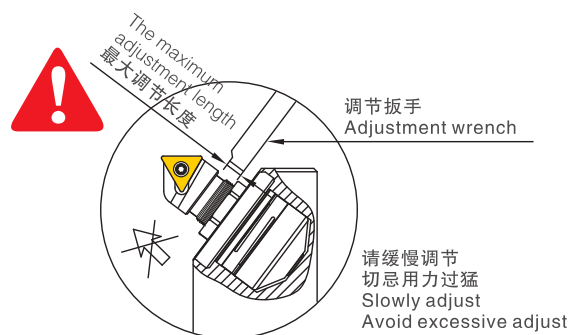
使用注意事项

Caution

- 初次安装精镗单元时，请将定位孔清理干净，并按规定主偏角安装。
- 在恶劣切削条件（粉尘、铁屑等）调节镗孔直径时，必须清理螺杆，以防止异物进入螺纹孔中。
- 请不要将刀杆拧松到超出扳手所标识的调节范围。若超出调节范围，将造成微调精镗单元损坏。
- 为保证使用寿命，请使用原厂配件。
- 推荐使用Kilowood品牌刀片，获得更佳切削效果。

Caution:

- Clean the locating hole and install cutting edge angle accordingly for first installation.
- When adjusting the bore diameter in severe cutting condition (dust, chips, etc.), please avoid any contamination into the screw hole
- Do not loosen the boring bar out of adjustment range signed by wrench, unrecovered damage may occur.
- In order to get guarantee service life and accuracy, use original spare part
- It is recommended to use Kilowood inserts for better cutting effect.



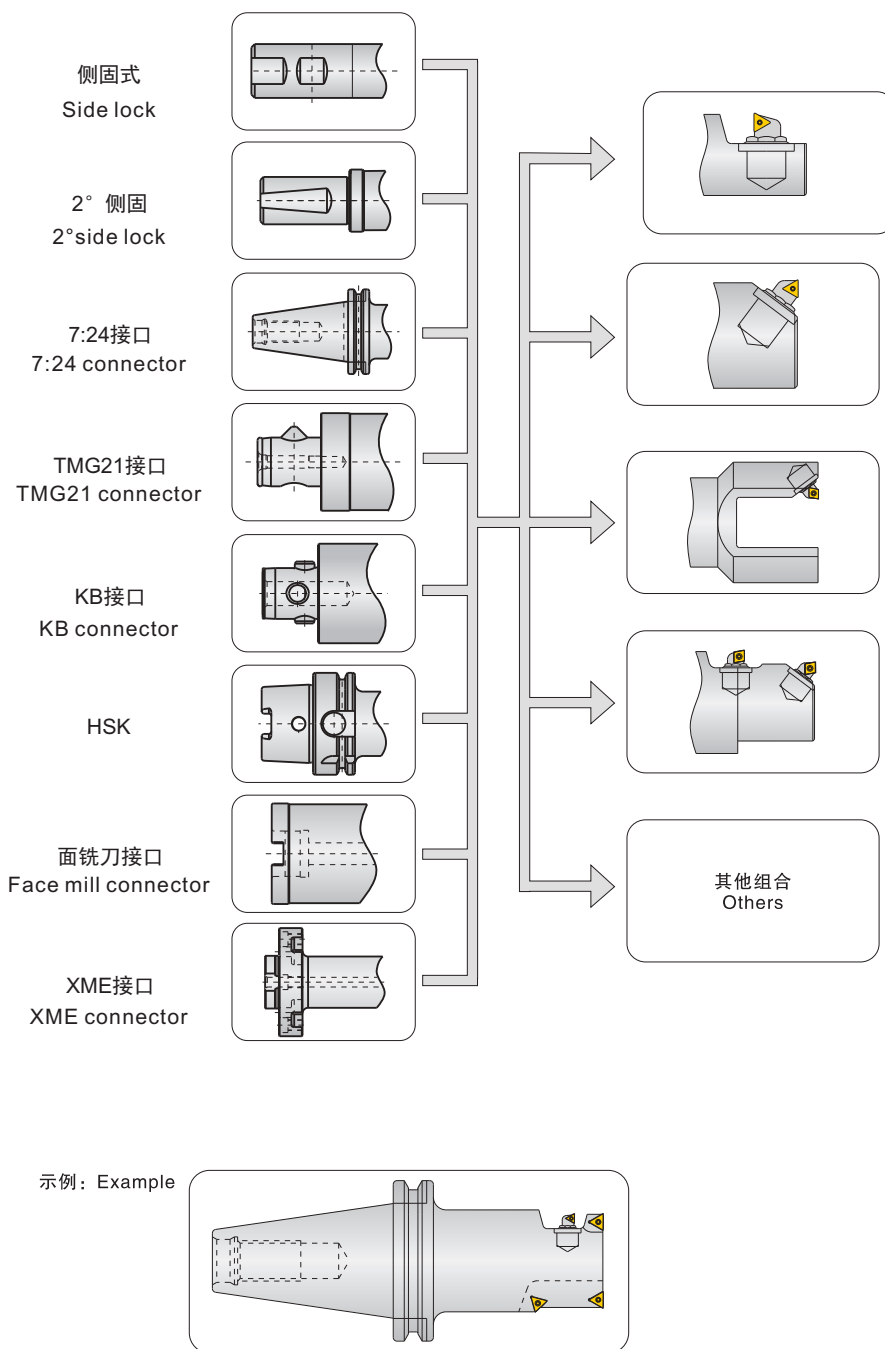
A 镗孔刀具 Boring Tools

MB 微调精镗单元

MB Micro-adjustable Fine Boring Unit

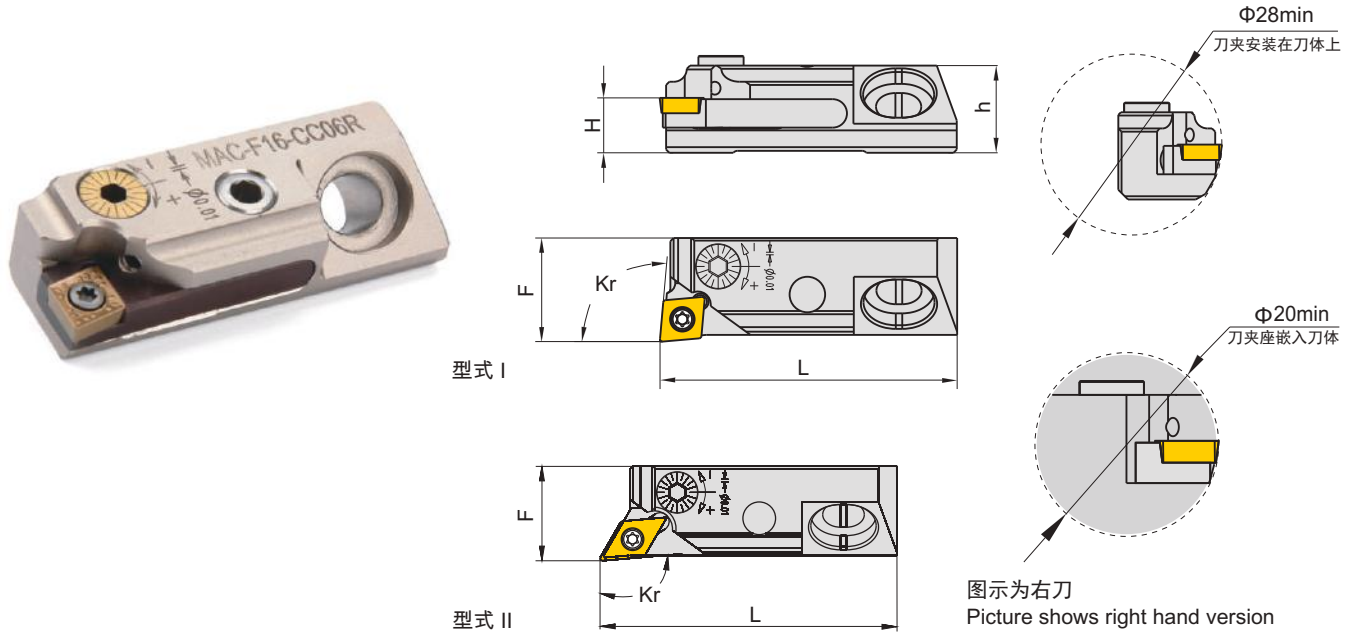
镗系列微调精镗单元在非标刀具中的应用

Application of MB Micro-Adjustable Fine Boring Unit in customized tools



A 镗孔刀具 Boring Tools

MAC微调小刀夹
MAC Micro-adjustable Cartridge



型号 Type		库存 Stock		尺寸(mm) Dimension						刀片 Inserts	型式 Model
左刀 Left hand	右刀 Right hand	左 Left	右 Right	Kr	F	H	h	L	Dmin		
MAC-L16-CC06L	MAC-L16-CC06R	●	●	95	16	8.5	13.5	46	28	CC..060204	I
MAC-F16-CC06L	MAC-F16-CC06R	●	●	90	16	8.5	13.5	46	28	CC..060204	I
MAC-L16-TC09L	MAC-L16-TC09R	◐	◑	95	16	8.5	13.5	46	28	TC..090204	I
MAC-F16-TC09L	MAC-F16-TC09R	◐	●	90	16	8.5	13.5	46	28	TC..090204	I
MAC-L16-TP09L	MAC-L16-TP09R	◐	◑	95	16	8.5	13.5	46	28	TP..090204	I
MAC-F16-TP09L	MAC-F16-TP09R	◐	◑	90	16	8.5	13.5	46	28	TP..090204	I
MAC-L16-DC07L	MAC-L16-DC07R	◐	◑	95	16	8.5	13.5	50	28	DC..070204	II
MAC-L20-TC11L	MAC-L20-TC11R	○	○	95	20	8.5	13.5	46	36	TC..110204	I
MAC-F20-TC11L	MAC-F20-TC11R	○	●	90	20	8.5	13.5	46	36	TC..110204	I

● 常备库存 Unallocated stock ◐ 可备库存 Available stock ○ 订单生产 Order production

Inserts	刀片螺钉 Screw for insert	扳手 Wrench	径向调节螺钉 Screw for axial adjustment	刀座锁紧螺钉 Lock screw for cutting head	刀夹压紧螺钉 lock screw for cartridge	轴向调节螺钉 Screw for axial adjustment	楔块 Wedge	扳手 Wrench
CC..060204	SIC025065	370 T7x35	SMAC16A	SMAC16C	SCC060200	SKC050200	WMAC16	S2.5
TC..090204	SIC022063							
TP..090204	SIC025065							
TC..110204	SIC025065							

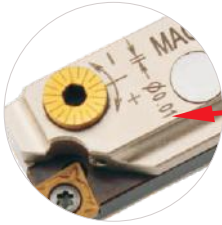
A 镗孔刀具 Boring Tools

MAC微调小刀夹

MAC Micro-adjustable Cartridge

适用于直径 $\phi 28\text{mm}$ 及以上孔的精镗和半精镗加工

Fine boring and semi-finish boring hole with diameter $\phi 28\text{mm}$ and above



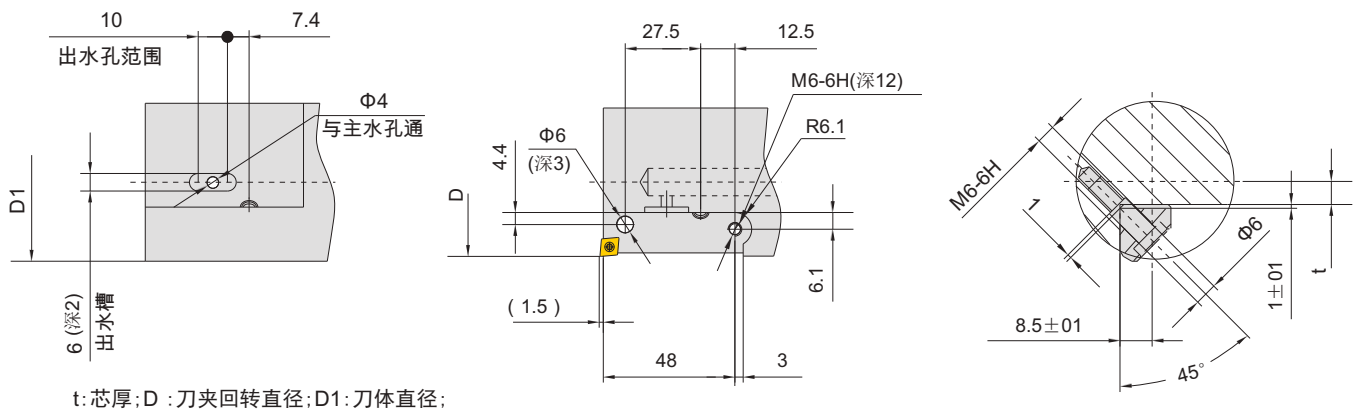
- 1 精度稳定，减少刀具调节时间，提高生产效率及产品质量
- 2 调节精度直径 $\phi 0.01\text{mm}/\text{div}$
- 3 轴向最大调节1mm，径向最大调节 $\phi 0.6\text{mm}$
- 4 刀夹带内部冷却，直接作用于切削刃
- 5 径向调节不会影响轴向位置



1. Stable precision, reduce the tool adjustment time, improve production efficiency and product quality
2. Adjustment accuracy $\phi 0.01\text{mm} / \text{div}$.
3. The maximum axial adjustment 1mm, radial maximum adjustment $\phi 0.6\text{mm}$.
4. Internal cooling, directly cooling the cutting edge.
5. Radial adjustment does not affect the axial position.

MAC 微调小刀夹安装尺寸

location for MAC micro-adjustable cartridge



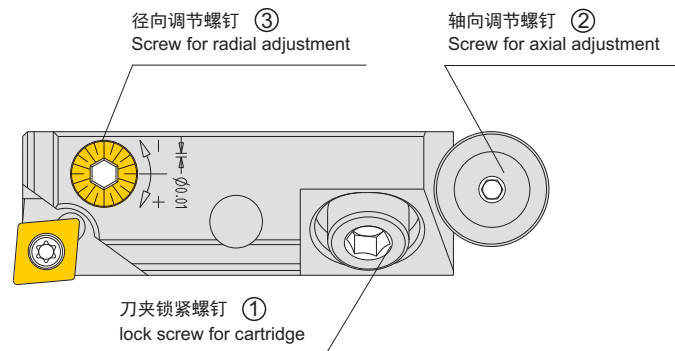
A 镗孔刀具 Boring Tools

MAC微调小刀夹

MAC Micro-adjustable Cartridge

刀夹尺寸调节指南

Adjusting steps for MAC micro-adjustable cartridge



轴向尺寸调节：

Adjustment in axial direction：

1. 微松刀夹锁紧螺钉①，保持一定预紧力
2. 旋转轴向调节螺钉②，调节刀夹轴向位置，旋紧刀夹锁紧螺钉①。
1. Loosen the lock screw for cartridge lightly, keep enough pre-lock.
2. Turn screw for axial adjustment, get the require position of insert, and then tighten the lock screw for cartridge.

径向尺寸调节：

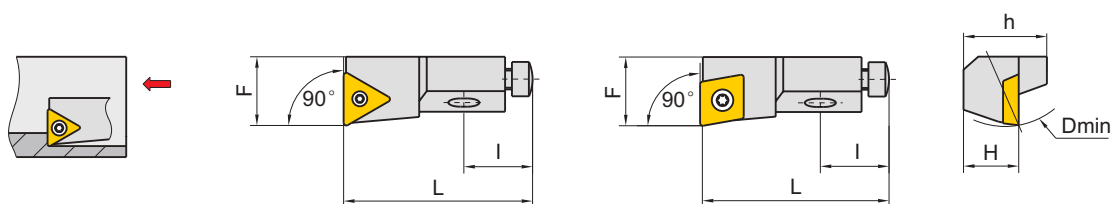
Radial adjustment：

1. 顺时针旋转径向调节螺钉 ③ 刀具直径变大
2. 逆时针旋转径向调节螺钉 ③ 刀具直径变小
1. Turn the screw for radial adjustment clockwise. Diameter of cutter becomes bigger.
2. Turn the screw for radial adjustment counter-clockwise. Diameter of cutter becomes smaller.



A 镗孔刀具 Boring Tools

S..F..R/L 90° 小刀夹
S..F..R/L 90° Cartridge



型号 Type		库存 Stock		刀片 Inserts	尺寸(mm) Dimension						重量 (kg)
左刀 Left hand	右刀 Right hand	L	R		H	F	h	I	L	Dmin	
SCFPL06CA-05	SCFPR06CA-05	○	●	CP..050204	6	8	8.5	12	25	20	0.03
SCFCL08CA-06	SCFCR08CA-06	○	●	CC..060204	8	10	11	17	32	25	0.04
SCFCL10CA-09	SCFCR10CA-09	●	●	CC..09T308	10	14	15	20	50	40	0.07
SCFCL12CA-12	SCFCR12CA-12	●	●	CC..120408	12	20	20	20	55	50	0.11
STFCL08CA-09	STFCR08CA-09	○	●	TC..090204	8	10	11	17	32	25	0.04
STFCL10CA-11	STFCR10CA-11	○	●	TC..110204	10	14	15	20	50	40	0.07
STFCL12CA-16	STFCR12CA-16	●	●	TC..16T308	12	20	20	20	55	50	0.11

● 常备库存 Unallocated stock ○ 可备库存 Available stock ○ 订单生产 Order production

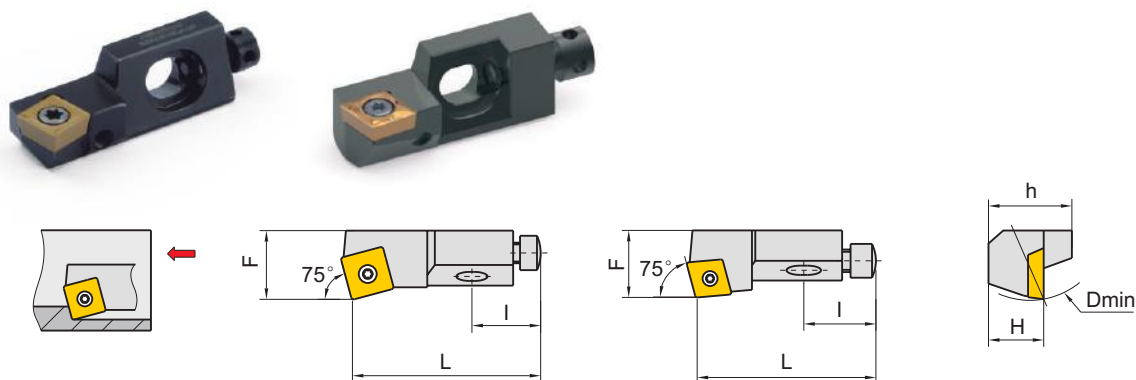
备件 / SPARE PARTS

刀片 Inserts	螺钉 Screw	扳手 Wrench
CP..050204	SIC022063	370 T7x35
CC..060204	SIC025065	370 T7x35
CC..09T308	SIC035080	365 T15x45
CC..120408	SID040110	365 T15x45
TC..090204	SIC022063	370 T7x35
TC..110204	SIC025065	370 T7x35
TC..16T308	SIC035080	365 T15x45

➡ 其余备件详见A70页

A 镗孔刀具 Boring Tools

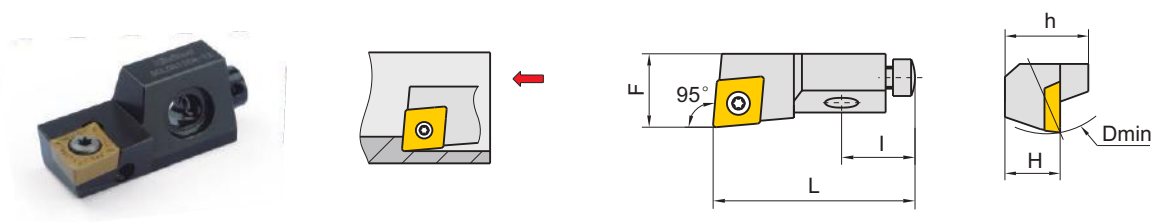
S..K..R/L 75° 小刀夹
S..K..R/L 75° Cartridge



型号 Type		库存 Stock		刀片 Inserts	尺寸(mm) Dimension						重量 (kg)
左刀 Left hand	右刀 Right hand	L	R		H	F	h	I	L	Dmin	
SSKCL10CA-09	SSKCR10CA-09	○	●	SC..09T308	10	14	15	20	50	40	0.07
SSKCL12CA-12	SSKCR12CA-12	●	●	SC..120408	12	20	20	20	55	50	0.11

● 常备库存 Unallocated stock ● 可备库存 Available stock ○ 订单生产 Order production

SCL..R/L 95° 小刀夹
SCL..R/L 95° Cartridge



型号 Type		库存 Stock		刀片 Inserts	尺寸(mm) Dimension						重量 (kg)
左刀 Left hand	右刀 Right hand	L	R		H	F	h	I	L	Dmin	
SCLCL10CA-09	SCLCR10CA-09	○	●	CC..09T308	10	14	15	20	50	40	0.07
SCLCL12CA-12	SCLCR12CA-12	○	●	CC..120408	12	20	20	20	55	50	0.11

● 常备库存 Unallocated stock ● 可备库存 Available stock ○ 订单生产 Order production

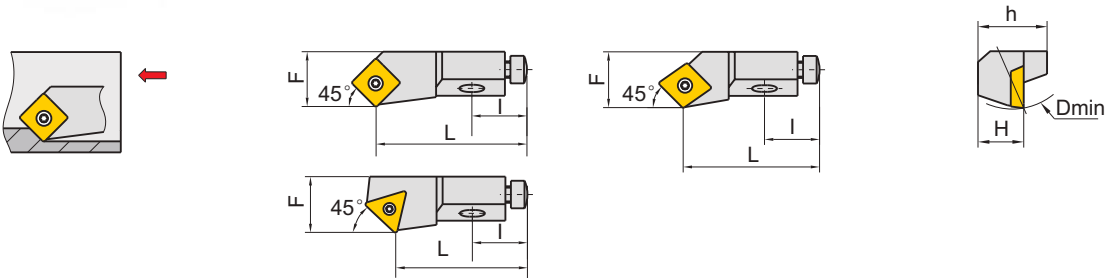
备件 / SPARE PARTS

刀片 Inserts	螺钉 Screw	扳手 Wrench
SC..09T308	SIC035080	365 T15x45
SC..120408	SID040110	365 T15x45
CC..09T308	SIC035080	365 T15x45
CC..120408	SID040110	365 T15x45

➡ 其余备件详见A70页

A 镗孔刀具 Boring Tools

S..S..R/L 45° 小刀夹
S..S..R/L 45° Cartridge



型号 Type		库存 Stock		刀片 Inserts	尺寸(mm) Dimension						重量 (kg)
左刀 Left hand	右刀 Right hand	L	R		H	F	h	I	L	Dmin	
SCSPL06CA-05	SCSPR06CA-05	○	●	CP..050204	6	8	8.5	12	21	20	0.03
SCSCL08CA-06	SCSCR08CA-06	○	●	CC..060204	8	10	11	17	28	25	0.04
STSCLO8CA-09	STSCR08CA-09	○	●	TC..090204	8	10	11	17	28	25	0.04
SCSCL10CA-09	SCSCR10CA-09	○	●	CC..09T308	10	14	15	20	44	40	0.07
SSSCL10CA-09	SSSCR10CA-09	●	●	SC..09T308	10	14	15	20	44	40	0.07
STSCLO10CA-11	STSCR10CA-11	○	●	TC..110204	10	14	15	20	44	40	0.07
SSSCL12CA-12	SSSCR12CA-12	○	●	SC..120408	12	20	20	20	47	50	0.11
STSCLO12CA-16	STSCR12CA-16	○	●	TC..16T308	12	20	20	20	47	50	0.11

● 常备库存 Unallocated stock ○ 可备库存 Available stock ○ 订单生产 Order production

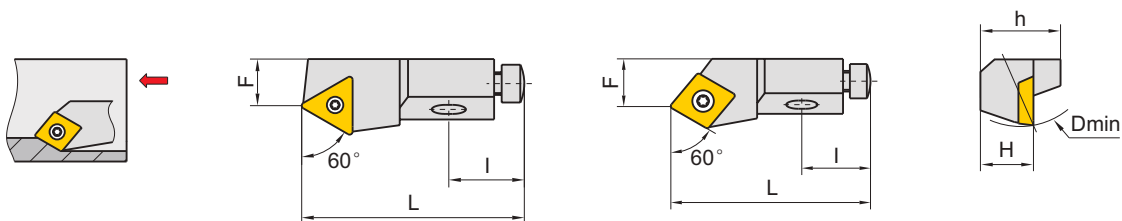
备件 / SPARE PARTS

刀片 Inserts	螺钉 Screw	扳手 Wrench
CP..050204	SIC022063	370 T7x35
SC..09T308	SIC035080	365 T15x45
SC..120408	SID040110	365 T15x45
CC..060204	SIC025065	370 T7x35
CC..09T308	SIC035080	365 T15x45
TC..090204	SIC022063	370 T7x35
TC..110204	SIC025065	370 T7x35
TC..16T308	SIC035080	365 T15x45

➡ 其余备件详见A70页

A 镗孔刀具 Boring Tools

S..T..R/L 60° 小刀夹
S..T..R/L 60° Cartridge



型号 Type		库存 Stock		刀片 Inserts	尺寸(mm) Dimension						重量 (kg)
左刀 Left hand	右刀 Right hand	L	R		H	F	h	I	L	Dmin	
SCTPL06CA-05	SCTPR06CA-05	○	○	CP..050204	6	5.5	8.5	12	25	20	0.03
SCTCL08CA-06	SCTCR08CA-06	○	●	CC..060204	8	6	11	17	32	25	0.04
SCTCL10CA-09	SCTCR10CA-09	○	●	CC..09T308	10	9	15	20	50	40	0.07
STTCL08CA-09	STTCR08CA-09	○	●	TC..090204	8	6	11	17	32	25	0.04
STTCL10CA-11	STTCR10CA-11	○	●	TC..110204	10	9	15	20	50	40	0.07
STTCL12CA-16	STTCR12CA-16	○	●	TC..16T308	12	13	20	20	55	50	0.11

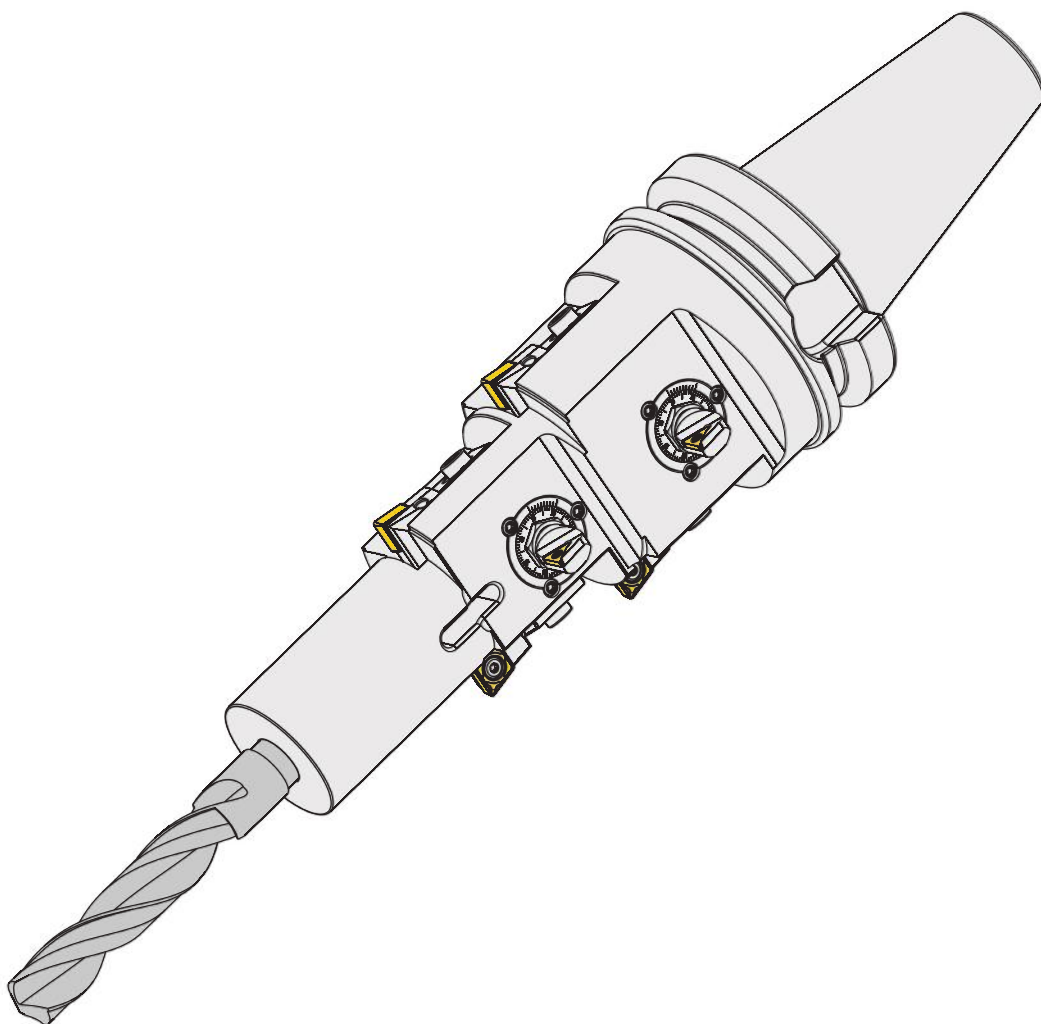
● 常备库存 Unallocated stock ● 可备库存 Available stock ○ 订单生产 Order production

备件 / SPARE PARTS




刀片 Inserts	螺钉 Screw	扳手 Wrench
CP..050204	SIC022063	370 T7x35
CC..060204	SIC025065	370 T7x35
CC..09T308	SIC035080	365 T15x45
TC..090204	SIC022063	370 T7x35
TC..110204	SIC025065	370 T7x35
TC..16T308	SIC035080	365 T15x45

➡ 其余备件详见A70页

A 镗孔刀具 Boring Tools



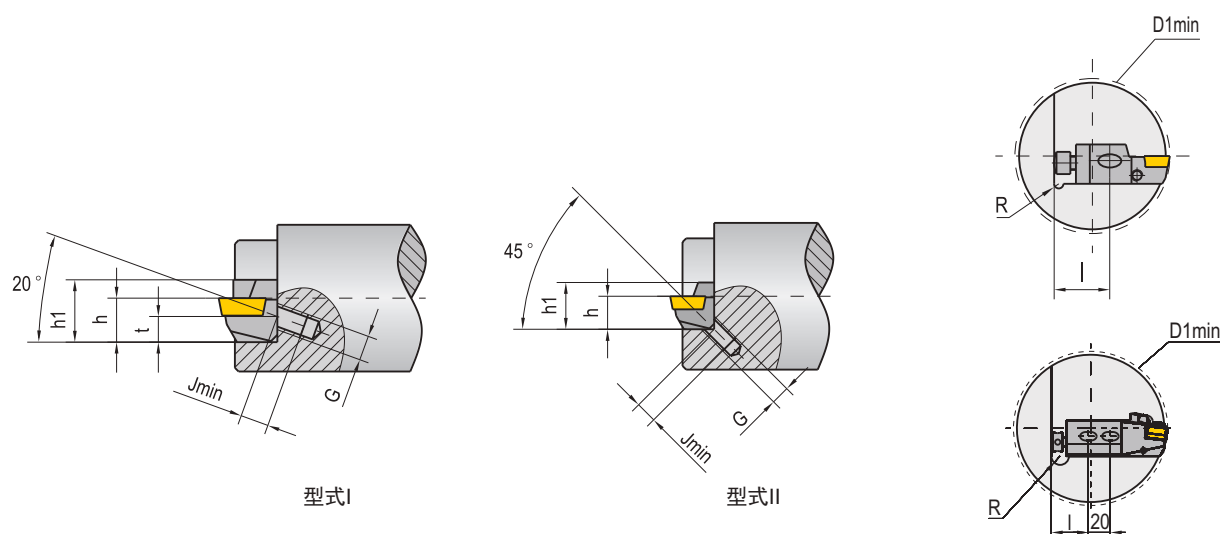
备件 / SPARE PARTS

刀夹型号 Cartridge type	螺钉 Screw 	扳手 Wrench 	螺钉 Screw 	螺钉 Screw 	扳手 Wrench 
06CA	SDC035120	S2.5	SAC030085	SSC030050	S1.5
08CA	SCC040160	S3	SAC040130	SSC030050	S1.5
10CA	SCC060200	S5	SAC050145	SSC040080	S2
12CA	SCC060250	S5	SAC060145	SSC050120	S2.5
16CA	SCC080350	S6	SAC060145	SSC060160	S3
20CA	SCC080350	S6	SAC060190	SSC060160	S3
25CA	SCC100400	S8	SAC060190	SSC060160	S3

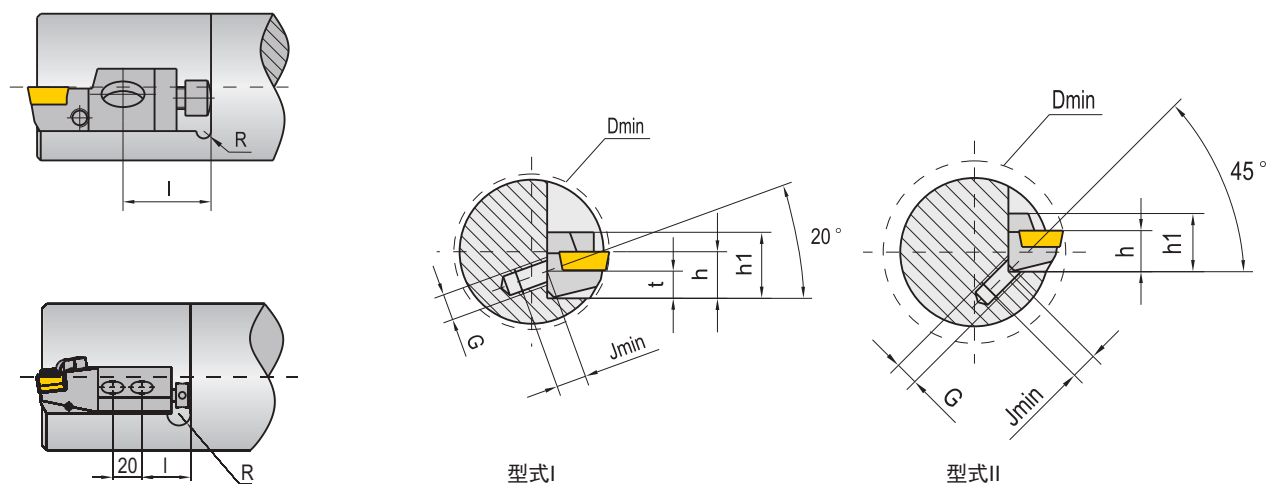
A 镗孔刀具 Boring Tools

刀夹安装示意图 Schematic diagram of tool holder installation

径向安装 Radial installation



轴向安装 Axial installation



刀夹型号 Cartridge Type	h	l	G	Jmin	t	h1	Rmax	Dmin	D1min	型式 Model
06CA	6	12	M3.5X0.6	12	3.5	8.5	1.5	20	30	I
08CA	8	17	M4X0.7	17	4.5	10	2.5	25	36	I
10CA	10	20	M6X1	20	5	15	4	40	55	I
12CA	12	20	M6X1	20	6	20	5	50	75	I
16CA	16	25	M8X1.25	25	-	21	6	60	75	II
20CA	20	30	M8X1.25	25	-	30	6	70	90	II
25CA	25	30	M10X1.5	30	-	35	8	100	115	II

A 镗孔刀具 Boring Tools

KiloWood® 系列刀片

刀片外形 Shape of insert	型号 Type	推荐切削参数 Cutting parameter		刀尖圆弧 R	尺寸(mm) Dimension			化学涂层(CVD) CVD Coating			物理涂层(PVD) PVD Coating			陶瓷 Ceramics	硬质合金 Carbide
		ap (mm)	f (mm/r)		内切圆 直径Φd	厚度S	孔径Φd1	TP710	TP720	TK920	TM8220	TJ15	TJ20U		
	CCMT060204-PS	0.1-1.5	0.05-0.15	0.4	6.35	2.38	2.8	★	★						★
	CCMT09T304-PS	0.1-2.0	0.05-0.2	0.4	9.525	3.97	4.4	★	★						★
	CCMT120404-PS	0.1-4.0	0.05-0.25	0.4	12.7	4.76	5.5	★	★						★
	CCMT060204-TF	0.1-1.5	0.05-0.15	0.4	6.35	2.38	2.8							★	
	CCMT09T304-TF	0.1-2.0	0.05-0.2	0.4	9.525	3.97	4.4							★	
	CCMT120404-TF	0.1-4.0	0.05-0.25	0.4	12.7	4.76	5.5							★	
	CCMT060204-KS	0.1-1.7	0.05-0.17	0.4	6.35	2.38	2.8			★					
	CCMT09T304-KS	0.11-2.0	0.06-0.23	0.4	9.525	3.97	4.4			★					
	CCMT09T308-KS	0.15-2.0	0.08-0.3	0.8	9.525	3.97	4.4			★					
	CCMT060204-MM	0.5-2.5	0.08-0.3	0.4	6.35	2.38	2.8				★				
	CCMT09T304-MM	0.3-4.0	0.06-0.3	0.4	9.525	3.97	4.4				★				
	CCMT09T308-MM	0.5-4.0	0.12-0.4	0.8	9.525	4.76	4.4				★				
	CCGT09T304-AL	0.5-5.0	0.1-0.3	0.4	9.525	3.97	4.4								★
	CCGT120404-AL	0.5-7.0	0.1-0.3	0.4	12.7	4.76	5.5								★
	CCGT060204L-13U	0.1-1.5	0.05-0.15	0.4	6.35	2.38	4.4					★			
	CCGT09T304L-15V	0.1-2.0	0.05-0.2	0.4	9.525	3.97	5.5						★		
	CPGT050204L-S	0.5-2.4	0.05-0.15	0.4	5.56	2.38	2.8					★			★
	SCMT09T304-CM	0.5-4.0	0.08-0.3	0.4	9.525	3.97	4.4							★	
	SCMT09T308-CM	0.5-4.0	0.12-0.4	0.8	9.525	3.97	4.4							★	
	SCMT120408-CM	0.5-4.0	0.12-0.4	0.8	12.7	4.76	5.5							★	










★ 常备库存 Unallocated stock ☆ 订单生产 Order production

P:钢	●	●	○	○	●	●
M:不锈钢			●	●	●	○
K:铸铁		●			●	●
N:有色金属						●
S:耐热合金			●	●		
H:淬硬材料						

● 推荐应用 Main application ○ 扩展应用 Extended application

A 镗孔刀具 Boring Tools

Kilowood® 系列刀片

刀片外形 Shape of insert	型号 Type	推荐切削参数 Cutting parameter		刀尖圆弧 r	尺寸(mm) Dimension			化学涂层(CVD) CVD Coating			物理涂层(PVD) PVD Coating			金属陶瓷 Cermet	硬涂层 Hard coating
		ap (mm)	f (mm/r)		内切圆 直径φd	厚度S	孔径φd1	TP710	TP720	TK920	TM8220	TJ15	TJ20U		
	TCMT110204-PS	0.1-2.0	0.05-0.2	0.4	6.35	2.38	2.8	★	★					★	
	TCMT110204-MM	0.1-2.0	0.05-0.2	0.4	6.35	2.38	2.8				★				
	TCMT110204-KS	0.5-3.0	0.07-0.5	0.4	6.35	2.38	2.8			★					
	TCMT090204-CM	0.5-2.5	0.08-0.3	0.4	5.56	2.38	2.5							★	
	TCMT110204-CM	0.5-3.0	0.08-0.3	0.4	6.35	2.38	2.8							★	
	TCMT16T304-CM	0.5-4.0	0.08-0.3	0.4	9.525	3.97	4.4							★	
	TCMT16T308-CM	0.5-4.0	0.12-0.4	0.8	9.525	3.97	4.4							★	
	TCGT090204-AL	0.5-4.0	0.1-0.3	0.4	5.56	2.38	2.5								★
	TCGT110204-AL	0.5-5.0	0.1-0.3	0.4	6.35	2.38	2.8								★
	TBGT060102L-S	0.1-0.5	0.03-0.07	0.2	3.97	1.59	2.3					★			
	TBGT060104L-S	0.2-0.5	0.03-0.07	0.4	3.97	1.59	2.3					★			
	TPGH090202L-15K	0.1-0.5	0.02-0.1	0.2	5.56	2.38	2.8						★	★	
	TPGH090204L-15K	0.2-0.5	0.03-0.12	0.4	5.56	2.38	2.8						★	★	
	TPGH110302L-15K	0.1-0.7	0.02-0.1	0.2	6.35	3.18	3.3						★	★	
	TPGH110304L-15K	0.2-0.7	0.03-0.12	0.4	6.35	3.18	3.3						★	★	
	TCGT090204L-S	0.2-0.8	0.05-0.15	0.4	5.56	2.38	2.5					★			
	TCGT090204R-S	0.2-0.8	0.05-0.15	0.4	5.56	2.38	2.5					★			
	TCGT110204L-S	0.2-0.7	0.03-0.12	0.4	6.35	2.38	2.8					★			
	TCGT110204R-S	0.2-0.7	0.03-0.12	0.4	6.35	2.38	2.8					★			
	WBGT060102L-S	0.1-0.8	0.01-0.08	0.2	3.97	1.59	2.3					★			
	WBGT060104L-S	0.1-0.8	0.01-0.08	0.4	3.97	1.59	2.3					★			



★ 常备库存 Unallocated stock ☆ 订单生产 Order production

P:钢	●	●		○	○	●	●
M:不锈钢			●	●	●	●	○
K:铸铁			●	●	●	●	●
N:有色金属							●
S:耐热合金				●	●		
H:淬硬材料							

● 推荐应用 Main application ○ 扩展应用 Extended application

A 镗孔刀具 Boring Tools

KiloCut® 系列刀片

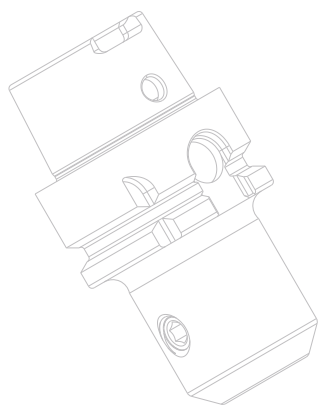
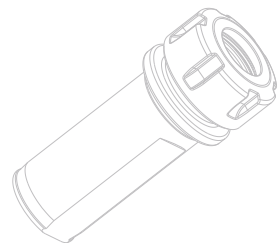
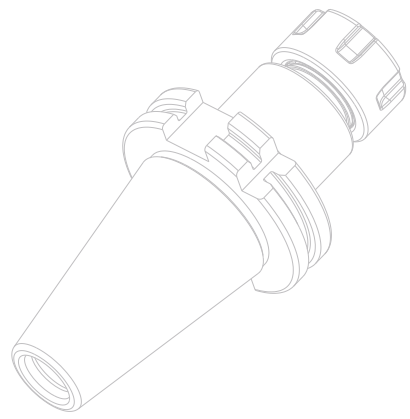
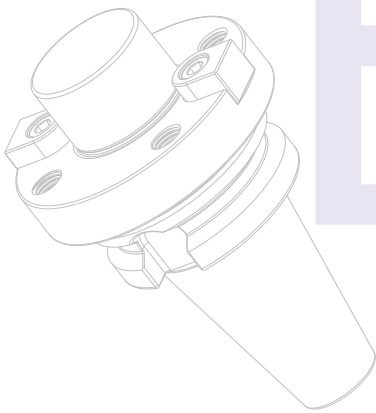
刀片外形 Shape of insert	型号 Type	推荐切削参数 Cutting parameter		刀尖圆弧 r	尺寸(mm) Dimension			化学涂层(CVD) CVD Coating		物理涂层(PVD) PVD Coating		陶瓷 Ceramics	硬质合金 Carbide
		ap (mm)	f (mm/r)		内切圆 直径Φd	厚度S	孔径Φd1			TJ15	TG4120		TN320
	CNHQ090508L-UL	0.5-8.5	0.15-0.6	0.8	9.42	5.56	4.4			★			
	CNHQ120608L-UL	0.5-11.5	0.15-0.6	0.8	12.6	6.35	5.5			★			
	CNHQ090508L-UM	0.5-8.5	0.15-0.6	0.8	9.42	5.56	4.4			★	★		
	CNHQ120608L-UM	0.5-11.5	0.15-0.6	0.8	12.6	6.35	5.5			★	★		
	CNHQ090508L-NM	0.5-8.5	0.15-0.6	0.8	9.42	5.56	4.4						★
	CNHQ120608L-NM	0.5-11.5	0.15-0.6	0.8	12.6	6.35	5.5						★

★ 常备库存 Unallocated stock ☆ 订单生产 Order production

P:钢				●	●								
M:不锈钢				●	●								
K:铸铁										●			○
N:有色金属													●
S:耐热合金													
H:淬硬材料													

● 推荐应用 Main application ○ 扩展应用 Extended application

B



HSK Tool System HSK 工具系统

DIN 69893 HSK-A

DIN 69893 HSK-C/E / F

7:24 Tool System 7:24 工具系统

JIS B 6339 BT30/40/50

DIN 69871 JT40/50

Special Tool System 其它 工具系统




XME Adjustable Holders XME可调刀柄 B74



ER Collet Extension 卡簧接杆 B79

Morse Taper Shank with Tang 有扁尾莫氏圆锥孔变径套 B81

B 工具系统 Tool System

	工具系统产品一览表			
	热胀刀柄 标准型 Shrink Fit Holders	模块式 热胀刀柄 Modular Shrink Fit Holders	热胀刀柄 轻型 Shrink Fit Holders slim	GSK 弹簧夹头刀柄 GSK Collet Holders
				

	HSK32A				B14
	HSK40A				B14
	HSK50A				
	HSK63A	B10	B31	B13	B15
	HSK80A				
	HSK100A	B11	B31		B15
	HSK32E	B12			B16
	HSK40E	B12			B16
	HSK50E	B12			
	HSK50F				
	HSK63F				

	BT30	B33		B38	B43
	BT40	B34	B31	B39	B44
	BT50	B35	B31		B45
	JT40	B36	B31		
	JT50	B37	B31		

B 工具系统 Tool System

工具系统产品一览表




ER 弹簧夹头刀柄 ER Collet Holders	液压夹头刀柄 Hydraulic Holders	强力夹头刀柄 Power Holders	侧固式 刀柄 Side-Locked Holders	面铣刀柄 Shell Mill Holder	有扁尾 莫氏圆锥孔刀柄 Morse Taper Shank with Tang
					



B17					
B17					
B17					
B18	B22	B23	B24	B26	B28
B19	B22	B23	B25	B27	B28
B20					
B20					
B20					
B21					


B46	B51	B55		B62	B69
B47	B51	B55	B57/58	B62	B69
B48	B52	B55	B57/59	B63/64/65	B69
B49	B53	B56	B60	B66	B70
B50	B53	B56	B61	B67	B70

B 工具系统 Tool System

	工具系统产品一览表			
	整体式 钻夹头刀柄 Integral Drill Holders	数控工具磨 专用刀柄 Hydraulic Holders For CNC tool grinders	变径柄 Adapter Arbor	XME 可调刀柄 Adjustable Holders
				

	HSK32A				
	HSK40A				B76
	HSK50A				B76
	HSK63A	B29			B76
	HSK80A				
	HSK100A	B29			B76
	HSK32E				
	HSK40E				
	HSK50E				
	HSK50F				
	HSK63F				

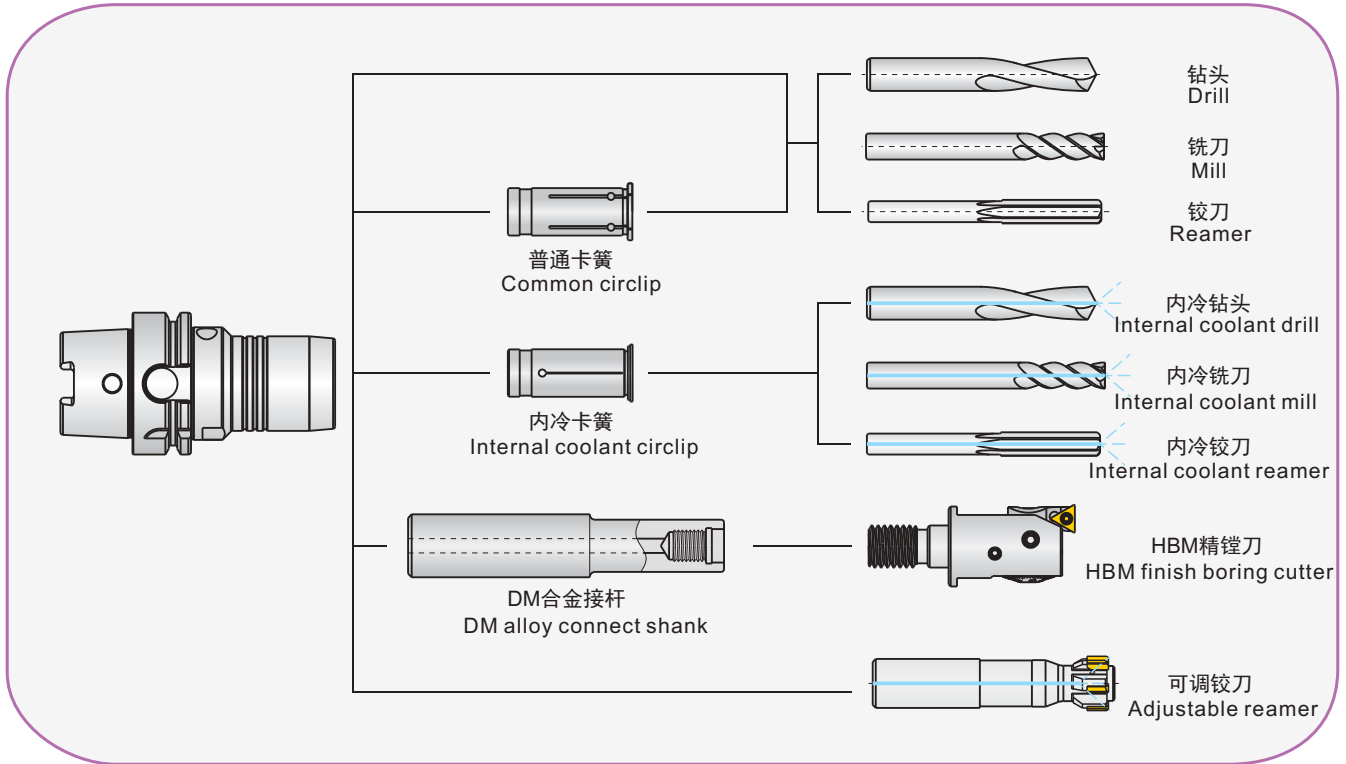
	BT30	B71		B73	B75
	BT40	B71		B73	B75
	BT50	B71		B73	B75
	JT40	B72		B73	
	JT50	B72	B54		

	莫氏锥柄				

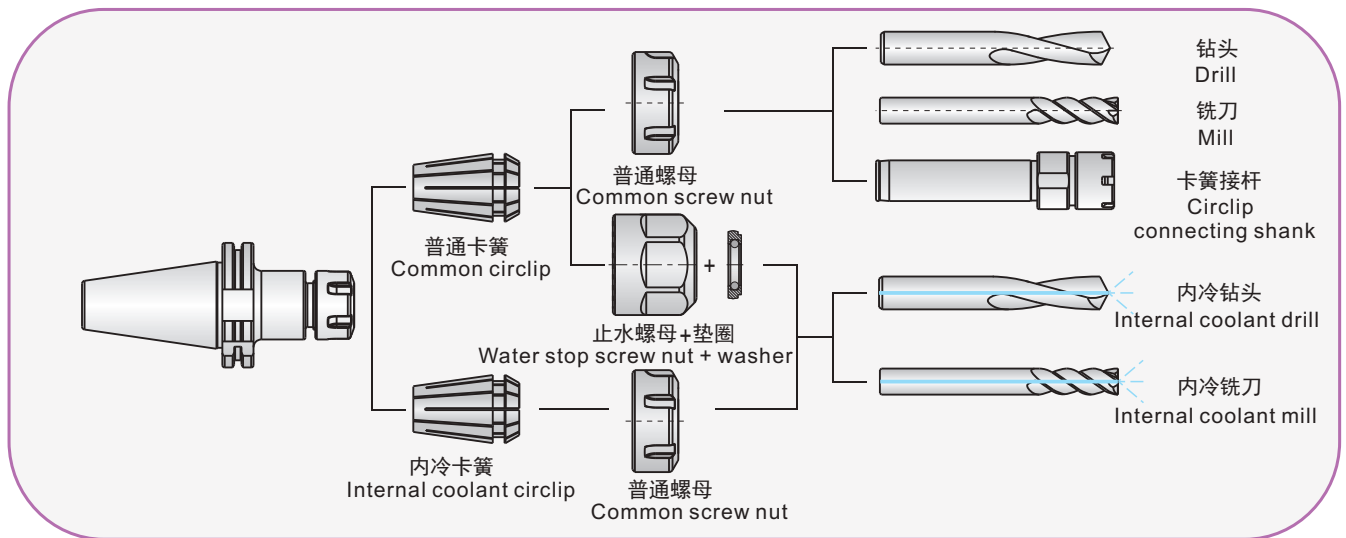
B 工具系统 Tool System

刀具夹持方式应用介绍 Introduction of tools clamping method application

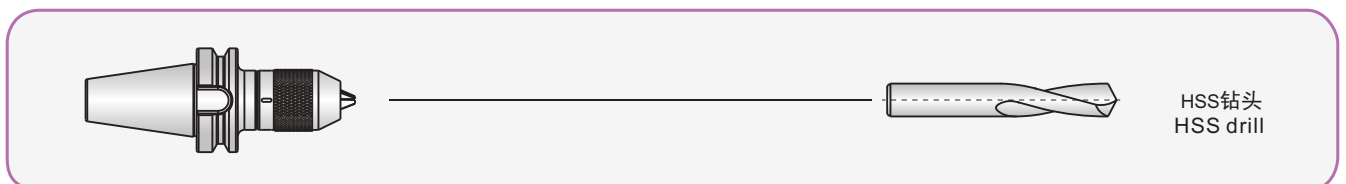
液压夹头刀柄 Hydraulic chuck holder



ER弹簧夹头刀柄 ER Collet chuck holder



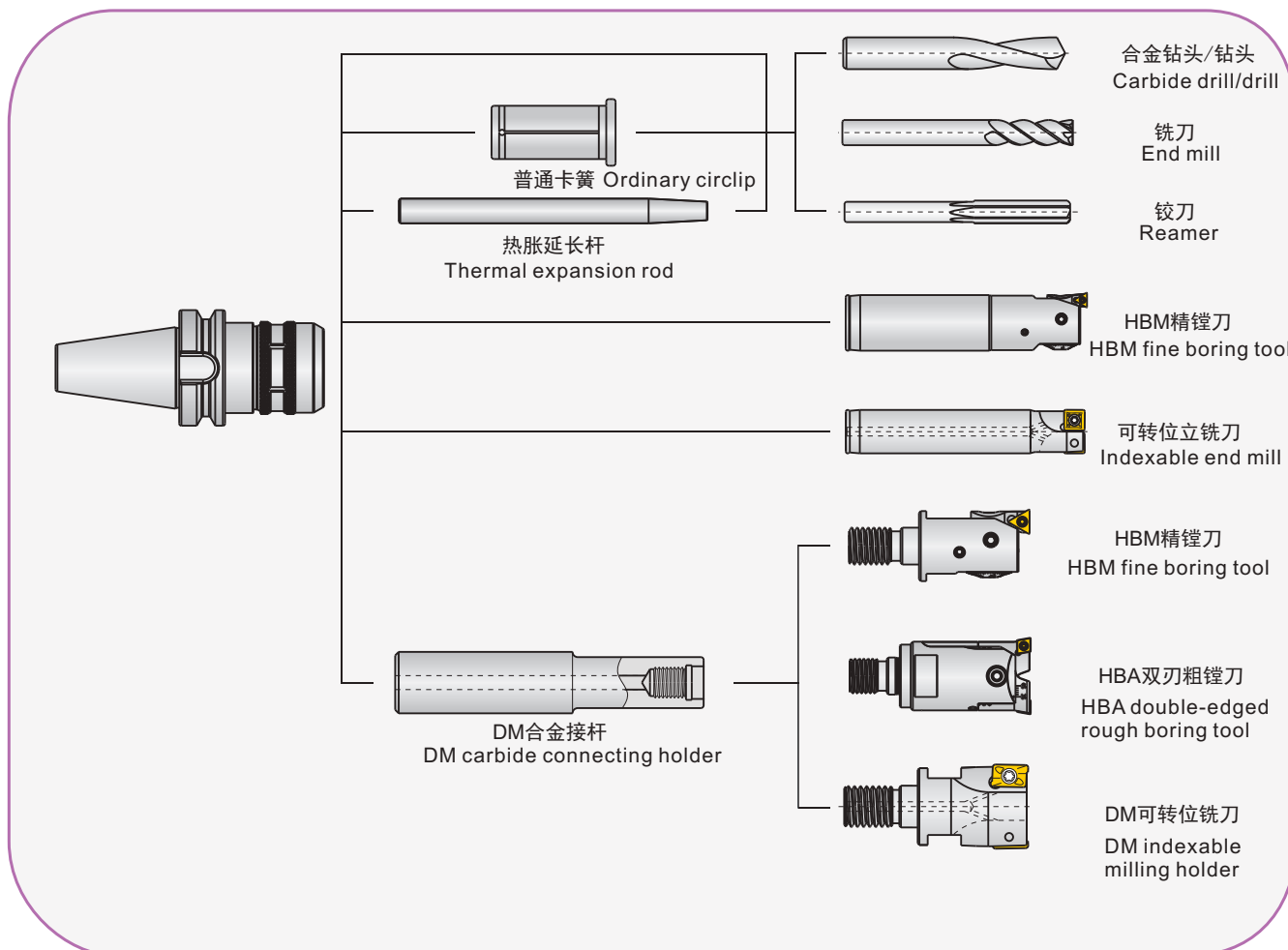
钻夹头刀柄 Drill holder



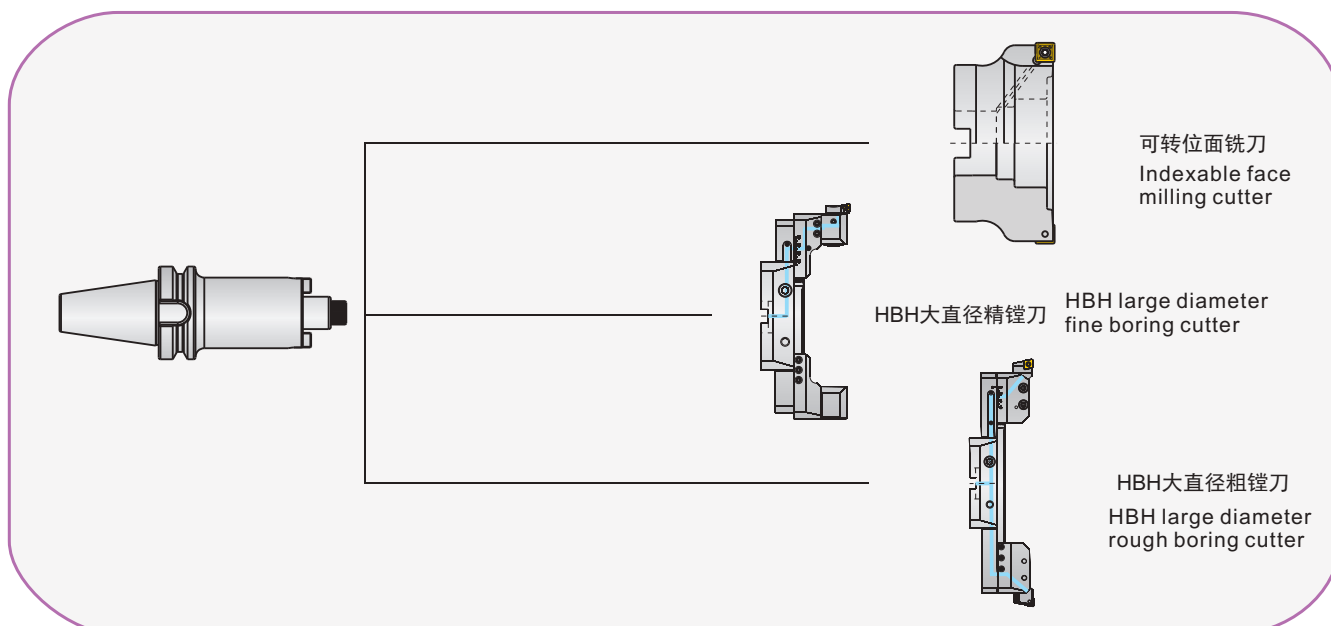
B 工具系统 Tool System

刀具夹持方式应用介绍 Application introduction of tool clamping method

强力夹头刀柄 Power Chuck Holder



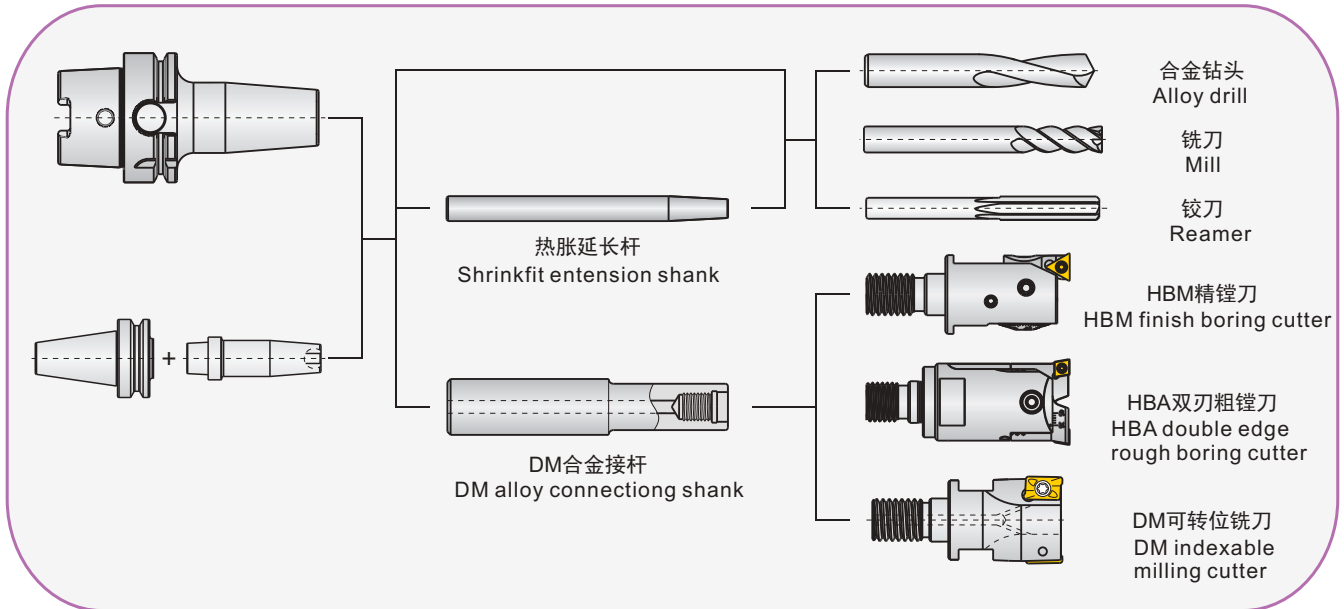
面铣刀刀柄 Face Mill Holder



B 工具系统 Tool System

刀具夹持方式应用介绍 Introduction of tools clamping method application

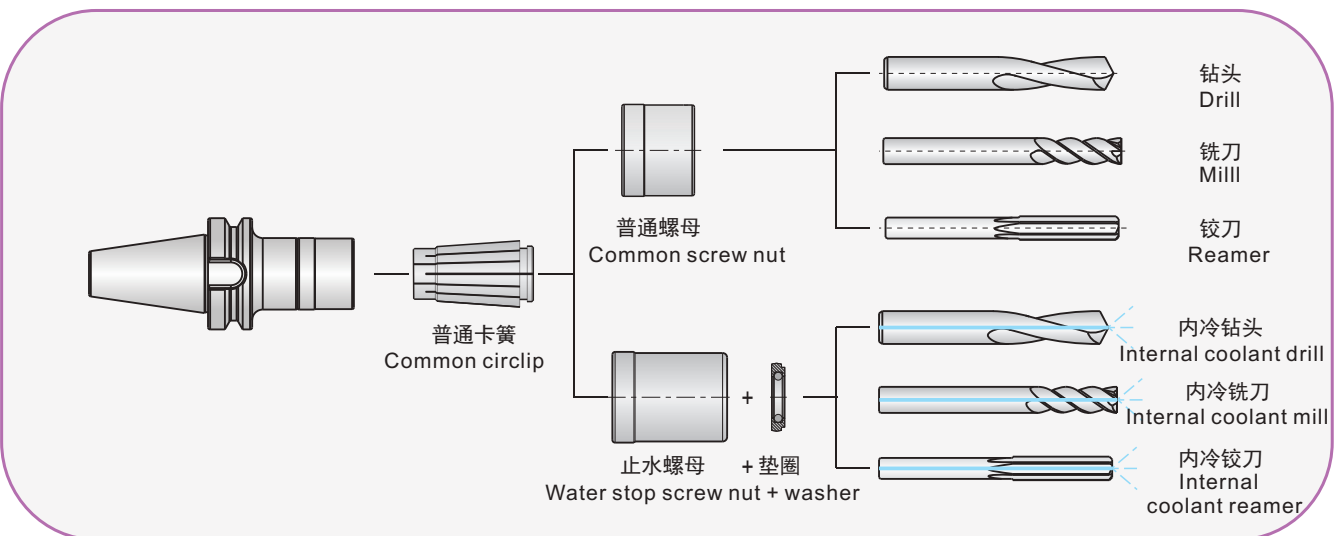
热胀刀柄 Shrinkfit holder



侧固式刀柄 Side lock holder



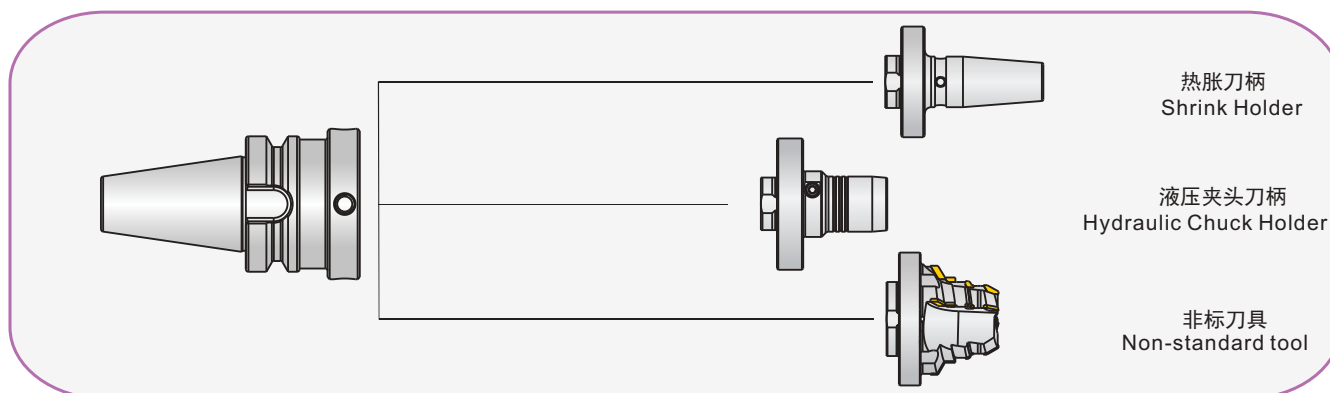
GSK弹簧夹头刀柄 GSK Collet chuck holder



B 工具系统 Tool System

刀具夹持方式应用介绍 Application introduction of tool clamping method

XME可调刀柄 XME Adjustable Holders

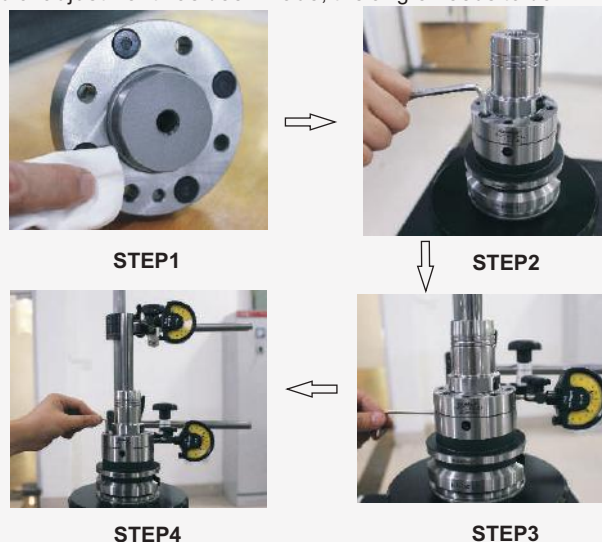


XME可调刀柄调节方法 Adjust method of XME Adjustable Holders

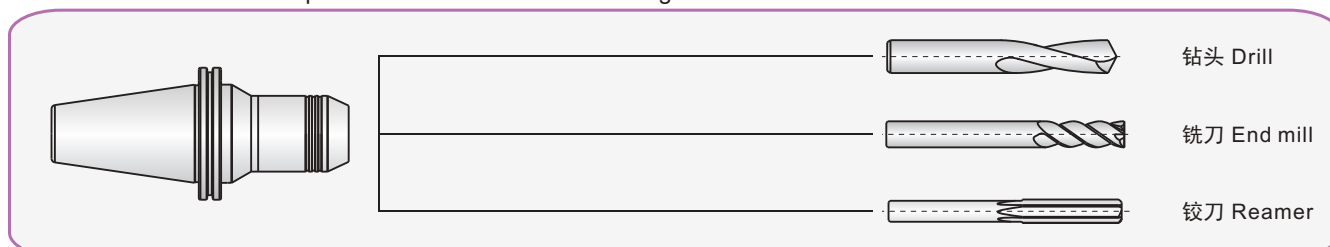
1. 清理各贴合面，调整螺栓端面不高于法兰端面；
2. 装入转接柄，预紧固定螺钉；
3. 径向调整：测量表放置在转接柄法兰盘上。找到最低点，调整径向调节螺钉，调至跳动在3um以内（每次调节后需松开调节螺钉）；
4. 角度调整：测量表放置在刀具前段测量位置，调整端面螺钉（每次调节后不松开调节螺钉）。当角度调整到3um内，需复检步骤3的径向跳动；若进行了径向调整，则需对角度复检并根据实际情况进行调整；
5. 交叉拧紧固定螺钉，并达到锁紧力矩，在完全达到锁紧力矩后，再次检查径向调整与角度调整，在必要时进行修正，轻微拧上调节螺钉。

1. Clean up the mating surfaces, and adjust bolt end face to make sure it is not higher than the end face of the flange;
2. Install the transfer handle and pre-tighten the fixing screws;
3. Radial adjustment: The measuring gauge is placed on the adapter handle flange. Find the lowest point and adjust the radial adjustment screw until the runout is within 3um (the adjustment screw needs to be loosened after each adjustment);
4. Angle adjustment: The measuring table is placed at the measuring position of the front section of the tool, and the end face screw is adjusted (the adjusting screw is not loosened after each adjustment). When the angle is adjusted to within 3um, the radial runout in step 3 needs to be rechecked; if the radial adjustment has been made, the angle needs to be rechecked and adjusted according to the actual situation;
5. Tighten the fixing screws crosswise and reach the locking torque. After fully reaching the locking torque, check the radial adjustment and angle adjustment again, make the correction if necessary, and tighten the adjusting screw slightly.

型号 Model No.	螺钉 Screw	推荐预紧力矩 Recommended preload torque (Nm)	推荐锁紧力矩 Recommended tightening torque (Nm)
XME30	SCC050160	4.3	8.7
XME35	SCC060200	7.5	15
XME40	SCC060200	7.5	15
XME50	SCC080250	18	36
XME60	SCC080250	18	36
XME80	SCC100300	36	72



数控工具磨床专用刀柄 Special tool holder for CNC tool grinder



B 工具系统 Tool System



特点与优势

Features and advantages

充分冷却刀具 Fully cool the tool

提高刀具寿命 Improve tool life

降低刀具成本 Reduce tool cost

钛合金高温合金
切削必备.

Necessary for cutting titanium alloy superalloy

B 工具系统 Tool System

热胀刀柄标准型-HSK63A Shrink Fit Holders-Standard

DIN
69893

Form
A

G2.5
25000rpm

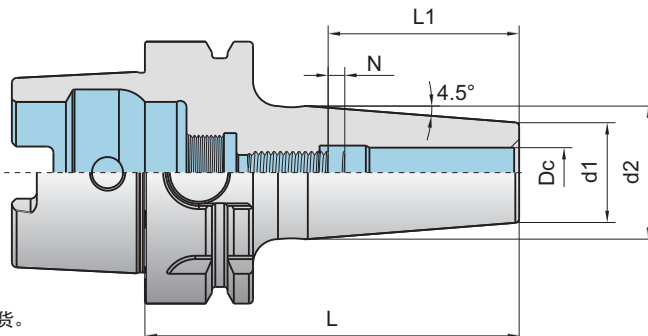
$\sqrt{0.003}$

中心冷却

$\frac{N}{- +}$



视频演示



可接受内孔直径为(公制):

Φ3、Φ5、Φ7、Φ9、Φ11、Φ15、Φ23等热胀刀柄订货。

可接受内孔直径为(英制):

1/8"、3/16"、1/4"、5/16"、3/8"、1/2"、5/8"、3/4"、7/8"、1"、1-1/4"等热胀刀柄订货。

The inner diameters(metric) of Φ3,Φ5,Φ7,Φ9,Φ11,Φ14,Φ15,Φ18,Φ23 are also available.

The inner diameters(inch) of 1/8",3/16",1/4",5/16",3/8",1/2",5/8",3/4",7/8",1",1-1/4" are also available.

型号 Type	库存 Stock	锥柄型式 Taper type	尺寸(mm) Dimension						轴向调节螺钉 Axial adjustment screw	重量 (kg)
			Dc	d1	d2	L	L1	N		
HSK63A-TE04-80	●	HSK63A	4	15	20	80	20	-	-	
HSK63A-TE06-80	●	HSK63A	6	21	27	80	36	10	SHC050150	
HSK63A-TE06-120	●	HSK63A	6	21	27	120	36	10	SHC050150	
HSK63A-TE06-160	●	HSK63A	6	21	27	160	36	10	SHC050150	
HSK63A-TE08-80	●	HSK63A	8	21	27	80	36	10	SHC060150	
HSK63A-TE08-120	●	HSK63A	8	21	27	120	36	10	SHC060150	
HSK63A-TE08-160	●	HSK63A	8	21	27	160	36	10	SHC060150	
HSK63A-TE10-85	●	HSK63A	10	24	32	85	42	10	SHC080150	
HSK63A-TE10-120	●	HSK63A	10	24	32	120	42	10	SHC080150	
HSK63A-TE10-160	●	HSK63A	10	24	32	160	42	10	SHC080150	
HSK63A-TE12-90	●	HSK63A	12	24	32	90	47	10	SHC080150	
HSK63A-TE12-120	●	HSK63A	12	24	32	120	47	10	SHC100150	
HSK63A-TE12-160	●	HSK63A	12	24	32	160	47	10	SHC100150	
HSK63A-TE14-90	●	HSK63A	14	27	34	90	47	10	SHC100150	
HSK63A-TE16-95	●	HSK63A	16	27	34	95	50	10	SHC100150	
HSK63A-TE16-120	●	HSK63A	16	27	34	120	50	10	SHC120200	
HSK63A-TE16-160	●	HSK63A	16	27	34	160	50	10	SHC120200	
HSK63A-TE18-95	●	HSK63A	18	33	42	95	50	10	SHC120200	
HSK63A-TE20-100	●	HSK63A	20	33	42	100	52	10	SHC120200	
HSK63A-TE20-120	●	HSK63A	20	33	42	120	52	10	SGC160200IC	
HSK63A-TE20-160	●	HSK63A	20	33	42	160	52	10	SGC160200IC	
HSK63A-TE25-115	●	HSK63A	25	44	53	115	58	10	SGC160200IC	
HSK63A-TE25-160	●	HSK63A	25	44	53	160	58	10	SGD220250IC	
HSK63A-TE32-120	●	HSK63A	32	44	53	120	58	10	SGD280250IC	
HSK63A-TE32-160	●	HSK63A	32	44	53	160	58	10	SGD280250IC	

接受端面出水刀柄订货, 订货示例:HSK63A-TE04-80C G2.5 25000rpm

接受带芯片孔刀柄订货, 订货示例:HSK63A-TE04-80 G2.5 25000rpm(IC)

● 常备库存
Unallocated stock

● 可备库存
Available stock

○ 订单生产
Order production

B 工具系统 Tool System

热胀刀柄标准型-HSK100A Shrink Fit Holders-Standard

DIN
69893

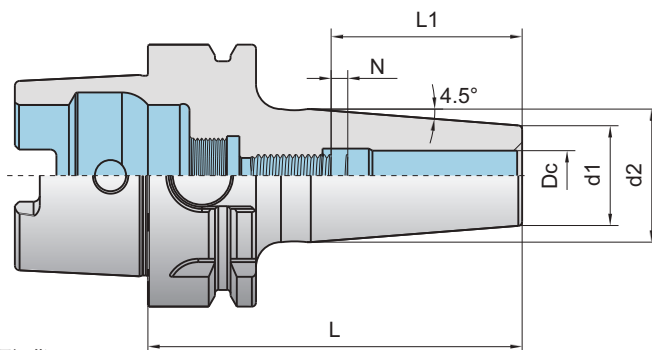
Form
A

G2.5
15000rpm

0.003

中心冷却

N
- +



可接受内孔直径为(公制):

Φ3、Φ5、Φ7、Φ9、Φ11、Φ15、Φ23等热胀刀柄订货。

可接受内孔直径为(英制):

1/8"、3/16"、1/4"、5/16"、3/8"、1/2"、5/8"、3/4"、7/8"、1"、1-1/4"等热胀刀柄订货。

The inner diameters (metric) of Φ3, Φ5, Φ7, Φ9, Φ11, Φ14, Φ15, Φ18, Φ23 are also available.

The inner diameters (inch) of 1/8", 3/16", 1/4", 5/16", 3/8", 1/2", 5/8", 3/4", 7/8", 1", 1-1/4" are also available.

型号 Type	库存 Stock	锥柄型式 Taper type	尺寸(mm) Dimension						轴向调节螺钉 Axial adjustment screw	重量 (kg)
			Dc	d1	d2	L	L1	N		
HSK100A-TE06-85	●	HSK100A	6	21	27	85	36	10	SHC050150	
HSK100A-TE06-120	●	HSK100A	6	21	27	120	36	10	SHC050150	
HSK100A-TE06-160	●	HSK100A	6	21	27	160	36	10	SHC050150	
HSK100A-TE08-85	●	HSK100A	8	21	27	85	36	10	SHC060150	
HSK100A-TE08-120	●	HSK100A	8	21	27	120	36	10	SHC060150	
HSK100A-TE08-160	○	HSK100A	8	21	27	160	36	10	SHC060150	
HSK100A-TE10-90	●	HSK100A	10	24	32	90	42	10	SHC080150	
HSK100A-TE10-120	○	HSK100A	10	24	32	120	42	10	SHC080150	
HSK100A-TE10-160	○	HSK100A	10	24	32	160	42	10	SHC080150	
HSK100A-TE12-95	○	HSK100A	12	24	32	95	47	10	SHC100150	
HSK100A-TE12-120	○	HSK100A	12	24	32	120	47	10	SHC100150	
HSK100A-TE12-160	○	HSK100A	12	24	32	160	47	10	SHC100150	
HSK100A-TE14-95	○	HSK100A	14	27	34	95	47	10	SHC100200	
HSK100A-TE16-100	●	HSK100A	16	27	34	100	50	10	SHC120200	
HSK100A-TE16-160	○	HSK100A	16	27	34	160	50	10	SHC120200	
HSK100A-TE18-100	○	HSK100A	18	33	42	100	50	10	SHC120200	
HSK100A-TE20-105	○	HSK100A	20	33	42	105	52	10	SHC120200	
HSK100A-TE20-160	○	HSK100A	20	33	42	160	52	10	SGC160200IC	
HSK100A-TE25-115	●	HSK100A	25	44	53	115	58	10	SGC120200IC	
HSK100A-TE25-160	○	HSK100A	25	44	53	160	58	10	SGD220250IC	
HSK100A-TE32-120	●	HSK100A	32	44	53	120	58	10	SGC120200IC	
HSK100A-TE32-160	○	HSK100A	32	44	53	160	58	10	SGD280250IC	

接受端面出水刀柄订货, 订货示例HSK100A-TE06-85C G2.5 15000rpm
End face coolant through tool holders are available, order example: HSK100A-TE06-85C G2.5 15000rpm

接受带芯片孔刀柄订货, 订货示例HSK100A-TE06-85 G2.5 15000rpm(IC)
Tool holders with chip hole are available, order example: HSK100A-TE06-85 G2.5 15000rpm(IC)

● 常备库存 Unallocated stock ○ 可备库存 Available stock ○ 订单生产 Order production

B 工具系统 Tool System

热胀刀柄标准型-HSK32E/HSK40E/HSK50E Shrink Fit Holders-Standard

DIN
69893

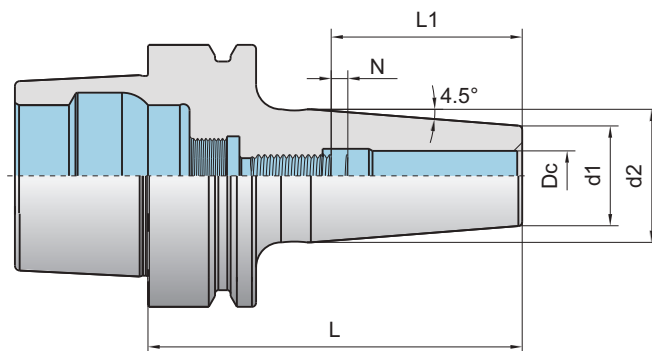
Form
E

G2.5
25000rpm

$\sqrt{Ra} = 0.003$

中心冷却

$\frac{N}{- +}$



可接受内孔直径为(公制):

Φ3、Φ5、Φ7、Φ9、Φ11、Φ14、Φ15、Φ18、Φ23等热胀刀柄订货。

可接受内孔直径为(英制):

1/8"、3/16"、1/4"、5/16"、3/8"、1/2"、5/8"、3/4"、7/8"、1"、1-1/4"等热胀刀柄订货。

The inner diameters (metric) of Φ3, Φ5, Φ7, Φ9, Φ11, Φ14, Φ15, Φ18, Φ23 are also available.
The inner diameters (inch) of 1/8", 3/16", 1/4", 5/16", 3/8", 1/2", 5/8", 3/4", 7/8", 1", 1-1/4" are also available.

型号 Type	库存 Stock	锥柄型式 Taper type	尺寸(mm) Dimension						轴向调节螺钉 Axial adjustment screw	重量 (kg)
			Dc	d1	d2	L	L1	N		
HSK32E-TE03-60	●	HSK32E	3	15	20	60	20	-	-	
HSK32E-TE04-60	●	HSK32E	4	15	20	60	20	-	-	
HSK32E-TE06-70	●	HSK32E	6	21	26	70	36	10	SHC050150	
HSK32E-TE08-70	●	HSK32E	8	21	26	70	36	10	SHC050150	
HSK32E-TE10-80	●	HSK32E	10	24	32	80	42	10	SHC050150	
HSK40E-TE04-60	●	HSK40E	4	15	20	60	20	-	-	
HSK40E-TE06-60	●	HSK40E	6	21	27	60	36	10	SHC050150	
HSK40E-TE06-80	●	HSK40E	6	21	27	80	36	10	SHC050150	
HSK40E-TE08-60	●	HSK40E	8	21	27	60	36	10	SHC050150	
HSK40E-TE08-80	●	HSK40E	8	21	27	80	36	10	SHC060150	
HSK40E-TE10-60	●	HSK40E	10	24	32	60	42	10	SHC050150	
HSK40E-TE10-90	●	HSK40E	10	24	32	90	42	10	SHC080150	
HSK40E-TE12-60	●	HSK40E	12	24	32	60	47	10	SHC080150C	
HSK40E-TE12-90	●	HSK40E	12	24	32	90	47	10	SHC100150C	
HSK50E-TE04-60	●	HSK50E	4	15	20	60	20	-	-	
HSK50E-TE06-80	●	HSK50E	6	21	27	80	36	10	SHC050150	
HSK50E-TE08-80	●	HSK50E	8	21	27	80	36	10	SHC060150	
HSK50E-TE10-85	●	HSK50E	10	24	32	85	42	10	SHC080150	
HSK50E-TE12-90	●	HSK50E	12	24	32	90	47	10	SHC080150	
HSK50E-TE16-95	●	HSK50E	16	27	34	95	50	10	SHC100150	

接受端面出水刀柄订货, 订货示例: HSK32E-TE03-60C G2.5 25000rpm
End face coolant through tool holders are available, order example: HSK32E-TE03-60C G2.5 25000rpm

● 常备库存 Unallocated stock ● 可备库存 Available stock ○ 订单生产 Order production

B 工具系统 Tool System

热胀刀柄轻型-HSK63A Shrink Fit Holders-Slim

DIN
69893

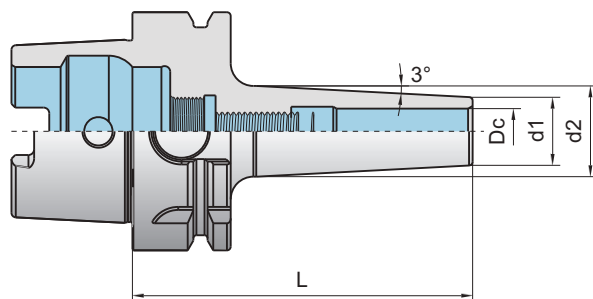
Form
A

G2.5
25000rpm

Ra = 0.003

中心冷却

N



可接受内孔直径为(公制):
Φ3、Φ5、Φ7、Φ9、Φ11、Φ14、Φ15、Φ18、Φ23等热胀刀柄订货。

可接受内孔直径为(英制):
1/8"、3/16"、1/4"、5/16"、3/8"、1/2"、5/8"、3/4"、7/8"、1"、1-1/4"等热胀刀柄订货。

The inner diameters(metric) of Φ3,Φ5,Φ7,Φ9,Φ11,Φ14,Φ15,Φ18,Φ23 are also available.
The inner diameters(inch) of 1/8",3/16",1/4",5/16",3/8",1/2",5/8",3/4",7/8",1",1-1/4" are also available.

型号 Type	库存 Stock	锥柄型式 Taper type	尺寸(mm) Dimension				轴向调节螺钉 Axial adjustment screw	重量 (kg)
			Dc	d1	d2	L		
HSK63A-TES04-80	●	HSK63A	4	10	16	80	-	
HSK63A-TES04-120	●	HSK63A	4	10	19	120	-	
HSK63A-TES04-160	●	HSK63A	4	10	22	160	-	
HSK63A-TES06-80	●	HSK63A	6	12	18	80	SHC050150	
HSK63A-TES06-120	●	HSK63A	6	12	21	120	SHC050150	
HSK63A-TES06-160	●	HSK63A	6	12	24	160	SHC050150	
HSK63A-TES08-80	●	HSK63A	8	14	20	80	SHC060150	
HSK63A-TES08-120	●	HSK63A	8	14	23	120	SHC060150	
HSK63A-TES08-160	●	HSK63A	8	14	26	160	SHC060150	
HSK63A-TES10-90	●	HSK63A	10	16	22	90	SHC080150	
HSK63A-TES10-120	●	HSK63A	10	16	25	120	SHC080150	
HSK63A-TES10-160	●	HSK63A	10	16	28	160	SHC080150	
HSK63A-TES12-90	●	HSK63A	12	18	24	90	SHC100150	
HSK63A-TES12-120	●	HSK63A	12	18	27	120	SHC100150	
HSK63A-TES12-160	●	HSK63A	12	18	30	160	SHC100150	

接受带芯片孔刀柄订货,订货示例:HSK63A-TES04-80 G2.5 25000rpm(IC)
Tool holders with chip hole are available,order example:HSK63A-TES04-80 G2.5 25000rpm(IC)

● 常备库存 Unallocated stock ● 可备库存 Available stock ○ 订单生产 Order production

B 工具系统 Tool System

GSK弹簧夹头刀柄-HSK32A/HSK40A GSK Collet Chucks

DIN
69893

Form
A

G2.5
25000rpm

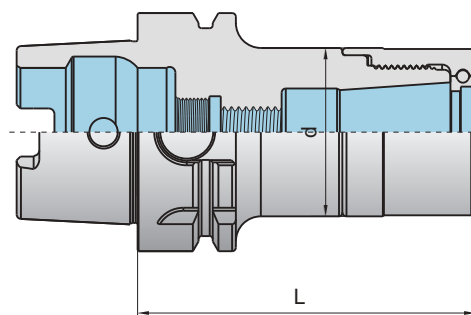
0.003

中心冷却

N
- +



视频演示



型号 Type	库存 Stock	锥柄型式 Taper type	尺寸(mm) Dimension		螺母 Nut	扳手 Wrench	SK卡簧 SKcollet	卡簧拆卸器 Colletpuller	重量 (kg)
			d	L					
HSK32A-GSK06-60	○	HSK32A	20	60	LN-GSK06	WGSK06	SK06	CGSK06	
HSK32A-GSK06-90	○	HSK32A	20	90	LN-GSK06	WGSK06	SK06	CGSK06	
HSK32A-GSK10-60	○	HSK32A	27.6	60	LN-GSK10	WGSK10	SK10	CGSK10	
HSK32A-GSK10-90	○	HSK32A	27.6	90	LN-GSK10	WGSK10	SK10	CGSK10	
HSK40A-GSK06-60	○	HSK40A	20	60	LN-GSK06	WGSK06	SK06	CGSK06	
HSK40A-GSK06-90	○	HSK40A	20	90	LN-GSK06	WGSK06	SK06	CGSK06	
HSK40A-GSK10-60	○	HSK40A	27.6	60	LN-GSK10	WGSK10	SK10	CGSK10	
HSK40A-GSK10-90	○	HSK40A	27.6	90	LN-GSK10	WGSK10	SK10	CGSK10	
HSK40A-GSK16-70	○	HSK40A	40	70	LN-GSK16	WGSK16	SK16	CGSK16	
HSK40A-GSK16-90	○	HSK40A	40	90	LN-GSK16	WGSK16	SK16	CGSK16	

➡ 订货示例: HSK32A-GSK06-60 G2.5 25000rpm
Order example: HSK32A-GSK06-60 G2.5 25000rpm

➡ 扳手、卡簧、卡簧拆卸器需单独订购。
Wrench, collet, and collet puller need to be ordered separately.

● 常备库存 Unallocated stock ● 可备库存 Available stock ○ 订单生产 Order production

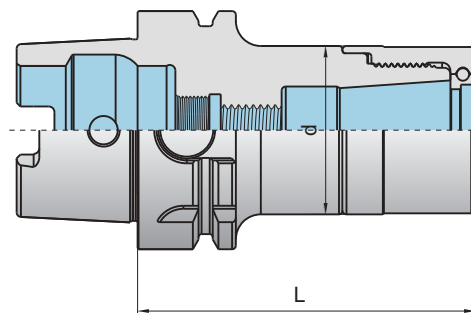
B 工具系统 Tool System

GSK弹簧夹头刀柄-HSK63A/HSK100A
GSK Collet Chucks

DIN
69893

Form
A

G2.5
25000rpm



型号 Type	库存 Stock	锥柄型式 Taper type	尺寸(mm) Dimension		螺母 Nut	扳手 Wrench	SK卡簧 SKcollet	卡簧拆卸器 Colletpuller	重量 (kg)
			d	L					
HSK63A-GSK06-60	●	HSK63A	20	60	LN-GSK06	WGSK06	SK06	CGSK06	
HSK63A-GSK06-90	○	HSK63A	20	90	LN-GSK06	WGSK06	SK06	CGSK06	
HSK63A-GSK06-120	○	HSK63A	20	120	LN-GSK06	WGSK06	SK06	CGSK06	
HSK63A-GSK10-60	●	HSK63A	27.6	60	LN-GSK10	WGSK10	SK10	CGSK10	
HSK63A-GSK10-90	●	HSK63A	27.6	90	LN-GSK10	WGSK10	SK10	CGSK10	
HSK63A-GSK10-120	●	HSK63A	27.6	120	LN-GSK10	WGSK10	SK10	CGSK10	
HSK63A-GSK16-90	●	HSK63A	40.5	90	LN-GSK16	WGSK16	SK16	CGSK16	
HSK63A-GSK16-120	●	HSK63A	40.5	120	LN-GSK16	WGSK16	SK16	CGSK16	
HSK100A-GSK16-90	○	HSK100A	40.5	90	LN-GSK16	WGSK16	SK16	CGSK16	
HSK100A-GSK16-120	○	HSK100A	40.5	120	LN-GSK16	WGSK16	SK16	CGSK16	

接受带芯片孔刀柄订货, 订货示例: HSK63A-GSK06-60 G2.5 25000rpm(IC)
Tool holders with chip hole are available, order example: HSK63A-GSK06-60 G2.5 25000rpm(IC)

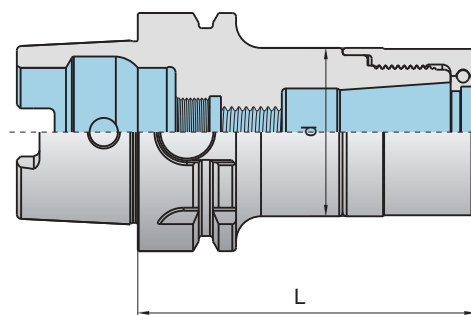
● 常备库存 Unallocated stock ● 可备库存 Available stock ○ 订单生产 Order production

➡ 扳手、卡簧、卡簧拆卸器需单独订购。
Wrench, collet, and collet puller need to be ordered separately.

B 工具系统 Tool System

GSK弹簧夹头刀柄-HSK32E/HSK40E
GSK Collet Chucks

DIN 69893
Form E
G2.5 25000rpm
 $\lambda = 0.003$
中心冷却
N - +



型号 Type	库存 Stock	锥柄型式 Taper type	尺寸(mm) Dimension		螺母 Nut	扳手 Wrench	SK卡簧 SKcollet	卡簧拆卸器 Colletpuller	重量 (kg)
			d	L					
HSK32E-GSK06-60	○	HSK32E	20	60	LN-GSK06	WGSK06	SK06	CGSK06	
HSK32E-GSK06-90	○	HSK32E	20	90	LN-GSK06	WGSK06	SK06	CGSK06	
HSK32E-GSK10-60	○	HSK32E	27.6	60	LN-GSK10	WGSK10	SK10	CGSK10	
HSK32E-GSK10-90	○	HSK32E	27.6	90	LN-GSK10	WGSK10	SK10	CGSK10	
HSK40E-GSK06-60	○	HSK40E	20	60	LN-GSK06	WGSK06	SK06	CGSK06	
HSK40E-GSK06-90	○	HSK40E	20	90	LN-GSK06	WGSK06	SK06	CGSK06	
HSK40E-GSK10-60	●	HSK40E	27.6	60	LN-GSK10	WGSK10	SK10	CGSK10	
HSK40E-GSK10-90	●	HSK40E	27.6	90	LN-GSK10	WGSK10	SK10	CGSK10	
HSK40E-GSK16-70	○	HSK40E	40.5	70	LN-GSK16	WGSK16	SK16	CGSK16	
HSK40E-GSK16-90	●	HSK40E	40.5	90	LN-GSK16	WGSK16	SK16	CGSK16	

订货示例: HSK32E-GSK06-60 G2.5 25000rpm
 Order example: HSK32E-GSK06-60 G2.5 25000rpm

扳手、卡簧、卡簧拆卸器需单独订购。
 Wrench, collet, and collet puller need to be ordered separately.

● 常备库存 Unallocated stock
 ○ 可备库存 Available stock
 ○ 订单生产 Order production

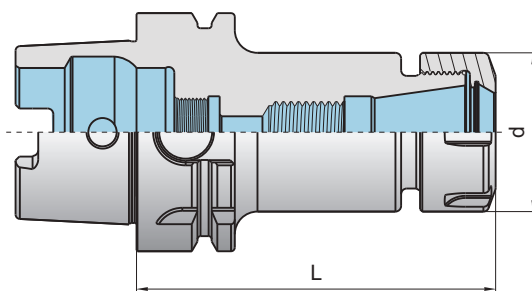
B 工具系统 Tool System

弹簧夹头刀柄 HSK32A/HSK40A/HSK50A ER Collet Chucks

DIN 69893
Form A
G2.5 25000rpm
±0.003
中心冷却
N



视频演示



型号 Type	库存 Stock	锥柄型式 Taper type	尺寸(mm) Dimension		螺母 Nut	扳手 Wrench	卡簧 ER collet	螺钉 Screw	重量 (kg)
			d	L					
HSK32A-ER11-80	○	HSK32A	19	80	LN11S	WER11	ER11	SGC060150IC	
HSK32A-ER16-80	●	HSK32A	28	80	LN16S	WER16	ER16	SGC100150IC	
HSK32A-ER20-80	●	HSK32A	34	80	LN20S	WER20	ER20	SGC120200IC	
HSK32A-ER25-80	●	HSK32A	42	80	LN25	WER25	ER25	SGC120200IC	
HSK40A-ER11-80	○	HSK40A	19	80	LN11S	WER11	ER11	SGC060150IC	
HSK40A-ER16-80	●	HSK40A	28	80	LN16S	WER16	ER16	SGC100150IC	
HSK40A-ER20-80	●	HSK40A	34	80	LN20S	WER20	ER20	SGC120200IC	
HSK40A-ER25-80	○	HSK40A	42	80	LN25	WER25	ER25	SGC120200IC	
HSK50A-ER16-60	○	HSK50A	28	60	LN16S	WER16	ER16	SGC060150IC	
HSK50A-ER16-100	●	HSK50A	28	100	LN16S	WER16	ER16	SGC100150IC	
HSK50A-ER20-70	○	HSK50A	34	70	LN20S	WER20	ER20	SGC060150IC	
HSK50A-ER20-100	○	HSK50A	34	100	LN20S	WER20	ER20	SGC120200IC	
HSK50A-ER25-70	●	HSK50A	42	70	LN25	WER25	ER25	SGC060150IC	
HSK50A-ER25-100	●	HSK50A	42	100	LN25	WER25	ER25	SGC160200IC	
HSK50A-ER32-80	●	HSK50A	50	80	LN32	WER32	ER32	SGC060150IC	
HSK50A-ER32-100	○	HSK50A	50	100	LN32	WER32	ER32	SGC080150IC	

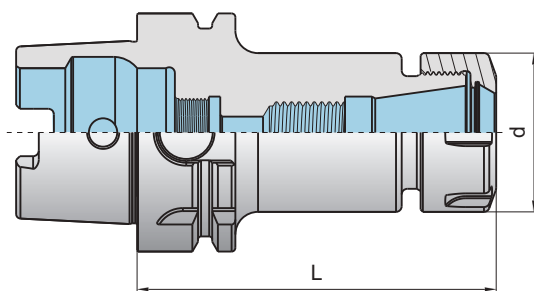
➔ 订货示例: HSK32A-ER11-80 G2.5 25000rpm
 Order example: HSK32A-ER11-80 G2.5 25000rpm

➔ 扳手、卡簧、螺钉需单独订购。
 Wrench, collet, and screw need to be ordered separately.

● 常备库存 Unallocated stock
 ○ 可备库存 Available stock
 ○ 订单生产 Order production

B 工具系统 Tool System

弹簧夹头刀柄HSK63A ER Collet Chucks



型号 Type	库存 Stock	锥柄型式 Taper type	尺寸(mm) Dimension		螺母 Nut	扳手 Wrench	卡簧 ER collet	螺钉 Screw	重量 (kg)
			d	L					
HSK63A-ER16-80	●	HSK63A	28	80	LN16S	WER16	ER16	SGC100150IC	
HSK63A-ER16-100	●	HSK63A	28	100	LN16S	WER16	ER16	SGC100150IC	
HSK63A-ER16-160	⊙	HSK63A	28	160	LN16S	WER16	ER16	SGC100150IC	
HSK63A-ER20-80	●	HSK63A	34	80	LN20S	WER20	ER20	SGC100150IC	
HSK63A-ER20-100	●	HSK63A	34	100	LN20S	WER20	ER20	SGC120200IC	
HSK63A-ER20-160	⊙	HSK63A	34	160	LN20S	WER20	ER20	SGC120200IC	
HSK63A-ER25-80	●	HSK63A	42	80	LN25	WER25	ER25	SGC100150IC	
HSK63A-ER25-100	⊙	HSK63A	42	100	LN25	WER25	ER25	SGC160200IC	
HSK63A-ER25-160	⊙	HSK63A	42	160	LN25	WER25	ER25	SGC160200IC	
HSK63A-ER32-80	●	HSK63A	50	80	LN32	WER32	ER32	SGC100150IC	
HSK63A-ER32-100	●	HSK63A	50	100	LN32	WER32	ER32	SGC100150IC	
HSK63A-ER32-160	⊙	HSK63A	50	160	LN32	WER32	ER32	SGC100150IC	
HSK63A-ER40-80	●	HSK63A	63	80	LN40	WER40	ER40	-	
HSK63A-ER40-100	●	HSK63A	63	100	LN40	WER40	ER40	SGC100150IC	
HSK63A-ER40-160	○	HSK63A	63	160	LN40	WER40	ER40	SGC100150IC	

接受带芯片孔刀柄订货, 订货示例: HSK63A-ER16-80 G2.5 25000rpm(IC)
 Tool holders with chip hole are available, order example: HSK63A-ER16-80 G2.5 25000rpm(IC)

常备库存
 Unallocated stock

可备库存
 Available stock

订单生产
 Order production

扳手、卡簧、螺钉需单独订购。
 Wrench, collet, and screw need to be ordered separately.

B 工具系统 Tool System

弹簧夹头刀柄 HSK100A ER Collet Chucks

DIN
69893

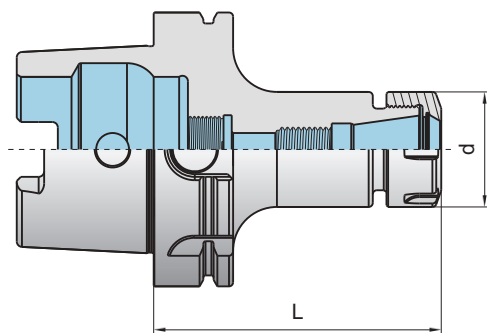
Form
A

G2.5
15000rpm

Ra=0.003

中心冷却

N
- +



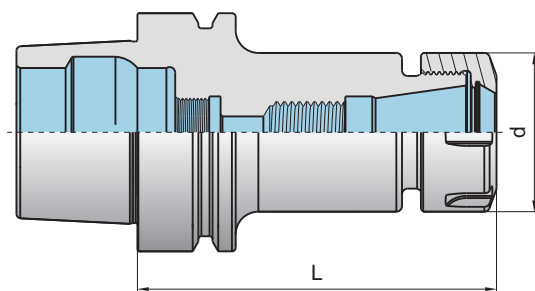
型号 Type	库存 Stock	锥柄型式 Taper type	尺寸(mm) Dimension		螺母 Nut	扳手 Wrench	卡簧 ER collet	螺钉 Screw	重量 (kg)
			d	L					
HSK100A-ER16-100	●	HSK100A	28	100	LN16S	WER16	ER16	SGC100150IC	
HSK100A-ER16-160	●	HSK100A	28	160	LN16S	WER16	ER16	SGC100150IC	
HSK100A-ER20-100	○	HSK100A	34	100	LN20S	WER20	ER20	SGC120200IC	
HSK100A-ER20-160	○	HSK100A	34	160	LN20S	WER20	ER20	SGC120200IC	
HSK100A-ER25-100	○	HSK100A	42	100	LN25	WER25	ER25	SGC120200IC	
HSK100A-ER25-160	●	HSK100A	42	160	LN25	WER25	ER25	SGC160200IC	
HSK100A-ER32-100	○	HSK100A	50	100	LN32	WER32	ER32	SGC120200IC	
HSK100A-ER32-160	○	HSK100A	50	160	LN32	WER32	ER32	SGD220250IC	
HSK100A-ER40-100	○	HSK100A	63	100	LN40	WER40	ER40	SGC120200IC	
HSK100A-ER40-160	○	HSK100A	63	160	LN40	WER40	ER40	SGD280250IC	

接受带芯片孔刀柄订货, 订货示例: HSK100A-ER16-100 G2.5 15000rpm(IC)
 ● 常备库存 Unallocated stock
● 可备库存 Available stock
○ 订单生产 Order production

扳手、卡簧、螺钉需单独订购。
Wrench, collet, and screw need to be ordered separately.

B 工具系统 Tool System

弹簧夹头刀柄 HSK32E/ HSK40E/ HSK50E ER Collet Chucks



型号 Type	库存 Stock	锥柄型式 Taper type	尺寸(mm) Dimension		螺母 Nut	扳手 Wrench	卡簧 ER collet	螺钉 Screw	重量 (kg)
			d	L					
HSK32E-ER11-80	○	HSK32E	19	80	LN11S	WER11	ER11	SGC060150IC	
HSK32E-ER16-80	●	HSK32E	28	80	LN16S	WER16	ER16	SGC100150IC	
HSK32E-ER20-80	●	HSK32E	34	80	LN20S	WER20	ER20	SGC120200IC	
HSK32E-ER25-80	●	HSK32E	42	80	LN25	WER25	ER25	SGC160200IC	
HSK40E-ER11-80	●	HSK40E	19	80	LN11S	WER11	ER11	SGC060150IC	
HSK40E-ER16-80	●	HSK40E	28	80	LN16S	WER16	ER16	SGC100150IC	
HSK40E-ER20-80	●	HSK40E	34	80	LN20S	WER20	ER20	SGC120200IC	
HSK40E-ER25-80	●	HSK40E	42	80	LN25	WER25	ER25	SGC120200IC	
HSK50E-ER16-60	○	HSK50E	28	60	LN16S	WER16	ER16	SGC060150IC	
HSK50E-ER16-100	●	HSK50E	28	100	LN16S	WER16	ER16	SGC100150IC	
HSK50E-ER20-70	●	HSK50E	34	70	LN20S	WER20	ER20	SGC060150IC	
HSK50E-ER20-100	○	HSK50E	34	70	LN20S	WER20	ER20	SGC060150IC	
HSK50E-ER25-70	○	HSK50E	42	70	LN25	WER25	ER25	SGC160200IC	
HSK50E-ER25-100	○	HSK50E	42	100	LN25	WER25	ER25	SGC160200IC	
HSK50E-ER32-80	●	HSK50E	50	80	LN32	WER32	ER32	SGC060150IC	
HSK50E-ER32-100	●	HSK50E	50	100	LN32	WER32	ER32	SGC080150IC	

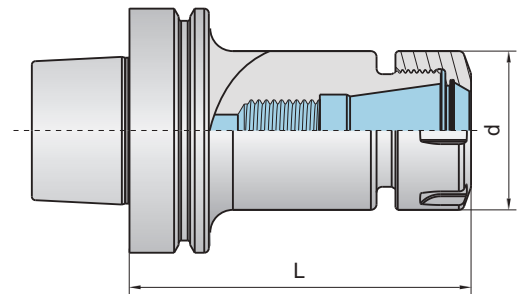
订货示例: HSK32E-ER11-80 G2.5 25000rpm
Order example: HSK32E-ER11-80 G2.5 25000rpm

扳手、卡簧、螺钉需单独订购。
Wrench, collet, and screw need to be ordered separately.

● 常备库存 Unallocated stock
● 可备库存 Available stock
○ 订单生产 Order production

B 工具系统 Tool System

弹簧夹头刀柄-HSK63F ER Collet Chucks



型号 Type	库存 Stock	锥柄型式 Taper type	尺寸(mm) Dimension		螺母 Nut	扳手 Wrench	卡簧 ER collet	螺钉 Screw	重量 (kg)
			d	L					
HSK63F-ER16-75	○	HSK63F	28	75	LN16S	WER16	ER16	SGC100150IC	
HSK63F-ER16-100	○	HSK63F	28	100	LN16S	WER16	ER16	SGC100150IC	
HSK63F-ER20-75	○	HSK63F	34	75	LN20S	WER20	ER20	SGC060150IC	
HSK63F-ER20-100	○	HSK63F	34	100	LN20S	WER20	ER20	SGC120200IC	
HSK63F-ER25-75	○	HSK63F	42	75	LN25	WER25	ER25	SGC060150IC	
HSK63F-ER25-100	○	HSK63F	42	100	LN25	WER25	ER25	SGC160200IC	
HSK63F-ER32-75	○	HSK63F	50	75	LN32	WER32	ER32	SGC060150IC	
HSK63F-ER32-100	○	HSK63F	50	100	LN32	WER32	ER32	SGC100150IC	
HSK63F-ER40-75	○	HSK63F	63	75	LN40	WER40	ER40	-	
HSK63F-ER40-100	○	HSK63F	63	100	LN40	WER40	ER40	SGC100150IC	

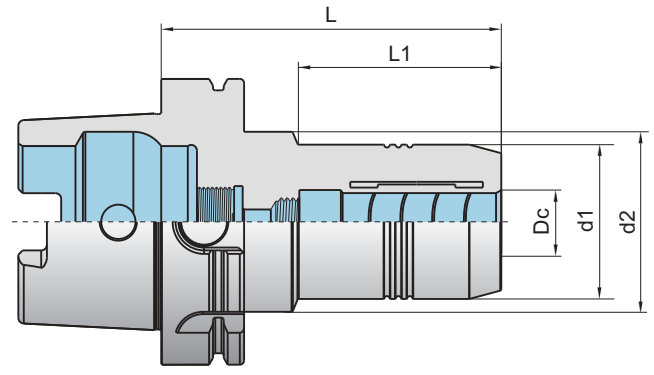
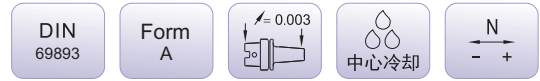
接受带芯片孔刀柄订货, 订货示例: HSK63F-ER16-75 G2.5 25000rpm(IC)
 Tool holders with chip hole are available, order example: HSK63F-ER16-75 G2.5 25000rpm(IC)

常备库存 Unallocated stock
 可备库存 Available stock
 订单生产 Order production

扳手、卡簧、螺钉需单独订购。
 Wrench, collet, and screw need to be ordered separately.

B 工具系统 Tool System

液压夹头刀柄-HSK63A Hydraulic Chucks



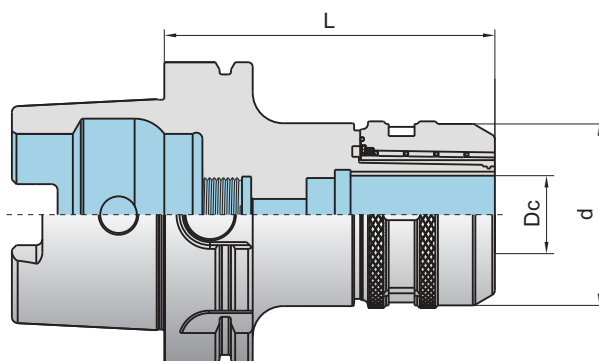
型号 Type	库存 Stock	锥柄型式 Taper type	尺寸(mm) Dimension					卡簧 HC collet	扳手 Wrench	重量 (kg)
			Dc	d1	d2	L1	L			
HSK63A-KHC06-80	●	HSK63A	6	26	50	28	80	HC06	TS5	
HSK63A-KHC08-80	●	HSK63A	8	30	50	30	80	HC08	TS5	
HSK63A-KHC10-80	●	HSK63A	10	32	50	34	80	HC10	TS5	
HSK63A-KHC12-85	●	HSK63A	12	34	50	40	85	HC12	TS5	
HSK63A-KHC14-90	●	HSK63A	14	36	50	46	90	-	TS5	
HSK63A-KHC16-90	●	HSK63A	16	38	50	44	90	HC16	TS5	
HSK63A-KHC18-90	●	HSK63A	18	40	50	45	90	-	TS5	
HSK63A-KHC20-90	●	HSK63A	20	42	50	47	90	HC20	TS5	
HSK63A-KHC20-150	●	HSK63A	20	42	50	107	150	HC20	TS5	
HSK63A-KHC20-200	●	HSK63A	20	42	50	157	200	HC20	TS5	
HSK63A-KHC25-120	●	HSK63A	25	57	66	57	120	-	TS5	
HSK63A-KHC32-125	●	HSK63A	32	64	75	59	125	HC32	TS5	
HSK100A-KHC06-80	●	HSK100A	6	26	50	30	80	HC06	TS5	
HSK100A-KHC08-80	●	HSK100A	8	30	50	31	80	HC08	TS5	
HSK100A-KHC10-90	●	HSK100A	10	32	50	38	90	HC10	TS5	
HSK100A-KHC12-95	●	HSK100A	12	34	50	44	95	HC12	TS5	
HSK100A-KHC16-100	●	HSK100A	16	38	50	51	100	HC16	TS5	
HSK100A-KHC20-105	●	HSK100A	20	42	50	58	105	HC20	TS5	
HSK100A-KHC20-150	●	HSK100A	20	42	50	103	150	HC20	TS5	
HSK100A-KHC20-200	●	HSK100A	20	42	50	153	200	HC20	TS5	
HSK100A-KHC25-110	●	HSK100A	25	57	66	64	110	-	TS5	
HSK100A-KHC32-110	●	HSK100A	32	64	75	63	110	HC32	TS5	

接受带芯孔刀柄订货, 订货示例: HSK63A-KHC06-80(IC)
Tool holders with chip hole are available, order example: HSK63A-KHC06-80(IC)

● 常备库存 Unallocated stock
● 可备库存 Available stock
○ 订单生产 Order production

B 工具系统 Tool System

强力夹头刀柄-HSK63A Power Chucks



型号 Type	库存 Stock	锥柄型式 Taper type	尺寸(mm) Dimension			卡簧 C collet	扳手 Wrench	重量 (kg)
			Dc	d	L			
HSK63A-KMC20-100	●	HSK63A	20	52	100	C20	WKMC20	
HSK63A-KMC25-110	●	HSK63A	25	59	110	C25	WKMC25	
HSK63A-KMC32-105	●	HSK63A	32	69	105	C32	WKMC32	
HSK100A-KMC25-110	●	HSK100A	25	59	110	C25	WKMC25	
HSK100A-KMC32-135	●	HSK100A	32	69	135	C32	WKMC32	
HSK100A-KMC42-140	●	HSK100A	42	88	140	C42	WKMC42	

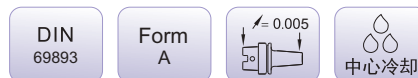
接受带芯片孔刀柄订货, 订货示例:HSK63A-KMC20-100(IC)
Tool holders with chip hole are available,order example:HSK63A-KMC20-100(IC)

● 常备库存 Unallocated stock ● 可备库存 Available stock ○ 订单生产 Order production

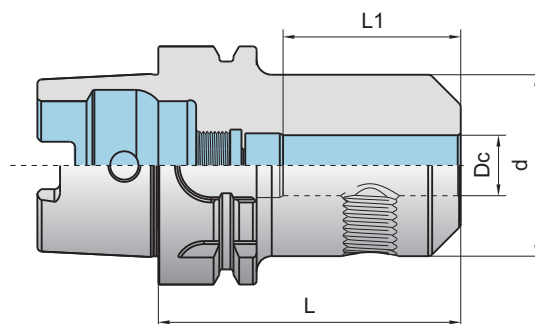
扳手需单独订购。
Wrench need to be ordered separately.

B 工具系统 Tool System

侧固式刀柄-HSK63A Side-Locked Holders



视频演示



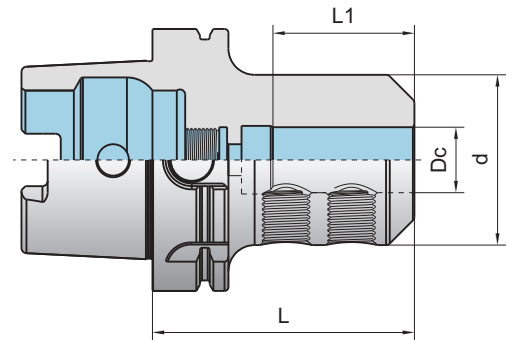
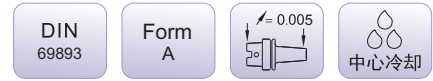
型号 Type	库存 Stock	锥柄型式 Taper type	尺寸(mm) Dimension				螺钉 Screw	扳手 Wrench	重量 (kg)
			Dc	d	L1	L			
HSK63A-XP12-80	●	HSK63A	12	42	44	80	SXP12	S6	
HSK63A-XP12-160	●	HSK63A	12	42	44	160	SXP12	S6	
HSK63A-XP16-80	●	HSK63A	16	48	47	80	SXP16	S6	
HSK63A-XP16-160	●	HSK63A	16	48	47	160	SXP16	S6	
HSK63A-XP20-80	●	HSK63A	20	52	49	80	SXP20	S8	
HSK63A-XP20-160	●	HSK63A	20	52	49	160	SXP20	S8	
HSK63A-XP25-110	●	HSK63A	25	65	54	110	SXP25	S8	
HSK63A-XP25-160	●	HSK63A	25	65	54	160	SXP25	S8	
HSK63A-XP32-110	●	HSK63A	32	72	58	110	SXP32	S10	
HSK63A-XP32-160	●	HSK63A	32	72	58	160	SXP32	S10	

接受带芯片孔刀柄订货, 订货示例: HSK63A-XP12-80(IC)
Tool holders with chip hole are available, order example: HSK63A-XP12-80(IC)

● 常备库存 Unallocated stock
● 可备库存 Available stock
○ 订单生产 Order production

B 工具系统 Tool System

侧固式刀柄-HSK100A Side-Locked Holders



型号 Type	库存 Stock	锥柄型式 Taper type	尺寸(mm) Dimension				螺钉 Screw	扳手 Wrench	重量 (kg)
			Dc	d	L1	L			
HSK100A-XP16-100	●	HSK100A	16	48	47	100	SXP16	S6	
HSK100A-XP16-160	●	HSK100A	16	48	47	160	SXP16	S6	
HSK100A-XP20-100	●	HSK100A	20	52	49	100	SXP20	S8	
HSK100A-XP20-160	●	HSK100A	20	52	49	160	SXP20	S8	
HSK100A-XP25-100	●	HSK100A	25	65	54	100	SXP25	S8	
HSK100A-XP25-160	●	HSK100A	25	65	54	160	SXP25	S8	
HSK100A-XP32-100	●	HSK100A	32	72	58	100	SXP32	S10	
HSK100A-XP32-160	●	HSK100A	32	72	58	160	SXP32	S10	
HSK100A-XP40-120	●	HSK100A	40	80	68	120	SXP40	S10	
HSK100A-XP40-160	●	HSK100A	40	80	68	160	SXP40	S10	

接受带芯片孔刀柄订货, 订货示例: HSK100A-XP16-100(IC)
Tool holders with chip hole are available, order example: HSK100A-XP16-100(IC)

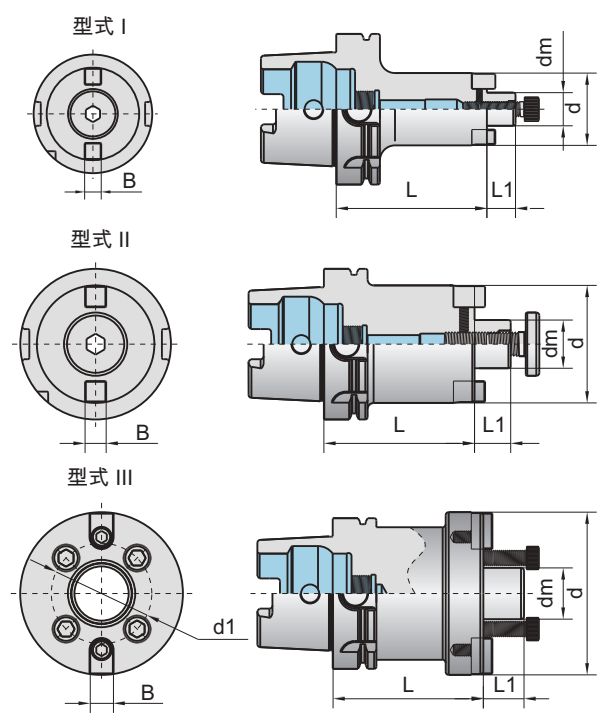
● 常备库存 Unallocated stock ● 可备库存 Available stock ○ 订单生产 Order production

B 工具系统 Tool System

面铣刀刀柄-HSK63A
Shell Mill Holders



视频演示



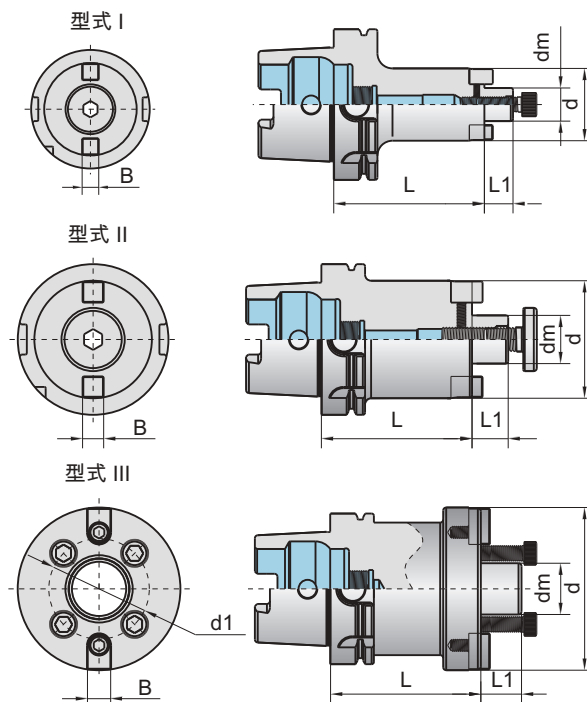
型号 Type	库存 Stock	锥柄型式 Taper type	尺寸(mm) Dimension						螺钉 Screw	扳手 Wrench	键 Key	型式 Model	重量 (kg)
			dm	d	d1	B	L1	L					
HSK63A-XMA22-50	○	HSK63A	22	48	-	10	19	50	SCC100300	S8	KXMA22	I	
HSK63A-XMA22-100	◐	HSK63A	22	48	-	10	19	100	SCC100300	S8	KXMA22	I	
HSK63A-XMA22-160	●	HSK63A	22	48	-	10	19	160	SCC100300	S8	KXMA22	I	
HSK63A-XMA27-60	○	HSK63A	27	60	-	12	21	60	SCC120350	S10	KXMA27	I	
HSK63A-XMA27-100	◐	HSK63A	27	60	-	12	21	100	SCC120350	S10	KXMA27	I	
HSK63A-XMA27-160	●	HSK63A	27	60	-	12	21	160	SCC120350	S10	KXMA27	I	
HSK63A-XMB32-60	●	HSK63A	32	78	-	14	24	60	SXSL32-S10	S10	KXMB32	II	
HSK63A-XMB32-100	◐	HSK63A	32	78	-	14	24	100	SXSL32-S10	S10	KXMB32	II	
HSK63A-XMB32-160	●	HSK63A	32	78	-	14	24	160	SXSL32-S10	S10	KXMB32	II	
HSK63A-XMB40-60	○	HSK63A	40	89	-	16	27	60	SXSL40-S12	S12	KXMB40	II	
HSK63A-XMB40-100	◐	HSK63A	40	89	-	16	27	100	SXSL40-S12	S12	KXMB40	II	
HSK63A-XMB40-160	○	HSK63A	40	89	-	16	27	160	SXSL40-S12	S12	KXMB40	II	
HSK63A-XMC40-60	◐	HSK63A	40	108	66.7	16	27	60	SCC120350	S10	KXMC40	III	

接受带芯孔刀柄订货, 订货示例: HSK63A-XMA22-50(IC)
Tool holders with chip hole are available, order example: HSK63A-XMA22-50(IC)

● 常备库存 Unallocated stock
◐ 可备库存 Available stock
○ 订单生产 Order production

B 工具系统 Tool System

面铣刀刀柄-HSK100A Shell Mill Holders



型号 Type	库存 Stock	锥柄型式 Taper type	尺寸(mm) Dimension						螺钉 Screw	扳手 Wrench	键 Key	型式 Model	重量 (kg)
			dm	d	d1	B	L1	L					
HSK100A-XMA22-50	●	HSK100A	22	48	-	10	19	50	SCC100300	S8	KXMA22	I	
HSK100A-XMA22-100	◐	HSK100A	22	48	-	10	19	100	SCC100300	S8	KXMA22	I	
HSK100A-XMA22-160	○	HSK100A	22	48	-	10	19	160	SCC100300	S8	KXMA22	I	
HSK100A-XMA27-50	●	HSK100A	27	60	-	12	21	50	SCC120350	S10	KXMA27	I	
HSK100A-XMA27-100	◐	HSK100A	27	60	-	12	21	100	SCC120350	S10	KXMA27	I	
HSK100A-XMA27-160	○	HSK100A	27	60	-	12	21	160	SCC120350	S10	KXMA27	I	
HSK100A-XMB32-50	●	HSK100A	32	78	-	14	24	50	SXSL32-S10	S10	KXMB32	II	
HSK100A-XMB32-100	◐	HSK100A	32	78	-	14	24	100	SXSL32-S10	S10	KXMB32	II	
HSK100A-XMB32-160	○	HSK100A	32	78	-	14	24	160	SXSL32-S10	S10	KXMB32	II	
HSK100A-XMB40-60	◐	HSK100A	40	89	-	16	27	60	SXSL40-S12	S12	KXMB40	II	
HSK100A-XMB40-100	◐	HSK100A	40	89	-	16	27	100	SXSL40-S12	S12	KXMB40	II	
HSK100A-XMB40-160	○	HSK100A	40	89	-	16	27	160	SXSL40-S12	S12	KXMB40	II	
HSK100A-XMC40-60	◐	HSK100A	40	108	66.7	16	27	60	SCC120350	S10	KXMC40	III	
HSK100A-XMC60-70	◐	HSK100A	60	129	101.6	25.4	38	70	SCC160450	S14	KXMC60	III	

接受带芯片孔刀柄订货, 订货示例: HSK100A-XMA22-50(IC)
Tool holders with chip hole are available, order example: HSK100A-XMA22-50(IC)

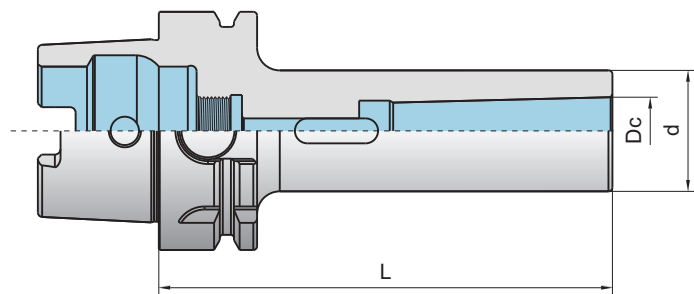
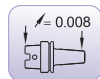
● 常备库存 Unallocated stock
◐ 可备库存 Available stock
○ 订单生产 Order production

B 工具系统 Tool System

有扁尾莫氏圆锥孔刀柄-HSK63A/HSK100A
Morse Taper Shanks with Tang

DIN
69893

Form
A



型号 Type	库存 Stock	锥柄型式 Taper type	莫氏锥度 Morse taper	尺寸(mm) Dimension			安装钻头直径 Drill bit dia.	重量 (kg)
				Dc	d	L		
HSK63A-M1-100	●	HSK63A	MT1	12.065	25	100	3~14	
HSK63A-M2-120	●	HSK63A	MT2	17.78	32	120	14.25~23	
HSK63A-M3-140	●	HSK63A	MT3	23.825	40	140	23.25~31.75	
HSK63A-M4-160	●	HSK63A	MT4	31.267	50	160	32~50.5	
HSK100A-M1-110	○	HSK100A	MT1	12.065	25	110	3~14	
HSK100A-M2-120	●	HSK100A	MT2	17.78	32	120	14.25~23	
HSK100A-M3-150	●	HSK100A	MT3	23.825	40	150	23.25~31.75	
HSK100A-M4-170	○	HSK100A	MT4	31.267	50	170	32~50.5	
HSK100A-M5-200	○	HSK100A	MT5	44.399	70	200	51~76	



接受带芯片孔刀柄订货, 订货示例:HSK63A-M1-100(IC)
Tool holders with chip hole are available,order example:HSK63A-M1-100(IC)

● 常备库存
Unallocated stock

● 可备库存
Available stock

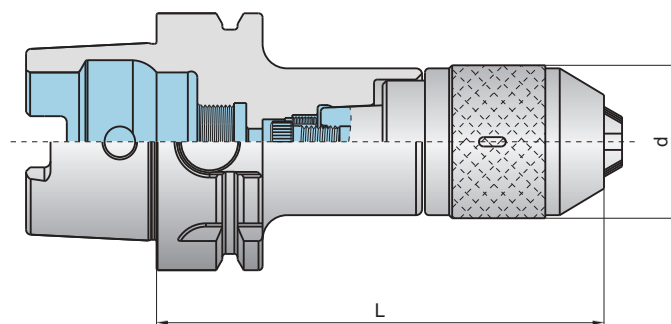
○ 订单生产
Order production

B 工具系统 Tool System

整体式钻夹头刀柄-HSK63A/HSK100A Integral Drill Chucks

DIN
69893

Form
A



型号 Type	库存 Stock	锥柄型式 Taper type	尺寸(mm) Dimension		夹持范围 Holding range	重量 (kg)
			d	L		
HSK63A-KPU08-130	●	HSK63A	37.5	130	0.5~8	
HSK63A-KPU13-155	●	HSK63A	50.5	155	0.5~13	
HSK63A-KPU16-160	●	HSK63A	57	160	3~16	
HSK100A-KPU08-135	○	HSK100A	37.5	135	0.5~8	
HSK100A-KPU13-165	●	HSK100A	50.5	165	0.5~13	
HSK100A-KPU16-170	●	HSK100A	57	170	3~16	

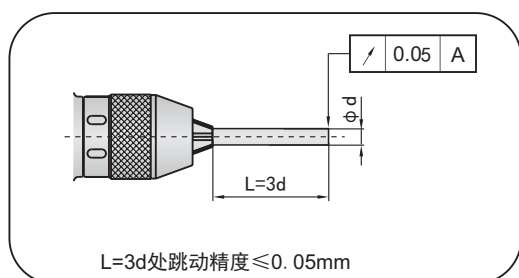


接受带芯片孔刀柄订货, 订货示例:HSK63A-KPU08-130(IC)
Tool holders with chip hole are available, order example: HSK63A-KPU08-130(IC)

● 常备库存
Unallocated stock

● 可备库存
Available stock

○ 订单生产
Order production



B 工具系统 Tool System

模块式热胀刀柄 Modular Shrink Fit Holders

不同主柄与接杆可组合成多种型号产品 Different holders and shanks can be combined into a variety of models

示例：主柄+模块式延长杆 Example: holder plus modular extension shank



HT32-TE**-60
HT32-TE**-90
HT32-TE**-130



BT40/BBT40-TE**-*
BT50/BBT50-TE**-*
HSK63A-TE**-*
HSK100A-TE**-*



BT40/BBT40-HT32-30
BT50/BBT50-HT32-40
HSK63A-HT32-70
HSK100A-HT32-70



BT40/BBT40-TM**-*
BT50/BBT50-TM**-*
HSK63A-TM**-*
HSK100A-TM**-*



HT32-TM**-65
HT32-TM**-90
HT32-TM**-120

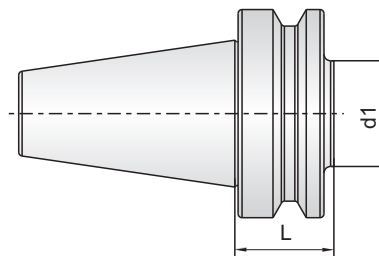


(特制不锈钢热胀延长杆)
(Special stainless steel shrinkfit extasion shank)



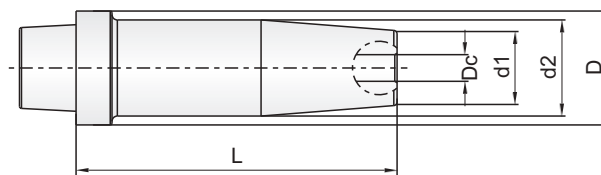
B 工具系统 Tool System

HT模块手柄
HT Module Holder



型号 Type	库存 Stock	锥柄型式 Taper type	尺寸(mm) Dimension		扳手 Wrench	垫圈 Sealer	螺钉 Screw	螺钉 Screw	重量 (kg)
			d1	L					
BT40-HT32-30	●	BT40	32	30	TS6	-	SSD140180LH	SCC080250C	0.96
BT50-HT32-40	●	BT50	32	40	TS6	-	SSD140180LH	SCC080250C	3.54
JT40-HT32-30	●	JT40	32	30	TS6	-	SSD140180LH	SCC080250C	0.82
JT50-HT32-30	●	JT50	32	30	TS6	-	SSD140180LH	SCC080250C	2.64
HSK63A-HT32-70	●	HSK63A	32	70	TS6	GMW2	-	SCC080250C	0.83
HSK100A-HT32-70	●	HSK100A	32	70	TS6	GMW2	-	SCC080250C	2.17

热胀延长杆
Shrink Fit Extension Bar



可接受内孔直径为(公制):

Φ3、Φ5、Φ7、Φ9、Φ11等热胀延长杆订货。

可接受内孔直径为(英制):

1/8"、3/16"、1/4"、5/16"、3/8"、1/2"等热胀延长杆订货。

The inner diameters(metric) of Φ3,Φ5,Φ7,Φ9,Φ11 are also available.

The inner diameters(inch) of 1/8",3/16",1/4",5/16",3/8",1/2" are also available.

型号 Type	库存 Stock	尺寸(mm) Dimension					轴向调节螺钉 Axial adjustment screw	重量 (kg)
		D	Dc	d1	d2	L		
HT32-TE04-60	●	32	4	15	20	60	-	0.18
HT32-TE04-90	●	32	4	15	20	90	-	0.24
HT32-TE04-130	●	32	4	15	20	130	-	0.56
HT32-TE06-60	●	32	6	21	27	60	SGC050150IC	0.26
HT32-TE06-90	●	32	6	21	27	90	SGC050150IC	0.39
HT32-TE06-130	●	32	6	21	27	130	SGC050150IC	0.56
HT32-TE08-60	●	32	8	21	27	60	SGC060150IC	0.25
HT32-TE08-90	●	32	8	21	27	90	SGC060150IC	0.38
HT32-TE08-130	●	32	8	21	27	130	SGC060150IC	0.56
HT32-TE10-60	●	32	10	24	32	60	SGC080150IC	0.30
HT32-TE10-90	●	32	10	24	32	90	SGC080150IC	0.48
HT32-TE10-130	●	32	10	24	32	130	SGC080150IC	0.71
HT32-TE12-60	●	32	12	24	32	60	SGC100150IC	0.28
HT32-TE12-90	●	32	12	24	32	90	SGC100150IC	0.46
HT32-TE12-130	●	32	12	24	32	130	SGC100150IC	0.70
HT32-TE16-60	●	32	16	27	32	60	SGC120200IC	0.30
HT32-TE16-90	●	32	16	27	32	90	SGC120200IC	0.48
HT32-TE16-130	●	32	16	27	32	130	SGC120200IC	0.71

订购示例为:HT32-TE04-60
Order example:HT32-TE04-60

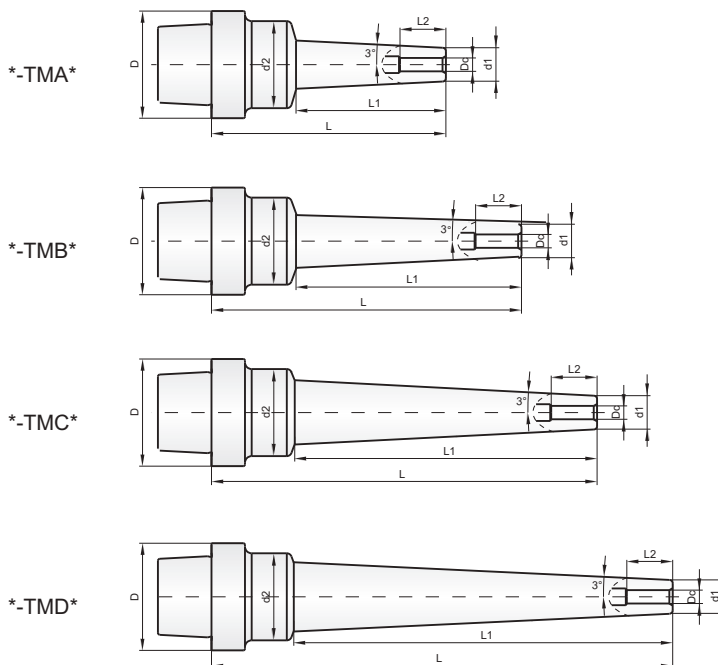
● 常备库存
Unallocated stock

⓪ 可备库存
Available stock

○ 订单生产
Order production

B 工具系统 Tool System

热胀延长杆 (特制不锈钢) Shrink Fit Extension Bar



可接受内孔直径为 (公制):

Φ3、Φ5、Φ7、Φ9、Φ11等热胀延长杆订货。

可接受内孔直径为 (英制):

1/8"、3/16"、1/4"、5/16"、3/8"、1/2"等热胀延长杆订货。

The inner diameters (metric) of Φ3, Φ5, Φ7, Φ9, Φ11 are also available.

The inner diameters (inch) of 1/8", 3/16", 1/4", 5/16", 3/8", 1/2" are also available.

型号 Type	库存 Stock	尺寸(mm) Dimension							重量 (kg)
		D	Dc	d1	d2	L	L1	L2	
HT32-TMA04-45	●	32	4	10	26	45	22	12	0.16
HT32-TMB04-65	●	32	4	10	26	65	42	12	0.19
HT32-TMC04-90	●	32	4	10	26	90	67	12	0.22
HT32-TMD04-120	○	32	4	10	26	120	97	12	0.28
HT32-TMA06-65	●	32	6	10	25	65	42	18	0.18
HT32-TMB06-90	●	32	6	10	25	90	67	18	0.21
HT32-TMC06-120	●	32	6	10	25	120	97	18	0.27
HT32-TMD06-150	○	32	6	10	25	150	127	18	0.35
HT32-TMA08-65	●	32	8	13	32	65	42	24	0.21
HT32-TMB08-90	●	32	8	13	32	90	67	24	0.26
HT32-TMC08-120	●	32	8	13	32	120	97	24	0.34
HT32-TMD08-150	○	32	8	13	32	150	127	24	0.45
HT32-TMA10-65	●	32	10	16	32	65	42	30	0.22
HT32-TMB10-90	●	32	10	16	32	90	67	30	0.29
HT32-TMC10-120	●	32	10	16	32	120	97	30	0.40
HT32-TMD10-150	○	32	10	16	32	150	127	30	0.54
HT32-TMA12-65	●	32	12	19	32	65	42	30	0.24
HT32-TMB12-90	●	32	12	19	32	90	67	30	0.32
HT32-TMC12-120	●	32	12	19	32	120	97	30	0.45
HT32-TMD12-150	○	32	12	19	32	150	127	30	0.62
HT32-TMA16-65	●	32	16	24	32	65	42	32	0.26
HT32-TMB16-90	●	32	16	24	32	90	67	32	0.36
HT32-TMC16-120	●	32	16	24	32	120	97	32	0.54
HT32-TMD16-150	○	32	16	24	32	150	127	32	0.72

订货示例为:HT32-TMA04-45
Order example:HT32-TMA04-45

● 常备库存
Unallocated stock

● 可备库存
Available stock

○ 订单生产
Order production

B 工具系统 Tool System

热胀刀柄标准型-BT30 Shrink Fit Holders-Standard

JIS B
6339

G2.5
25000rpm

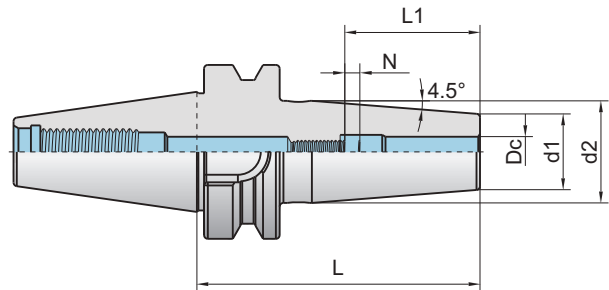
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中心冷却

N
- +



视频演示



可接受内孔直径为(公制):
 Φ3、Φ5、Φ7、Φ9、Φ11、Φ14、Φ15、Φ18、Φ23等热胀刀柄订货。
 可接受内孔直径为(英制):
 1/8"、3/16"、1/4"、5/16"、3/8"、1/2"、5/8"、3/4"、7/8"、1"、1-1/4"等热胀刀柄订货。

The inner diameters(metric) of Φ3,Φ5,Φ7,Φ9,Φ11,Φ14,Φ15,Φ18,Φ23 are also available.
 The inner diameters(inch) of 1/8",3/16",1/4",5/16",3/8",1/2",5/8",3/4",7/8",1",1-1/4" are also available.

型号 Type	库存 Stock	锥柄型式 Taper type	尺寸(mm) Dimension						轴向调节螺钉 Axial adjustment screw	重量 (kg)
			Dc	d1	d2	L	L1	N		
BT30-TE04-80	●	BT30	4	15	20	80	20	-	-	
BT30-TE06-80	●	BT30	6	21	27	80	36	10	SGC050150IC	
BT30-TE08-80	●	BT30	8	21	27	80	36	10	SGC060150IC	
BT30-TE10-80	●	BT30	10	24	32	80	42	10	SGC080150IC	
BT30-TE12-80	●	BT30	12	24	32	80	47	10	SGC100150IC	
BT30-TE16-80	●	BT30	16	27	34	80	50	10	SGC120200IC	

接受BBT刀柄订货, 订货示例:BBT30-TE04-80 G2.5 25000rpm
BBT tool holders are available.Order example:BBT30-TE04-80 G2.5 25000rpm

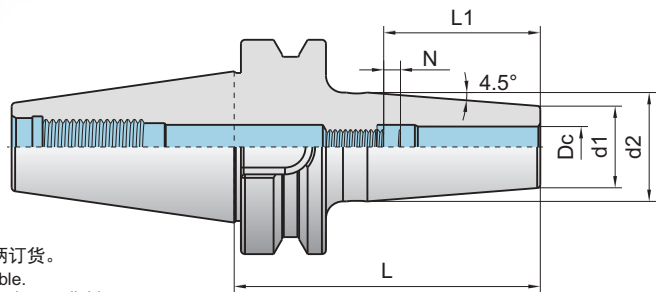
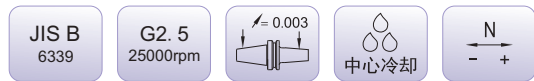
接受端面出水刀柄订货, 订货示例:BT30-TE04-80C G2.5 25000rpm
End face coolant through tool holders are available,order example:BT30-TE04-80C G2.5 25000rpm

● 常备库存 Unallocated stock ○ 可备库存 Available stock ○ 订单生产 Order production

▶ 请使用内冷拉钉, 安全装卸刀具。
 Please use the matching coolant through studs. Pay attention to use it safely.

B 工具系统 Tool System

热胀刀柄标准型-BT40 Shrink Fit Holders-Standard



可接受内孔直径为(公制):

Φ3、Φ5、Φ7、Φ9、Φ11、Φ15、Φ23等热胀刀柄订货。

可接受内孔直径为(英制):

1/8"、3/16"、1/4"、5/16"、3/8"、1/2"、5/8"、3/4"、7/8"、1"、1-1/4"等热胀刀柄订货。

The inner diameters(metric) of Φ3,Φ5,Φ7,Φ9,Φ11,Φ14,Φ15,Φ18,Φ23 are also available.

The inner diameters(inch) of 1/8",3/16",1/4",5/16",3/8",1/2",5/8",3/4",7/8",1",1-1/4" are also available.

型号 Type	库存 Stock	锥柄型式 Taper type	尺寸(mm) Dimension						轴向调节螺钉 Axial adjustment screw	重量 (kg)
			Dc	d1	d2	L	L1	N		
BT40-TE04-90	●	BT40	4	15	20	90	20	-	-	1.07
BT40-TE06-90	●	BT40	6	21	27	90	36	10	SGC050150IC	1.20
BT40-TE06-120	●	BT40	6	21	27	120	36	10	SGC050150IC	1.34
BT40-TE06-160	●	BT40	6	21	27	160	36	10	SGC050150IC	1.50
BT40-TE08-90	●	BT40	8	21	27	90	36	10	SGC060150IC	1.17
BT40-TE08-120	●	BT40	8	21	27	120	36	10	SGC060150IC	1.31
BT40-TE08-160	●	BT40	8	21	27	160	36	10	SGC060150IC	1.47
BT40-TE10-90	●	BT40	10	24	32	90	42	10	SGC080150IC	1.21
BT40-TE10-120	●	BT40	10	24	32	120	42	10	SGC080150IC	1.39
BT40-TE10-160	●	BT40	10	24	32	160	42	10	SGC080150IC	1.60
BT40-TE12-90	●	BT40	12	24	32	90	47	10	SGC100150IC	1.20
BT40-TE12-120	●	BT40	12	24	32	120	47	10	SGC100150IC	1.37
BT40-TE12-160	●	BT40	12	24	32	160	47	10	SGC100150IC	1.58
BT40-TE14-90	●	BT40	14	27	34	90	47	10	SGC120200IC	1.24
BT40-TE16-90	●	BT40	16	27	34	90	50	10	SGC120200IC	1.24
BT40-TE16-120	●	BT40	16	27	34	120	50	10	SGC120200IC	1.43
BT40-TE16-160	●	BT40	16	27	34	160	50	10	SGC120200IC	1.68
BT40-TE18-90	●	BT40	18	33	42	90	50	10	SGC160200IC	1.34
BT40-TE20-90	●	BT40	20	33	42	90	52	10	SGC160200IC	1.34
BT40-TE20-120	●	BT40	20	33	42	120	52	10	SGC160200IC	1.63
BT40-TE20-160	●	BT40	20	33	42	160	52	10	SGC160200IC	2.02
BT40-TE25-100	○	BT40	25	44	53	100	58	10	SGD220250IC	1.74
BT40-TE25-160	○	BT40	25	44	53	160	58	10	SGD220250IC	2.71
BT40-TE32-100	○	BT40	32	44	53	100	58	10	SGD280250IC	1.54
BT40-TE32-160	○	BT40	32	44	53	160	58	10	SGD280250IC	2.51

接受BBT刀柄订货, 订货示例:BBT40-TE04-90 G2.5 25000rpm
BBT tool holders are available. Order example:BBT40-TE04-90 G2.5 25000rpm

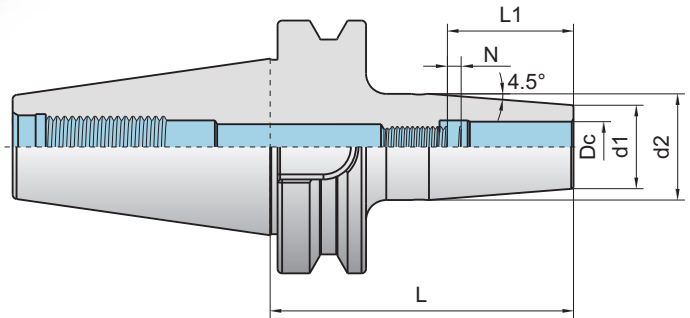
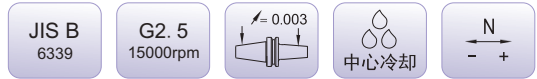
接受端面出水刀柄订货, 订货示例:BT40-TE04-90C G2.5 25000rpm
End face coolant through tool holders are available,order example:BT40-TE04-90C G2.5 25000rpm

● 常备库存 Unallocated stock ○ 可备库存 Available stock ○ 订单生产 Order production

请使用内冷拉钉, 安全装卸刀具。Please use the matching coolant through studs. Pay attention to use it safely.

B 工具系统 Tool System

热胀刀柄标准型-BT50 Shrink Fit Holders-Standard



可接受内孔直径为(公制):

Φ3、Φ5、Φ7、Φ9、Φ11、Φ15、Φ23等热胀刀柄订货。

可接受内孔直径为(英制):

1/8"、3/16"、1/4"、5/16"、3/8"、1/2"、5/8"、3/4"、7/8"、1"、1-1/4"等热胀刀柄订货。

The inner diameters (metric) of Φ3, Φ5, Φ7, Φ9, Φ11, Φ14, Φ15, Φ18, Φ23 are also available.

The inner diameters (inch) of 1/8", 3/16", 1/4", 5/16", 3/8", 1/2", 5/8", 3/4", 7/8", 1", 1-1/4" are also available.

型号 Type	库存 Stock	锥柄型式 Taper type	尺寸(mm) Dimension						轴向调节螺钉 Axial adjustment screw	重量 (kg)
			Dc	d1	d2	L	L1	N		
BT50-TE06-100	●	BT50	6	21	27	100	36	10	SGC050150IC	3.82
BT50-TE06-160	●	BT50	6	21	27	160	36	10	SGC050150IC	4.06
BT50-TE08-100	○	BT50	8	21	27	100	36	10	SGC060150IC	3.74
BT50-TE08-160	○	BT50	8	21	27	160	36	10	SGC060150IC	3.98
BT50-TE10-100	●	BT50	10	24	32	100	42	10	SGC080150IC	3.79
BT50-TE10-160	●	BT50	10	24	32	160	42	10	SGC080150IC	4.11
BT50-TE12-100	○	BT50	12	24	32	100	47	10	SGC100150IC	3.77
BT50-TE12-160	○	BT50	12	24	32	160	47	10	SGC100150IC	4.10
BT50-TE14-100	○	BT50	14	27	34	100	47	10	SGC120200IC	3.80
BT50-TE16-100	○	BT50	16	27	34	100	50	10	SGC120200IC	3.80
BT50-TE16-160	○	BT50	16	27	34	160	50	10	SGC120200IC	4.12
BT50-TE18-100	○	BT50	18	33	42	100	50	10	SGC160200IC	3.93
BT50-TE20-100	●	BT50	20	33	42	100	52	10	SGC160200IC	3.93
BT50-TE20-160	●	BT50	20	33	42	160	52	10	SGC160200IC	4.49
BT50-TE25-100	●	BT50	25	44	53	100	58	10	SGD220250IC	4.16
BT50-TE25-160	○	BT50	25	44	53	160	58	10	SGD220250IC	5.10
BT50-TE32-100	○	BT50	32	44	53	100	58	10	SGD280250IC	3.97
BT50-TE32-160	○	BT50	32	44	53	160	58	10	SGD280250IC	4.91

接受BBT刀柄订货, 订货示例:BT50-TE06-100 G2.5 15000rpm
BBT tool holders are available. Order example: BT50-TE06-100 G2.5 25000rpm

接受端面出水刀柄订货, 订货示例:BT50-TE06-100C G2.5 25000rpm
End face coolant through tool holders are available, order example: BT50-TE06-100C G2.5 25000rpm

● 常备库存
Unallocated stock

○ 可备库存
Available stock

○ 订单生产
Order production

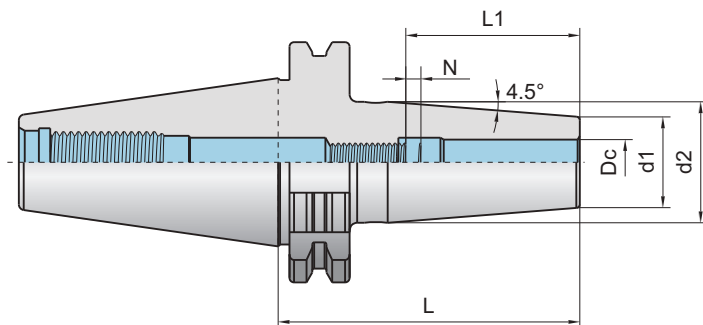
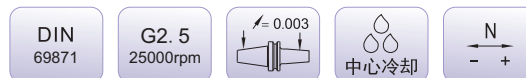


请使用内冷拉钉, 安全装卸刀具。

Please use the matching coolant through studs. Pay attention to use it safely.

B 工具系统 Tool System

热胀刀柄标准型-JT40 Shrink Fit Holders-Standard



可接受内孔直径为(公制):

Φ3、Φ5、Φ7、Φ9、Φ11、Φ14、Φ15、Φ18、Φ23等热胀刀柄订货。

可接受内孔直径为(英制):

1/8"、3/16"、1/4"、5/16"、3/8"、1/2"、5/8"、3/4"、7/8"、1"、1-1/4"等热胀刀柄订货。

The inner diameters (metric) of Φ3, Φ5, Φ7, Φ9, Φ11, Φ14, Φ15, Φ18, Φ23 are also available.

The inner diameters (inch) of 1/8", 3/16", 1/4", 5/16", 3/8", 1/2", 5/8", 3/4", 7/8", 1", 1-1/4" are also available.

型号 Type	库存 Stock	锥柄型式 Taper type	尺寸(mm) Dimension						轴向调节螺钉 Axial adjustment screw	重量 (kg)
			Dc	d1	d2	L	L1	N		
JT40-TE04-80	●	JT40	4	15	20	80	20	-	-	0.92
JT40-TE06-80	●	JT40	6	21	27	80	36	10	SGC050150IC	1.03
JT40-TE06-120	⦿	JT40	6	21	27	120	36	10	SGC050150IC	1.20
JT40-TE06-160	⦿	JT40	6	21	27	160	36	10	SGC050150IC	1.36
JT40-TE08-80	●	JT40	8	21	27	80	36	10	SGC060150IC	1.01
JT40-TE08-120	●	JT40	8	21	27	120	36	10	SGC060150IC	1.17
JT40-TE08-160	●	JT40	8	21	27	160	36	10	SGC060150IC	1.32
JT40-TE10-80	●	JT40	10	24	32	80	42	10	SGC080150IC	1.05
JT40-TE10-120	●	JT40	10	24	32	120	42	10	SGC080150IC	1.29
JT40-TE10-160	●	JT40	10	24	32	160	42	10	SGC080150IC	1.51
JT40-TE12-80	●	JT40	12	24	32	80	47	10	SGC100150IC	1.43
JT40-TE12-120	●	JT40	12	24	32	120	47	10	SGC100150IC	1.26
JT40-TE12-160	●	JT40	12	24	32	160	47	10	SGC100150IC	1.47
JT40-TE16-80	●	JT40	16	27	34	80	50	10	SGC120200IC	1.07
JT40-TE16-120	⦿	JT40	16	27	34	120	50	10	SGC120200IC	1.33
JT40-TE16-160	●	JT40	16	27	34	160	50	10	SGC120200IC	1.57
JT40-TE20-80	●	JT40	20	33	42	80	52	10	SGC160200IC	1.16
JT40-TE20-120	●	JT40	20	33	42	120	52	10	SGC160200IC	1.56
JT40-TE20-160	●	JT40	20	33	42	160	52	10	SGC160200IC	1.94
JT40-TE25-100	⦿	JT40	25	44	53	100	58	10	SGD220250IC	1.72
JT40-TE25-160	⦿	JT40	25	44	53	160	58	10	SGD220250IC	2.69
JT40-TE32-100	⦿	JT40	32	44	53	100	58	10	SGD280250IC	1.52
JT40-TE32-160	⦿	JT40	32	44	53	160	58	10	SGD280250IC	2.48



接受端面出水刀柄订货, 订货示例:JT40-TE04-80C G2.5 25000rpm

End face coolant through tool holders are available, order example:JT40-TE04-80C G2.5 25000rpm

● 常备库存

Unallocated stock

⦿ 可备库存

Available stock

○ 订单生产

Order production

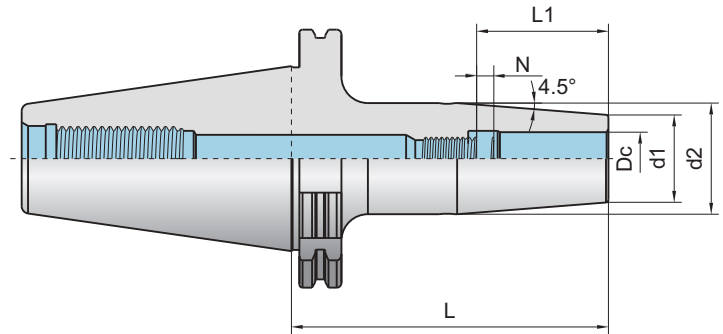
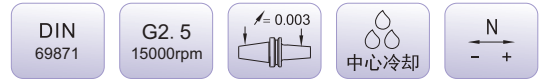


请使用内冷拉钉, 安全装卸刀具。

Please use the matching coolant through studs. Pay attention to use it safely.

B 工具系统 Tool System

热胀刀柄标准型-JT50 Shrink Fit Holders-Standard



可接受内孔直径为(公制):
Φ3、Φ5、Φ7、Φ9、Φ11、Φ14、Φ15、Φ18、Φ23等热胀刀柄订货。
可接受内孔直径为(英制):
1/8"、3/16"、1/4"、5/16"、3/8"、1/2"、5/8"、3/4"、7/8"、1"、1-1/4"等热胀刀柄订货。
The inner diameters(metric) of Φ3,Φ5,Φ7,Φ9,Φ11,Φ14,Φ15,Φ18,Φ23 are also available.
The inner diameters(inch) of 1/8",3/16",1/4",5/16",3/8",1/2",5/8",3/4",7/8",1",1-1/4" are also available.

型号 Type	库存 Stock	锥柄型式 Taper type	尺寸(mm) Dimension						轴向调节螺钉 Axial adjustment screw	重量 (kg)
			Dc	d1	d2	L	L1	N		
JT50-TE06-80	●	JT50	6	21	27	80	36	10	SGC050150IC	2.78
JT50-TE06-120	●	JT50	6	21	27	120	36	10	SGC050150IC	2.94
JT50-TE06-160	●	JT50	6	21	27	160	36	10	SGC050150IC	3.10
JT50-TE08-80	●	JT50	8	21	27	80	36	10	SGC060150IC	2.77
JT50-TE08-120	●	JT50	8	21	27	120	36	10	SGC060150IC	2.82
JT50-TE08-160	●	JT50	8	21	27	160	36	10	SGC060150IC	3.07
JT50-TE10-80	●	JT50	10	24	32	80	42	10	SGC080150IC	2.81
JT50-TE10-120	●	JT50	10	24	32	120	42	10	SGC080150IC	3.04
JT50-TE10-160	●	JT50	10	24	32	160	42	10	SGC080150IC	3.26
JT50-TE12-80	●	JT50	12	24	32	80	47	10	SGC100150IC	2.79
JT50-TE12-120	●	JT50	12	24	32	120	47	10	SGC100150IC	3.02
JT50-TE12-160	●	JT50	12	24	32	160	47	10	SGC100150IC	3.23
JT50-TE16-80	●	JT50	16	27	34	80	50	10	SGC120200IC	2.82
JT50-TE16-120	●	JT50	16	27	34	120	50	10	SGC120200IC	3.02
JT50-TE16-160	●	JT50	16	27	34	160	50	10	SGC120200IC	3.22
JT50-TE20-80	●	JT50	20	33	42	80	52	10	SGC160200IC	2.93
JT50-TE20-120	●	JT50	20	33	42	120	52	10	SGC160200IC	3.31
JT50-TE20-160	●	JT50	20	33	42	160	52	10	SGC160200IC	3.66
JT50-TE25-100	●	JT50	25	44	53	100	58	10	SGD220250IC	3.47
JT50-TE25-160	●	JT50	25	44	53	160	58	10	SGD220250IC	4.42
JT50-TE32-100	●	JT50	32	44	53	100	58	10	SGD280250IC	3.31
JT50-TE32-160	●	JT50	32	44	53	160	58	10	SGD280250IC	4.23

接受端面出水刀柄订货, 订货示例:JT50-TE06-80C G2.5 15000rpm
End face coolant through tool holders are available,order example:JT50-TE06-80C G2.5 15000rpm

● 常备库存 Unallocated stock ● 可备库存 Available stock ○ 订单生产 Order production

▶ 请使用内冷拉钉, 安全装卸刀具。
Please use the matching coolant through studs. Pay attention to use it safely.

B 工具系统 Tool System

热胀刀柄轻型-BT30 Shrink Fit Holders-Slim

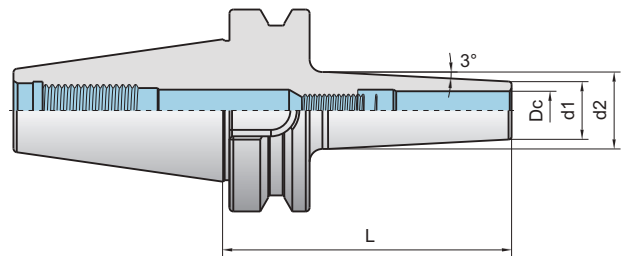
JIS B
6339

G2.5
25000rpm

$\lambda = 0.003$

中心冷却

N
- +



可接受内孔直径为(公制):

Φ3、Φ5、Φ7、Φ9、Φ11、Φ14、Φ15、Φ18、Φ23等热胀刀柄订货。

可接受内孔直径为(英制):

1/8"、3/16"、1/4"、5/16"、3/8"、1/2"、5/8"、3/4"、7/8"、1"、1-1/4"等热胀刀柄订货。

The inner diameters(metric) of Φ3,Φ5,Φ7,Φ9,Φ11,Φ14,Φ15,Φ18,Φ23 are also available.

The inner diameters(inch) of 1/8",3/16",1/4",5/16",3/8",1/2",5/8",3/4",7/8",1",1-1/4" are also available.

型号 Type	库存 Stock	锥柄型式 Taper type	尺寸(mm) Dimension				轴向调节螺钉 Axial adjustment screw	重量 (kg)
			Dc	d1	d2	L		
BT30-TES03-80	●	BT30	3	8	14	80	-	0.42
BT30-TES04-80	●	BT30	4	10	16	80	-	0.44
BT30-TES06-80	●	BT30	6	12	18	80	SGC050150IC	0.45
BT30-TES08-80	●	BT30	8	14	20	80	SGC060150IC	0.46
BT30-TES10-80	●	BT30	10	16	22	80	SGC080150IC	0.47
BT30-TES12-80	●	BT30	12	18	24	80	SGC100150IC	0.49

订货示例:BT30-TES03-80 G2.5 25000rpm
Order example:BT30-TES03-80 G2.5 25000rpm

● 常备库存
Unallocated stock

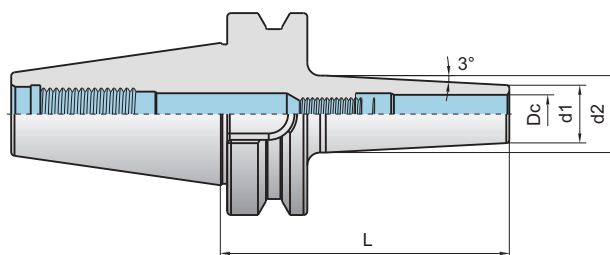
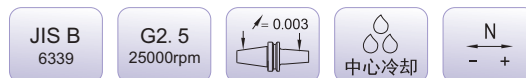
◐ 可备库存
Available stock

○ 订单生产
Order production

请使用内冷拉钉，安全装卸刀具。
Please use the matching coolant through studs. Pay attention to use it safely.

B 工具系统 Tool System

热胀刀柄轻型-BT40 Shrink Fit Holders-Slim



可接受内孔直径为(公制):

Φ3、Φ5、Φ7、Φ9、Φ11、Φ14、Φ15、Φ18、Φ23等热胀刀柄订货。

可接受内孔直径为(英制):

1/8"、3/16"、1/4"、5/16"、3/8"、1/2"、5/8"、3/4"、7/8"、1"、1-1/4"等热胀刀柄订货。

The inner diameters(metric) of Φ3,Φ5,Φ7,Φ9,Φ11,Φ14,Φ15,Φ18,Φ23 are also available.

The inner diameters(inch) of 1/8",3/16",1/4",5/16",3/8",1/2",5/8",3/4",7/8",1",1-1/4" are also available.

型号 Type	库存 Stock	锥柄型式 Taper type	尺寸(mm) Dimension				轴向调节螺钉 Axial adjustment screw	重量 (kg)
			Dc	d1	d2	L		
BT40-TES04-90	●	BT40	4	10	16	90	-	1.01
BT40-TES04-120	●	BT40	4	10	19	120	-	1.07
BT40-TES04-160	●	BT40	4	10	22	160	-	1.16
BT40-TES06-90	●	BT40	6	12	18	90	SGC050150IC	1.03
BT40-TES06-120	●	BT40	6	12	21	120	SGC050150IC	1.10
BT40-TES06-160	●	BT40	6	12	24	160	SGC050150IC	1.21
BT40-TES08-90	●	BT40	8	14	20	90	SGC060150IC	1.07
BT40-TES08-120	●	BT40	8	14	23	120	SGC060150IC	1.16
BT40-TES08-160	●	BT40	8	14	26	160	SGC060150IC	1.28
BT40-TES10-90	●	BT40	10	16	22	90	SGC080150IC	1.07
BT40-TES10-120	●	BT40	10	16	25	120	SGC080150IC	1.15
BT40-TES10-160	●	BT40	10	16	28	160	SGC080150IC	1.29
BT40-TES12-90	●	BT40	12	18	24	90	SGC100150IC	1.08
BT40-TES12-120	●	BT40	12	18	27	120	SGC100150IC	1.20
BT40-TES12-160	●	BT40	12	18	30	160	SGC100150IC	1.37

▶ 订货示例:BT40-TES04-90 G2.5 25000rpm
Order example:BT40-TES04-90 G2.5 25000rpm

● 常备库存
Unallocated stock

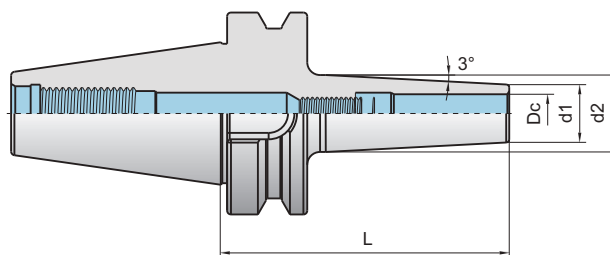
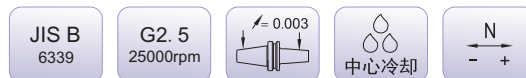
◐ 可备库存
Available stock

○ 订单生产
Order production

▶ 请使用内冷拉钉，安全装卸刀具。
Please use the matching coolant through studs. Pay attention to use it safely.

B 工具系统 Tool System

热胀刀柄轻型-BBT Shrink Fit Holders-Slim



可接受内孔直径为(公制):

Φ3、Φ5、Φ7、Φ9、Φ11、Φ14、Φ15、Φ18、Φ23等热胀刀柄订货。

可接受内孔直径为(英制):

1/8"、3/16"、1/4"、5/16"、3/8"、1/2"、5/8"、3/4"、7/8"、1"、1-1/4"等热胀刀柄订货。

The inner diameters(metric) of Φ3,Φ5,Φ7,Φ9,Φ11,Φ14,Φ15,Φ18,Φ23 are also available.

The inner diameters(inch) of 1/8",3/16",1/4",5/16",3/8",1/2",5/8",3/4",7/8",1",1-1/4" are also available.

型号 Type	库存 Stock	锥柄型式 Taper type	尺寸(mm) Dimension				轴向调节螺钉 Axial adjustment screw	重量 (kg)
			Dc	d1	d2	L		
BBT30-TES03-80	●	BBT30	3	8	14	80	-	0.41
BBT30-TES04-80	●	BBT30	4	10	16	80	-	0.43
BBT30-TES06-80	●	BBT30	6	12	18	80	SGC050150IC	0.45
BBT30-TES08-80	●	BBT30	8	14	20	80	SGC060150IC	0.45
BBT30-TES10-80	●	BBT30	10	16	22	80	SGC080150IC	0.46
BBT30-TES12-80	●	BBT30	12	18	24	80	SGC100150IC	0.48
BBT40-TES04-90	●	BBT40	4	10	16	90	-	1.00
BBT40-TES04-120	●	BBT40	4	10	19	120	-	1.06
BBT40-TES04-160	●	BBT40	4	10	22	160	-	1.14
BBT40-TES06-90	●	BBT40	6	12	18	90	SGC050150IC	1.02
BBT40-TES06-120	●	BBT40	6	12	21	120	SGC050150IC	1.09
BBT40-TES06-160	●	BBT40	6	12	24	160	SGC050150IC	1.19
BBT40-TES08-90	●	BBT40	8	14	20	90	SGC060150IC	1.06
BBT40-TES08-120	●	BBT40	8	14	23	120	SGC060150IC	1.14
BBT40-TES08-160	●	BBT40	8	14	26	160	SGC060150IC	1.27
BBT40-TES10-90	●	BBT40	10	16	22	90	SGC080150IC	1.05
BBT40-TES10-120	●	BBT40	10	16	25	120	SGC080150IC	1.14
BBT40-TES10-160	●	BBT40	10	16	28	160	SGC080150IC	1.28
BBT40-TES12-90	●	BBT40	12	18	24	90	SGC100150IC	1.07
BBT40-TES12-120	●	BBT40	12	18	27	120	SGC100150IC	1.18
BBT40-TES12-160	●	BBT40	12	18	30	160	SGC100150IC	1.36

订货示例:BBT30-TES03-80 G2.5 25000rpm
Order example:BBT30-TES03-80 G2.5 25000rpm

● 常备库存
Unallocated stock

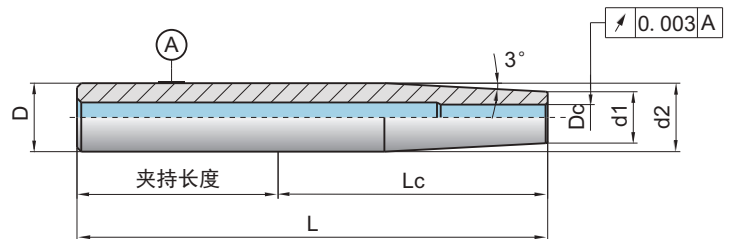
● 可备库存
Available stock

○ 订单生产
Order production

请使用内冷拉钉, 安全装卸刀具。
Please use the matching coolant through studs. Pay attention to use it safely.

B 工具系统 Tool System

迷你型-热胀延长杆 Shrink Fit Extension Bar



可接受内孔直径为(公制):
Φ3、Φ5、Φ7、Φ9、Φ11、Φ14、Φ15、Φ18、Φ23等热胀延长杆订货。

可接受内孔直径为(英制):
1/8"、3/16"、1/4"、5/16"、3/8"、1/2"、5/8"、3/4"、7/8"、1"、1-1/4"等热胀延长杆订货。

The inner diameters(metric) of Φ3,Φ5,Φ7,Φ9,Φ11,Φ14,Φ15,Φ18,Φ23 are also available.
The inner diameters(inch) of 1/8",3/16",1/4",5/16",3/8",1/2",5/8",3/4",7/8",1",1-1/4" are also available.

型号 Type	库存 Stock	尺寸(mm) Dimension						重量 (kg)
		D	Dc	d1	d2	Lc	L	
A12-TES04-110	●	12	4	10	11.8	63	110	008
A16-TES04-110	●	16	4	10	14	60	110	013
A16-TES04-200	●	16	4	10	16	150	200	027
A16-TES06-110	●	16	6	12	15.8	60	110	014
A16-TES06-160	●	16	6	12	15.8	110	160	
A16-TES06-200	●	16	6	12	16	150	200	026
A16-TES08-160	●	16	8	14	16	110	160	
A16-TES10-160	●	16	10	16	16	110	160	
A20-TES04-110	●	20	4	10	14	58	110	018
A20-TES06-110	●	20	6	12	16	58	110	0.18
A20-TES06-160	●	20	6	12	16	108	160	
A20-TES06-250	●	20	6	12	20	198	250	050
A20-TES08-110	●	20	8	14	19	58	110	0.19
A20-TES08-160	●	20	8	14	20	108	160	
A20-TES08-250	●	20	8	14	20	198	250	0.48
A20-TES10-110	●	20	10	16	19.8	58	110	0.19
A20-TES10-160	⦿	20	10	16	20	108	160	
A20-TES10-250	⦿	20	10	16	20	198	250	0.45
A20-TES12-110	●	20	12	18	19.8	58	110	0.17
A25-TES12-250	●	25	12	18	25	193	250	0.68
A25-TES16-250	⦿	25	16	22	25	193	250	0.56

▶ 订货示例:A12-TES04-110
Order example:A12-TES04-110

● 常备库存
Unallocated stock

⦿ 可备库存
Available stock






○ 订单生产
Order production

B 工具系统 Tool System

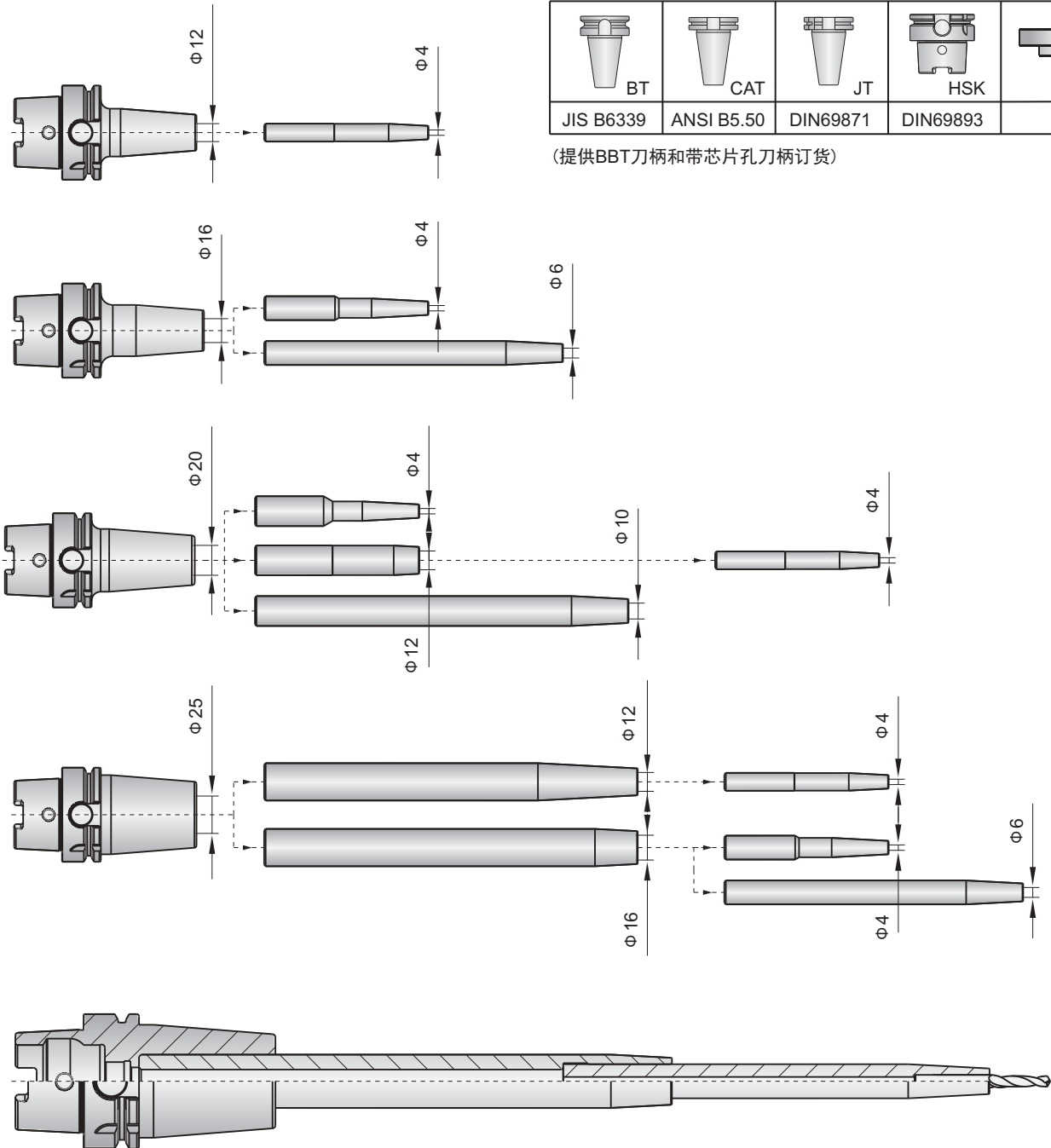
热胀延长杆使用示意图

Shrink Fit Extension Bar Diagram

提供以下接口的热胀刀柄

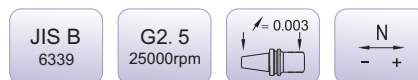
				
BT	CAT	JT	HSK	XME
JIS B6339	ANSI B5.50	DIN69871	DIN69893	

(提供BBT刀柄和带芯片孔刀柄订货)

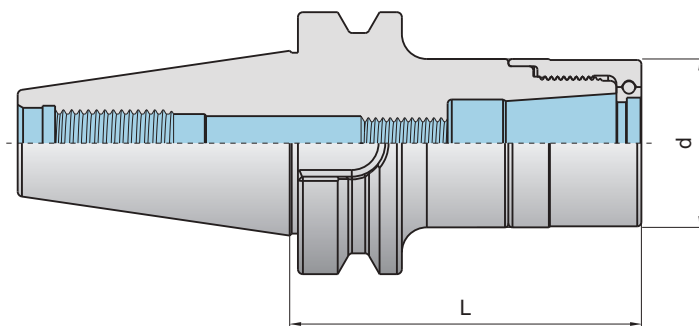


B 工具系统 Tool System

GSK弹簧夹头刀柄-BT30
GSK Collet Chucks



视频演示



型号 Type	库存 Stock	锥柄型式 Taper type	尺寸(mm) Dimension		螺母 Nut	扳手 Wrench	SK卡簧 SKcollet	卡簧拆卸器 Colletpuller	重量 (kg)
			d	L					
BT30-GSK06-60	●	BT30	20	60	LN-GSK06	WGSK06	SK06	CGSK06	
BT30-GSK06-90	●	BT30	20	90	LN-GSK06	WGSK06	SK06	CGSK06	
BT30-GSK10-60	●	BT30	27.6	60	LN-GSK10	WGSK10	SK10	CGSK10	
BT30-GSK10-90	●	BT30	27.6	90	LN-GSK10	WGSK10	SK10	CGSK10	
BT30-GSK16-60	●	BT30	40.5	60	LN-GSK16	WGSK16	SK16	CGSK16	
BT30-GSK16-90	●	BT30	40.5	90	LN-GSK16	WGSK16	SK16	CGSK16	

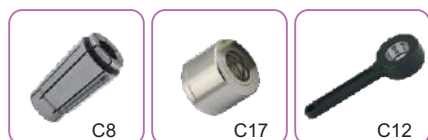
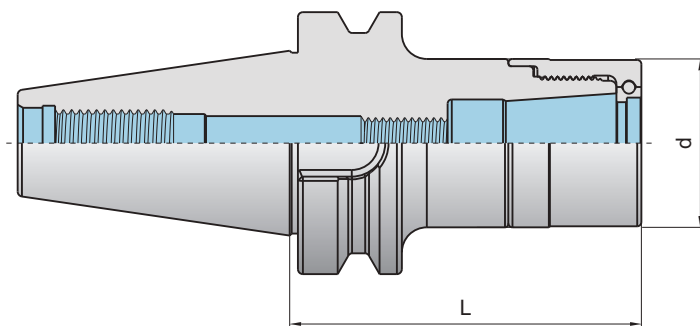
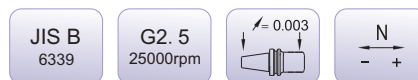
接受BBT刀柄订货, 订货示例:BBT30-GSK06-60 G2.5 25000rpm
BBT tool holders are available. Order example:BBT30-GSK06-60 G2.5 25000rpm

扳手、卡簧、卡簧拆卸器需单独订购。
Wrench, collet, and collet puller need to be ordered separately.

● 常备库存 Unallocated stock ● 可备库存 Available stock ○ 订单生产 Order production

B 工具系统 Tool System

GSK弹簧夹头刀柄-BT40
GSK Collet Chucks



型号 Type	库存 Stock	锥柄型式 Taper type	尺寸(mm) Dimension		螺母 Nut	扳手 Wrench	SK卡簧 SKcollet	卡簧拆卸器 Colletpuller	重量 (kg)
			d	L					
BT40-GSK06-60	●	BT40	20	60	LN-GSK06	WGSK06	SK06	CGSK06	
BT40-GSK06-90	●	BT40	20	90	LN-GSK06	WGSK06	SK06	CGSK06	
BT40-GSK06-120	●	BT40	20	120	LN-GSK06	WGSK06	SK06	CGSK06	
BT40-GSK10-60	●	BT40	27.6	60	LN-GSK10	WGSK10	SK10	CGSK10	
BT40-GSK10-90	●	BT40	27.6	90	LN-GSK10	WGSK10	SK10	CGSK10	
BT40-GSK10-120	●	BT40	27.6	120	LN-GSK10	WGSK10	SK10	CGSK10	
BT40-GSK10-150	●	BT40	27.6	150	LN-GSK10	WGSK10	SK10	CGSK10	
BT40-GSK16-75	●	BT40	40.5	75	LN-GSK16	WGSK16	SK16	CGSK16	
BT40-GSK16-90	●	BT40	40.5	90	LN-GSK16	WGSK16	SK16	CGSK16	
BT40-GSK16-120	⦿	BT40	40.5	120	LN-GSK16	WGSK16	SK16	CGSK16	
BT40-GSK16-150	●	BT40	40.5	150	LN-GSK16	WGSK16	SK16	CGSK16	
BT40-GSK25-90	●	BT40	55.5	90	LN-GSK25	WGSK25	SK25	CGSK25	
BT40-GSK25-120	⦿	BT40	55.5	120	LN-GSK25	WGSK25	SK25	CGSK25	

接受BBT刀柄订货, 订货示例:BBT40-GSK06-60 G2.5 25000rpm
BBT tool holders are available. Order example:BBT40-GSK06-60 G2.5 25000rpm

扳手、卡簧、卡簧拆卸器需单独订购。
Wrench, collet, and collet puller need to be ordered separately.

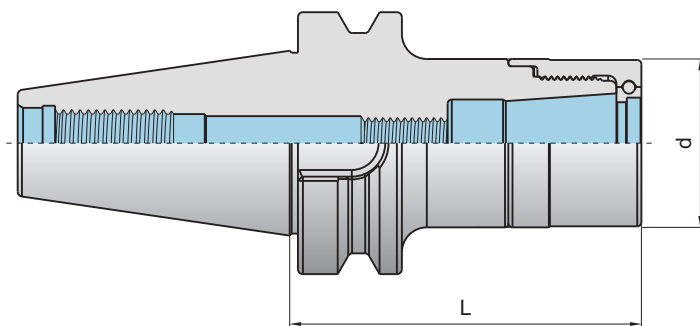
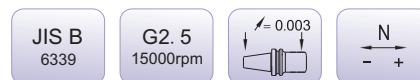
● 常备库存
Unallocated stock

⦿ 可备库存
Available stock

○ 订单生产
Order production

B 工具系统 Tool System

GSK弹簧夹头刀柄-BT50
GSK Collet Chucks



型号 Type	库存 Stock	锥柄型式 Taper type	尺寸(mm) Dimension		螺母 Nut	扳手 Wrench	SK卡簧 SKcollet	卡簧拆卸器 Colletpuller	重量 (kg)
			d	L					
BT50-GSK10-105	●	BT50	27.6	105	LN-GSK10	WGSK10	SK10	CGSK10	
BT50-GSK10-135	●	BT50	27.6	135	LN-GSK10	WGSK10	SK10	CGSK10	
BT50-GSK10-165	●	BT50	27.6	165	LN-GSK10	WGSK10	SK10	CGSK10	
BT50-GSK16-105	●	BT50	40.5	105	LN-GSK16	WGSK16	SK16	CGSK16	
BT50-GSK16-135	●	BT50	40.5	135	LN-GSK16	WGSK16	SK16	CGSK16	
BT50-GSK16-165	●	BT50	40.5	165	LN-GSK16	WGSK16	SK16	CGSK16	
BT50-GSK16-200	●	BT50	40.5	200	LN-GSK16	WGSK16	SK16	CGSK16	
BT50-GSK25-105	●	BT50	55.5	105	LN-GSK25	WGSK25	SK25	CGSK25	
BT50-GSK25-135	●	BT50	55.5	135	LN-GSK25	WGSK25	SK25	CGSK25	
BT50-GSK25-165	●	BT50	55.5	165	LN-GSK25	WGSK25	SK25	CGSK25	
BT50-GSK25-200	○	BT50	55.5	200	LN-GSK25	WGSK25	SK25	CGSK25	

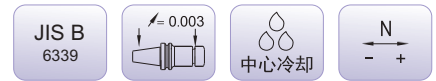
接受BBT刀柄订货, 订货示例:BBT50-GSK10-105 G2.5 15000rpm
BBT tool holders are available. Order example:BBT50-GSK10-105 G2.5 15000rpm

扳手、卡簧、卡簧拆卸器需单独订购。
Wrench, collet, and collet puller need to be ordered separately.

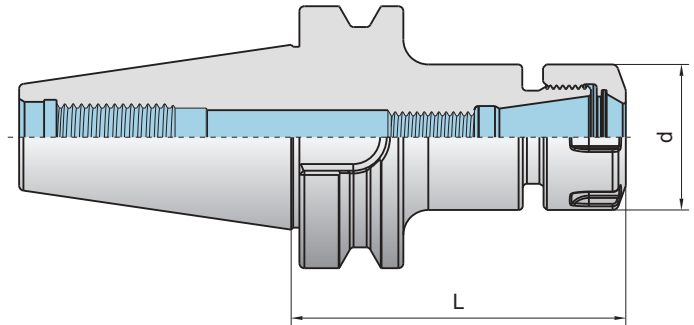
● 常备库存 Unallocated stock ● 可备库存 Available stock ○ 订单生产 Order production

B 工具系统 Tool System

弹簧夹头刀柄-BT30 ER Collet Chucks



视频演示



C9

C17

型号 Type	库存 Stock	锥柄型式 Taper type	尺寸(mm) Dimension		螺母 Nut	扳手 Wrench	卡簧 ERcollet	螺钉 Screw	重量 (kg)
			d	L					
BT30-ER11-70	●	BT30	19	70	LN11S	WER11	ER11	SGC060150IC	0.44
BT30-ER11-100	●	BT30	19	100	LN11S	WER11	ER11	SGC060150IC	0.78
BT30-ER16-70	●	BT30	28	70	LN16S	WER16	ER16	SGC100150IC	0.54
BT30-ER16-100	●	BT30	28	100	LN16S	WER16	ER16	SGC100150IC	0.68
BT30-ER20-70	●	BT30	34	70	LN20S	WER20	ER20	SGC120200IC	0.55
BT30-ER20-100	●	BT30	34	100	LN20S	WER20	ER20	SGC120200IC	0.82
BT30-ER25-60	●	BT30	42	60	LN25	WER25	ER25	SGC160200IC	0.58
BT30-ER25-100	●	BT30	42	100	LN25	WER25	ER25	SGC160200IC	0.98

接受BBT刀柄订货, 订货示例:BBT30-ER11-70
BBT tool holders are available. Order example:BBT30-ER11-70

● 常备库存
Unallocated stock

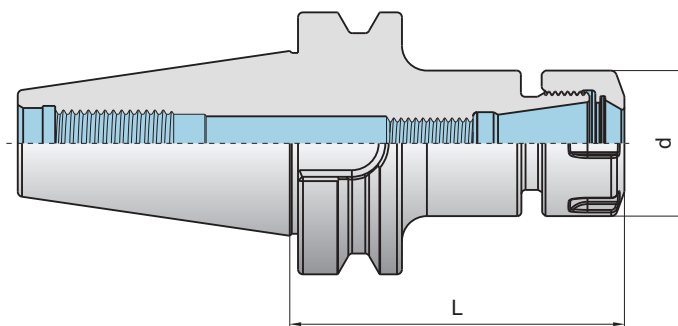
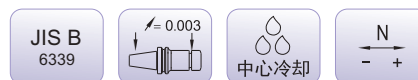
○ 可备库存
Available stock

○ 订单生产
Order production

➡ 扳手、卡簧、螺钉需单独订购。
Wrench, collet, and screw need to be ordered separately.

B 工具系统 Tool System

弹簧夹头刀柄-BT40 ER Collet Chucks



型号 Type	库存 Stock	锥柄型式 Taper type	尺寸(mm) Dimension		螺母 Nut	扳手 Wrench	卡簧 ERcollet	螺钉 Screw	重量 (kg)
			d	L					
BT40-ER11-70	●	BT40	19	70	LN11S	WER11	ER11	SGC060150IC	1.02
BT40-ER11-100	●	BT40	19	100	LN11S	WER11	ER11	SGC060150IC	1.10
BT40-ER11-160	●	BT40	19	160	LN11S	WER11	ER11	SGC060150IC	1.22
BT40-ER16-70	●	BT40	28	70	LN16S	WER16	ER16	SGC100150IC	1.14
BT40-ER16-100	●	BT40	28	100	LN16S	WER16	ER16	SGC100150IC	1.32
BT40-ER16-160	●	BT40	28	160	LN16S	WER16	ER16	SGC100150IC	1.63
BT40-ER20-70	●	BT40	34	70	LN20S	WER20	ER20	SGC120200IC	1.16
BT40-ER20-100	●	BT40	34	100	LN20S	WER20	ER20	SGC120200IC	1.38
BT40-ER20-160	●	BT40	34	160	LN20S	WER20	ER20	SGC120200IC	1.76
BT40-ER25-70	●	BT40	42	70	LN25	WER25	ER25	SGC160200IC	1.22
BT40-ER25-100	●	BT40	42	100	LN25	WER25	ER25	SGC160200IC	1.52
BT40-ER25-160	●	BT40	42	160	LN25	WER25	ER25	SGC160200IC	2.11
BT40-ER32-70	●	BT40	50	70	LN32	WER32	ER32	SGD220250IC	1.32
BT40-ER32-100	●	BT40	50	100	LN32	WER32	ER32	SGD220250IC	1.72
BT40-ER32-160	●	BT40	50	160	LN32	WER32	ER32	SGD220250IC	2.58
BT40-ER40-70	●	BT40	63	70	LN40	WER40	ER40	SGD280250IC	1.41
BT40-ER40-100	●	BT40	63	100	LN40	WER40	ER40	SGD280250IC	2.01
BT40-ER40-160	●	BT40	63	160	LN40	WER40	ER40	SGD280250IC	3.29

接受BBT刀柄订货, 订货示例:BBT40-ER11-70
BBT tool holders are available. Order example:BBT40-ER11-70

● 常备库存
Unallocated stock

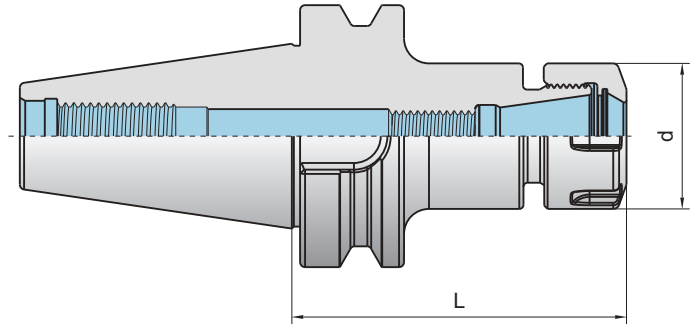
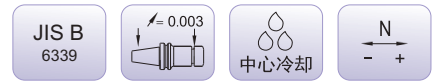
◐ 可备库存
Available stock

○ 订单生产
Order production

➡ 扳手、卡簧、螺钉需单独订购。
Wrench, collet, and screw need to be ordered separately.

B 工具系统 Tool System

弹簧夹头刀柄-BT50 ER Collet Chucks



型号 Type	库存 Stock	锥柄型式 Taper type	尺寸(mm) Dimension		螺母 Nut	扳手 Wrench	卡簧 ERcollet	螺钉 Screw	重量 (kg)
			d	L					
BT50-ER11-70	○	BT50	19	70	LN11S	WER11	ER11	SGC060150IC	3.56
BT50-ER11-100	○	BT50	19	100	LN11S	WER11	ER11	SGC060150IC	3.65
BT50-ER11-160	○	BT50	19	160	LN11S	WER11	ER11	SGC060150IC	3.78
BT50-ER16-70	◐	BT50	28	70	LN16S	WER16	ER16	SGC100150IC	3.64
BT50-ER16-100	●	BT50	28	100	LN16S	WER16	ER16	SGC100150IC	3.81
BT50-ER16-160	●	BT50	28	160	LN16S	WER16	ER16	SGC100150IC	4.26
BT50-ER20-70	●	BT50	34	70	LN20S	WER20	ER20	SGC120200IC	3.67
BT50-ER20-100	●	BT50	34	100	LN20S	WER20	ER20	SGC120200IC	3.84
BT50-ER20-160	●	BT50	34	160	LN20S	WER20	ER20	SGC120200IC	4.34
BT50-ER25-70	●	BT50	42	70	LN25	WER25	ER25	SGC160200IC	3.70
BT50-ER25-100	●	BT50	42	100	LN25	WER25	ER25	SGC160200IC	4.54
BT50-ER25-160	●	BT50	42	160	LN25	WER25	ER25	SGC160200IC	4.74
BT50-ER32-70	●	BT50	50	70	LN32	WER32	ER32	SGD220250IC	3.73
BT50-ER32-100	●	BT50	50	100	LN32	WER32	ER32	SGD220250IC	4.14
BT50-ER32-160	●	BT50	50	160	LN32	WER32	ER32	SGD220250IC	4.97
BT50-ER40-70	●	BT50	63	70	LN40	WER40	ER40	SGD280250IC	3.76
BT50-ER40-100	●	BT50	63	100	LN40	WER40	ER40	SGD280250IC	4.44
BT50-ER40-160	●	BT50	63	160	LN40	WER40	ER40	SGD280250IC	5.77

接受BBT刀柄订货, 订货示例:BBT50-ER11-70
BBT tool holders are available. Order example: BBT50-ER11-70

● 常备库存
Unallocated stock

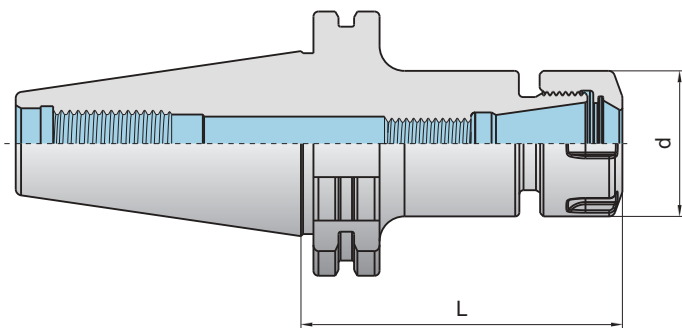
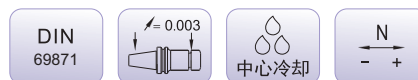
◐ 可备库存
Available stock

○ 订单生产
Order production

扳手、卡簧、螺钉需单独订购。
Wrench, collet, and screw need to be ordered separately.

B 工具系统 Tool System

弹簧夹头刀柄-JT40
ER Collet Chucks



型号 Type	库存 Stock	锥柄型式 Taper type	尺寸(mm) Dimension		螺母 Nut	扳手 Wrench	卡簧 ERcollet	螺钉 Screw	重量 (kg)
			d	L					
JT40-ER11-70	○	JT40	19	70	LN11S	WER11	ER11	SGC060150IC	0.9
JT40-ER11-100	○	JT40	19	100	LN11S	WER11	ER11	SGC060150IC	0.95
JT40-ER11-160	○	JT40	19	160	LN11S	WER11	ER11	SGC060150IC	1.10
JT40-ER16-70	●	JT40	28	70	LN16S	WER16	ER16	SGC100150IC	1.04
JT40-ER16-100	●	JT40	28	100	LN16S	WER16	ER16	SGC100150IC	1.02
JT40-ER16-160	●	JT40	28	160	LN16S	WER16	ER16	SGC100150IC	1.52
JT40-ER20-70	●	JT40	34	70	LN20S	WER20	ER20	SGC120200IC	1.06
JT40-ER20-100	●	JT40	34	100	LN20S	WER20	ER20	SGC120200IC	1.38
JT40-ER20-160	○	JT40	34	160	LN20S	WER20	ER20	SGC120200IC	1.65
JT40-ER25-70	●	JT40	42	70	LN25	WER25	ER25	SGC160200IC	1.14
JT40-ER25-100	●	JT40	42	100	LN25	WER25	ER25	SGC160200IC	1.43
JT40-ER25-160	●	JT40	42	160	LN25	WER25	ER25	SGC160200IC	2.00
JT40-ER32-70	●	JT40	50	70	LN32	WER32	ER32	SGD220250IC	1.24
JT40-ER32-100	●	JT40	50	100	LN32	WER32	ER32	SGD220250IC	1.67
JT40-ER32-160	●	JT40	50	160	LN32	WER32	ER32	SGD220250IC	2.25
JT40-ER40-70	○	JT40	63	70	LN40	WER40	ER40	SGD280250IC	1.26
JT40-ER40-100	○	JT40	63	100	LN40	WER40	ER40	SGD280250IC	1.60
JT40-ER40-160	○	JT40	63	160	LN40	WER40	ER40	SGD280250IC	2.45

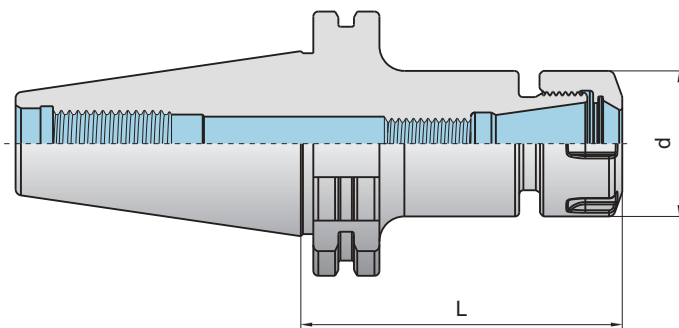
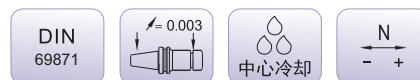
➔ 订货示例: JT40-ER11-70
 Order example: JT40-ER11-70

● 常备库存 Unallocated stock ● 可备库存 Available stock ○ 订单生产 Order production

➔ 扳手、卡簧、螺钉需单独订购。
 Wrench, collet, and screw need to be ordered separately.

B 工具系统 Tool System

弹簧夹头刀柄-JT50
ER Collet Chucks



型号 Type	库存 Stock	锥柄型式 Taper type	尺寸(mm) Dimension		螺母 Nut	扳手 Wrench	卡簧 ERcollet	螺钉 Screw	重量 (kg)
			d	L					
JT50-ER11-70	○	JT50	19	70	LN11S	WER11	ER11	SGC060150IC	2.70
JT50-ER11-100	○	JT50	19	100	LN11S	WER11	ER11	SGC060150IC	2.70
JT50-ER11-160	○	JT50	19	160	LN11S	WER11	ER11	SGC060150IC	2.90
JT50-ER16-70	○	JT50	28	70	LN16S	WER16	ER16	SGC100150IC	2.75
JT50-ER16-100	○	JT50	28	100	LN16S	WER16	ER16	SGC100150IC	3.00
JT50-ER16-160	○	JT50	28	160	LN16S	WER16	ER16	SGC100150IC	3.30
JT50-ER20-70	○	JT50	34	70	LN20S	WER20	ER20	SGC120200IC	2.80
JT50-ER20-100	○	JT50	34	100	LN20S	WER20	ER20	SGC120200IC	3.05
JT50-ER20-160	●	JT50	34	160	LN20S	WER20	ER20	SGC120200IC	3.35
JT50-ER25-70	○	JT50	42	70	LN25	WER25	ER25	SGC160200IC	2.90
JT50-ER25-100	●	JT50	42	100	LN25	WER25	ER25	SGC160200IC	3.20
JT50-ER25-160	●	JT50	42	160	LN25	WER25	ER25	SGC160200IC	3.75
JT50-ER32-70	●	JT50	50	70	LN32	WER32	ER32	SGD220250IC	2.90
JT50-ER32-100	●	JT50	50	100	LN32	WER32	ER32	SGD220250IC	3.35
JT50-ER32-160	●	JT50	50	160	LN32	WER32	ER32	SGD220250IC	4.15
JT50-ER40-70	○	JT50	63	70	LN40	WER40	ER40	SGD280250IC	3.15
JT50-ER40-100	●	JT50	63	100	LN40	WER40	ER40	SGD280250IC	3.80
JT50-ER40-160	●	JT50	63	160	LN40	WER40	ER40	SGD280250IC	5.15

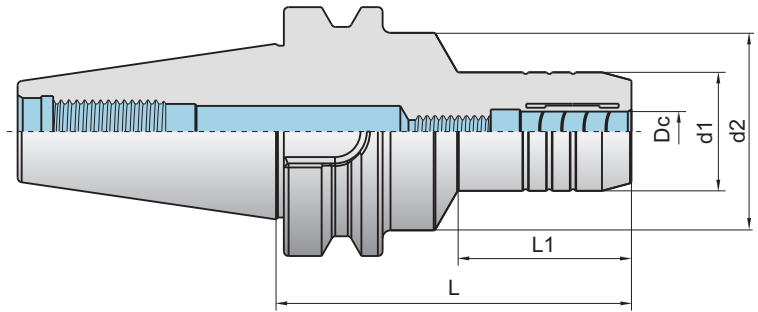
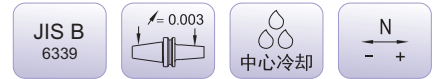
➔ 订货示例: JT50-ER11-70
 Order example: JT50-ER11-70

● 常备库存 Unallocated stock ○ 可备库存 Available stock ○ 订单生产 Order production

➔ 扳手、卡簧、螺钉单独订购。
 Wrench, collet, and screw need to be ordered separately.

B 工具系统 Tool System

液压夹头刀柄-BT30/BT40
Hydraulic Chucks



型号 Type	库存 Stock	锥柄型式 Taper type	尺寸(mm) Dimension					扳手 Wrench	重量 (kg)
			Dc	d1	d2	L1	L		
BT30-KHC06-75	●	BT30	6	26	50	30	75	TS5	
BT30-KHC08-75	●	BT30	8	30	50	31	75	TS5	
BT30-KHC10-80	●	BT30	10	32	50	37	80	TS5	
BT30-KHC12-85	●	BT30	12	34	50	42	85	TS5	
BT30-KHC16-90	●	BT30	16	38	50	49	90	TS5	
BT30-KHC20-90	●	BT30	20	42	50	51	90	TS5	
BT40-KHC06-90	●	BT40	6	26	50	36	90	TS5	
BT40-KHC08-90	●	BT40	8	30	50	40	90	TS5	
BT40-KHC10-90	●	BT40	10	32	50	41	90	TS5	
BT40-KHC12-90	●	BT40	12	34	50	42	90	TS5	
BT40-KHC14-90	●	BT40	14	36	50	43	90	TS5	
BT40-KHC16-90	●	BT40	16	38	50	44	90	TS5	
BT40-KHC18-90	●	BT40	18	40	50	45	90	TS5	
BT40-KHC20-90	●	BT40	20	42	50	49	90	TS5	
BT40-KHC20-140	●	BT40	20	42	50	99	140	TS5	
BT40-KHC25-100	●	BT40	25	57	66	57	100	TS5	
BT40-KHC32-105	●	BT40	32	64	75	61	105	TS5	

订货示例: BT30-KHC06-75
Order example: BT30-KHC06-75

● 常备库存
Unallocated stock

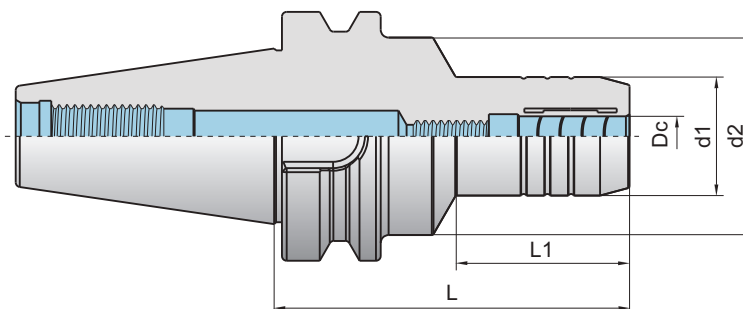
○ 可备库存
Available stock

○ 订单生产
Order production

B 工具系统 Tool System

液压夹头刀柄-BT50
Hydraulic Chucks

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型号 Type	库存 Stock	锥柄型式 Taper type	尺寸(mm) Dimension					扳手 Wrench	重量 (kg)
			Dc	d1	d2	L1	L		
BT50-KHC06-90	●	BT50	6	26	50	31	90	TS5	
BT50-KHC08-90	●	BT50	8	30	50	33	90	TS5	
BT50-KHC10-95	●	BT50	10	32	50	36	95	TS5	
BT50-KHC12-100	●	BT50	12	34	50	41	100	TS5	
BT50-KHC14-100	●	BT50	14	36	50	42	100	TS5	
BT50-KHC16-100	●	BT50	16	38	50	43	100	TS5	
BT50-KHC18-100	●	BT50	18	40	50	45	100	TS5	
BT50-KHC20-105	●	BT50	20	42	50	51	105	TS5	
BT50-KHC20-140	●	BT50	20	42	50	86	140	TS5	
BT50-KHC25-110	●	BT50	25	57	66	58	110	TS5	
BT50-KHC32-115	●	BT50	32	64	75	62	115	TS5	

订货示例: BT50-KHC06-90
Order example: BT50-KHC06-90

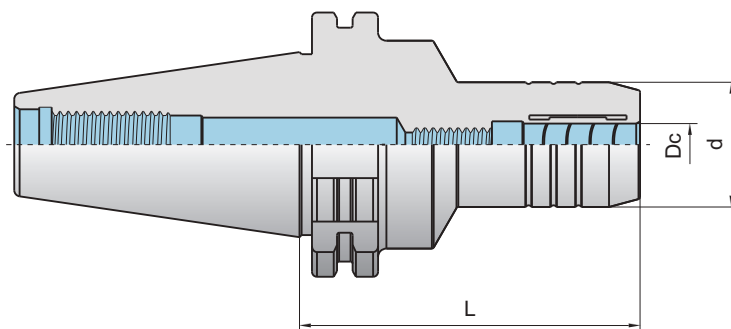
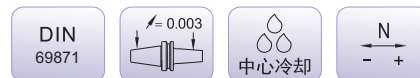
● 常备库存
Unallocated stock

○ 可备库存
Available stock

○ 订单生产
Order production

B 工具系统 Tool System

液压夹头刀柄-JT40/JT50
Hydraulic Chucks



型号 Type	库存 Stock	锥柄型式 Taper type	尺寸(mm) Dimension			扳手 Wrench 	重量 (kg)
			Dc	d	L		
JT40-KHC06-80	●	JT40	6	26	80	TS5	
JT40-KHC08-80	●	JT40	8	30	80	TS5	
JT40-KHC10-80	●	JT40	10	32	80	TS5	
JT40-KHC12-80	●	JT40	12	34	80	TS5	
JT40-KHC16-80	●	JT40	16	38	80	TS5	
JT40-KHC20-90	●	JT40	20	42	90	TS5	
JT40-KHC25-110	●	JT40	25	57	110	TS5	
JT40-KHC32-115	●	JT40	32	64	115	TS5	
JT50-KHC06-90	●	JT50	6	26	90	TS5	
JT50-KHC08-90	●	JT50	8	30	90	TS5	
JT50-KHC10-90	●	JT50	10	32	90	TS5	
JT50-KHC12-90	●	JT50	12	34	90	TS5	
JT50-KHC16-90	●	JT50	16	38	90	TS5	
JT50-KHC20-90	●	JT50	20	42	90	TS5	
JT50-KHC25-90	●	JT50	25	57	90	TS5	
JT50-KHC32-100	●	JT50	32	64	100	TS5	

➡ 订货示例: JT40-KHC06-80
Order example: JT40-KHC06-80

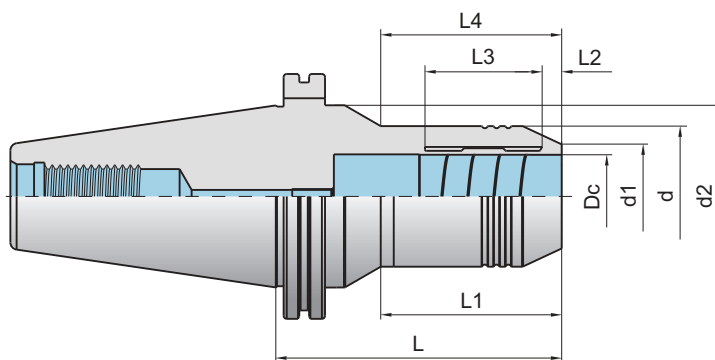
● 常备库存
Unallocated stock

○ 可备库存
Available stock

○ 订单生产
Order production

B 工具系统 Tool System

数控工具磨床专用刀柄-JT50
Hydrink Chucks For CNC Tool Grinders



型号 Type	库存 Stock	锥柄型式 Taper type	尺寸(mm) Dimension									扳手 Wrench	重量 (kg)
			Dc	d	d1	d2	L1	L2	L3	L4	L		
JT50-KHC06-110GM	●	JT50	6	32	15	70	55	6.5	20	43	110	TS4	
JT50-KHC08-110GM	●	JT50	8	33	17	70	55	6.5	20	43	110	TS4	
JT50-KHC10-110GM	●	JT50	10	35	19	70	55	6.5	28	43	110	TS4	
JT50-KHC12-110GM	●	JT50	12	36	21	70	55	6.5	28	50	110	TS4	
JT50-KHC20-110GM	●	JT50	20	42	28	70	50	6.5	35	90	110	TS4	
JT50-KHC32-110GM	●	JT50	32	54	40	70	69	7.0	45	90	110	TS4	

▶ 订货示例: JT50-KHC06-110GMW
Order example: JT50-KHC06-110GMW

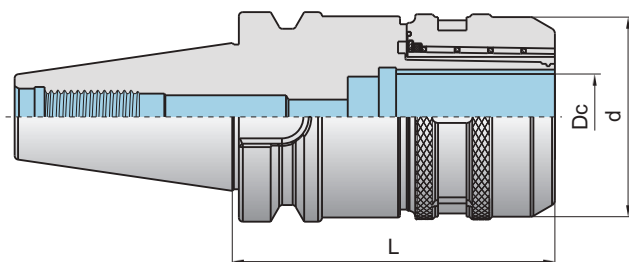
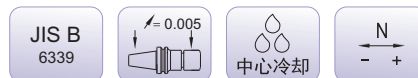
● 常备库存
Unallocated stock

◐ 可备库存
Available stock

○ 订单生产
Order production

B 工具系统 Tool System

强力夹头刀柄-BT30/BT40/BT50
Power Chucks



型号 Type	库存 Stock	锥柄型式 Tapertype	尺寸(mm) Dimension			扳手 Wrench	重量 (kg)
			Dc	d	L		
BT30-KMC20-75	●	BT30	20	52	75	WKMC20	
BT30-KMC25-80	●	BT30	25	59	80	WKMC25	
BT30-KMC32-100	●	BT30	32	69	100	WKMC32	
BT40-KMC20-80	●	BT40	20	52	80	WKMC20	
BT40-KMC25-80	●	BT40	25	59	80	WKMC25	
BT40-KMC32-105	●	BT40	32	69	105	WKMC32	
BT50-KMC20-105	●	BT50	20	52	105	WKMC20	
BT50-KMC25-105	●	BT50	25	59	105	WKMC25	
BT50-KMC32-105	●	BT50	32	69	105	WKMC32	
BT50-KMC42-115	●	BT50	42	88	115	WKMC42	

接受BBT刀柄订货, 订货示例:BBT30-KMC20-75
BBT tool holders are available. Order example:BBT30-KMC20-75

● 常备库存
Unallocated stock

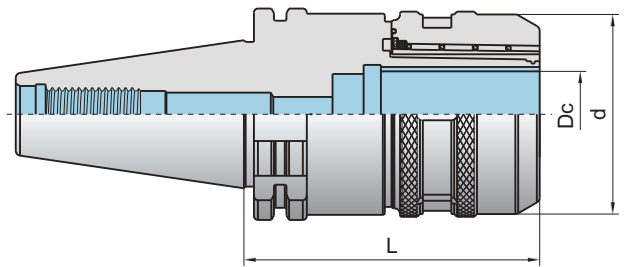
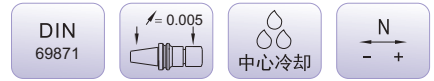
○ 可备库存
Available stock

○ 订单生产
Order production

➡ 扳手需单独订购。
Wrench need to be ordered separately.

B 工具系统 Tool System

强力夹头刀柄-JT40/JT50 Power Chucks



型号 Type	库存 Stock	锥柄型式 Tapertype	尺寸(mm) Dimension			扳手 Wrench	重量 (kg)
			Dc	d	L		
JT40-KMC20-90	○	JT40	20	52	90	WKMC20	
JT40-KMC25-90	●	JT40	25	59	90	WKMC25	
JT40-KMC32-105	●	JT40	32	69	105	WKMC32	
JT50-KMC20-105	○	JT50	20	52	105	WKMC20	
JT50-KMC25-105	●	JT50	25	59	105	WKMC25	
JT50-KMC32-105	●	JT50	32	69	105	WKMC32	
JT50-KMC42-115	○	JT50	42	88	115	WKMC42	

➡ 订货示例: JT40-KMC20-90
Order example: JT40-KMC20-90

● 常备库存
Unallocated stock

○ 可备库存
Available stock

○ 订单生产
Order production

➡ 扳手需单独订购。
Wrench need to be ordered separately.

B 工具系统 Tool System

侧固式刀柄短型-BT40/BT50
Side-Locked Holders-STUB

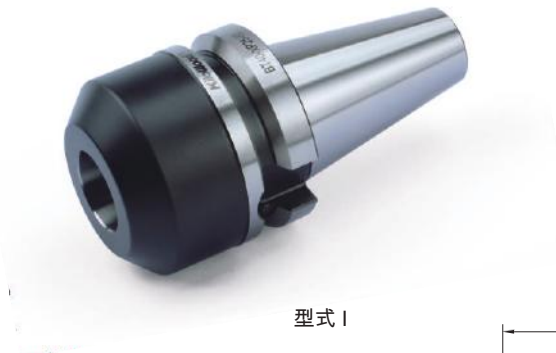
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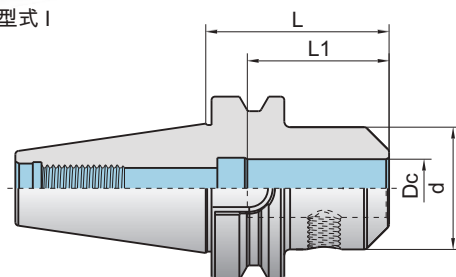
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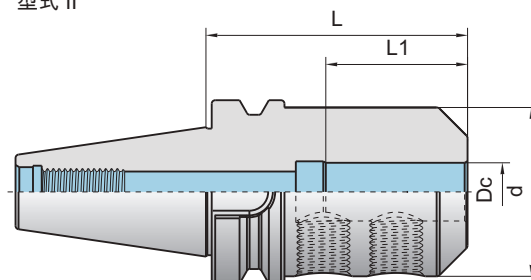
视频演示



型式 I



型式 II



型号 Type	库存 Stock	锥柄型式 Tapertype	尺寸(mm) Dimension				螺钉 Screw	扳手 Wrench	螺钉 Screw	扳手 Wrench	型式 Model	重量 (kg)
			Dc	d	L1	L						
BT40-XP16-35	●	BT40	16	48	47	35	SXP16A	S6	-	-	I	1.00
BT40-XP20-35	●	BT40	20	52	49	35	SXP16A	S6	-	-	I	0.97
BT40-XP25-60	●	BT40	25	65	54	60	SXP25	S8	SXP16A	S6	II	1.42
BT40-XP32-65	●	BT40	32	72	58	65	SXP32	S10	SXP10A	S5	II	1.33
BT50-XP16-45	●	BT50	16	48	47	45	SXP16	S6	-	-	I	3.56
BT50-XP20-45	●	BT50	20	52	49	45	SXP20	S8	-	-	I	3.54
BT50-XP25-72	●	BT50	25	65	54	72	SXP25	S8	-	-	II	4.11
BT50-XP32-75	●	BT50	32	72	58	75	SXP32	S10	-	-	II	4.21

接受BBT刀柄订货, 订货示例:BBT40-XP16-35
BBT tool holders are available. Order example:BBT40-XP16-35

● 常备库存
Unallocated stock

● 可备库存
Available stock

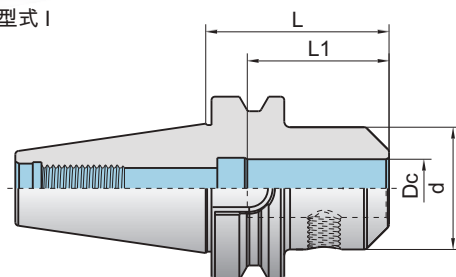
○ 订单生产
Order production

B 工具系统 Tool System

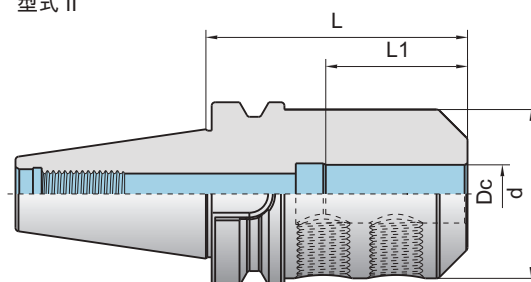
侧固式刀柄-BT40 Side-Locked Holders



型式 I



型式 II



型号 Type	库存 Stock	锥柄型式 Tapertype	尺寸(mm) Dimension				螺钉 Screw	扳手 Wrench	型式 Model	重量 (kg)
			Dc	d	L1	L				
BT40-XP12-63	●	BT40	12	42	44	63	SXP12	S6	I	1.28
BT40-XP12-100	◐	BT40	12	42	44	100	SXP12	S6	I	1.35
BT40-XP16-63	●	BT40	16	48	47	63	SXP16	S6	I	1.38
BT40-XP16-100	●	BT40	16	48	47	100	SXP16	S6	I	1.83
BT40-XP20-63	●	BT40	20	52	49	63	SXP20	S8	I	1.96
BT40-XP20-100	●	BT40	20	52	49	100	SXP20	S8	I	2.21
BT40-XP25-90	●	BT40	25	65	54	90	SXP25	S8	II	2.62
BT40-XP25-160	●	BT40	25	65	54	160	SXP25	S8	II	3.74
BT40-XP32-100	●	BT40	32	72	58	100	SXP32	S10	II	3.80
BT40-XP32-160	●	BT40	32	72	58	160	SXP32	S10	II	3.96

接受BBT刀柄订货, 订货示例:BBT40-XP12-63
BBT tool holders are available. Order example:BBT40-XP12-63

● 常备库存
Unallocated stock

◐ 可备库存
Available stock

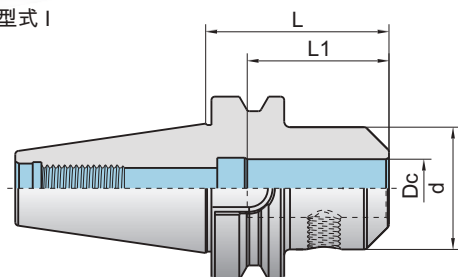
○ 订单生产
Order production

B 工具系统 Tool System

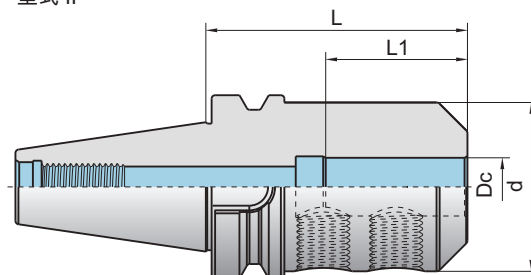
侧固式刀柄-BT50 Side-Locked Holders



型式 I



型式 II



型号 Type	库存 Stock	锥柄型式 Tapertype	尺寸(mm) Dimension				螺钉 Screw	扳手 Wrench	型式 Model	重量 (kg)
			Dc	d	L1	L				
BT50-XP16-80	●	BT50	16	48	47	80	SXP16	S6	I	3.61
BT50-XP16-100	●	BT50	16	48	47	100	SXP16	S6	I	3.83
BT50-XP20-80	●	BT50	20	52	49	80	SXP20	S8	I	3.75
BT50-XP20-100	●	BT50	20	52	49	100	SXP20	S8	I	4.04
BT50-XP25-100	●	BT50	25	65	54	100	SXP25	S8	II	4.80
BT50-XP25-160	●	BT50	25	65	54	160	SXP25	S8	II	6.21
BT50-XP32-105	●	BT50	32	72	58	105	SXP32	S10	II	5.13
BT50-XP32-160	●	BT50	32	72	58	160	SXP32	S10	II	6.74
BT50-XP40-120	●	BT50	40	80	68	120	SXP40	S10	II	6.14
BT50-XP40-160	●	BT50	40	80	68	160	SXP40	S10	II	7.80
BT50-XP50-120	●	BT50	50	90	77	120	SXP50	S12	II	6.06



接受BBT刀柄订货, 订货示例:BBT50-XP16-80
BBT tool holders are available. Order example:BBT50-XP16-80

● 常备库存
Unallocated stock

○ 可备库存
Available stock

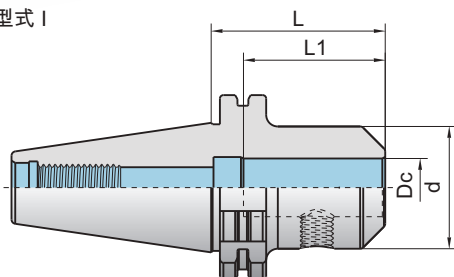
○ 订单生产
Order production

B 工具系统 Tool System

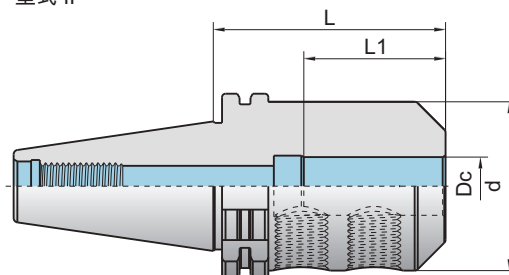
侧固式刀柄-JT40
Side-Locked Holders-STUB



型式 I



型式 II



型号 Type	库存 Stock	锥柄型式 Tapertype	尺寸(mm) Dimension				螺钉 Screw	扳手 Wrench	型式 Model	重量 (kg)
			Dc	d	L1	L				
JT40-XP12-50	○	JT40	12	42	44	50	SXP12	S6	I	1.07
JT40-XP12-100	●	JT40	12	42	44	100	SXP12	S6	I	1.56
JT40-XP16-63	○	JT40	16	48	47	63	SXP16	S6	I	1.29
JT40-XP16-100	○	JT40	16	48	47	100	SXP16	S6	I	1.78
JT40-XP20-63	○	JT40	20	52	49	63	SXP20	S8	I	1.30
JT40-XP20-100	●	JT40	20	52	49	100	SXP20	S8	I	1.82
JT40-XP25-100	●	JT40	25	65	54	100	SXP25	S8	II	2.36
JT40-XP32-100	●	JT40	32	72	58	100	SXP32	S10	II	2.53

订货示例: JT40-XP12-50
Order example: JT40-XP12-50

● 常备库存
Unallocated stock

○ 可备库存
Available stock

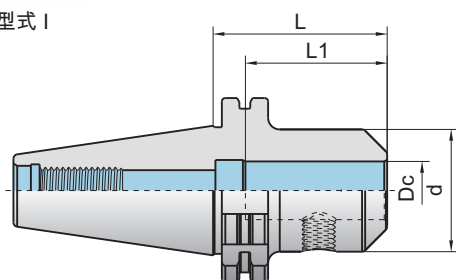
○ 订单生产
Order production

B 工具系统 Tool System

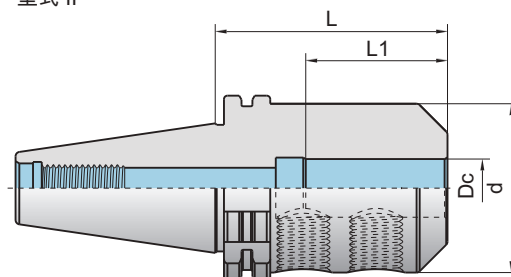
侧固式刀柄-JT50
Side-Locked Holders



型式 I



型式 II



型号 Type	库存 Stock	锥柄型式 Tapertype	尺寸(mm) Dimension				螺钉 Screw	扳手 Wrench	型式 Model	重量 (kg)
			Dc	d	L1	L				
JT50-XP16-63	●	JT50	16	48	47	63	SXP16	S6	I	3.05
JT50-XP16-100	●	JT50	16	48	47	100	SXP16	S6	I	3.58
JT50-XP20-63	●	JT50	20	52	49	63	SXP20	S8	I	3.10
JT50-XP20-100	●	JT50	20	52	49	100	SXP20	S8	I	3.66
JT50-XP25-80	●	JT50	25	65	54	80	SXP25	S8	II	3.78
JT50-XP25-160	●	JT50	25	65	54	160	SXP25	S8	II	5.64
JT50-XP32-100	●	JT50	32	72	58	100	SXP32	S10	II	4.49
JT50-XP32-160	●	JT50	32	72	58	160	SXP32	S10	II	6.35
JT50-XP40-100	●	JT50	40	80	68	100	SXP40	S10	II	5.06
JT50-XP40-160	●	JT50	40	80	68	160	SXP40	S10	II	7.19

➔ 订货示例: JT50-XP16-63
Order example: JT50-XP16-63

● 常备库存
Unallocated stock

◐ 可备库存
Available stock

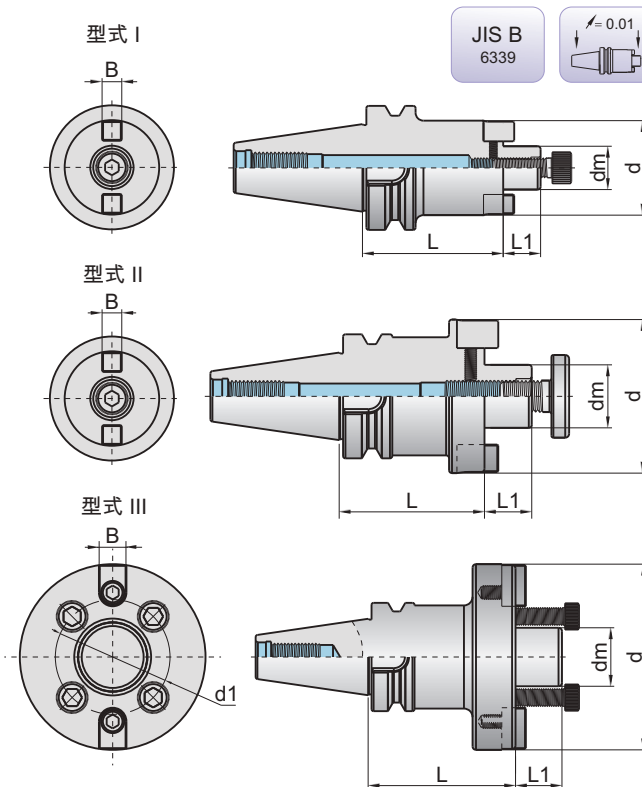
○ 订单生产
Order production

B 工具系统 Tool System

面铣刀刀柄-BT30/BT40
Shell Mill Holders



视频演示



型号 Type	库存 Stock	锥柄型式 Taper type	尺寸(mm) Dimension						螺钉 Screw	扳手 Wrench	键 Key	型式 Model	重量 (kg)
			dm	d	d1	B	L1	L					
BT30-XMA16-30	●	BT30	16	38	-	8	17	30	SCC080300	S6	KXMA16	I	0.48
BT30-XMA16-100	●	BT30	16	38	-	8	17	100	SCC080300	S6	KXMA16	I	1.07
BT30-XMA22-45	●	BT30	22	48	-	10	19	45	SCC100300	S8	KXMA22	I	0.08
BT30-XMA22-100	●	BT30	22	48	-	10	19	100	SCC100300	S8	KXMA22	I	1.35
BT30-XMA27-45	⊙	BT30	27	60	-	12	21	45	SCC120350	S10	KXMA27	I	0.94
BT30-XMA27-100	⊙	BT30	27	60	-	12	21	100	SCC120350	S10	KXMA27	I	1.55
BT40-XMA16-35	●	BT40	16	38	-	8	17	35	SCC080300	S6	KXMA16	I	1.11
BT40-XMA16-100	●	BT40	16	38	-	8	17	100	SCC080300	S6	KXMA16	I	1.62
BT40-XMA16-160	⊙	BT40	16	38	-	8	17	160	SCC080300	S6	KXMA16	I	2.10
BT40-XMA22-40	●	BT40	22	48	-	10	19	40	SCC100300	S8	KXMA22	I	1.20
BT40-XMA22-100	●	BT40	22	48	-	10	19	100	SCC100300	S8	KXMA22	I	2.02
BT40-XMA22-160	●	BT40	22	48	-	10	19	160	SCC100300	S8	KXMA22	I	2.80
BT40-XMA27-40	●	BT40	27	60	-	12	21	40	SCC120350	S10	KXMA27	I	1.34
BT40-XMA27-100	●	BT40	27	60	-	12	21	100	SCC120350	S10	KXMA27	I	2.60
BT40-XMA27-160	⊙	BT40	27	60	-	12	21	160	SCC120350	S10	KXMA27	I	3.88
BT40-XMB32-50	●	BT40	32	78	-	14	24	50	SXSL32-S10	S10	KXMB32	II	1.95
BT40-XMB32-100	●	BT40	32	78	-	14	24	100	SXSL32-S10	S10	KXMB32	II	3.01
BT40-XMB32-160	●	BT40	32	78	-	14	24	160	SXSL32-S10	S10	KXMB32	II	4.25
BT40-XMB40-60	●	BT40	40	89	-	16	27	60	SXSL34-S12	S12	KXMB40	II	2.56
BT40-XMB40-100	●	BT40	40	89	-	16	27	100	SXSL34-S12	S12	KXMB40	II	3.42
BT40-XMC40-60	●	BT40	40	108	66.7	16	27	60	SCC120350	S10	KXMC40	III	3.01

接受BBT刀柄订货, 订货示例:BBT30-XMA16-30
内冷刀柄订货示例:BT30-XMA16-30C

BBT tool holders are available. Order example:BBT30-XMA16-30
Order example for coolant through tool holder:BT30-XMA16-30C

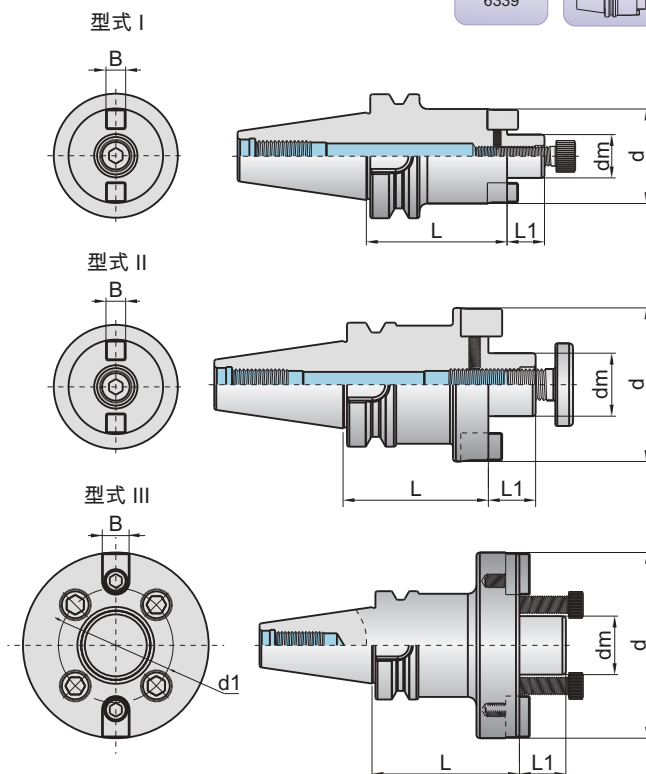
● 常备库存
Unallocated stock

⊙ 可备库存
Available stock

○ 订单生产
Order production

B 工具系统 Tool System

面铣刀刀柄-BT50 Shell Mill Holders



型号 Type	库存 Stock	锥柄型式 Taper type	尺寸(mm) Dimension						螺钉 Screw	扳手 Wrench	键 Key	型式 Model	重量 (kg)
			dm	d	d1	B	L1	L					
BT50-XMA16-55	●	BT50	16	38	-	8	17	55	SCC080300	S6	KXMA16	I	3.65
BT50-XMA16-100	●	BT50	16	38	-	8	17	100	SCC080300	S6	KXMA16	I	4.06
BT50-XMA16-160	●	BT50	16	38	-	8	17	160	SCC080300	S6	KXMA16	I	4.62
BT50-XMA22-55	●	BT50	22	48	-	10	19	55	SCC100300	S8	KXMA22	I	3.83
BT50-XMA22-100	●	BT50	22	48	-	10	19	100	SCC100300	S8	KXMA22	I	4.45
BT50-XMA22-160	●	BT50	22	48	-	10	19	160	SCC100300	S8	KXMA22	I	5.36
BT50-XMA27-55	●	BT50	27	60	-	12	21	55	SCC120350	S10	KXMA27	I	4.10
BT50-XMA27-100	●	BT50	27	60	-	12	21	100	SCC120350	S10	KXMA27	I	5.15
BT50-XMA27-160	●	BT50	27	60	-	12	21	160	SCC120350	S10	KXMA27	I	6.20
BT50-XMB32-55	●	BT50	32	78	-	14	24	55	SXSL32-S10	S10	KXMB32	II	4.36
BT50-XMB32-100	●	BT50	32	78	-	14	24	100	SXSL32-S10	S10	KXMB32	II	5.96
BT50-XMB32-160	●	BT50	32	78	-	14	24	160	SXSL32-S10	S10	KXMB32	II	7.98
BT50-XMB40-55	●	BT50	40	89	-	16	27	55	SXSL40-S12	S12	KXMB40	II	4.71
BT50-XMB40-100	●	BT50	40	89	-	16	27	100	SXSL40-S12	S12	KXMB40	II	5.65
BT50-XMB40-160	●	BT50	40	89	-	16	27	160	SXSL40-S12	S12	KXMB40	II	9.59
BT50-XMC40-55	●	BT50	40	108	66.7	16	27	55	SCC120350	S10	KXMC40	III	4.75
BT50-XMC60-70	●	BT50	60	129	101.6	25.4	38	70	SCC160450	S14	KXMC60	III	7.74

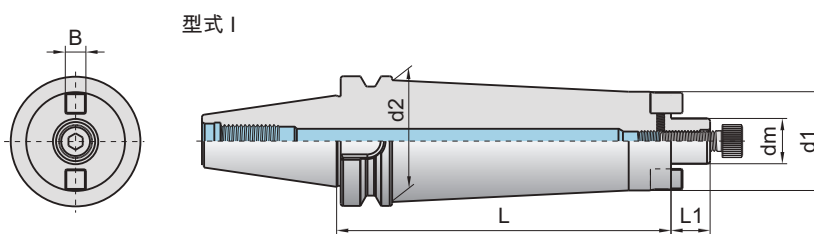
接受BBT刀柄订货, 订货示例:BBT50-XMA16-55
内冷刀柄订货示例:BT50-XMA16-55C
BBT tool holders are available. Order example:BBT50-XMA16-55
Order example for coolant through tool holder:BT50-XMA16-55C

● 常备库存 Unallocated stock
● 可备库存 Available stock
○ 订单生产 Order production

B 工具系统 Tool System

面铣刀刀柄加长型-BT40/BT50
Shell Mill Holders

JIS B
6339



型号 Type	库存 Stock	锥柄型式 Taper type	尺寸(mm) Dimension						螺钉 Screw	扳手 Wrench	键 Key	型式 Model	重量 (kg)
			dm	d1	d2	B	L1	L					
BT40-XMA22-200BG	●	BT40	22	48	61	10	19	200	SCC100300	S8	KXMA22	I	
BT40-XMA22-250BG	○	BT40	22	48	61	10	19	250	SCC100300	S8	KXMA22	I	
BT40-XMA22-300BG	○	BT40	22	48	61	10	19	300	SCC100300	S8	KXMA22	I	
BT40-XMA22-350BG	○	BT40	22	48	61	10	19	350	SCC100300	S8	KXMA22	I	
BT40-XMA22-400BG	○	BT40	22	48	61	10	19	400	SCC100300	S8	KXMA22	I	
BT50-XMA22-200BG	●	BT50	22	48	61	10	19	200	SCC100300	S8	KXMA22	I	
BT50-XMA22-250BG	●	BT50	22	48	61	10	19	250	SCC100300	S8	KXMA22	I	
BT50-XMA22-300BG	●	BT50	22	48	61	10	19	300	SCC100300	S8	KXMA22	I	
BT50-XMA22-350BG	●	BT50	22	48	61	10	19	350	SCC100300	S8	KXMA22	I	
BT50-XMA22-400BG	●	BT50	22	48	61	10	19	400	SCC100300	S8	KXMA22	I	
BT50-XMA22-450BG	○	BT50	22	48	61	10	19	450	SCC100300	S8	KXMA22	I	
BT50-XMA22-500BG	○	BT50	22	48	61	10	19	500	SCC100300	S8	KXMA22	I	
BT50-XMA22-550BG	○	BT50	22	48	61	10	19	550	SCC100300	S8	KXMA22	I	
BT50-XMA22-600BG	○	BT50	22	48	61	10	19	600	SCC100300	S8	KXMA22	I	

▶ 订货示例:BT40-XMA22-200BG
Order example:BT40-XMA22-200BG

● 常备库存
Unallocated stock

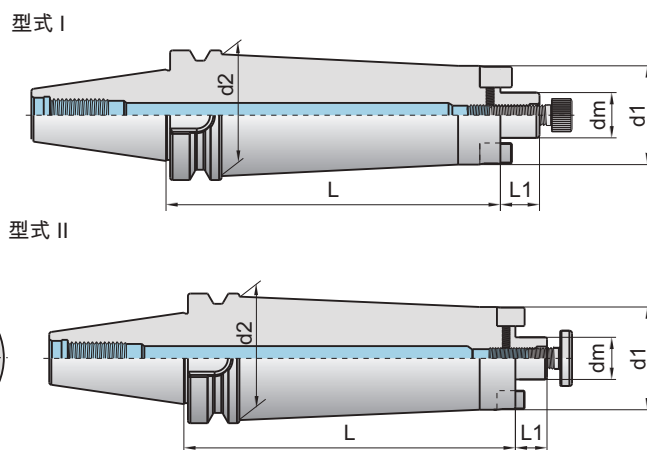
○ 可备库存
Available stock

○ 订单生产
Order production

B 工具系统 Tool System

面铣刀刀柄加长型-BT50
Shell Mill Holders

JIS B
6339



型号 Type	库存 Stock	锥柄型式 Taper type	尺寸(mm) Dimension						螺钉 Screw	扳手 Wrench	键 Key	型式 Model	重量 (kg)
			dm	d1	d2	B	L1	L					
BT50-XMA27-200BG	●	BT50	27	60	78	12	21	200	SCC120350	S10	KXMA27	I	
BT50-XMA27-250BG	●	BT50	27	60	78	12	21	250	SCC120350	S10	KXMA27	I	
BT50-XMA27-300BG	●	BT50	27	60	78	12	21	300	SCC120350	S10	KXMA27	I	
BT50-XMA27-350BG	●	BT50	27	60	78	12	21	350	SCC120350	S10	KXMA27	I	
BT50-XMA27-400BG	◐	BT50	27	60	78	12	21	400	SCC120350	S10	KXMA27	I	
BT50-XMA27-450BG	○	BT50	27	60	78	12	21	450	SCC120350	S10	KXMA27	I	
BT50-XMA27-500BG	○	BT50	27	60	78	12	21	500	SCC120350	S10	KXMA27	I	
BT50-XMA27-550BG	○	BT50	27	60	78	12	21	550	SCC120350	S10	KXMA27	I	
BT50-XMA27-600BG	○	BT50	27	60	78	12	21	600	SCC120350	S10	KXMA27	I	
BT50-XMB32-200BG	●	BT50	32	78	98	14	24	200	SXSL32-S10	S10	KXMB32	II	
BT50-XMB32-250BG	●	BT50	32	78	98	14	24	250	SXSL32-S10	S10	KXMB32	II	
BT50-XMB32-300BG	●	BT50	32	78	98	14	24	300	SXSL32-S10	S10	KXMB32	II	
BT50-XMB32-350BG	○	BT50	32	78	98	14	24	350	SXSL32-S10	S10	KXMB32	II	
BT50-XMB32-400BG	○	BT50	32	78	98	14	24	400	SXSL32-S10	S10	KXMB32	II	

▶ 订货示例:BT50-XMA27-200BG
Order example:BT50-XMA27-200BG

● 常备库存
Unallocated stock

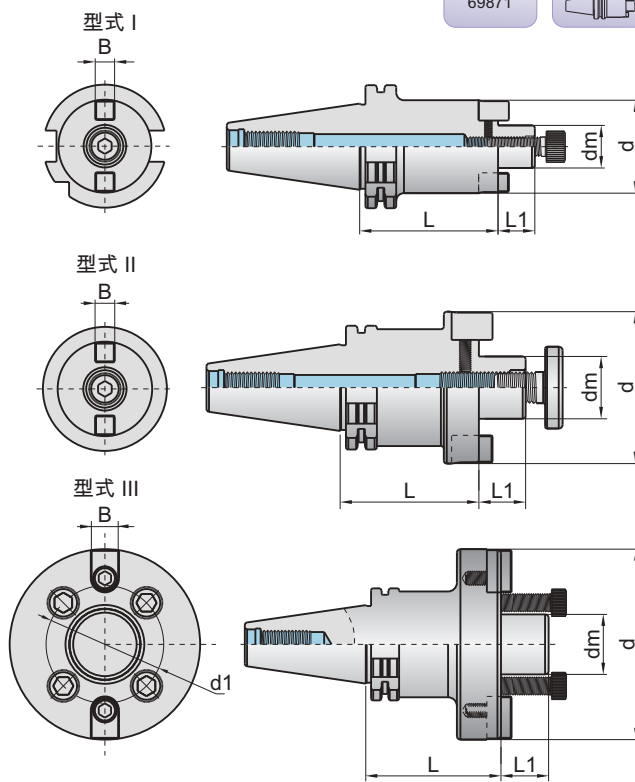
◐ 可备库存
Available stock

○ 订单生产
Order production

B 工具系统 Tool System

面铣刀刀柄-JT40 Shell Mill Holders

DIN
69871



型号 Type	库存 Stock	锥柄型式 Taper type	尺寸(mm) Dimension						螺钉 Screw	扳手 Wrench	键 Key	型式 Model	重量 (kg)
			dm	d	d1	B	L1	L					
JT40-XMA16-35	●	JT40	16	38	-	8	17	35	SCC080300	S6	KXMA16	I	0.93
JT40-XMA16-100	●	JT40	16	38	-	8	17	100	SCC080300	S6	KXMA16	I	1.30
JT40-XMA16-160	○	JT40	16	38	-	8	17	160	SCC080300	S6	KXMA16	I	1.99
JT40-XMA22-35	●	JT40	22	48	-	10	19	35	SCC100300	S8	KXMA22	I	1.08
JT40-XMA22-100	●	JT40	22	48	-	10	19	100	SCC100300	S8	KXMA22	I	1.60
JT40-XMA22-160	○	JT40	22	48	-	10	19	160	SCC100300	S8	KXMA22	I	2.74
JT40-XMA27-50	●	JT40	27	60	-	12	21	50	SCC120350	S10	KXMA27	I	1.45
JT40-XMA27-100	●	JT40	27	60	-	12	21	100	SCC120350	S10	KXMA27	I	2.21
JT40-XMA27-160	○	JT40	27	60	-	12	21	160	SCC120350	S10	KXMA27	I	3.05
JT40-XMB32-55	●	JT40	32	78	-	14	24	55	SXSL32-S10	S10	KXMB32	II	1.80
JT40-XMB32-100	●	JT40	32	78	-	14	24	100	SXSL32-S10	S10	KXMB32	II	2.58
JT40-XMB32-160	○	JT40	32	78	-	14	24	160	SXSL32-S10	S10	KXMB32	II	3.50
JT40-XMB40-55	○	JT40	40	89	-	16	27	55	SXSL34-S12	S12	KXMB40	II	2.37
JT40-XMB40-100	●	JT40	40	89	-	16	27	100	SXSL34-S12	S12	KXMB40	II	2.99
JT40-XMC40-55	○	JT40	40	108	66.7	16	27	55	SCC120350	S10	KXMC40	III	2.55

▶ 内冷刀柄订货示例: JT40-XMA16-35C
Order example for coolant through tool holder:
JT40-XMA16-35C

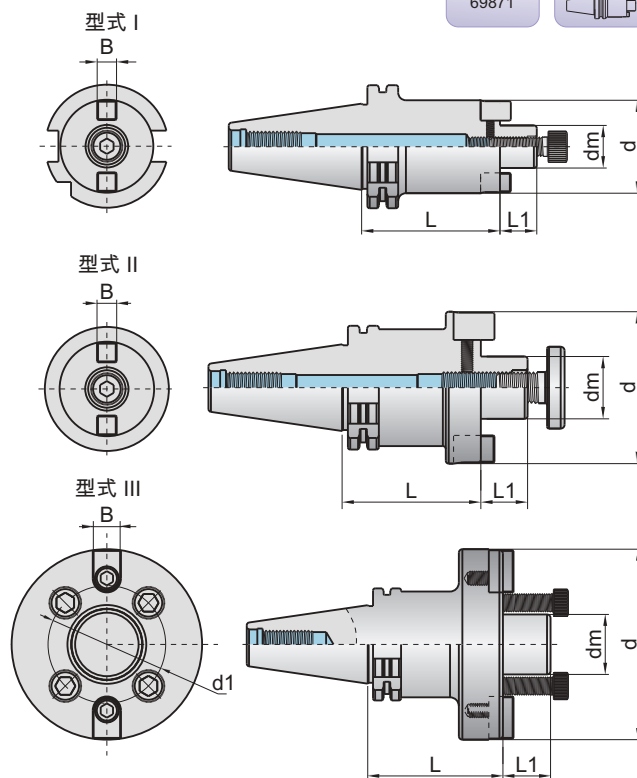
● 常备库存
Unallocated stock

◐ 可备库存
Available stock

○ 订单生产
Order production

B 工具系统 Tool System

面铣刀刀柄-JT50 Shell Mill Holders



型号 Type	库存 Stock	锥柄型式 Taper type	尺寸(mm) Dimension						螺钉 Screw	扳手 Wrench	键 Key	型式 Model	重量 (kg)
			dm	d	d1	B	L1	L					
JT50-XMA16-35	○	JT50	16	38	-	8	17	35	SCC080300	S6	KXMA16	I	2.80
JT50-XMA16-100	○	JT50	16	38	-	8	17	100	SCC080300	S6	KXMA16	I	3.30
JT50-XMA16-160	○	JT50	16	38	-	8	17	160	SCC080300	S6	KXMA16	I	3.80
JT50-XMA22-35	●	JT50	22	48	-	10	19	35	SCC100300	S8	KXMA22	I	2.90
JT50-XMA22-100	●	JT50	22	48	-	10	19	100	SCC100300	S8	KXMA22	I	3.75
JT50-XMA22-160	●	JT50	22	48	-	10	19	160	SCC100300	S8	KXMA22	I	4.60
JT50-XMA27-35	○	JT50	27	60	-	12	21	35	SCC120350	S10	KXMA27	I	2.98
JT50-XMA27-100	●	JT50	27	60	-	12	21	100	SCC120350	S10	KXMA27	I	4.44
JT50-XMA27-160	●	JT50	27	60	-	12	21	160	SCC120350	S10	KXMA27	I	5.68
JT50-XMB32-35	●	JT50	32	78	-	14	24	35	SXSL32-S10	S10	KXMB32	II	3.34
JT50-XMB32-100	●	JT50	32	78	-	14	24	100	SXSL32-S10	S10	KXMB32	II	5.64
JT50-XMB32-160	●	JT50	32	78	-	14	24	160	SXSL32-S10	S10	KXMB32	II	7.75
JT50-XMB40-55	●	JT50	40	89	-	16	27	55	SXSL40-S12	S12	KXMB40	II	4.24
JT50-XMB40-100	●	JT50	40	89	-	16	27	100	SXSL40-S12	S12	KXMB40	II	6.12
JT50-XMB40-160	●	JT50	40	89	-	16	27	160	SXSL40-S12	S12	KXMB40	II	8.60
JT50-XMC40-55	●	JT50	40	108	66.7	16	27	55	SCC120350	S10	KXMC40	III	4.72
JT50-XMC60-70	●	JT50	60	129	101.6	25.4	38	70	SCC160450	S14	KXMC60	III	7.36

▶ 内冷刀柄订货示例: JT50-XMA16-35C
Order example for coolant through tool holder:
JT50-XMA16-35C

● 常备库存
Unallocated stock

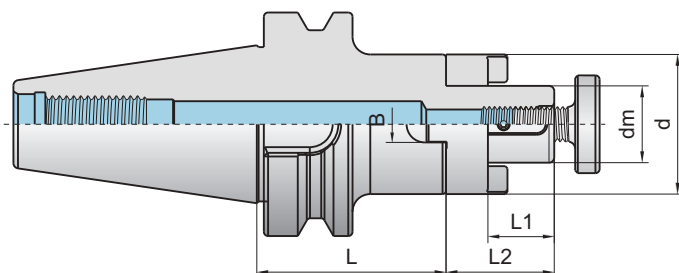
● 可备库存
Available stock

○ 订单生产
Order production

B 工具系统 Tool System

套式立铣刀及三面刃铣刀刀柄-BT40
Shell Mill&Disc Mill Holder

JIS B
6339



型号 Type	库存 Stock	锥柄型式 Taper type	尺寸(mm) Dimension						驱动环 Drivenring	键 Key	螺钉 Screw	扳手 Wrench	重量 (kg)
			dm	d	B	L1	L2	L					
BT40-XSL32-100	●	BT40	32	58	14	24	38	100	DXSL32	KXSL32	SXSL32	S12	2.86
BT40-XSL40-100	●	BT40	40	70	16	27	41	100	DXSL40	KXSL40	SXSL40	S14	3.45
BT50-XSL32-100	●	BT50	32	58	14	24	38	100	DXSL32	KXSL32	SXSL32	S12	5.16
BT50-XSL40-100	●	BT50	40	70	16	27	41	100	DXSL40	KXSL40	SXSL40	S14	6.05
BT50-XSL50-100	●	BT50	50	90	18	30	46	100	DXSL50	KXSL50	SXSL50	S19	

订货示例: BT40-XSL32-100
Order example: BT40-XSL32-100

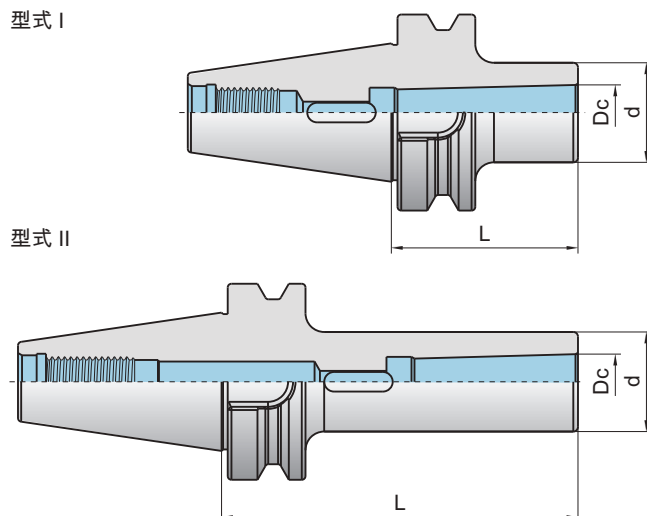
● 常备库存
Unallocated stock

◐ 可备库存
Available stock

○ 订单生产
Order production

B 工具系统 Tool System

有扁尾莫氏圆锥孔刀柄-BT30/BT40/BT50
Morse Taper Shanks with Tang



型号 Type	库存 Stock	锥柄型式 Taper type	莫氏锥度 Morse taper	尺寸(mm) Dimension			安装钻头直径 Drill bit dia.	型式 Model	重量 (kg)
				Dc	d	L			
BT30-M1-45	●	BT30	MT1	12.065	25	45	3~14	I	0.43
BT30-M2-60	●	BT30	MT2	17.78	32	60	14.25~23	I	0.50
BT40-M1-50	●	BT40	MT1	12.065	25	50	3~14	I	1.02
BT40-M1-120	●	BT40	MT1	12.065	25	120	3~14	II	1.29
BT40-M2-50	●	BT40	MT2	17.78	32	50	14.25~23	I	1.01
BT40-M2-120	●	BT40	MT2	17.78	32	120	14.25~23	II	1.41
BT40-M3-70	●	BT40	MT3	23.825	40	70	23.25~31.75	I	1.15
BT40-M3-135	●	BT40	MT3	23.825	40	135	23.25~31.75	II	1.73
BT40-M4-95	●	BT40	MT4	31.267	50	95	32~50.5	I	1.43
BT40-M4-165	●	BT40	MT4	31.267	50	165	32~50.5	II	2.40
BT50-M1-45	●	BT50	MT1	12.065	25	45	3~14	I	3.60
BT50-M1-120	●	BT50	MT1	12.065	25	120	3~14	II	3.83
BT50-M2-60	●	BT50	MT2	17.78	32	60	14.25~23	I	3.63
BT50-M2-135	●	BT50	MT2	17.78	32	135	14.25~23	II	3.82
BT50-M3-65	●	BT50	MT3	23.825	40	65	23.25~31.75	I	3.40
BT50-M3-150	●	BT50	MT3	23.825	40	150	23.25~31.75	II	4.35
BT50-M4-95	●	BT50	MT4	31.267	50	95	32~50.5	I	3.85
BT50-M4-180	●	BT50	MT4	31.267	50	180	32~50.5	II	5.06
BT50-M5-110	●	BT50	MT5	44.399	70	110	51~76	I	4.17

▶ 订货示例:BT30-M1-45
Order example:BT30-M1-45

● 常备库存
Unallocated stock

◐ 可备库存
Available stock

○ 订单生产
Order production

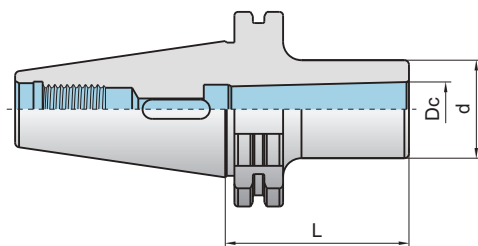
B 工具系统 Tool System

有扁尾莫氏圆锥孔刀柄-JT40/JT50
Morse Taper Shanks with Tang

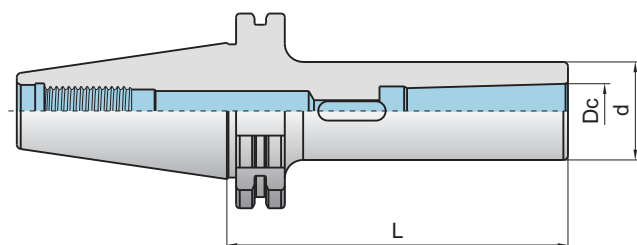
DIN
69871



型式 I



型式 II



型号 Type	库存 Stock	锥柄型式 Taper type	莫氏锥度 Morse taper	尺寸(mm) Dimension			安装钻头直径 Drill bit dia.	型式 Model	重量 (kg)
				Dc	d	L			
JT40-M1-50	●	JT40	MT1	12.065	25	50	3~14	I	0.88
JT40-M1-120	○	JT40	MT1	12.065	25	120	3~14	II	1.13
JT40-M2-50	●	JT40	MT2	17.78	32	50	14.25~23	I	0.89
JT40-M2-120	●	JT40	MT2	17.78	32	120	14.25~23	II	1.29
JT40-M3-70	●	JT40	MT3	23.825	40	70	23.25~31.75	I	1.04
JT40-M3-135	●	JT40	MT3	23.825	40	135	23.25~31.75	II	1.62
JT40-M4-95	○	JT40	MT4	31.267	50	95	32~50.5	I	1.37
JT40-M4-165	●	JT40	MT4	31.267	50	165	32~50.5	II	2.34
JT50-M1-45	●	JT50	MT1	12.065	25	45	3~14	I	2.67
JT50-M1-120	●	JT50	MT1	12.065	25	120	3~14	II	2.94
JT50-M2-60	●	JT50	MT2	17.78	32	60	14.25~23	I	2.73
JT50-M2-135	●	JT50	MT2	17.78	32	135	14.25~23	II	3.23
JT50-M3-65	●	JT50	MT3	23.825	40	65	23.25~31.75	I	2.80
JT50-M3-150	●	JT50	MT3	23.825	40	150	23.25~31.75	II	3.57
JT50-M4-70	●	JT50	MT4	31.267	50	70	32~50.5	I	2.85
JT50-M4-180	●	JT50	MT4	31.267	50	180	32~50.5	II	3.52
JT50-M5-110	●	JT50	MT5	44.399	70	110	51~76	I	3.67

订货示例: JT40-M1-50
Order example: JT40-M1-50

● 常备库存
Unallocated stock

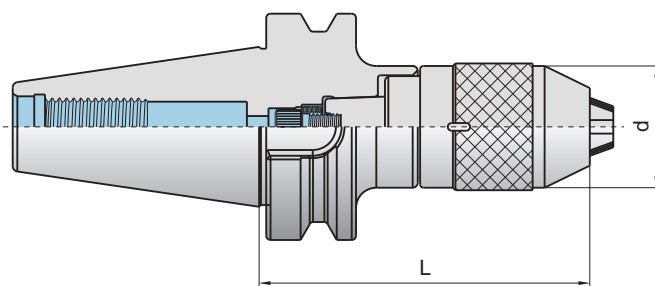
● 可备库存
Available stock

○ 订单生产
Order production

B 工具系统 Tool System

整体式钻夹头刀柄-BT30/BT40/BT50 Integral Drill Chucks

JIS B
6339



型号 Type	库存 Stock	锥柄型式 Taper type	尺寸(mm) Dimension		夹持范围 Holding range	扳手 Wrench	重量 (kg)
			d	L			
BT30-KPU08-75	●	BT30	37.5	75	0.5~8	WKPU08	0.89
BT40-KPU08-80	●	BT40	37.5	80	0.5~8	WKPU08	1.28
BT40-KPU13-95	●	BT40	50.5	95	0.5~13	WKPU13	1.75
BT40-KPU13-150	●	BT40	50.5	150	0.5~13	WKPU13	2.47
BT40-KPU16-100	●	BT40	57	100	3~16	WKPU16	2.02
BT40-KPU16-150	●	BT40	57	150	3~16	WKPU16	2.87
BT50-KPU08-90	●	BT50	37.5	90	0.5~8	WKPU08	3.79
BT50-KPU13-105	●	BT50	50.5	105	0.5~13	WKPU13	4.35
BT50-KPU13-180	●	BT50	50.5	180	0.5~13	WKPU13	5.25
BT50-KPU16-110	●	BT50	57	110	3~16	WKPU16	4.61
BT50-KPU16-180	●	BT50	57	180	3~16	WKPU16	5.73

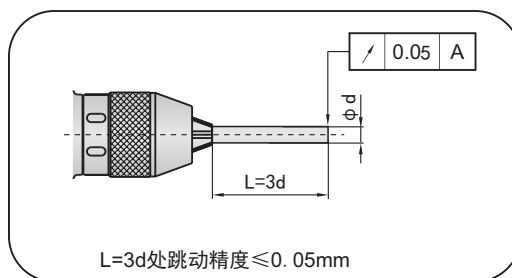
▶ 订货示例:BT30-KPU08-75
Order example:BT30-KPU08-75

▶ 扳手需单独订购
Wrench need to be ordered separately.

● 常备库存
Unallocated stock

◐ 可备库存
Available stock

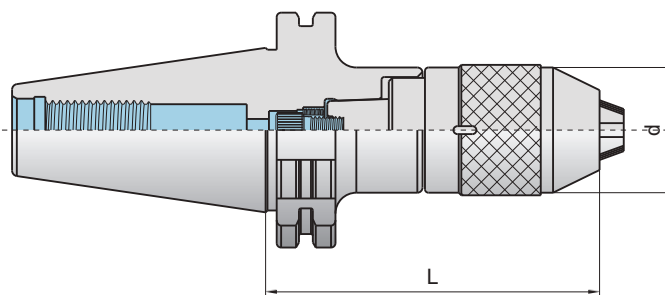
○ 订单生产
Order production



B 工具系统 Tool System

整体式钻夹头刀柄-JT40/JT50 Integral Drill Chucks

DIN
69871



型号 Type	库存 Stock	锥柄型式 Taper type	尺寸(mm) Dimension		夹持范围 Holding range	扳手 Wrench	重量 (kg)
			d	L			
JT40-KPU08-70	●	JT40	37.5	70	0.5~8	WKPU08	1.12
JT40-KPU13-90	●	JT40	50.5	90	0.5~13	WKPU13	1.63
JT40-KPU13-150	●	JT40	50.5	150	0.5~13	WKPU13	2.20
JT40-KPU16-105	●	JT40	57	105	3~16	WKPU16	2.04
JT50-KPU08-70	○	JT50	37.5	70	0.5~8	WKPU08	2.91
JT50-KPU13-85	●	JT50	50.5	85	0.5~13	WKPU13	3.37
JT50-KPU13-180	●	JT50	50.5	180	0.5~13	WKPU13	4.56
JT50-KPU16-90	●	JT50	57	90	3~16	WKPU16	3.62

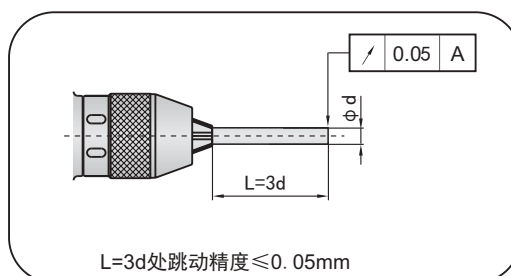
➔ 订货示例: JT40-KPU08-70
Order example: JT40-KPU08-70

➔ 扳手需单独订购
Wrench need to be ordered separately.

● 常备库存
Unallocated stock

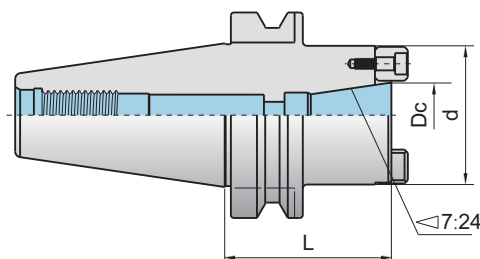
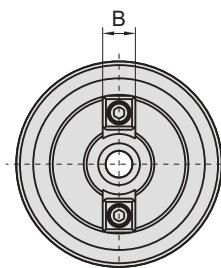
◐ 可备库存
Available stock

○ 订单生产
Order production



B 工具系统 Tool System

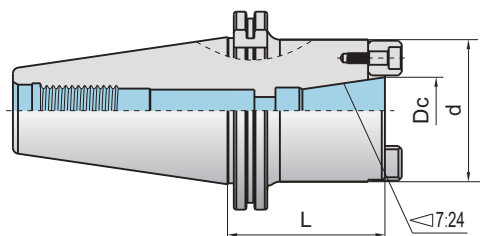
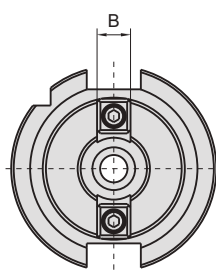
变径柄-BT40/BT50 Adapter Arbors



型号 Type	库存 Stock	锥柄型式 Taper type	尺寸(mm) Dimension				螺钉 Screw	扳手 Wrench	重量 (kg)
			Dc	d	B	L			
BT40-30-75	●	BT40	31.75	φ 67.5	16	75	SCC120350	S10	2.01
BT50-30-75	○	BT50	31.75	φ 67.5	16	75	SCC120350	S10	4.42
BT50-40-75	●	BT50	44.45	φ 89	16	75	SCC160400A	S14	4.81

订货示例: BT40-30-75
Order example: BT40-30-75

变径柄-JT40/50 Adapter Arbors



型号 Type	库存 Stock	锥柄型式 Taper type	尺寸(mm) Dimension				螺钉 Screw	扳手 Wrench	重量 (kg)
			Dc	d	B	L			
JT40-30-75	○	JT40	31.75	φ 67.5	16	75	SCC120350	S10	
JT50-30-75	○	JT50	31.75	φ 67.5	16	75	SCC120350	S10	3.90
JT50-40-75	○	JT50	44.45	φ 89	16	75	SCC160400A	S14	

订货示例: JT40-30-75
Order example: JT40-30-75

● 常备库存
Unallocated stock

◐ 可备库存
Available stock

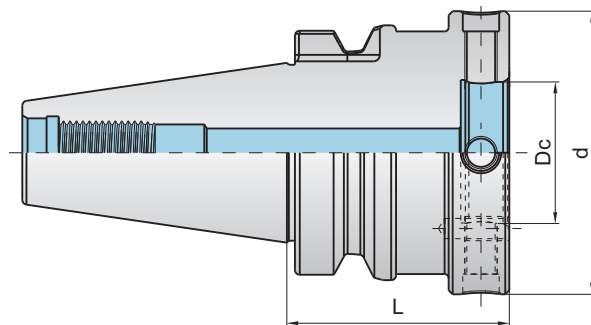
○ 订单生产
Order production

B 工具系统 Tool System



B 工具系统 Tool System

可调刀柄-BT
Adjustable Holders



型号 Type	库存 Stock	锥柄型式 Taper type	尺寸(mm) Dimension			螺钉 Screw	螺钉 Screw	扳手 Wrench	扳手 Wrench	重量 (kg)
			Dc	d	L					
BT30-XME30-40	○	BT30	30	60	40	SFD080120	SCC050160	S4	S4	
BT30-XME35-40	○	BT30	35	70	40	SFD080120	SCC060200	S4	S5	
BT40-XME30-55	●	BT40	30	60	55	SFD080120	SCC050160	S4	S4	
BT40-XME35-55	●	BT40	35	70	55	SFD080120	SCC060200	S4	S5	
BT40-XME40-65	●	BT40	40	80	65	SFD080120	SCC060200	S4	S5	
BT40-XME50-70	○	BT40	50	100	70	SFE100140	SCC080250	S5	S6	
BT50-XME30-70	●	BT50	30	60	70	SFD080120	SCC050160	S4	S4	
BT50-XME35-70	●	BT50	35	70	70	SFD080120	SCC060200	S4	S5	
BT50-XME40-70	●	BT50	40	80	70	SFD080120	SCC060200	S4	S5	
BT50-XME50-70	○	BT50	50	100	70	SFE100140	SCC080250	S5	S6	
BT50-XME60-80	○	BT50	60	117	80	SFE100140	SCC080250	S5	S6	
BT50-XME80-80	○	BT50	80	140	80	SFE100200	SCC100300	S5	S8	

▶ 订货示例:BT30-XME30-40
Order example:BT30-XME30-40

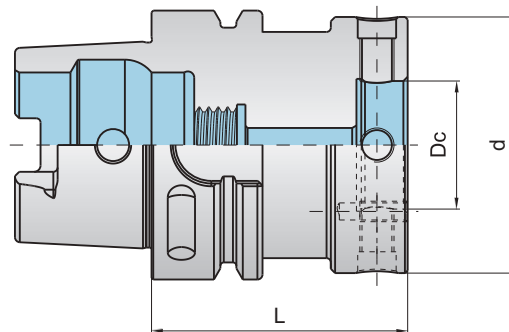
● 常备库存
Unallocated stock





◐ 可备库存
Available stock

○ 订单生产
Order production

B 工具系统 Tool System

可调刀柄-HSK
Adjustable Holders



型号 Type	库存 Stock	锥柄型式 Taper type	尺寸(mm) Dimension			螺钉 Screw 	螺钉 Screw 	扳手 Wrench 	扳手 Wrench 	重量 (kg)
			Dc	d	L					
HSK40A-XME30-60	○	HSK40A	30	60	60	SFD080120	SCC050160	S4	S4	
HSK50A-XME30-60	○	HSK50A	30	60	60	SFD080120	SCC050160	S4	S4	
HSK50A-XME35-60	○	HSK50A	35	70	60	SFD080120	SCC060200	S4	S5	
HSK50A-XME40-60	○	HSK50A	40	80	60	SFD080120	SCC060200	S4	S5	
HSK63A-XME30-60	●	HSK63A	30	60	60	SFD080120	SCC050160	S4	S4	
HSK63A-XME35-60	●	HSK63A	35	70	60	SFD080120	SCC060200	S4	S5	
HSK63A-XME40-60	●	HSK63A	40	80	60	SFD080120	SCC060200	S4	S5	
HSK63A-XME50-65	○	HSK63A	50	100	65	SFE100140	SCC080250	S5	S6	
HSK63A-XME60-65	○	HSK63A	60	117	65	SFE100140	SCC080250	S5	S6	
HSK100A-XME30-55	●	HSK100A	30	60	55	SFD080120	SCC050160	S4	S4	
HSK100A-XME35-55	●	HSK100A	35	70	55	SFD080120	SCC060200	S4	S5	
HSK100A-XME40-55	●	HSK100A	40	80	55	SFD080120	SCC060200	S4	S5	
HSK100A-XME50-65	○	HSK100A	50	100	65	SFE100140	SCC080250	S5	S6	
HSK100A-XME60-65	○	HSK100A	60	117	65	SFE100140	SCC080250	S5	S6	
HSK100A-XME80-75	○	HSK100A	80	140	75	SFE100200	SCC100300	S5	S8	

订货示例: HSK40A-XME30-60
Order example: HSK40A-XME30-60

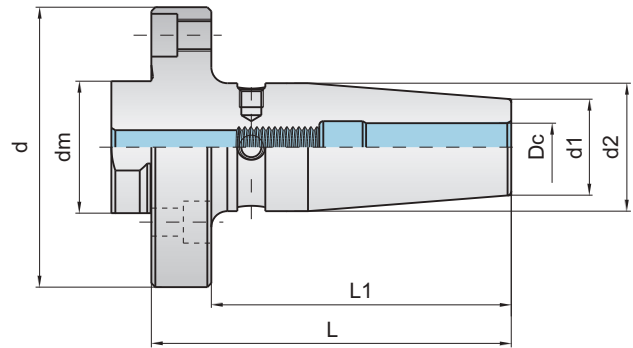
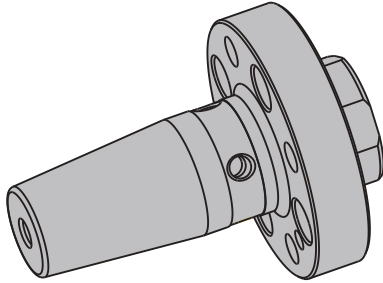
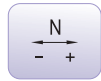
● 常备库存
Unallocated stock

◐ 可备库存
Available stock

○ 订单生产
Order production

B 工具系统 Tool System

热胀刀柄-XME
Shrink Fit Holders



型号 Type	库存 Stock	法兰型式 Taper type	尺寸(mm) Dimension							螺钉 Screw	扳手 Wrench	重量 (kg)
			dm	d	Dc	d1	d2	L1	L			
XME30T-TE06-70	●	XME30T	30	60	6	21	27	57	70	SFD08080	S4	
XME30T-TE08-70	●	XME30T	30	60	8	21	27	57	70	SFD08080	S4	
XME30T-TE10-70	●	XME30T	30	60	10	24	32	57	70	SFD08080	S4	
XME30T-TE12-70	●	XME30T	30	60	12	24	32	57	70	SFD08080	S4	
XME35T-TE16-75	●	XME35T	35	70	16	27	34	60	75	SFD08080	S4	
XME40T-TE20-80	●	XME40T	40	80	20	33	42	63	80	SFD080120	S4	
XME50T-TE25-80	○	XME50T	50	100	25	44	53	59	80	SFE100140	S5	
XME50T-TE32-80	○	XME50T	50	100	32	44	53	59	80	SFE100140	S5	

订货示例: XME30T-TE06-70
Order example: XME30T-TE06-70

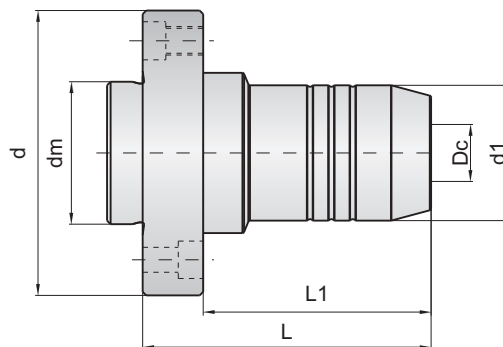
● 常备库存
Unallocated stock

○ 可备库存
Available stock

○ 订单生产
Order production

B 工具系统 Tool System

液压夹头刀柄-XME
Hydraulic Chucks



型号 Type	库存 Stock	法兰型式 Taper type	尺寸(mm) Dimension						螺钉 Screw	扳手 Wrench	扳手 Wrench	重量 (kg)
			dm	d	Dc	d1	L1	L				
XME30T-KHC06-65	●	XME30T	30	60	6	26	52	65	SFD08080	S4	TS5	
XME30T-KHC08-65	●	XME30T	30	60	8	30	52	65	SFD08080	S4	TS5	
XME30T-KHC10-70	●	XME30T	30	60	10	32	57	70	SFD08080	S4	TS5	
XME30T-KHC12-75	●	XME30T	30	60	12	34	62	75	SFD08080	S4	TS5	
XME40T-KHC12-77.5	●	XME40T	40	80	12	34	60.5	77.5	SFD080120	S4	TS5	
XME40T-KHC16-82.5	●	XME40T	40	80	16	38	65.5	82.5	SFD080120	S4	TS5	
XME40T-KHC20-82.5	●	XME40T	40	80	20	42	65.5	82.5	SFD080120	S4	TS5	
XME50T-KHC25-100	○	XME50T	50	100	25	57	79	100	SFE100140	S5	TS5	
XME60T-KHC32-103	○	XME60T	60	117	32	64	82	103	SFE100140	S5	TS5	

➔ 订货示例:XME30T-KHC06-65
Order example:XME30T-KHC06-65

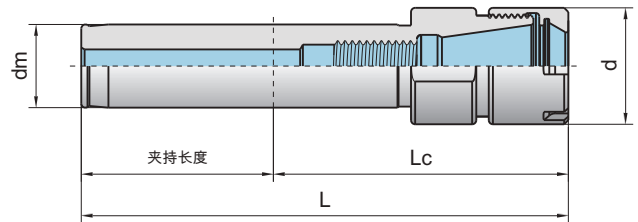
● 常备库存
Unallocated stock

◐ 可备库存
Available stock

○ 订单生产
Order production

B 工具系统 Tool System

卡簧接杆 ER Chuck Extensions



型号 Type	库存 Stock	尺寸(mm) Dimension				螺母 Nut	扳手 Wrench	卡簧 ERcollet	螺钉 Screw	重量 (kg)
		dm	d	Lc	L					
A16-ER11M-100	●	16	16	52	100	LN11M	WER11M	ER11	SGC060150	
A16-ER11M-150	●	16	16	102	150	LN11M	WER11M	ER11	SGC060150	
A16-ER11M-200	●	16	16	152	200	LN11M	WER11M	ER11	SGC060150	
A20-ER16M-100	●	20	22	50	100	LN16M	WER16M	ER16	SGC100150	
A20-ER16M-150	●	20	22	100	150	LN16M	WER16M	ER16	SGC100150	
A20-ER16M-200	●	20	22	150	200	LN16M	WER16M	ER16	SGC100150	
A20-ER16M-250	●	20	22	200	250	LN16M	WER16M	ER16	SGC100150	
A20-ER20M-100	●	20	28	50	100	LN20M	WER20M	ER20	SGC120200	
A20-ER20M-150	●	20	28	100	150	LN20M	WER20M	ER20	SGC120200	
A20-ER20M-200	●	20	28	150	200	LN20M	WER20M	ER20	SGC120200	
A20-ER20M-250	●	20	28	200	250	LN20M	WER20M	ER20	SGC120200	
A25-ER20M-100	●	25	28	44	100	LN20M	WER20M	ER20	SGC120200	
A25-ER20M-150	●	25	28	94	150	LN20M	WER20M	ER20	SGC120200	
A25-ER20M-200	○	25	28	144	200	LN20M	WER20M	ER20	SGC120200	
A25-ER20M-250	●	25	28	194	250	LN20M	WER20M	ER20	SGC120200	
A25-ER20M-300	●	25	28	244	300	LN20M	WER20M	ER20	SGC120200	

订货示例: A16-ER11M-100
Order example: A16-ER11M-100

扳手、卡簧、螺钉需单独订购。
Wrench, collet, and screw need to be ordered separately.

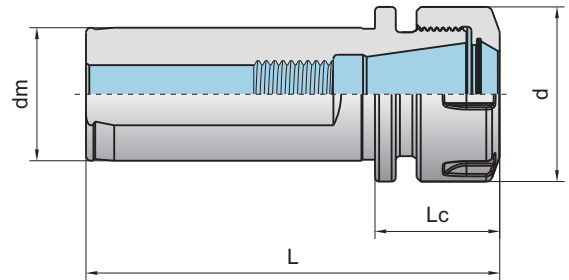
● 常备库存
Unallocated stock



○ 可备库存
Available stock

○ 订单生产
Order production

B 工具系统 Tool System

卡簧接杆 ER Chuck Extensions



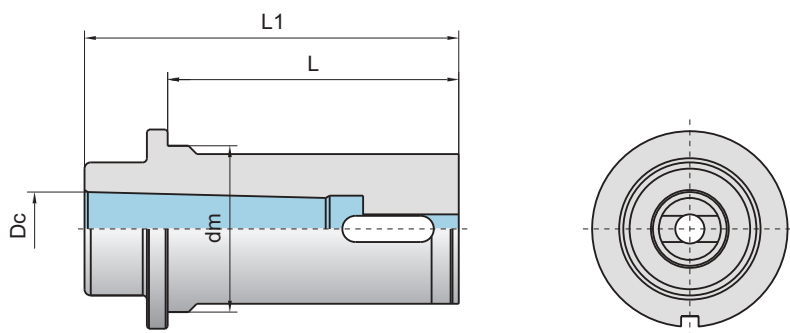
型号 Type	库存 Stock	尺寸(mm) Dimension				螺母 Nut 	扳手 Wrench 	卡簧 ERcollet 	螺钉 Screw 	重量 (kg)
		dm	d	Lc	L					
A32-ER16-100	○	32	28	30	100	LN16S	WER16	ER16	SGC100150	
A32-ER20-105	●	32	34	35	105	LN20S	WER20	ER20	SGC120200	
A32-ER25-105	●	32	42	35	105	LN25	WER25	ER25	SGC160200	
A40-ER20-115	○	40	34	35	115	LN20S	WER20	ER20	SGC120200	
A40-ER25-115	●	40	42	35	115	LN25	WER25	ER25	SGC160200	
A40-ER32-120	●	40	50	40	120	LN32	WER32	ER32	SGD220250	
A50-ER25-125	○	50	42	35	125	LN25	WER25	ER25	SGC160200	
A50-ER32-130	○	50	50	40	130	LN32	WER32	ER32	SGD220250	
A50-ER40-130	○	50	63	40	130	LN40	WER40	ER40	SGD280250	

➤ 订货示例: A32-ER16-100
 Order example: A32-ER16-100
 ➤ 扳手、卡簧、螺钉需单独订购。
 Wrench, collet, and screw need to be ordered separately.

● 常备库存 Unallocated stock ○ 可备库存 Available stock ○ 订单生产 Order production

B 工具系统 Tool System

有扁尾莫氏圆锥孔变径套
Morse Taper Shanks with Tang



型号 Type	库存 Stock	莫氏锥度 Morse taper	尺寸(mm) Dimension				安装钻头直径 Drill bit dia.	重量 (kg)
			dm	Dc	L	L1		
RS32-M2	●	MT2	32	17.78	70	90	14.25-23	
RS40-M2	●	MT2	40	17.78	70	90	14.25-23	
RS40-M3	●	MT3	40	23.825	70	110	23.25-31.75	
RS50-M2	●	MT2	50	17.78	120	125	14.25-23	
RS50-M3	●	MT3	50	23.825	120	125	23.25-31.75	
RS50-M4	●	MT4	50	31.267	120	135	32-50.5	
RS63-M2	●	MT2	63	17.78	125	130	14.25-23	
RS63-M3	●	MT3	63	23.825	125	130	23.25-31.75	
RS63-M4	●	MT4	63	31.267	125	135	32-50.5	
RS63-M5	●	MT5	63	44.399	125	170	51-76	

订货示例: RS32-M2
Order example: RS32-M2

● 常备库存
Unallocated stock

⦿ 可备库存
Available stock

○ 订单生产
Order production

B 工具系统 Tool System

夹紧刀柄 Clamping handle

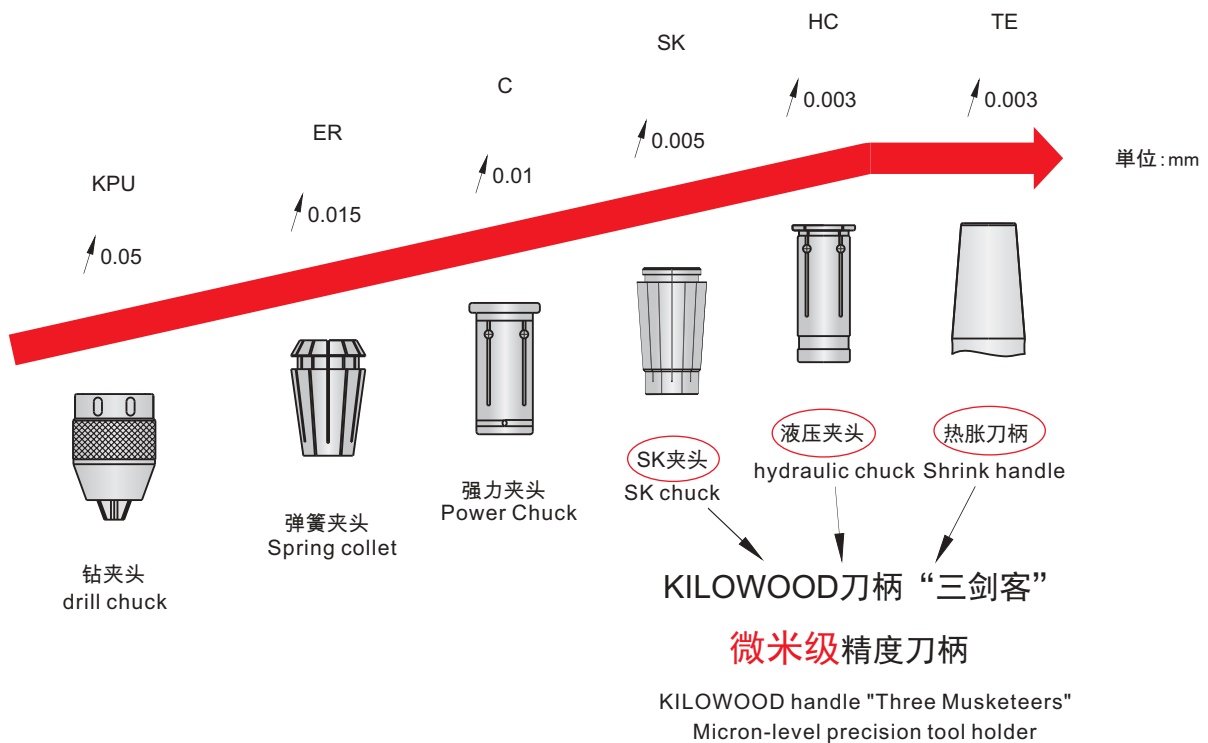
刀具夹持刀柄选择 Tool Holder Selection

- 刀柄是机床和刀具的最后连接环节，对整个加工系统有着非常重要的作用。
- 选择刀柄时，不仅要考虑其夹持精度、刚性，而且还需要考虑操作是否方便，以及整体经济性。

The tool holder is the final link between the machine tool and the tool, and plays a very important role in the entire processing system. When choosing a tool holder, not only should its clamping accuracy and rigidity be considered, but also the convenience of operation and the overall economy should be considered.

刀柄类型 Handle Type	跳动 fluctuation	刚性 rigidity	操作简易度 Difficulty of operation	成本 cost	使用效果 Effect
热胀刀柄 Shrink handle	0.003	优秀 excellent	较易，精度一致性好 Relatively easy, good accuracy consistency	初期投入大，综合成本低 Large initial investment, low comprehensive cost	优秀 excellent
液压夹头刀柄 Hydraulic Chuck Holder	0.003	良好 good	容易，精度一致性好 Easy and consistent accuracy	高 high	优秀 excellent
GSK刀柄 GSK handle	0.005	中等 medium	一般，使用精度与操作人员有关 Ordinary, the accuracy of use is related to the operator	一般 ordinary	较好 better
强力夹头刀柄 Power Chuck Holder	0.01	优秀 excellent	一般，精度一致性好 Ordinary and consistent accuracy	较高 higher	良好 good
弹簧夹头刀柄 Collet holder	0.015	中等 medium	一般，使用精度与操作人员有关 Ordinary and its own accuracy is not high	低 low	一般 ordinary
钻夹头刀柄 Drill Chuck Holder	0.05	一般 ordinary	一般，自身精度不高 Ordinary and its own accuracy is not high	低 low	一般 ordinary

可达到的最高精度 Highest Accuracy Achievable



B 工具系统 Tool System

使用安全注意事项 Attention

使用工具 Tool Using

硬质合金刀具
Carbide Tools
(Φ3~Φ5:h5, Φ6~Φ32:h6)



高速钢刀具
HSS Tools
(Φ6~Φ32:h6)



使用公差范围外的刀具是刀柄损坏和发生滑落事故的原因之一。
另外，刀具柄部的细小铁屑等附着物会影响刀柄正常装夹，造成刀具无法正常拔出（请待冷却后再次加热，切勿强行插拔）。



注意

为了更安全有效地使用刀柄、刀具，在使用前请务必阅读配套的产品使用说明书，确保正确使用。请认真阅读注意和警告事项，若产品出现故障，在我公司判断可以修理后，由专业技术人员修理。

In order to use handles and tools more safely and effectively, please be sure to read the corresponding product instruction manual before use to ensure correct manipulation. Please read the Cautions and Warnings carefully. If the product breaks down and our company judges that it can be repaired, professional technicians will repair the tools.

Using tools that are out of tolerance is one of the reasons of tool handles damage and slippage. In addition, small iron filings and other attachments on the tool handle will affect the normal clamping, resulting in the tool not being able to be pulled out normally (please reheat after cooling down, do not insert or pull out forcibly).

热装前 Before shrink fitting

保养:

在热装前，请务必清洁刀具柄部和刀柄的夹持部分。
请使用方便快捷的“清洁刷”来清除油污，铁屑粉尘及积碳等异物。



maintainance:

Before shrink fitting, be sure to clean the tool shank and the holding part of the tool handle.
Please use the convenient "cleaning brush" to remove foreign matter such as oil, iron dust and carbon deposits.

佩戴耐热手套:

在热装刀具时，会产生300℃的高温，有烫伤危险。

请务必佩戴耐热手套。

Wear heat-resistant gloves:

When shrink fitting, a high temperature of 300℃ will be generated, which may cause burns.

Be sure to wear heat-resistant gloves.



详见F007页

刀具插入长度:

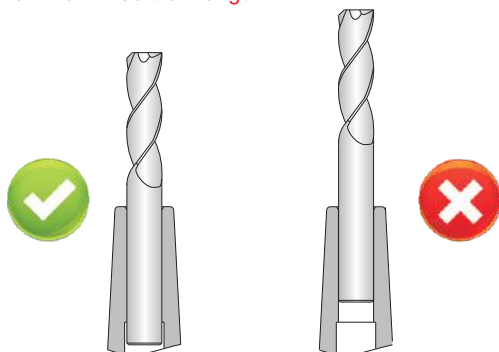
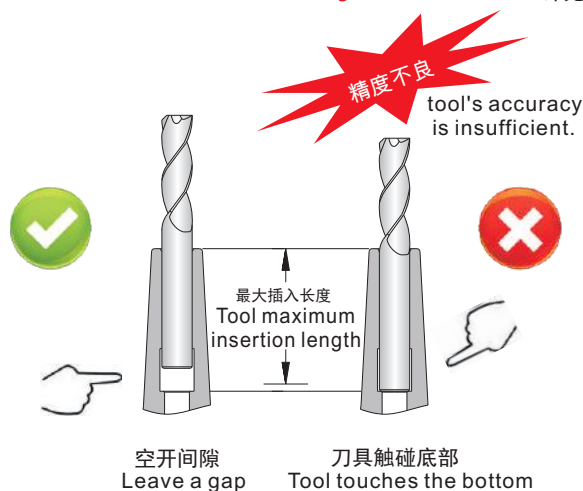
插入刀具时，刀具柄部贴到底的状态，会引起刀具精度不良。

请务必确保刀具插入长度在最大插入长度内。

Tool maximum insertion length:

When the tool is inserted, the tool shank is stuck to the bottom, which will cause the tool's accuracy to be insufficient.

Always make sure that the tool insertion length is within the maximum insertion length.



最短夹持长度:

插入刀具时，插入长度短会引起刀柄损坏，降低刀柄寿命。

请务必将刀具插入尽可能更深的位置。

Minimum clamping length:

When inserting a tool, a short insertion length can cause damage to the tool holder and reduce tool holder life.

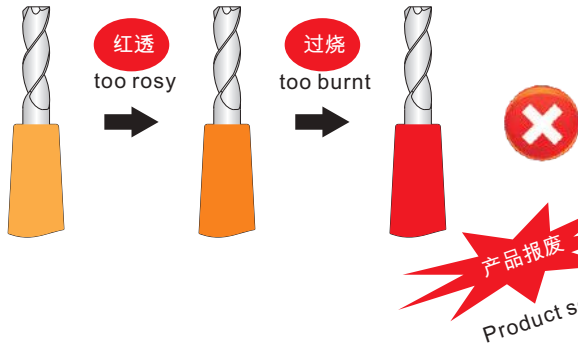
Be sure to insert the tools as far as possible.

B 工具系统 Tool System

使用安全注意事项 Attention

热卸时

When hot unloading

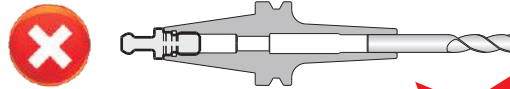
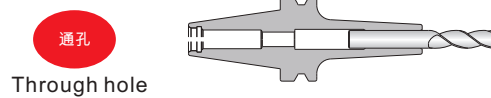
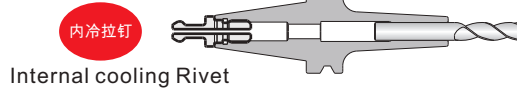


卸刀时如果一次加热没有成功卸下刀具，请将刀柄完全冷却后再加热，禁止直接反复加热。

When unloading the tool, if the tool is not successfully unloaded after one heating, please cool the knife handle completely before heating, and direct repeated heating is prohibited.

推荐使用内冷拉钉，否则请将拉钉取下后再进行加热。

It is recommended to use internal cooling Rivet, otherwise please remove the Rivet before heating.



密闭空间空气产生阻力
Air creates resistance in a confined space

水冷时

When water cooling

刀具热装之后直接水冷，会产生大量的水蒸气，有烫伤危险。

请在热装装置上冷却至少1分钟（COOL状态）以后再进行冷却。

冷却后请完全去除水分；残留水分会使刀柄生锈，从而引起刀柄损坏，降低刀柄使用寿命。

Direct water cooling after the tool is hot loaded will generate a large amount of water vapor, which may cause burns

Please cool down on the shrink-fit device for at least 1 minute (COOL state) before cooling down.

Remove moisture completely after cooling; residual moisture will rust the handle, causing damage to the handle and reducing the life of the handle.

改制加工:

请不要随意改变刀柄长度（刀具夹持长度）或外形尺寸。

刀具夹持长度变短后，会引起夹持力降低和精度受损。

请务必确保壁厚在2.5mm以上。

Restructuring processing:

Please do not change the shank length (tool holding length) or external dimensions at will.

When the tool clamping length is shortened, the clamping force will be reduced and the accuracy will be impaired.

Please make sure that the wall thickness is above 2.5mm



B 工具系统 Tool System

使用安全注意事项 Attention

生锈或氧化膜的对应方法

How to deal with rust or oxide film

为何生锈？ Why rust?

- 空气中的水分附着于刀柄上，金属会与水分发生反应生锈。
- 金属表面的锈迹，随着时间发展会逐渐的腐蚀到内部。

冷却液通过刀柄内部时，刀柄内部深处残留的冷却液易引起生锈。

- Moisture in the air adheres to the handle, and the metal reacts with the moisture to rust.
- The rust on the metal surface will gradually corrode to the inside as time goes on.

When the coolant passes through the inside of the handle, the remaining coolant deep inside the handle is likely to cause rust

有生锈或氧化膜产生时会怎样？

What happens when there is rust or oxide film?

- 如果在这种情况下夹持刀具，可能会发生刀具无法插入、或者腐蚀部分在热装时因应力作用导致产品开裂。
- 夹持力降低，会导致刀具脱落，夹持精度下降等情况产生。

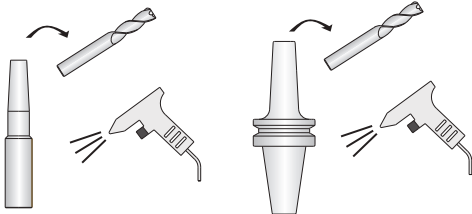
如何才能不生锈或者延迟生锈的发生？

How can we not rust or delay the occurrence of rust?

存在“水分”、“空气（氧）”时，铁就会生锈。通过去除并使“水分”或“空气（氧）”不直接接触到“金属”后，可以防止生锈或延迟生锈的发生。

去除水分 remove moisture

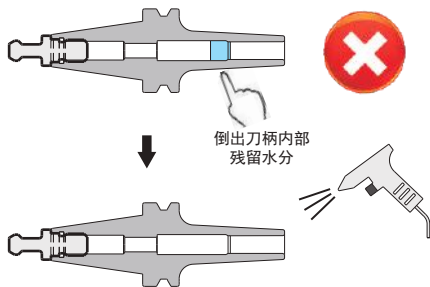
- 使用后请用气体吹干水分。特别是刀柄内孔要充分吹风；
- 请用热装式刀柄加热装置加热，取下刀具。



- 若装配的是无内冷孔的拉钉，热拆刀具时请遵循以下操作。热装刀具进行水冷后，请先将刀柄内部的残留水分倒出，再用气体吹干水分。

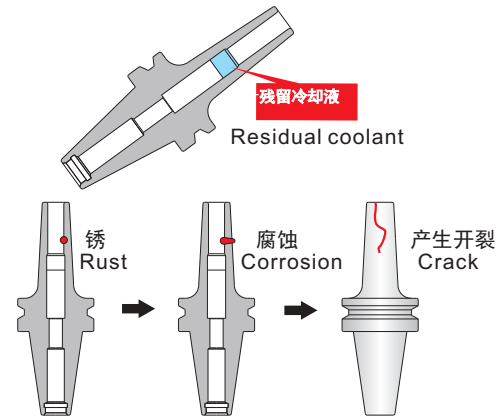
If the Rivet without internal cooling hole is assembled, please follow the following operations when hot dismantling the tool.

After the hot-loading tool is water-cooled, please pour out the residual moisture inside the handle first, and then use air to dry the moisture.



- 热装刀具未装拉钉或装配内冷拉钉时，热装刀具进行水冷后，可直接用气体吹干水分。

When the hot-loading tool is not equipped with a rivet or is equipped with an internal cooling rivet, after the hot-loading tool is water-cooled, the water can be directly blown dry with air.

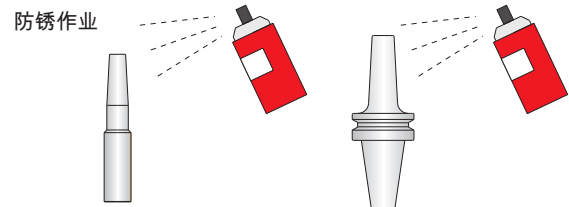


If the tool is clamped in this condition, it may happen that the tool cannot be inserted, or the corroded part may crack due to stress during shrink fitting. If the clamping force is reduced, the tool will fall off and the clamping accuracy will decrease.

Iron rusts in the presence of "moisture" and "air (oxygen)". By removing and keeping "moisture" or "air (oxygen)" out of direct contact with "metal", rust can be prevented or its onset delayed.

Please blow dry with air after use. In particular, the inner hole of the handle should be fully blown;

Please use the shrink-fit tool holder heating device to heat and remove the tool



- 氧化膜、油污等，造成工具难以插入时，请在热装前使用金属刷去除以上杂质。

Oxide film, oil stains, etc. make it difficult to insert the tool, please use a metal brush to remove the above impurities before shrink fitting.

- 清洗后喷防锈油或浸在防锈油中。 Spray anti-rust oil or soak in anti-rust oil after cleaning

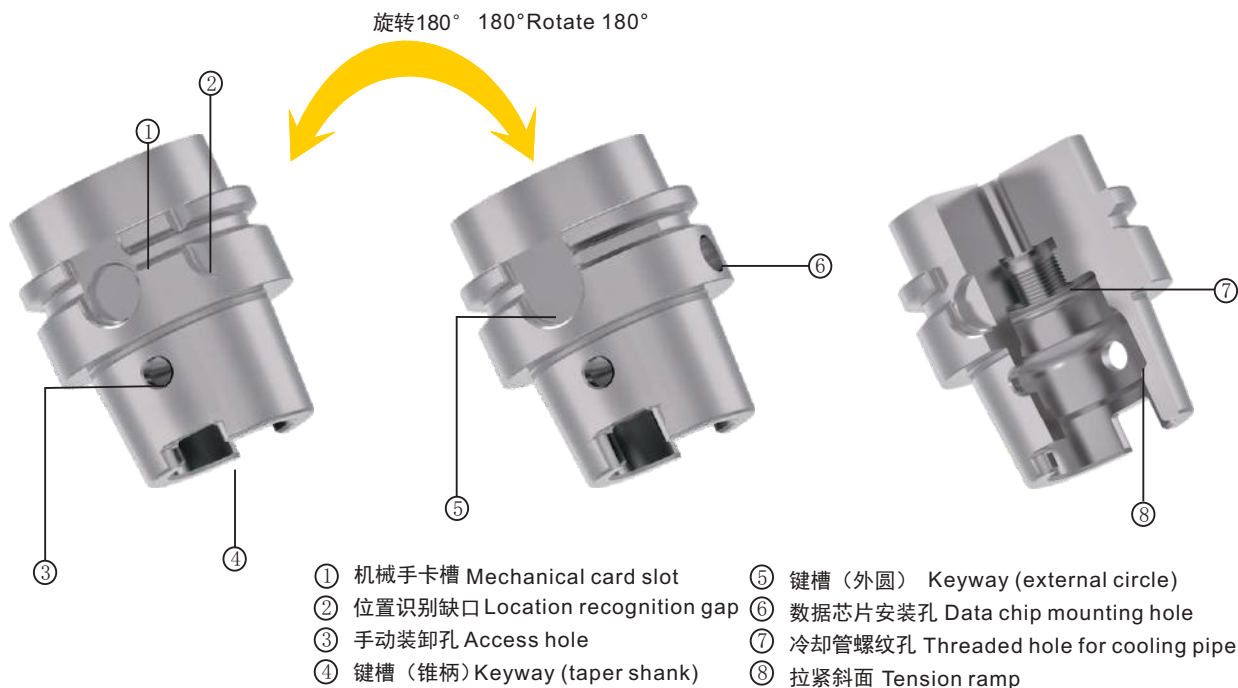
- 热装之前，要充分去除附着在刀柄的防锈油，再进行热装。 Before hot-fitting, fully remove the anti-rust oil attached to the handle, and then hot-fit.

- 请使用毛刷和溶剂清洗去除油污。 Please use a brush and solvent cleaning to remove oil stains.

B 工具系统 Tool System

技术资料
Technical Data

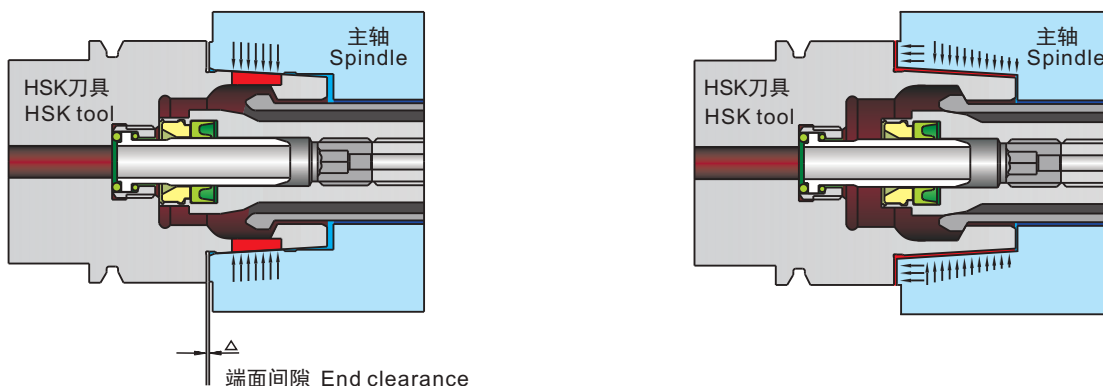
HSK锥柄结构 HSK taper shank structure



HSK刀柄与主轴的连接结构及工作原理 Connection structure and working principle of HSK tool holder and spindle

图一 拉杆未拉紧前 Figure 1 Before the tie rod is not tightened

图二 拉杆拉紧后 Figure 2 After the tie rod is tightened



HSK刀柄的空心锥柄与主轴孔完全接触时, HSK刀柄端面与主轴端面有约0.1mm间隙(如图一)。

在夹紧机构作用下, 拉杆向右移动, 夹爪胀开, 夹爪外锥面顶在空心锥柄30°锥面上, 拉动 HSK刀柄向 右移动, 空心锥柄产生变形。刀柄端面与主轴端面靠紧, 实现了刀柄与主轴锥面和端面两面同时定位和夹紧(如上图二)。

When the hollow taper shank of the HSK tool holder is in full contact with the spindle hole, there is a gap of about 0.1mm between the end surface of the HSK tool holder and the end surface of the spindle (as shown in Figure 1).

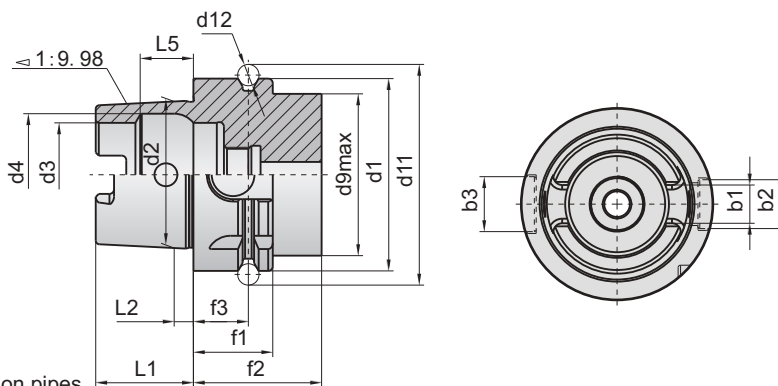
Under the action of the clamping mechanism, the pull rod moves to the right, the jaws expand, and the outer tapered surface of the jaws presses against the 30° tapered surface of the hollow taper shank. When the HSK shank is pulled to move to the right, the hollow taper shank is deformed. The end face of the tool handle is close to the end face of the spindle, which realizes the simultaneous positioning and clamping of the tool handle, the cone surface and the end face of the spindle (as shown in Figure 2 above).

B 工具系统 Tool System

HSK短锥型式-A型 HSK short cone type-A type HSK-A

加工中心的标准设计
带有机手卡槽，适合自动刀具交换
通过冷却润滑管，支持中心冷却润滑供应
锥柄末端有驱动键槽
数据芯片孔 (DIN 69873)为可选配置
包含手动装卸孔，也可以用于C型柄

Standard Design of Machining Centers
With manipulator slot for automatic tool change
Supports central cooling lubrication supply via cooling lubrication pipes
Drive keyway at end of tapered shank
Data chip hole (DIN 69873) is an optional configuration
Contains holes for manual loading and unloading, can also be used for C-handles

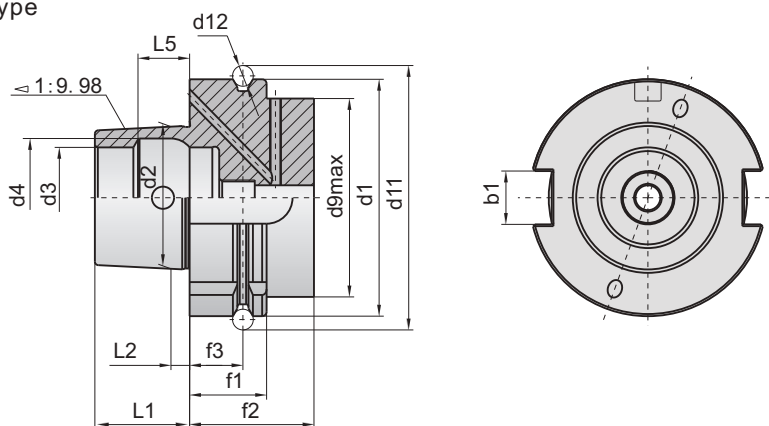


锥柄型式 Taper type	尺寸(mm) Dimension															
	b1	b2	b3	d1	d2	d3	d4	d9	d11	d12	f1	f2	f3	L1	L2	L5
HSK-25A	6.05	6	7	25	19.006	14	15	20	28.5	3	10	20	4.5	13	2.5	7.21
HSK-32A	7.05	7	9	32	24.007	17	19	26	37	4	20	35	16	16	3.2	8.92
HSK-40A	8.05	9	11	40	30.007	21	23	34	45	4	20	35	16	20	4	11.42
HSK-50A	10.54	12	14	50	38.009	26	29	42	59.3	7	26	42	18	25	5	14.13
HSK-63A	12.54	16	18	63	48.010	34	37	53	72.3	7	26	42	18	32	6.3	18.13
HSK-80A	16.04	18	20	80	60.012	42	50	68	88.8	7	26	42	18	40	8	22.85
HSK-100A	20.02	20	22	100	75.013	53	58	88	109.75	7	29	45	20	50	10	28.56

HSK短锥型式-B型 HSK short cone type-B type HSK-B

适合加工中心
通过加大法兰接触面可增大径向压力
带有机手卡槽，适合自动刀具交换
通过法兰端面提供冷却润滑供应
具有数据芯片孔 (DIN 69873)

Suitable for machining centers
Radial pressure can be increased by increasing the flange contact surface
With manipulator slot
Suitable for automatic tool change
Cooling and lubrication supply via flange face
With data chip hole (DIN 69873 with manipulator card slot)



锥柄型式 Taper type	尺寸(mm) Dimension													
	b1	d1	d2	d3	d4	d9	d11	d12	f1	f2	f3	L1	L2	L5
HSK-40B	9	40	24.007	17	19	34	45	4	20	35	16	16	3.2	8.92
HSK-50B	12	50	30.007	21	23	42	59.3	7	26	42	18	20	4	11.42
HSK-63B	16	63	38.009	26	29	53	72.3	7	26	42	18	25	5	14.13
HSK-80B	18	80	48.010	34	37	68	88.8	7	26	42	18	32	6.3	18.13
HSK-100B	20	100	60.012	42	46	88	109.25	7	29	45	20	40	8	22.85
HSK-125B	25	125	75.013	53	58	111	134.75	7	29	45	20	50	10	28.56

B 工具系统 Tool System

HSK短锥型式-C型

HSK-C

HSK short taper type-C type

适合专机和模块化刀具系统

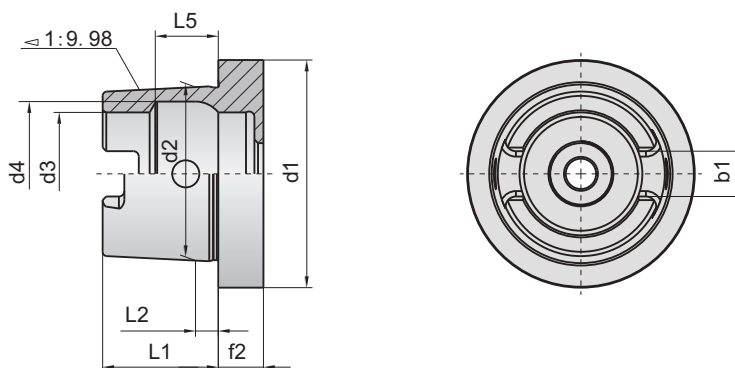
支持中心冷却润滑供应

锥柄末端有驱动键槽

Suitable for special machine and modular tooling system

Support center cooling lubrication supply

Drive keyway at end of tapered shank



锥柄型式 Taper type	尺寸(mm) Dimension								
	b1	d1	d2	d3	d4	f2	L1	L2	L5
HSK-25C	6.05	25	19.006	14	15	8	13	2.5	7.21
HSK-32C	7.05	32	24.007	17	19	10	16	3.2	8.92
HSK-40C	8.05	40	30.007	21	23	10	20	4	11.42
HSK-50C	10.54	50	38.009	26	29	12.5	25	5	14.13
HSK-63C	12.54	63	48.010	34	37	12.5	32	6.3	18.13
HSK-80C	16.04	80	60.012	42	50	16	40	8	22.85
HSK-100C	20.02	100	75.013	53	58	16	50	10	28.56

HSK短锥型式-D型

HSK-D

HSK short taper type-D type

适合专机

通过加大法兰接触面可增大径向压力

通过法兰端面提供冷却润滑供应

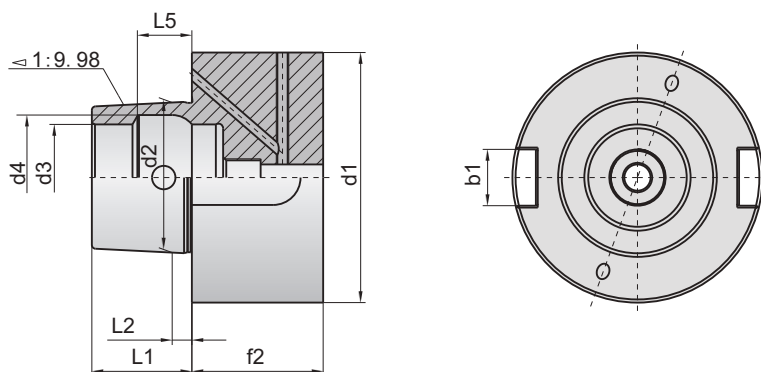
无驱动键槽，旋转对称

Suitable for special machine

Radial pressure can be increased by increasing the flange contact surface

Cooling and lubrication supply via flange face

Without drive keyway, rotationally symmetrical



锥柄型式 Taper type	尺寸(mm) Dimension								
	b1	d1	d2	d3	d4	f2	L1	L2	L5
HSK-40D	10	40	24.007	17	19	35	16	3.2	8.92
HSK-50D	12	50	30.007	21	23	35	20	4	11.42
HSK-63D	16	63	38.009	26	29	42	25	5	14.13
HSK-80D	18	80	48.010	34	37	42	32	6.3	18.13
HSK-100D	20	100	60.012	42	50	42	40	8	22.85

B 工具系统 Tool System

HSK短锥型式-E型

HSK-E

HSK short taper type-E type

适合高速机床

带有机械手卡槽，适合手动刀具交换

通过冷却润滑管，支持中心冷却润滑供应

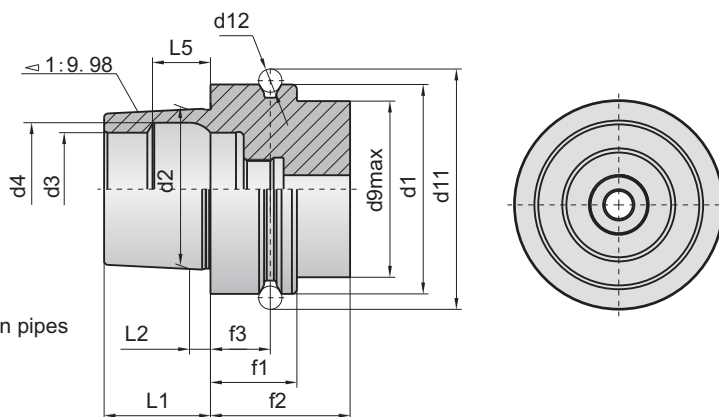
没有驱动键槽，旋转对称

Suitable for high-speed machine

With manipulator slot for manual tool change

Supports central cooling lubrication supply via cooling lubrication pipes

Without drive keyway, rotationally symmetrical



锥柄型式 Taper type	尺寸(mm) Dimension												
	d1	d2	d3	d4	d9	d11	d12	f1	f2	f3	L1	L2	L5
HSK-32E	32	24.007	17	19	26	37	4	20	35	16	16	3.2	8.92
HSK-40E	40	30.007	21	23	34	45	4	20	35	16	20	4	11.42
HSK-50E	50	38.009	26	29	42	59.3	7	26	42	18	25	5	14.13
HSK-63E	63	48.010	34	37	53	72.3	7	26	42	18	32	6.3	18.13

HSK短锥型式-F型

HSK-F

HSK short taper type-F type

适合高速机床，多用于木工领域

通过加大法兰接触面可增大径向压力

带有机械手卡槽，适合自动刀具交换

通过冷却润滑管，支持中心冷却润滑供应

没有驱动键槽，旋转对称

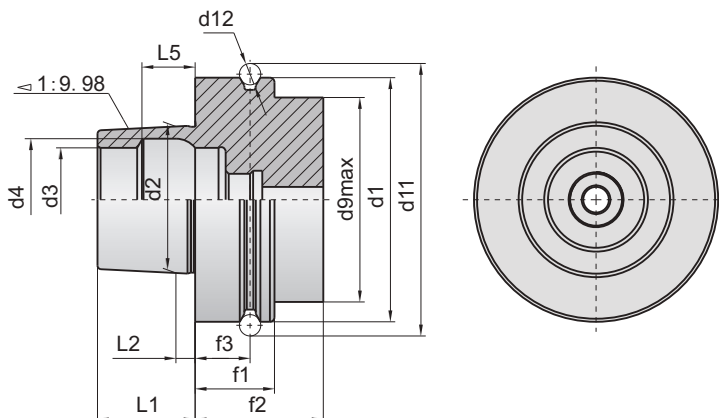
Suitable for high-speed machine, mostly used in woodworking fields

Radial pressure can be increased by increasing the flange contact surface

With manipulator slot for automatic tool change

Supports central cooling lubrication supply via cooling lubrication pipes

Without drive keyway, rotationally symmetrical



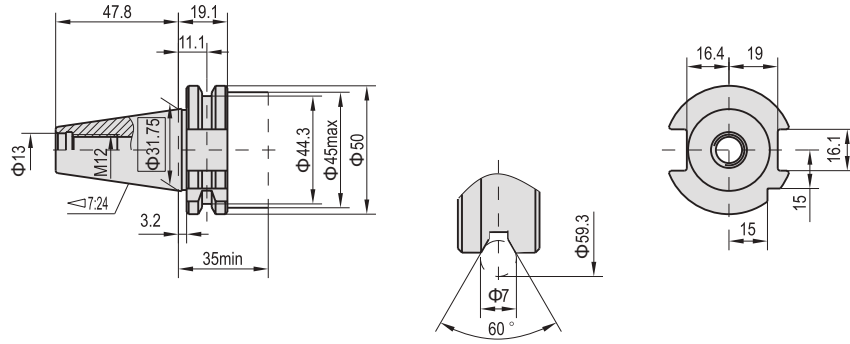
锥柄型式 Taper type	尺寸(mm) Dimension												
	d1	d2	d3	d4	d9	d11	d12	f1	f2	f3	L1	L2	L5
HSK-50F	50	30.007	21	23	42	45	4	20	35	16	20	4	11.42
HSK-63F	63	38.009	26	29	53	59.3	7	26	42	18	25	5	14.13
HSK-80F	80	48.010	34	37	67	72.3	7	26	42	18	32	6.3	18.13

B 工具系统 Tool System

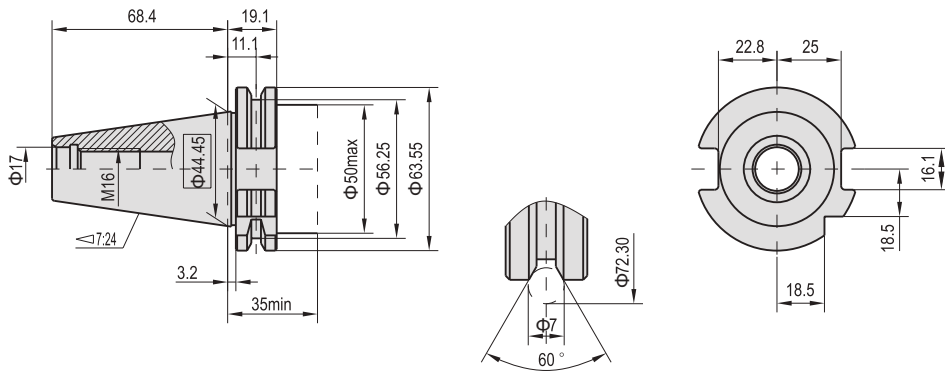
锥柄标准

锥柄型式 (DIN69871-A)

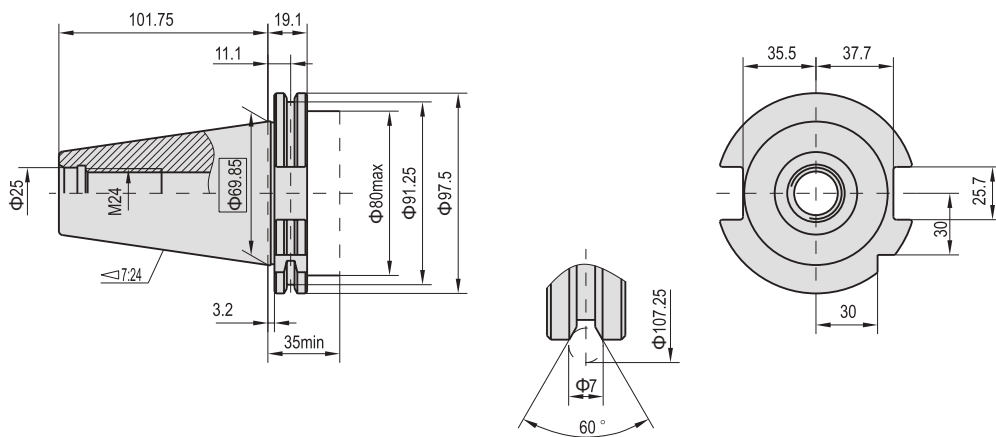
JT30



JT40



JT50

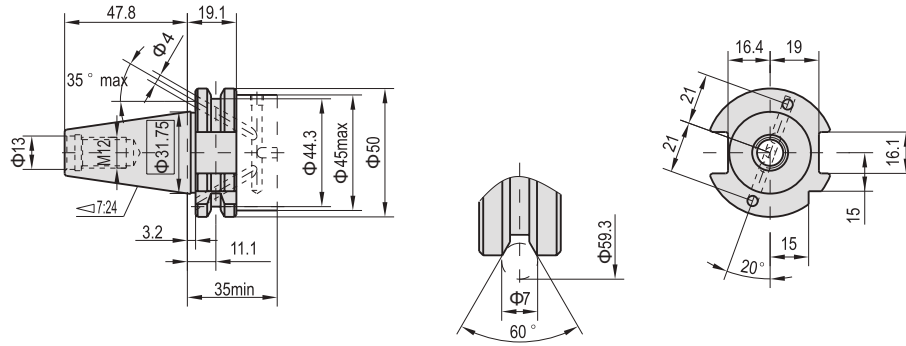


B 工具系统 Tool System

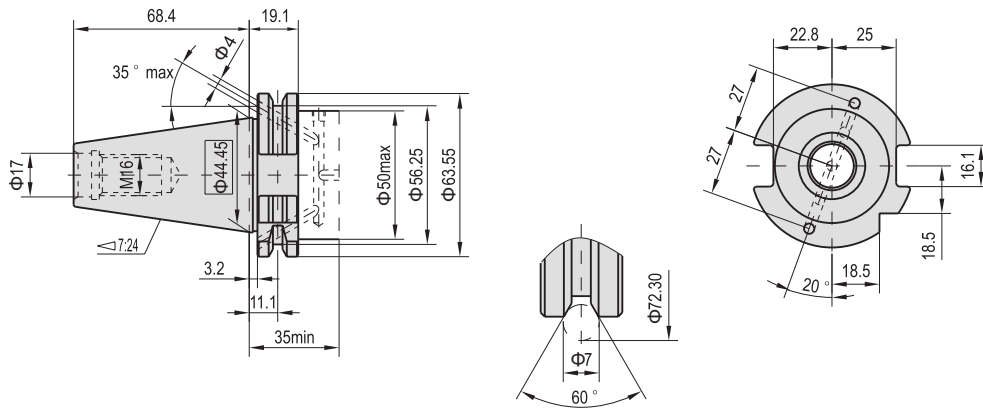
锥柄标准

锥柄型式 (DIN69871-B)

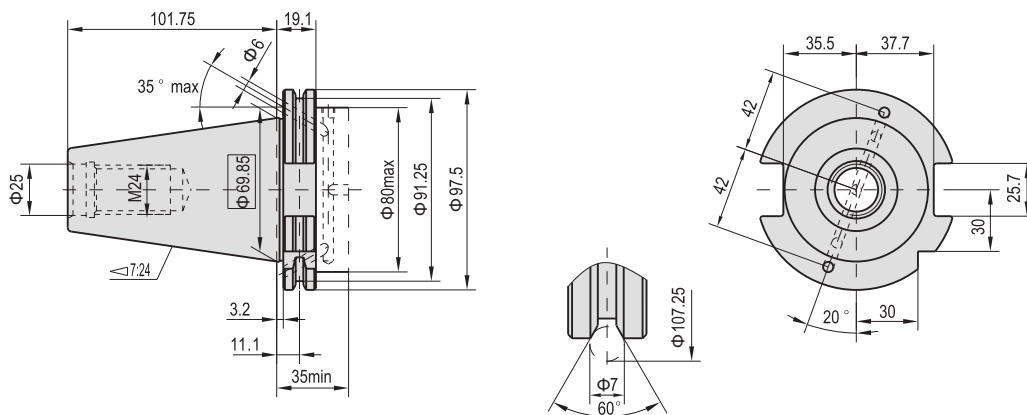
JT30B



JT40B



JT50B

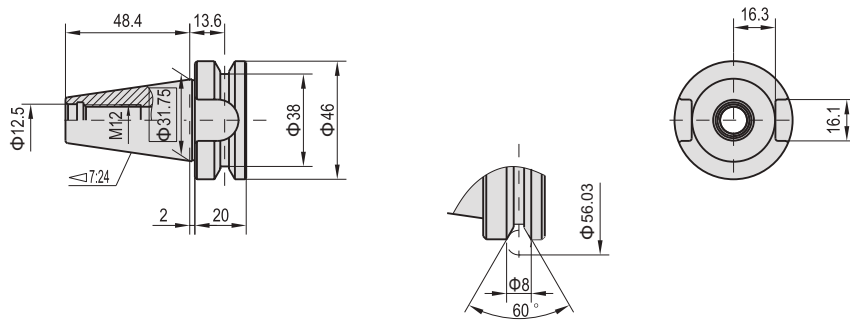


B 工具系统 Tool System

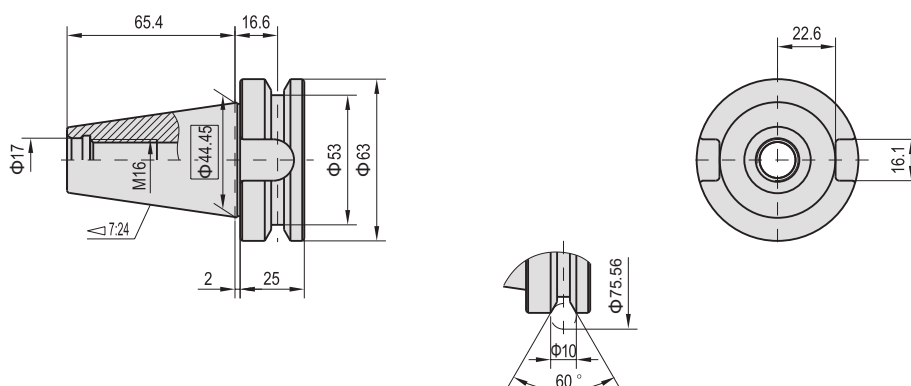
锥柄标准

锥柄型式 (MAS403BT/JIS B 6339)

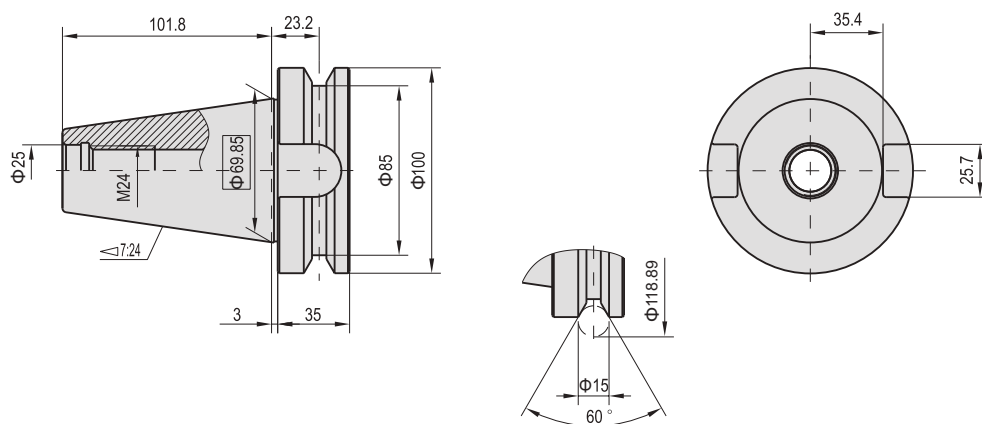
BT30



BT40



BT50

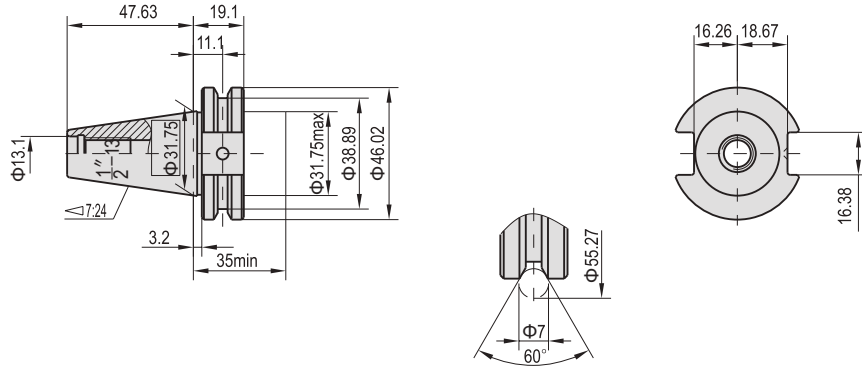


B 工具系统 Tool System

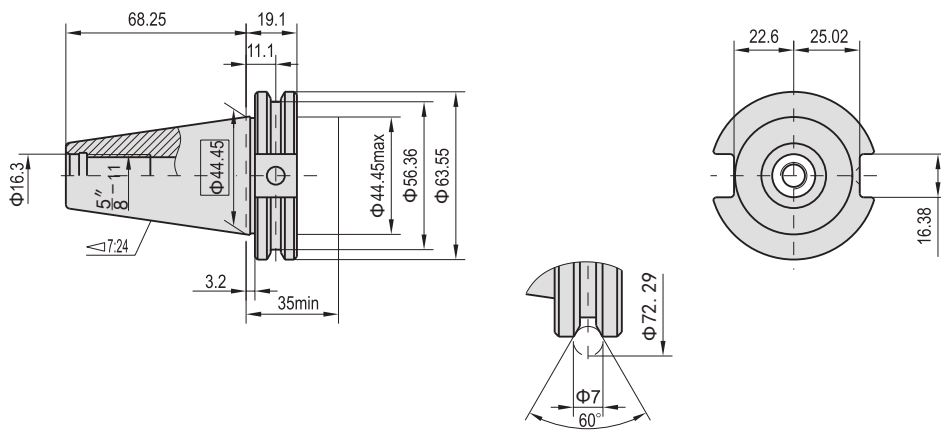
锥柄标准

锥柄型式 (ANSI B5.50CATA)

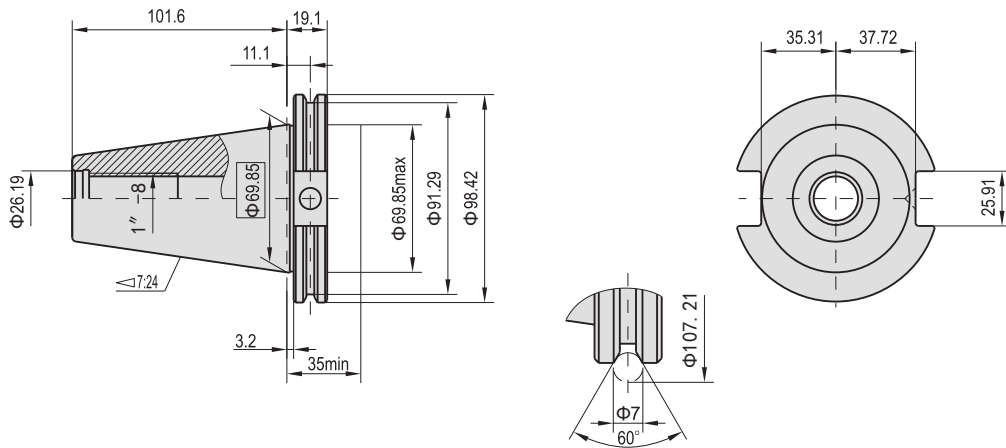
CAT30



CAT40



CAT50



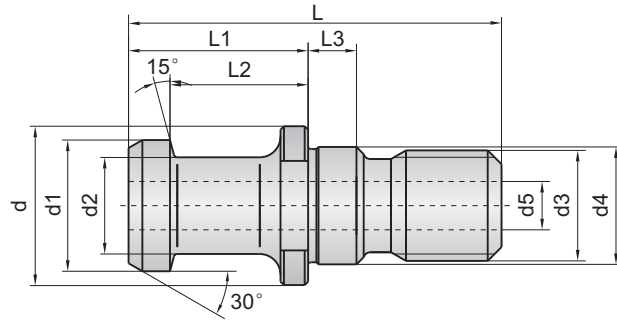
C

Pull Stud	拉钉 C2
Collet	卡簧 C8
Screw	螺钉 C14
Other Accessories	其它附件 C17



C 附件 Appendix

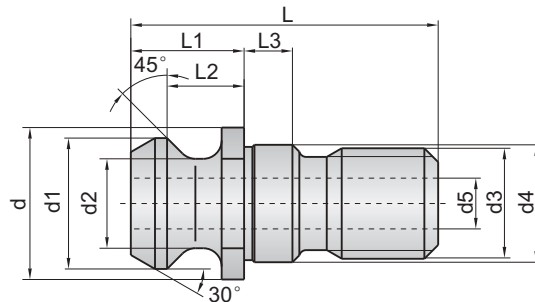
拉钉ISO7388 A型



型号 Type	库存 Stock	尺寸(mm) Dimension										重量 (kg)
		L	L1	L2	L3	d	d1	d2	d3	d4	d5	
LDA30	●	44	24	19	5	17	12	8	M12	13	-	0.05
LDA40	●	54	26	20	7	23	19	14	M16	17	-	0.07
LDA50	●	74	34	25	10	36	28	21	M24	25	-	0.22
LDA40C	●	54	26	20	7	23	19	14	M16	17	7	0.07
LDA50C	●	74	34	25	10	36	28	21	M24	25	11.5	0.22

→ 订货示例:LDA30

拉钉ISO7388 B型



型号 Type	库存 Stock	尺寸(mm) Dimension										重量 (kg)
		L	L1	L2	L3	d	d1	d2	d3	d4	d5	
LDB30	●	27	11.8	8.1	5	17	13.3	9.3	M12	13	-	0.05
LDB40	●	44.5	16.4	11.15	7	22.5	18.95	12.95	M16	17	-	0.07
LDB50	●	66.5	25.55	17.95	10	36	29.1	19.6	M24	25	-	0.22
LDB40C	●	44.5	16.4	11.15	7	22.5	18.95	12.95	M16	17	7	0.07
LDB50C	●	66.5	25.55	17.95	10	36	29.1	19.6	M24	25	11.5	0.22

→ 订货示例:LDB30

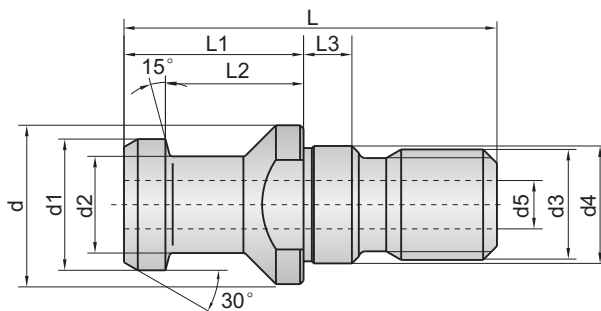
● 常备库存
Unallocated stock

○ 可备库存
Available stock

○ 订单生产
Order production

C 附件 Appendix

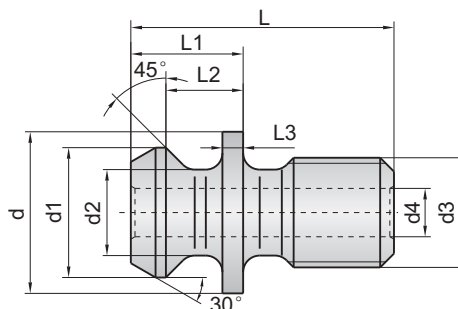
拉钉DIN69872



型号 Type	库存 Stock	尺寸(mm) Dimension										重量 (kg)
		L	L1	L2	L3	d	d1	d2	d3	d4	d5	
D30	●	44	24	19	5	17	13	9	M12	13	-	0.05
D40	●	54	26	20	7	23	19	14	M16	17	-	0.07
D50	●	74	34	25	10	36	28	21	M24	25	-	0.20
D40C	●	54	26	20	7	23	19	14	M16	17	7	0.07
D50C	●	74	34	25	10	36	28	21	M24	25	11.5	0.20

▶ 订货示例: D30

拉钉ANSI B5.50



型号 Type	库存 Stock	尺寸(mm) Dimension										重量 (kg)
		L	L1	L2	L3	d	d1	d2	d3	d4		
A30	●	27.94	11.684	8.128	2.54	16.51	13.208	9.779	1/2-13 UNC	-	0.02	
A40	●	38.1	16.256	11.176	3.048	23.876	18.796	12.446	5/8-11 UNC	-	0.05	
A50	●	58.42	25.4	17.78	5.08	36.576	28.956	20.828	1/8 UNC	-	0.20	
A30C	●	27.94	11.684	8.128	2.54	16.51	13.208	9.779	1/2-13 UNC	4.75	0.02	
A40C	●	38.1	16.256	11.176	3.048	23.876	18.796	12.446	5/8-11 UNC	7.14	0.05	
A50C	●	58.42	25.4	17.78	5.08	36.576	28.956	20.828	1/8 UNC	11.89	0.20	

▶ 订货示例: A30

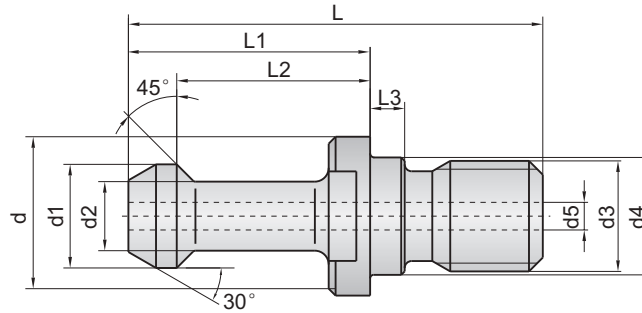
● 常备库存
Unallocated stock

○ 可备库存
Available stock

○ 订单生产
Order production

C 附件 Appendix

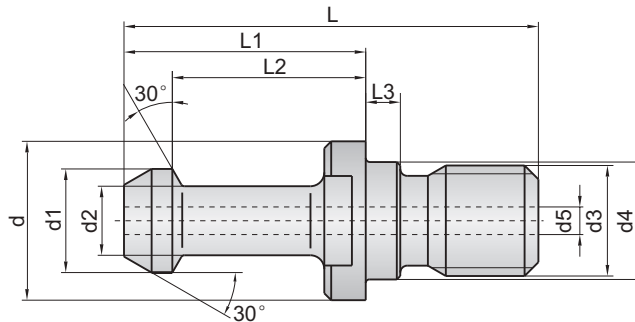
拉钉MAS403-1975



型号 Type	库存 Stock	尺寸(mm) Dimension										重量 (kg)
		L	L1	L2	L3	d	d1	d2	d3	d4	d5	
P30T-I	●	43	23	18	4.5	16.5	11	7	M12	12.5	-	0.03
P40T-I	●	60	35	28	5	23	15	10	M16	17	-	0.06
P50T-I	●	85	45	35	8	38	23	17	M24	25	-	0.26
P40T-IC	●	60	35	28	5	23	15	10	M16	17	4	0.06
P50T-IC	●	85	45	35	8	38	23	17	M24	25	6	0.26

➔ 订货示例: P30T-I

拉钉MAS403-1975



型号 Type	库存 Stock	尺寸(mm) Dimension										重量 (kg)
		L	L1	L2	L3	d	d1	d2	d3	d4	d5	
P30T-II	●	43	23	18	4.5	16.5	11	7	M12	12.5	-	0.03
P40T-II	●	60	35	28	5	23	15	10	M16	17	-	0.06
P50T-II	●	85	45	35	8	38	23	17	M24	25	-	0.26
P40T-IIC	●	60	35	28	5	23	15	10	M16	17	4	0.06
P50T-IIC	●	85	45	35	8	38	23	17	M24	25	6	0.26

➔ 订货示例: P30T-II

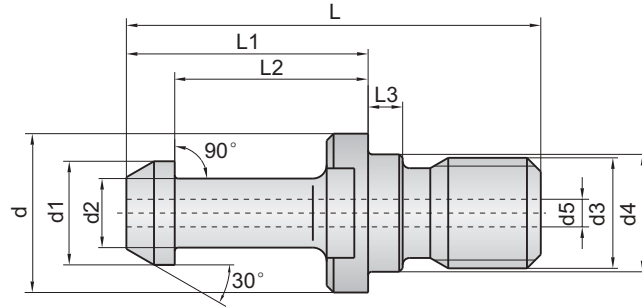
● 常备库存
Unallocated stock

○ 可备库存
Available stock

○ 订单生产
Order production

C 附件 Appendix

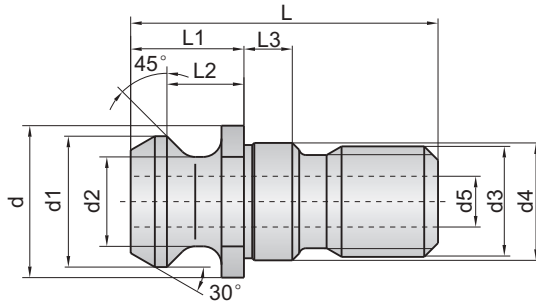
拉钉MAS430-1975



型号 Type	库存 Stock	尺寸(mm) Dimension										重量 (kg)
		L	L1	L2	L3	d	d1	d2	d3	d4	d5	
P30	●	43	23	18	4.5	16.5	11	7	M12	12.5	-	0.03
P40	●	60	35	28	5	23	15	10	M16	17	-	0.06
P50	●	85	45	35	8	38	23	17	M24	25	-	0.26
P40C	●	60	35	28	5	23	15	10	M16	17	4	0.06
P50C	●	85	45	35	8	38	23	17	M24	25	6	0.26

➡ 订货示例: P30

MAZAK拉钉



型号 Type	库存 Stock	尺寸 Dimension(mm)										重量 (kg)
		L	L1	L2	L3	d	d1	d2	d3	d4	d5	
MAZAK-BT40	●	44.1	19.1	14.02	7	22	18.80	12.45	M16	17	-	
MAZAK-BT50	●	65.2	25.2	17.7	10	37	28.96	20.83	M24	25	-	
MAZAK-BT40C	●	44.1	19.1	14.02	7	22	18.80	12.45	M16	17	7	
MAZAK-BT50C	●	65.2	25.2	17.7	10	37	28.96	20.83	M24	25	10	

➡ 订货示例: MAZAK-BT40

● 常备库存

Unallocated stock

● 可备库存

Available stock

○ 订单生产

Order production

C 附件 Appendix

ST转接拉钉 ST transfer stud

DIN2080标准刀柄替代方案：DIN2080 standard tool holder alternative:

降低刀柄库存!!! Decrease the stock quantity of holder

只需要相应的拉钉和键即可实现 Only need the corresponding pull stud and key to realize

BT刀柄（JIS B6339标准）转化为ST接口刀柄 BT holder (JIS B6339 standard) convert to ST connecting holder
(DIN2080标准) (DIN2080 standard)

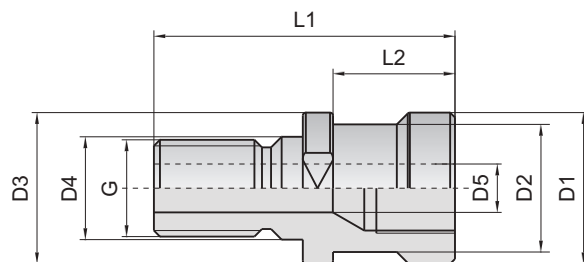


JT刀柄（DIN69871标准）转化为ST接口刀柄 JT holder (DIN69871 standard) convert to ST connecting holder
(DIN2080标准) (DIN2080 standard)



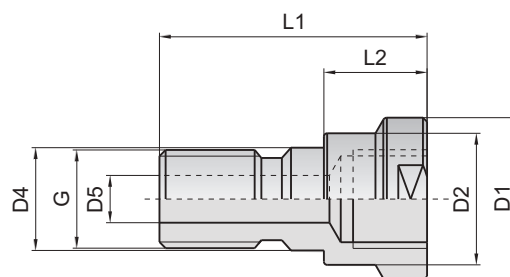
C 附件 Appendix

ST转接拉钉



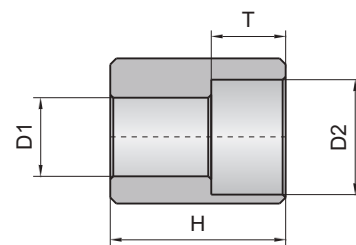
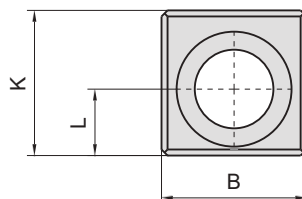
型号 Type	库存 Stock	尺寸(mm) Dimension								适用于 Apply to	重量 (kg)
		G	D1	D2	D3	D4/g6	D5	L1	L2		
LD-ST40	●	M16	25	21.1	25	17	7.5	53	25	ST40	

➔ 订货示例:LD-ST40



型号 Type	库存 Stock	尺寸(mm) Dimension								适用于 Apply to	重量 (kg)
		G	D1	D2	D3	D4/g6	D5	L1	L2		
LD-ST50	●	M24	39.6	32	25	-	11.5	65.1	25.1	ST50	

➔ 订货示例:LD-ST50



型号 Type	库存 Stock	尺寸(mm) Dimension							螺栓 Screw	适用于 Apply to	重量 (kg)
		K	B	D1	D2	T	H	L			
KST40	●	16.5	15.9	6.4	10.4	6.2	24.5	7	M6x25	ST40	
KST50	●	24	25.4	13	19	12.3	29	11	M12x30	ST50	

➔ 订货示例:KST40

● 常备库存
Unallocated stock

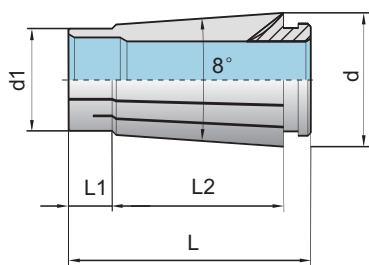
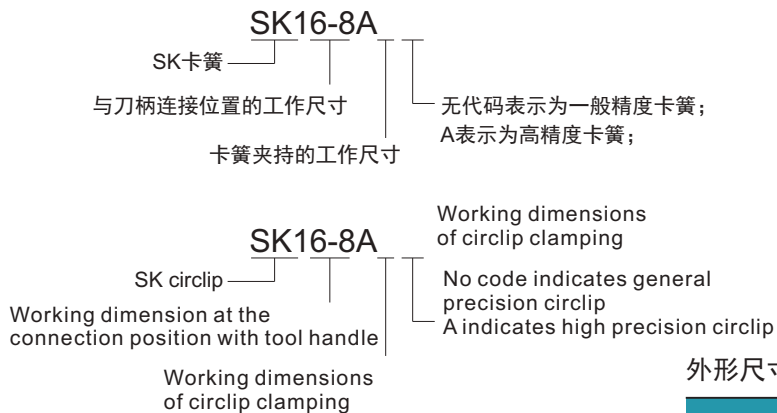
○ 可备库存
Available stock

○ 订单生产
Order production

C 附件 Appendix

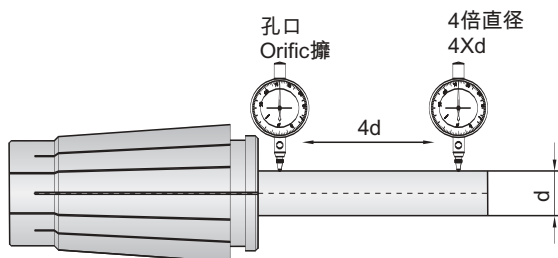
SK卡簧 SK Collet

SK卡簧编号规则:



外形尺寸

型号 Type	尺寸(mm) Dimension				
	d	d1	L	L1	L2
SK06	10.4	7.5	25	3.8	17.4
SK10	15.5	12	30.5	5	21.3
SK16	24.6	18.8	45	8	32
SK25	35.6	28.9	57	8.5	43



夹持精度

夹持直径 Holding dia.	径向跳动 Run out		
	一般精度 General precision	高精度A High precision	精密级P Ultrahigh precision
1.0~1.4	0.01	-	-
1.5~2.9	0.01	-	-
3.0~5.9	0.01	0.005	-
6.0~9.9	0.01	0.005	-
10.0~17.9	0.01	0.005	-

名称 Name	型号 Type	夹持直径 Holding dia.
SK06	SK06-2	1.8~2.0
	-3	2.8~3.0
	-4	3.5~4.0
	-5	4.5~5.0
	-6	5.5~6.0
SK10	SK10-2	1.75~2.0
	-3	2.75~3.0
	-4	3.5~4.0
	-5	4.5~5.0
	-6	5.5~6.0
	-8	7.5~8.0
	-9	8.5~9.0
-10	9.5~10.0	

名称 Name	型号 Type	夹持直径 Holding dia.
SK16	SK16-3	2.75~3.0
	-4	3.5~4.0
	-5	4.5~5.0
	-6	5.5~6.0
	-8	7.5~8.0
	-9	8.5~9.0
	-10	9.5~10.0
	-12	11.5~12.0
	-14	13.5~14.0
	-15	14.5~15.0
	-16	15.5~16.0

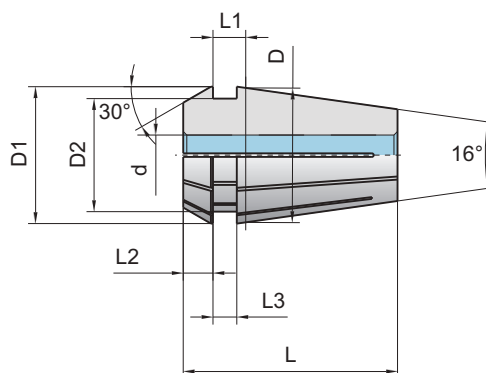
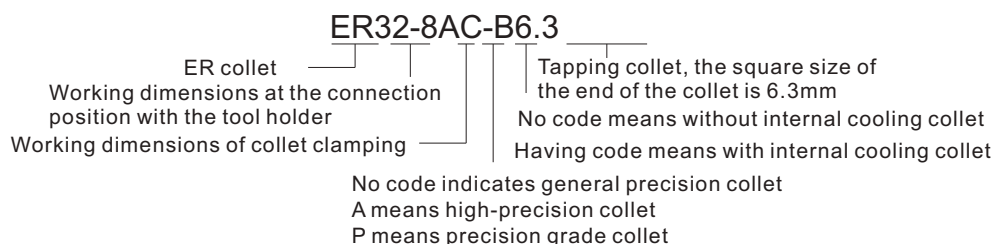
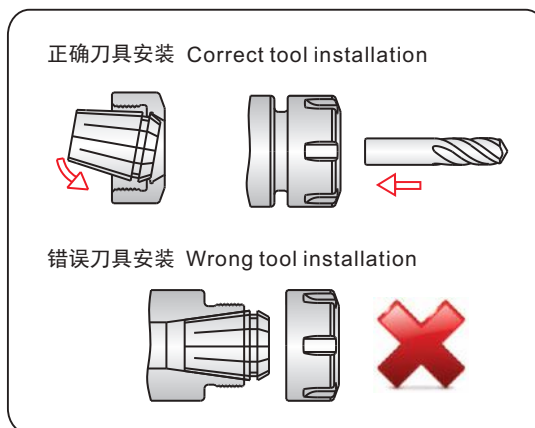
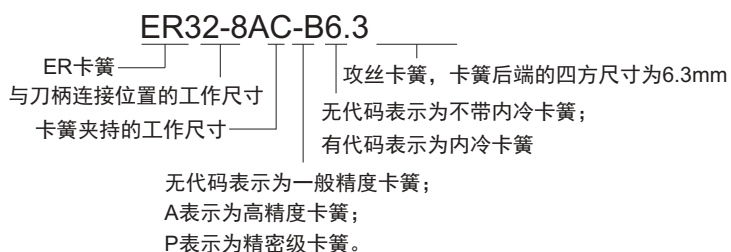
名称 Name	型号 Type	夹持直径 Holding dia.
SK25	SK25-6	5.5~6.0
	-8	7.5~8.0
	-10	9.5~10.0
	-12	11.5~12.0
	-16	15.5~16.0
	-18	17.5~18.0
	-20	19.5~20.0
	-21	20.5~21.0
	-22	21.5~22.0
	-24	23.5~24.0
	-25	24.5~25.0

➔ 订货示例: SK16-4; SK16-10A

C 附件 Appendix

ER卡簧 ER Collet

ER卡簧编号规则: ER collet model No. explanation



外形尺寸

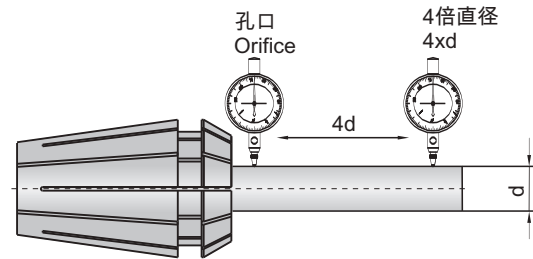
型号 Type	d	D	D1	D2	L	L1	L2	L3	弹性收缩量 Collapsible capacity
ER11	2.0-7.0	11	11.5	9.5	18	3.8	2.5	2	0.5
ER16	2.0-2.5	16	17	13.8	27.5	6.26	4	2.7	0.5
	>2.5-10.0	16	17	13.8	27.5	6.26	4	2.7	1
ER20	2.0-2.5	20	21	17.4	31.5	6.36	4.8	2.8	0.5
	>2.5-13.0	20	21	17.4	31.5	6.36	4.8	2.8	1
ER25	2.0-2.5	25	26	22	34	6.66	5	3.1	0.5
	>2.5-16.0	25	26	22	34	6.66	5	3.1	1
ER32	2.0-2.5	32	33	29.2	40	7.16	5.5	3.6	0.5
	>2.5-20.0	32	33	29.2	40	7.16	5.5	3.6	1
ER40	3.0-26.0	40	41	36.2	46	7.66	7	4.1	1

C 附件 Appendix

ER卡簧 (无内冷) ER Collet Without Cooling

夹持精度

夹持直径 <i>Holding dia.</i>	径向跳动 Run out		
	一般精度 General precision	高精度A High precision	精密级P Ultrahigh precision
2.0~2.9	0.025	-	-
3.0~5.9	0.015	0.01	0.005
6.0~9.9	0.015	0.01	0.005
10.0~17.9	0.02	0.01	0.005
18.0~26.9	0.02	0.01	0.005
27.0~34.0	0.02	0.01	0.005



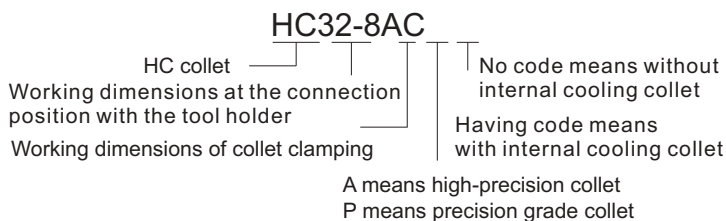
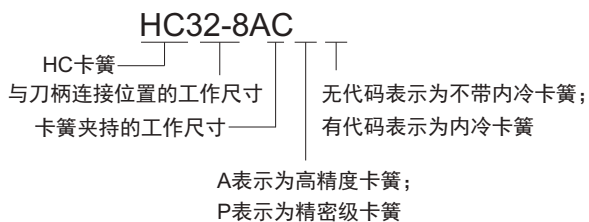
ER11-*		ER16-*		ER20-*		ER25-*		ER32-*		ER40-*	
型号 <i>Type</i>	夹持范围 <i>Range</i>	型号 <i>Type</i>	夹持范围 <i>Range</i>	型号 <i>Type</i>	夹持范围 <i>Range</i>	型号 <i>Type</i>	夹持范围 <i>Range</i>	型号 <i>Type</i>	夹持范围 <i>Range</i>	型号 <i>Type</i>	夹持范围 <i>Range</i>
ER11-2	2-1.5	ER16-2	2-1.5	ER20-2	2-1.5	ER25-3	3-2	ER32-4	4-3	ER40-4	4-3
ER11-3	3-2.5	ER16-3	3-2	ER20-3	3-2	ER25-4	4-3	ER32-5	5-4	ER40-5	5-4
ER11-4	4-3.5	ER16-4	4-3	ER20-4	4-3	ER25-5	5-4	ER32-6	6-5	ER40-6	6-5
ER11-5	5-4.5	ER16-5	5-4	ER20-5	5-4	ER25-6	6-5	ER32-8	8-7	ER40-8	8-7
ER11-6	6-5.5	ER16-6	6-5	ER20-6	6-5	ER25-8	8-7	ER32-9	9-8	ER40-9	9-8
ER11-7	7-6.5	ER16-8	8-7	ER20-8	8-7	ER25-9	9-8	ER32-10	10-9	ER40-10	10-9
		ER16-9	9-8	ER20-9	9-8	ER25-10	10-9	ER32-12	12-11	ER40-12	12-11
		ER16-10	10-9	ER20-10	10-9	ER25-12	12-11	ER32-14	14-13	ER40-14	14-13
				ER20-12	12-11	ER25-14	14-13	ER32-15	15-14	ER40-15	15-14
				ER20-13	13-12	ER25-15	15-14	ER32-16	16-15	ER40-16	16-15
						ER25-16	16-15	ER32-18	18-17	ER40-18	18-17
								ER32-20	20-19	ER40-20	20-19
										ER40-21	21-20
										ER40-22	22-21
										ER40-24	24-23
										ER40-25	25-24
										ER40-26	26-25

➡ 订货示例: ER16-4;ER25-10A

C 附件 Appendix

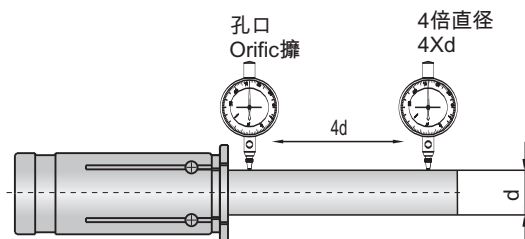
液压卡簧 Hydraulic Collet

液压刀柄卡簧编号规则: Hydraulic collet model No. explanation

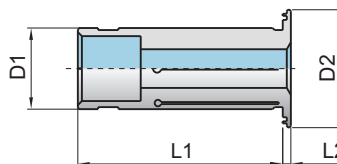


夹持精度 Accuracy of clamping

夹持直径 Holding dia.	径向跳动 Run out	
	高精度A High precision	精密级P Ultrahigh precision
<10	0.005	0.003
10~20	0.005	0.003
>20	0.005	0.003



液压卡簧(内冷) Hydraulic Collet with Cooling



内冷卡簧 Coolant collet	夹持范围 Holding range	尺寸(mm) Dimension			
		D1	D2	L1	L2
HC12-*C	3,4,5,6,8	12	19	45	2
HC20-*C	3,4,5,6,8,9,10,12,14,15,16	20	29	50.5	2
HC32-*C	8,10,12,14,16,18,20,25	32	39	60.5	3

➔ 订货示例: HC20-6C
Order example

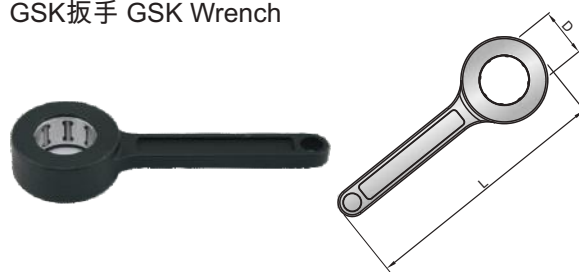
C 附件 Appendix

SK卡簧拆卸器
SK Colletpuller



型号 Type	适用于 Apply to
CGSK06	GSK06系列卡簧
CGSK10	GSK10系列卡簧
CGSK16	GSK16系列卡簧
CGSK25	GSK25系列卡簧

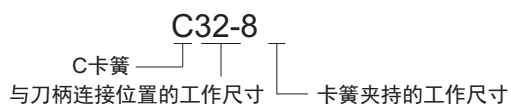
GSK扳手 GSK Wrench



型号 Type	尺寸 Dimension(mm)	
	D	L
WGSK06	19.5	120
WGSK10	27.1	135
WGSK16	40	180
WGSK25	55	250

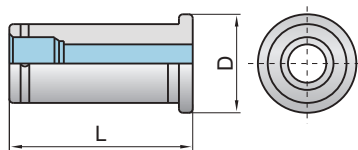
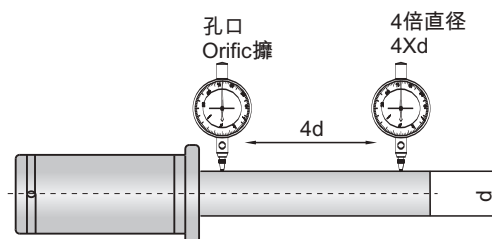
强力夹头刀柄卡簧
Power Chuck Collet

强力夹头刀柄卡簧编号规则:



夹持精度

夹持直径 Holding dia.	径向跳动 Run out	
	一般精度 General precision	精密级 Ultrahigh precision
<10	0.01	-
10~20	0.01	-
>20	0.01	-

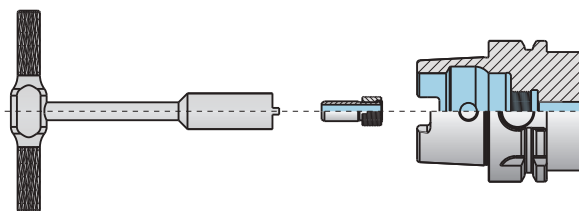


卡簧 Collet	夹持范围 Hold size 公制 Metric	尺寸(mm) Dimension		重量 (kg)
		D	L	
C20-*	6,8,10,12,16	26	55.1	
C25-*	6,8,10,12,16,20	30	63	
C32-*	4,5,6,8,10,12,14,16,18,20,25	38	70	
C42-*	6,8,10,12,16,20,25,32	48	75	

➔ 订货示例: C32-10

C 附件 Appendix

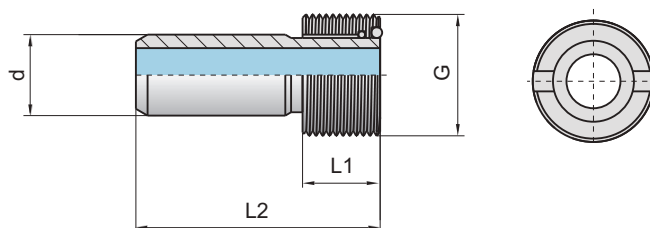
HSK冷却管扳手 HSK Coolant Wrench



型号 Type	库存 Stock	锥柄型式 Taper type	尺寸(mm) Dimension		重量 (kg)
			d	L1	
WHSK32	●	HSK-32	7.5	107	0.09
WHSK40	●	HSK-40	10.5	112	0.10
WHSK50	●	HSK-50	14.5	117	0.13
WHSK63	●	HSK-63	16.5	122	0.14
WHSK80	●	HSK-80	18	131	0.15
WHSK100	●	HSK-100	22	141	0.19

➔ 订货示例: WHSK32

HSK冷却管 HSK Coolant Sleeve



型号 Type	库存 Stock	锥柄型式 Taper type	尺寸(mm) Dimension				重量 (kg)
			G	d	L1	L2	
CHSK32	●	HSK-32	M10x1	6	5.5	26	0.005
CHSK40	●	HSK-40	M12x1	8	7.5	29.5	0.009
CHSK50	●	HSK-50	M16x1	10	9.5	33	0.018
CHSK63	●	HSK-63	M18x1	12	11.5	36.5	0.027
CHSK80	●	HSK-80	M20x1.5	14	13.5	40	0.036
CHSK100	●	HSK-100	M24x1.5	16	15.5	44	0.051

➔ 订货示例: CHSK32

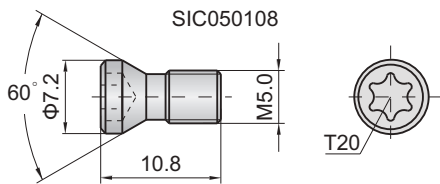
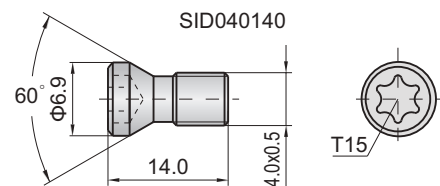
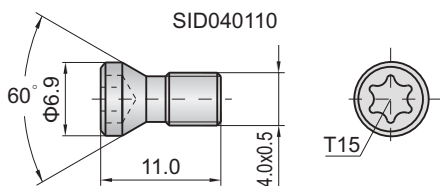
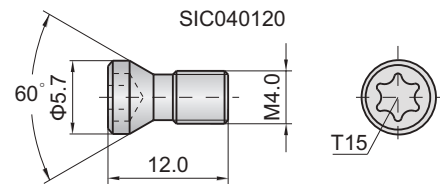
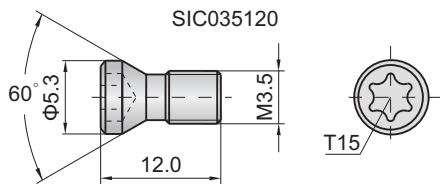
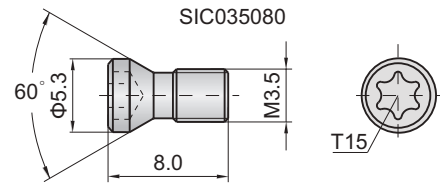
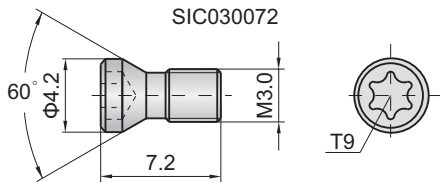
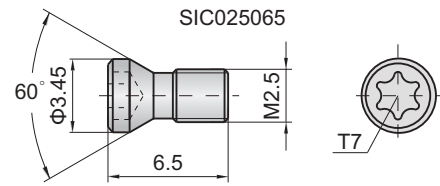
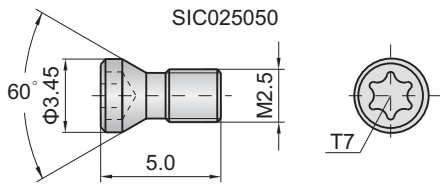
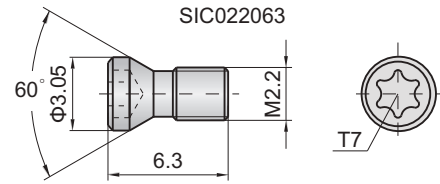
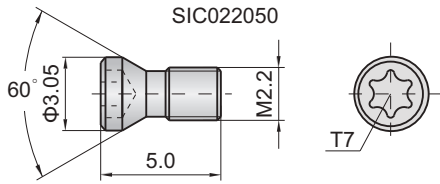
● 常备库存
Unallocated stock

◐ 可备库存
Available stock

○ 订单生产
Order production

螺钉
Screw

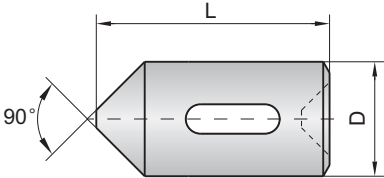
螺钉

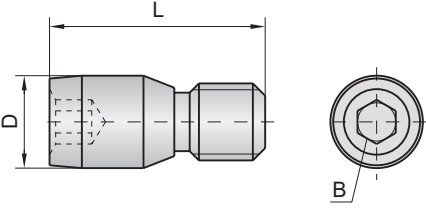


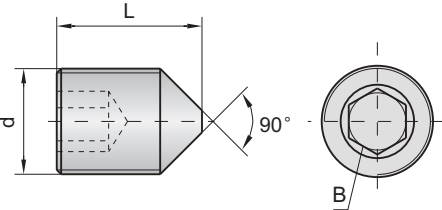
瑞士SFS授权书

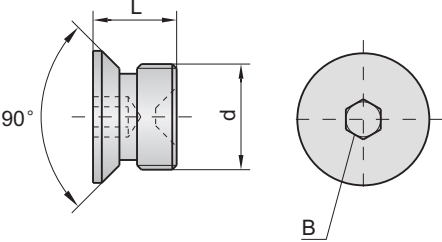


C 附件 Appendix

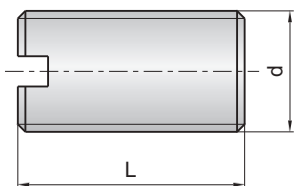
滑销		尺寸 (mm) Dimension				
		型号 Type	D	L		
		21A25-E3	7	12.0		
		21A32-E3	9	14.5		
		21A40-E3	11	18.5		
		21A50-E3	13	26.5		
		21A63-E3	17	32.0		
		21A80-E3	21	43.0		
		21A100-E3	25	52.0		
		21A125-E3	32	63.0		

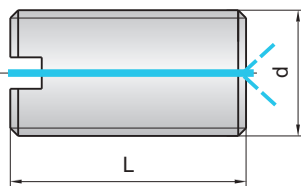
定位销		尺寸(mm) Dimension			
		型号 Type	D	L	B
		21A25-E4	3.0	8	S1.5
		21A32-E4	4.7	11	S1.5
		21A40-E4	5.7	12	S2.0
		21A50-E4	6.5	14	S2.5
		21A63-E4	9.5	20	S4.0
		21A80-E4	11.5	23	S5.0
		21A100-E4	15.5	30	S8.0
		21A125-E4	19.5	40	S8.0

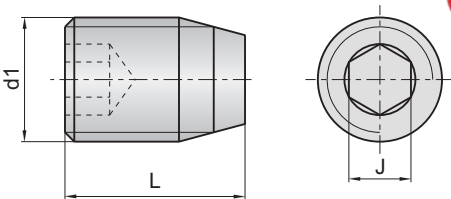
外锥端螺钉		尺寸 (mm) Dimension				
		型号 Type	d	螺距 Pitch	L	B
		21A25-E1	M6	0.75	8.5	S3
		21A32-E1	M8	1.0	11.0	S4
		21A40-E1	M10	1.25	14.0	S5
		21A50-E1	M12	1.5	16.5	S6
		21A63-E1	M16	2.0	20.5	S8
		21A80-E1	M20	2.5	26.0	S10
		21A100-E1	M24	3.0	27.5	S12
		21A125-E1	M30	3.0	37.0	S14

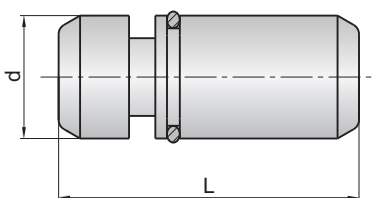
内锥端螺钉		尺寸 (mm) Dimension				
		型号 Type	d	螺距 Pitch	L	B
		21A25-E2	M6	0.75	5.0	S2
		21A32-E2	M8	1.0	6.5	S2
		21A40-E2	M10	1.25	8.0	S3
		21A50-E2	M12	1.5	8.5	S4
		21A63-E2	M16	2.0	12.0	S5
		21A80-E2	M20	2.5	13.8	S6
		21A100-E2	M24	3.0	18.5	S8
		21A125-E2	M30	3.0	23.0	S10

C 附件 Appendix

螺钉		型号 Type	尺寸 (mm) Dimension			
			d	L		
		SGC050150	M5	15		
		SGC060150	M6	15		
		SGC080150	M8	15		
		SGC100150	M10	15		
		SGC120200	M12	20		
		SGC160200	M16	20		
		SGD220250	M22x1.5	25		
		SGD280250	M28x1.5	25		

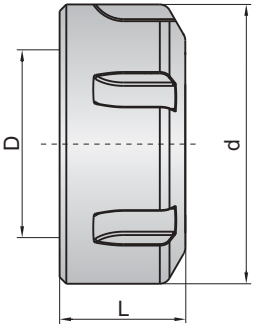
螺钉 (带内冷)		型号 Type	尺寸(mm) Dimension			
			d	L		
		SGC050150IC	M5	15		
		SGC060150IC	M6	15		
		SGC080150IC	M8	15		
		SGC100150IC	M10	15		
		SGC120200IC	M12	20		
		SGC160200IC	M16	20		
		SGD220250IC	M22x1.5	25		
		SGD280250IC	M28x1.5	25		

KB接口专用螺钉		型号 Type	尺寸(mm) Dimension			
			d1	L	J	
		SKB1	M4x0.5	5.0	2.0	
		SKB2	M5x0.5	6.5	2.5	
		SKB3	M6x0.75	8.5	3.0	
		SKB4	M8x0.75	11.0	4.0	
		SKB5	M10x1.0	14.0	5.0	
		SKB6	M12x1.0	18.0	6.0	
		SKB7	M20x1.5	29.0	10.0	

滑销		型号 Type	尺寸(mm) Dimension			
			d	L		
		SPKB1	4.0	13.2		
		SPKB2	5.0	17.0		
		SPKB3	7.0	22.0		
		SPKB4	8.5	26.5		
		SPKB5	11.0	33.0		
		SPKB6	14.0	43.0		
		SPKB7	18.0	56.0		

C 附件 Appendix

ER螺母



型号 Type	尺寸 (mm) Dimension			
	D	d	L	适用卡簧 Apply for
LN11S	M14X0.75	19	11.3	ER11
LN16S	M22X1.5	28	17.5	ER16
LN20S	M25X1.5	34	19.0	ER20
LN25	M32X1.5	42	20.0	ER25
LN32	M40X1.5	50	22.5	ER32
LN40	M50X1.5	63	25.5	ER40
LN11M	M13X0.75	16	11.3	ER11
LN16M	M19X1.0	22	17.5	ER16
LN20M	M24X1.0	28	19	ER20

ER内冷螺母



型号 Type	尺寸 (mm) Dimension			
	D	d	L	适用卡簧 Apply for
LN16SC	M22X1.5	28	22.5	ER16
LN20SC	M25X1.5	34	24.0	ER20
LN25C	M32X1.5	42	25.0	ER25
LN32C	M40X1.5	50	27.5	ER32
LN40C	M50X1.5	63	30.5	ER40

GSK螺母



型号 Type	尺寸 (mm) Dimension			
	D	d	L	适用卡簧 Apply for
LN-GSK06	M15.5x1	19.5	21.3	SK06
LN-GSK10	M22x1	27.1	25.0	SK10
LN-GSK16	M32x1.5	40.0	32.0	SK16
LN-GSK25	M45x1.5	55.0	37.5	SK25

GSK内冷螺母



型号 Type	尺寸 (mm) Dimension			
	D	d	L	适用卡簧 Apply for
LN-GSK10C	M22x1	27.1	29.5	SK10
LN-GSK16C	M32x1.5	40.0	36.5	SK16
LN-GSK25C	M45x1.5	55.0	42.0	SK25

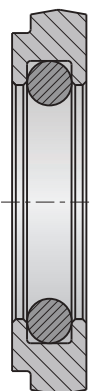


(可止水的内冷螺母)

注意：需要根据不同的刀具直径选择相应的止水垫圈，示例：柄部直径为Φ10，选择RG*-10。

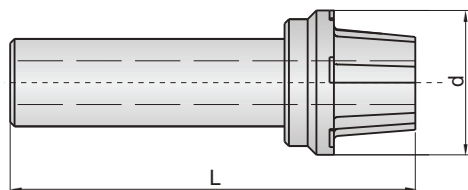
C 附件 Appendix

止水垫圈	夹持范围 TAP Standard	型号 Type				
		ER16/SK10	ER20/SK13	ER25/SK16	ER32/SK20	ER40/SK25
	3.02.5	RG16-3	RG20-3	RG25-3	RG32-3	RG40-3
	3.53.0	RG16-3.5	RG20-3.5	RG25-3.5	RG32-3.5	RG40-3.5
	4.03.5	RG16-4	RG20-4	RG25-4	RG32-4	RG40-4
	4.54.0	RG16-4.5	RG20-4.5	RG25-4.5	RG32-4.5	RG40-4.5
	5.04.5	RG16-5	RG20-5	RG25-5	RG32-5	RG40-5
	5.55.0	RG16-5.5	RG20-5.5	RG25-5.5	RG32-5.5	RG40-5.5
	6.05.5	RG16-6	RG20-6	RG25-6	RG32-6	RG40-6
	6.56.0	RG16-6.5	RG20-6.5	RG25-6.5	RG32-6.5	RG40-6.5
	7.06.5	RG16-7	RG20-7	RG25-7	RG32-7	RG40-7
	7.57.0	RG16-7.5	RG20-7.5	RG25-7.5	RG32-7.5	RG40-7.5
	8.07.5	RG16-8	RG20-8	RG25-8	RG32-8	RG40-8
	8.58.0	RG16-8.5	RG20-8.5	RG25-8.5	RG32-8.5	RG40-8.5
	9.08.5	RG16-9	RG20-9	RG25-9	RG32-9	RG40-9
	9.59.0	RG16-9.5	RG20-9.5	RG25-9.5	RG32-9.5	RG40-9.5
	10.09.5	RG16-10	RG20-10	RG25-10	RG32-10	RG40-10
	10.540.0		RG20-10.5	RG25-10.5	RG32-10.5	RG40-10.5
	11.040.5		RG20-11	RG25-11	RG32-11	RG40-11
	11.541.0		RG20-11.5	RG25-11.5	RG32-11.5	RG40-11.5
	12.041.5		RG20-12	RG25-12	RG32-12	RG40-12
	12.542.0		RG20-12.5	RG25-12.5	RG32-12.5	RG40-12.5
	13.042.5		RG20-13	RG25-13	RG32-13	RG40-13
	13.543.0			RG25-13.5	RG32-13.5	RG40-13.5
	14.043.5			RG25-14	RG32-14	RG40-14
	14.544.0			RG25-14.5	RG32-14.5	RG40-14.5
	15.044.5			RG25-15	RG32-15	RG40-15
	15.545.0			RG25-15.5	RG32-15.5	RG40-15.5
	16.045.5			RG25-16	RG32-16	RG40-16
	16.546.0				RG32-16.5	RG40-16.5
	17.046.5				RG32-17	RG40-17
	17.547.0				RG32-17.5	RG40-17.5
	18.047.5				RG32-18	RG40-18
	18.548.0				RG32-18.5	RG40-18.5
	19.048.5				RG32-19	RG40-19
	19.549.0				RG32-19.5	RG40-19.5
	20.049.5				RG32-20	RG40-20
	20.520.0					RG40-20.5
	21.020.5					RG40-21
	21.521.0					RG40-21.5
	22.021.5					RG40-22
	22.522.0					RG40-22.5
	23.022.5					RG40-23
	23.523.0					RG40-23.5
	24.023.5					RG40-24
	24.524.0					RG40-24.5
	25.024.5					RG40-25
	25.525.0					RG40-25.5
	26.025.5					RG40-26



C 附件 Appendix

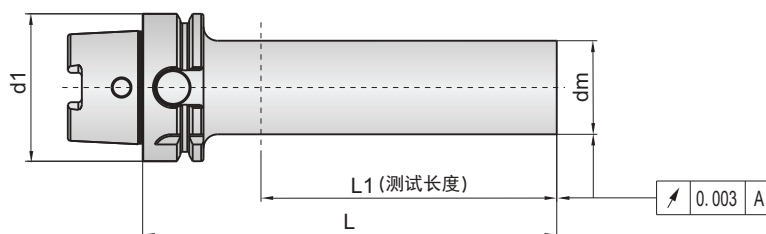
HSK主轴清洁棒 HSK Spindle Cleaning Rod



型号 Type	库存 Stock	锥柄型式 Taper type	尺寸(mm) Dimension		重量 (kg)
			d	L	
CLHSK32	●	HSK-32	46	140	
CLHSK40	●	HSK-40	46	145	
CLHSK50	●	HSK-50	55	155	
CLHSK63	●	HSK-63	67	170	
CLHSK80	●	HSK-80	85	180	
CLHSK100	●	HSK-100	105	200	

➔ 订货示例: CLHSK32

HSK测试棒 HSK Test Rod



型号 Type	库存 Stock	锥柄型式 Taper type	尺寸(mm) Dimension				重量 (kg)
			d1	dm	L	L1	
HSK63A-TSB40-300	●	HSK-63A	63	40	300	260	3.39
HSK100A-TSB50-350	●	HSK-100A	100	50	350	300	7.02

➔ 订货示例: HSK63A-TSB40-300

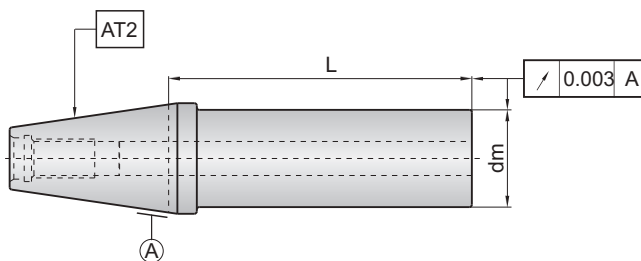
● 常备库存
Unallocated stock

● 可备库存
Available stock

○ 订单生产
Order production

C 附件 Appendix

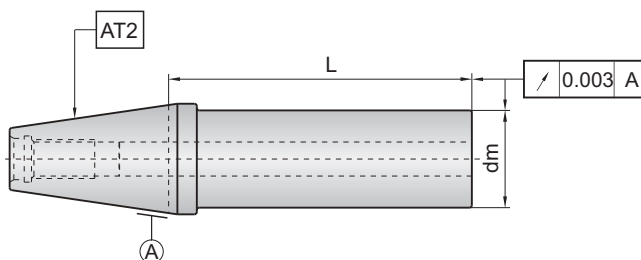
BT测试棒 BT Test Rod



型号 Type	库存 Stock	锥柄型式 Taper type	尺寸(mm) Dimension		重量 (kg)
			dm	L	
BT30-TSB32-250	●	BT30	32	250	1.60
BT40-TSB40-300	●	BT40	40	300	3.10
BT50-TSB50-350	●	BT50	50	350	6.48
ISO20-TSB-L100	●	ISO20	24	100	

➔ 订货示例: BT30-TSB32-250

JT测试棒 JT Test Rod



型号 Type	库存 Stock	锥柄型式 Taper type	尺寸(mm) Dimension		重量 (kg)
			dm	L	
JT40-TSB40-300	●	JT40	40	300	3.12
JT50-TSB50-350	●	JT50	50	350	6.47

➔ 订货示例: JT50-TSB50-350

● 常备库存
Unallocated stock

● 可备库存
Available stock

○ 订单生产
Order production



- HIGH PERFORMANCE TAP
 - HIGH-SPEED STEEL DRILL
-





百年品质 (A Legend for over a Century)

克利夫兰为您提供的不只是一系列产品，更多是在百年工艺不断发展进步见证下的质量、效率和一致性的有效保证。克利夫兰拥有数千种车削、铣削和孔加工产品，能够为客户提供全面、高效的定制化解决方案。

一个半世纪的品质保障

1876年，
克利夫兰在美国
俄亥俄州正式成立

1980年，
克利夫兰成立并收购
多家公司，销售额达4000万美
元，成为行业的佼佼者

1997年，
格林菲尔德并入美国肯纳
刀具集团

2015年，
远东工具建成克利夫兰数控
刀片生产基地

1883年，
克利夫兰成为高速钢螺
旋钻的创始者和领航者

1994年，
克利夫兰并入美国格林菲
尔德公司

2009年，
远东工具并购格林菲尔
德，成为全球最大高速
钢刀具制造企业

2017年，
远东工具在中国大连新建
克利夫兰高速钢钻头、铣刀、
丝锥生产基地，服务中国及
亚洲客户

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HSSE ST Programme Metric T-JIS M
HSSE材质, ST涂层, 通用丝锥, T-JIS公制丝锥

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色环丝锥, T-JIS标公制粗牙丝锥

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Programme Metric DIN M
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Programme metrical fine T-JIS MF
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Programme metrical fine DIN MF
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●本样本登载的产品, 虽标有库存, 但由于新材料, 新产品的开发, 更改废除的情况也有。

●式样, 形状, 表内数值也可能会有变动。






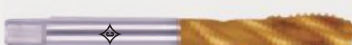









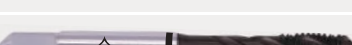

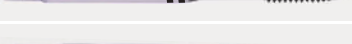
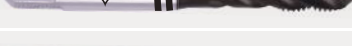
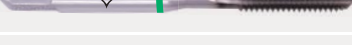
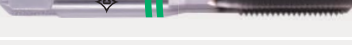







●The inventory status is indicated for respective products on this catalogue. However, the products may be improved or discontinued due to development of new materials and products ,etc.

●Specifications, shapes, values in the tables, etc. are subject to change without prior notice.

Material related application chart / 材料应用表

No. G/序号	Material group	材料类别	M&T-JIS M	MF&T-JIS MF
G01	Structural steels <1000 N / mm ²	结构钢<1000N/mm ²	○	○
G02	Structural steels >900 N / mm ²	结构钢>900N/mm ²	○	○
G03	Case hardening steels <1000 N / mm ²	表面硬化钢<1000N/mm ²	○	○
G04	Case hardening steels >900 N / mm ²	表面硬化钢>900N/mm ²	○	○
G05	Heat treatable steels <1000 N / mm ²	热处理钢<1000N/mm ²	○	○
G06	Heat treatable steels >900 N / mm ²	热处理钢>900N/mm ²	○	○
G07	Nitriding steels	氮化钢	○	○
G08	Carbon tool steels	碳素工具钢	○	○
G09	Heat resisting steels	耐热钢	○	○
G10	Cr stainless steels, sulphured	Cr不锈钢	○	○
G11	Cr stainless steels, ferritic and martensitic	Cr不锈钢、铁素体不锈钢、马氏体不锈钢	○	○
G12	Cr-Ni stainless steels, austenitic	Cr-Ni不锈钢、奥氏体不锈钢	○	○
G13	Free-cutting steels	易切钢	○	○
G14	Cast steels <1000 N / mm ²	铸钢<1000N/mm ²	○	○
G15	Cast steels >900 N / mm ²	铸钢>900N/mm ²	○	○
G16	Malleable cast iron	可锻铸铁	○	○
G17	Nodular graphite cast iron	结节性石墨铸铁(球墨铸铁)	○	○
G18	Lamellar graphite cast iron (grey cast iron)	片状石墨铸铁(灰铸铁)	○	○
G19	Vermicular graphite cast iron	蠕墨铸铁	○	○
G20	Copper	铜	○	○
G21	Hard brass (Ms 58, short chipping)	硬黄铜(Ms58,短切屑)	○	○
G22	Soft brass (MS 63, long chipping)	软黄铜(Ms63,长切屑)	○	○
G23	Red brass	红铜	○	○
G24	Phosphor bronze	磷青铜	○	○
G25	Wrought alloy of aluminium	锻造铝合金	○	○
G26	Aluminium cast alloy Si 0.5 %-5 %	铸造铝合金(Si 0.5% ~ 5%)	○	○
G27	Aluminium cast alloy Si 5 % -10 %	铸造铝合金(Si 5% ~ 10%)	○	○
G28	Aluminium cast alloy Si > 10 %	铸造铝合金(Si>10%)	○	○
G29	Wrought alloy of magnesium	锻造镁合金	○	○
G30	Cast alloy of magnesium	铸造镁合金	○	○
G31	Alloy of nickel	镍合金	○	○
G32	Titanium and alloy of titanium	钛、钛合金	○	○
G33	Ferro-TiC	Ferro-TiC钢结硬质合金	○	○
G34	Thermoplastic compounds / synthetics	热塑性复合材料 / 合成纤维	○	○
G35	High strength structural steels fine grained	高强度细晶粒结构钢	○	○

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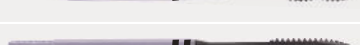
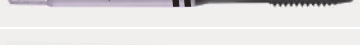
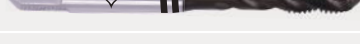







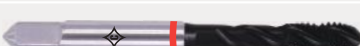





























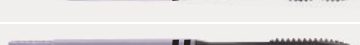
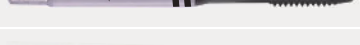
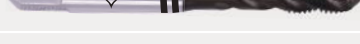







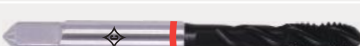

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•	•				105/4 DUO	D27
		•	•		131/3 DUO	D27
•	•	•	•		105/3	D28
•	•	•	•		105/3 DUO	D29
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		•	•		131/3 DUO	D31
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		●	●		131/3	D48-49
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		•	•		131/3 DUO	D68-69

Colouring-programme/Cleveland /丝锥——色环应用

The new duo colour ring tap from Cleveland is a high performance tool made of powder-metallurgy steel with a hard material coating and a recently developed cutting geometry for high tool life.

双色环丝锥是 Cleveland 推出新一代高性能色环丝锥 选用PVD涂层及最新研发的几何切削形状大大提高刀具寿命。

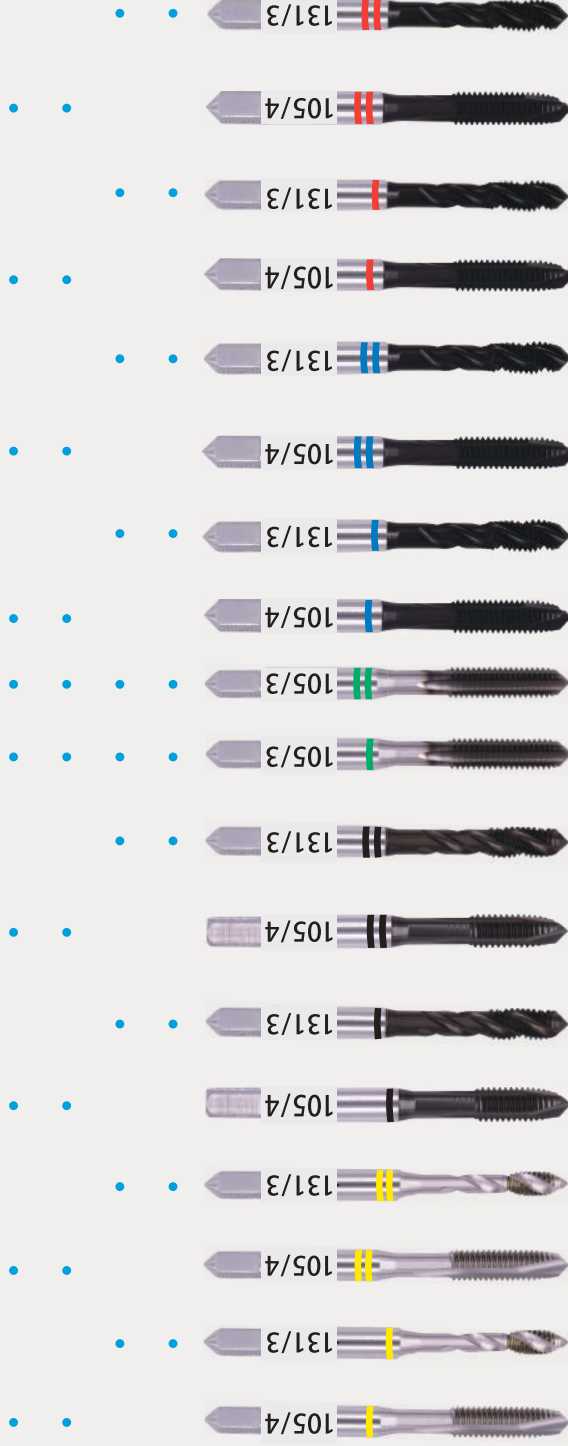
Dimensions DIN 371/376 尺寸 DIN371/376

through short  短通孔

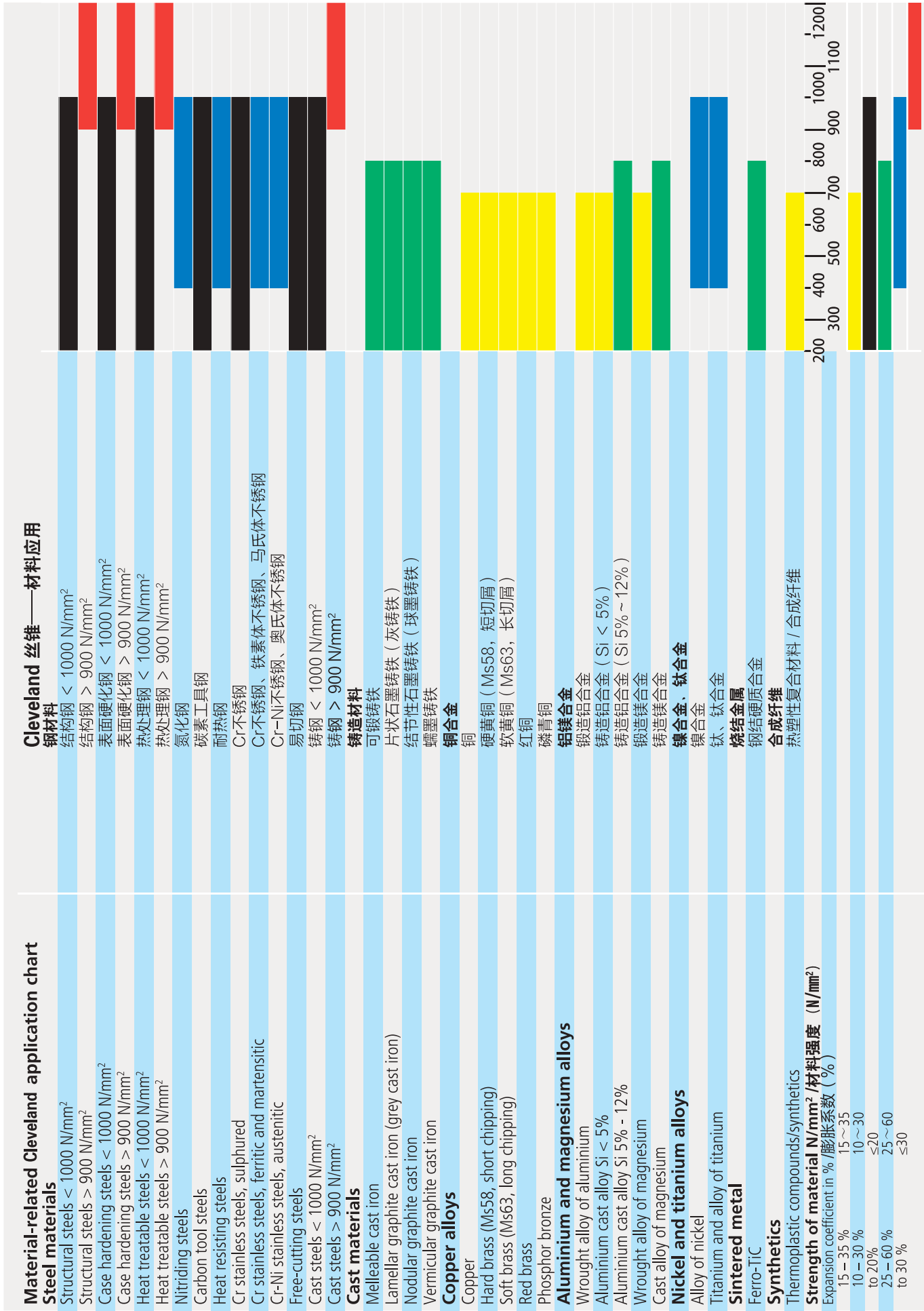
through  通孔

blind hole short  短盲孔

blind hole  盲孔



Group 组别	Material 材料	Strength of material N/mm ² 材料强度 (N/mm ²)	Expansion coefficient% 膨胀系数 (%)
●	Nonferrous metal, light metal /有色金属, 轻金属	≤700	15~35
○	Structural steels and quality /优质结构钢	≤1000	10~30
●	Grey cast iron /灰铸铁	≤800	≤20
○	Stainless steels /不锈钢	400~1000	25~60
○	High resistance steels /高强度钢	≥900	≤30



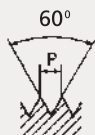
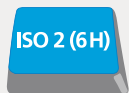
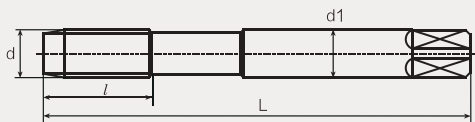
应用领域

Application Domain





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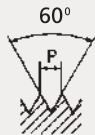
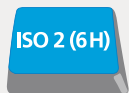
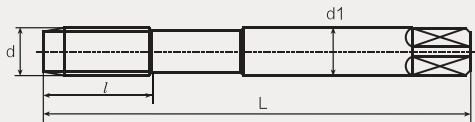
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L	105/4		131/3		d ₁	a	d	P		Art.	Art.	Art.	Art.
	l	l	l	l									
40	8	8	3	2.5	M2	0.4	1.6	J652000 •	J673040 •				
44	9	9	3	2.5	M2.5	0.45	2.05	J652035 •	J671560 •				
46	11	6	4	3.2	M3	0.5	2.5	J656707 •	J644245 •				
52	13	7.5	5	4	M4	0.7	3.3	J637176 •	J645500 •				
52	10	7.5	5	4	MF4	0.5	3.5	J666300 ○	J666600 ○				
60	16	9	5.5	4.5	M5	0.8	4.2	J637184 •	J645659 •				
60	12	7.5	5.5	4.5	MF5	0.5	4.5	J666301 ○	J666601 ○				
62	19	11	6	4.5	M6	1	5	J637192 •	J651829 •				
62	14	8	6	4.5	MF6	0.75	5.25	J666303 ○	J666604 ○				
70	22	13	6.2	5	M8	1.25	6.75		J652108 •	J671625 •			
70	22	10	6.2	5	MF8	1	7	J666333 ○	J666634 ○				
70	18	10	6.2	5	MF8	0.75	7.25	J666332 ○	J666633 ○				
75	24	16	7	5.5	M10	1.5	8.5	J652116 •	J671633 •				
75	24	14	7	5.5	MF10	1.25	8.75	J666336 ○	J666637 ○				
75	20	12	7	5.5	MF10	1	9	J666335 ○	J666636 ○				
75	20	12	7	5.5	MF10	0.75	9.25	J666334 ○	J666635 ○				
82	29	18	8.5	6.5	M12	1.75	10.25	J637222 •	J657150 •				
82	22	14	8.5	6.5	MF12	1.5	10.5	J666339 ○	J666640 ○				
82	22	14	8.5	6.5	MF12	1.25	10.75	J666338 ○	J666639 ○				
82	22	14	8.5	6.5	MF12	1	11	J666337 ○	J666638 ○				
88	30	20	10.5	8	M14	2	12	J637230 •	J657177 •				
88	22	20	10.5	8	MF14	1.5	12.5	J666341 ○	J666642 ○				
88	22	16	10.5	8	MF14	1	13	J666340 ○	J666641 ○				
95	32	20	12.5	10	M16	2	14	J637249 •	J657193 •				
95	22	20	12.5	10	MF16	1.5	14.5	J666343 ○	J666644 ○				
95	22	16	12.5	10	MF16	1	15	J666342 ○	J666643 ○				



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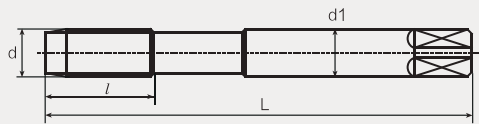
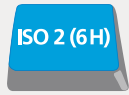
C/2,5

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	l	l	l	l									
100	34	22	14	11	M18	2.5	15.5			J652124 ◯		J657274 ◯	
100	34	25	14	11	MF18	2	16			J666344 ◯		J666645 ◯	
100	25	25	14	11	MF18	1.5	16.5			J666345 ◯		J666646 ◯	
100	25	18	14	11	MF18	1	17			J666346 ◯		J666647 ◯	
105	34	25	15	12	M20	2.5	17.5			J652132 ◯		J657304 ◯	
105	25	25	15	12	MF20	1.5	18.5			J666347 ◯		J666648 ◯	
115	34	25	17	13	M22	2.5	19.5			J672801 ◯		J677102 ◯	
115	25	17	17	13	MF22	1.5	20.5			J666348 ◯		J666649 ◯	
120	38	28	19	15	M24	3	21			J672802 ◯		J677103 ◯	
120	28	20	19	15	MF24	2	22			J666349 ◯		J666650 ◯	
120	25	20	19	15	MF24	1.5	22.5			J666350 ◯		J666651 ◯	

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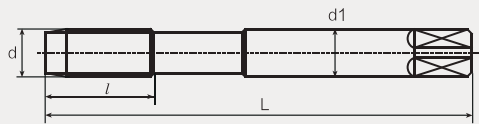
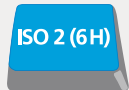
C/2,5

C/2,5

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	l	l	l	l									
40	8	8	3	2.5	M2	0.4	1.6	J952000 ●	J973040 ●				
44	9	9	3	2.5	M2.5	0.45	2.05	J952035 ●	J971560 ●				
46	11	6	4	3.2	M3	0.5	2.5	J956707 ●	J944245 ●				
52	13	7.5	5	4	M4	0.7	3.3	J937176 ●	J945500 ●				
52	10	7.5	5	4	MF4	0.5	3.5	J966300 ○	J966600 ○				
60	16	9	5.5	4.5	M5	0.8	4.2	J937184 ●	J945659 ●				
60	12	7.5	5.5	4.5	MF5	0.5	4.5	J966301 ○	J966601 ○				
62	19	11	6	4.5	M6	1	5	J937192 ●	J951829 ●				
62	14	8	6	4.5	MF6	0.75	5.25	J966303 ○	J966604 ○				
70	22	13	6.2	5	M8	1.25	6.75	J952108 ●	J971625 ●				
70	22	10	6.2	5	MF8	1	7	J966333 ○	J966634 ○				
70	18	10	6.2	5	MF8	0.75	7.25	J966332 ○	J966633 ○				
75	24	16	7	5.5	M10	1.5	8.5	J952116 ●	J971633 ●				
75	24	14	7	5.5	MF10	1.25	8.75	J966336 ○	J966637 ○				
75	20	12	7	5.5	MF10	1	9	J966335 ○	J966636 ○				
75	20	12	7	5.5	MF10	0.75	9.25	J966334 ○	J966635 ○				
82	29	18	8.5	6.5	M12	1.75	10.25	J937222 ●	J957150 ●				
82	22	14	8.5	6.5	MF12	1.5	10.5	J966339 ○	J966640 ○				
82	22	14	8.5	6.5	MF12	1.25	10.75	J966338 ○	J966639 ○				
82	22	14	8.5	6.5	MF12	1	11	J966337 ○	J966638 ○				
88	30	20	10.5	8	M14	2	12	J937230 ●	J957177 ●				
88	22	20	10.5	8	MF14	1.5	12.5	J966341 ○	J966642 ○				
88	22	16	10.5	8	MF14	1	13	J966340 ○	J966641 ○				
95	32	20	12.5	10	M16	2	14	J937249 ●	J957193 ●				
95	22	20	12.5	10	MF16	1.5	14.5	J966343 ○	J966644 ○				
95	22	16	12.5	10	MF16	1	15	J966342 ○	J966643 ○				



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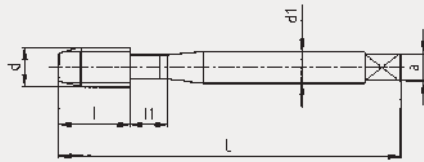
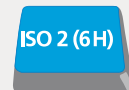
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L	105/4		131/3		d ₁	a	d	P		Art.	Art.	Art.	Art.
	l	l	l	l									
100	34	22	14	11	M18	2.5	15.5			J952124 ◯		J957274 ◯	
100	34	25	14	11	MF18	2	16			J966344 ◯		J966645 ◯	
100	25	25	14	11	MF18	1.5	16.5			J966345 ◯		J966646 ◯	
100	25	18	14	11	MF18	1	17			J966346 ◯		J966647 ◯	
105	34	25	15	12	M20	2.5	17.5			J952132 ◯		J957304 ◯	
105	25	25	15	12	MF20	1.5	18.5			J966347 ◯		J966648 ◯	
115	34	25	17	13	M22	2.5	19.5			J972801 ◯		J977102 ◯	
115	25	17	17	13	MF22	1.5	20.5			J966348 ◯		J966649 ◯	
120	38	28	19	15	M24	3	21			J972802 ◯		J977103 ◯	
120	28	20	19	15	MF24	2	22			J966349 ◯		J966650 ◯	
120	25	20	19	15	MF24	1.5	22.5			J966350 ◯		J966651 ◯	

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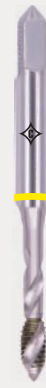
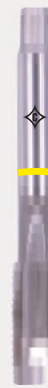


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L	105/4		131/3		d ₁	a	d	P		Art.	Art.	Art.	Art.
	l	l ₁	l	l ₁									
46	11	7	6	11	4	3.2	M 3	0.5	2.5	J822519 ○		J878514 ○	
52	13	8	7.5	13	5	4	M 4	0.7	3.3	J822535 ○		J878530 ○	
60	16	9	9	16	5.5	4.5	M 5	0.8	4.2	J822543 ○		J878549 ○	
62	19	11	11	18	6	4.5	M 6	1	5	J822551 ○		J878557 ○	
70	22	13	13	21	6.2	5	M 8	1.25	6.8		J861123 ○		J878453 ○
75	24	15	16	22	7	5.5	M 10	1.5	8.5		J861131 ○		J878454 ○
82	29		18		8.5	6.5	M 12	1.75	10.2		J822594 ○		J878581 ○
88	30		20		10.5	8	M 14	2	12		J822608 ○		J878603 ○
95	32		20		12.5	10	M 16	2	14		J822616 ○		J878611 ○
100	34		22		14	11	M 18	2.5	15.5		J822624 ○		J878638 ○
105	34		25		15	12	M 20	2.5	17.5		J822632 ○		J878646 ○
115	34		25		17	13	M 22	2.5	19.5		J822230 ○		J822455 ○
120	38		28		19	15	M 24	3	21		J822231 ○		J822456 ○

**105/4 YELLOW RING
131/3 YELLOW RING**

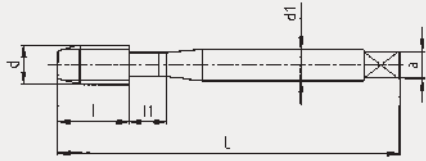
G25 Wrought alloy of aluminium, G22 soft brass(Ms63,长切屑) G29 long chipping) G29 wrought alloy of magnesium, G26 aluminium cast alloy Si < 5%, G23 red brass, G24 phosphor bronze, G20 copper, G01, G02 Structural steels

**105/4 YELLOW RING
131/3 YELLOW RING**

G25锻造铝合金, G22软黄铜(Ms63,长切屑) G29锻造镁合金, G26 铸造铝合金(Si < 5%) G23红铜, G24磷青铜, G20铜, G01, G02结构钢



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L	105/4		131/3		d ₁	a	d	P		Art.	Art.	Art.	Art.	
	l	l ₁	l	l ₁										
46	11	7	6	11	4	3.2	M 3	0.5	2.5	J843403 ○		J843422 ○		
52	13	8	7.5	13	5	4	M 4	0.7	3.3	J843404 ○		J843423 ○		
60	16	9	9	16	5.5	4.5	M 5	0.8	4.2	J843405 ○		J843424 ○		
62	19	11	11	18	6	4.5	M 6	1	5	J843406 ○		J843425 ○		
70	22	13	13	21	6.2	5	M 8	1.25	6.8		J143414 ○		J143434 ○	
75	24	15	16	22	7	5.5	M 10	1.5	8.5		J143415 ○		J143435 ○	
82	29		18		8.5	6.5	M 12	1.75	10.2		J843409 ○		J843429 ○	
88	30		20		10.5	8	M 14	2	12		J843410 ○		J843430 ○	
95	32		20		12.5	10	M 16	2	14		J843411 ○		J843431 ○	
100	34		22		14	11	M 18	2.5	15.5		J843412 ○		J843432 ○	
105	34		25		15	12	M 20	2.5	17.5		J843413 ○		J843433 ○	
115	34		25		17	13	M 22	2.5	19.5		J843414 ○		J843434 ○	
120	38		28		19	15	M 24	3	21		J843415 ○		J843435 ○	

**105/4 DUO YELLOW RING
131/3 DUO YELLOW RING**

G25 Wrought alloy of aluminium, G22 soft brass(Ms63 long chipping) G29 wrought alloy of magnesium, G26 aluminium cast alloy Si < 5%, G23 red brass, G24 phosphor bronze, G20 copper, G01, G02 Structural steels

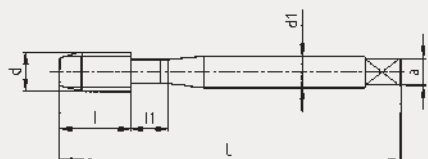
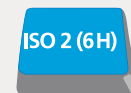
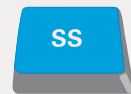
**105/4 DUO YELLOW RING
131/3 DUO YELLOW RING**

G25锻造铝合金, G22软黄铜(Ms63,长切屑) G29锻造镁合金, G26 铸造铝合金(Si < 5%) G23红铜, G24 磷青铜, G20铜, G01, G02结构钢

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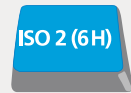
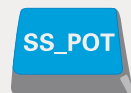
L	105/4		131/3		d ₁	a	d	P		Art.	Art.	Art.	Art.
	l	h	l	l ₁									
45	11	7	6	11	4	3.2	M 3	0.5	2.5	J856707 ●		J844245 ●	
52	13	8	7.5	13	5	4	M 4	0.7	3.3	J837176 ●		J845500 ●	
60	16	9	9	16	5.5	4.5	M 5	0.8	4.2	J837184 ●		J845659 ●	
62	19	11	11	18	6	4.5	M 6	1	5	J837192 ●		J851829 ●	
70	22	13	13	21	6.2	5	M 8	1.25	6.8		J852108 ●		J871625 ●
75	24	15	16	22	7	5.5	M 10	1.5	8.5		J852116 ●		J871633 ●
82	29		18		8.5	6.5	M 12	1.75	10.2		J837222 ●		J857150 ●
88	30		20		10.5	8	M 14	2	12		J837230 ●		J857177 ●
95	32		20		12.5	10	M 16	2	14		J837249 ●		J857193 ●
100	34		22		14	11	M 18	2.5	15.5		J852124 ○		J857274 ○
105	34		25		15	12	M 20	2.5	17.5		J852132 ○		J857304 ○
115	34		25		17	13	M 22	2.5	19.5		J872419 ○		J877102 ○
120	38		28		19	15	M 24	3	21		J883798 ○		J877103 ○

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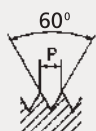
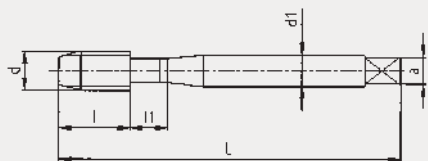
G01, G02, G03, G04, G05, G08, G13, G14, G20.

105/4,131/3 BLACK RING

G01,G02结构钢, G03, G04表面硬化钢, G05热处理钢<1000N/mm², G08碳素工具钢, G13易切钢, G14铸钢<1000N/mm², G20铜



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L	105/4		131/3		di	a	d	P		Art.	Art.	Art.	Art.	
	l	li	l	li										
45	11	7	6	11	4	3.2	M 3	0.5	2.5	J843217 ●		J843239 ●		
52	13	8	7.5	13	5	4	M 4	0.7	3.3	J843218 ●		J843240 ●		
60	16	9	9	16	5.5	4.5	M 5	0.8	4.2	J843219 ●		J843241 ●		
62	19	11	11	18	6	4.5	M 6	1	5	J843220 ●		J843242 ●		
70	22	13	13	21	6.2	5	M 8	1.25	6.8		J143229 ●		J143237 ●	
75	24	15	16	22	7	5.5	M 10	1.5	8.5		J143230 ●		J143238 ●	
82	29		18		8.5	6.5	M 12	1.75	10.2		J843232 ●		J843245 ●	
88	30		20		10.5	8	M 14	2	12		J843233 ●		J843246 ●	
95	32		20		12.5	10	M 16	2	14		J843234 ●		J843247 ●	
100	34		22		14	11	M 18	2.5	15.5		J843235 ○		J843248 ○	
105	34		25		15	12	M 20	2.5	17.5		J843236 ○		J843250 ○	
115	34		25		17	13	M 22	2.5	19.5		J843800 ○		J843251 ○	
120	38		28		19	15	M 24	3	21		J843801 ○		J843252 ○	

105/4,131/3 DUO BLACK RING

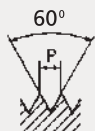
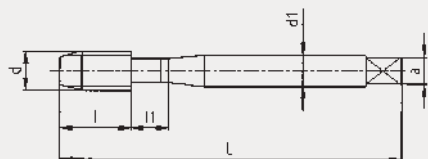
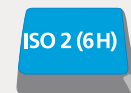
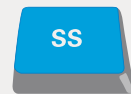
G01,G02 Structural steels, G03, G04 case hardening steels, G05 heat treatable steels up to 1000N/mm², G08 carbon tool steels, G13 free-cutting steels, G10 Cr stainless steels sulphured, a.o.

105/4,131/3 DUO BLACK RING

G01,G02结构钢, G03, G04表面硬化钢, G05热处理钢<1000N/mm², G08碳素工具钢, G13易切钢 G10 Cr不锈钢



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L	105/3		d ₁	a	d	P		Art.	Art.
	l	l ₁							
46	11	7	4	3.2	M 3	0.5	2.5	J837257 ○	
52	13	8	5	4	M 4	0.7	3.3	J837273 ○	
60	16	9	5.5	4.5	M 5	0.8	4.2	J837281 ○	
62	19	11	6	4.5	M 6	1	5	J856715 ○	
70	22	13	6.2	5	M 8	1.25	6.8		J871412 ○
75	24	15	7	5.5	M 10	1.5	8.5		J874985 ○
82	29		8.5	6.5	M 12	1.75	10.2		J856723 ○
88	30		10.5	8	M 14	2	12		J852140 ○
95	30		12.5	10	M 16	2	14		J852159 ○
100	34		14	11	M 18	2.5	15.5		J852167 ○
105	34		15	12	M 20	2.5	17.5		J852175 ○
115	34		17	13	M 22	2.5	19.5		J852177 ○
120	38		19	15	M 24	3	21		J852179 ○

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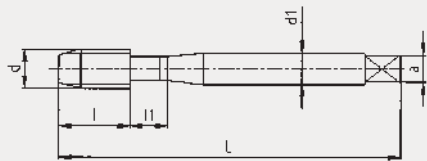
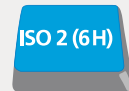
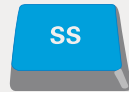
G18 Lamellar graphite cast iron (grey cast iron), G17 nodular graphite cast iron, G19 vermicular graphite cast iron, G16 malleable cast iron, G27, G28 aluminium cast alloy Si 5-12 % a.o.

105/3 GREEN RING

G18片状石墨铸铁(灰铸铁) G17结节性石墨铸铁(球墨铸铁) G19蠕墨铸铁, G16可锻铸铁, G27, G28铸造铝合金 Si 5-12 %



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L	105/3		d ₁	a	d	P		Art.	Art.
	l	l ₁							
46	11	7	4	3.2	M 3	0.5	2.5	J843446 ○	
52	13	8	5	4	M 4	0.7	3.3	J843447 ○	
60	16	9	5.5	4.5	M 5	0.8	4.2	J843448 ○	
62	19	11	6	4.5	M 6	1	5	J843449 ○	
70	22	13	6.2	5	M 8	1.25	6.8		J143450 ○
75	24	15	7	5.5	M 10	1.5	8.5		J143451 ○
82	29		8.5	6.5	M 12	1.75	10.2		J843454 ○
88	30		10.5	8	M 14	2	12		J843455 ○
95	32		12.5	10	M 16	2	14		J843456 ○
100	34		14	11	M 18	2.5	15.5		J843457 ○
105	34		15	12	M 20	2.5	17.5		J843458 ○
115	34		17	13	M 22	2.5	19.5		J843459 ○
120	38		19	15	M 24	3	21		J843460 ○

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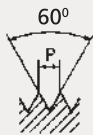
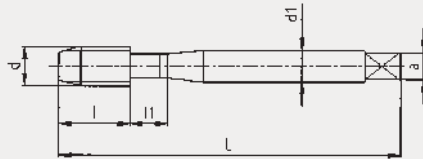
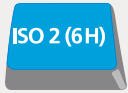
G18 Lamellar graphite cast iron (grey cast iron), G17 nodular graphite cast iron, G19 vermicular graphite cast iron, G16 malleablecast iron, G27, G28 aluminium cast alloy Si 5-12 % a.o.

105/3 DUO GREEN RING

G18片状石墨铸铁(灰铸铁) G17结节性石墨铸铁(球墨铸铁) G19蠕墨铸铁, G16可锻铸铁, G27, G28铸造铝合金 Si 5-12 %



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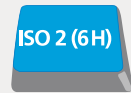
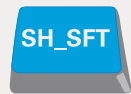
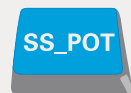
L	105/4		131/3		d ₁	a	d	p		Art.	Art.	Art.	Art.
	l	l ₁	l	l ₁									
46	11	7	6	11	4	3.2	M 3	0.5	2.5	J893572 ●		J825925 ●	
52	13	8	7.5	13	5	4	M 4	0.7	3.3	J893580 ●		J826034 ●	
60	16	9	9	16	5.5	4.5	M 5	0.8	4.2	J893599 ●		J826085 ●	
62	19	11	11	18	6	4.5	M 6	1	5	J893602 ●		J826123 ●	
70	22	13	13	21	6.2	5	M 8	1.25	6.8		J193631 ●		J126291 ●
75	24	15	16	22	7	5.5	M 10	1.5	8.5		J193632 ●		J126292 ●
82	29		18		8.5	6.5	M 12	1.75	10.2		J893637 ●		J826298 ●
88	30		20		10.5	8	M 14	2	12		J893645 ●		J854852 ●
95	32		20		12.5	10	M 16	2	14		J893653 ●		J854860 ●
100	34		22		14	11	M 18	2.5	15.5		J893661 ○		J854879 ○
105	34		25		15	12	M 20	2.5	17.5		J893688 ○		J854887 ○
115	34		25		17	13	M 22	2.5	19.5		J893690 ○		J854889 ○
120	38		28		19	15	M 24	3	21		J893718 ○		J854909 ○

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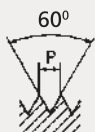
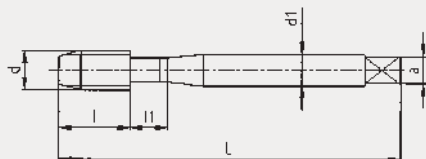
G12 Cr-Ni stainless steels austenitic, G11 Cr stainless steels ferritic and martensitic, G07 nitriding steels, G09 heat resisting steels, G31 alloy of nickel, G10 Cr stainless steels sulphured, G01, G02 structural steels, G03, G04 case hardening steels G06 heat treatable steels from 900N/mm²

105/4.131/3 BLUE RING

G12 Cr-Ni不锈钢, G11马氏体不锈钢, G07氮化钢, G09 耐热钢, G31镍合金, G10 Cr不锈钢, G01, G02 结构钢, G03, G04表面硬化钢, G06热处理钢 >900N/mm²



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L	105/4		131/3		d ₁	a	d	P		Art.	Art.	Art.	Art.	
	l	l ₁	l	l ₁										
46	11	7	3.6	11	4	3.2	M 3	0.5	2.5	J843285 •		J843299 •		
52	13	8	4	13	5	4	M 4	0.7	3.3	J843286 •		J843300 •		
60	16	9	5.7	16	5.5	4.5	M 5	0.8	4.2	J843287 •		J843301 •		
62	19	11	7.5	18	6	4.5	M 6	1	5	J843289 •		J843302 •		
70	22	13	13	21	6.2	5	M 8	1.25	6.8		J143281 •		J143297 •	
75	24	15	16	22	7	5.5	M 10	1.5	8.5		J143282 •		J143298 •	
82	29		18		8.5	6.5	M 12	1.75	10.2		J843292 •		J843306 •	
88	30		20		10.5	8	M 14	2	12		J843293 •		J843307 •	
95	32		20		12.5	10	M 16	2	14		J843294 •		J843308 •	
100	34		22		14	11	M 18	2.5	15.5		J843295 ○		J843309 ○	
105	34		25		15	12	M 20	2.5	17.5		J843296 ○		J843310 ○	
115	34		25		17	13	M 22	2.5	19.5		J843820 ○		J843851 ○	
120	38		28		19	15	M 24	3	21		J843821 ○		J843852 ○	

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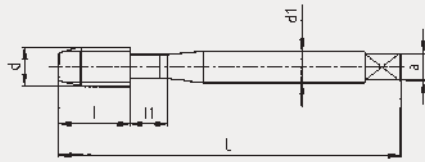
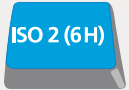
G12 Cr-Ni stainless steels austenitic, G11 Cr stainless steels ferritic and martensitic, G07 nitriding steels, G09 heat resisting steels, G31 alloy of nickel, G10 Cr stainless steels sulphured, G01, G02 structural steels, G03, G04 case hardening steels, G06 heat treatable steels from 900N/mm²

105/4, 131/3 DUO BLUE RING

G12 Cr-Ni不锈钢, G11马氏体不锈钢, G07氮化钢, G09耐热钢, G31镍合金, G10 Cr不锈钢, G01, G02结构钢, G03, G04表面硬化钢, G06热处理钢 >900N/mm²



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L	105/4		131/3		d ₁	a	d	P		Art.	Art.	Art.	Art.
	l	h	l	h ₁									
46	11	7	6	11	4	3.2	M 3	0.5	2.5	J875035 ○		J876031 ○	
52	13	8	7.5	13	5	4	M 4	0.7	3.3	J875043 ○		J876058 ○	
60	16	9	9	16	5.5	4.5	M 5	0.8	4.2	J875051 ○		J876066 ○	
62	19	11	11	18	6	4.5	M 6	1	5	J875078 ○		J876074 ○	
70	22	13	13	21	6.2	5	M 8	1.25	6.8		J175092 ○		J176088 ○
75	24	15	16	22	7	5.5	M10	1.5	8.5		J175100 ○		J176096 ○
82	29		18		8.5	6.5	M12	1.75	10.2		J875108 ○		J876104 ○
88	30		20		10.5	8	M14	2	12		J875116 ○		J876112 ○
95	32		20		12.5	10	M16	2	14		J875124 ○		J876120 ○
100	34		22		14	11	M18	2.5	15.5		J875132 ○		J876139 ○
105	34		25		15	12	M20	2.5	17.5		J875140 ○		J876147 ○
115	34		25		17	13	M22	2.5	19.5		J875148 ○		J876155 ○
120	38		28		19	15	M24	3	21		J883909 ○		J884204 ○

105/4 RED RING
131/3 RED RING

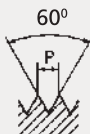
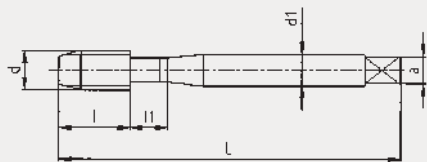
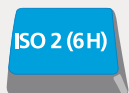
G01, G02 Structural steels, G03, G04 case hardening steels, G05, G06 heat treatable steels, G15 cast steels from 900 N/mm², G08 carbon tool steels, G34 thermoplastic compounds/synthetics

105/4 RED RING
131/3 RED RING

G01, G02结构钢, G03, G04表面硬化钢, G06热处理钢 >900N/mm², G15铸钢>900N/mm², G08碳素工具钢, G34热塑性复合材料



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• For stock /有库存

Norm /标准



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ISO 2 (6H)

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L	105/4		131/3		d ₁	a	d	P		Art.	Art.	Art.	Art.	
	l	h	l	l ₁										
46	11	7	3.6	11	4	3.2	M 3	0.5	2.5	J843314	○	J843327	○	
52	13	8	4	13	5	4	M 4	0.7	3.3	J843315	○	J843328	○	
60	16	9	5.7	16	5.5	4.5	M 5	0.8	4.2	J843316	○	J843329	○	
62	19	11	7.5	18	6	4.5	M 6	1	5	J843317	○	J843330	○	
70	22	13	13	21	6.2	5	M 8	1.25	6.8		J143311	○	J143325	○
75	24	15	16	22	7	5.5	M 10	1.5	8.5		J143312	○	J143326	○
82	29		18		8.5	6.5	M 12	1.75	10.2		J843320	○	J843333	○
88	30		20		10.5	8	M 14	2	12		J843321	○	J843334	○
95	32		20		12.5	10	M 16	2	14		J843322	○	J843335	○
100	34		22		14	11	M 18	2.5	15.5		J843323	○	J843336	○
105	34		25		15	12	M 20	2.5	17.5		J843324	○	J843337	○
115	34		25		17	13	M 22	2.5	19.5		J843860	○	J843870	○
120	38		28		19	15	M 24	3	21		J843861	○	J843871	○

105/4 DUO RED RING
131/3 DUO RED RING

G01, G02 Structural steels, G03, G04 case hardening steels, G06 heat treatable steels, G15 cast steels from 900N/mm², G08 carbon tool steels

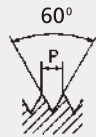
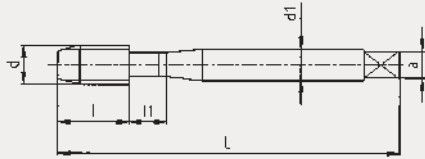
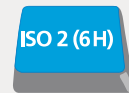
105/4 DUO RED RING
131/3 DUO RED RING

G01, G02结构钢, G03, G04表面硬化钢, G06热处理钢 >900N/mm², G15铸钢>900N/mm², G08碳素工具钢

T-JIS M



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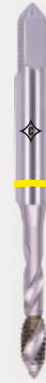


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• For stock /有库存

Norm /标准

Class of tolerance /公差



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DIN 376

ISO 2 (6H)

ISO 2 (6H)

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C/2,5

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L	105/4		131/3		DIN 371		DIN 376		d	P		Art.	Art.	Art.	Art.
	l	l1	l	l1	d1	a	d1	a							
45	8	8			2.8	2.1			M 2	0.4	1.6	C822462 ○		C878484 ○	
50	9	9			2.8	2.1			M 2,5	0.45	2.05	C822497 ○		C878506 ○	
56	11	7	6	11	3.5	2.7	2.2	1.8	M 3	0.5	2.5	C822519 ○	C861077 ○	C878514 ○	
63	13	8	7.5	13	4.5	3.4	2.8	2.1	M 4	0.7	3.3	C822535 ○	C861093 ○	C878530 ○	
70	16	9	9	16	6	4.9	3.5	2.7	M 5	0.8	4.2	C822543 ○	C861107 ○	C878549 ○	
80	19	11	11	18	6	4.9	4.5	3.4	M 6	1	5	C822551 ○	C861115 ○	C878557 ○	
90	22	13	13	21	8	6.2	6	4.9	M 8	1.25	6.8	C822578 ○	C861123 ○	C878565 ○	
100	24	15	16	22	10	8	7	5.5	M 10	1.5	8.5	C822586 ○	C861131 ○	C878573 ○	
110	29		18				9	7	M 12	1.75	10.2		C822594 ○		C878581 ○
110	30		20				11	9	M 14	2	12		C822608 ○		C878603 ○
110	32		20				12	9	M 16	2	14		C822616 ○		C878611 ○
125	34		22				14	11	M 18	2.5	15.5		C822624 ○		C878638 ○
140	34		25				16	12	M 20	2.5	17.5		C822632 ○		C878646 ○
140	34		25				18	14.5	M 22	2.5	19.5		C822230 ○		C822455 ○
160	38		28				18	14.5	M 24	3	21		C822231 ○		C822456 ○

**105/4 YELLOW RING
131/3 YELLOW RING**

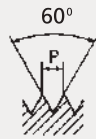
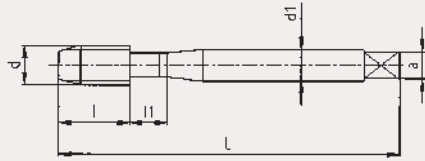
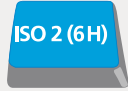
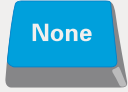
G25 Wrought alloy of aluminium, G22 soft brass(Ms63,长切屑) G29 (long chipping) G29 wrought alloy of magnesium, G26 aluminium cast alloy Si < 5%, G23 red brass, G24 phosphor bronze, G20 copper, G01, G02 Structural steels

**105/4 YELLOW RING
131/3 YELLOW RING**

G25锻造铝合金, G22软黄铜(Ms63,长切屑) G29锻造镁合金, G26 铸造铝合金(Si < 5%) G23红铜, G24 磷青铜, G20铜, G01, G02结构钢



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• For stock /有库存

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ISO 2 (6H)

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L	105/4		131/3		DIN 371		DIN 376		d	P		Art.	Art.	Art.	Art.	
	l	l1	l	l1	d1	a	d1	a								
56	11	7	6	11	3.5	2.7	2.2	1.8	M 3	0.5	2.5	C843403	○	C843422	○	
63	13	8	7.5	13	4.5	3.4	2.8	2.1	M 4	0.7	3.3	C843404	○	C843423	○	
70	16	9	9	16	6	4.9	3.5	2.7	M 5	0.8	4.2	C843405	○	C843424	○	
80	19	11	11	18	6	4.9	4.5	3.4	M 6	1	5	C843406	○	C843425	○	
90	22	13	13	21	8	6.2	6	4.9	M 8	1.25	6.8	C843407	○	C843426	○	
100	24	15	16	22	10	8	7	5.5	M 10	1.5	8.5	C843408	○	C843428	○	
110	29		18				9	7	M 12	1.75	10.2		C843409	○	C843429	○
110	30		20				11	9	M 14	2	12		C843410	○	C843430	○
110	32		20				12	9	M 16	2	14		C843411	○	C843431	○
125	34		22				14	11	M 18	2.5	15.5		C843412	○	C843432	○
140	34		25				16	12	M 20	2.5	17.5		C843413	○	C843433	○
140	34		25				18	14.5	M 22	2.5	19.5		C843414	○	C843434	○
160	38		28				18	14.5	M 24	3	21		C843415	○	C843435	○

105/4 DUO YELLOW RING 131/3 DUO YELLOW RING

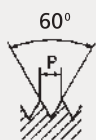
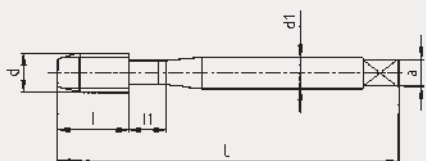
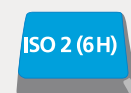
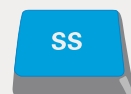
G25 Wrought alloy of aluminium, G22 soft brass(Ms63 long chipping) G29 wrought alloy of magnesium, G26 aluminium cast alloy Si < 5%, G23 red brass, G24 phosphor bronze, G20 copper, G01, G02 Structural steels

105/4 DUO YELLOW RING 131/3 DUO YELLOW RING

G25锻造铝合金, G22软黄铜(Ms63,长切屑) G29锻造镁合金, G26 铸造铝合金(Si < 5%) G23红铜, G24 磷青铜, G20铜, G01, G02结构钢



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ISO 2 (6H)

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L	105/4		131/3		DIN 371		DIN 376		d	P		Art.	Art.	Art.	Art.
	l	l1	l	l1	d1	a	d1	a							
45	8		8		2.8	2.1			M 2	0.4	1.6	C852000 ●		C873040 ●	
50	9		9		2.8	2.1			M2.5	0.45	2.05	C852035 ●		C871560 ●	
56	11	7	6	11	3.5	2.7	2.2	1.8	M 3	0.5	2.5	C856707 ●	C852051 ○	C844245 ●	
63	13	8	7.5	13	4.5	3.4	2.8	2.1	M 4	0.7	3.3	C837176 ●	C852078 ○	C845500 ●	C812299 ○
70	16	9	9	16	6	4.9	3.5	2.7	M 5	0.8	4.2	C837184 ●	C852086 ○	C845659 ●	C871609 ○
80	19	11	11	18	6	4.9	4.5	3.4	M 6	1	5	C837192 ●	C852094 ○	C851829 ●	C871617 ○
90	22	13	13	21	8	6.2	6	4.9	M 8	1.25	6.8	C837206 ●	C852108 ○	C865285 ●	C871625 ○
100	24	15	16	22	10	8	7	5.5	M 10	1.5	8.5	C837214 ●	C852116 ○	C865293 ●	C871633 ○
110	29		18				9	7	M 12	1.75	10.2		C837222 ●		C857150 ●
110	30		20				11	9	M 14	2	12		C837230 ●		C857177 ●
110	32		20				12	9	M 16	2	14		C837249 ●		C857193 ●
125	34		22				14	11	M 18	2.5	15.5		C852124 ○		C857274 ○
140	34		25				16	12	M 20	2.5	17.5		C852132 ○		C857304 ○
140	34		25				18	14.5	M 22	2.5	19.5		C872419 ○		C884107 ○
160	38		28				18	14.5	M 24	3	21		C883798 ○		C884115 ○

105/4,131/3 BLACK RING

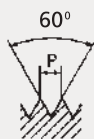
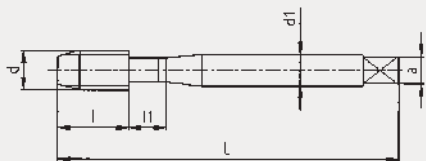
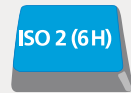
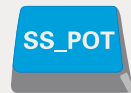
G01, G02, G03, G04, G05, G08, G13, G14, G20.

105/4,131/3 BLACK RING

G01,G02结构钢, G03, G04表面硬化钢, G05热处理钢<1000N/mm², G08碳素工具钢, G13易切钢, G14铸钢<1000N/mm², G20铜



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• For stock /有库存

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ISO 2 (6H)

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C/2,5-3

L	105/4		131/3		DIN 371		DIN 376		d	P		Art.	Art.	Art.	Art.
	l	l1	l	l1	d1	a	d1	a							
45	8		8		2.8	2.1			M 2	0.4	1,6				
50	9		9		2.8	2.1			M2.5	0.45	2,05				
56	11	7	6	11	3.5	2.7	2.7	1.8	M 3	0.5	2,5	C843217 ●		C843239 ●	
63	13	8	7.5	13	4.5	3.4	2.8	2.1	M 4	0.7	3,3	C843218 ●		C843240 ●	
70	16	9	9	16	6	4.9	3.5	2.7	M 5	0.8	4,2	C843219 ●		C843241 ●	
80	19	11	11	18	6	4.9	4.5	3.4	M 6	1	5	C843220 ●		C843242 ●	
90	22	13	13	21	8	6.2	6	4.9	M 8	1.25	6,8	C843221 ●		C843243 ●	
100	24	15	16	22	10	8	7	5.5	M 10	1.5	8,5	C843231 ●		C843244 ●	
110	29		18				9	7	M 12	1.75	10,2		C843232 ●		C843245 ●
110	30		20				11	9	M 14	2	12		C843233 ●		C843246 ●
110	32		20				12	9	M 16	2	14		C843234 ●		C843247 ●
125	34		22				14	11	M 18	2.5	15,5		C843235 ○		C843248 ○
140	34		25				16	12	M 20	2.5	17,5		C843236 ○		C843250 ○
140	34		25				18	14.5	M 22	2.5	19,5		C843237 ○		C843251 ○
160	38		28				18	14.5	M 24	3	21		C843801 ○		C843252 ○

105/4,131/3 DUO BLACK RING

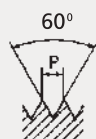
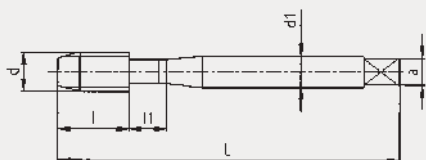
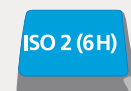
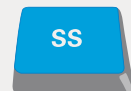
G01,G02 Structural steels, G03, G04 case hardening steels, G05 heat treatable steels up to 1000N/mm², G08 carbon tool steels, G13 free-cutting steels, G10 Cr stainless steels sulphured, a.o.

105/4,131/3 DUO BLACK RING

G01,G02结构钢, G03, G04表面硬化钢, G05热处理钢<1000N/mm², G08碳素工具钢, G13易切钢 G10 Cr不锈钢



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ISO 2 (6H)

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ISO 2 (6H)

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L	105/3		DIN 371		DIN 376		d	P		Art.	Art.
	l	l ₁	d ₁	a	d ₁	a					
45	8		2.8	2.1			M 2	0.4	1.6	C871374 ○	
50	9		2.8	2.1			M2.5	0.45	2.05	C871382 ○	
56	11	7	3.5	2.7			M 3	0.5	2.5	C837257 ○	
63	13	8	4.5	3.4			M 4	0.7	3.3	C837273 ○	
70	16	9	6	4.9			M 5	0.8	4.2	C837281 ○	
80	19	11	6	4.9			M 6	1	5	C856715 ○	
90	22	13	8	6.2	6	4.9	M 8	1.25	6.8	C837303 ○	C871412 ○
100	24	15	10	8	7	5.5	M 10	1.5	8.5	C837311 ○	C874985 ○
110	29				9	7	M 12	1.75	10.2		C856723 ○
110	30				11	9	M 14	2	12		C852140 ○
110	32				12	9	M 16	2	14		C852159 ○
140	34				16	12	M 20	2.5	17.5		C852175 ○
140	34				18	14.5	M 22	2.5	19.5		C852177 ○
160	38				18	14.5	M 24	3	21		C852179 ○

105/3 GREEN RING

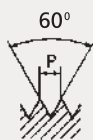
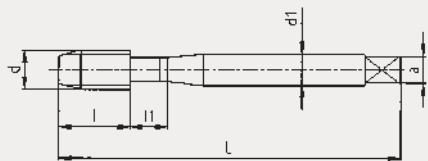
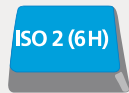
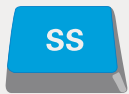
G18 Lamellar graphite cast iron (grey cast iron), G17 nodular graphite cast iron, G19 vermicular graphite cast iron, G16 malleable cast iron, G27, G28 aluminium cast alloy Si 5-12 % a.o.

105/3 GREEN RING

G18片状石墨铸铁(灰铸铁) G17结节性石墨铸铁(球墨铸铁) G19蠕墨铸铁, G16可锻铸铁, G27, G28铸造铝合金 Si 5-12 %



DIN 371/376



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DUO



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DUO



• For stock /有库存

Norm /标准

Class of tolerance /公差



DIN 371

ISO 2 (6H)

C/2,5



DIN 376

ISO 2 (6H)

C/2,5

L	105/3		DIN 371		DIN 376		d	P		Art.	Art.
	l	l ₁	d ₁	a	d ₁	a					
56	11	7	3.5	2.7			M 3	0.5	2.5	C843446 ○	
63	13	8	4.5	3.4			M 4	0.7	3.3	C843447 ○	
70	16	9	6	4.9			M 5	0.8	4.2	C843448 ○	
80	19	11	6	4.9			M 6	1	5	C843449 ○	
90	22	13	8	6.2	6	4.9	M 8	1.25	6.8	C843452 ○	
100	24	15	10	8	7	5.5	M 10	1.5	8.5	C843453 ○	
110	29				9	7	M 12	1.75	10.2		C843454 ○
110	30				11	9	M 14	2	12		C843455 ○
110	32				12	9	M 16	2	14		C843456 ○
140	34				16	12	M 20	2.5	17.5		C843458 ○
140	34				18	14.5	M 22	2.5	19.5		C843459 ○
160	38				18	14.5	M 24	3	21		C843460 ○

105/3 DUO GREEN RING

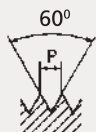
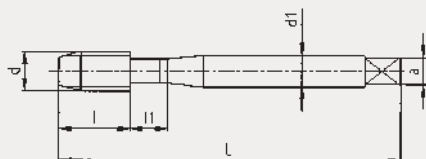
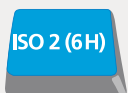
G18 Lamellar graphite cast iron (grey cast iron), G17 nodular graphite cast iron, G19 vermicular graphite cast iron, G16 malleablecast iron, G27, G28 aluminium cast alloy Si 5-12 % a.o.

105/3 DUO GREEN RING

G18片状石墨铸铁(灰铸铁) G17结节性石墨铸铁(球墨铸铁) G19蠕墨铸铁, G16可锻铸铁, G27, G28铸造铝合金 Si 5-12 %



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• For stock /有库存

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Class of tolerance /公差



DIN 371

DIN 376

DIN 371

DIN 376

ISO 2 (6H)

ISO 2 (6H)

ISO 2 (6H)

ISO 2 (6H)

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C/2,5

C/2,5

L	105/4		131/3		d ₁	a	d	p		Art.	Art.	Art.	Art.
	l	l ₁	l	l ₁									
45	8		8		2.8	2.1	M 2	0.4	1.6	C893564 ●		C825690 ●	
50	9		9		2.8	2.1	M2.5	0.45	2.05	C893556 ●		C825828 ●	
56	11	7	6	11	3.5	2.7	M 3	0.5	2.5	C893572 ●		C825925 ●	
63	13	8	7.5	13	4.5	3.4	M 4	0.7	3.3	C893580 ●		C826034 ●	
70	16	9	9	16	6	4.9	M 5	0.8	4.2	C893599 ●		C826085 ●	
80	19	11	11	18	6	4.9	M 6	1	5	C893602 ●		C826123 ●	
90	22	13	13	21	8	6.2	M 8	1.25	6.8	C893610 ●		C826212 ●	
100	24	15	16	22	10	8	M 10	1.5	8.5	C893629 ●		C826247 ●	
110	29		18		9	7	M 12	1.75	10.2		C893637 ●		C826298 ●
110	30		20		11	9	M 14	2	12		C893645 ●		C854852 ●
110	32		20		12	9	M 16	2	14		C893653 ●		C854860 ●
125	34		22		14	11	M 18	2.5	15.5		C893661 ○		C854879 ○
140	34		25		16	12	M 20	2.5	17.5		C893688 ○		C854887 ○
140	34		25		18	14.5	M 22	2.5	19.5		C893696 ○		C854895 ○
160	38		28		18	14.5	M 24	3	21		C893718 ○		C854909 ○

105/4.131/3 BLUE RING

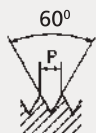
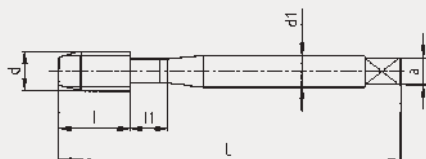
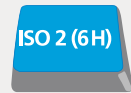
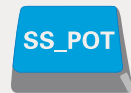
G12 Cr-Ni stainless steels austenitic, G11 Cr stainless steels ferritic and martensitic, G07 nitriding steels, G09 heat resisting steels, G31 alloy of nickel, G10 Cr stainless steels sulphured, G01, G02 structural steels, G03, G04 case hardening steels G06 heat treatable steels from 900N/mm²

105/4.131/3 BLUE RING

G12 Cr-Ni不锈钢, G11马氏体不锈钢, G07氮化钢, G09 耐热钢, G31镍合金, G10 Cr不锈钢, G01, G02 结构钢, G03, G04表面硬化钢, G06热处理钢 >900N/mm²



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DIN 376

DIN 371

DIN 376

ISO 2 (6H)

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ISO 2 (6H)

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C/2,5

C/2,5

L	105/4		131/3		d ₁	a	d			Art.	Art.	Art.	Art.
	l	l ₁	l	l ₁									
45	8		8		2.8	2.1	M 2	0.4	1.6				
50	9		9		2.8	2.1	M2.5	0.45	2.05				
56	11	7	3.6	11	3.5	2.7	M 3	0.5	2.5	C843285 ●		C843299 ●	
63	13	8	4	13	4.5	3.4	M 4	0.7	3.3	C843286 ●		C843300 ●	
70	16	9	5.7	16	6	4.9	M 5	0.8	4.2	C843287 ●		C843301 ●	
80	19	11	7.5	18	6	4.9	M 6	1	5	C843289 ●		C843302 ●	
90	22	13	13	21	8	6.2	M 8	1.25	6.8	C843290 ●		C843304 ●	
100	24	15	16	22	10	8	M 10	1.5	8.5	C843291 ●		C843305 ●	
110	29		18		9	7	M 12	1.75	10.2		C843292 ●		C843306 ●
110	30		20		11	9	M 14	2	12		C843293 ●		C843307 ●
110	32		20		12	9	M 16	2	14		C843294 ●		C843308 ●
125	34		22		14	11	M 18	2.5	15.5		C843295 ○		C843309 ○
140	34		25		16	12	M 20	2.5	17.5		C843296 ○		C843310 ○
140	34		25		18	14.5	M 22	2.5	19.5		C843298 ○		C843312 ○
160	38		28		18	14.5	M 24	3	21		C843821 ○		C843852 ○

105/4, 131/3 DUO BLUE RING

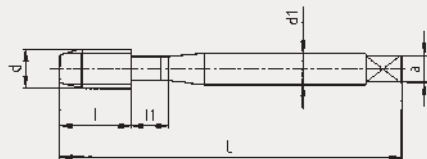
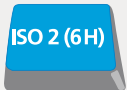
G12 Cr-Ni stainless steels austenitic, G11 Cr stainless steels ferritic and martensitic, G07 nitriding steels, G09 heat resisting steels, G31 alloy of nickel, G10 Cr stainless steels sulphured, G01, G02 structural steels, G03, G04 case hardening steels, G06 heat treatable steels from 900N/mm²

105/4, 131/3 DUO BLUE RING

G12 Cr-Ni不锈钢, G11马氏体不锈钢, G07氮化钢, G09 耐热钢, G31镍合金, G10 Cr不锈钢, G01, G02结构钢, G03, G04表面硬化钢, G06热处理钢 >900N/mm²



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• For stock /有库存

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ISO 2 (6H)

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L	105/4		131/3		d1	a	d	P		Art.	Art.	Art.	Art.	
	l	l1	l	l1										
45	8		8		2.8	2.1	M 2	0.4	1.6	C875000	o	C876007	o	
50	9		9		2.8	2.1	M2.5	0.45	2.05	C875027	o	C876023	o	
56	11	7	6	11	3.5	2.7	M 3	0.5	2.5	C875035	o	C876031	o	
63	13	8	7.5	13	4.5	3.4	M 4	0.7	3.3	C875043	o	C876058	o	
70	16	9	9	16	6	4.9	M 5	0.8	4.2	C875051	o	C876066	o	
80	19	11	11	18	6	4.9	M 6	1	5	C875078	o	C876074	o	
90	22	13	13	21	8	6.2	M 8	1.25	6.8	C875086	o	C876082	o	
100	24	15	16	22	10	8	M 10	1.5	8.5	C875094	o	C876090	o	
110	29		18		9	7	M 12	1.75	10.2		C875108	o	C876104	o
110	30		20		11	9	M 14	2	12		C875116	o	C876112	o
110	32		20		12	9	M 16	2	14		C875124	o	C876120	o
125	34		22		14	11	M 18	2.5	15.5		C875132	o	C876139	o
140	34		25		16	12	M 20	2.5	17.5		C875140	o	C876147	o
140	34		25		18	14.5	M 22	2.5	19.5		C883895	o	C884190	o
160	38		28		18	14.5	M 24	3	21		C883909	o	C884204	o

105/4 RED RING
131/3 RED RING

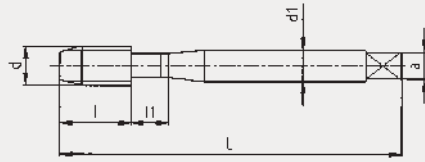
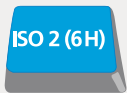
G01, G02 Structural steels, G03, G04 case hardening steels, G05, G06 heat treatable steels, G15 cast steels from 900 N/mm², G08 carbon tool steels, G34 thermoplastic compounds/synthetics

105/4 RED RING
131/3 RED RING

G01, G02结构钢, G03, G04表面硬化钢, G06热处理钢 >900N/mm², G15铸钢>900N/mm², G08碳素工具钢, G34热塑性复合材料



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• For stock /有库存

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ISO 2 (6H)

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L	105/4		131/3		d1	a	d	P		Art.	Art.	Art.	Art.
	l	l1	l	l1									
45	8		8		2.8	2.1	M 2	0.4	1.6				
50	9		9		2.8	2.1	M2.5	0.45	2.05				
56	11	7	3.6	11	3.5	2.7	M 3	0.5	2.5	C843314 ○		C843327 ○	
63	13	8	4	13	4.5	3.4	M 4	0.7	3.3	C843315 ○		C843328 ○	
70	16	9	5.7	16	6	4.9	M 5	0.8	4.2	C843316 ○		C843329 ○	
80	19	11	7.5	18	6	4.9	M 6	1	5	C843317 ○		C843330 ○	
90	22	13	13	21	8	6.2	M 8	1.25	6.8	C843318 ○		C843331 ○	
100	24	15	16	22	10	8	M 10	1.5	8.5	C843319 ○		C843332 ○	
110	29		18		9	7	M 12	1.75	10.2		C843320 ○		C843333 ○
110	30		20		11	9	M 14	2	12		C843321 ○		C843334 ○
110	32		20		12	9	M 16	2	14		C843322 ○		C843335 ○
125	34		22		14	11	M 18	2.5	15.5		C843323 ○		C843336 ○
140	34		25		16	12	M 20	2.5	17.5		C843324 ○		C843337 ○
140	34		25		18	14.5	M 22	2.5	19.5		C843325 ○		C843338 ○
160	38		28		18	14.5	M 24	3	21		C843326 ○		C843339 ○

105/4 DUO RED RING
131/3 DUO RED RING

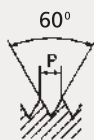
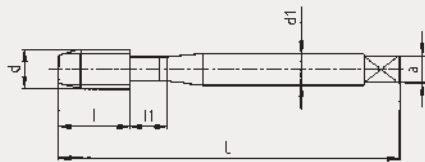
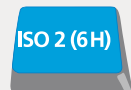
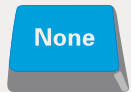
G01, G02 Structural steels, G03, G04 case hardening steels, G06 heat treatable steels, G15 cast steels from 900N/mm², G08 carbon tool steels

105/4 DUO RED RING
131/3 DUO RED RING

G01, G02结构钢, G03, G04表面硬化钢, G06热处理钢 >900N/mm², G15铸钢>900N/mm², G08碳素工具钢



T-JIS

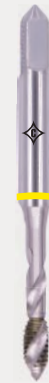


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• For stock /有库存

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T-JIS

T-JIS

T-JIS

ISO 2 (6H)

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L	105/4		131/3		d ₁	a	d	P		Art.		Art.	
	l	l	l	l						Art.	Art.	Art.	Art.
52	10	7.5	5	4	MF4	0.5	3.5	J864170 ◯		J865600 ◯			
60	12	7.5	5.5	4.5	MF5	0.5	4.5	J864171 ◯		J865601 ◯			
62	14	8	6	4.5	MF6	0.75	5.25	J864174 ◯		J865604 ◯			
70	18	10	6.2	5	MF8	0.75	7.25		J164218 ◯			J165641 ◯	
70	22	10	6.2	5	MF8	1	7		J164219 ◯			J165642 ◯	
75	20	12	7	5.5	MF10	0.75	9.25		J164220 ◯			J165643 ◯	
75	20	12	7	5.5	MF10	1	9		J164221 ◯			J165644 ◯	
75	24	14	7	5.5	MF10	1.25	8.8		J164222 ◯			J165645 ◯	
82	22	14	8.5	6.5	MF12	1	11		J164223 ◯			J165646 ◯	
82	22	14	8.5	6.5	MF12	1.25	10.8		J164224 ◯			J165647 ◯	
82	22	14	8.5	6.5	MF12	1.5	10.5		J164225 ◯			J165648 ◯	
88	22	16	10.5	8	MF14	1	13		J164226 ◯			J165649 ◯	
88	22	20	10.5	8	MF14	1.5	12.5		J164227 ◯			J165650 ◯	
95	22	16	12.5	10	MF16	1	15		J164228 ◯			J165651 ◯	
95	22	20	12.5	10	MF16	1.5	14.5		J164229 ◯			J165652 ◯	

**105/4 YELLOW RING
131/3 YELLOW RING**

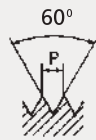
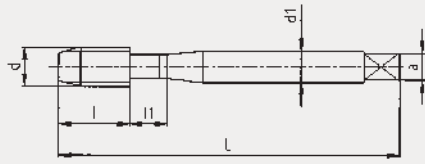
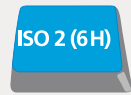
G25 Wrought alloy of aluminium, G22 soft brass(Ms63 long chipping) G29 wrought alloy of magnesium, G26 aluminium cast alloy Si < 5%, G23 red brass, G24 phosphor bronze, G20 copper, G01, G02 Structural steels

**105/4 YELLOW RING
131/3 YELLOW RING**

G25锻造铝合金, G22软黄铜(Ms63,长切屑) G29锻造镁合金, G26 铸造铝合金(Si < 5%) G23红铜, G24 磷青铜, G20铜, G01, G02结构钢



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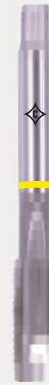


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L	105/4		131/3		d ₁	a	d	P		Art.	Art.	Art.	Art.
	l	l	l	l									
100	25	18	14	11	MF18	1	17		J164230	○	J165653	○	
100	25	25	14	11	MF18	1.5	16.5		J164231	○	J165654	○	
100	34	25	14	11	MF18	2	16		J164232	○	J165655	○	
105	25	25	15	12	MF20	1.5	18.5		J164233	○	J165656	○	
115	25	17	17	13	MF22	1.5	20.5		J164234	○	J165657	○	
120	25	20	19	15	MF24	1.5	22.5		J164235	○	J165658	○	
120	28	20	19	15	MF24	2	22		J164236	○	J165659	○	

**105/4 YELLOW RING
131/3 YELLOW RING**

G25 Wrought alloy of aluminium, G22 soft brass(Ms63 long chipping) G29 wrought alloy of magnesium, G26 aluminium cast alloy Si < 5%, G23 red brass, G24 phosphor bronze, G20 copper, G01, G02 Structural steels

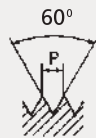
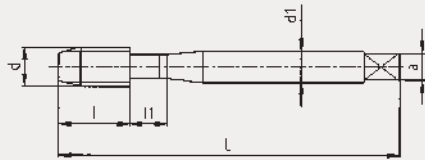
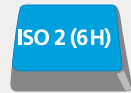
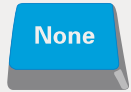
**105/4 YELLOW RING
131/3 YELLOW RING**

G25锻造铝合金, G22软黄铜(Ms63,长切屑) G29锻造镁合金, G26 铸造铝合金(Si < 5%) G23红铜, G24 磷青铜, G20铜, G01, G02结构钢

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L	105/4		131/3		d ₁	a	d	P		Art.		Art.	
	l	l	l	l						Art.	Art.	Art.	Art.
52	10	7.5	5	4	MF4	0.5	3.5	J820001	○	J820076	○		
60	12	7.5	5.5	4.5	MF5	0.5	4.5	J820004	○	J820079	○		
62	14	8	6	4.5	MF6	0.75	5.25	J820010	○	J820085	○		
70	18	10	6.2	5	MF8	0.75	7.25			J820016	○	J820091	○
70	22	10	6.2	5	MF8	1	7			J820019	○	J820094	○
75	20	12	7	5.5	MF10	0.75	9.25			J820025	○	J820100	○
75	20	12	7	5.5	MF10	1	9			J820028	○	J820103	○
75	24	14	7	5.5	MF10	1.25	8.8			J820031	○	J820106	○
82	22	14	8.5	6.5	MF12	1	11			J820034	○	J820109	○
82	22	14	8.5	6.5	MF12	1.25	10.8			J820037	○	J820112	○
82	22	14	8.5	6.5	MF12	1.5	10.5			J820040	○	J820115	○
88	22	16	10.5	8	MF14	1	13			J820043	○	J820118	○
88	22	20	10.5	8	MF14	1.5	12.5			J820046	○	J820121	○
95	22	16	12.5	10	MF16	1	15			J820049	○	J820124	○
95	22	20	12.5	10	MF16	1.5	14.5			J820052	○	J820127	○

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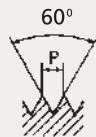
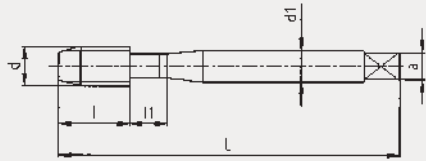
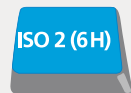
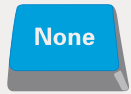
G25 Wrought alloy of aluminium, G22 soft brass(Ms63 long chipping) G29 wrought alloy of magnesium, G26 aluminium cast alloy Si < 5%, G23 red brass, G24 phosphor bronze, G20 copper, G01, G02 Structural steels

105/4 DUO YELLOW RING
131/3 DUO YELLOW RING

G25锻造铝合金, G22软黄铜(Ms63,长切屑) G29锻造镁合金, G26 铸造铝合金(Si < 5%) G23红铜, G24 磷青铜, G20铜, G01, G02结构钢



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L	105/4 l	131/3 l	d ₁	a	d	P		Art.	Art.	Art.	Art.
100	25	18	14	11	MF18	1			J820055 ◯		J820130 ◯
100	25	25	14	11	MF18	1.5			J820058 ◯		J820133 ◯
100	34	25	14	11	MF18	2			J820061 ◯		J820136 ◯
105	25	25	15	12	MF20	1.5			J820064 ◯		J820139 ◯
115	25	17	17	13	MF22	1.5			J820067 ◯		J820142 ◯
120	25	20	19	15	MF24	1.5			J820070 ◯		J820145 ◯
120	28	20	19	15	MF24	2			J820073 ◯		J820148 ◯

**105/4 DUO YELLOW RING
131/3 DUO YELLOW RING**

G25 Wrought alloy of aluminium, G22 soft brass(Ms63 long chipping) G29 wrought alloy of magnesium, G26 aluminium cast alloy Si < 5%, G23 red brass, G24 phosphor bronze, G20 copper, G01, G02 Structural steels

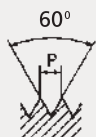
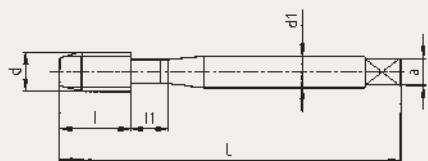
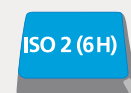
**105/4 DUO YELLOW RING
131/3 DUO YELLOW RING**

G25锻造铝合金, G22软黄铜(Ms63,长切屑) G29锻造镁合金, G26 铸造铝合金(Si < 5%) G23红铜, G24 磷青铜, G20铜, G01, G02结构钢

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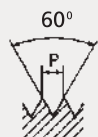
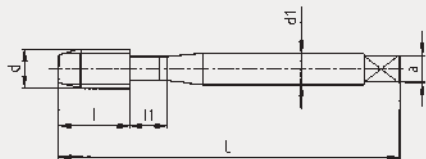
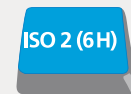
L	105/4		131/3		d ₁	a	d	P		Art.	Art.	Art.	Art.
	l	l	l	l									
52	10	7.5	5	4	MF4	0.5	3.5	J866300 ◯	J866600 ◯				
60	12	7.5	5.5	4.5	MF5	0.5	4.5	J866301 ◯	J866601 ◯				
62	14	8	6	4.5	MF6	0.75	5.25	J866303 ◯	J866604 ◯				
70	18	10	6.2	5	MF8	0.75	7.25	J166332 ◯	J166633 ◯				
70	22	10	6.2	5	MF8	1	7	J166333 ◯	J166634 ◯				
75	20	12	7	5.5	MF10	0.75	9.25	J166334 ◯	J166635 ◯				
75	20	12	7	5.5	MF10	1	9	J166335 ◯	J166636 ◯				
75	24	14	7	5.5	MF10	1.25	8.8	J166336 ◯	J166637 ◯				
82	22	14	8.5	6.5	MF12	1	11	J166337 ◯	J166638 ◯				
82	22	14	8.5	6.5	MF12	1.25	10.8	J166338 ◯	J166639 ◯				
82	22	14	8.5	6.5	MF12	1.5	10.5	J166339 ◯	J166640 ◯				
88	22	16	10.5	8	MF14	1	13	J166340 ◯	J166641 ◯				
88	22	20	10.5	8	MF14	1.5	12.5	J166341 ◯	J166642 ◯				
95	22	16	12.5	10	MF16	1	15	J166342 ◯	J166643 ◯				
95	22	22	12.5	10	MF16	1.5	14.5	J166343 ◯	J166644 ◯				

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G01, G02, G03, G04, G05, G08,
G13, G14, G20.

105/4,131/3 BLACK RING
G01, G02结构钢, G03, G04表面硬化钢, G05热处理钢<1000N/mm²,
G08碳素工具钢, G13易切钢, G14铸钢<1000N/mm², G20铜



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L	105/4		131/3		d ₁	a	d	P		Art.	Art.	Art.	Art.	
	l	l	l	l										
100	25	18	14	11	MF18	1	17			J166344	○		J166645	○
100	25	25	14	11	MF18	1.5	16.5			J166345	○		J166646	○
100	34	25	14	11	MF18	2	16			J166346	○		J166647	○
105	25	25	15	12	MF20	1.5	18.5			J166347	○		J166648	○
115	25	17	17	13	MF22	1.5	20.5			J166348	○		J166649	○
120	25	20	19	15	MF24	1.5	22.5			J166349	○		J166650	○
120	28	20	19	15	MF24	2	22			J166350	○		J166651	○

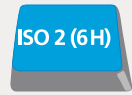
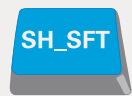
105/4,131/3 BLACK RING

G01, G02, G03, G04, G05, G08, G13, G14, G20.

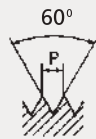
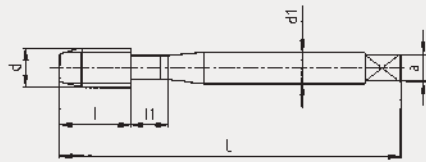
105/4,131/3 BLACK RING

G01, G02结构钢, G03, G04表面硬化钢, G05热处理钢<1000N/mm², G08碳素工具钢, G13易切钢, G14铸钢<1000N/mm², G20铜





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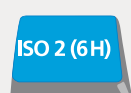
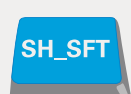
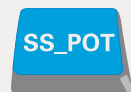
L	105/4		131/3		d ₁	a	d	P		Art.	Art.	Art.	Art.
	l	l	l	l									
52	10	7.5	5	4	MF4	0.5	3.5	J820151 ○		J820226 ○			
60	12	7.5	5.5	4.5	MF5	0.5	4.5	J820154 ○		J820229 ○			
62	14	8	6	4.5	MF6	0.75	5.25	J820160 ○		J820235 ○			
70	18	10	6.2	5	MF8	0.75	7.25		J820166 ○			J820241 ○	
70	22	10	6.2	5	MF8	1	7		J820169 ○			J820244 ○	
75	20	12	7	5.5	MF10	0.75	9.25		J820175 ○			J820250 ○	
75	20	12	7	5.5	MF10	1	9		J820178 ○			J820253 ○	
75	24	14	7	5.5	MF10	1.25	8.8		J820181 ○			J820256 ○	
82	22	14	8.5	6.5	MF12	1	11		J820184 ○			J820259 ○	
82	22	14	8.5	6.5	MF12	1.25	10.8		J820187 ○			J820262 ○	
82	22	14	8.5	6.5	MF12	1.5	10.5		J820190 ○			J820265 ○	
88	22	16	10.5	8	MF14	1	13		J820193 ○			J820268 ○	
88	22	20	10.5	8	MF14	1.5	12.5		J820196 ○			J820271 ○	
95	22	16	12.5	10	MF16	1	15		J820199 ○			J820274 ○	
95	22	22	12.5	10	MF16	1.5	14.5		J820202 ○			J820277 ○	

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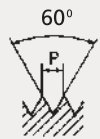
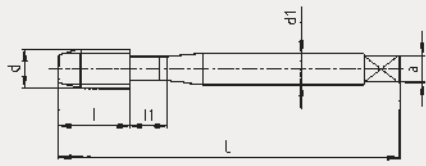
G01,G02 Structural steels, G03, G04 case hardening steels, G05 heat treatable steels up to 1000N/mm², G08 carbon tool steels, G13 free-cutting steels, G10 Cr stainless steels sulphured, a.o.

105/4,131/3 DUO BLACK RING

G01,G02结构钢, G03, G04表面硬化钢, G05热处理钢<1000N/mm², G08碳素工具钢, G13易切钢 G10 Cr不锈钢



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L	105/4		131/3		d ₁	a	d	P		Art.	Art.	Art.	Art.
	l	l	l	l									
100	25	18	14	11	MF18	1	17			J820205 ◦		J820280 ◦	
100	25	25	14	11	MF18	1.5	16.5			J820208 ◦		J820283 ◦	
100	34	25	14	11	MF18	2	16			J820211 ◦		J820286 ◦	
105	25	25	15	12	MF20	1.5	18.5			J820214 ◦		J820289 ◦	
115	25	17	17	13	MF22	1.5	20.5			J820217 ◦		J820292 ◦	
120	25	20	19	15	MF24	1.5	22.5			J820220 ◦		J820295 ◦	
120	28	20	19	15	MF24	2	22			J820223 ◦		J820298 ◦	

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G01,G02 Structural steels, G03, G04 case hardening steels, G05 heat treatable steels up to 1000N/mm², G08 carbon tool steels, G13 free-cutting steels, G10 Cr stainless steels sulphured, a.o.

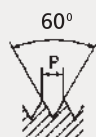
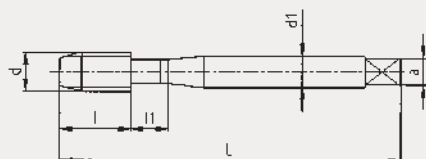
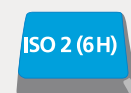
105/4,131/3 DUO BLACK RING

G01,G02结构钢, G03, G04表面硬化钢, G05热处理钢<1000N/mm², G08碳素工具钢, G13易切钢 G10 Cr不锈钢





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L	105/3 l	d ₁	a	d	P		Art.
70	22	6.2	5	MF8	1	7	J166712 ◯
75	20	7	5.5	MF10	1	9	J166713 ◯
82	22	8.5	6.5	MF12	1	11	J166714 ◯
82	22	8.5	6.5	MF12	1.5	10.5	J166715 ◯
88	22	10.5	8	MF14	1.5	12.5	J166716 ◯
95	22	12.5	10	MF16	1.5	14.5	J166717 ◯
100	25	14	11	MF18	1	17	J166718 ◯
100	25	14	11	MF18	1.5	16.5	J166719 ◯
100	34	14	11	MF18	2	16	J166720 ◯
105	25	15	12	MF20	1.5	18.5	J166721 ◯
115	25	17	13	MF22	1.5	20.5	J166722 ◯
120	25	19	15	MF24	1.5	22.5	J166723 ◯
120	28	19	15	MF24	2	22	J166724 ◯

105/3 GREEN RING

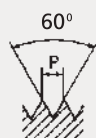
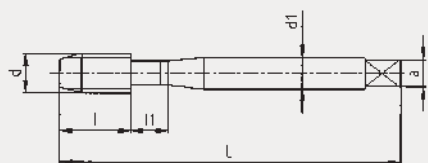
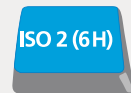
G18 Lamellar graphite cast iron (grey cast iron), G17 nodular graphite cast iron, G19 vermicular graphite cast iron, G16 malleablecast iron, G27, G28 aluminium cast alloy Si 5-12 % a.o.

105/3 GREEN RING

G18片状石墨铸铁(灰铸铁) G17结节性石墨铸铁(球墨铸铁) G19蠕墨铸铁, G16可锻铸铁, G27, G28铸造铝合金 Si 5-12 %



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L	105/3 l	d ₁	a	d	P		Art.
70	22	6.2	5	MF8	1	7	J820319 ○
75	20	7	5.5	MF10	1	9	J820328 ○
82	22	8.5	6.5	MF12	1	11	J820334 ○
82	22	8.5	6.5	MF12	1.5	10.5	J820340 ○
88	22	10.5	8	MF14	1.5	12.5	J820346 ○
95	22	12.5	10	MF16	1.5	14.5	J830352 ○
100	25	14	11	MF18	1	17	J820355 ○
100	25	14	11	MF18	1.5	16.5	J820358 ○
100	34	14	11	MF18	2	16	J820361 ○
105	25	15	12	MF20	1.5	18.5	J820364 ○
115	25	17	13	MF22	1.5	20.5	J820367 ○
120	25	19	15	MF24	1.5	22.5	J820370 ○
120	28	19	15	MF24	2	22	J820373 ○

105/3 DUO GREEN RING

G18 Lamellar graphite cast iron (grey cast iron), G17 nodular graphite cast iron, G19 vermicular graphite cast iron, G16 malleablecast iron, G27, G28 aluminium cast alloy Si 5-12% a o

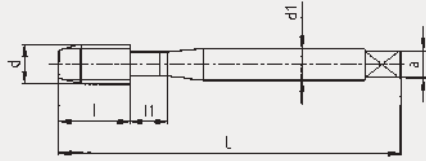
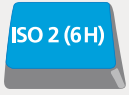
105/3 DUO GREEN RING

G18片状石墨铸铁(灰铸铁) G17结节性石墨铸铁(球墨铸铁) G19蠕墨铸铁, G16可锻铸铁, G27, G28铸造铝合金 Si 5-12 %





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L	105/4		131/3		d ₁	a	d	p		Art.	Art.	Art.	Art.
	l	l ₁	l	l ₁									
52	10	8	7.5	13	5	4	MF4	0.5	3.5	J811870 ◯		J884875 ◯	
60	12	11	7.5	16	5.5	4.5	MF5	0.5	4.5	J811871 ◯		J884883 ◯	
62	14	11	8	18	6	4.5	MF6	0.75	5.25	J811872 ◯		J884891 ◯	
70	18	13	10	21	6.2	5	MF8	0.75	7.25		J111892 ◯		J184789 ◯
70	22	13	10	21	6.2	5	MF8	1	7		J111893 ◯		J184790 ◯
75	20	15	12	22	7	5.5	MF10	0.75	9.25		J111894 ◯		J184791 ◯
75	20	15	12	22	7	5.5	MF10	1	9		J111895 ◯		J184792 ◯
75	24	15	14		7	5.5	MF10	1.25	8.8		J111896 ◯		J184793 ◯
82	22		14		8.5	6.5	MF12	1	11		J811877 ◯		J884956 ◯
82	22		14		8.5	6.5	MF12	1.25	10.8		J811879 ◯		J884964 ◯
82	22		14		8.5	6.5	MF12	1.5	10.5		J811880 ◯		J884972 ◯
88	22		16		10.5	8	MF14	1	13		J811881 ◯		J884980 ◯
88	22		20		10.5	8	MF14	1.5	12.5		J811882 ◯		J884999 ◯
95	22		16		12.5	10	MF16	1	15		J811883 ◯		J885006 ◯
95	22		20		12.5	10	MF16	1.5	14.5		J811884 ◯		J885014 ◯

105/4.131/3 BLUE RING

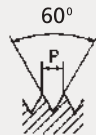
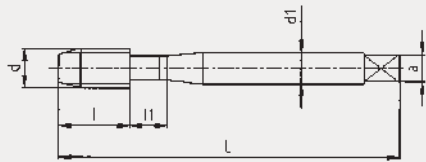
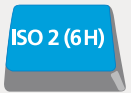
G12 Cr-Ni stainless steels austenitic, G11 Cr stainless steels ferritic and martensitic, G07 nitriding steels, G09 heat resisting steels, G31 alloy of nickel, G10 Cr stainless steels sulphured, G01, G02 structural steels, G03, G04 case hardening steels G06 heat treatable steels from 900N/mm²

105/4.131/3 BLUE RING

G12 Cr-Ni不锈钢, G11马氏体不锈钢, G07氮化钢, G09 耐热钢, G31镍合金, G10 Cr不锈钢, G01, G02 结构钢, G03, G04表面硬化钢, G06热处理钢 >900N/mm²



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L	105/4		131/3		d ₁	a	d	P		105/4		131/3	
	l	l	l	l						Art.	Art.	Art.	Art.
100	25	18	14	11	MF18	1	17		J811885	○	J884778	○	
100	25	25	14	11	MF18	1.5	16.5		J811887	○	J885030	○	
100	34	25	14	11	MF18	2	16		J811886	○	J885029	○	
105	25	25	15	12	MF20	1.5	18.5		J811889	○	J884786	○	
115	25	17	17	13	MF22	1.5	20.5		J811890	○	J884787	○	
120	25	20	19	15	MF24	1.5	22.5		J811892	○	J884788	○	
120	28	20	19	15	MF24	2	22		J811891	○	J884794	○	

105/4.131/3 BLUE RING

G12 Cr-Ni stainless steels austenitic, G11 Cr stainless steels ferritic and martensitic, G07 nitriding steels, G09 heat resisting steels, G31 alloy of nickel, G10 Cr stainless steels sulphured, G01, G02 structural steels, G03, G04 case hardening steels G06 heat treatable steels from 900N/mm²

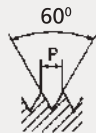
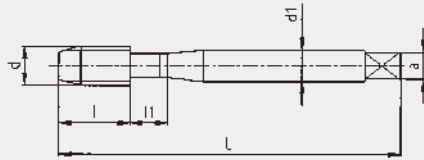
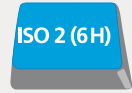
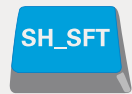
105/4.131/3 BLUE RING

G12 Cr-Ni不锈钢, G11马氏体不锈钢, G07氮化钢, G09 耐热钢, G31镍合金, G10 Cr不锈钢, G01, G02 结构钢, G03, G04表面硬化钢, G06热处理钢 >900N/mm²

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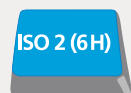
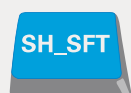
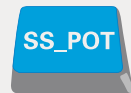
L	105/4		131/3		d ₁	a	d	p		Art.	Art.	Art.	Art.
	l	l ₁	l	l ₁									
52	10	8	7.5	13	5	4	MF4	0.5	3.5	J820376 ◯		J820451 ◯	
60	12	11	7.5	16	5.5	4.5	MF5	0.5	4.5	J820379 ◯		J820454 ◯	
62	14	11	8	18	6	4.5	MF6	0.75	5.25	J820385 ◯		J820460 ◯	
70	18	13	10	21	6.2	5	MF8	0.75	7.25		J820391 ◯		J820466 ◯
70	22	13	10	21	6.2	5	MF8	1	7		J820394 ◯		J820469 ◯
75	20	15	12	22	7	5.5	MF10	0.75	9.25		J820400 ◯		J820475 ◯
75	20	15	12	22	7	5.5	MF10	1	9		J820403 ◯		J820478 ◯
75	24	15	14		7	5.5	MF10	1.25	8.8		J820406 ◯		J820481 ◯
82	22		14		8.5	6.5	MF12	1	11		J820409 ◯		J820484 ◯
82	22		14		8.5	6.5	MF12	1.25	10.8		J820412 ◯		J820487 ◯
82	22		14		8.5	6.5	MF12	1.5	10.5		J820415 ◯		J820490 ◯
88	22		16		10.5	8	MF14	1	13		J820418 ◯		J820493 ◯
88	22		20		10.5	8	MF14	1.5	12.5		J820421 ◯		J820496 ◯
95	22		16		12.5	10	MF16	1	15		J820424 ◯		J820499 ◯
95	22		20		12.5	10	MF16	1.5	14.5		J820427 ◯		J820502 ◯

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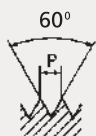
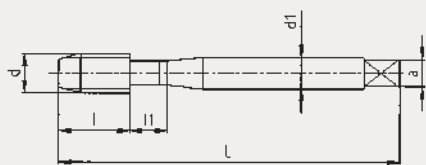
G12 Cr-Ni stainless steels austenitic, G11 Cr stainless steels ferritic and martensitic, G07 nitriding steels, G09 heat resisting steels, G31 alloy of nickel, G10 Cr stainless steels sulphured, G01, G02 structural steels, G03, G04 case hardening steels, G06 heat treatable steels from 900N/mm²

105/4, 131/3 DUO BLUE RING

G12 Cr-Ni不锈钢, G11马氏体不锈钢, G07氮化钢, G09耐热钢, G31镍合金, G10 Cr不锈钢, G01, G02结构钢, G03, G04表面硬化钢, G06热处理钢 >900N/mm²



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L	105/4		131/3		d ₁	a	d	P		Art.	Art.	Art.	Art.
	l	l	l	l									
100	25	18	14	11	MF18	1	17		J820430	○	J820505	○	
100	25	25	14	11	MF18	1.5	16.5		J820433	○	J820508	○	
100	34	25	14	11	MF18	2	16		J820436	○	J820511	○	
105	25	25	15	12	MF20	1.5	18.5		J820439	○	J820514	○	
115	25	17	17	13	MF22	1.5	20.5		J820442	○	J820517	○	
120	25	20	19	15	MF24	1.5	22.5		J820445	○	J820520	○	
120	28	20	19	15	MF24	2	22		J820448	○	J820523	○	

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G12 Cr-Ni stainless steels austenitic, G11 Cr stainless steels ferritic and martensitic, G07 nitriding steels, G09 heat resisting steels, G31 alloy of nickel, G10 Cr stainless steels sulphured, G01, G02 structural steels, G03, G04 case hardening steels, G06 heat treatable steels from 900N/mm²

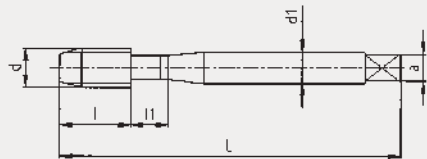
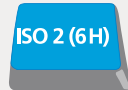
105/4, 131/3 DUO BLUE RING

G12 Cr-Ni不锈钢, G11马氏体不锈钢, G07氮化钢, G09耐热钢, G31镍合金, G10 Cr不锈钢, G01, G02结构钢, G03, G04表面硬化钢, G06热处理钢 >900N/mm²





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L	105/4		131/3		d ₁	a	d	p		Art.	Art.	Art.	Art.
	l	l ₁	l	l ₁									
52	10	8	7.5	13	5	4	MF4	0.5	3.5	J885065 ◯		J887610 ◯	
60	12	11	7.5	16	5.5	4.5	MF5	0.5	4.5	J885073 ◯		J887629 ◯	
62	14	11	8	18	6	4.5	MF6	0.75	5.25	J885081 ◯		J887637 ◯	
70	18	13	10	21	6.2	5	MF8	0.75	7.25		J185148 ◯		J187690 ◯
70	22	13	10	21	6.2	5	MF8	1	7		J185149 ◯		J187691 ◯
75	20	15	12	22	7	5.5	MF10	0.75	9.25		J185150 ◯		J187692 ◯
75	20	15	12	22	7	5.5	MF10	1	9		J185152 ◯		J187693 ◯
82	22		14		8.5	6.5	MF12	1	11		J885154 ◯		J887696 ◯
82	22		14		8.5	6.5	MF12	1.25	10.9		J885162 ◯		J887718 ◯
82	22		14		8.5	6.5	MF12	1.5	10.5		J885170 ◯		J887726 ◯
88	22		16		10.5	8	MF14	1	13		J885189 ◯		J887734 ◯
88	22		20		10.5	8	MF14	1.5	12.5		J885197 ◯		J887742 ◯
95	22		16		12.5	10	MF16	1	15		J885200 ◯		J887750 ◯
95	22		20		12.5	10	MF16	1.5	14.5		J885219 ◯		J887769 ◯

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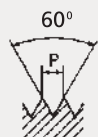
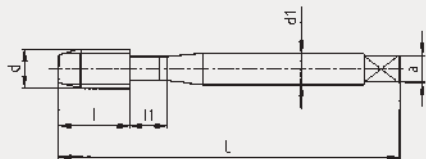
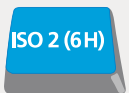
G01, G02 Structural steels, G03, G04 case hardening steels, G05, G06 heat treatable steels, G15 cast steels from 900 N/mm², G08 carbon tool steels, G34 thermoplastic compounds/synthetics

105/4 RED RING
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G01, G02结构钢, G03, G04表面硬化钢, G06热处理钢 >900N/mm², G15铸钢>900N/mm², G08碳素工具钢, G34热塑性复合材料



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L	105/4		131/3		d ₁	a	d	P		Art.	Art.	Art.	Art.
	l	l	l	l									
100	25	18	14	11	MF18	1	17			J885227	○	J887777	○
100	25	25	14	11	MF18	1.5	16.5			J885235	○	J887785	○
100	34	25	14	11	MF18	2	16			J885234	○	J887784	○
105	25	25	15	12	MF20	1.5	18.5			J885251	○	J887807	○
115	25	17	17	13	MF22	1.5	20.5			J885252	○	J887808	○
120	25	20	19	15	MF24	1.5	22.5			J885254	○	J887810	○
120	28	20	19	15	MF24	2	22			J885253	○	J887809	○

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G01, G02 Structural steels, G03, G04 case hardening steels, G05, G06 heat treatable steels, G15 cast steels from 900 N/mm², G08 carbon tool steels, G34 thermoplastic compounds/synthetics

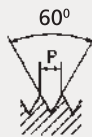
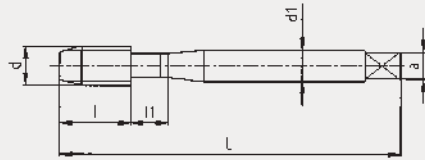
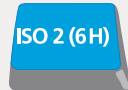
105/4 RED RING
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G01, G02结构钢, G03, G04表面硬化钢, G06热处理钢 >900N/mm², G15铸钢>900N/mm², G08碳素工具钢, G34热塑性复合材料





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L	105/4		131/3		d ₁	a	d	p		Art.	Art.	Art.	Art.
	l	l ₁	l	l ₁									
52	10	8	7.5	13	5	4	MF4	0.5	3.5	J820526 ◯		J820601 ◯	
60	12	11	7.5	16	5.5	4.5	MF5	0.5	4.5	J820529 ◯		J820604 ◯	
62	14	11	8	18	6	4.5	MF6	0.75	5.25	J820535 ◯		J820610 ◯	
70	18	13	10	21	6.2	5	MF8	0.75	7.25		J820541 ◯		J820616 ◯
70	22	13	10	21	6.2	5	MF8	1	7		J820544 ◯		J820619 ◯
75	20	15	12	22	7	5.5	MF10	0.75	9.25		J820550 ◯		J820625 ◯
75	20	15	12	22	7	5.5	MF10	1	9		J820553 ◯		J820628 ◯
82	22		14		8.5	6.5	MF12	1	11		J820559 ◯		J820634 ◯
82	22		14		8.5	6.5	MF12	1.25	10.8		J820562 ◯		J820637 ◯
82	22		14		8.5	6.5	MF12	1.5	10.5		J820565 ◯		J820640 ◯
88	22		16		10.5	8	MF14	1	13		J820568 ◯		J820643 ◯
88	22		20		10.5	8	MF14	1.5	12.5		J820571 ◯		J820646 ◯
95	22		16		12.5	10	MF16	1	15		J820574 ◯		J820649 ◯
95	22		20		12.5	10	MF16	1.5	14.5		J820577 ◯		J820652 ◯

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131/3 DUO RED RING

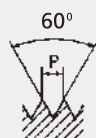
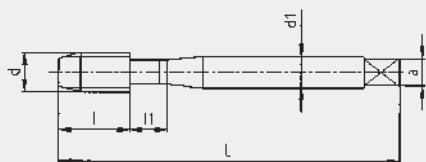
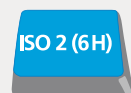
G01, G02 Structural steels, G03, G04 case hardening steels, G06 heat treatable steels, G15 cast steels from 900N/mm², G08 carbon tool steels

105/4 DUO RED RING
131/3 DUO RED RING

G01, G02结构钢, G03, G04表面硬化钢, G06热处理钢 >900N/mm², G15铸钢>900N/mm², G08碳素工具钢



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L	105/4		131/3		d ₁	a	d	P		Art.	Art.	Art.	Art.
	l	l	l	l									
100	25	18	14	11	MF18	1	17		J820580	○	J820655	○	
100	25	25	14	11	MF18	1.5	16.5		J820583	○	J820658	○	
100	34	25	14	11	MF18	2	16		J820586	○	J820661	○	
105	25	25	15	12	MF20	1.5	18.5		J820589	○	J820664	○	
115	25	17	17	13	MF22	1.5	20.5		J820592	○	J820667	○	
120	25	20	19	15	MF24	1.5	22.5		J820595	○	J820670	○	
120	28	20	19	15	MF24	2	22		J820598	○	J820673	○	

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131/3 DUO RED RING

G01, G02 Structural steels, G03, G04 case hardening steels, G06 heat treatable steels, G15 cast steels from 900N/mm², G08 carbon tool steels

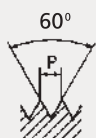
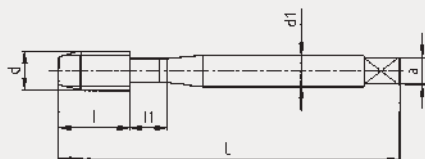
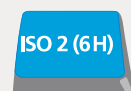
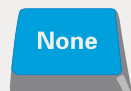
105/4 DUO RED RING
131/3 DUO RED RING

G01, G02结构钢, G03, G04表面硬化钢, G06热处理钢 >900N/mm², G15铸钢 >900N/mm², G08碳素工具钢



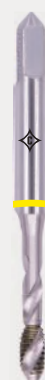


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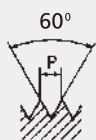
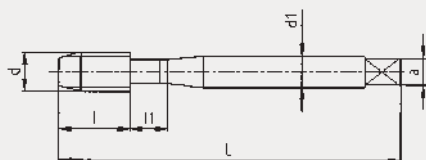
L	105/4		131/3		d _i	a	d	P		Art.	Art.
	l	l	l	l							
63	10	7.5	2.8	2.1	MF4	0.5	3.5	C864170	○	C865600	○
70	12	7.5	3.5	2.7	MF5	0.5	4.5	C864171	○	C865601	○
80	14	8	4.5	3.4	MF6	0.5	5.5	C864173	○	C865603	○
80	14	8	4.5	3.4	MF6	0.75	5.25	C864174	○	C865604	○
80	17	10	6	4.9	MF8	0.5	7.5	C864175	○	C865605	○
80	18	10	6	4.9	MF8	0.75	7.25	C864176	○	C865606	○
90	22	10	6	4.9	MF8	1	7	C864177	○	C865607	○
90	17	12	7	5.5	MF10	0.5	9.5	C864178	○	C865608	○
90	20	12	7	5.5	MF10	0.75	9.25	C864179	○	C865609	○
90	20	12	7	5.5	MF10	1	9	C864180	○	C865610	○
100	24	14	7	5.5	MF10	1.25	8.8	C864181	○	C865611	○
100	22	14	9	7	MF12	1	11	C864183	○	C865613	○
100	22	14	9	7	MF12	1.25	10.8	C864184	○	C865614	○
100	22	14	9	7	MF12	1.5	10.5	C864185	○	C865615	○
100	22	16	11	9	MF14	1	13	C864186	○	C865616	○
100	22	20	11	9	MF14	1.5	12.5	C864187	○	C865617	○

**105/4 YELLOW RING
131/3 YELLOW RING**

G25 Wrought alloy of aluminium, G22 soft brass(Ms63 long chipping) G29 wrought alloy of magnesium, G26 aluminium cast alloy Si < 5%, G23 red brass, G24 phosphor bronze, G20 copper, G01, G02 Structural steels

**105/4 YELLOW RING
131/3 YELLOW RING**

G25锻造铝合金, G22软黄铜(Ms63,长切屑) G29锻造镁合金, G26 铸造铝合金(Si < 5%) G23红铜, G24 磷青铜, G20铜, G01, G02结构钢

MF**DIN 374****HSSE****None****ISO 2 (6H)**

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L	105/4		131/3		d ₁	a	d	P		Art.	Art.
	l	l	d ₁	a							
100	22	16	12	9	MF16	1	15	C864188 ○	C865618 ○		
100	22	20	12	9	MF16	1.5	14.5	C864190 ○	C865620 ○		
110	25	18	14	11	MF18	1	17	C864191 ○	C865621 ○		
110	25	25	14	11	MF18	1.5	16.5	C864192 ○	C865622 ○		
125	34	25	14	11	MF18	2	16	C864193 ○	C865623 ○		
125	25	25	16	12	MF20	1.5	18.5	C864195 ○	C865625 ○		
125	25	17	18	14.5	MF22	1.5	20.5	C864198 ○	C865627 ○		
140	25	20	18	14.5	MF24	1.5	22.5	C864200 ○	C865628 ○		
140	28	20	18	14.5	MF24	2	22	C864201 ○	C865629 ○		

**105/4 YELLOW RING
131/3 YELLOW RING**

G25 Wrought alloy of aluminium, G22 soft brass(Ms63 long chipping) G29 wrought alloy of magnesium, G26 aluminium cast alloy Si < 5%, G23 red brass, G24 phosphor bronze, G20 copper, G01, G02 Structural steels

**105/4 YELLOW RING
131/3 YELLOW RING**

G25锻造铝合金, G22软黄铜(Ms63,长切屑) G29锻造镁合金, G26 铸造铝合金(Si < 5%) G23红铜, G24磷青铜, G20铜, G01, G02结构钢

DIN MF

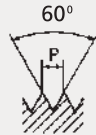
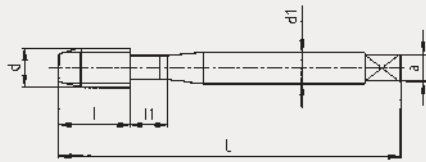
MF

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PM

None

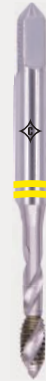
ISO 2 (6H)



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L	105/4 l	131/3 l	d ₁	a	d	P		Art.	Art.
63	10	7.5	2.8	2.1	MF4	0.5	3.5	C820001 ◯	C820076 ◯
70	12	7.5	3.5	2.7	MF5	0.5	4.5	C820004 ◯	C820079 ◯
80	14	8	4.5	3.4	MF6	0.5	5.5	C820007 ◯	C820082 ◯
80	14	8	4.5	3.4	MF6	0.75	5.25	C820010 ◯	C820085 ◯
80	17	10	6	4.9	MF8	0.5	7.5	C820013 ◯	C820088 ◯
80	18	10	6	4.9	MF8	0.75	7.25	C820016 ◯	C820091 ◯
90	22	10	6	4.9	MF8	1	7	C820019 ◯	C820094 ◯
90	17	12	7	5.5	MF10	0.5	9.5	C820022 ◯	C820097 ◯
90	20	12	7	5.5	MF10	0.75	9.25	C820025 ◯	C820100 ◯
90	20	12	7	5.5	MF10	1	9	C820028 ◯	C820103 ◯
100	24	14	7	5.5	MF10	1.25	8.8	C820031 ◯	C820106 ◯
100	22	14	9	7	MF12	1	11	C820034 ◯	C820109 ◯
100	22	14	9	7	MF12	1.25	10.8	C820037 ◯	C820112 ◯
100	22	14	9	7	MF12	1.5	10.5	C820040 ◯	C820115 ◯
100	22	16	11	9	MF14	1	13	C820043 ◯	C820118 ◯
100	22	20	11	9	MF14	1.5	12.5	C820046 ◯	C820121 ◯

**105/4 DUO YELLOW RING
131/3 DUO YELLOW RING**

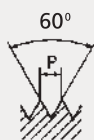
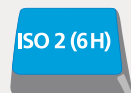
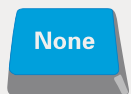
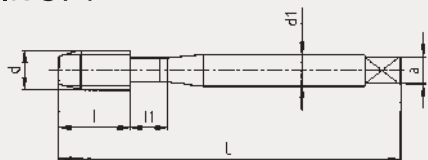
G25 Wrought alloy of aluminium, G22 soft brass(Ms63 long chipping) G29 wrought alloy of magnesium, G26 aluminium cast alloy Si < 5%, G23 red brass, G24 phosphor bronze, G20 copper, G01, G02 Structural steels

**105/4 DUO YELLOW RING
131/3 DUO YELLOW RING**

G25锻造铝合金, G22软黄铜(Ms63,长切屑) G29锻造镁合金, G26 铸造铝合金(Si < 5%) G23红铜, G24 磷青铜, G20铜, G01, G02结构钢



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L	105/4 l	131/3 l	d ₁	a	d	P		Art.	Art.
100	22	16	12	9	MF16	1	15	C820052 ◯	C820127 ◯
100	22	20	12	9	MF16	1.5	14.5	C820049 ◯	C820124 ◯
110	25	18	14	11	MF18	1	17	C820061 ◯	C820136 ◯
110	25	25	14	11	MF18	1.5	16.5	C820058 ◯	C820133 ◯
125	34	25	14	11	MF18	2	16	C820055 ◯	C820130 ◯
125	25	25	16	12	MF20	1.5	18.5	C820064 ◯	C820139 ◯
125	25	17	18	14.5	MF22	1.5	20.5	C820067 ◯	C820142 ◯
140	25	20	18	14.5	MF24	1.5	22.5	C820073 ◯	C820148 ◯
140	28	20	18	14.5	MF24	2	22	C820070 ◯	C820145 ◯

**105/4 DUO YELLOW RING
131/3 DUO YELLOW RING**

G25 Wrought alloy of aluminium, G22 soft brass(Ms63 long chipping) G29 wrought alloy of magnesium, G26 aluminium cast alloy Si < 5%, G23 red brass, G24 phosphor bronze, G20 copper, G01, G02 Structural steels

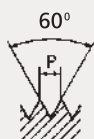
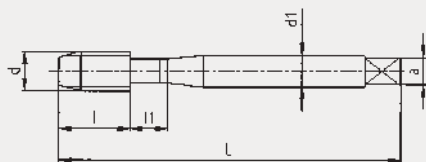
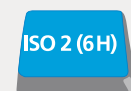
**105/4 DUO YELLOW RING
131/3 DUO YELLOW RING**

G25锻造铝合金, G22软黄铜(Ms63,长切屑) G29锻造镁合金, G26 铸造铝合金(Si < 5%) G23红铜, G24磷青铜, G20铜, G01, G02结构钢





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L	105/4		131/3		d ₁	a	d	P		Art.	Art.
	l	l	l	l							
63	10	7.5	2.8	2.1	MF4	0.5	3.5	C866300	○	C866600	○
70	12	7.5	3.5	2.7	MF5	0.5	4.5	C866301	○	C866601	○
80	14	8	4.5	3.4	MF6	0.5	5.5	C866302	○	C866603	○
80	14	8	4.5	3.4	MF6	0.75	5.25	C866303	○	C866604	○
80	17	10	6	4.9	MF8	0.5	7.5	C866304	○	C866605	○
80	18	10	6	4.9	MF8	0.75	7.25	C866305	○	C866606	○
90	22	10	6	4.9	MF8	1	7	C866306	○	C866607	○
90	17	12	7	5.5	MF10	0.5	9.5	C866307	○	C866608	○
90	20	12	7	5.5	MF10	0.75	9.25	C866308	○	C866609	○
90	20	12	7	5.5	MF10	1	9	C866309	○	C866610	○
100	24	14	7	5.5	MF10	1.25	8.8	C866310	○	C866611	○
100	22	14	9	7	MF12	1	11	C866311	○	C866613	○
100	22	14	9	7	MF12	1.25	10.8	C866312	○	C866614	○
100	22	14	9	7	MF12	1.5	10.5	C866313	○	C866615	○
100	22	16	11	9	MF14	1	13	C866314	○	C866616	○
100	22	20	11	9	MF14	1.5	12.5	C866315	○	C866617	○

105/4,131/3 BLACK RING

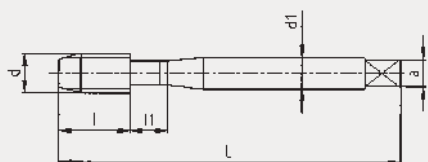
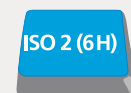
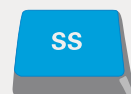
G01, G02, G03, G04, G05, G08, G13, G14, G20.

105/4,131/3 BLACK RING

G01, G02结构钢, G03, G04表面硬化钢, G05热处理钢<1000N/mm², G08碳素工具钢, G13易切钢, G14铸钢<1000N/mm², G20铜



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L	105/4		131/3		d ₁	a	d	P		Art.	Art.
	l	l	l	l							
100	22	16	12	9	MF16	1	15	C866316	○	C866618	○
100	22	20	12	9	MF16	1.5	14.5	C866318	○	C866620	○
110	25	18	14	11	MF18	1	17	C866319	○	C866621	○
110	25	25	14	11	MF18	1.5	16.5	C866320	○	C866622	○
125	34	25	14	11	MF18	2	16	C866321	○	C866623	○
125	25	25	16	12	MF20	1.5	18.5	C866323	○	C866625	○
125	25	17	18	14.5	MF22	1.5	20.5	C866324	○	C866626	○
140	25	20	18	14.5	MF24	1.5	22.5	C866325	○	C866627	○
140	28	20	18	14.5	MF24	2	22	C866326	○	C866628	○

105/4,131/3 BLACK RING

G01, G02, G03, G04, G05, G08, G13, G14, G20.

105/4,131/3 BLACK RING

G01,G02结构钢, G03, G04表面硬化钢, G05热处理钢<1000N/mm², G08碳素工具钢, G13易切钢, G14铸钢<1000N/mm², G20铜



MF

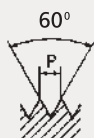
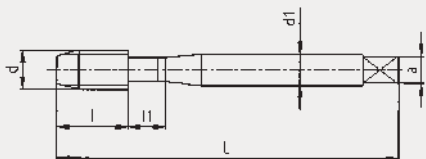
DIN 374

PM

SS_POT

SH_SFT

ISO 2 (6H)



105/4
DUO



131/3
DUO



• For stock /有库存

Norm /标准

Class of tolerance /公差



DIN 374

ISO 2 (6H)

B/4



DIN 374

ISO 2 (6H)

C/2,5

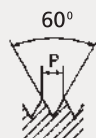
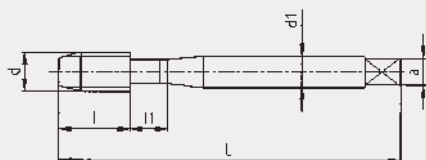
L	105/4		131/3		d ₁	a	d	P		Art.	Art.
	l	l	l	l							
63	10	7.5	2.8	2.1	MF4	0.5	3.5	C820151	○	C820226	○
70	12	7.5	3.5	2.7	MF5	0.5	4.5	C820154	○	C820229	○
80	14	8	4.5	3.4	MF6	0.5	5.5	C820157	○	C820232	○
80	14	8	4.5	3.4	MF6	0.75	5.25	C820160	○	C820235	○
80	17	10	6	4.9	MF8	0.5	7.5	C820163	○	C820238	○
80	18	10	6	4.9	MF8	0.75	7.25	C820166	○	C820241	○
90	22	10	6	4.9	MF8	1	7	C820169	○	C820244	○
90	17	12	7	5.5	MF10	0.5	9.5	C820172	○	C820247	○
90	20	12	7	5.5	MF10	0.75	9.25	C820175	○	C820250	○
90	20	12	7	5.5	MF10	1	9	C820178	○	C820253	○
90	24	14	7	5.5	MF10	1.25	8.8	C820181	○	C820256	○
100	22	14	9	7	MF12	1	11	C820184	○	C820259	○
100	22	14	9	7	MF12	1.25	10.8	C820187	○	C820262	○
100	22	14	9	7	MF12	1.5	10.5	C820190	○	C820265	○
100	22	16	11	9	MF14	1	13	C820193	○	C820268	○
100	22	20	11	9	MF14	1.5	12.5	C820196	○	C820271	○

105/4,131/3 DUO BLACK RING

G01,G02 Structural steels, G03, G04 case hardening steels, G05 heat treatable steels up to 1000N/mm², G08 carbon tool steels, G13 free-cutting steels, G10 Cr stainless steels sulphured, a.o.

105/4,131/3 DUO BLACK RING

G01,G02结构钢, G03, G04表面硬化钢, G05热处理钢<1000N/mm², G08碳素工具钢, G13易切钢 G10 Cr不锈钢

MF**DIN 374****PM****SS_POT****SH_SFT****ISO 2 (6H)**105/4
DUO131/3
DUO

• For stock /有库存

Norm /标准

Class of tolerance /公差



DIN 374

ISO 2 (6H)


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DIN 374

ISO 2 (6H)

C/2,5

L	105/4 l	131/3 l	d ₁	a	d	P		Art.	Art.
100	22	16	12	9	MF16	1	15	C820202 ◊	C820277 ◊
100	22	20	12	9	MF16	1.5	14.5	C820199 ◊	C820274 ◊
110	25	18	14	11	MF18	1	17	C820211 ◊	C820286 ◊
110	25	25	14	11	MF18	1.5	16.5	C820208 ◊	C820283 ◊
125	34	25	14	11	MF18	2	16	C820205 ◊	C820280 ◊
125	25	25	16	12	MF20	1.5	18.5	C820214 ◊	C820289 ◊
125	25	17	18	14.5	MF22	1.5	20.5	C820217 ◊	C820292 ◊
140	25	20	18	14.5	MF24	1.5	22.5	C820223 ◊	C820298 ◊
140	28	20	18	14.5	MF24	2	22	C820220 ◊	C820295 ◊

105/4,131/3 DUO BLACK RING

G01,G02 Structural steels, G03, G04 case hardening steels, G05 heat treatable steels up to 1000N/mm², G08 carbon tool steels, G13 free-cutting steels, G10 Cr stainless steels sulphured, a.o.

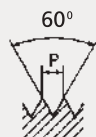
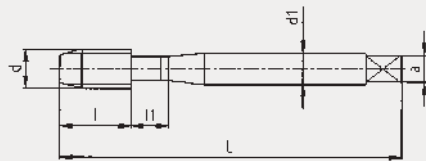
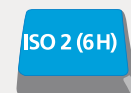
105/4,131/3 DUO BLACK RING

G01,G02结构钢, G03, G04表面硬化钢, G05热处理钢<1000N/mm², G08碳素工具钢, G13易切钢 G10 Cr不锈钢

DIN MF



DIN 374



105/3



• For stock /有库存



Norm /标准

DIN 374

Class of tolerance /公差

ISO 2 (6H)



C/2,5

L	105/3		d ₁	a	d	P		Art.
	l							
63	10		2.8	2.1	MF4	0.5	3.5	C866700 ◯
70	12		3.5	2.7	MF5	0.5	4.5	C866701 ◯
80	14		4.5	3.4	MF6	0.75	5.25	C866702 ◯
80	18		6	4.9	MF8	0.75	7.25	C866703 ◯
90	22		6	4.9	MF8	1	7	C866704 ◯
90	20		7	5.5	MF10	1	9	C866705 ◯
100	22		9	7	MF12	1	11	C866706 ◯
100	22		9	7	MF12	1.5	10.5	C866707 ◯
100	22		11	9	MF14	1.5	22.5	C866708 ◯
100	22		12	9	MF16	1	15	C866809 ◯
100	22		12	9	MF16	1.5	14.5	C866709 ◯
110	25		14	11	MF18	1	17	C866811 ◯
110	25		14	11	MF18	1.5	16.5	C866710 ◯
125	34		14	11	MF18	2	16	C866810 ◯
125	25		16	12	MF20	1.5	18.5	C866711 ◯
125	25		18	14.5	MF22	1.5	20.5	C866812 ◯
140	25		18	14.5	MF24	1.5	22.5	C866814 ◯
140	28		18	14.5	MF24	2	22	C866813 ◯

105/3 GREEN RING

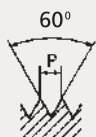
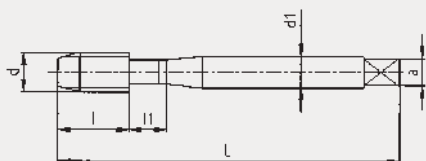
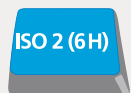
G18 Lamellar graphite cast iron (grey cast iron), G17 nodular graphite cast iron, G19 vermicular graphite cast iron, G16 malleable cast iron, G27, G28 aluminium cast alloy Si 5-12 % a.o.

105/3 GREEN RING

G18片状石墨铸铁(灰铸铁) G17结节性石墨铸铁(球墨铸铁) G19蠕墨铸铁, G16可锻铸铁, G27, G28铸造铝合金 Si 5-12 %



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DUO



DIN MF

• For stock /有库存



Norm /标准

DIN 374

Class of tolerance /公差

ISO 2 (6H)



C/2,5

L	105/3 l	d ₁	a	d	P		Art.
63	10	2.8	2.1	MF4	0.5	3.5	C820301 ◯
70	12	3.5	2.7	MF5	0.5	4.5	C820304 ◯
80	14	4.5	3.4	MF6	0.75	5.25	C820310 ◯
80	18	6	4.9	MF8	0.75	7.25	C820316 ◯
90	22	6	4.9	MF8	1	7	C820319 ◯
90	20	7	5.5	MF10	1	9	C820328 ◯
100	22	9	7	MF12	1	11	C820334 ◯
100	22	9	7	MF12	1.5	10.5	C820340 ◯
100	22	11	9	MF14	1.5	22.5	C820346 ◯
100	22	12	9	MF16	1	15	C820352 ◯
100	22	12	9	MF16	1.5	14.5	C820349 ◯
110	25	14	11	MF18	1	17	C820361 ◯
110	25	14	11	MF18	1.5	16.5	C820358 ◯
125	34	14	11	MF18	2	16	C820355 ◯
125	25	16	12	MF20	1.5	18.5	C820364 ◯
125	25	18	14.5	MF22	1.5	20.5	C820367 ◯
140	25	18	14.5	MF24	1.5	22.5	C820373 ◯
140	28	18	14.5	MF24	2	22	C820370 ◯

105/3 DUO GREEN RING

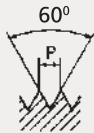
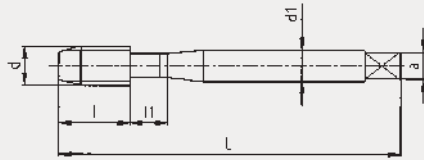
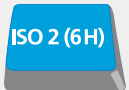
G18 Lamellar graphite cast iron (grey cast iron), G17 nodular graphite cast iron, G19 vermicular graphite cast iron, G16 malleablecast iron, G27, G28 aluminium cast alloy Si 5-12 % a.o.

105/3 DUO GREEN RING

G18片状石墨铸铁(灰铸铁) G17结节性石墨铸铁(球墨铸铁) G19蠕墨铸铁, G16可锻铸铁, G27, G28铸造铝合金 Si 5-12 %



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• For stock /有库存

Norm /标准

Class of tolerance /公差



DIN 371

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DIN 371

DIN 374

ISO 2 (6H)

ISO 2 (6H)

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C/2,5

C/2,5

L	105/4		131/3		d ₁	a	d	p		105/4		131/3		
	l	l ₁	l	l ₁						Art.	Art.	Art.	Art.	
63	10	8	7.5	13	2.8	2.1	MF4	0.5	3.5	C811870	○	C884875	○	
70	12	11	7.5	16	3.5	2.7	MF5	0.5	4.5	C811871	○	C884883	○	
80	14	11	8	18	4.5	3.4	MF6	0.75	5.25	C811872	○	C884891	○	
80	18	13	10	21	6	4.9	MF8	0.75	7.25	C811873	○	C884905	○	
90	22	13	10	21	6	4.9	MF8	1	7	C811874	○	C884913	○	
90	20	15	12	22	7	5.5	MF10	0.75	9.25	C811875	○	C884921	○	
90	20	15	12	22	7	5.5	MF10	1	9	C811876	○	C884948	○	
100	24	15	14		7	5.5	MF10	1.25	8.8	C812350	○	C812352	○	
100	22		14		9	7	MF12	1	11		C811877	○	C884956	○
100	22		14		9	7	MF12	1.25	10.8		C811879	○	C884964	○
100	22		14		9	7	MF12	1.5	10.5		C811880	○	C884972	○
100	22		16		11	9	MF14	1	13		C811881	○	C884980	○
100	22		20		11	9	MF14	1.5	12.5		C811882	○	C884999	○

105/4.131/3 BLUE RING

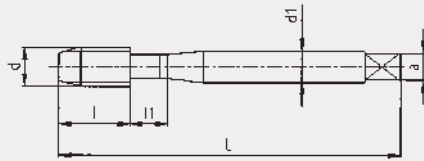
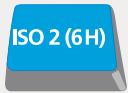
G12 Cr-Ni stainless steels austenitic, G11 Cr stainless steels ferritic and martensitic, G07 nitriding steels, G09 heat resisting steels, G31 alloy of nickel, G10 Cr stainless steels sulphured, G01, G02 structural steels, G03, G04 case hardening steels G06 heat treatable steels from 900N/mm²

105/4.131/3 BLUE RING

G12 Cr-Ni不锈钢, G11马氏体不锈钢, G07氮化钢, G09 耐热钢, G31镍合金, G10 Cr不锈钢, G01, G02 结构钢, G03, G04表面硬化钢, G06热处理钢 >900N/mm²



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• For stock /有库存

Norm /标准

Class of tolerance /公差



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ISO 2 (6H)

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B/4

C/2,5

C/2,5

L	105/4		131/3		d ₁	a	d	P		Art.	Art.	Art.	Art.
	l	l ₁	l	l ₁									
100	22		16		12	9	MF16	1	15		C811883 ○		C885006 ○
100	22		20		12	9	MF16	1.5	14.5		C811884 ○		C885014 ○
110	25		18		14	11	MF18	1	17		C811885 ○		C885022 ○
110	25		25		14	11	MF18	1.5	16.5		C811887 ○		C885030 ○
125	34		25		14	11	MF18	2	16		C811900 ○		C884888 ○
125	25		25		16	12	MF20	1.5	18.5		C811889 ○		C884786 ○
125	25		17		18	14.5	MF22	1.5	20.5		C811901 ○		C884787 ○
140	25		20		18	14.5	MF24	1.5	22.5		C811903 ○		C884788 ○
140	28		20		18	14.5	MF24	2	22		C811902 ○		C884889 ○

105/4.131/3 BLUE RING

G12 Cr-Ni stainless steels austenitic, G11 Cr stainless steels ferritic and martensitic, G07 nitriding steels, G09 heat resisting steels, G31 alloy of nickel, G10 Cr stainless steels sulphured, G01, G02 structural steels, G03, G04 case hardening steels G06 heat treatable steels from 900N/mm²

105/4.131/3 BLUE RING

G12 Cr-Ni不锈钢, G11马氏体不锈钢, G07氮化钢, G09 耐热钢, G31镍合金, G10 Cr不锈钢, G01, G02 结构钢, G03, G04表面硬化钢, G06热处理钢 >900N/mm²



MF

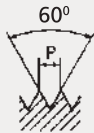
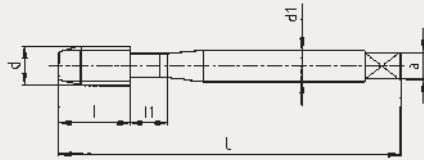
DIN 371/374

PM

SS_POT

SH_SFT

ISO 2 (6H)



105/4
DUO

105/4
DUO

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DUO

131/3
DUO



• For stock /有库存

Norm /标准

Class of tolerance /公差



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DIN 374

DIN 371

DIN 374

ISO 2 (6H)

ISO 2 (6H)

ISO 2 (6H)

ISO 2 (6H)

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B/4

C/2,5

C/2,5

L	105/4		131/3		d ₁	a	d	p		Art.	Art.	Art.	Art.
	l	l ₁	l	l ₁									
63	10	8	7.5	13	2.8	2.1	MF4	0.5	3.5	C820376 ○		C820451 ○	
70	12	11	7.5	16	3.5	2.7	MF5	0.5	4.5	C820379 ○		C820454 ○	
80	14	11	8	18	4.5	3.4	MF6	0.75	5.25	C820385 ○		C820460 ○	
80	18	13	10	21	6	4.9	MF8	0.75	7.25	C820391 ○		C820466 ○	
90	22	13	10	21	6	4.9	MF8	1	7	C820394 ○		C820469 ○	
90	20	15	12	22	7	5.5	MF10	0.75	9.25	C820400 ○		C820475 ○	
90	20	15	12	22	7	5.5	MF10	1	9	C820403 ○		C820478 ○	
100	24	15	14		7	5.5	MF10	1.25	8.8	C820406 ○		C820481 ○	
100	22		14		9	7	MF12	1	11		C820409 ○		C820484 ○
100	22		14		9	7	MF12	1.25	10.8		C820412 ○		C820487 ○
100	22		14		9	7	MF12	1.5	10.5		C820415 ○		C820490 ○
100	22		16		11	9	MF14	1	13		C820418 ○		C820493 ○
100	22		20		11	9	MF14	1.5	12.5		C820421 ○		C820496 ○

105/4, 131/3 DUO BLUE RING

G12 Cr-Ni stainless steels austenitic, G11 Cr stainless steels ferritic and martensitic, G07 nitriding steels, G09 heat resisting steels, G31 alloy of nickel, G10 Cr stainless steels sulphured, G01, G02 structural steels, G03, G04 case hardening steels, G06 heat treatable steels from 900N/mm²

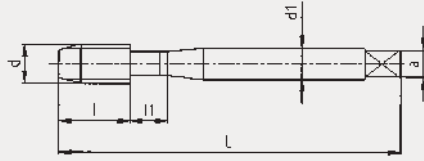
105/4, 131/3 DUO BLUE RING

G12 Cr-Ni不锈钢, G11马氏体不锈钢, G07氮化钢, G09耐热钢, G31镍合金, G10 Cr不锈钢, G01, G02结构钢, G03, G04表面硬化钢, G06热处理钢 >900N/mm²

MF

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PM



SS_POT

SH_SFT



ISO 2 (6H)

105/4
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DUO

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DUO

131/3
DUO



• For stock /有库存

Norm /标准



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DIN 371

DIN 374

Class of tolerance /公差

ISO 2 (6H)

ISO 2 (6H)

ISO 2 (6H)

ISO 2 (6H)



B/4

B/4

C/2,5

C/2,5

L	105/4		131/3		d ₁	a	d	P		Art.	Art.	Art.	Art.
	l	l ₁	l	l ₁									
100	22		16		12	9	MF16	1	15		C820427 ◦		C820502 ◦
100	22		20		12	9	MF16	1.5	14.5		C820424 ◦		C820499 ◦
110	25		18		14	11	MF18	1	17		C820436 ◦		C820511 ◦
110	25		25		14	11	MF18	1.5	16.5		C820433 ◦		C820508 ◦
125	34		25		14	11	MF18	2	16		C820430 ◦		C820505 ◦
125	25		25		16	12	MF20	1.5	18.5		C820439 ◦		C820514 ◦
125	25		17		18	14.5	MF22	1.5	20.5		C820442 ◦		C820517 ◦
140	25		20		18	14.5	MF24	1.5	22.5		C820448 ◦		C820523 ◦
140	28		20		18	14.5	MF24	2	22		C820445 ◦		C820520 ◦

105/4, 131/3 DUO BLUE RING

G12 Cr-Ni stainless steels austenitic, G11 Cr stainless steels ferritic and martensitic, G07 nitriding steels, G09 heat resisting steels, G31 alloy of nickel, G10 Cr stainless steels sulphured, G01, G02 structural steels, G03, G04 case hardening steels, G06 heat treatable steels from 900N/mm²

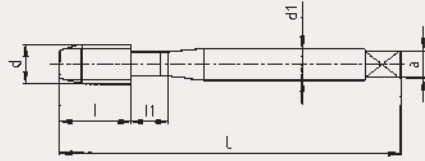
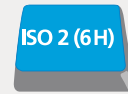
105/4, 131/3 DUO BLUE RING

G12 Cr-Ni不锈钢, G11马氏体不锈钢, G07氮化钢, G09耐热钢, G31镍合金, G10 Cr不锈钢, G01, G02结构钢, G03, G04表面硬化钢, G06热处理钢 >900N/mm²

DIN MF



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• For stock /有库存

Norm /标准

Class of tolerance /公差



DIN 371

DIN 374

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L	105/4		131/3		d ₁	a	d	P		Art.	Art.	Art.	Art.		
	l	l ₁	l	l ₁											
63	10	8	7.5	13	4.5	3.4	MF4	0.5	3.5	C885065	○	C887610	○		
70	12	11	7.5	16	6	4.9	MF5	0.5	4.5	C885073	○	C887629	○		
80	14	11	8	18	6	4.9	MF6	0.75	5.25	C885081	○	C887637	○		
80	18	13	10	21	8	6.2	MF8	0.75	7.25	C885103	○	C887645	○		
90	22	13	10	21	8	6.2	MF8	1	7	C885111	○	C887653	○		
90	20	15	12	22	10	8	MF10	0.75	9.25	C885138	○	C887661	○		
90	20	15	12	22	10	8	MF10	1	9	C885146	○	C887688	○		
100	22		14		9	7	MF12	1	1			C885154	○	C887696	○
100	22		14		9	7	MF12	1.25	10.8			C885162	○	C887718	○
100	22		14		9	7	MF12	1.5	10.5			C885170	○	C887726	○
100	22		16		11	9	MF14	1	13			C885189	○	C887734	○
100	22		20		11	9	MF14	1.5	12.5			C885197	○	C887742	○

105/4 RED RING
131/3 RED RING

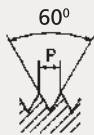
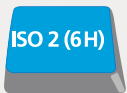
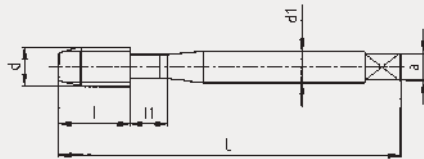
G01, G02 Structural steels, G03, G04 case hardening steels, G05, G06 heat treatable steels, G15 cast steels from 900 N/mm², G08 carbon tool steels, G34 thermoplastic compounds/synthetics

105/4 RED RING
131/3 RED RING

G01, G02结构钢, G03, G04表面硬化钢, G06热处理钢 >900N/mm², G15铸钢>900N/mm², G08碳素工具钢, G34热塑性复合材料



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• For stock /有库存

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L	105/4		131/3		d ₁	a	d	P		Art.	Art.	Art.	Art.	
	l	l ₁	l	l ₁										
100	22		16		12	9	MF16	1	15		C885200	○	C887750	○
100	22		20		12	9	MF16	1.5	14.5		C885219	○	C887769	○
110	25		18		14	11	MF18	1	17		C885227	○	C887777	○
110	25		25		14	11	MF18	1.5	16.5		C885235	○	C887785	○
125	34		25		14	11	MF18	2	16		C885201	○	C887751	○
125	25		25		16	12	MF20	1.5	18.5		C885251	○	C887807	○
125	25		17		18	14.5	MF22	1.5	20.5		C885252	○	C887808	○
140	25		20		18	14.5	MF24	1.5	22.5		C885254	○	C887810	○
140	28		20		18	14.5	MF24	2	22		C885253	○	C887809	○

105/4 RED RING
131/3 RED RING

G01, G02 Structural steels, G03, G04 case hardening steels, G05, G06 heat treatable steels, G15 cast steels from 900 N/mm², G08 carbon tool steels, G34 thermoplastic compounds/synthetics

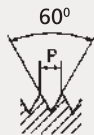
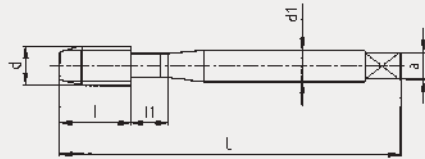
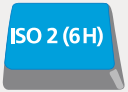
105/4 RED RING
131/3 RED RING

G01, G02结构钢, G03, G04表面硬化钢, G06热处理钢 >900N/mm², G15铸钢>900N/mm², G08碳素工具钢, G34热塑性复合材料





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DUO



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• For stock /有库存

Norm /标准

Class of tolerance /公差



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ISO 2 (6H)

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L	105/4		131/3		d ₁	a	d	P		Art.	Art.	Art.	Art.
	l	l ₁	l	l ₁									
63	10	8	7.5	13	2.8	2.1	MF4	0.5	3.5	C820526 ○		C820601 ○	
70	12	11	7.5	16	3.5	2.7	MF5	0.5	4.5	C820529 ○		C820604 ○	
80	14	11	8	18	4.5	3.4	MF6	0.75	5.25	C820535 ○		C820610 ○	
80	18	13	10	21	6	4.9	MF8	0.75	7.25	C820541 ○		C820616 ○	
90	22	13	10	21	6	4.9	MF8	1	7	C820544 ○		C820619 ○	
90	20	15	12	22	7	5.5	MF10	0.75	9.25	C820550 ○		C820625 ○	
90	20	15	12	22	7	5.5	MF10	1	9	C820553 ○		C820628 ○	
100	22		14		9	7	MF12	1	1		C820559 ○		C820634 ○
100	22		14		9	7	MF12	1.25	10.8		C820562 ○		C820637 ○
100	22		14		9	7	MF12	1.5	10.5		C820565 ○		C820640 ○
100	22		16		11	9	MF14	1	13		C820568 ○		C820643 ○
100	22		20		11	9	MF14	1.5	12.5		C820571 ○		C820646 ○

**105/4 DUO RED RING
131/3 DUO RED RING**

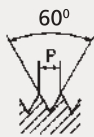
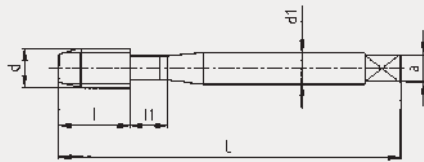
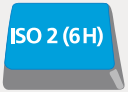
G01, G02 Structural steels, G03, G04 case hardening steels, G06 heat treatable steels, G15 cast steels from 900N/mm², G08 carbon tool steels

**105/4 DUO RED RING
131/3 DUO RED RING**

G01, G02结构钢, G03, G04表面硬化钢, G06热处理钢 >900N/mm², G15铸钢 >900N/mm², G08碳素工具钢



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L	105/4		131/3		d ₁	a	d	P		Art.	Art.	Art.	Art.	
	l	l ₁	l	l ₁										
100	22		16		12	9	MF16	1	15		J820574	○	J820649	○
100	22		20		12	9	MF16	1.5	14.5		J820577	○	J820652	○
110	25		18		14	11	MF18	1	17		J820580	○	J820655	○
110	25		25		14	11	MF18	1.5	16.5		J820583	○	J820658	○
125	34		25		14	11	MF18	2	16		J820586	○	J820661	○
125	25		25		16	12	MF20	1.5	18.5		J820589	○	J820664	○
125	25		17		18	14.5	MF22	1.5	20.5		J820592	○	J820667	○
140	25		20		18	14.5	MF24	1.5	22.5		J820595	○	J820670	○
140	28		20		18	14.5	MF24	2	22		J820598	○	J820673	○

105/4 DUO RED RING
131/3 DUO RED RING

G01, G02 Structural steels, G03, G04 case hardening steels, G06 heat treatable steels, G15 cast steels from 900N/mm², G08 carbon tool steels

105/4 DUO RED RING
131/3 DUO RED RING

G01, G02结构钢, G03, G04表面硬化钢, G06热处理钢 >900N/mm², G15铸钢 >900N/mm², G08碳素工具钢

DIN MF

Table of contents of the technical part/技术应用目录

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Technical Explanations

HSS

HSS is a world wide spread technical term for a tungsten-molybdenum alloyed high-speed steel with a high tenacity and a good cutting ability.

ULTRA or HSSE

Under ULTRA or also called HSSE, we understand a high vanadium- or cobalt alloyed tungsten-molybdenum high speed steel with an excellent wearing resistance.

AERO

A tap with a special cutting geometry out of highly-alloyed, pressure-resisting high speed steel for the manufacturing of Ni-based alloys and all high-tensile materials.

GS machine tap

A tap with a special cutting geometry, nitrated, for the manufacturing of cast steel and similar short-chipping materials.

IKZ Machine tap with internal cooling

The big advantage of a tap with internal cooling channel is that the lubrication and cooling fluid can be directly led to the cutting edges in order to enable an even better lubrication.

GG machine tap

A tap with a special cutting geometry, nitrated, for the working of grey cast iron and similar short-chipping materials.

VAP Steam oxydated

In a water steam atmosphere of 530° C we manufacture an oxide layer which prevents cold welding extensively.

NIT Nitriding

Increase of nitrogen of the tools surface in a nitriding bath at approximately 550° C, 0.02 mm depth.

Hardness = 1100 HV.

Improved friction properties and an increased wearing resistance.

TIN coating (Titanium nitride)

Titanium, evaporated at approximately 500° C.

Hardness = 2200 HV.

Coat thickness = 0.002 mm.

Extremely wear- resp. abrasion-resistant.

Very good friction properties.

TiCN coating

Similar procedure to the TIN coating. Titanium-carbon-nitride coating, vapourdeposited in the PVD process at approximately 500° C.

Hardness = 3000 HV.

Coat thickness = 0.002 - 0.003 mm.

In comparison to the TIN coating the tool life is prolonged once more and the cutting speed is increased.

技术说明

HSS

高速钢是一种世界上应用广泛，具有高韧性和良好的切削性能 的钨钼合金。

ULTRA or HSSE

ULTRA 或者 HSSE (含钒高速钢)，指高钒或钴合金钨钼系高速钢，具有优良的耐磨性能。

AERO

由高合金、耐压高速钢制成，具有特殊的切削几何形状，适合于加工镍基合金和所有的高强度材料。

GS machine tap

具有特殊的切削几何形状，经氮化处理，适合于加工铸钢和类似的短切屑材料。

IKZ Machine tap with internal cooling

具有内冷却孔的优点：冷却液可以直接冷却，润滑切削刃口。

GG machine tap

具有特殊的切削几何形状，经氮化处理，适合于加工灰口铸铁和类似短切屑材料。

VAP Steam oxydated

在约 530°C 的水蒸汽环境中生成氧化物沉积层，可以很大程度上防止粘结。

NIT Nitriding

在约 550°C 的熔融盐浴中进行氮化处理，氮化层厚 0.02mm、硬度 1100 HV，改善了摩擦性能、增加了耐磨性。

TIN coating (Titanium nitride)

真空镀氮化钛，温度 500°C，涂层厚度 0.002mm、硬度 2000HV，TiN 涂层的主要是防止粘结，更好地提高了摩擦性能和耐磨性。

TiCN coating

类似于 TiN 涂层，在约 500°C 通过 PVD 工艺，沉积形成金属钛的碳氮化物涂层，厚度 0.002 ~ 0.003mm、硬度 3000HV。与 TiN 涂层相比，TiCN 涂层允许更高的切削速度，拥有更长的使用寿命。



Chart for taps without coating, steam oxydated and nitrided /无涂层、无氮化及氧化丝锥参数表

	Material /材料	Vc mm	Number of revolutions per minute for metrical ISO threads /每分钟转数 (公制ISO螺纹)										
			1	1.1	1.2	1.4	1.6	1.8	2	2.2	2.5	3	3.5
G01	Structural steels <1000N/mm ² 结构钢<1000 N/mm ²	12	3820	3472	3183	2728	2387	2122	1910	1736	1528	1273	1091
G02	Structural steels >900N/mm ² 结构钢>900N/mm ²	8	2546	2315	2122	1819	1592	1415	1273	1157	1019	849	728
G03	Case hardening steels <1000 N/mm ² 表面硬化钢<1000 N/mm ²	10	3183	2894	2653	2274	1989	1768	1592	1447	1273	1061	909
G04	Case hardening steels >900 N/mm ² 表面硬化钢>900 N/mm ²	6	1910	1736	1592	1364	1194	1061	955	868	764	637	546
G05	Heat treatable steels <1000 N/mm ² 热处理钢<1000 N/mm ²	6	1910	1736	1592	1364	1194	1061	955	868	764	637	546
G06	Heat treatable steels >900 N/mm ² 热处理钢>900 N/mm ²	4	1273	1157	1061	909	796	707	637	579	509	424	364
G07	Nitriding steels 氮化钢	4	1273	1157	1061	909	796	707	637	579	509	424	364
G08	Carbon tool steels 碳素工具钢	6	1910	1736	1592	1364	1194	1061	955	868	764	637	546
G09	Heat resisting steels 耐热钢	4	1273	1157	1061	909	796	707	637	579	509	424	364
G10	Cr stainless steels, sulphured Cr不锈钢	6	1910	1736	1592	1364	1194	1061	955	868	764	637	546
G11	Cr stainless steels, ferritic and martensitic 马氏体不锈钢	6	1910	1736	1592	1364	1194	1061	955	868	764	637	546
G12	Cr-Ni stainless steels, austenitic Cr-Ni不锈钢	5	1592	1447	1326	1137	995	884	796	723	637	531	455
G13	Free-cutting steels 易切钢	14	4456	4051	3714	3183	2785	2476	2228	2026	1783	1485	1273
G14	Cast steels <1000 N/mm ² 铸钢<1000 N/mm ²	10	3183	2894	2653	2274	1989	1768	1592	1447	1273	1061	909
G15	Cast steels >900 N/mm ² 铸钢>900 N/mm ²	6	1910	1736	1592	1364	1194	1061	955	868	764	637	546
G16	Malleable cast iron 可锻铸铁 iron	10	3183	2894	2653	2274	1989	1768	1592	1447	1273	1061	909
G17	Nodular graphite cast iron 结节性石墨铸铁 (球墨铸铁)	12	3820	3472	3183	2728	2387	2122	1910	1736	1528	1273	1091
G18	Lamellar graphite cast iron (grey cast iron) 片状石墨铸铁 (灰铸铁)	10	3183	2894	2653	2274	1989	1768	1592	1447	1273	1061	909





	4	4.5	5	6	8	10	12	14	16	18	20	22	24	27	30	33	36	39	42	45	48
	955	849	764	637	477	382	318	273	239	212	191	174	159	141	127	116	106	98	91	85	80
	637	566	509	424	318	255	212	182	159	141	127	116	106	94	85	77	71	65	61	57	53
	796	707	637	531	398	318	265	227	199	177	159	145	133	118	106	96	88	82	76	71	66
	477	424	382	318	239	191	159	136	119	106	95	87	80	71	64	58	53	49	45	42	40
	477	424	382	318	239	191	159	136	119	106	95	87	80	81	64	58	53	49	45	42	40
	318	283	255	212	159	127	106	91	80	71	64	58	53	47	42	39	35	33	30	28	27
	318	283	255	212	159	127	106	91	80	71	64	58	53	47	42	39	35	33	30	28	27
	477	424	382	318	239	191	159	136	119	106	95	87	80	71	64	58	53	19	45	42	40
	318	283	255	212	159	127	106	91	80	71	64	58	53	47	42	39	35	33	30	28	27
	477	424	382	318	239	191	159	136	119	106	95	87	80	71	64	58	53	49	45	42	40
	477	424	382	318	239	191	159	136	119	106	95	87	80	71	64	58	53	49	45	42	40
	398	354	318	265	199	159	133	114	99	88	80	72	66	59	53	48	44	41	38	35	33
	1114	990	891	743	557	446	371	318	279	248	223	203	186	165	149	135	124	114	106	99	93
	796	707	637	531	398	318	265	227	199	177	159	145	133	118	106	96	88	82	76	71	66
	477	424	382	318	239	191	159	136	119	106	95	87	80	71	64	58	53	49	45	42	40
	796	707	637	531	398	318	265	227	199	177	159	145	133	118	106	96	88	82	76	71	66
	955	849	764	637	477	382	318	273	239	212	191	147	159	141	127	116	106	98	91	85	80
	796	707	637	531	398	318	265	227	199	177	159	145	133	118	106	96	88	82	76	71	66



Chart for taps without coating, steam oxydated and nitrided /无涂层、无氮化及氧化丝锥参数表

	Material /材料	Vc mm	Number of revolutions per minute for metrical ISO threads /每分钟转数 (公制ISO螺纹)										
			1	1.1	1.2	1.4	1.6	1.8	2	2.2	2.5	3	3.5
G19	Vermicular graphite cast iron 蠕墨铸铁	12	3820	3472	3183	2728	2387	2122	1910	1736	1528	1273	1091
G20	Copper 铜	10	3183	2894	2653	2274	1989	1768	1592	1447	1273	1061	909
G21	Hard brass (Ms 58, short chipping) 硬黄铜 (Ms58 短切屑)	20	6366	5787	5305	4547	3979	3537	3183	2894	2546	2122	1819
G22	Soft brass (MS 63, long chipping) 软黄铜 (Ms63, 长切屑)	18	5730	5209	4775	4093	3581	3183	2865	2604	2292	1910	1637
G23	Red brass 红铜	10	3183	2894	2653	2274	1989	1768	1592	1447	1273	1061	909
G24	Phosphor bronze 磷青铜	12	3820	3472	3183	2728	2387	2122	1910	1736	1528	1273	1091
G25	Wrought alloy of aluminium 锻造铝合金	15	4775	4341	3979	3410	2984	2653	2387	2170	1910	1592	1364
G26	Aluminium cast alloy Si 0.5% – 5% 铸造铝合金 Si 0.5 – 5 %	20	6366	5787	5305	4547	3979	3537	3183	2894	2546	2122	1819
G27	Aluminium cast alloy Si 5% – 10% 铸造铝合金 Si 5 – 10 %	20	6366	5787	5305	4547	3979	3537	3183	2894	2546	2122	1819
G28	Aluminium cast alloy Si >10 % 铸造铝合金 Si >10 %	20	6366	5787	5305	4547	3979	3537	3183	2894	2546	2122	1819
G29	Wrought alloy of magnesium 锻造镁合金	15	4775	4341	3979	3410	2984	2653	2387	2170	1910	1592	1364
G30	Cast alloy of magnesium 铸造镁合金	20	6366	5787	5305	4547	3979	3537	3183	2894	2546	2122	1819
G31	Alloy of nickel 镍合金	4	1273	1157	1061	909	796	707	637	579	509	424	364
G32	Titanium and alloy of titanium 钛、钛合金	4	1273	1157	1061	909	796	707	637	579	509	424	364
G33	Ferro-Tic 钢结硬质合金	4	1273	1157	1061	909	796	707	637	579	509	424	364
G34	Thermoplastic compounds/synthetics 热塑性复合材料 / 合成纤维	20	6366	5787	5305	4547	3979	3537	3183	2894	2546	2122	1819
G35	High strength structural steels fine grained 高强度细晶粒结构钢	6	1910	1736	1592	1364	1194	1061	955	868	764	637	546





	4	4.5	5	6	8	10	12	14	16	18	20	22	24	27	30	33	36	39	42	45	48
	955	849	764	637	477	382	318	273	239	212	191	174	159	141	127	116	106	98	91	85	80
	796	707	637	531	398	318	265	227	199	177	159	145	133	118	106	96	88	82	76	71	66
	1592	1415	1273	1061	796	637	531	455	398	354	318	289	265	236	212	193	177	163	152	141	133
	1432	1273	1146	955	716	573	477	409	358	318	286	260	239	212	191	174	159	147	136	127	119
	796	707	637	531	398	318	265	227	199	177	159	145	133	118	106	96	88	82	76	71	66
	955	849	764	637	477	382	318	273	239	212	191	174	159	141	127	116	106	98	91	85	80
	1194	1061	955	796	597	477	398	341	298	265	239	217	199	177	159	145	133	122	114	106	99
	1592	1415	1273	1061	796	637	531	455	398	354	318	289	265	236	212	193	177	163	152	141	133
	1592	1415	1273	1061	796	637	531	455	398	354	318	289	265	236	212	193	177	163	152	141	133
	1194	1061	955	796	597	477	398	341	298	265	239	217	199	177	159	145	133	122	114	106	99
	1592	1415	1273	1061	796	637	531	455	398	354	318	289	265	236	212	193	177	163	152	141	133
	318	283	255	212	159	127	106	91	80	71	64	58	53	47	42	39	35	33	30	28	27
	318	283	255	212	159	127	106	91	80	71	64	58	53	47	42	39	35	33	30	28	27
	318	283	255	212	159	127	106	91	80	71	64	58	53	47	42	39	35	33	30	28	27
	1592	1415	1273	1061	796	637	531	455	398	354	318	289	265	236	212	193	177	163	152	141	133
	477	424	382	318	239	191	159	136	119	106	95	87	80	71	64	58	53	49	45	42	40



Chart for taps with hard material coating / 涂层丝锥参数

	Material /材料	Vc mm	Number of revolutions per minute for metrical ISO threads /每分钟转数 (公制ISO螺纹)										
			1	1.1	1.2	1.4	1.6	1.8	2	2.2	2.5	3	3.5
G01	Structural steels <1000N/mm ² 结构钢<1000 N/mm ²	22	7003	6366	5836	5002	4377	3890	3501	3183	2801	2334	2001
G02	Structural steels >900N/mm ² 结构钢>900N/mm ²	12	3820	3472	3183	2728	2387	2122	1910	1736	1528	1273	1091
G03	Case hardening steels <1000 N/mm ² 表面硬化钢 < 1000 N/mm ²	20	6366	5787	5305	4547	3979	3537	3183	2894	2546	2122	1819
G04	Case hardening steels > 900 N/mm ² 表面硬化钢>900 N/mm ²	10	3183	2894	2653	2274	1989	1768	1592	1447	1273	1061	909
G05	Heat treatable steels <1000 N/mm ² 热处理钢<1000 N/mm ²	14	4456	4051	3714	3183	2785	2476	2228	2026	1783	1485	1273
G06	Heat treatable steels >900 N/mm ² 热处理钢>900 N/mm ²	8	2546	2315	2122	1819	1592	1415	1273	1157	1019	849	728
G07	Nitriding steels 氮化钢	8	2546	2315	2122	1819	1592	1415	1273	1157	1019	849	728
G08	Carbon tool steels 碳素工具钢	9	2865	2604	2387	2046	1790	1592	1432	1302	1146	955	819
G09	Heat resisting steels 耐热钢	7	2228	2026	1857	1592	1393	1238	1114	1013	891	743	637
G10	Cr stainless steels, sulphured Cr不锈钢	10	3183	2894	2653	2274	1989	1768	1592	1447	1273	1061	909
G11	Cr stainless steels, ferritic and martensitic 马氏体不锈钢	10	3183	2894	2653	2274	1989	1768	1592	1447	1273	1061	909
G12	Cr-Ni stainless steels, austenitic Cr-Ni不锈钢	8	2546	2315	2122	1819	1592	1415	1273	1157	1019	849	728
G13	Free-cutting steels 易切钢	24	7639	6945	6366	5457	4775	4244	3820	3472	3056	2546	2183
G14	Cast steels <1000 N/mm ² 铸钢<1000 N/mm ²	16	5093	4630	4244	3638	3183	2829	2546	2315	2037	1698	1455
G15	Cast steels >900 N/mm ² 铸钢>900 N/mm ²	8	2546	2315	2122	1819	1592	1415	1273	1157	1019	849	728
G16	Malleable cast iron 可锻铸铁 iron	16	5093	4630	4244	3638	3183	2829	2546	2315	2037	1698	1455
G17	Nodular graphite cast iron 结节性石墨铸铁 (球墨铸铁)	16	5093	4630	4244	3638	3183	2829	2546	2315	2037	1698	1455
G18	Lamellar graphite cast iron (grey cast iron) 片状石墨铸铁 (灰铸铁)	14	4456	4051	3714	3183	2785	2476	2228	2026	1783	1485	1273





	4	4.5	5	6	8	10	12	14	16	18	20	22	24	27	30	33	36	39	42	45	48
	1751	1556	1401	1167	875	700	584	500	438	389	350	318	292	259	233	212	195	180	167	156	146
	955	849	764	637	477	382	318	273	239	212	191	174	159	141	127	116	106	98	91	85	80
	1592	1415	1273	1061	796	637	531	455	398	354	318	289	265	236	212	193	177	163	152	141	133
	796	707	637	531	398	3.18	265	227	199	177	159	145	133	118	106	96	88	82	76	71	66
	1114	990	891	743	557	446	371	318	279	248	223	203	186	165	149	135	124	114	106	99	93
	637	566	509	424	318	255	212	182	159	141	127	116	106	94	85	77	71	65	61	57	53
	637	566	509	424	318	255	212	182	159	141	127	116	106	94	85	77	71	65	61	57	53
	716	637	573	477	358	286	239	205	179	159	143	130	119	106	95	87	80	73	68	64	60
	557	495	446	371	279	223	186	159	139	124	111	101	93	83	74	68	62	57	53	50	46
	796	707	637	531	398	318	265	227	199	177	159	145	133	118	106	96	88	82	76	71	66
	796	707	637	531	398	318	265	227	199	177	159	145	133	118	106	96	88	82	76	71	66
	637	566	509	424	318	255	212	182	159	141	127	116	106	94	85	77	71	65	61	57	53
	1910	1698	1528	1273	955	764	637	546	477	424	382	347	318	283	255	231	212	196	182	170	159
	1273	1132	1019	849	637	509	424	364	318	283	255	231	212	189	170	154	141	131	121	113	106
	637	566	509	424	318	255	212	182	159	141	127	116	106	94	85	77	71	65	61	57	53
	1273	1132	1019	849	637	509	424	364	318	283	255	231	212	189	170	154	141	131	121	113	106
	1273	1132	1019	849	637	509	424	364	318	283	255	231	212	189	170	154	141	131	121	113	106
	1114	990	891	743	557	446	371	318	279	248	223	203	186	165	149	135	124	114	106	99	93



Chart for taps with hard material coating / 涂层丝锥参数

Material /材料	Vc mm	Number of revolutions per minute for metrical ISO threads /每分钟转数 (公制ISO螺纹)										
		1	1.1	1.2	1.4	1.6	1.8	2	2.2	2.5	3	3.5
G19 Vermicular graphite cast iron 蠕墨铸铁	16	5093	4630	4244	3638	3183	2829	2546	2315	2037	1698	1455
G20 Copper 铜	16	5093	4630	4244	3638	3183	2829	2546	2315	2037	1698	1455
G21 Hard brass (Ms 58, short chipping) 硬黄铜 (Ms58 短切屑)	35	11141	10128	9284	7958	6963	6189	5570	5064	4456	3714	3183
G22 Soft brass (MS 63, long chipping) 软黄铜 (Ms63长切屑)	33	10504	9549	8754	7503	6565	5836	5252	4775	4202	3501	3001
G23 Red brass 红铜	18	5730	5209	4775	4093	3581	3183	2865	2604	2292	1910	1637
G24 Phosphor bronze 磷青铜	21	6685	6077	5570	4775	4178	3714	3342	3038	2674	2228	1910
G25 Wrought alloy of aluminium 锻造铝合金	24	7639	6945	6366	5457	4775	4244	3820	3472	3056	2546	2183
G26 Aluminium cast alloy Si 0.5% – 5% 铸造铝合金 Si 0.5 – 5 %	26	8276	7524	6897	5911	5173	4598	4138	3762	3310	2759	2365
G27 Aluminium cast alloy Si 5% – 10% 铸造铝合金 Si 5 – 10 %	26	8276	7524	6897	5911	5173	4598	4138	3762	3310	2759	2365
G28 Aluminium cast alloy Si >10 % 铸造铝合金 Si >10 %	26	8276	7524	6897	5911	5173	4598	4138	3762	3310	2759	2365
G29 Wrought alloy of magnesium 锻造镁合金	24	7639	6945	6366	5457	4775	4244	3820	3472	3056	2546	2183
G30 Cast alloy of magnesium 铸造镁合金	26	8276	7524	6897	5911	5173	4598	4138	3762	3310	2759	2365
G31 Alloy of nickel 镍合金	6	1910	1736	1592	1364	1194	1061	955	868	764	637	546
G32 Titanium and alloy of titanium 钛、钛合金	6	1910	1736	1592	1364	1194	1061	955	868	764	637	546
G33 Ferro-Tic 钢结硬质合金	6	1910	1736	1592	1364	1194	1061	955	868	764	637	546
G34 Thermoplastic compounds/synthetics 热塑性复合材料 / 合成纤维	20	6366	5787	5305	4547	3979	3537	3183	2894	2546	2122	1819
G35 High strength structural steels fine grained 高强度细晶粒结构钢	10	3183	2894	2653	2274	1989	1768	1592	1447	1273	1061	909





	4	4,5	5	6	8	10	12	14	16	18	20	22	24	27	30	33	36	39	42	45	48
	1273	1132	1019	849	637	509	424	364	318	283	255	231	212	189	170	154	141	131	121	113	106
	1273	1132	1019	849	637	509	424	364	318	283	255	231	212	189	170	154	141	131	121	113	106
	2785	2476	2228	1857	1393	1114	928	796	696	619	557	506	464	413	371	338	309	286	265	248	232
	2626	2334	2101	1751	1313	1050	875	750	657	584	525	477	438	389	350	318	292	269	250	233	219
	1432	1273	1146	955	716	573	477	409	358	318	286	260	239	212	191	174	159	147	136	127	119
	1671	1485	1337	1114	836	668	557	477	418	371	334	304	279	248	223	203	186	171	159	149	139
	1910	1698	1528	1273	955	764	637	546	477	424	382	347	318	283	255	231	212	196	182	170	159
	2069	1839	1655	1379	1035	828	690	591	517	460	414	376	345	307	276	251	230	212	197	184	172
	2069	1839	1655	1379	1035	828	690	591	517	460	414	376	345	307	276	251	230	212	197	184	172
	2069	1839	1655	1379	1035	828	690	591	517	460	414	376	345	307	276	251	230	212	197	184	172
	1910	1698	1528	1273	955	764	637	546	477	424	382	347	318	283	255	231	212	196	182	170	159
	2069	1839	1655	1379	1035	828	690	591	517	460	414	376	345	307	276	251	230	212	197	184	172
	477	424	382	318	239	191	159	136	119	106	95	87	80	71	64	58	53	49	45	42	40
	477	424	382	318	239	191	159	136	119	106	95	87	80	71	64	58	53	49	45	42	40
	477	424	382	318	239	191	159	136	119	106	95	87	80	71	64	58	53	49	45	42	40
	1592	1415	1273	1061	796	637	531	455	398	354	318	289	265	236	212	193	177	163	152	141	133
	796	707	637	531	398	318	265	227	199	177	159	145	133	118	106	96	88	82	76	71	66





Core hole drill sizes 螺纹预钻孔尺寸

ISO 2306 DIN 336	Pitch 螺距	Core/ 底孔		Recommended core/ 建议底 hole 钻头	Extrem(e) 极值
		Mini 最小	Maxi 最大		

DIN & T-JIS Metric pitch thread DIN标&T-JIS标公制螺纹 (粗牙)

M 1	0,25	0,729	0,785	0,75	0,75
M 1,1	0,25	0,829	0,885	0,85	0,85
M 1,2	0,25	0,929	0,985	0,95	0,95
M 1,4	0,30	1,075	1,142	1,1	1,10
M 1,6	0,35	1,221	1,321	1,25	1,30
M 1,7	0,35	1,256	1,346	1,3	1,30
M 1,8	0,35	1,421	1,521	1,45	1,50
M 2	0,40	1,567	1,679	1,6	1,65
M 2,2	0,45	1,713	1,838	1,75	1,80
M 2,3	0,4	1,795	1,920	1,9	1,90
M 2,5	0,45	2,013	2,138	2,05	2,10
M 2,6	0,45	2,036	2,176	2,1	2,15
M 3	0,50	2,459	2,599	2,5	2,55
M 3,5	0,60	2,850	3,010	2,9	3,0
M 4	0,7	3,242	3,422	3,3	3,40
M 4,5	0,75	3,688	3,878	3,75	3,85
M 5	0,80	4,134	4,334	4,2	4,30
M 6	1	4,917	5,153	5	5,10
M 7	1	5,917	6,153	6	6,10
M 8	1,25	6,647	6,912	6,8	6,90
M 9	1,25	7,647	7,912	7,8	7,90
M 10	1,50	8,376	8,676	8,5	8,60
M 11	1,5	9,376	9,676	9,5	9,60
M 12	1,75	10,106	10,441	10,2	10,40
M 14	2	11,835	12,210	12	12,20
M 16	2	13,835	14,210	14	14,20
M 18	2,50	15,294	15,744	15,5	15,70
M 20	2,50	17,294	17,744	17,5	17,70
M 22	2,5	19,294	19,744	19,5	19,70
M 24	3	20,752	21,252	21	21,20
M 27	3	23,752	24,252	24	24,20
M 30	3,5	26,211	26,711	26,5	26,75

ISO 2306 DIN 336	Pitch 螺距	Core/ 底孔		Recommended core/ 建议底 hole 钻头	Extrem(e) 极值
		Mini 最小	Maxi 最大		
M 33	3,50	29,211	29,771	29,5	29,75
M 36	4	31,670	32,270	32	32,25
M 39	4	34,670	35,270	35	35,25
M 42	4,5	37,129	37,799	37,5	37,75
M 45	4,5	40,129	40,799	40,5	40,75
M 48	5	42,587	43,297	43	43,25

DIN & T-JIS Metric fine pitch thread DIN标&T-JIS标公制螺纹 (细牙)

MF 2	0,25	1,729	1,785	1,75	1,75
MF 2,2	0,25	1,929	1,985	1,95	1,95
MF 2,5	0,35	2,121	2,221	2,15	2,20
MF 3	0,35	2,621	2,721	2,65	2,70
MF 3,5	0,35	3,121	3,221	3,15	3,20
MF 4	0,5	3,459	3,599	3,5	3,55
MF 4,5	0,5	3,959	4,099	4	4,05
MF 5	0,5	4,459	4,599	4,5	4,55
MF 6	0,5	5,459	5,599	5,5	5,55
MF 6	0,75	5,188	5,378	5,25	5,35
MF 7	0,75	6,188	6,378	6,25	6,35
MF 8	0,5	7,459	7,599	7,5	7,55
MF 8	0,75	7,188	7,378	7,25	7,35
MF 8	1	6,917	7,153	7	7,15
MF 9	0,75	8,188	8,378	8,25	8,35
MF 9	1	7,917	8,153	8	8,15
MF 10	0,5	9,459	9,599	9,5	9,55
MF 10	0,75	9,188	9,378	9,25	9,35
MF 10	1	8,917	9,153	9	9,15
MF 10	1,25	8,647	8,912	8,8	8,90
MF 11	1	9,917	10,153	10	10,15
MF 12	0,5	11,459	11,599	11,5	11,55
MF 12	0,75	11,188	11,378	11,3	11,35
MF 12	1	10,917	11,153	11	11,15
MF 12	1,25	10,647	10,912	10,8	10,90
MF 12	1,5	10,376	10,676	10,5	10,65
MF 14	1	12,917	13,153	13	13,15
MF 14	1,25	12,647	12,912	12,8	12,90
MF 14	1,5	12,376	12,676	12,5	12,60
MF 15	1	13,917	14,153	14	14,15
MF 15	1,5	13,376	13,676	13,5	13,65
MF 16	1	14,917	15,153	15	15,15
MF 16	1,5	14,376	14,676	14,5	14,65
MF 18	1	16,917	17,153	17	17,15

Thread standard \ 螺纹标准

DIN M ISO metric coarse thread DIN 13/DIN ISO 965
ISO公制粗螺纹DIN13/ DIN ISO 965

DIN MF ISO metric fine thread DIN 13/DIN ISO 965
ISO公制细螺纹DIN13/ DIN ISO 965



Conversion of the designation for taps with metrical ISO thread

The issue of the DIN EN 22 857 replaces the DIN 802, part 1 which has been withdrawn.

The European standard indicates the tolerance of manufacturing for the thread part of taps, which is for producing metrical ISO threads with tolerance 4H up to 8H and 4G up to 6G.

The essential change of the DIN EN 22 857 compared with the DIN 802, part 1, is the conversion of the designation for taps as per application classes. They were adapted to the international standard. The following table shows you the connection of DIN EN 22 857 with the withdrawn DIN 802, part 1, for the tolerance field with different applications of the taps.

DIN EN 22857		Tolerance field of the internal screw thread					DIN 802, part 1 (withdrawn)
Application class of the taps							Tolerance class of the taps
Class 1	ISO 1	4H	5H				4H
Class 2	ISO 2	4G	5G	6H			6H
Class 3	ISO 3			6G	7H	8H	6G
–	–				7G	8H	7G

With the catalogue 1997 we took over the designation of the taps according to the DIN EN 22857, but during the transition period we will add also the tolerance classes of taps as per withdrawn DIN 802, part 1. This will guarantee the faultless assign of the tap in the application.

Example:

M 10 for tolerance field of the internal screw thread 6H

as per DIN 22857 M 10 ISO 2

as per DIN 802, part 1 (withdrawn) M 10 – 6H

For the further designation the DIN 2197 ist still valid and is applied unchanged. During the transition period the taps will be delivered with new as also old designation.

Example:

M 12 x 1,5-ISO 2 (6H)

The tolerance class which are not registered in the DIN EN 22857 as for example 7G, 8G and the X-tolerances remain unchanged as per withdrawn DIN 802, part 1. Concerning this, a new standard is in preparation.

Example:

The designation of a internal screw thread M 10 with additional oversize for tolerance 6H: M 10-6HX





丝锥应用与ISO公制螺纹转换

DIN EN 22857 代替 DIN802 已撤销的第 1 部分。

欧洲标准指出丝锥螺纹部分的制造公差，这是用于制造公差 4h 到 8h 和 4G 到 6G 的公制 ISO 螺纹。

相比 DIN802 第 1 部分，DIN EN 22857 有实质性的改变，是指丝锥类别应用中的转换。这个新标准符合国际标准。

下表显示了 DIN EN22857 与撤销的 DIN802 第 1 部分的相互关系，对于丝锥不同应用的公差范围。

DIN EN 22857		内螺纹的公差范围					DIN 802 第1部分 (已撤销)
丝锥的应用等级							丝锥的公差等级
Class 1	ISO 1	4H	5H				4H
Class 2	ISO 2	4G	5G	6H			6H
Class 3	ISO 3			6G	7H	8H	6G
-	-				7G	8H	7G

1997 年样本中，我们的丝锥依据 DIN EN 22 857 设计，但过渡期间我们也依据 DIN 802 第 1 部分增加丝锥的公差等级，这将保证应用的完整性。

例如：M 10 的内螺纹公差范围——6H

根据 DIN 22 857

根据 DIN 802 第 1 部分 M 10——ISO 2

M 10——6H

DIN 2197 IST 的应用不变，在过渡期间丝锥的新、老应用型号共存。

例如：M 12 × 1.5——ISO 2 (6H)

公差等级不执行 DIN EN 22857 的，例如 7G、8G 和“X”保持不变，仍按照撤销的 DIN 802, 第 1 部分执行。关于这一点，一个新的标准正在制订中。

例如：一个 M 10 中径加大的 6H 内螺纹设计：

M 10——6HX





Symbols / 图标

DUO duo colour ring tap / 双色环丝锥

p pitch in mm / 螺距(mm)



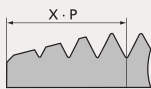
core hole drill / 钻头

M	MF	HSS / HSSE / PM	ST / NONE / SS /SH	ISO(6H)
公制粗牙	公制细牙丝锥	材质	涂层	精度

柄部形状/SHANKS LENGTH T-JIS 公制螺纹 T-JIS Metric thread

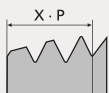
柄径 d1	3	4	5	5.5	6	6.1	6.2	7	8	8.5	9	9.5	10	10.5	11	12	12.5	13
四方部长 lk	5	6	7		8			9		10		11		12		13		
四方部宽 a	2.5	3.2	4	4.5	5	5.5	6	6.5	7	8		9		10				

Chamfer form / 导锥形式



Form(e) B

Chamfer form for taps as per DIN. The length of the chamfer is between 3,5 and 5 threads.
丝锥的导锥形式,符合 DIN 标准,倒角长度在 3.5 到 5 倍螺距。



Form(e) C

Chamfer form for taps as per DIN. The length of the chamfer is between 2 and 3 threads.
丝锥的导锥形式,符合 DIN 标准,倒角长度在 2 到 3 倍螺距。



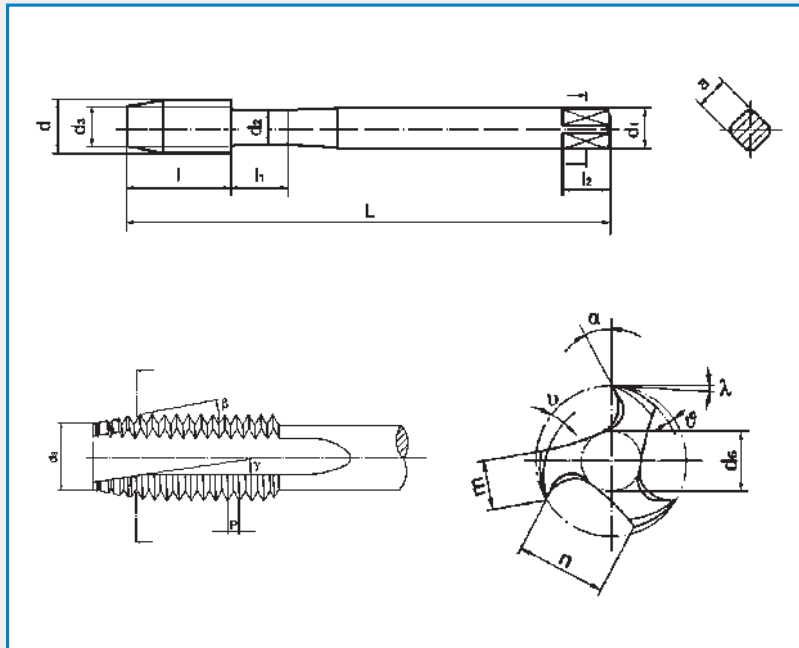
Form(e) E

Chamfer form for taps as per DIN. The length of the chamfer is between 1,5 and 2 threads.
丝锥的导锥形式,符合 DIN 标准,倒角长度在 1.5 到 2 倍螺距。





CLEVELAND



Taps / 术语

Structural dimensions:

L = total length
 l = thread length
 l1 = neck length
 l2 = square length
 a = square

d1 = shank diameter
 d2 = neck diameter
 m = width of land
 n = width of flutes

Geometry:

d = nominal diameter
 d3 = chamfer diameter
 d6 = web thickness
 P = pitch of thread

Thread:

α = chip angle
 β = angel of chamfer
 γ = angle of spiral point
 θ = radial relief of thread
 λ = radial relief angle
 u = relief angle of chamfer

结构尺寸

L=全长
 l=螺纹长
 l1=缩颈长
 l2=方尾长
 a=方尾

d1=柄直径
 d2=缩颈直径
 m=刃宽
 n=槽宽

螺纹

d=公称直径
 d3=导锥直径
 d6=芯厚
 P=螺距

几何角度

α =径向前角
 β =导锥角度
 γ =螺尖角度
 θ =螺纹径向铲磨量
 λ =螺纹径向后角
 u =导锥后角





Problems encountered while working with taps

Problem	Causes	Solutions
Oversize thread	<p>Improper selection of tap Angle or position error Countersink is missing</p> <p>Core hole drill too small</p> <p>Tap is damaged or has cold welding</p> <p>Cutting speed too high or too low</p> <p>Machine spindle or compensation chuck do not function axially Chip packing in tap flutes Tap has the wrong tolerance class Tap has been reground</p>	<p>Select a suitable tap as per application chart Correct alignment of tap and drilled hole Provide the core hole, before cutting the thread, with a countersink 90°</p> <p>Choose the core hole as per chart, for hard materials aim for the upper tolerance limit</p> <p>Use a new tap, evaluate coolant being used, possibly use a tap with surface treatment</p> <p>Choose the correct speed as per chart, according to the working material</p> <p>Check the function of the spindle and the compensation chuck, if possible use a smaller machine</p> <p>Avoid chip packing in the flutes or under the work piece</p> <p>Use a gauge and a tap with the same tolerance class</p> <p>Tap has the wrong geometry or a burred edge. Regrind the tool , possibly choose a new tap</p>
Undersize thread	<p>Working piece thin walled and/or material with high expansion Wrong choice of tap (geometry not adapted) Tap has the wrong tolerance class Axial pitch error</p>	<p>Use a tap with a higher tolerance class respectively with oversize</p> <p>Select a suitable tap as per application chart</p> <p>Use a gauge and a tap with the same tolerance class</p> <p>See under «axial pitch error»</p>
Axial pitch error	<p>Wrong choice of tap (geometry not adapted)</p> <p>The countersink is missing</p> <p>The cutting force is too high (feed)</p> <p>The cutting force is too low (feed)</p> <p>Spindle and feed are not synchronised</p>	<p>Use a tap with a higher tolerance class respectively with oversize</p> <p>Provide the core hole, before cutting the thread, with a countersink 90°</p> <p>With a manual feed reduce the pressure, use a compensation chuck/tap holder. Verify the adjusted feed on the machine, possibly reduce the feed (only possible with a compensation chuck)</p> <p>Verify the adjusted feed on the machine. With manual feed increase the pressure</p> <p>The adjustment of the machine is not correct. Use a compensation chuck. Verify the machine settings</p>



Problem	Causes	Solutions
Widening in a curve	<p>Wrong choice of tap (geometry not adapted) Angle or position error Countersink is missing</p> <p>The cutting force is too high (feed)</p> <p>The cutting force is too low (feed)</p> <p>Tap has been reground</p> <p>Machine spindle and compensation chuck do not function axially</p>	<p>Select a suitable tap as per application chart Correct alignment of tap and drilled hole Provide the core hole, before cutting the thread, with a countersink 90°</p> <p>With a manual feed reduce the pressure, use a compensation chuck/tap holder. Verify the adjusted feed on the machine, possibly reduce the feed (only possible with a compensation chuck)</p> <p>Verify the adjusted feed on the machine. With manual feed increase the pressure</p> <p>Tap has the wrong geometry or a burred edge. Regrind the tool again, eventually choose a new tap</p> <p>Check the function of the spindle and the compensation chuck, if possible use a smaller machine</p>
Rough thread surface	<p>Wrong choice of tap (geometry not adapted) Dull tap Tap is damaged or has cold welding</p> <p>Insufficient lubrication Chip packing in tap flutes Cutting speed too high or too low</p> <p>Core drill too small</p> <p>Tap has been reground</p>	<p>Select a suitable tap as per application chart Use a new tap</p> <p>Use a new tap, evaluate coolant being used, possibly use a tap with surface treatment</p> <p>Improve the lubrication, if possible use cutting oil Avoid chip packing in the flutes or under the work piece</p> <p>Choose the correct speed as per chart, please also consider the working material</p> <p>Choose the core hole as per chart, for hard materials aim for the upper tolerance limit</p> <p>Tap has the wrong geometry or a burred edge. Regrind the tool again, possibly choose a new tap.</p>
Tool life too short	<p>Wrong choice of tap (geometry not adapted) Cutting speed too high or too low</p> <p>The working material is abrasive (grey cast iron, aluminium/cast alloy with Si, plastic with glass fibres reinforced etc.)</p> <p>Insufficient lubrication</p> <p>Work-hardened surface of the core hole, due to blunt or not suitable drills</p>	<p>Select a suitable tap as per application chart Choose the correct speed as per chart, please also consider the working material</p> <p>Use a tap with surface treatment</p> <p>Improve the lubrication, if possible use cutting oil</p> <p>Use sharp and suitable drills. For hard materials avoid the use of carbide drills</p>



Problem	Causes	Solutions
Tap breakage	<p>Wrong choice of tap (geometry not adapted) Taps bottoming in the hole</p> <p>Angle or position error Countersink is missing</p> <p>Core hole drill too small</p> <p>Dull tap Working piece thin walled and/or material with high expansion</p> <p>Chip packing in tap flutes Tap has been reground</p>	<p>Select a suitable tap as per application chart</p> <p>Verify the adjustment of the thread length, consider the chamfer length and possibly the centre point. Avoid the use of a safety clutch on a machine with forced feed</p> <p>Correct alignment of tap and drilled hole</p> <p>Provide the core hole, before cutting the thread, with a countersink 90°</p> <p>Choose the core hole as per chart, for hard materials aim for the upper tolerance limit</p> <p>Use a new tap</p> <p>During the return the tap is gripped by the work piece. Use a tap with a higher relief. If possible use a special execution</p> <p>Avoid chip packing in the flutes or under the working piece</p> <p>Use a new tap</p>
Breakage of chamfer and/or guiding teeth	<p>Wrong choice of tap (geometry not adapted) Chip packing in tap flutes</p> <p>Core hole drill too small</p> <p>Dull tap Taps bottoming in the hole</p> <p>Angle or positional error</p> <p>Material too hard</p>	<p>Select a suitable tap as per application chart</p> <p>Avoid chip packing in the flutes or under the working piece. Blind holes being tapped in a recessed hole can cause the breakage of individual teeth on the upper part of the tap</p> <p>Choose the core hole as per chart, for hard materials aim for the upper tolerance limit</p> <p>Use a new tap</p> <p>Verify the adjustment of the thread length, consider the chamfer length and possibly the centre point. Avoid the use of a safety clutch on a machine with forced feed</p> <p>Choose the core hole as per chart, for hard materials aim for the upper tolerance limit</p> <p>Use a tap with more flutes, or use a set of taps</p>





丝锥加工中可能出现的问题

问题	原因	对策
中径扩大	<p>丝锥选择不当 角度或位置误差 螺纹底孔没加工倒角 螺纹底孔太小 丝锥损坏或有粘结 切削速度过高或过低</p> <p>切屑堵塞 选用的丝锥公差等级错误 丝锥重磨不当</p>	<p>依据应用图表选择合适的丝锥 丝锥和底孔正确对齐 攻丝前底孔孔口应该加工有90° 倒角 依据图表选择底孔，硬材料选择公差上限 换新的丝锥，使用冷却液，使用带涂层丝锥 依据被加工材料、图表选择合适的切削速度 检查机床主轴或夹具的轴向补偿功能，尽量选用较小的机床 确保排屑通畅 使用的量具和丝锥要在一个公差等级 重磨丝锥，确保丝锥有适合被加工材料的几何角度，重磨后刃口无毛刺，更换新丝锥</p>
中径缩小	<p>工件薄壁或材料具有高膨胀性 丝锥选择错误（几何形状不适合） 选用的丝锥公差等级错误 轴向螺距误差</p>	<p>选用高公差等级、中径加大的丝锥 依据应用图表选择合适的丝锥 使用的量具和丝锥要在同一公差等级 请参阅<轴向螺距误差></p>
轴向螺距误差	<p>丝锥选择错误（几何形状不适合） 螺纹底孔没加工倒角 切削力太高（进给）</p>	<p>依据应用图表选择合适的丝锥 攻丝前底孔孔口应该加工有90° 倒角 使用补偿夹具/攻丝架手动进给减少压力，调整降低机床进给（仅带补偿夹具）</p>



问题	原因	对策
	<p>切削力太低（进给） 主轴和进给不同步</p>	<p>调整机床进给，手动进给增加压力 机床的调整是不正确的，使用补偿夹具， 确认机床的相关设置</p>
喇叭形入口	<p>丝锥选择错误（几何形状不适合） 角度或位置误差 螺纹底孔没加工倒角</p> <p>切削力太高（进给）</p> <p>切削力太低（进给）</p> <p>丝锥重磨不当</p> <p>机床主轴或夹具的轴向补偿不起作用</p>	<p>依据应用图表选择合适的丝锥 丝锥和底孔正确对齐 攻丝前底孔孔口应该有90° 倒角</p> <p>使用补偿夹具/攻丝架手动进给减少压力， 调整降低机床进给（仅带补偿夹具）</p> <p>调整机床进给，手动进给增加压力</p> <p>重磨丝锥，确保丝锥有适合被加工材料的 几何角度，重磨后刃口无毛刺，更换新丝锥 检查机床主轴或夹具的轴向补偿功能，尽量 选用较小的机床</p>
螺纹表面粗糙度不良	<p>丝锥选择错误（几何形状不适合） 丝锥磨损、钝 丝锥损坏或有粘结 润滑不足</p> <p>切屑堵塞 切削速度过高或过低</p> <p>螺纹底孔太小 丝锥重磨不当</p>	<p>依据应用图表选择合适的丝锥更换丝锥 更换丝锥，使用冷却液，使用带涂层丝锥 提高润滑，可以使用切削油 确保排屑通畅</p> <p>依据被加工材料、图表选择合适的切削速度 依据图表选择底孔，硬材料选择公差上限</p> <p>重磨丝锥，确保丝锥有适合被加工材料的 几何角度，重磨后刃口无毛刺，更换丝锥</p>
丝锥寿命太短	<p>丝锥选择错误（几何形状不适合） 切削速度过高或过低 被加工材料的原因（灰铸铁，含Si的铝/ 铸铝合金，玻璃纤维增强塑料，等）</p> <p>润滑不足 由于钻头磨损或不适合钻孔，从而导致 底孔的表面硬化</p>	<p>依据应用图表选择合适的丝锥 依据被加工材料、图表选择合适的切削速度 选用涂层丝锥</p> <p>提高润滑，可以使用切削油 选用锋利和适当的钻头，对于硬材料避免使 用硬质合金钻头</p>



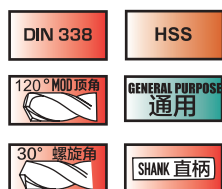
问题	原因	对策
丝锥破损	丝锥选择错误（几何形状不适合） 丝锥攻底 角度或位置误差 螺纹底孔没加工倒角 螺纹底孔太小 丝锥磨损、钝 工件薄壁或材料具有高膨胀性 切屑堵塞 丝锥重磨不当	依据应用图表选择合适的丝锥 确认螺纹长度，考虑导锥长度和可能的中心点， 避免在机床上使用刚性攻丝 丝锥和底孔正确对齐 攻丝前底孔孔口应该加工有90° 倒角 依据图表选择底孔，硬材料选择公差上限更换新丝锥 选用高公差等级、中径加大的丝锥 确保排屑通畅 更换新丝锥
导锥破损	丝锥选择错误（几何形状不适合） 切屑堵塞 螺纹底孔太小 丝锥磨损、钝 丝锥攻底 角度或位置误差 材料太硬	依据应用图表选择合适的丝锥 确保排屑通畅，盲孔内有上一序切屑残留，容 易造成切削锥破损 依据图表选择底孔，硬材料选择公差上限 更换新丝锥 确认螺纹长度，考虑导锥长度和可能的中心点， 避免在机床上使用刚性攻丝 丝锥和底孔正确对齐 选用更多排屑槽的丝锥，或选用一套丝锥



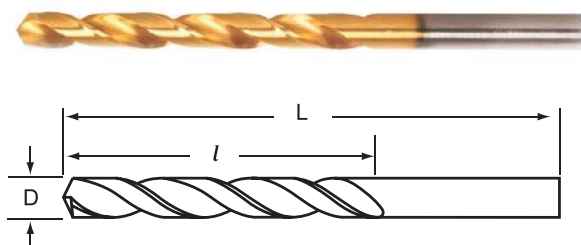
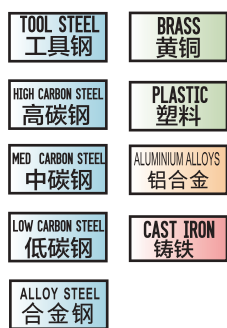
General Application Drills 通用钻头

Jobber Length 标准钻头

FEATURES 特征



APPLICATIONS 应用



D/Metric mm	Flute Length mm	Overall Length mm	Order Number HSS	D/Metric mm	Flute Length mm	Overall Length mm	Order Number HSS
直径	沟长	总长	订货号	直径	沟长	总长	订货号
1.50	18	40	C29784	4.10	43	75	C29811
1.60	20	43	C29785	4.20	43	75	C29812
1.70	20	43	C29786	4.30	47	80	C29813
1.80	22	46	C29787	4.40	47	80	C29814
1.90	22	46	C29788	4.50	47	80	C29815
2.00	24	49	C29789	4.60	47	80	C29816
2.10	24	49	C29790	4.70	47	80	C29817
2.20	27	53	C29791	4.80	52	86	C29818
2.30	27	53	C29792	4.90	52	86	C29819
2.40	30	57	C29793	5.00	52	86	C29820
2.50	30	57	C29794	5.10	52	86	C29821
2.60	30	57	C29795	5.20	52	86	C29822
2.70	33	61	C29796	5.30	52	86	C29823
2.80	33	61	C29797	5.40	57	93	C29824
2.90	33	61	C29798	5.50	57	93	C29825
3.00	33	61	C29799	5.60	57	93	C29826
3.10	36	65	C29800	5.70	57	93	C29827
3.20	36	65	C29801	5.80	57	93	C29828
3.30	36	65	C29802	5.90	57	93	C29829
3.40	39	70	C29804	6.00	57	93	C29830
3.50	39	70	C29805	6.10	63	101	C29831
3.60	39	70	C29806	6.20	63	101	C29832
3.70	39	70	C29807	6.30	63	101	C29833
3.80	43	75	C29808	6.40	63	101	C29834
3.90	43	75	C29809	6.50	63	101	C29835
4.00	43	75	C29810	6.60	63	101	C29836

General Application Drills
通用钻头

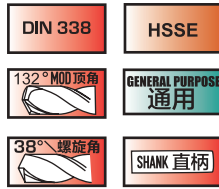
Jobber Length
标准钻头

D/Metric mm	Flute Length mm	Overall Length mm	Order Number HSS	D/Metric mm	Flute Length mm	Overall Length mm	Order Number HSS
直径	沟长	总长	订货号	直径	沟长	总长	订货号
6.70	63	101	C29837	11.00	94	142	C29881
6.80	69	109	C29838	11.10	94	142	C29882
6.90	69	109	C29839	11.20	94	142	C29883
7.00	69	109	C29840	11.30	94	142	C29884
7.10	69	109	C29841	11.40	94	142	C29885
7.20	69	109	C29842	11.50	94	142	C29886
7.30	69	109	C29843	11.60	94	142	C29887
7.40	69	109	C29844	11.70	94	142	C29888
7.50	69	109	C29845	11.80	94	142	C29889
7.60	75	117	C29846	11.90	101	151	C29891
7.70	75	117	C29847	12.00	101	151	C29892
7.80	75	117	C29848	12.10	101	151	C29893
7.90	75	117	C29849	12.20	101	151	C29894
8.00	75	117	C29850	12.30	101	151	C29895
8.10	75	117	C29851	12.40	101	151	C29896
8.20	75	117	C29852	12.50	101	151	C29897
8.30	75	117	C29854	12.60	101	151	C29898
8.40	75	117	C29855	12.70	101	151	C29899
8.50	75	117	C29856	12.80	101	151	C29900
8.60	81	125	C29857	12.90	101	151	C29901
8.70	81	125	C29858	13.00	101	151	C29902
8.80	81	125	C29859				
8.90	81	125	C29860				
9.00	81	125	C29861				
9.10	81	125	C29862				
9.20	81	125	C29863				
9.30	81	125	C29864				
9.40	81	125	C29865				
9.50	81	125	C29866				
9.60	87	133	C29867				
9.70	87	133	C29868				
9.80	87	133	C29869				
9.90	87	133	C29870				
10.00	87	133	C29871				
10.10	87	133	C29872				
10.20	87	133	C29873				
10.30	87	133	C29874				
10.40	87	133	C29875				
10.50	87	133	C29876				
10.60	87	133	C29877				
10.70	94	142	C29878				
10.80	94	142	C29879				
10.90	94	142	C29880				

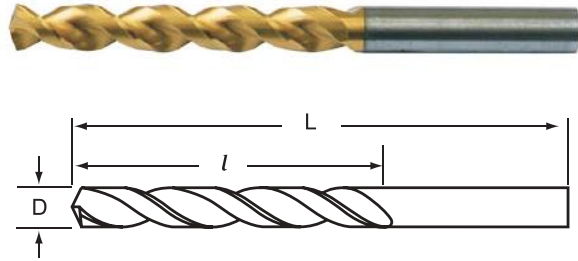
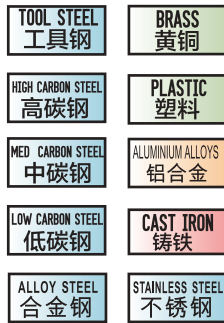
General Application Drills 通用钻头

Jobber Length 标准钻头

FEATURES 特征



APPLICATIONS 应用



D/Metric mm	Flute Length mm	Overall Length mm	Order Number HSSE	D/Metric mm	Flute Length mm	Overall Length mm	Order Number HSSE
直径	沟长	总长	订货号	直径	沟长	总长	订货号
1.50	18	40	C29652	4.10	43	75	C29679
1.60	20	43	C29653	4.20	43	75	C29680
1.70	20	43	C29654	4.30	47	80	C29681
1.80	22	46	C29655	4.40	47	80	C29682
1.90	22	46	C29656	4.50	47	80	C29683
2.00	24	49	C29657	4.60	47	80	C29684
2.10	24	49	C29658	4.70	47	80	C29685
2.20	27	53	C29659	4.80	52	86	C29686
2.30	27	53	C29660	4.90	52	86	C29687
2.40	30	57	C29661	5.00	52	86	C29688
2.50	30	57	C29662	5.10	52	86	C29689
2.60	30	57	C29663	5.20	52	86	C29690
2.70	33	61	C29664	5.30	52	86	C29691
2.80	33	61	C29665	5.40	57	93	C29692
2.90	33	61	C29666	5.50	57	93	C29693
3.00	33	61	C29667	5.60	57	93	C29694
3.10	36	65	C29668	5.70	57	93	C29695
3.20	36	65	C29669	5.80	57	93	C29696
3.30	36	65	C29670	5.90	57	93	C29697
3.40	39	70	C29671	6.00	57	93	C29698
3.50	39	70	C29672	6.10	63	101	C29699
3.60	39	70	C29674	6.20	63	101	C29700
3.70	39	70	C29675	6.30	63	101	C29701
3.80	43	75	C29676	6.40	63	101	C29702
3.90	43	75	C29677	6.50	63	101	C29703
4.00	43	75	C29678	6.60	63	101	C29704

Jobber Length
标准钻头

D/Metric mm	Flute Length mm	Overall Length mm	Order Number HSSE	D/Metric mm	Flute Length mm	Overall Length mm	Order Number HSSE
直径	沟长	总长	订货号	直径	沟长	总长	订货号
6.70	63	101	C29705	11.00	94	142	C29758
6.80	69	109	C29706	11.10	94	142	C29759
6.90	69	109	C29707	11.20	94	142	C29760
7.00	69	109	C29708	11.30	94	142	C29761
7.10	69	109	C29718	11.40	94	142	C29762
7.20	69	109	C29719	11.50	94	142	C29763
7.30	69	109	C29720	11.60	94	142	C29764
7.40	69	109	C29721	11.70	94	142	C29765
7.50	69	109	C29722	11.80	94	142	C29766
7.60	75	117	C29723	11.90	101	151	C29767
7.70	75	117	C29724	12.00	101	151	C29768
7.80	75	117	C29725	12.10	101	151	C29769
7.90	75	117	C29726	12.20	101	151	C29770
8.00	75	117	C29727	12.30	101	151	C29771
8.10	75	117	C29728	12.40	101	151	C29772
8.20	75	117	C29729	12.50	101	151	C29773
8.30	75	117	C29730	12.60	101	151	C29774
8.40	75	117	C29731	12.70	101	151	C29775
8.50	75	117	C29732	12.80	101	151	C29776
8.60	81	125	C29733	12.90	101	151	C29777
8.70	81	125	C29734	13.00	101	151	C29778
8.80	81	125	C29735				
8.90	81	125	C29736				
9.00	81	125	C29737				
9.10	81	125	C29738				
9.20	81	125	C29739				
9.30	81	125	C29740				
9.40	81	125	C29741				
9.50	81	125	C29742				
9.60	87	133	C29743				
9.70	87	133	C29744				
9.80	87	133	C29746				
9.90	87	133	C29747				
10.00	87	133	C29748				
10.10	87	133	C29749				
10.20	87	133	C29750				
10.30	87	133	C29751				
10.40	87	133	C29752				
10.50	87	133	C29753				
10.60	87	133	C29754				
10.70	94	142	C29755				
10.80	94	142	C29756				
10.90	94	142	C29757				



Metalcutting Safety

IMPORTANT SAFETY INSTRUCTIONS

Read before using the tools in this catalogue!

Projectile and Fragmentation Hazards:

Modern metalcutting operation involve high spindle and cutter speeds and high temperatures and cutting forces. Although hot metal chips and temperatures, they can sometimes fragment, particularly if they are subjected to over-stress, severe impact, or other abuse.

To avoid injury:

- Always wear appropriate personal protective equipment, including safety goggles, when operating metalcutting machines or working nearby.
- Always make sure all machine guards are in place.

Breathing and Skin Contact Hazards:

Grinding carbide or other advanced cutting tool materials produces dust or mist containing metallic particles. Breathing this dust or mist—especially over an extended period—can cause temporary or permanent lung disease or make existing medical conditions worse. Contact with this dust or mist can irritate eyes, skin, and mucous membranes and may make existing skin conditions worse.

To avoid injury:

- Always wear breathing protection and safety goggles when grinding.
- Provide ventilation control and collect and properly dispose of dust, or sludge from grinding.
- Avoid skin contact with dust or mist.

For more information, read the applicable Material Safety Data Sheet provided by Cleveland and consult General Industry Safety and Health Regulations.

These safety instructions are general guidelines. Many variables affect machining operations. It is impossible to cover every specific situation. The technical information included in this catalogue and recommendations on machining practices may not apply to your particular operation.

金属切削安全

重要安全说明：

使用该目录中刀具之前请阅读！

抛射物及碎屑的危险

现代金属切削主轴和刀片运转速度快，温度高和切削力大。高温金属切削会在切削中从工件飞离。虽然设计和生产的切削刀具可以承受很大的切削力和高温，有时也会产生碎片，尤其是在受到过大压力，严重冲击，或其它使用不当的情况下。

避免受伤：

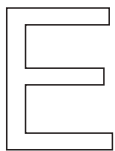
- 在操作金属切削机床或在附近工作时，一定要戴好个人防护设备，包括防护眼镜。
- 一定确保安装好机器的防护装置。

呼吸与皮肤接触危险：

研磨硬质合金或其它高级切削刀具材料时会产生带金属颗粒的粉尘或雾。吸入这样的粉尘或雾——尤其是长期吸入，会引起暂时或永久性的肺部疾病，或者会使现在的身体情况更糟。接触这样的粉尘或雾会刺激眼睛，皮肤和粘膜，使现在的皮肤状况更糟。

避免受伤：

- 在研磨时，一定要佩戴呼吸保护装置和防护眼镜。
- 要通风，控制，收集并合理处理研磨产生的粉尘、雾或渣滓。
- 避免皮肤接触粉尘或雾。



○ DEEP HOLE MACHINING



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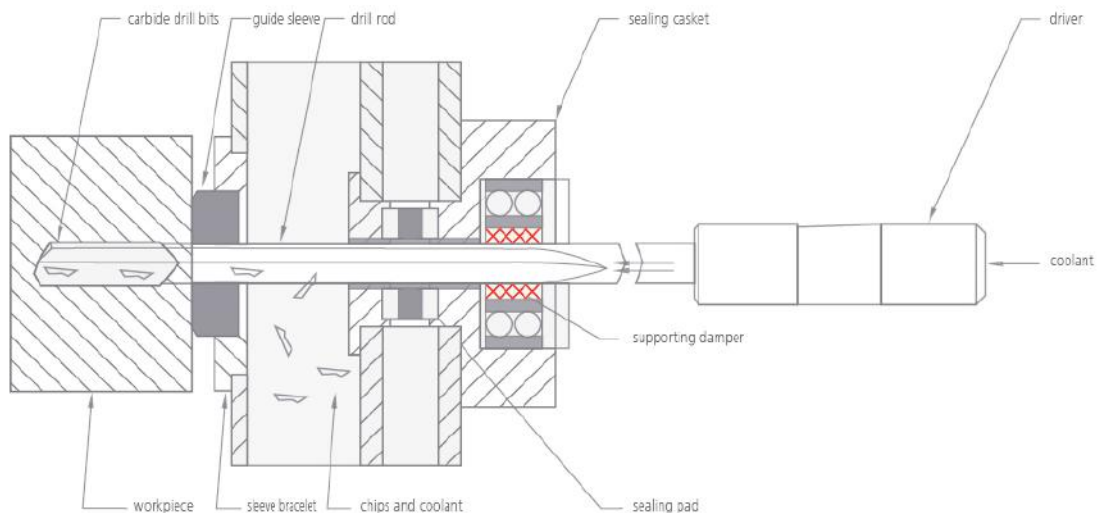
THE ART OF GUN DRILLS

The art of gun drills

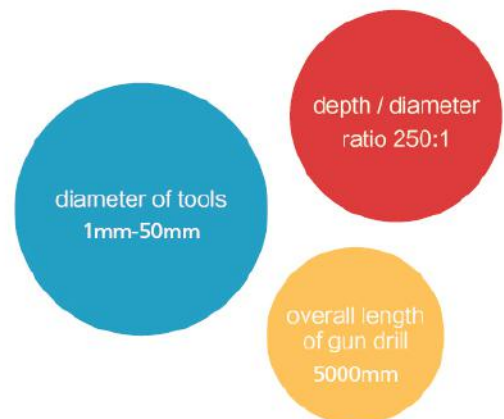
The gun drill has a decisive impact on the generation and development of deep hole drilling technology. The single flute drills can achieve extremely high aperture tolerance, surface texture and small vibration variance. This allows the gun drill to be used in precise hole machining. In practical application, the direct drills operation can replace part of the reaming operation, which has a strong sense of mechanical reliability.

The gun drill is composed of carbide drill bit, drill rod, and driver, which can be suitable for most of material processing, such as cast iron, stainless steel, aluminium, graphite, wood products, and all kinds of nonferrous metals. The gun drill is the single flute cutting tool, the hole needs to be guided by the guide bush. With the development of CNC machine industry, gun drill tools are not only suitable for itself only, but also suitable for high pressure internal embedded liquid coolant CNC lathes, machining center and other complex numeric lathes as well.

Shin-IL company can produce drill tools with diameter of 1mm-50mm, the length ratio is more than 250x, and the longest length can reach 5000mm. The pattern of drill tool is divided into standard gun drills, non standard (step gun drills, spherical gun drills, etc.). Coating and PCD gun drills, overall carbide solid drills, and clip type gun drills etc.



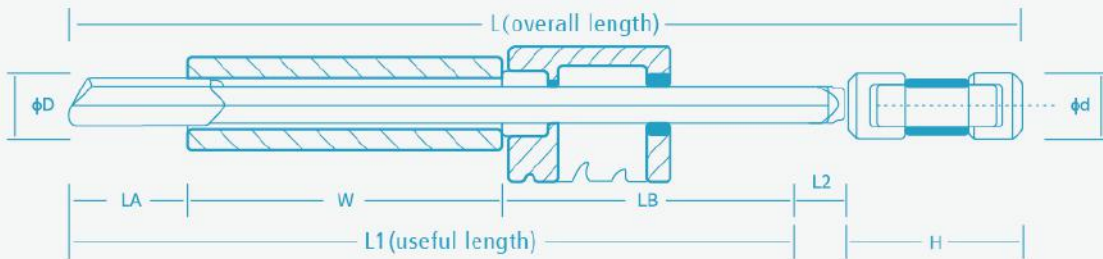
- Use vertical and horizontal equipment with a high pressure internal cooling system
- Use special cutting oil or coolant for deep hole drilling and make sure to provide sufficient pressure and flowrate.
- Because the gun drill without self-center orientation, so in the processing it must use guide sleeve or pilot hole, serves as centering for gun drill machining.
- Using the correct machining parameters for optimal drilling hole processing.



Gun drill booking format and the calculation of length

1. The nominal cutting blade diameter can be subdivided to 0.001mm according to customer needs
2. Please mark the order according to the following standard

D(drill bit diameter) x L(overall length) – handle/driver number



L(overall length)

D=drill bit diameter

W=drilling depth

L=overall length

LB=width of supporting guide casket

L1(useful length)

H=handle/driver number

LA=drill tip length

L1=useful length

L2=minimum for chips discharge allow

overall length calculated as follows:

overall length=LA (drill tip length) + W (drilling depth) + LB (width of supporting guide casket) + L2 (minimum for chips discharge allow) + H (handle length)

3. Please highlight the workpiece material, hardness, hole tolerance, and hole brightness
4. Mark the handle code number (catalog page 5, page 6. page 10.)

Extra technical service :

Grinding tools

Provide grinding of carbide gun drill, including grinding service per customer request

Replace, and weld the new carbide drill

(Assume drill handle and rod are also available for use)

- 1.check the useful status of the gun drill
- 2.remove the cripple or damaged drill bit
- 3.install and weld a new bit
- 4.calibrate the gun drill

Replace and renew drill tips and rods.

(Assume drill handle is also available for use)

- 1.check the useful status of the gun drill
- 2.remove the cripple waste drill bits and drill rods
- 3.install and weld new drill bits and drill rods
- 4.calibrate the gun drill

Coating service

Provide standard, necessary coating service for drilling tools.

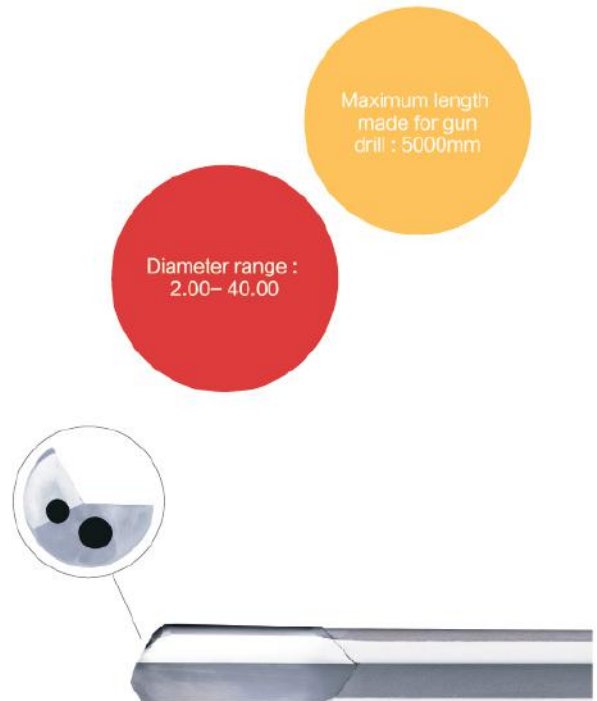
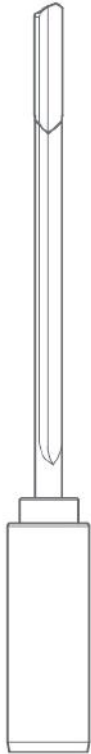
BRAZED GUN DRILLS

■ Brazed single flute gun drill

Brazed single flute gun drill is made up of the drill tip, drill rod and drill handle through welding into a whole, can be processed according to the different choice of the carbide materials by means of reasonable tool design. The bit is usually made of integral solid carbide, with the tip portion welded to a heat treated drill rod and then linked to a finely polished steel drill handle. For special materials of the workpiece, drill bits can also be treated with different kinds of coatings.

Product features

Hole can be processed in good precision, high economy, high cutting stability, excellent drilling quality texture (straightness, brightness, roundness). Drill bits can be grinded for many times, It can customized according to customer requirements, can be used for gun drilling machine, machining center and modified lathe as well.

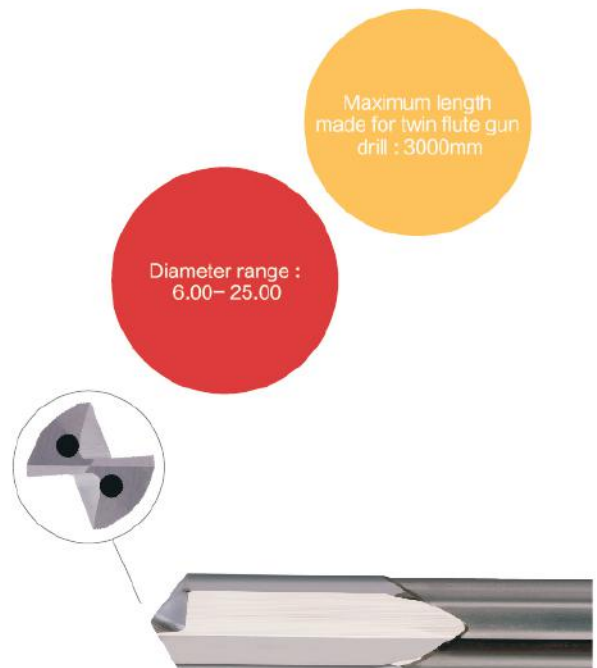
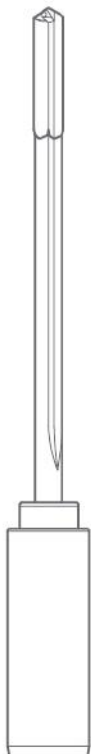


■ Brazed twin flute gun drill

Brazed twin flute gun drill has two symmetrical cutting blades, which has the same cutting fluid circulation system as the single flute gun drill. The cutting flute has two oil holes in the cutting head provided coolant to the blades. The mixture of the coolant and chips are discharged from the "v" groove outside of the cutting tube. Brazed twin flute gun drill is made of drill tip, drill tube and drill handle by welded into a whole body, and can also be made for the whole carbide substance. However, due to the limited discharge space of twin flute gun drill, it is suitable for processing soft brittleness materials.

Product features

Faster drilling speed than single flute gun drill. But only limited to the processing of cast iron or similar products.





Stock of brazed single flute gun drills

specification	235mm(L)		270mm(L)		handle / driver	800 mm (L)	1000 mm (L)	1200 mm (L)	1440 mm (L)	1650 mm (L)	1800 mm (L)	handle / driver
	standard	coating	standard	coating								
φ3.02	◆	◆			10*40	◆	◆					25*70
φ3.52	◆	◆				◆	◆					
φ4.02	◆	◆				◆	◆	◆				
φ4.52	◆	◆				◆	◆	◆				
φ5.02	◆	◆				◆	◆	◆	◆			
φ5.52	◆	◆					◆	◆	◆			
φ6.02	◆	◆					◆	◆	◆	◆		
φ6.52	◆	◆					◆	◆	◆	◆		
φ7.02	◆	◆	◆				◆	◆	◆	◆		
φ7.52	◆	◆					◆	◆	◆	◆		
φ8.02	◆	◆	◆					◆	◆	◆	◆	
φ8.52	◆	◆						◆	◆	◆		
φ9.02	◆	◆	◆					◆	◆	◆		
φ9.52	◆	◆						◆	◆	◆		
φ10.02	◆	◆	◆					◆	◆	◆	◆	
φ10.52	◆	◆						◆	◆	◆		
φ11.02	◆	◆	◆						◆	◆		
φ11.52	◆	◆							◆	◆		
φ12.02	◆	◆	◆						◆	◆	◆	

◆ = available stock

BRAZED GUN DRILLS

Standard driver of the brazed gun drills

specification	diameter Ø dia. (mm)	drawing	tool length calculation		fix position X	screw spec M
			clamping part D	transitional part L		
SH10-00	10		40		24.0	
SH16-03	16		45	53	31.0	
SH25-00	25		70	78	34.0	
SH10-01	10		40	57	24.0	
SH16-04	16		45	72	31.0	
SH25-01	25		70	105	34.0	
SH16-02	16		50	58	47.5	
SH16-33	16		50	77	47.5	
SH10-06	10		60			M6x0.5
SH16-15	16		80			M10x1
SH25-08	25		100			M16x1.5
SH10-28	10		60	77		M6x0.5
SH16-22	16		60	105		M10x1
SH25-10	25		100	140		M16x1.5
SH12.7-00	12.7			38.1		25.3
SH19.05-01	19.05		70		45.0	
SH25.4-00	25.4		70		57.5	
SH31.7-00	31.7		70		57.5	
SH38.1-01	38.1		70		57.5	
SH19.05-11	19.05		70	97	45.0	
SH25.4-11	25.4		70	100	57.5	
SH31.7-01	31.7		70	111	57.5	
SH38.1-01	38.1		70	110	57.5	
SH10-44	10			60	68	35
SH16-31	16	80		90	37	M10x1
SH25-34	25	100		100	45	M16x1.5
SH16-66	16		80	80	37	M10x1
SH25-40	25		100	100	45	M16x1.5
SH10-30	10		40	40	28.0	
SH12-14	12		45	45	33.0	
SH16-70	16		48	48	36.0	
SH20-56	20		50	50	38.0	

BRAZED GUN DRILLS

specification	diameter Φ dia. (mm)	drawing	tool length calculation		fix position X	screw spec M
			clamping part D	transitional part L		
SH16-00	16		112		73.0	TR16x1.5
SH20-00	20		126		82.0	TR 20x2
SH28-00	28		126		82.0	TR 28x2
SH36-00	36		162		109.0	TR 36x2
SH16-21	16		40		28.0	
SH25-16	25		50		35.0	
SH35-00	35		60		40.0	
SH16-30	16		40	67	28.0	
SH25-20	25		50	77	35.0	
SH35-01	35		60	100	40.0	
SH10-40	10		40			
SH12-18	12		45			
SH16-11	16		48			
SH20-01	20		50			
SH25-11	25		56			
SH32-24	32		60			
SH40-03	40		70			
SH10-41	10		40	57		
SH12-19	12		45	62		
SH16-20	16		48	75		
SH20-60	20		50	77		
SH25-21	25	56	86			
SH32-23	32	60	100			
SH40-04	40	70	110			
SH10-11	10		40		23.5	
SH12-07	12		45		26.5	
SH16-32	16		48		29.0	
SH20-29	20		50		30.5	
SH25-22	25		56		38.0	
SH32-10	32		60		43.0	
SH40-13	40		70		47.0	
SH10-23	10		40	57	23.5	
SH12-02	12		45	62	26.5	
SH16-53	16		48	75	29.0	
SH20-34	20	50	77	30.5		
SH25-31	25	56	86	38.0		
SH32-11	32	60	100	43.0		
SH40-14	40	70	110	47.0		
SH10-20	10		40		28.0	
SH12-08	12		45		33.0	
SH16-47	16		48		36.0	
SH20-40	20		50		38.0	
SH25-36	25		56		44.0	
SH32-12	32		60		48.0	
SH40-18	40		70		66.0	
SH10-24	10		40	57	28.0	
SH12-05	12		45	62	33.0	
SH16-51	16		48	75	36.0	
SH20-43	20	50	77	38.0		
SH25-37	25	56	86	44.0		
SH32-13	32	60	100	48.0		
SH40-17	40	70	110	66.0		
SH10-29	10		40		28.0	
SH12-13	12		45		33.0	
SH16-62	16		48		36.0	
SH20-55	20		50		38.0	

BRAZED GUN DRILLS

Machining parameters of the brazed single flute gun drills

workpiece material	spring steel prehard steel cast iron chilled cast iron titanium alloy special steel (nickel base heat resistant alloy nickel alloy)	stainless steel anti corrosive stainless steel austenitic stainless steel 18~25%Cr Ni > 8%	martensitic stainless steel ferritic steel (normal stainless steel cast stainless steel) 13~25%Cr free cutting steel (sulphurized steel)	alloy steel quenching and tempered steel case hardened steel nitriding steel tool steel (> 900N/mm ²)
cutting speed m/min	25~60	30~60	40~70	60~80

diameter Φ	feed rate: mm/rev.			
2.0~2.49	0.001~0.002	0.002~0.005	0.002~0.006	0.002~0.005
2.5~2.99	0.001~0.005	0.004~0.007	0.004~0.007	0.004~0.006
3.0~3.49	0.002~0.007	0.006~0.008	0.005~0.009	0.005~0.007
3.5~3.99	0.004~0.008	0.008~0.009	0.007~0.011	0.007~0.010
4.0~4.49	0.006~0.009	0.009~0.010	0.008~0.013	0.008~0.012
4.5~4.99	0.008~0.011	0.010~0.013	0.009~0.017	0.011~0.015
5.0~5.99	0.010~0.014	0.012~0.015	0.013~0.019	0.013~0.018
6.0~6.99	0.012~0.016	0.014~0.017	0.015~0.023	0.015~0.022
7.0~7.99	0.015~0.018	0.016~0.019	0.018~0.026	0.018~0.025
8.0~8.99	0.018~0.021	0.018~0.021	0.020~0.031	0.020~0.027
9.0~9.99	0.021~0.025	0.020~0.028	0.023~0.034	0.023~0.030
10.0~11.99	0.025~0.030	0.025~0.033	0.025~0.041	0.025~0.038
12.0~13.99	0.027~0.033	0.030~0.044	0.030~0.045	0.029~0.044
14.0~15.99	0.029~0.040	0.035~0.044	0.035~0.052	0.035~0.050
16.0~17.99	0.033~0.044	0.041~0.050	0.042~0.060	0.039~0.053
18.0~19.99	0.037~0.049	0.045~0.062	0.045~0.067	0.044~0.060
20.0~23.99	0.041~0.054	0.049~0.071	0.050~0.079	0.049~0.069
24.0~27.99	0.045~0.057	0.052~0.083	0.054~0.090	0.054~0.077
28.0~31.99	0.049~0.062	0.057~0.091	0.059~0.098	0.059~0.085
32.0~40.0	0.052~0.065	0.063~0.098	0.065~0.107	0.063~0.098

● The cutting speed and feed rate depend on : tool diameter, tool length, cutting fluid, workpiece material, characterization of machine and clamping condition. The processing parameters in the above table are the standard normal value for reference. The practical actual working conditions on site are the true value.

BRAZED GUN DRILLS

cast iron grey cast iron (< 300N/mm ²) nodular cast iron (< 400N/mm ²)	cast iron grey cast iron (< 300N/mm ²) grey cast iron (< 400N/mm ²) malleable cast iron white heart malleable cast iron black heart malleable cast iron	structural steel quenching and tempered steel high carbon low alloy steel case hardened steel nitriding steel tool steel (> 900N/mm ²) free cutting steel	brass bronze copper plastic	aluminium cast aluminium Si > 5% free cutting aluminium	aluminium cast aluminium Si > 5% non quenched aluminium
60~90	70~100	70~100	80~150	80~160	100~300

feed rate: mm/rev.

0.005~0.018	0.005~0.019	0.003~0.007	0.003~0.015	0.002~0.012	0.005~0.005
0.008~0.028	0.008~0.02	0.005~0.010	0.005~0.020	0.004~0.026	0.004~0.008
0.009~0.038	0.009~0.038	0.007~0.012	0.006~0.030	0.006~0.037	0.006~0.012
0.011~0.042	0.011~0.046	0.009~0.015	0.007~0.045	0.007~0.055	0.007~0.025
0.012~0.047	0.012~0.050	0.012~0.019	0.008~0.050	0.008~0.071	0.008~0.026
0.016~0.052	0.016~0.057	0.014~0.020	0.009~0.057	0.009~0.094	0.009~0.028
0.018~0.065	0.018~0.068	0.016~0.026	0.010~0.069	0.010~0.109	0.010~0.036
0.024~0.071	0.024~0.074	0.018~0.028	0.012~0.079	0.012~0.125	0.012~0.045
0.028~0.084	0.028~0.085	0.021~0.035	0.014~0.092	0.018~0.130	0.014~0.049
0.032~0.092	0.032~0.096	0.024~0.036	0.016~0.101	0.020~0.144	0.016~0.056
0.036~0.110	0.036~0.114	0.027~0.040	0.018~0.113	0.023~0.158	0.018~0.034
0.045~0.116	0.050~0.120	0.030~0.04	0.020~0.139	0.025~0.174	0.020~0.074
0.051~0.126	0.060~0.138	0.036~0.060	0.024~0.156	0.030~0.182	0.024~0.087
0.057~0.138	0.070~0.154	0.042~0.071	0.028~0.179	0.035~0.194	0.028~0.099
0.620~0.158	0.079~0.170	0.048~0.079	0.033~0.199	0.050~0.209	0.033~0.108
0.066~0.173	0.090~0.191	0.054~0.091	0.036~0.244	0.054~0.228	0.036~0.130
0.069~0.189	0.106~0.207	0.060~0.107	0.040~0.249	0.060~0.254	0.040~0.146
0.076~0.210	0.120~0.221	0.069~0.117	0.048~0.291	0.072~0.295	0.048~0.169
0.079~0.212	0.140~0.237	0.079~0.134	0.056~0.327	0.084~0.360	0.056~0.194
0.086~0.228	0.160~0.245	0.085~0.154	0.064~0.380	0.096~0.455	0.064~0.221

- The cutting speed and feed rate depend on : tool diameter, tool length, cutting fluid, workpiece material, characterization of machine and damping condition. The processing parameters in the above table are the standard normal value for reference. The practical actual working conditions on site are the true value.

SOLID CARBIDE GUN DRILLS

■ Solid carbide gun drill

The solid carbide gun drill is made of drill body (drill tip and drill rod integrated) and the drill handle from two parts by welding as a whole. It can also be made by the whole carbide. (drill tip, drill rod, and handle integrated). Its stability, efficiency and useful life are better than the welding type. This design ensures higher reliability and cutting performance, while it compromise higher rigidity and less distorted vibration. It is therefore enjoy a longer tool life.

Made it up for maximum 550mm overall length

Drilling diameter range : 1.00- 12.00

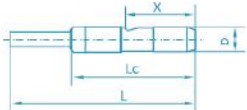
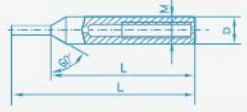
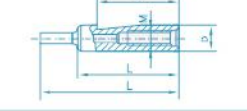





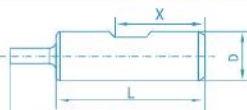
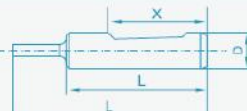


Solid carbide gun drill stock table

Φ1.52*160-10*55	Φ2.0*250-10*135	Φ3.8*185-4*38/50-L
Φ1.80*160-10*55	Φ2.2*170-4*38/50	Φ3.8*240-10*100-L
Φ2.02*160-10*55	Φ2.5*175-4*38/50-L	Φ3.8*275-10*135-L
Φ2.02*180-10*55	Φ2.5*230-10*100-L	Φ4.0*185-4*38/50-L
Φ2.02*180-10*55-L	Φ2.5*265-10*135-L	Φ4.0*240-10*100-L
Φ2.02*200-10*55	Φ2.6*175-4*38/50-L	Φ4.0*275-10*135-L
Φ2.02*200-10*55-L	Φ2.6*265-10*135-L	Φ4.2*185-4*38/50-L
Φ2.52*180-10*55	Φ2.8*175-4*38/50-L	Φ4.2*240-10*100-L
Φ2.52*180-10*55-L	Φ2.8*265-10*135-L	Φ4.2*275-10*135-L
Φ3.02*180-10*55	Φ3.0*175-4*38/50-L	Φ4.5*285-10*135-L
Φ3.02*200-10*55	Φ3.0*230-10*100-L	Φ4.8*250-10*100-L
Φ3.02*200-10*55-L	Φ3.0*265-10*135-L	Φ5.0*250-10*100-L
Φ2.8*170-2.9*30-L	Φ3.2*180-4*38/50-L	Φ5.0*260-10*100-L
Φ3.0*170-2.9*30-L	Φ3.2*230-10*100-L	Φ6.0*260-10*100-L
Φ3.2*170-3.1*30-L	Φ3.2*265-10*135-L	Φ6.0*295-10*135-L
Φ1.80*200-10*100	Φ3.5*180-4*38/50-L	Φ7.0*280-10*100-L
Φ2.0*170-4*38/50	Φ3.5*230-10*100-L	Φ9.0*280-10*100-L
Φ2.0*220-10*100	Φ3.5*265-10*135-L	Φ10.0*280-10*100-L

● L : TIALN

Table of solid carbide gun drill handle

specification	diameter Ø dia. (mm)	drawing	handle length calculation		fix position X	screw spec M
			clamping part D	transitional part L		
SH6-03	6		30	45	17	
SH10-15	10		55	70		M6x0.5
SH10-37	10		40	55	32.7	M6x0.5
SH10-42	10		40	55	24	
SH12.7-01	12.7		38	48	25.4	
SH12.7-09	12.7		51	65		M6x0.5
SH16-75	16		80	105	37	M10x1
SH4-08	4		34	46		
SH6-12	6		36	50		
SH10-51	10		40	55		
SH12-27	12		45	60		
SH16-86	16		48	63		
SH6-13	6		36	50	20	
SH10-47	10		40	55	23.5	
SH12-30	12		45	60	26.5	
SH16-78	16		48	63	29	
SH6-01	6		36	50	25	
SH10-49	10		40	55	28	
SH12-28	12		45	60	33	
SH16-84	16		48	63	36	

SOLID CARBIDE GUN DRILL

Solid carbide gun drill machining parameters

workpiece material	spring steel preharden steel hot work steel cast iron steel chilled cast iron titanium alloy special alloy (Ni base alloy nickel alloy)	stainless steel corrosive resistant steel austenitic steel 18~25%Cr Ni > 8%	martensitic steel ferritic steel (normal stainless steel cast stainless steel) 13~25%Cr free cutting steel (sulphurized steel)	alloy steel quenching and tempered steel case hardened steel nitriding steel tool steel (>900N/mm ²)
cutting speed m/min	25~60	30~60	40~70	60~80

diameter Φ

feed rate: mm/rev.

0.7~0.79	0.0004~0.0012	0.0005~0.0012	0.0007~0.0012	0.0005~0.0012
0.8~0.89	0.0006~0.0016	0.0070~0.0015	0.0011~0.0014	0.0006~0.0015
0.9~0.99	0.0009~0.0020	0.0011~0.0019	0.0014~0.0017	0.0009~0.0019
1.0~1.09	0.0013~0.0024	0.0014~0.0022	0.0019~0.0022	0.0010~0.0023
1.1~1.19	0.0017~0.0028	0.0017~0.0025	0.0022~0.0026	0.0013~0.0029
1.2~1.29	0.0020~0.0033	0.0020~0.0027	0.0024~0.0028	0.0015~0.0035
1.3~1.39	0.0023~0.0036	0.0022~0.0029	0.0031~0.0035	0.0020~0.0041
1.4~1.49	0.0026~0.0038	0.0023~0.0031	0.0034~0.0037	0.0021~0.0047
1.5~1.59	0.0029~0.0042	0.0024~0.0035	0.0035~0.0042	0.0021~0.0051
1.6~1.79	0.0035~0.0054	0.0036~0.0049	0.0040~0.0051	0.0024~0.0066
1.8~1.99	0.0040~0.0065	0.0040~0.0065	0.0050~0.0065	0.0030~0.0075
2.0~2.49	0.0050~0.0075	0.0050~0.0075	0.0050~0.0075	0.0030~0.0095
2.5~2.99	0.0060~0.0095	0.0060~0.0095	0.0060~0.0110	0.0040~0.0110
3.0~3.49	0.0080~0.0110	0.0080~0.0110	0.0080~0.0130	0.0050~0.0140
3.5~3.99	0.0090~0.0125	0.0100~0.0160	0.0090~0.0160	0.0070~0.0160
4.0~4.49	0.0100~0.0135	0.0110~0.0180	0.0100~0.0190	0.0080~0.0190
4.5~4.99	0.0110~0.0160	0.0140~0.0220	0.0110~0.0220	0.0110~0.0210
5.0~5.99	0.0130~0.0220	0.0150~0.0240	0.0130~0.0250	0.0120~0.0250
6.0~7.99	0.0150~0.0300	0.0180~0.0290	0.0150~0.0370	0.0150~0.0330
8.0~12.0	0.0180~0.0380	0.0210~0.0330	0.0170~0.0410	0.0180~0.0380

- The cutting speed and feed rate depend on : tool diameter, tool length, cutting fluid, workpiece material, characterization of machine and clamping condition. The processing parameters in the above table are the standard normal value for reference. The practical actual working conditions on site are the true value.

SOLID CARBIDE GUN DRILL

cast iron grey cast iron (< 300N/mm ²) nodular cast iron (< 400N/mm ²)	cast iron grey cast iron (< 300N/mm ²) nodular cast iron (< 400N/mm ²) malleable cast iron white heart malleable cast iron black heart malleable cast iron	structural steel quenching and tempered steel high carbon low alloy steel case hardened steel nitriding steel tool steel (> 900N/mm ²) free cutting steel	brass bronze copper plastic	aluminium cast aluminium Si > 5% easy to process aluminium	aluminium cast aluminium Si > 5% non quenched aluminium
60~90	70~100	70~100	80~150	80~160	100~300

feed rate: mm/rev.

0.0009~0.0014	0.0007~0.0018	0.0004~0.0018	0.0005~0.0012	0.0007~0.0012	0.0005~0.0009
0.0012~0.0018	0.0010~0.0023	0.0004~0.0022	0.0008~0.0015	0.0012~0.0014	0.0008~0.0012
0.0015~0.0024	0.0014~0.0028	0.0007~0.0026	0.0011~0.0019	0.0017~0.0020	0.0011~0.0017
0.0019~0.0029	0.0018~0.0032	0.0010~0.0032	0.0015~0.0024	0.0020~0.0024	0.0015~0.0024
0.0025~0.0035	0.0022~0.0038	0.0014~0.0038	0.0019~0.0029	0.0022~0.0029	0.0019~0.0034
0.0031~0.0041	0.0030~0.0048	0.0018~0.0041	0.0024~0.0034	0.0024~0.0034	0.0024~0.0041
0.0040~0.0051	0.0039~0.0060	0.0020~0.0050	0.0028~0.0039	0.0026~0.0045	0.0026~0.0044
0.0047~0.0060	0.0049~0.0079	0.0021~0.0054	0.0031~0.0047	0.0028~0.0055	0.0032~0.0048
0.0053~0.0068	0.0056~0.0100	0.0021~0.0067	0.0032~0.0053	0.0035~0.0066	0.0038~0.0059
0.0064~0.0095	0.0064~0.0150	0.0028~0.0075	0.0035~0.0095	0.0040~0.0085	0.0040~0.0075
0.0070~0.0130	0.0070~0.0220	0.0030~0.0095	0.0040~0.0130	0.0050~0.0110	0.0050~0.0110
0.0100~0.0220	0.0090~0.0330	0.0040~0.0120	0.0040~0.0180	0.0050~0.0200	0.0070~0.0130
0.0130~0.0320	0.0110~0.0430	0.0050~0.0160	0.0050~0.0250	0.0060~0.0360	0.0080~0.0170
0.0150~0.0390	0.0140~0.0530	0.0080~0.0180	0.0060~0.0370	0.0080~0.0540	0.0100~0.0200
0.0180~0.0480	0.0180~0.0620	0.0090~0.0230	0.0070~0.0490	0.0110~0.0750	0.0100~0.0250
0.0200~0.0560	0.0200~0.0690	0.0120~0.0260	0.0080~0.0600	0.0120~0.0950	0.0130~0.0300
0.0230~0.0640	0.0230~0.0780	0.0140~0.0280	0.0090~0.0690	0.0140~0.1300	0.0160~0.0360
0.0250~0.0760	0.0250~0.0950	0.0150~0.0380	0.0100~0.0800	0.0150~0.1550	0.0200~0.0470
0.0300~0.1100	0.0300~0.1250	0.0180~0.0490	0.0120~0.0960	0.0180~0.0250	0.0260~0.0660
0.0330~0.1190	0.0350~0.1360	0.0210~0.0570	0.0140~0.1100	0.0210~0.2080	0.0290~0.0780

● The cutting speed and feed rate depend on : tool diameter, tool length, cutting fluid, workpiece material, characterization of machine and damping condition. The processing parameters in the above table are the standard normal value for reference. The practical actual working conditions on site are the true value.

CLIP TYPE GUN DRILL

Clip type gun drill

New and high performance deep hole drilling tool, apply inserts with blade to replace the traditional gun drill tool blade.

Manufacturing range from 12-50mm. Large diameter (greater than 28mm to 50 mm) using multi-blade inserts and BTA type gun drill formation. (see page 15)

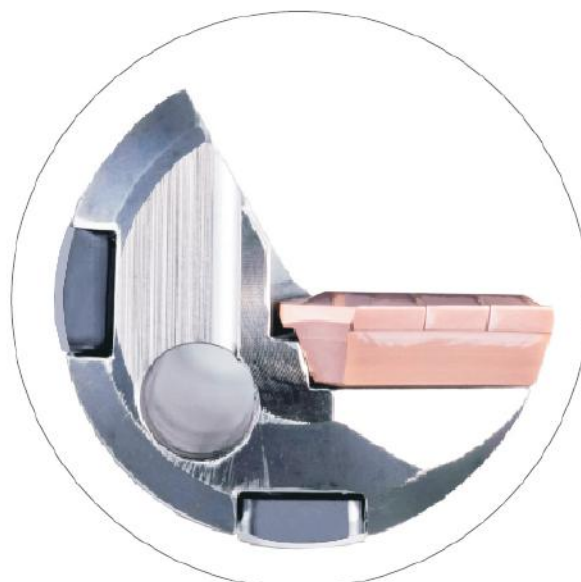
Relative large diameter
 $\geq \phi 28 \sim \phi 50$

Diameter range:
 $\phi 12.0 \sim \phi 50.0$

Product features

No more grinding, easy to replace the blades and guides.

Special blade port treatment has high cutting speed and cutting ability.



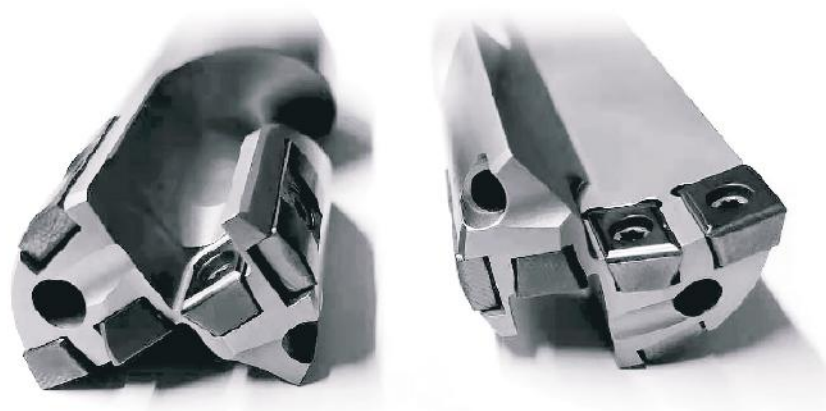
Allocation table of Clip type gun drill(single insert)

Diameter	Insert code	Screw code	Wrench code	Guide pad code	Guide pad screw spec	Screw spec	Wrench spec
11.52-13.99	TGD060204-JI-T	M2.5*4.5	T-8F	PGD-04-055	M2*3.7	M2*3.7	T-6F
14-15.99	TGD070304-JI-T	M2.5*0.45	T-8F	PGD-05-060	SR34-508	M2.2*0.45	T-7F
16-18.00	TGD080305-JI-T	M2.5*0.45	T-8F	PGD-05-075	SR34-508	M2.2*0.45	T-7F
18.01-19.99	TGD090305-JI-T	M2.5*0.45	T-8F	PGD-06-085	SR14-560	M2.5*0.45	T-8F
20.00-20.99	TGD100305-JI-T	M3.0*0.5	T-8F	PGD-06-085	SR14-560	M2.5*0.45	T-8F
21.00-21.99	TGD100305-JI-T	M3.0*0.5	T-8F	PGD-06-100	SR14-560	M2.5*0.45	T-8F
22.00-25.00	TGD110405-JI-T	M3.5*0.6	T-9F	PGD-06-100	SR14-560	M2.5*0.45	T-8F
25.01-29.49	TGD120405-JI-T	M4.0*0.7	T-15F	PGD-06-120	SR14-560	M2.5*0.45	T-8F
29.5-32.02	TGD130408-JI-T	M5*11	T-20F	PGD-07-120	M3*6.5	M3*6.5	T-8F

CLIP TYPE GUN DRILL

■ BTA formation clip type gun drill

Mainly used for large hole drilling (32-50mm), It can be widely used in all kinds of high pressure internal coolant ejection CNC machines.



Allocation table of BTA clip type gun drill (3 inserts)

Product items	Diameter range			
	φ 32.00-33.00	φ 33.01-35.00	φ 35.01-38.00	φ 38.01-41.00
Peripheral insert	TGDP07504G-T	TGDP07504G-T	TGDP07504G-T	TGDP09004G-T
	TGDP070404G-I	TGDP070404G-I	TGDP070404G-I	TGDP090404G-I
Central insert	TGDC06504G-T	TGDC06504G-T	TGDC08004G-T	TGDC08004G-T
	TGDC060408G-I	TGDC060408G-I	TGDC080408G-I	TGDC080408G-I
Intermediate insert	TGDI06504G-T	TGDI06504G-T	TGDI06504G-T	TGDI06504G-T
	TGDI060404G-I	TGDI060404G-I	TGDI060404G-I	TGDI060404G-I
Screw	M2.5*7	M2.5*7	M2.5*7	M2.5*7
Wrench	T-8F	T-8F	T-8F	T-8F
Guide pad	PGD-06-120	PGD-07-120	PGD-07-120	PGD-08-155
Screw	M2.5*6	M3*7	M3*7	M3*7
Wrench	T-8F	T-9F	T-8F	T-9F

Product features

- Faster drilling feed rate : maximum feed 0.35mm/rev. High productivity.
- Excellent machining surface quality : Ra=0.6–2.0 [um]
- Cylindricity of machining hole : 50–80 [um]
- High precision : IT10
- Maximum drilling depth : L=5xD & maximum drilling depth 800mm
- No need for extra auxiliary assistance.
- Only the conventional coolant pressure is required
- Exchangeable guide pads, double head useful
- For the machining of steel and cast iron

Diameter range			
φ 41.01-44.00	φ 44.01-45.00	φ 45.01-47.00	φ 47.01-50.00
TGDP09004G-T	TGDP09004G-T	TGDP09004G-T	TGDP110408G-T
TGDP090404G-I	TGDP090404G-I	TGDP090404G-I	TGDP110404G-I
TGDC08004G-T	TGDC09504G-T	TGDC09504G-T	TGDC09504G-T
TGDC080408G-I	TGDC090408G-I	TGDC090408G-I	TGDC090408G-I
TGDI08004G-T	TGDI08004G-T	TGDI08004G-T	TGDI08004G-T
TGDI080404G-I	TGDI080404G-I	TGDI080404G-I	TGDI080404G-I
M2.5*7	M2.5*7	M2.5*7	M2.5*7
T-8F	T-8F	T-8F	T-8F
PGD-08-155	PGD-08-155	PGD-06-120	PGD-10-200
M3*7	M3*7	M2.5*6	M3*7
T-8F	T-9F	T-8F	T-9F

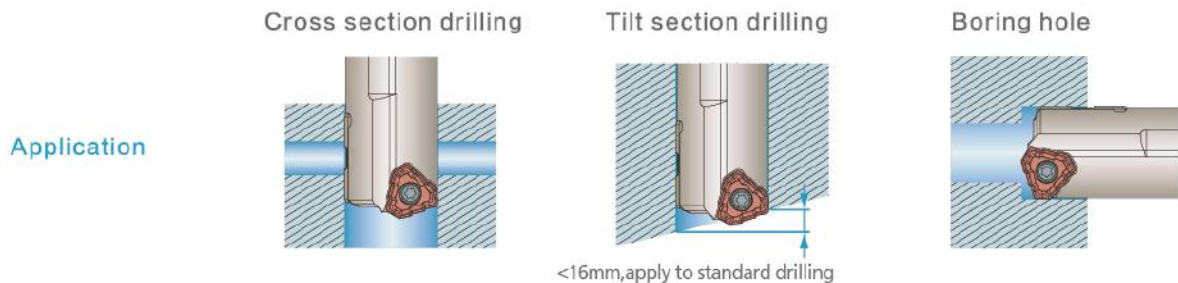
MACHINING PARAMETERS

Standard machining parameters

Workpiece material	Cutting speed Vc(m/min)	Feed rate: f(mm/rev)			
		Φ12-Φ13.99	Φ14-Φ18	Φ18.01-Φ28	Φ28.01-Φ50
Low carbon steel (C < 0.3) SS400/St42-1, SM/S152-3, S25C/C25, etc.	50-100	-	0.03-0.1	0.03-0.1	-
	80-140	0.05-0.1	0.05-0.1	0.05-0.1	0.1-0.2
Carbon steel (C > 0.3) S45C/C45, S55C/C55 etc.	50-100	-	0.03-0.1	0.03-0.12	-
	80-140	0.05-0.16	0.05-0.16	0.05-0.2	0.1-0.2
Low alloy steel (C < 0.3) SCM415, 18CrMo4, etc.	50-100	-	0.03-0.1	0.03-0.1	-
	80-140	0.05-0.1	0.05-0.1	0.05-0.1	0.1-0.2
Alloy steel (C > 0.3) SCM440/42CrMo4, etc.	50-100	-	0.03-0.1	0.03-0.2	-
	80-120	0.05-0.16	0.05-0.16	0.05-0.2	0.1-0.2
Stainless steel (Austenitic) SUS304/X5CrNi18-9, SUS316/ X5CrNiMo17-12-3, etc.	50-100	-	0.03-0.06	0.03-0.06	-
	60-100	0.05-0.1	0.05-0.1	0.05-0.1	0.1-0.15
Stainless steel (Martensitic, ferritic) SUS430/X6Cr17, SUS416/ X12Cr13, 等。	50-100	-	0.03-0.06	0.03-0.06	-
	60-100	0.05-0.1	0.05-0.1	0.05-0.1	0.1-0.15
Stainless steel (Precipitated) SUS630/X5CrNiCuNb16-4, etc.	50-100	-	0.03-0.06	0.03-0.06	-
	60-100	0.05-0.1	0.05-0.1	0.05-0.1	0.1-0.15
Grey cast iron FC250/250-2, etc.	50-100	-	0.03-0.15	0.05-0.18	-
	80-140	0.05-0.25	0.05-0.25	0.05-0.3	0.1-0.3
Nodular cast iron FCD700/700-2, etc.	50-100	-	0.03-0.15	0.05-0.18	-
	80-140	0.05-0.25	0.05-0.25	0.05-0.3	0.1-0.3
Aluminium alloy	80-160	-	0.03-0.15	0.03-0.15	-
	100-200	0.05-0.2	0.05-0.2	0.05-0.2	0.1-0.25
Heat resistant alloy Inconel 718, etc.	20-50	-	0.03-0.06	0.03-0.08	-
	20-50	0.04-0.08	0.04-0.08	0.04-0.1	0.06-0.13
Titanium alloy Ti-6AL-4V, etc.	30-160	-	0.03-0.1	0.03-0.12	-
	30-60	0.05-0.13	0.05-0.13	0.05-0.15	0.1-0.18
Quenching steel ≥40HRC	40-100	-	0.03-0.08	0.03-0.08	-
	50-100	0.04-0.08	0.04-0.08	0.04-0.1	0.06-0.13

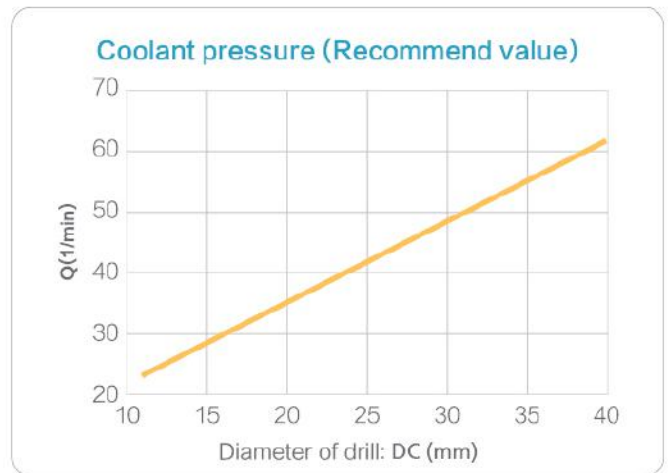
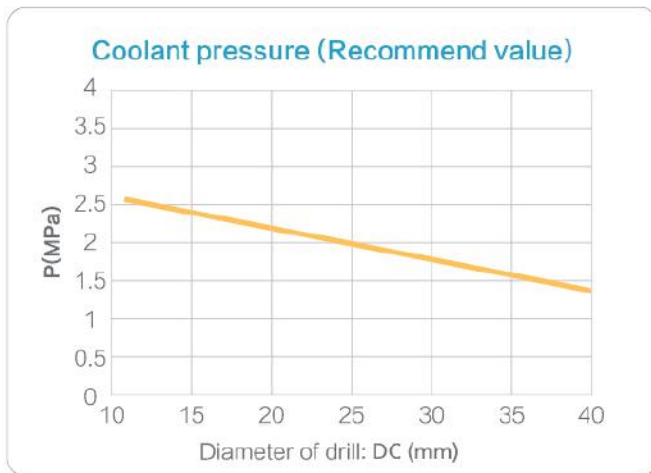
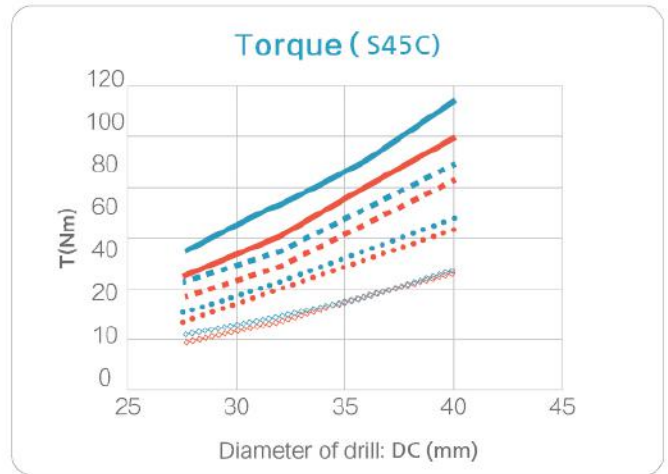
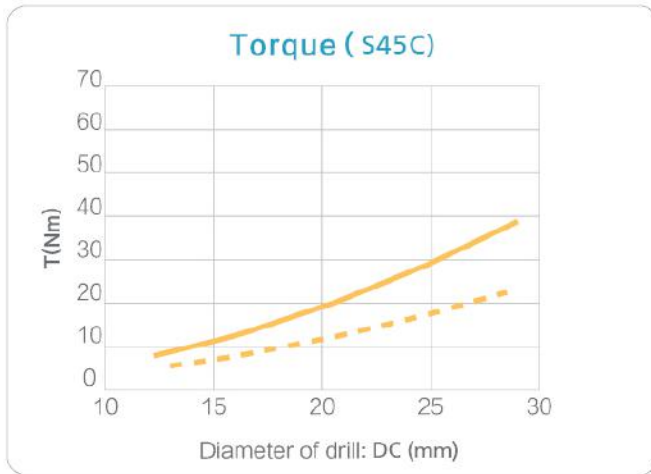
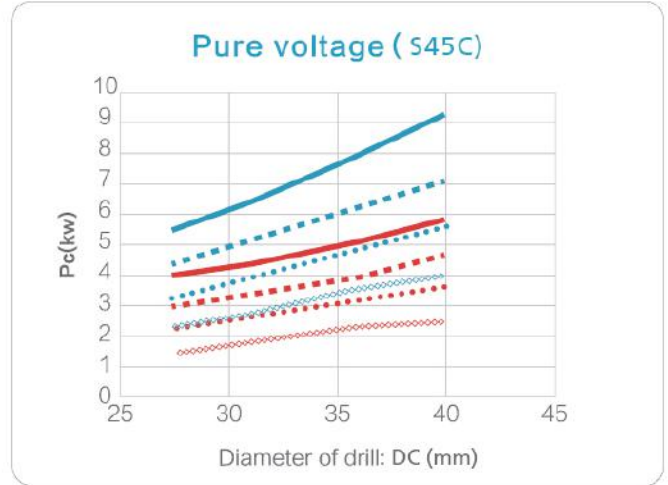
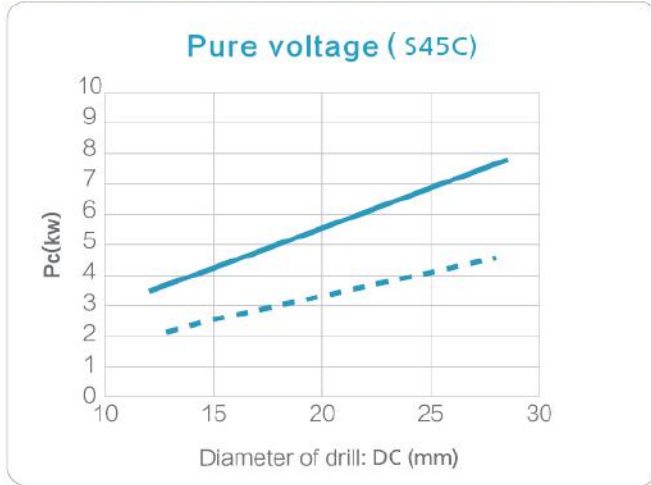
Standard machining parameters

Feed Rate f(mm/rec)	0.03-0.05	0.03-0.05	0.1-0.3
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- While processing cross and tilt hole drilling, make sure guide pad attach to workpiece inner wall
- Prepare a guiding hole before processing boring a deep hole

Spindle power and coolant pressure

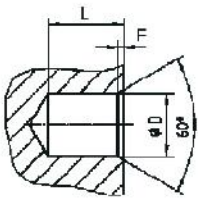


- | | |
|------------------------------------|-----------------------------------|
| Vc = 120 m/min
fn = 0.1 mm/rev | Vc = 80 m/min
fn = 0.05 mm/rev |
| Vc = 120 m/min
fn = 0.05 mm/rev | Vc = 40 m/min
fn = 0.1 mm/rev |
| Vc = 80 m/min
fn = 0.1 mm/rev | Vc = 40 m/min
fn = 0.05 mm/rev |

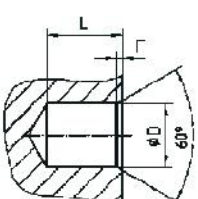
- | | |
|------------------------------------|-----------------------------------|
| Vc = 100 m/min
fn = 0.25 mm/rev | Vc = 60 m/min
fn = 0.25 mm/rev |
| Vc = 100 m/min
fn = 0.2 mm/rev | Vc = 60 m/min
fn = 0.2 mm/rev |
| Vc = 100 m/min
fn = 0.15 mm/rev | Vc = 60 m/min
fn = 0.15 mm/rev |
| Vc = 100 m/min
fn = 0.1 mm/rev | Vc = 60 m/min
fn = 0.1 mm/rev |

GUN DRILL APPLY ON THE CNC MACHINERY

Guiding hole dimension for the brazed gun drill

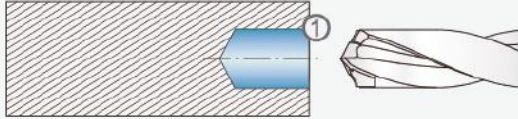
Diameter range	Diameter of drill	Diameter of guiding hole	Contrast of the guiding hole and drilling depth							
			LxD Drilling depth	Guiding hole depth						
				Φ 1.805 -4.000	Φ 4.001 -8.500	Φ 8.501 -12.000	Φ 12.001 -20.999	Φ 21.000 -30.999	Φ 31.000 -40.999	Φ 41.000 -55.000
	1.85mm - 4.00mm	+0.005 to +0.010	ap.10xD	2.0xD	1.0xD	1.0xD	1.0xD	1xD	1xD	
	4.01mm - 12.00mm	+0.010 to +0.020	ap.20xD	3.0xD	1.5xD	1.5xD	1.5xD			
	12.01mm - 50.00mm	+0.015 to +0.040	ap.25xD	4.0xD	2.0xD	2.0xD	1.5xD			
			ap.30xD	6.0xD	3.0xD	3.0xD	1.5xD			
			ap.35xD	30mm	35mm	3.0xD	1.5xD			
			ap.40xD	30mm	35mm	3.0xD	1.5xD			

Solid carbide gun drill guiding hole dimension

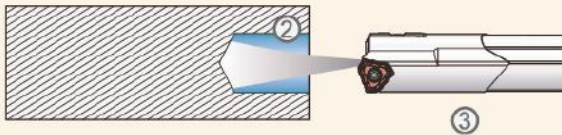
Diameter range	Diameter of drill	Diameter of guiding hole	Contrast of the guiding hole and drilling depth				
			LxD Drilling depth	Guiding hole depth			
				Φ 0.500-1.599	Φ 1.600-3.999	Φ 4.000-6.999	Φ 7.000-12.000
	0.500mm - 4.000mm	+0.005 to +0.010	ap.20xD	2.0xD	2.0xD	2.0xD	2.5xD
	4.001mm - 12.000mm	+0.010 to +0.020	ap.30xD		3.0xD	3.0xD	3.5xD
			ap.40xD		4.0xD	4.0xD	40mm
			ap.50xD	6.0xD	35mm		
			ap.60xD	6.0xD		30mm	
			>40xD				

Clip type gun drill apply on CNC machine and lathe

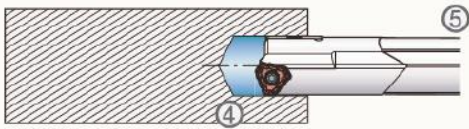
For the sake of good performance, please follow the instruction



- ① Prepare a pilot hole
Hole tolerance: $+0.01\text{--}+0.1\text{mm}$
Depth of hole: $H=15\text{mm}$



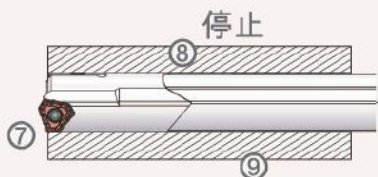
- ② Turn on coolant
- ③ Drill slowly into the pilot hole
Revolving speed: $n=50\text{--}100\text{min}^{-1}$
Feed rate: $V_f=100\text{--}300\text{mm/min}$
Notice: do not enter the pilot hole at high speed



- ④ Stop at 10mm after enter the pilot hole
- ⑤ Start process at normal revolving speed



- ⑥ Start axial moving at 10–20mm while entering the hole at feed rate 80% of the program speed. After drilling depth more than 20mm, drilling speed trends toward to 100% of the program speed.

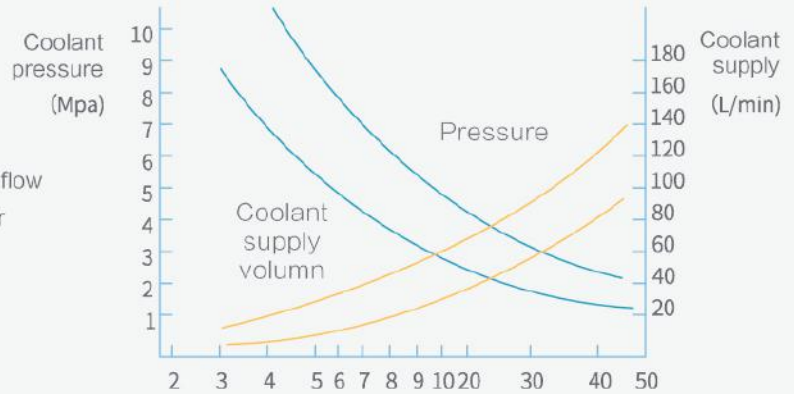


- ⑦ Drilling through hole: Continuous drilling till the drill tip thrust 5mm out of the hole.
- ⑧ Stop spindle revolving and turn off the coolant.
- ⑨ Withdraw the drill tip.

TECHNICAL PARAMETERS

1

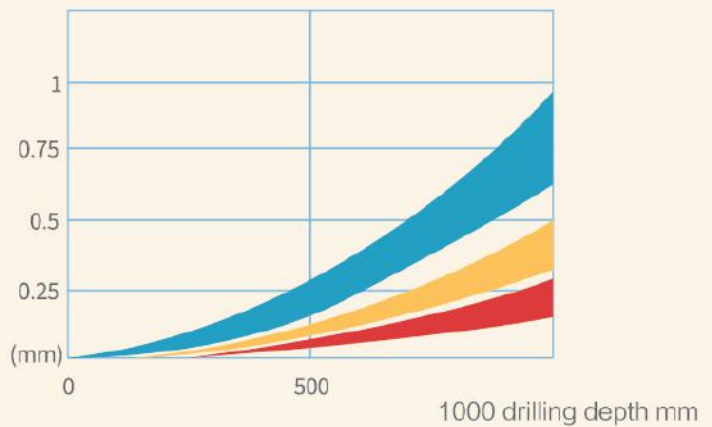
Coolant pressure, coolant flow rate varies on the diameter of the gun drill. (horizontal axis)



2

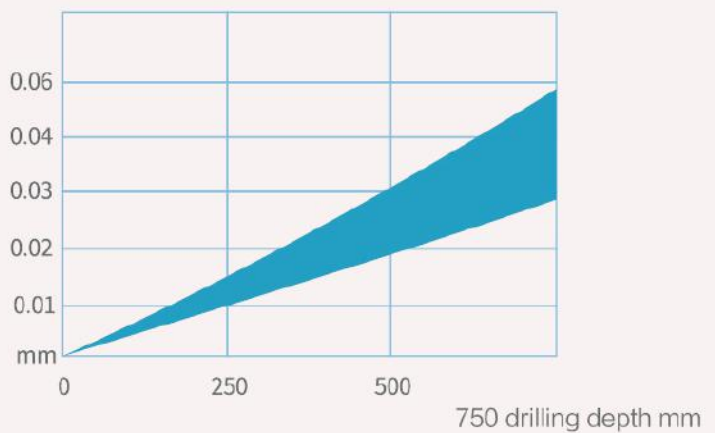
Drilling deviation (vertical axis) varies with the drilling depth (horizontal axis)

- Tools revolving, workpiece standstill
- Tools standstill, workpiece revolving
- Tools revolving, workpiece anti-revolving



3

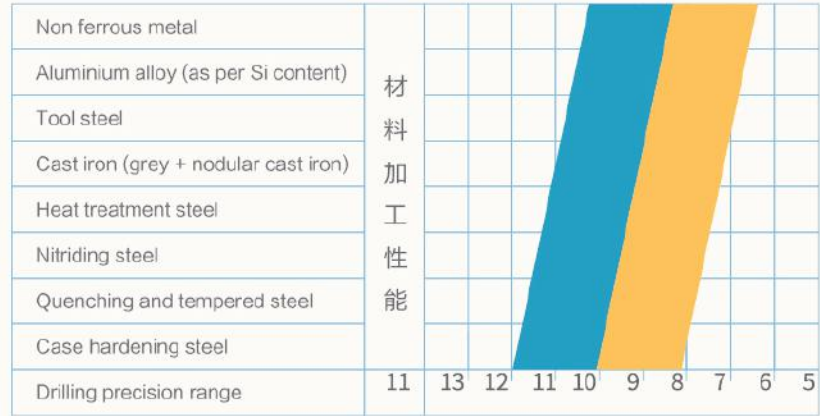
Straightness (vertical axis) varies with drilling depth (horizontal axis)



4

Single flute tolerance

- Normal condition
- Good condition



Recommended value

5

Surface quality

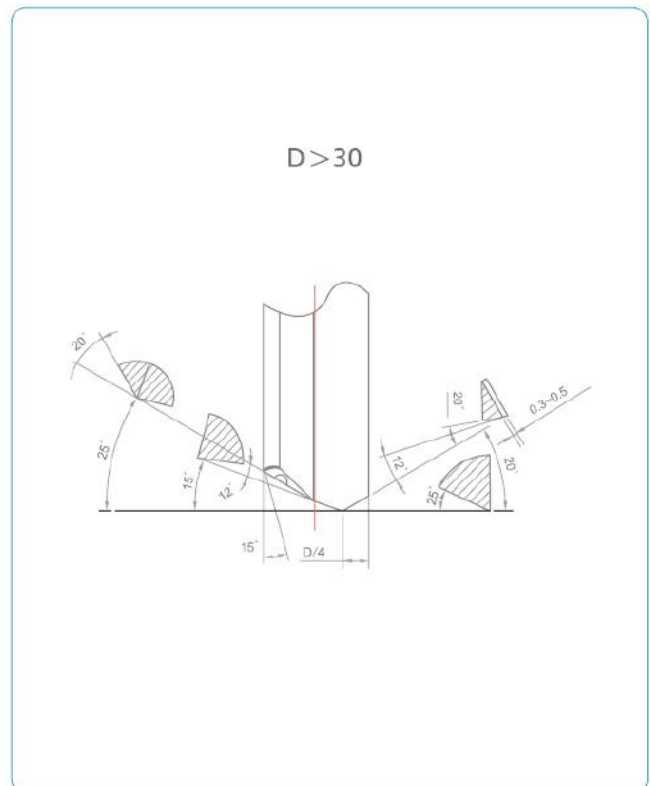
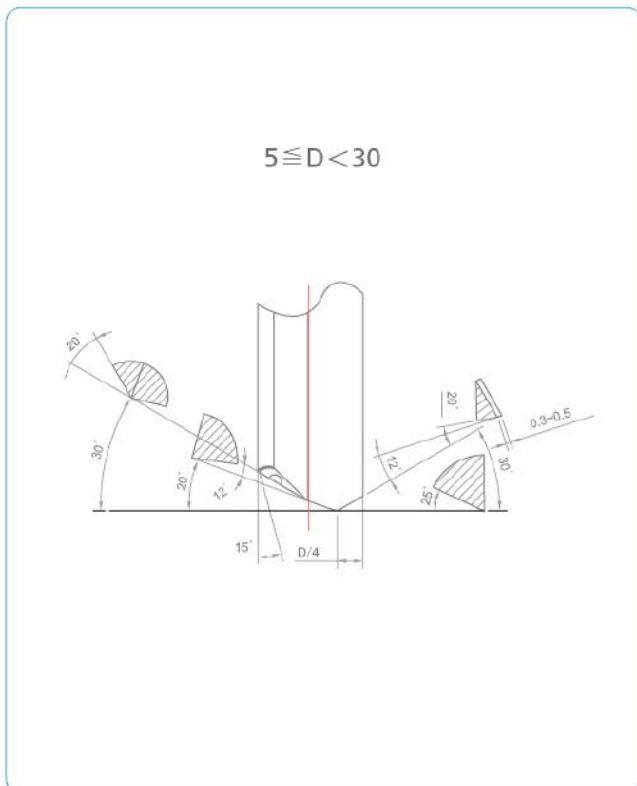
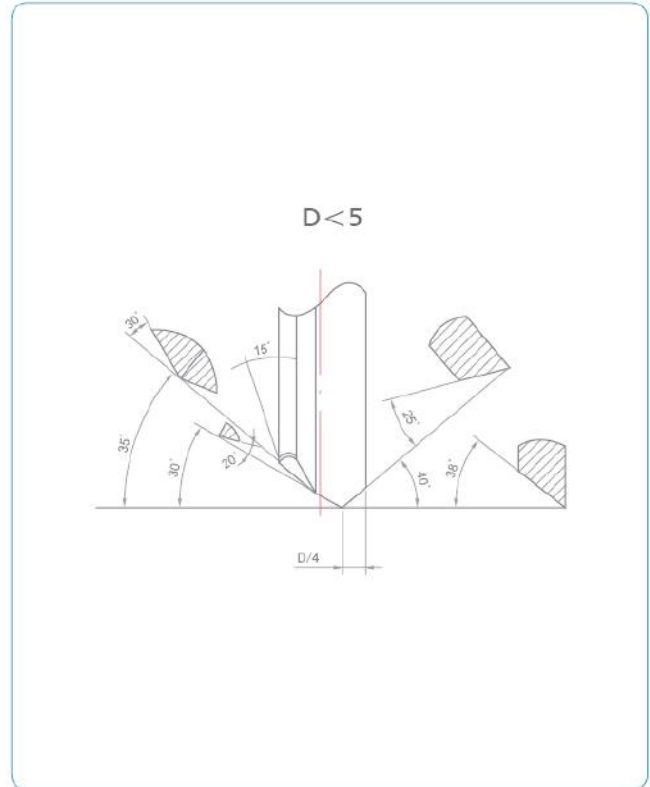
- Normal condition
- Good condition

Grade of roundness		N8	N7	N6	N5	N4	N3
Quality zone							
Surface roughness	R ₁ μm	21	11.5	6.2	3.4	1.9	1.0
	R _a μm	3.2	1.6	0.8	0.4	0.2	0.1
	R _z μm	14	7.6	4.5	2.2	1.2	0.65

Recommended value

Angle of the drilling blade

Grinding angle of the drilling blade will affect the hole tolerance, chip formation, coolant pressure, flow rate, tool life, center line deflection and surface quality. Different rake angles should be selected according to different materials. Standard drill blade grinding angles are suitable for most processing needs. For materials poor in chips discharge and hard tough material, we can provide special blade grinding angles.



Model no.

CSS-20/26

CSS-20 pneumatic / 26 pneumatic

- Automatic function
- veteran is not necessary
- Programmer is unnecessary
- One man manage multi-machinery



Pneumatic model

Main function	Diameter range	CSS-520 1~20mm CSS-526 1~25mm
	Tool category	gun drill
	Length of tool	330mm
	Max.length of blade	150mm
Spindle of grinding wheel	Spindle type	electric spindle
	Power voltage	4km
	Max rpm	8000
	Max line speed	36m/s
	Taper model	BT30
	Diameter of grinding wheel	31.75mm
Equipment parameter	No. of grinding wheel	4
	power source	380V
	Dimension	1650*1550*2000
	Weight of machine	1500KG
	Way of detection	high precision contact 3D probe detection
Control axile	Lubrication oil	(ISO Vg68)
	Motor type: servo motor 5 axle	stroke
	X axle	400mm
	Y axle	300mm
	Z axle	160mm
	C axle	-45°~190°
	A axle	∞
Accuracy	Positioning accuracy	0.005mm
	Repeat accuracy	0.003mm
	A axle inner taper beating	0.002mm

CLIP TYPE BTA

Clip type BTA is generally suitable for large aperture deep hole processing. Features included excellent surface quality, high processing safety and ideal concentricity. It needs special deep hole drilling equipment because of the specialism of tools.



Diameter range	Insert			Guide pad	
	Peripheral	Intermediate	Intermediate		
φ25.00~φ26.40	TBDP060308G/L	TBDI050308G/L	TBDC050308G/L	PBD-06A	
φ26.41~φ28.70					
φ28.71~φ31.00					
φ31.01~φ33.30	TBDP08T308G/L	TBDI06T308G/L	TBDC06T308G/L	PBD-07A	
φ33.31~φ36.20					
φ36.21~φ39.60					
φ39.61~φ43.00	TBDP09T308G/L	TBDI08T308G/L	TBDC08T308G/L	PBD-08A	
φ43.01~φ47.00					
φ47.01~φ51.70					
φ51.71~φ56.20	TBDP11T308G/L	TBDI10T308G/L	TBDC10T308G/L	PBD-10A	
φ56.21~φ65.00			TBDI12T308G/L	TBDC12T308G/L	PBD-12A

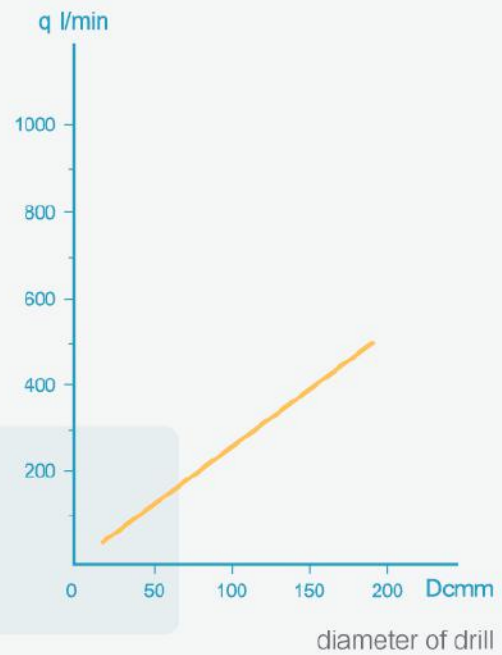
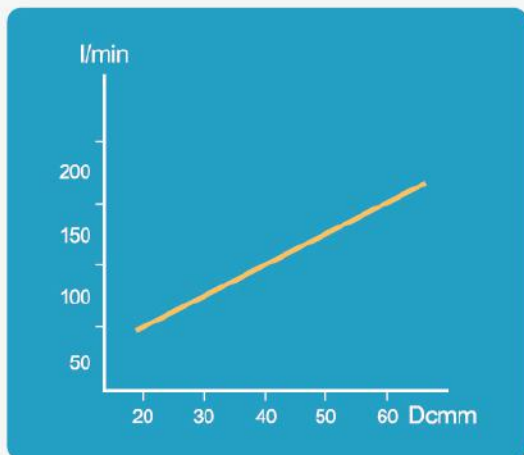
Diameter range	Insert						Guide pad		
	Peripheral	Peripheral	Intermediate	Intermediate	Central	Central			
φ63.50	CBDP1516-28	TBDP13T3082/3					PBD-65D		
φ65.00									
φ65.00									
φ69.85									
φ70.00									
φ71.45	CBDP1822-28	TBDP1806082/3	CBDI1216-30	TBDI16T312R2/3	CBDC1216-31	TBDC16T312R2/3	PBD-70D		
φ75.00							PBD-75D		
φ76.20									
φ80.00							PBD-80D		
φ82.55									
φ85.00			CBDC1522-31	TBDC220612R2/3				PBD-85D	
φ88.90								PBD-90D	
φ90.00									
φ95.00								PBD-95D	
φ95.25									
φ100.00	CBDP1516-28	TBDP13T3082/3	CBDI1522-30	TBDI220612R2/3	CBDC1216-31	TBDC16T312R2/3	PBD-100D		
φ101.60									
φ105.00							PBD-105D		
φ107.95									
φ110.00							PBD-110D		
φ114.30									
φ115.00			PBD-115D						
φ120.00			CBDP1516-28	TBDP13T3082/3	CBDI1216-30	TBDI16T312R2/3	CBDC1216-31	TBDC16T312R2/3	PBD-120D
φ120.65									
φ125.00									PBD-125D
φ127.00									
φ130.00	PBD-130D								

MACHINING PARAMETERS

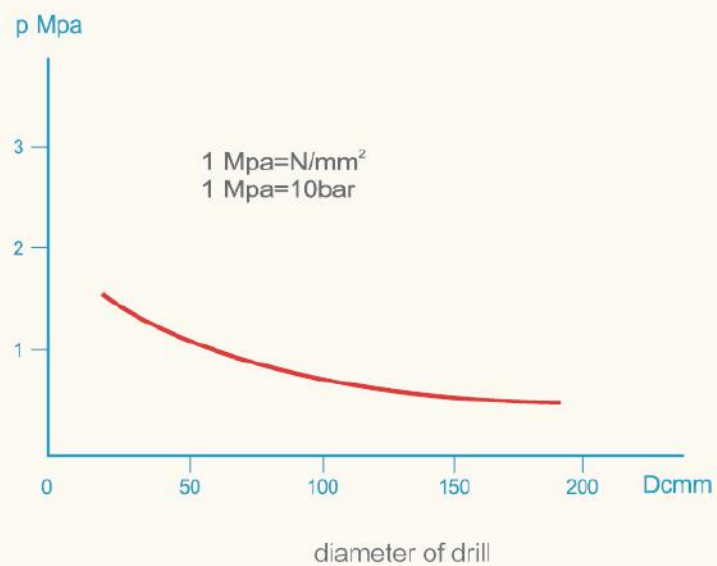
Gun drill recommended cutting parameter

Specification	Hardness HB	Cutting speed Vc (m/min)	Feed rate (mm/rev)				
			12-25	25-43	43.1-65	65-85	> 85
Carbon steel	125	50-120	0.05-0.15	0.08-0.25	0.12-0.35	0.15-0.25	0.18-0.3
	190	50-120	0.05-0.15	0.08-0.25	0.12-0.35	0.15-0.25	0.18-0.3
	250	50-120	0.05-0.15	0.08-0.25	0.12-0.35	0.15-0.25	0.18-0.3
	220	50-120	0.05-0.15	0.08-0.25	0.12-0.35	0.15-0.25	0.18-0.3
	300	50-120	0.05-0.15	0.08-0.25	0.12-0.35	0.15-0.25	0.18-0.3
Low carbon steel	200	50-110	0.05-0.15	0.08-0.25	0.12-0.30	0.15-0.25	0.18-0.3
	275	50-110	0.05-0.15	0.08-0.25	0.12-0.30	0.15-0.25	0.18-0.3
	300	50-110	0.05-0.15	0.08-0.25	0.12-0.30	0.15-0.25	0.18-0.3
	350	50-110	0.05-0.15	0.08-0.25	0.12-0.30	0.15-0.25	0.18-0.3
High carbon steel	200	50-120	0.05-0.15	0.08-0.25	0.12-0.30	0.15-0.25	0.18-0.3
	325	50-120	0.05-0.15	0.08-0.25	0.12-0.30	0.15-0.25	0.18-0.3
Stainless steel	200	40-110	0.05-0.15	0.08-0.25	0.12-0.35	0.15-0.25	0.18-0.3
	240	40-110	0.05-0.15	0.08-0.25	0.12-0.35	0.15-0.25	0.18-0.3
	180	40-110	0.05-0.15	0.08-0.25	0.12-0.35	0.15-0.25	0.18-0.3
Malleable cast iron	130	60-110	0.05-0.15	0.08-0.2	0.12-0.35	0.15-0.2	0.18-0.23
	230	60-110	0.05-0.15	0.08-0.2	0.12-0.35	0.15-0.2	0.18-0.23
Grey cast iron	160	60-110	0.05-0.15	0.08-0.2	0.12-0.35	0.15-0.2	0.18-0.23
	250	60-110	0.05-0.15	0.08-0.2	0.12-0.35	0.15-0.2	0.18-0.23
Nodular cast iron	180	60-130	0.05-0.15	0.08-0.2	0.12-0.35	0.15-0.2	0.18-0.23
	260	60-130	0.05-0.15	0.08-0.2	0.12-0.35	0.15-0.2	0.18-0.23
Refined aluminium alloy	60	60-130	0.05-0.15	0.08-0.2	0.12-0.35	0.1-0.3	0.18-0.3
	100	60-130	0.05-0.15	0.08-0.2	0.12-0.35	0.1-0.3	0.18-0.3
Malleable aluminium alloy	75	60-130	0.05-0.15	0.08-0.2	0.12-0.28	0.1-0.3	0.18-0.3
	90	60-130	0.05-0.15	0.08-0.2	0.12-0.28	0.1-0.3	0.18-0.3
	130	60-130	0.05-0.15	0.08-0.2	0.12-0.28	0.1-0.3	0.18-0.3
Copper alloy	110	60-130	0.05-0.15	0.08-0.2	0.12-0.28	0.1-0.3	0.18-0.3
	90	60-130	0.05-0.15	0.08-0.2	0.12-0.28	0.1-0.3	0.18-0.3
	100	60-130	0.05-0.15	0.08-0.2	0.12-0.28	0.1-0.3	0.18-0.3
Ferritic alloy	200	20-65	0.05-0.15	0.08-0.18	0.12-0.28	0.1-0.3	0.18-0.3
	280	20-65	0.05-0.15	0.08-0.18	0.12-0.28	0.15-0.25	0.18-0.3
Ni base alloy	250	20-65	0.05-0.15	0.08-0.18	0.12-0.28	0.15-0.25	0.18-0.3
Cobalt base alloy	350	20-65	0.05-0.15	0.08-0.18	0.12-0.28	0.15-0.25	0.18-0.3
	320	20-65	0.05-0.15	0.08-0.18	0.12-0.28	0.15-0.25	0.18-0.3
Titanium alloy		30-60	0.05-0.15	0.08-0.18	0.12-0.28	0.15-0.25	0.18-0.3

Recommended coolant flow rate



Recommended coolant pressure

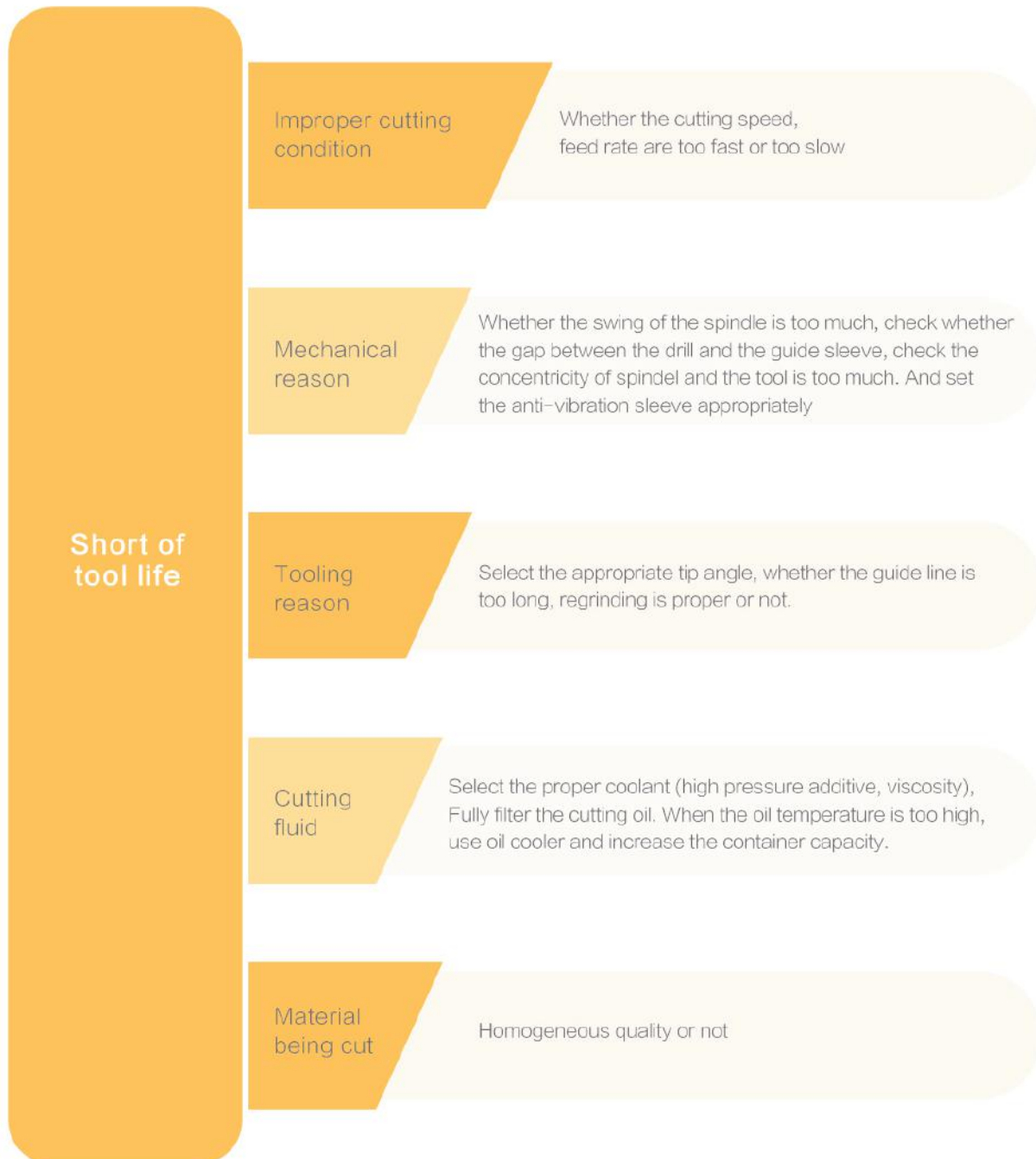


PROBLEM AND SOLUTION

Wear and broken problem

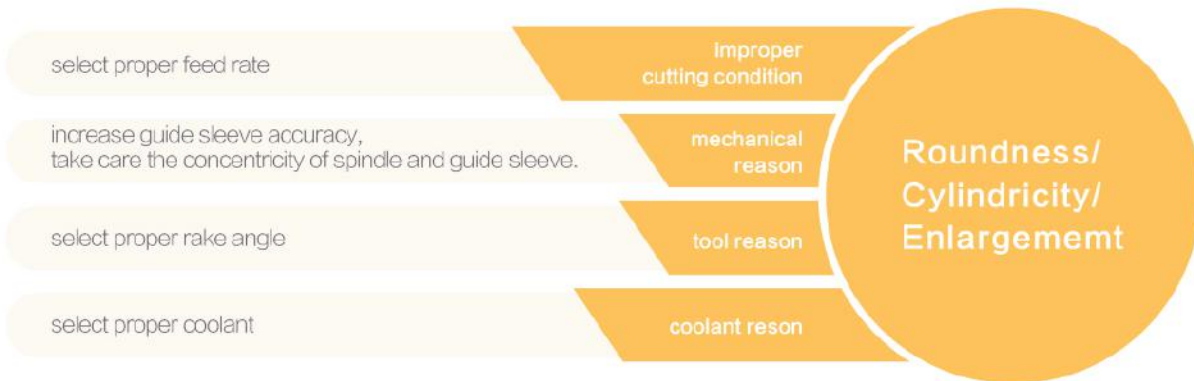
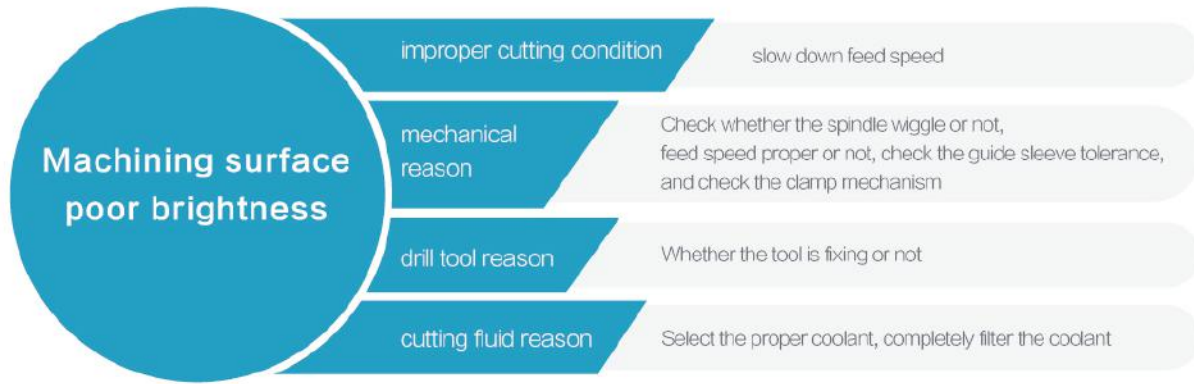


Tooling life

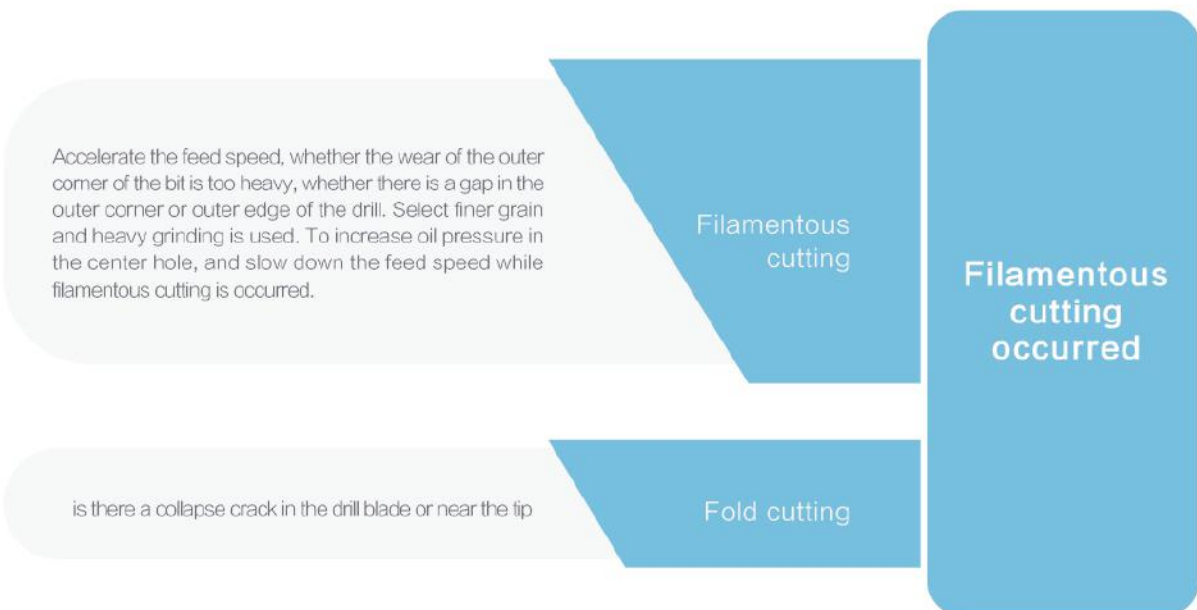
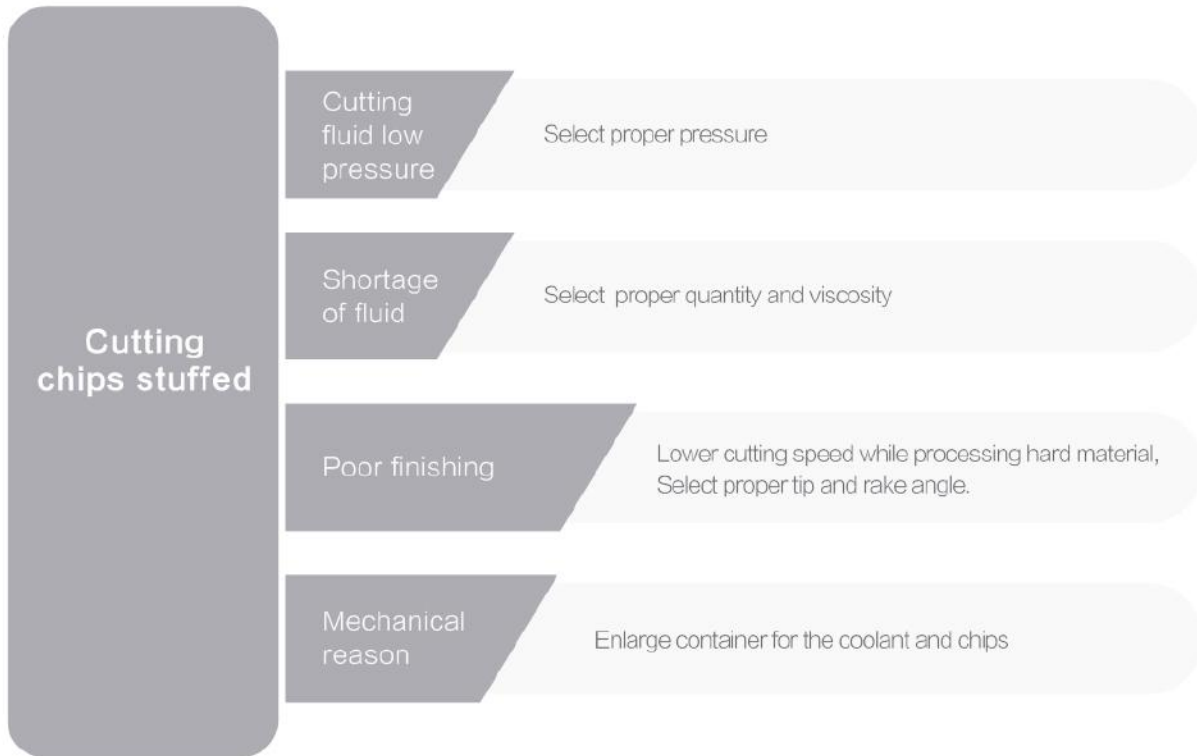


PROBLEM AND SOLUTION

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