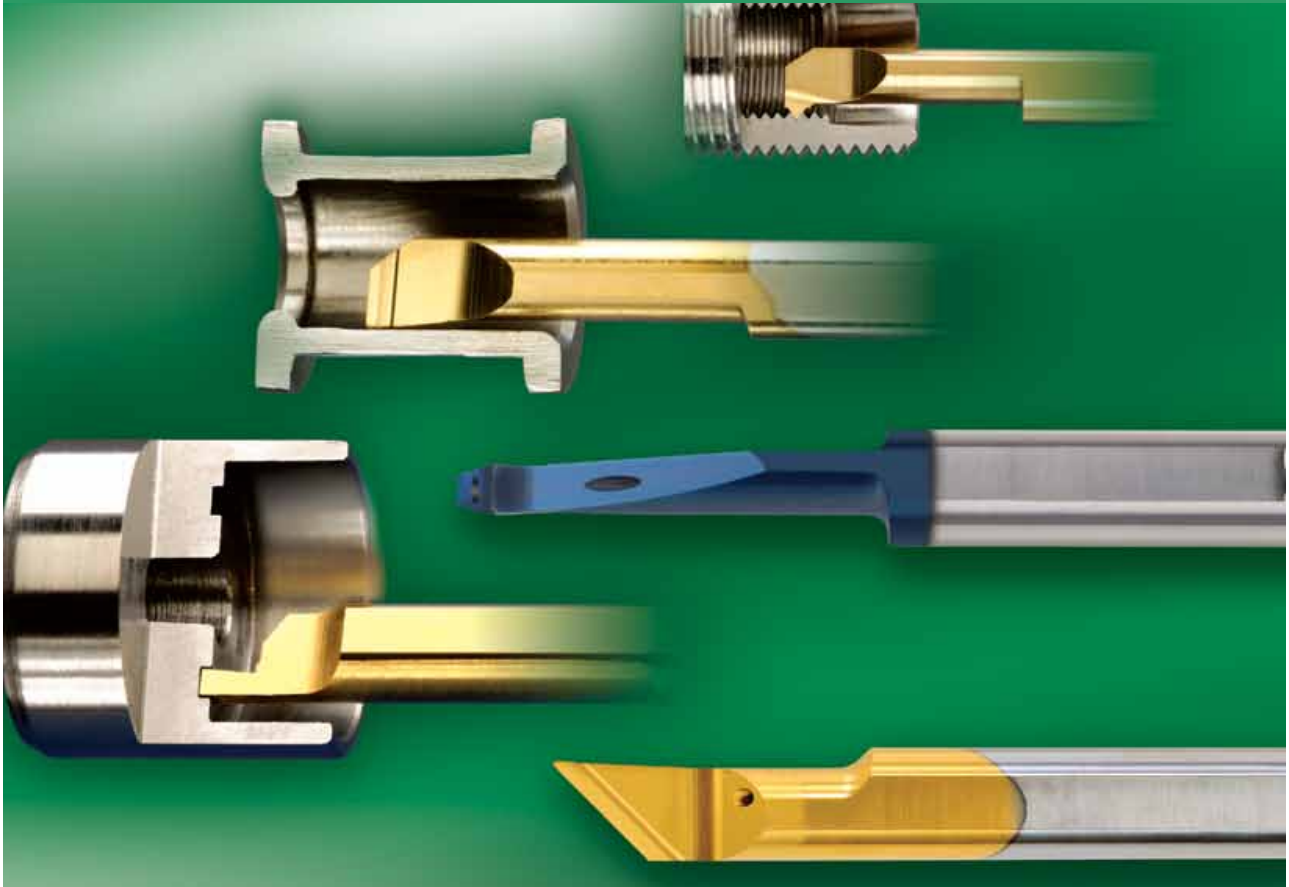




Tiny Tools 微型刀具



整体硬质合金用于小孔

Solid Carbide tools for working in small bores

These tools are made for the high-tech, medical and small component industry. All tools include through coolant enabling the cooling fluid to reach the cutting edge efficiently, for easy chip removal and smooth cutting operations.

这些工具是为高科技、医疗和小部件行业提供。所有的工具包括冷却孔通过，使冷却液送达切削刃便于排屑和使得切削平稳。

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三 禄 切 削 刀 具
SUNROX^M



上海三禄贸易有限公司



Carmex
Precision Tools Ltd.
x-treme thread cutting™



Tiny Tools New Products

小型刀具—新产品





CBR

Carmex最新引进CBR小镗杆,增进断屑。新产品将MTR镗孔和MPR仿形镗孔组合,用于镗孔和仿形加工,带改进切屑理。

Carmex introducing new Tiny Tool CBR, with advance Chip Breaker. The new product is a combination of MTR and MPR for boring and profiling with improved chip evacuation.

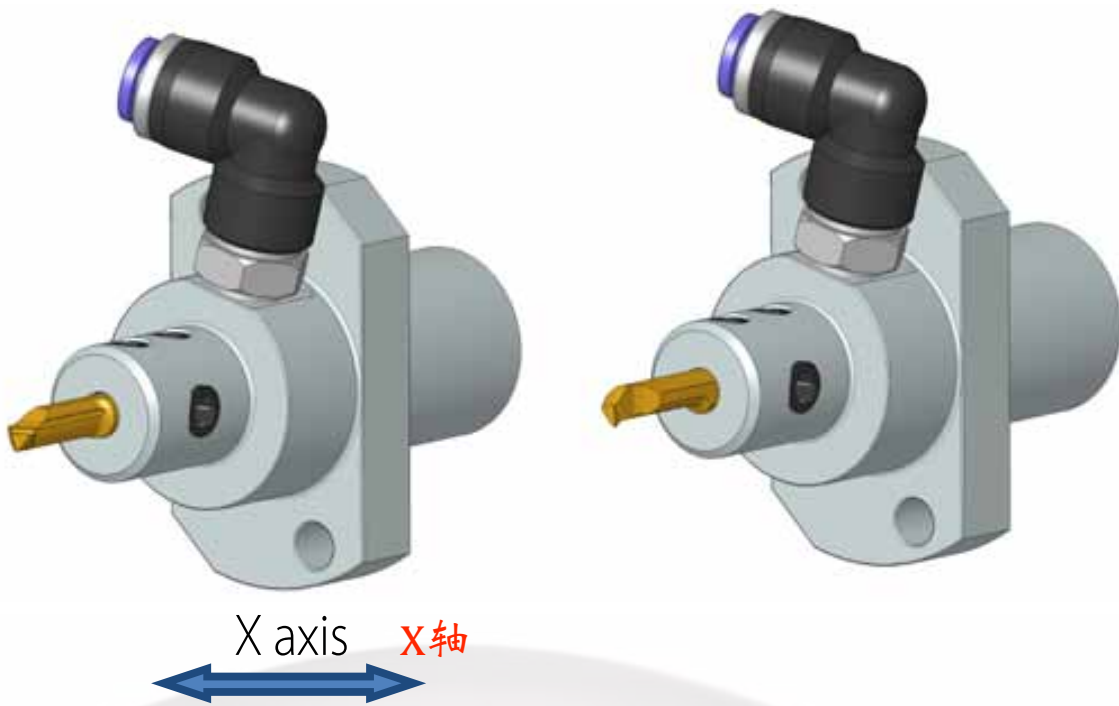
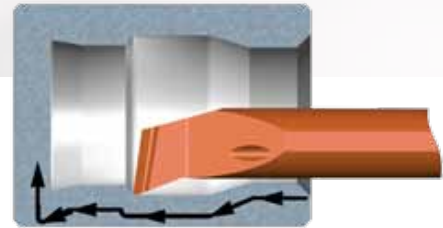
Chip evacuation is obtained thanks to advanced Chip Breaker and the internal coolant through the tool, pushing the chips out of the hole.
切屑通过改进的断屑槽型并通过刀杆的内冷排出孔外
Excellent Solution for machining stainless steels, super alloys and other "difficult" materials that creates curly chips around the tool and the application.
Can be used also as general purpose for a wide range of materials.

杰出的断屑用于加工不锈钢、超合金和其它的困难的金属材料以及宽范围的金属材料。

Carbide grade:

New advance carbide grade TNX for higher feeds and high performance, at medium to high cutting speed. Extra fine grain size with high hardness and toughness combined with triple reddish coating, provides high edge stability and better chip flow.

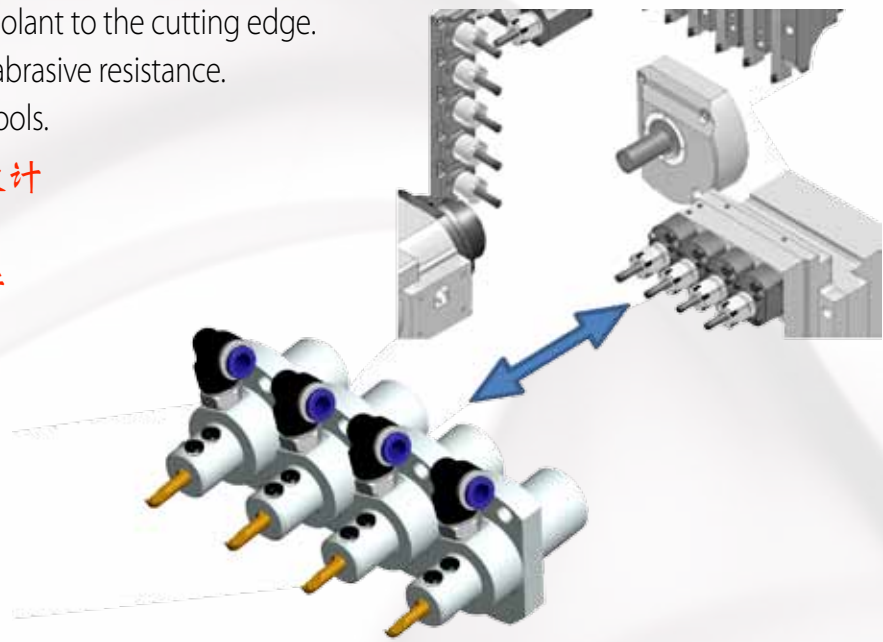
新改进的硬质合金TNX用于高进给和高效能,中到高的切削速度。特细级高硬和韧性组合,三层淡红色涂层,达到切削刃高稳定性和最佳切屑流动。





- Designed with internal coolant to the cutting edge.
- Coated holders provides abrasive resistance.
- Fits to the standard Tiny Tools.

带内冷送到刀尖的设计
 涂层的刀杆耐磨损
 首选的标准微小刀杆



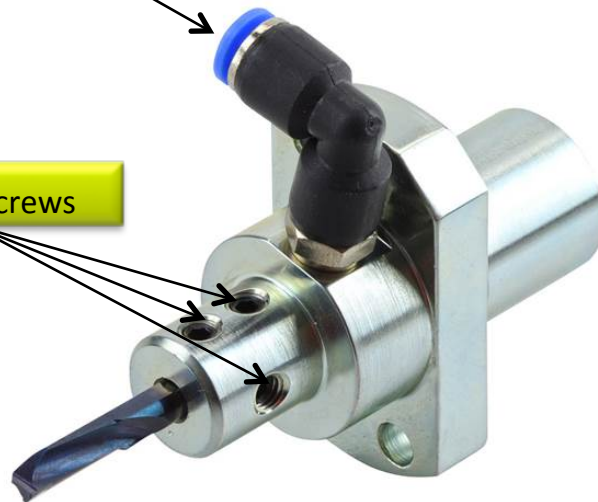
1st Hacharoshet St., Maalot Industrial Zone
 2101302, ISRAEL
 Tel: (972) 4-9077400, Fax: (972) 4-9077440.
 E-mail: info@carmex.com
 Website: www.carmex.com
 Postal address: P.O. Box 404, Maalot 2101302, ISRAEL.

内冷

Internal Coolant

锁紧螺钉

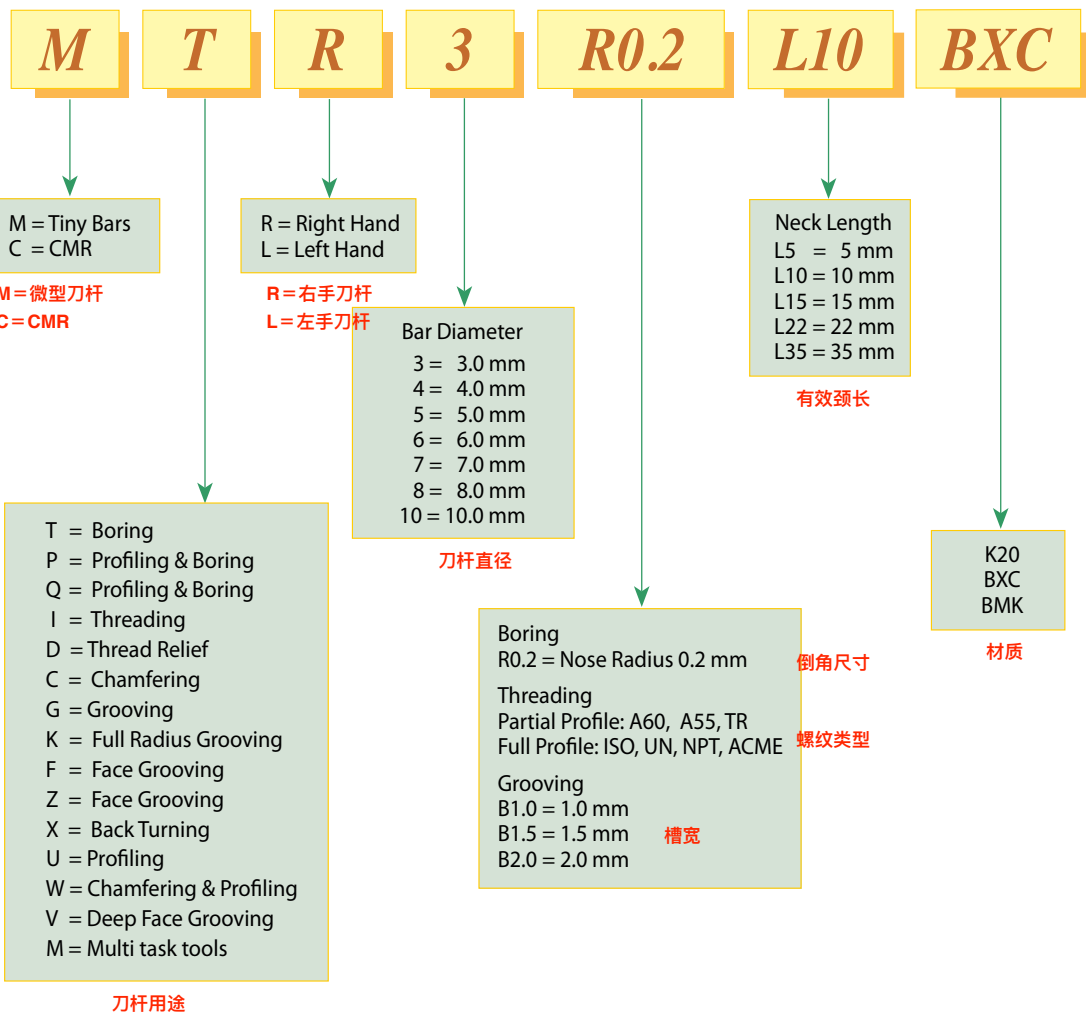
Clamping Screws





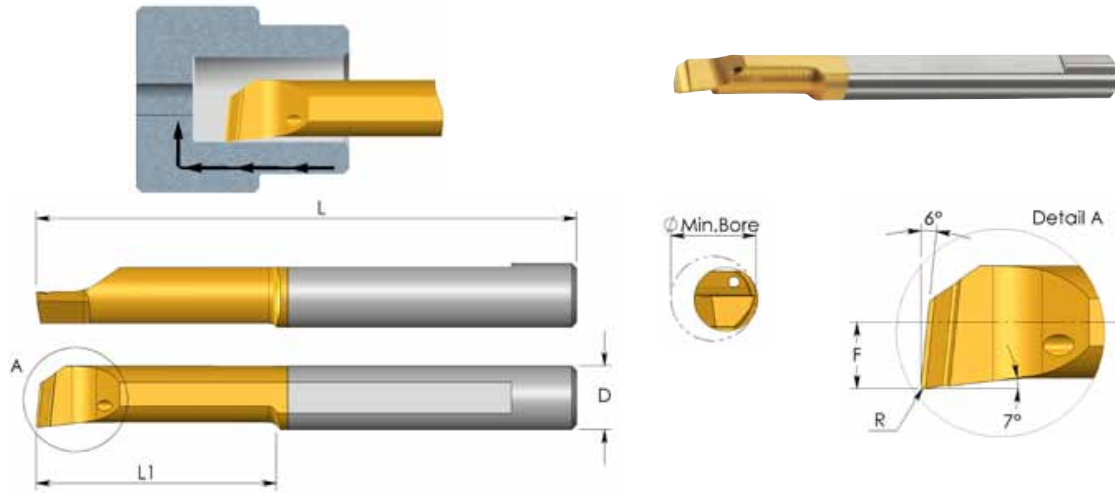
Product Identification 产品标识

Tiny Bars Ordering Codes 微型刀杆订货编号





MTR Bars Boring MTR镗孔刀

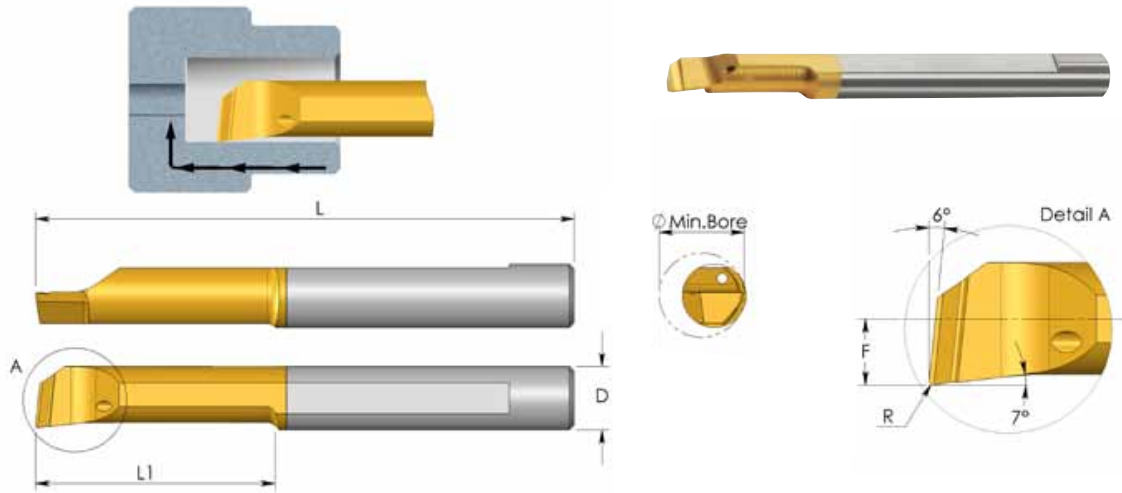


D	Ordering Code 订货号	L	L1	R	F	Min. 最小孔 Bore Dia.	变径套 Holder*
3.0	MTR 1 R0.05 L4	39	4	0.05	0.5	1.0	SIM ... H3
	MTR 1 R0.05 L6	39	6	0.05	0.5	1.0	
	MTR 1.5 R0.1 L6	39	6	0.10	0.7	1.5	
3.0	MTR 2 R0.05 L10	39	10	0.05	0.8	2.1	SIM ... H3
	MTR 2 R0.15 L5	39	5	0.15	0.8	2.1	
	MTR 2 R0.15 L10	39	10	0.15	0.8	2.1	
3.0	MTR 3 R0.05 L10	39	10	0.05	1.3	3.1	SIM ... H3
	MTR 3 R0.05 L15	39	15	0.05	1.3	3.1	
	MTR 3 R0.1 L10	39	10	0.10	1.3	3.1	
	MTR 3 R0.1 L15	39	15	0.10	1.3	3.1	
	MTR 3 R0.2 L10	39	10	0.20	1.3	3.1	
	MTR 3 R0.2 L15	39	15	0.20	1.3	3.1	
4.0	MTR 4 R0.05 L15	51	15	0.05	1.7	4.1	SIM ... H4
	MTR 4 R0.1 L10	51	10	0.10	1.7	4.1	
	MTR 4 R0.1 L15	51	15	0.10	1.7	4.1	
	MTR 4 R0.1 L22	51	22	0.10	1.7	4.1	
	MTR 4 R0.2 L10	51	10	0.20	1.7	4.1	
	MTR 4 R0.2 L15	51	15	0.20	1.7	4.1	
	MTR 4 R0.2 L22	51	22	0.20	1.7	4.1	
	MTR 4 R0.2 L30	59	30	0.20	1.7	4.1	

* For additional holders see page 100 * 辅助刀杆 (变径套) 见100页



MTR Bars Boring MTR镗孔刀



D	Ordering Code 订货号	L	L1	R	F	Min.最小孔 Bore Dia.	变径套 Holder*
5.0	MTR 5 R0.05 L15	51	15	0.05	2.1	5.1	SIM ... H5
	MTR 5 R0.1 L15	51	15	0.10	2.1	5.1	
	MTR 5 R0.1 L22	51	22	0.10	2.1	5.1	
	MTR 5 R0.1 L30	76	30	0.10	2.1	5.1	
	MTR 5 R0.2 L15	51	15	0.20	2.1	5.1	
	MTR 5 R0.2 L22	51	22	0.20	2.1	5.1	
6.0	MTR 5 R0.2 L30	76	30	0.20	2.1	5.1	SIM ... H6
	MTR 6 R0.05 L15	51	15	0.05	2.8	6.1	
	MTR 6 R0.05 L22	51	22	0.05	2.8	6.1	
	MTR 6 R0.1 L15	51	15	0.10	2.8	6.1	
	MTR 6 R0.1 L22	51	22	0.10	2.8	6.1	
	MTR 6 R0.2 L15	51	15	0.20	2.8	6.1	
7.0	MTR 6 R0.2 L22	51	22	0.20	2.8	6.1	SIM ... H7
	MTR 6 R0.2 L30	58	30	0.20	2.8	6.1	
8.0	MTR 7 R0.2 L22	62	22	0.20	3.3	7.1	SIM ... H8
	MTR 7 R0.2 L30	62	30	0.20	3.3	7.1	
10.0	MTR 8 R0.2 L15	64	15	0.20	3.8	8.1	SIM ... H10
	MTR 8 R0.2 L22	64	22	0.20	3.8	8.1	
	MTR 8 R0.2 L35	76	35	0.20	3.8	8.1	
	MTR10R0.2 L35	73	35	0.20	4.8	10.1	

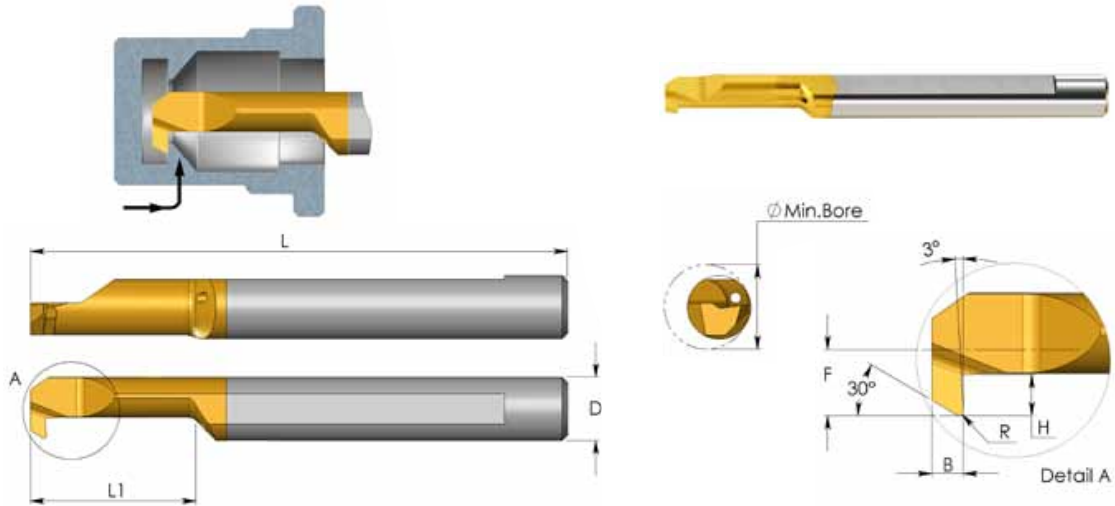
Order example: MTR 4 R0.2 L15 BXC 订货式样: MTR 4 R0.2 L15 BXC

For L.H. bars specify MTL instead of MTR 左手镗刀以MTL替换MTR

* For additional holders see page 100 * 辅助刀杆 (变径套) 见100页



MXR Bars Back Turning MXR背车刀



D	Ordering Code 订货号	L	L1	B	R	H	F	Min.最小孔 Bore Dia.	变径套 Holder*
4.0	MXR 4 R0.1 L10	51	10	1.3	0.10	0.5	1.3	3.1	SIM ... H4
	MXR 4 R0.15 L10	51	10	1.3	0.15	0.8	1.7	4.1	SIM ... H4
4.0	MXR 4 R0.15 L15	51	15	1.3	0.15	0.8	1.7	4.1	SIM ... H4
	MXR 5 R0.2 L15	51	15	1.5	0.20	1.0	2.3	5.1	SIM ... H5
5.0	MXR 5 R0.2 L22	51	22	1.5	0.20	1.0	2.3	5.1	SIM ... H5
	MXR 6 R0.2 L15	51	15	1.5	0.20	1.8	2.8	6.1	SIM ... H6
6.0	MXR 6 R0.2 L22	51	22	1.5	0.20	1.8	2.8	6.1	SIM ... H6

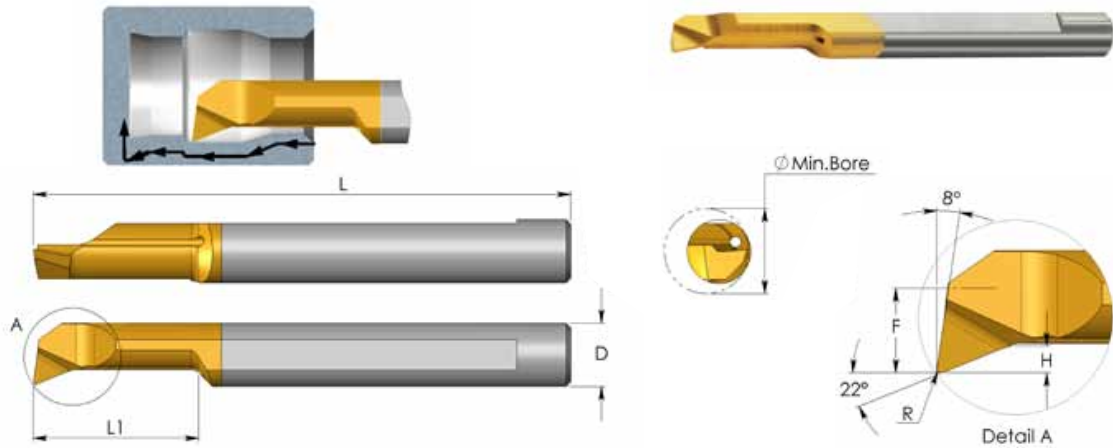
Order example: MXR 4 R0.15 L15 BXC 订货式样: **MXR 4 R.015 L15 BXC**

For L.H. bars specify MXL instead of MXR 左手镗刀以MXL替换MXR

* For additional holders see page 100 * 辅助刀杆 (变径套) 见100页



MPR Bars Profiling and Boring MPR仿形和镗孔刀



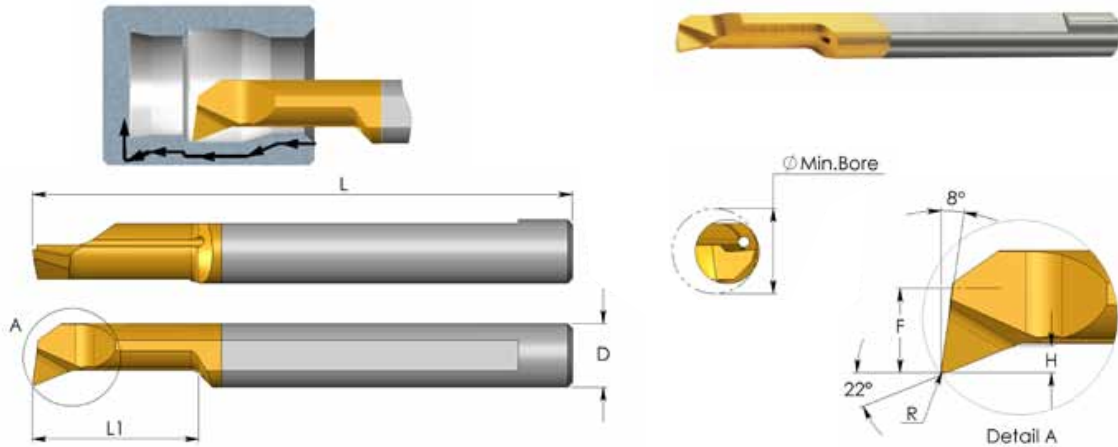
D	Ordering Code 订货号	L	L1	R	H	F	Min.最小孔 Bore Dia.	变径套 Holder*
3.0	MPR 1 R0.05 L4	39	4	0.05	0.2	0.5	1.0	SIM ... H3
	MPR 1 R0.05 L8	39	8	0.05	0.2	0.5	1.0	
3.0	MPR 1.5 R0.05 L10	39	10	0.05	0.3	0.7	1.5	SIM ... H3
	MPR 1.5 R0.1 L6	39	6	0.10	0.3	0.7	1.5	
	MPR 1.5 R0.1 L10	39	10	0.10	0.3	0.7	1.5	
3.0	MPR 2 R0.05 L10	39	10	0.05	0.5	0.8	2.1	SIM ... H3
	MPR 2 R0.1 L10	39	10	0.10	0.5	0.8	2.1	
	MPR 2 R0.15 L5	39	5	0.15	0.5	0.8	2.1	
	MPR 2 R0.15 L10	39	10	0.15	0.5	0.8	2.1	
	MPR 2 R0.15 L15	39	15	0.15	0.5	0.8	2.1	
3.0	MPR 3 R0.05 L10	39	10	0.05	0.7	1.3	3.1	SIM ... H3
	MPR 3 R0.05 L15	39	15	0.05	0.7	1.3	3.1	
	MPR 3 R0.1 L15	39	15	0.10	0.7	1.3	3.1	
	MPR 3 R0.1 L22	47	22	0.10	0.7	1.3	3.1	
	MPR 3 R0.2 L10	39	10	0.20	0.7	1.3	3.1	
	MPR 3 R0.2 L15	39	15	0.20	0.7	1.3	3.1	
4.0	MPR 4 R0.1 L10	51	10	0.10	0.8	1.7	4.1	SIM ... H4
	MPR 4 R0.1 L15	51	15	0.10	0.8	1.7	4.1	
	MPR 4 R0.1 L22	51	22	0.10	0.8	1.7	4.1	
	MPR 4 R0.2 L10	51	10	0.20	0.8	1.7	4.1	
	MPR 4 R0.2 L15	51	15	0.20	0.8	1.7	4.1	
	MPR 4 R0.2 L22	51	22	0.20	0.8	1.7	4.1	

* For additional holders see page 100 * 辅助刀杆 (变径套) 见100页



Tiny Tools

MPR Bars Profiling and Boring



D	Ordering Code 订货号	L	L1	R	H	F	Min. 最小孔 Bore Dia.	变径套 Holder*
5.0	MPR 5 R0.1 L22	51	22	0.10	1.2	2.1	5.1	SIM ... H5
	MPR 5 R0.1 L30	76	30	0.10	1.2	2.1	5.1	
	MPR 5 R0.2 L10	51	10	0.20	1.2	2.1	5.1	
	MPR 5 R0.2 L15	51	15	0.20	1.2	2.1	5.1	
	MPR 5 R0.2 L22	51	22	0.20	1.2	2.1	5.1	
	MPR 5 R0.2 L30	76	30	0.20	1.2	2.1	5.1	
6.0	MPR 6 R0.2 L15	51	15	0.20	1.4	2.8	6.1	SIM ... H6
	MPR 6 R0.2 L22	51	22	0.20	1.4	2.8	6.1	
	MPR 6 R0.2 L30	76	30	0.20	1.4	2.8	6.1	
7.0	MPR 7 R0.2 L22	62	22	0.20	1.5	3.3	7.1	SIM ... H7
	MPR 7 R0.2 L30	62	30	0.20	1.5	3.3	7.1	
	MPR 7 R0.2 L35	62	35	0.20	1.5	3.3	7.1	
8.0	MPR 8 R0.2 L15	64	15	0.20	1.6	3.8	8.1	SIM ... H8
	MPR 8 R0.2 L22	64	22	0.20	1.6	3.8	8.1	
	MPR 8 R0.2 L35	76	35	0.20	1.6	3.8	8.1	
10.0	MPR 10 R0.2 L35	73	35	0.20	2.0	4.8	10.1	SIM ... H10

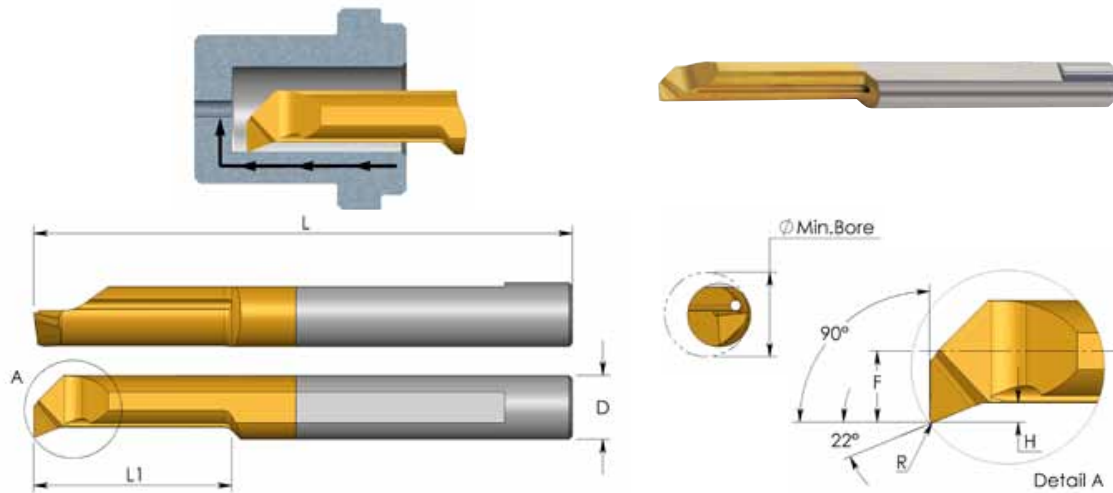
Order example: MPR 4 R0.2 L15 BXC 订货式样: **MPR 4 R0.2 L15 BXC**

For L.H. Bars specify MPL instead of MPR 左手镗刀以MPL替换MPR

* For additional holders see page 100 * 辅助刀杆 (变径套) 见100页



MUR Bars Profiling, 90° Face Cutting MUR仿形, 90°端面槽刀



D	订货号 Ordering Code	L	L1	R	H	F	Min. 最小孔 Bore Dia.	变径套 Holder*
3.0	MUR 3 R0.05 L10	39	10	0.05	0.4	1.3	3.1	SIM ... H3
	MUR 3 R0.05 L15	39	15	0.05	0.4	1.3	3.1	
4.0	MUR 4 R0.1 L10	51	10	0.10	0.5	1.7	4.1	SIM ... H4
	MUR 4 R0.1 L15	51	15	0.10	0.5	1.7	4.1	
5.0	MUR 5 R0.15 L15	51	15	0.15	0.7	2.1	5.1	SIM ... H5
	MUR 5 R0.15 L22	51	22	0.15	0.7	2.1	5.1	
6.0	MUR 6 R0.15 L15	51	15	0.15	0.9	2.8	6.1	SIM ... H6
	MUR 6 R0.15 L22	51	22	0.15	0.9	2.8	6.1	
8.0	MUR 8 R0.2 L22	64	22	0.20	1.1	3.8	8.1	SIM ... H8

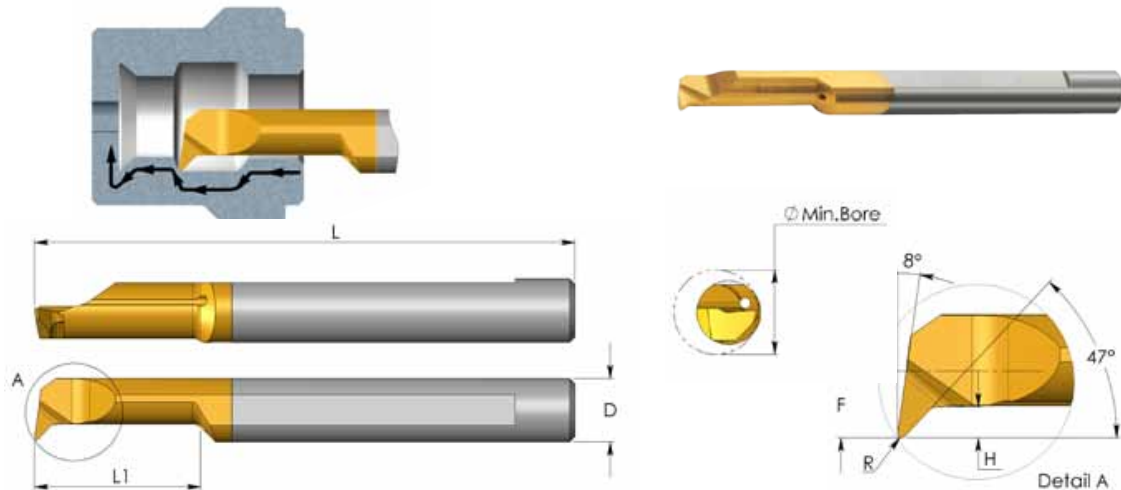
Order example: MUR 5 R0.15 L15 BXC 订货式样: MPR 5 R0.15 L15 BXC

For L.H. bars specify MUL instead of MUR 左手镗刀以MUL替换MUR

* For additional holders see page 100 * 辅助刀杆 (变径套) 见100页



MQR Bars Profiling and Boring MQR仿形和镗孔



D	Ordering Code 订货号	L	L1	R	H	F	Min.最小孔 Bore Dia.	变径套 Holder*
4.0	MQR 4 R0.1 L22	51	22	0.10	0.8	1.8	4.1	SIM ... H4
	MQR 4 R0.2 L10	51	10	0.20	0.8	1.8	4.1	
	MQR 4 R0.2 L15	51	15	0.20	0.8	1.8	4.1	
	MQR 4 R0.2 L22	51	22	0.20	0.8	1.8	4.1	
5.0	MQR 5 R0.2 L15	51	15	0.20	1.0	2.3	5.1	SIM ... H5
	MQR 5 R0.2 L22	51	22	0.20	1.0	2.3	5.1	
6.0	MQR 6 R0.2 L15	51	15	0.20	1.4	2.8	6.1	SIM ... H6
	MQR 6 R0.2 L22	51	22	0.20	1.4	2.8	6.1	
	MQR 6 R0.2 L30	58	30	0.20	1.4	2.8	6.1	
8.0	MQR 8 R0.2 L22	64	22	0.20	1.6	3.8	8.1	SIM ... H8
	MQR 8 R0.2 L27	64	27	0.20	2.0	3.8	8.1	

Order example: MQR 5 R0.2 L15 BXC 订货式样: MQR 5 R0.2 L15 BXC

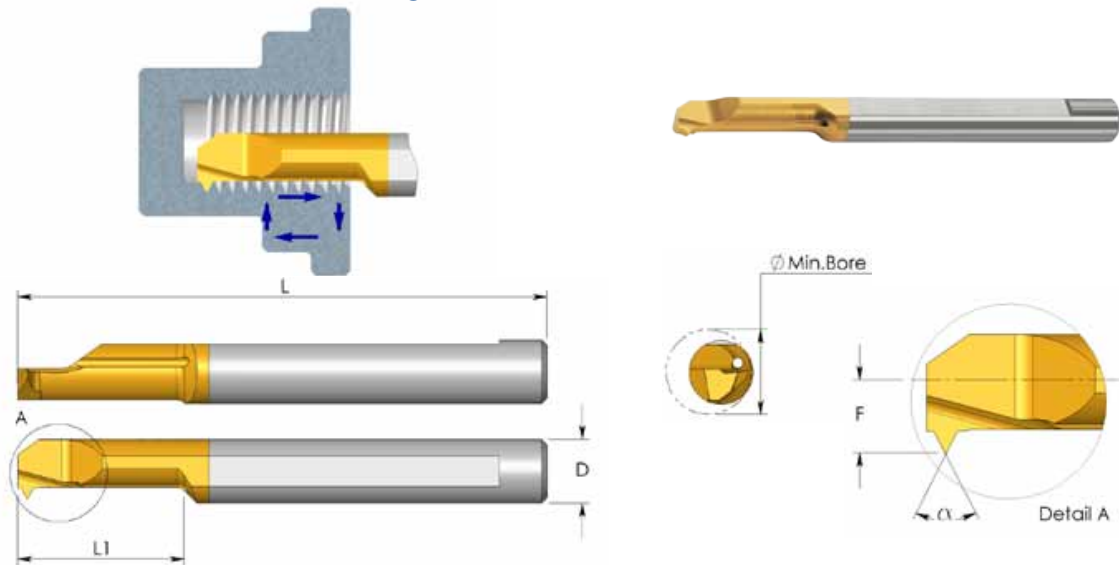
For L.H. bars specify MQR instead of MQL 左手镗刀以MQL替换MQR

* For additional holders see page 100 * 辅助刀杆 (变径套) 见100页



MIR Bars Threading

MIR螺纹车刀



Partial Profile 55° 不完整牙55° (范围牙, 无修光刃)

D	Ordering Code 订货号	L	L1	α	Pitch Range mm 螺距范围 TPI		F	Min.最小孔 Bore Dia.	变径套 Holder*
3.0	MIR 3 L15 A55	39	15	55	0.5 - 1.0	48 - 24	1.4	3.2	SIM ... H3
4.0	MIR 4 L15 A55	51	15	55	0.5 - 1.0	48 - 24	1.8	4.1	SIM ... H4
5.0	MIR 5 L15 A55	51	15	55	0.5 - 1.25	48 - 20	2.3	5.1	SIM ... H5
	MIR 5 L22 A55	51	22	55	0.5 - 1.25	48 - 20	2.3	5.1	
6.0	MIR 6 L15 A55	51	15	55	0.5 - 1.5	48 - 16	2.6	6.0	SIM ... H6
	MIR 6 L22 A55	51	22	55	0.5 - 1.5	48 - 16	2.6	6.0	

Order example: MIR 5 L15 A55 BXC

Partial Profile 60° 不完整牙60° (范围牙, 无修光刃)

D	Ordering Code 订货号	L	L1	α	Pitch Range mm 螺距范围 TPI		F	Min.最小孔 Bore Dia.	变径套 Holder*
3.0	MIR 1 L5 A60	39	4.8	60	0.25 - 0.35	100 - 72	0.55	1.2	SIM ... H3
	MIR 1.5 L6 A60	39	6.3	60	0.35 - 0.45	72 - 56	0.65	1.4	
3.0	MIR 2 L8 A60	39	8	60	0.45 - 0.7	56 - 32	1.0	2.1	SIM ... H3
3.0	MIR 3 L15 A60	39	15	60	0.7 - 1.0	32 - 24	1.4	3.2	SIM ... H3
4.0	MIR 4 L15 A60	51	15	60	0.8 - 1.0	32 - 24	1.8	4.1	SIM ... H4
5.0	MIR 5 L15 A60	51	15	60	1.0 - 1.25	24 - 20	2.3	5.1	SIM ... H5
	MIR 5 L22 A60	51	22	60	1.0 - 1.25	24 - 20	2.3	5.1	
6.0	MIR 6 L15 A60	51	15	60	1.0 - 1.5	24 - 16	2.6	6.0	SIM ... H6
	MIR 6 L22 A60	51	22	60	1.0 - 1.5	24 - 16	2.6	6.0	
8.0	MIR 8 L22 A60	64	22	60	1.0 - 2.0	24 - 13	3.6	8.0	SIM ... H8

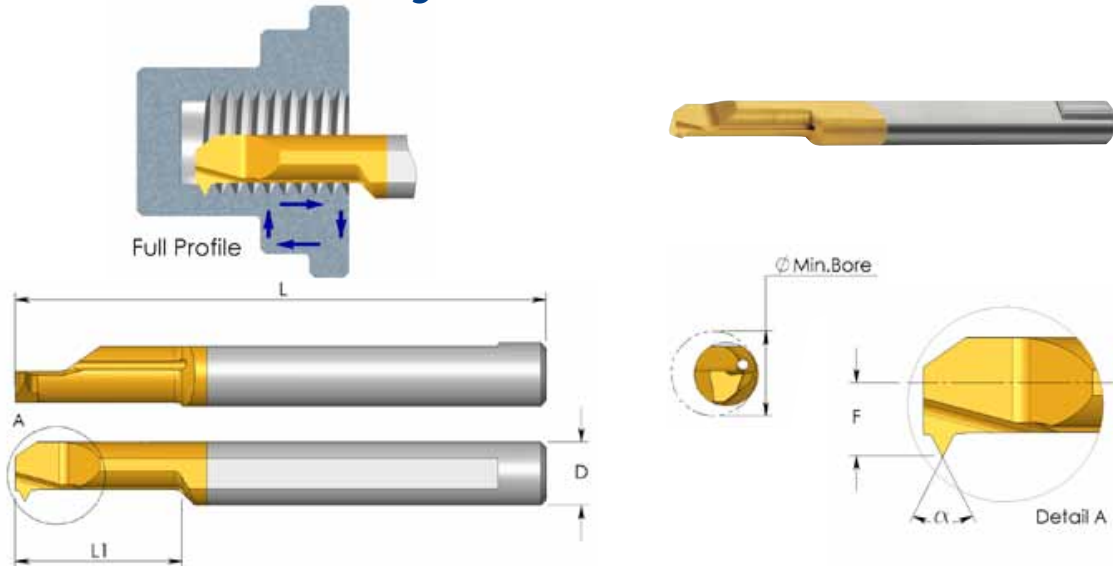
Order example: MIR 5 L15 A60 BXC 订货样式: MIR 5 L15 BXC

For L.H. bars specify MIL instead of MIR 左手刀以MIL替代MIR

* For additional holders see page 100 辅助 (变径) 刀套见100页



MIR Bars Threading MIR螺纹刀



Full Profile - ISO 60° 完整牙带修光刃 - ISO 60°

D	Ordering Code 订货号	Thread 螺纹	L	L1	F	Min. Bore Dia. 最小孔	变径套 Holder*
3.0	MIR 3 L10 0.5ISO	M3x0.5	39	10	1.0	2.4	SIM ... H3
3.0	MIR 3 L15 0.5 ISO	M4 x 0.5	39	15	1.4	3.2	
	MIR 3 L15 0.7 ISO	M4 x 0.7	39	15	1.4	3.2	
4.0	MIR 3 L15 0.75 ISO	M4.5 x 0.75	39	15	1.4	3.2	SIM ... H4
	MIR 4 L15 0.5 ISO	M5 x 0.5	51	15	1.8	4.1	
	MIR 4 L15 0.75 ISO	M5 x 0.75	51	15	1.8	4.1	
5.0	MIR 4 L15 0.8 ISO	M5 x 0.8	51	15	1.8	4.1	SIM ... H4
5.0	MIR 5 L15 1.0 ISO	M6 x 1.0	51	15	2.2	4.9	SIM ... H5
6.0	MIR 6 L22 1.25 ISO	M8 x 1.25	51	22	2.8	6.1	SIM ... H6

Order example: MIR 5 L15 1.0 ISO BXC 订货样式: MIR 5 L15 1.0 ISO BXC

Full Profile - UN 60° 完整牙带修光刃 - UN60°

D	Ordering Code 订货号	Thread 牙数	L	L1	F	Min. 最小孔 Bore Dia.	变径套 Holder*
3.0	MIR 3 L10 32 UN	6-32 UNC	39	10	1.0	2.7	SIM ... H3
3.0	MIR 3 L15 36 UN	8-36 UNF	39	15	1.4	3.2	
		MIR 3 L15 32 UN	8-32 UNC	39	15	1.4	3.2
4.0	MIR 4 L15 36 UN	12-36 UNS	51	15	1.8	4.1	SIM ... H4
	MIR 4 L15 32 UN	12-32 UNEF	51	15	1.8	4.1	
5.0	MIR 5 L15 28 UN	1/4-28 UNF	51	15	2.2	4.9	SIM ... H5
	MIR 5 L18 20 UN	1/4-20 UNC	51	18	2.3	5.0	
6.0	MIR 6 L18 24 UN	5/16-24UNF	51	18	2.8	6.5	SIM ... H6
	MIR 6 L18 18 UN	5/16-18UNC	51	18	2.8	6.2	

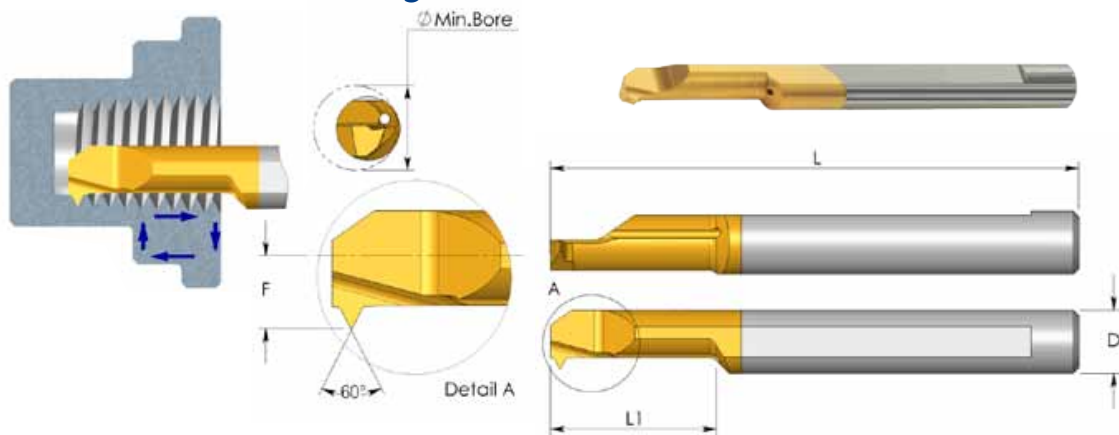
Order example: MIR 4 L15 36 UN BXC 订货式样: MIR 4 L15 36 UN BXC

For L.H. bars specify MIL instead of MIR 左手刀以MIL替换MIR

* For additional holders see page 100 辅助 (变径套) 刀杆见100页



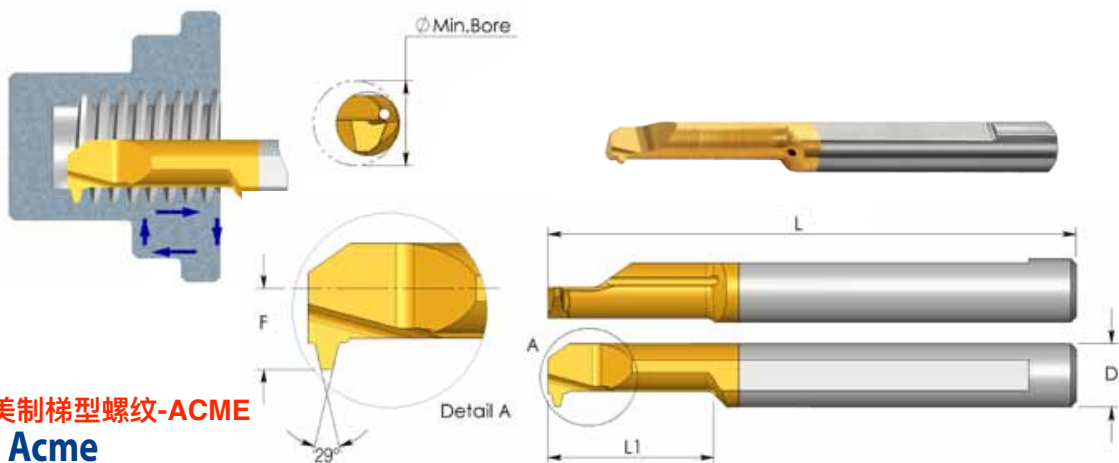
MIR Bars Threading MIR螺纹刀



Full Profile - NPT 60° 完整牙- NPT 60°

D	Ordering Code 订货号	Pitch TPI 牙数	Thread Size 螺纹规格	L	L1	F	Min. 最小孔 Bore Dia.	变径套 Holder*
6.0	MIR 6 L15 27 NPT	27	1/16 x 27 NPT 1/8 x 27 NPT	51	15	2.8	5.9	SIM ... H6

Order example: MIR 6 L15 27 NPT BXC 订货式样: MIR 6 L15 27 NPT BXC



9°美制梯型螺纹-ACME
Acme

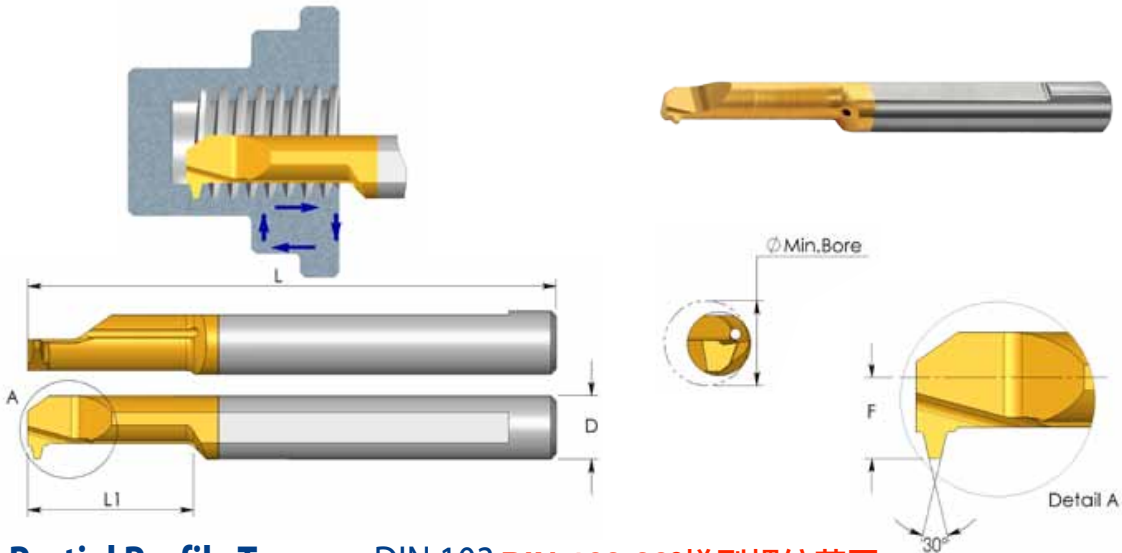
D	Ordering Code 订货号	Pitch TPI 牙数	Thread Size 螺纹规格	L	L1	F	Min. 最小孔 Bore Dia.	变径套 Holder*
4.0	MIR 4 L15 16 ACME	16	1/4 x 16	51	15	1.8	4.6	SIM ... H4
6.0	MIR 6 L20 14 ACME	14	5/16 x 14	51	20	2.8	6.0	SIM ... H6
7.0	MIR 7 L22 12 ACME	12	3/8 x 12 7/16 x 12	62	22	3.3	7.2	SIM ... H7
8.0	MIR 8 L30 10 ACME	10	1/2 x 10	76	30	3.8	10.0	SIM ... H8
10.0	MIR 10 L35 8 ACME	8	5/8 x 8	73	35	4.8	12.5	SIM ... H10
10.0	MIR 10 L45 6 ACME	6	3/4 x 6 7/8 x 6	105	45	4.8	14.6	SIM ... H10
10.0	MIR 10 L52 5 ACME	5	1x5	105	52	4.8	20.0	SIM ... H10

Order example: MIR 6 L 20 14 ACME BXC 订货式样: MIR 6 L20 14 ACME BXC

* For additional holders see page 100 辅助 (变径套) 刀杆见100页



MIR Bars Threading MIR螺纹刀



Partial Profile Trapez - DIN 103 DIN-103-30°梯型螺纹范围

D	Ordering Code 订货号	Pitch mm 螺距	Thread Size 螺纹规格	L	L1	F	Min. 最小孔 Bore Dia.	变径套 Holder*
6.0	MIR 6 L22 1.5 TR	1.5	Tr8x1.5 Tr9x1.5 Tr10x1.5	51	22	2.8	6.4	SIM ... H6
7.0	MIR 7 L25 2 TR	2	Tr 9 x 2 Tr10 x 2 Tr11 x 2 Tr12 x 2	62	25	3.2	6.9	SIM ... H7
10.0	MIR 10 L35 2 TR	2	Tr14 x 2 Tr16 x 2 Tr18 x 2 Tr20 x 2	73	35	4.8	11.0	SIM ... H10
7.0	MIR 7 L35 3 TR	3	Tr11 x 3 Tr12 x 3	62	35	3.3	7.5	SIM ... H7
10.0	MIR 10 L35 3 TR	3	Tr14 x 3 Tr22 x 3 Tr24 x 3 Tr26 x 3 Tr28 x 3	73	35	4.8	10.5	SIM ... H10
10.0	MIR 10 L45 4 TR	4	Tr16 x 4 Tr18 x 4 Tr20 x 4	105	45	4.8	11.5	SIM ... H10
10.0	MIR 10 L55 5 TR	5	Tr22 x 5 Tr24 x 5 Tr28 x 5	105	55	4.8	11.0	SIM ... H10

Order example: MIR 10 L35 3 TR BXC 订货式样: MIR 10 L35 TR BXC

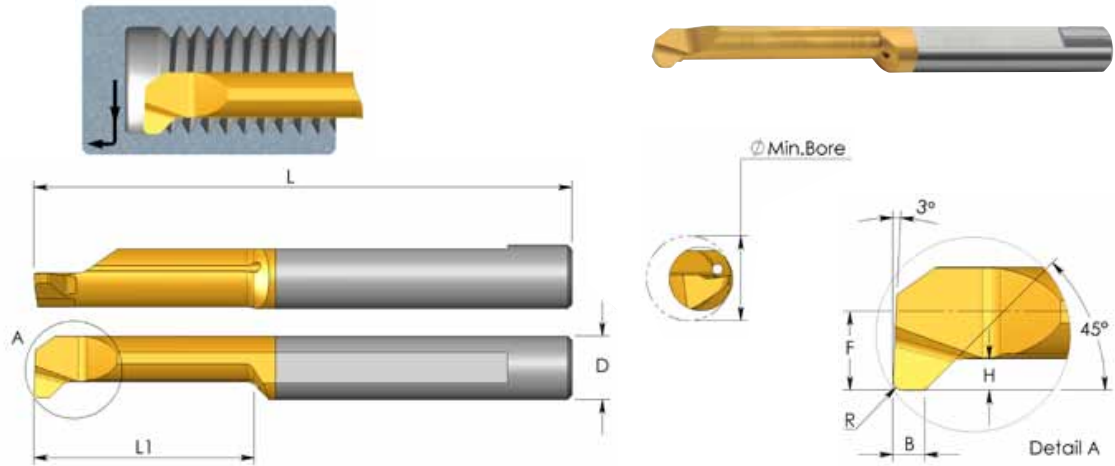
For L.H. bars specify MIL instead of MIR 左手刀以MIL替换MIR

* For additional holders see page 100 辅助 (变径套) 刀杆见100页



MDR Bars Thread Relief, Chamfering and Grooving

MDR螺纹退刀槽，槽内倒角刀（符合DIN76标准）



D	Ordering Code 订货号	L	L1	B	R	H	F	Min. 最小孔 Bore Dia.	变径套 Holder*
4.0	MDR 4 R0.5 L18	51	18	1.5	0.5	0.8	1.8	4.1	SIM ... H4
5.0	MDR 5 R0.5 L24	51	24	1.5	0.5	1.2	2.3	5.1	SIM ... H5
6.0	MDR 6 R0.5 L27	58	27	1.5	0.5	1.4	2.8	6.1	SIM ... H6

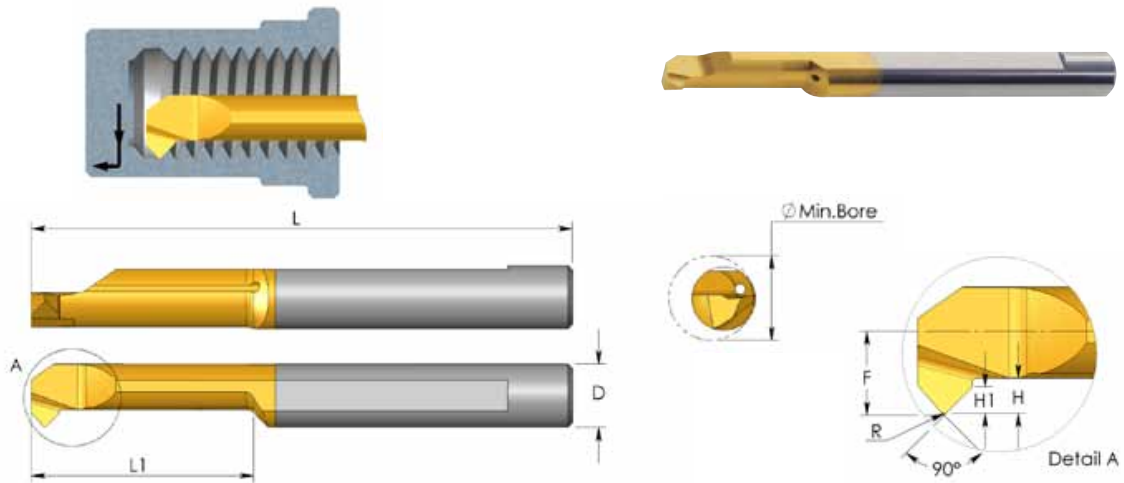
Order example: MDR 5 R0.5 L24 BXC 订货样式: **MDR 5 R0.5 L24 BXC**

For L.H. bars specify MDL instead of MDR 左手刀以MDL套盒MDR

* For additional holders see page 100 辅助刀套见100页



MCR Bars Chamfering and Boring MCR90°倒角和镗孔刀



D	Ordering Code 订货号	L	L1	R	H	H1	F	Min.最小孔 Bore Dia.	变径套 Holder*
3.0	MCR 3 R0.2 L10	39	10	0.2	0.7	0.3	1.3	3.1	SIM ... H3
4.0	MCR 4 R0.2 L15	51	15	0.2	0.8	0.4	1.7	4.1	SIM ... H4
5.0	MCR 5 R0.2 L15	51	15	0.2	1.2	0.7	2.1	5.1	SIM ... H5
6.0	MCR 6 R0.2 L15	51	15	0.2	1.4	0.7	2.8	6.1	SIM ... H6
7.0	MCR 7 R0.2 L20	62	20	0.2	1.5	0.8	3.3	7.1	SIM ... H7

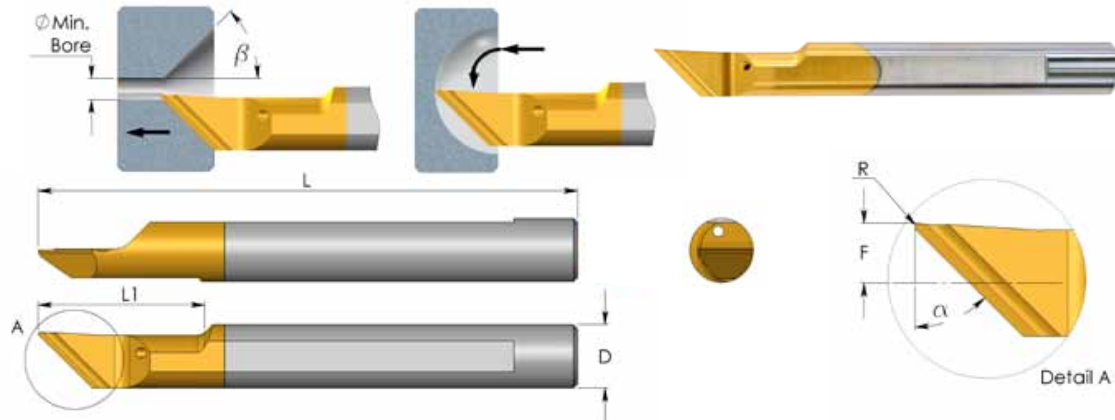
Order example: MCR 4 R0.2 L15 BXC 订货样式: MCR 4 R0.2 L15 BXC

For L.H. bars specify MCL instead of MCR 左手刀以MCL替换MCR

* For additional holders see page 100 辅助刀套见100页



MWR Bars Chamfering and Profiling MWR倒角和仿形



D	Ordering Code 订货号	L	L1	R			F	Min. 最小孔 Bore Dia.	变径套 Holder*
6.0	MWR 6 R0.2 A90	51	15.0	0.2	45°	45°	2.3	1.0	SIM ... H6
	MWR 6 R0.2 A60	51	15.0	0.2	60°	30°	2.3	1.0	
	* MWR 6 R0.4 A90	51	22.0	0.4	45°	45°	2.3	6.0	
	* MWR 6 R0.4 A60	51	22.0	0.4	60°	30°	2.3	6.0	

Order example: MWR 6 R0.2 A90 BXC 订货式样: MWR 6 R0.2 A90 BXC

For L.H. bars specify MWL instead of MWR 左手刀以MWL替换MWR

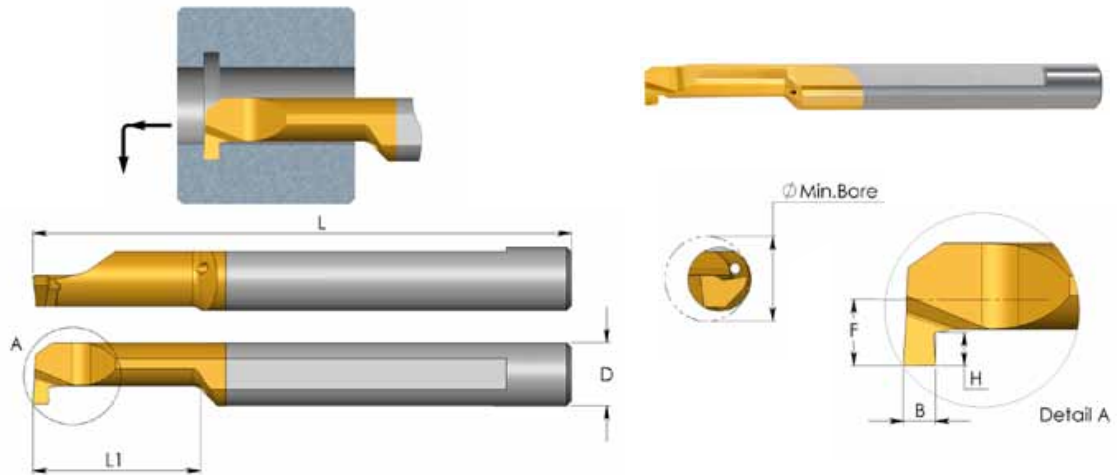
*Can be used also for boring * 可以用于镗孔

** For additional holders see page 100 ** 辅助刀套见100页



MGR Bars Grooving

MGR内槽刀

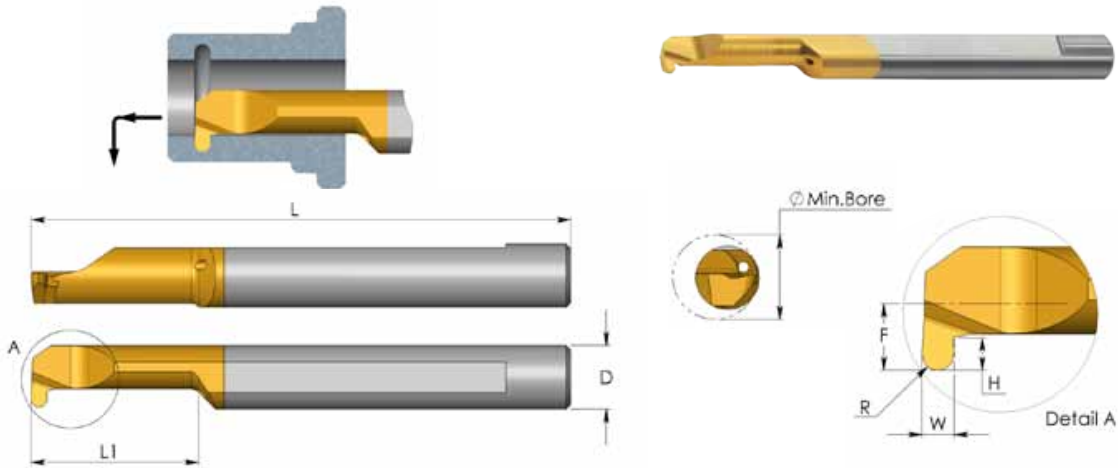


D	Ordering Code 订货号	L	L1	B	H	F	Min.最小孔 Bore Dia.	变径套 Holder*
3.0	MGR 3 B0.7 L10	39	10	0.7	0.6	1.3	3.1	SIM ... H3
	MGR 4 B0.5 L10	51	10	0.5	0.5	1.7	4.1	
4.0	MGR 4 B0.7 L10	51	10	0.7	0.6	1.7	4.1	SIM ... H4
	MGR 4 B1.0 L10	51	10	1.0	1.0	1.7	4.1	
	MGR 4 B1.0 L15	51	15	1.0	1.0	1.7	4.1	
	MGR 4 B1.5 L10	51	10	1.5	1.0	1.7	4.1	
	MGR 5 B1.0 L15	51	15	1.0	1.2	2.3	5.1	
5.0	MGR 5 B1.0 L22	51	22	1.0	1.2	2.3	5.1	SIM ... H5
	MGR 5 B1.5 L15	51	15	1.5	1.2	2.3	5.1	
	MGR 5 B1.5 L22	51	22	1.5	1.2	2.3	5.1	
	MGR 5 B2.0 L15	51	15	2.0	1.2	2.3	5.1	
	MGR 5 B2.0 L22	51	22	2.0	1.2	2.3	5.1	
	MGR 6 B1.0 L15	51	15	1.0	1.4	2.8	6.1	
6.0	MGR 6 B1.0 L22	51	22	1.0	1.4	2.8	6.1	SIM ... H6
	MGR 6 B1.5 L15	51	15	1.5	1.4	2.8	6.1	
	MGR 6 B1.5 L22	51	22	1.5	1.4	2.8	6.1	
	MGR 6 B2.0 L15	51	15	2.0	1.4	2.8	6.1	
	MGR 6 B2.0 L22	51	22	2.0	1.4	2.8	6.1	
	MGR 6 B1.0 L17	51	17	1.0	1.8	2.8	6.1	
6.0	MGR 6 B1.5 L17	51	17	1.5	1.8	2.8	6.1	SIM ... H6
	MGR 6 B2.0 L17	51	17	2.0	1.8	2.8	6.1	
	MGR 7 B1.0 L15	62	15	1.0	2.5	3.3	7.1	
7.0	MGR 7 B1.0 L22	62	22	1.0	2.5	3.3	7.1	SIM ... H7
	MGR 7 B1.0 L30	62	30	1.0	2.5	3.3	7.1	
	MGR 7 B1.5 L15	62	15	1.5	2.5	3.3	7.1	
	MGR 7 B1.5 L22	62	22	1.5	2.5	3.3	7.1	
	MGR 7 B1.5 L30	62	30	1.5	2.5	3.3	7.1	
	MGR 7 B2.0 L15	62	15	2.0	2.5	3.3	7.1	
	MGR 7 B2.0 L22	62	22	2.0	2.5	3.3	7.1	
	MGR 7 B2.0 L30	62	30	2.0	2.5	3.3	7.1	
8.0	MGR 8 B1.0 L22	64	22	1.0	1.7	3.8	8.1	SIM ... H8
	MGR 8 B1.5 L22	64	22	1.5	1.7	3.8	8.1	
	MGR 8 B2.0 L22	64	22	2.0	2.6	3.8	8.1	

Order example: MGR 5 B1.5 L15 BXC 订货样式: MGR 5 B1.5 L15 BXC For L.H. bars specify MGL instead of MGR
* For additional holders see page 100 * 辅助刀套见100页 左手刀以MGL替换MGR



MKR Bars Full Radius Grooving MKR 内 R 槽刀



D	订货号 Ordering Code	L	L1	R	W	H	F	Min.最小孔 Bore Dia.	变径套 Holder*
4.0	MKR 4 R0.5 L10	51	10	0.50	1.0	1.0	1.7	4.1	SIM ... H4
	MKR 4 R0.75 L10	51	10	0.75	1.5	1.0	1.7	4.1	
5.0	MKR 5 R0.5 L15	51	15	0.50	1.0	1.2	2.3	5.1	SIM ... H5
	MKR 5 R0.75 L15	51	15	0.75	1.5	1.2	2.3	5.1	
	MKR 5 R1.0 L15	51	15	1.00	2.0	1.2	2.3	5.1	
6.0	MKR 6 R0.5 L15	51	15	0.50	1.0	1.6	2.8	6.1	SIM ... H6
	MKR 6 R0.75 L15	51	15	0.75	1.5	1.6	2.8	6.1	
	MKR 6 R1.0 L15	51	15	1.00	2.0	1.6	2.8	6.1	
7.0	MKR 7 R0.5 L22	62	22	0.50	1.0	2.5	3.3	7.1	SIM ... H7
	MKR 7 R0.75 L22	62	22	0.75	1.5	2.5	3.3	7.1	
	MKR 7 R1.0 L22	62	22	1.00	2.0	2.5	3.3	7.1	

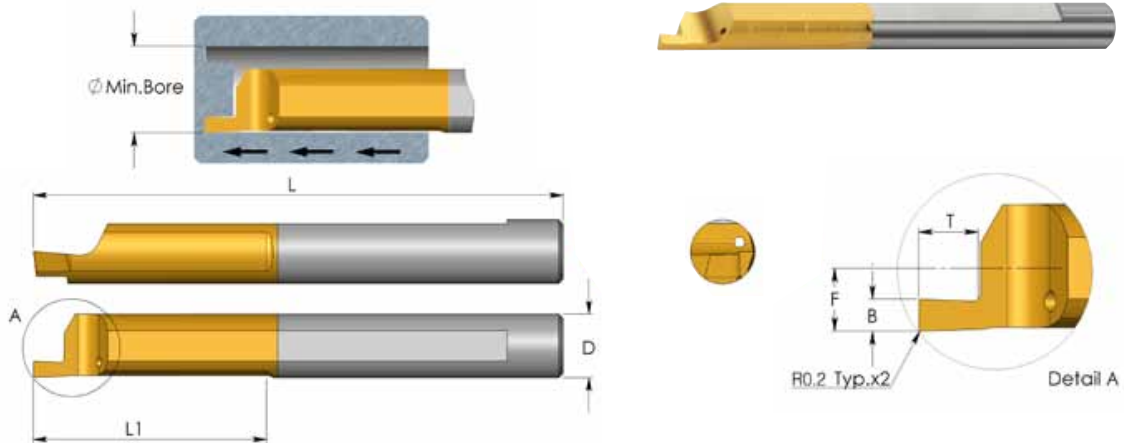
Order example: MKR 5 R1.0 L15 BXC 订货样式: **MKR 5 R1.0 L15 BXC**

For L.H. bars specify MKL instead of MKR 左手刀以MKL替换MKR

* For additional holders see page 100 * 变径套见100页



MFR Bars Face Grooving MFR向右端面槽刀



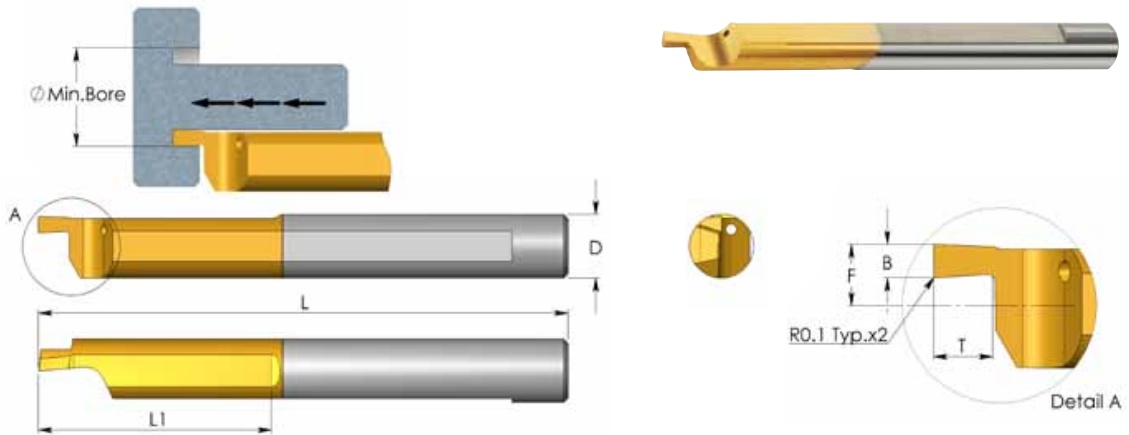
D	订货号 Ordering Code	L	L1	B	T	F	Min. 最小孔 Bore Dia.	变径套 Holder*
4.0	MFR 4 B0.75 L15	51	15	0.75	1.2	1.95	5.0	SIM ... H4
	MFR 4 B1.0 L15	51	15	1.0	1.5	1.95	5.0	
	MFR 4 B1.5 L15	51	15	1.5	2.8	1.95	5.0	
5.0	MFR 5 B0.75 L22	51	22	0.75	1.2	2.45	6.0	SIM ... H5
	MFR 5 B1.0 L22	51	22	1.0	1.5	2.45	6.0	
	MFR 5 B1.5 L22	51	22	1.5	2.5	2.45	6.0	
	MFR 5 B2.0 L22	51	22	2.0	3.8	2.45	6.0	
6.0	MFR 6 B1.0 L22	51	22	1.0	1.5	2.95	8.0	SIM ... H6
	MFR 6 B1.5 L22	51	22	1.5	2.5	2.95	8.0	
	MFR 6 B2.0 L22	51	22	2.0	3.0	2.95	8.0	
	MFR 6 B2.5 L22	51	22	2.5	4.8	2.95	8.0	
	MFR 6 B3.0 L30	58	30	3.0	6.0	2.95	8.0	
8.0	MFR 8 B2.5 L22	64	22	2.5	3.5	3.95	10.0	SIM ... H8

Order example: MFR 5 B1.0 L22 BXC 订货样式: MFR 5 B1.0 L22 BXC

* For additional holders see page 100 * 变径套见100页



MFL Bars Face Grooving MFL左向端面槽刀



D	Ordering Code 订货号	L	L1	B	T	F	Min. 最小孔 Bore Dia.	变径套 Holder*
4.0	MFL 4 B0.75 L15	51	15	0.75	1.2	1.75	5.0	SIM ... H4
	MFL 4 B1.0 L15	51	15	1.0	1.5	1.75	5.0	
	MFL 4 B1.5 L15	51	15	1.5	2.8	1.75	5.0	
5.0	MFL 5 B0.75 L22	51	22	0.75	1.2	2.25	6.0	SIM ... H5
	MFL 5 B1.0 L22	51	22	1.0	1.5	2.25	6.0	
	MFL 5 B1.5 L22	51	22	1.5	2.5	2.25	6.0	
	MFL 5 B2.0 L22	51	22	2.0	3.8	2.25	6.0	
6.0	MFL 6 B1.0 L22	51	22	1.0	1.5	2.75	8.0	SIM ... H6
	MFL 6 B1.5 L22	51	22	1.5	2.5	2.75	8.0	
	MFL 6 B2.0 L22	51	22	2.0	3.0	2.75	8.0	
	MFL 6 B2.5 L22	51	22	2.5	4.8	2.75	8.0	
8.0	MFL 6 B3.0 L30	58	30	3.0	6.0	2.75	8.0	SIM ... H8
	MFL 8 B2.5 L22	64	22	2.5	3.5	3.75	10.0	

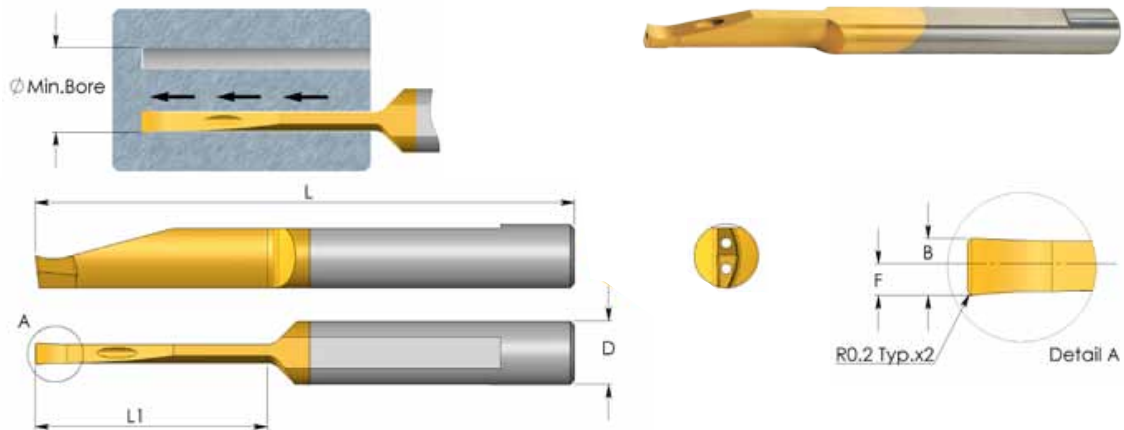
Order example: MFL 6 B1.0 L22 BXC 订货样式: MFL 6 B1.0 L22 BXC

* For additional holders see page 100 * 变径套见100页



MVR Bars Deep Face Grooving - with 2 Coolant Bores

MVR 深孔端面槽刀带两个冷却孔



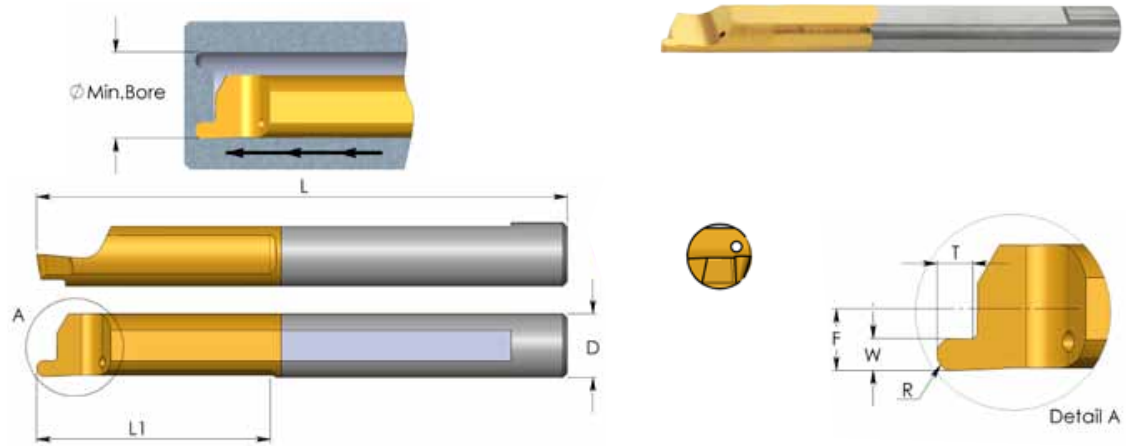
D	Ordering Code 订货号	L	L1	B	F	Min. 最小孔 Bore Dia.	变径套 Holder*
6.0	MVR 6 B2.0 L15	64	15	2.0	1.1	12.0	SIM ... H6
	MVR 6 B2.0 L22	64	22	2.0	1.1	12.0	
	MVR 6 B2.5 L22	64	22	2.5	1.4	12.0	
8.0	MVR 8 B3.0 L27	64	27	3.0	1.6	15.0	SIM ... H8
	MVR 8 B3.0 L43	80	43	3.0	1.6	15.0	
8.0	MVR 8 B4.0 L43	80	43	4.0	2.1	20.0	SIM ... H8

Order example: MVR 6 B2.0 L22 BXC 订货样式: MVR 6 B2.0 L22 BXC

* For additional holders see page 100 * 变径套见100页



MZR Bars Face Grooving MZR 右向端面 R 槽刀



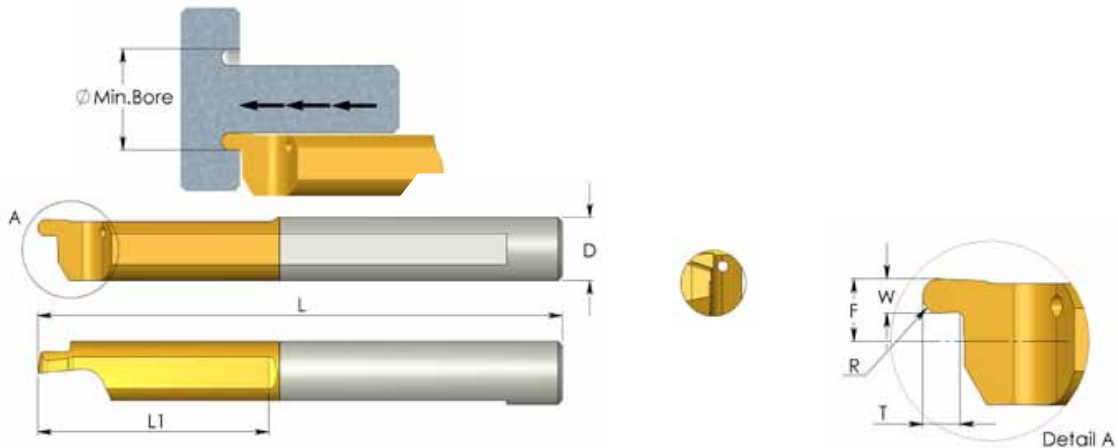
D	订货号 Ordering Code	L	L1	R	W	T	F	Min. 最小孔 Bore Dia.	变径套 Holder*
4.0	MZR 4 R0.5 L15	51	15	0.50	1.0	1.2	1.95	5.0	SIM ... H4
	MZR 4 R0.75 L15	51	15	0.75	1.5	1.5	1.95	5.0	
5.0	MZR 5 R0.5 L22	51	22	0.50	1.0	1.2	2.45	6.0	SIM ... H5
	MZR 5 R0.75 L22	51	22	0.75	1.5	1.5	2.45	6.0	
	MZR 5 R1.0 L22	51	22	1.00	2.0	2.5	2.45	6.0	
6.0	MZR 6 R0.5 L22	51	22	0.50	1.0	1.2	2.95	8.0	SIM ... H6
	MZR 6 R0.75 L22	51	22	0.75	1.5	1.5	2.95	8.0	
	MZR 6 R1.0 L22	51	22	1.00	2.0	2.5	2.95	8.0	

Order example: MZR 5 R0.5 L22 BXC 订货样式: MZR 5 R0.5 L22 BXC

* For additional holders see page 100 * 变径套见100页



MZL Bars Face Grooving MZL 左向 R 端面槽刀



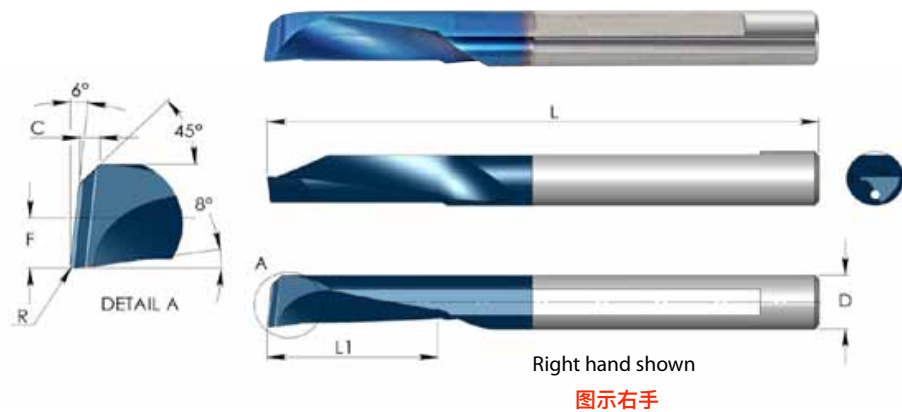
D	订货号 Ordering Code	L	L1	R	W	T	F	Min.最小孔 Bore Dia.	变径套 Holder*
4.0	MZL 4 R0.5 L15	51	15	0.50	1.0	1.2	1.75	5.0	SIM ... H4
	MZL 4 R0.75 L15	51	15	0.75	1.5	1.5	1.75	5.0	
5.0	MZL 5 R0.5 L22	51	22	0.50	1.0	1.2	2.25	6.0	SIM ... H5
	MZL 5 R1.0 L22	51	22	1.00	2.0	2.5	2.25	6.0	
6.0	MZL 6 R0.5 L22	51	22	0.50	1.0	1.2	2.75	8.0	SIM ... H6
	MZL 6 R0.75 L22	51	22	0.75	1.5	1.5	2.75	8.0	
	MZL 6 R1.0 L22	51	22	1.00	2.0	2.5	2.75	8.0	

Order example: MZL 5 R0.5 L22 BXC 订货样式: MZL 5 R0.5 L22 BXC

* For additional holders see page 100 * 变径套见100页



CMR Carmex Multi-Task Tiny Tools **CMR Carmex 多功能微型刀具**



Right hand 右手

D	Ordering Code 订货号	L	L1	R	F	C	Hole Dia.* 孔径	变径套 Holder **
4	CMR 4 R0.1 L10	51	10	0.1	1.8	1.1	4	SIM...H4
	CMR 4 R0.1 L15	51	15	0.1	1.8	1.1	4	
5	CMR 5 R0.2 L10	51	10	0.2	2.3	1.3	5	SIM...H5
	CMR 5 R0.2 L15	51	15	0.2	2.3	1.3	5	
6	CMR 6 R0.2 L12	58	12	0.2	2.8	1.5	6	SIM...H6
	CMR 6 R0.2 L18	58	18	0.2	2.8	1.5	6	

P	BMK	*
M		*
K		*
N		*
S		*
H		

* The minimum diameter the tool can produce from full material * 小径刀具可用于全部材料加工

Left hand 左手

D	Ordering Code 订货号	L	L1	R	F	C	Hole Dia.* 孔径	变径套 Holder **
4	CML 4 R0.1 L10	51	10	0.1	1.8	1.1	4	SIM...H4
	CML 4 R0.1 L15	51	15	0.1	1.8	1.1	4	
5	CML 5 R0.2 L10	51	10	0.2	2.3	1.3	5	SIM...H5
	CML 5 R0.2 L15	51	15	0.2	2.3	1.3	5	
6	CML 6 R0.2 L12	58	12	0.2	2.8	1.5	6	SIM...H6
	CML 6 R0.2 L18	58	18	0.2	2.8	1.5	6	

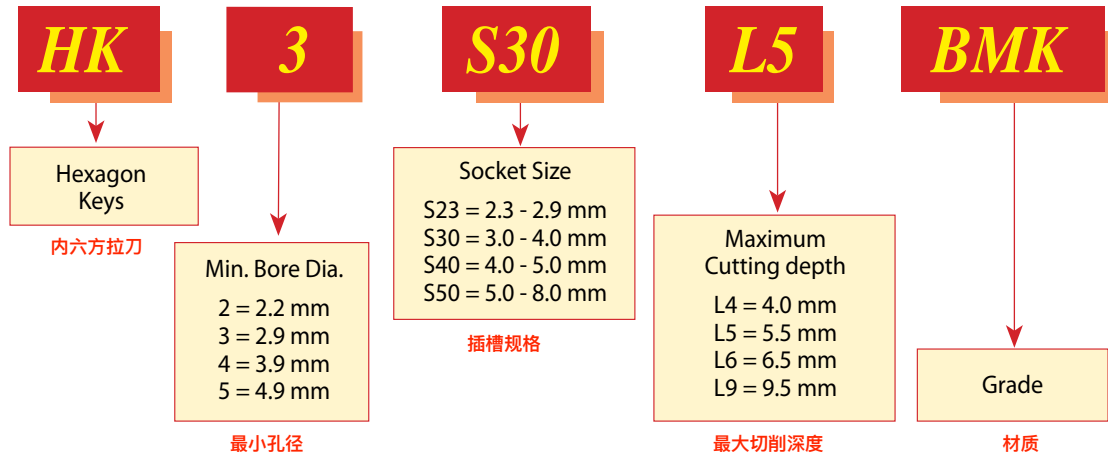
P	BMK	*
M		*
K		*
N		*
S		*
H		

* The minimum diameter the tool can produce from full material * 小径刀具可用于所有材料加工

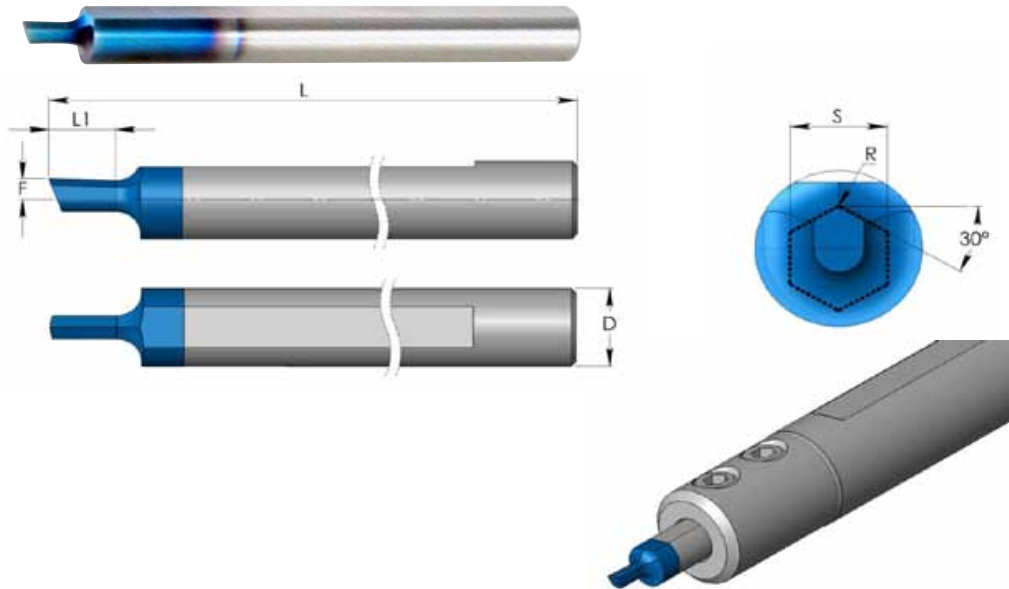
** For additional holders see page 100 ** 变径套见100页



Product Identification 产品标识



HK Broaching Tools for Hexagon Keys HK 内六方拉削刀具



D	S	Ordering Code 订货号	L	L1	R	F	Min. Bore Dia. 最小孔	变径套 Holder *
5.0	2.3-2.9	HK 2 S23 L4	51	4.0	0.05	1.35	2.2	SIM...H5
	3.0-4.0	HK 3 S30 L5	51	5.5	0.05	1.35	2.9	
	4.0-5.0	HK 4 S40 L6	51	6.5	0.10	1.35	3.9	
7.0	5.0-8.0	HK 5 S50 L9	62	9.5	0.10	1.35	4.9	SIM...H7

P	BMK	*
M		*
K		*
N		*
S		*
H		*

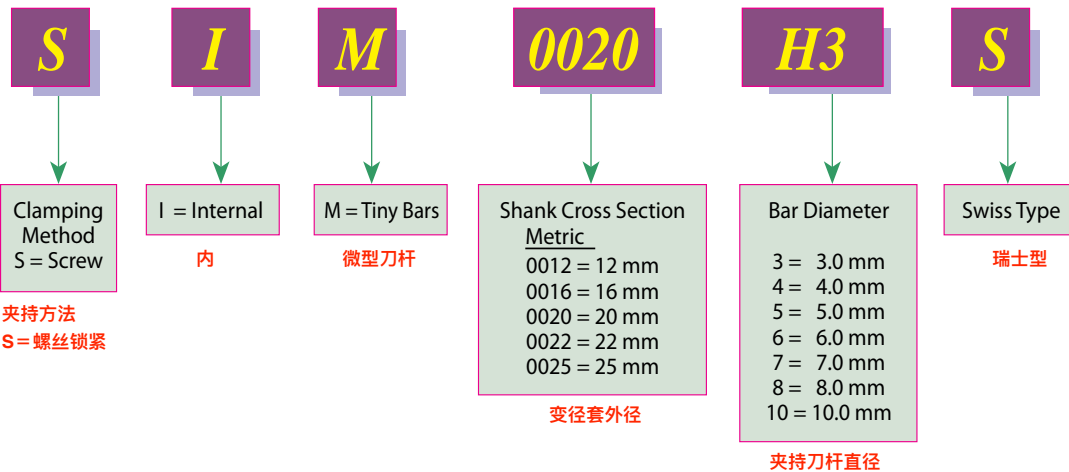
S = Socket Size S=插入孔径尺寸

* For additional holders see page 100 * 变径套见100页

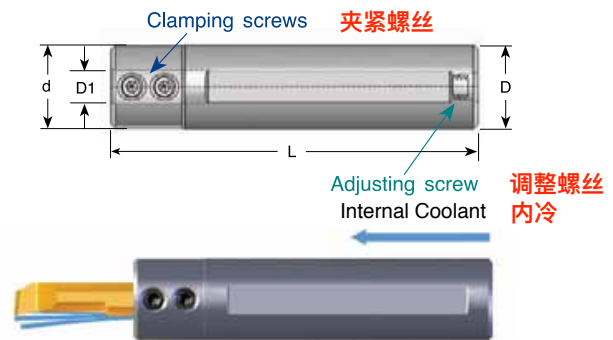


Product Identification 产品标识

Tiny Bar Holders Ordering Codes 小刀杆变径套订货编码



Tiny Tools Bar Holders 微型刀变径套



D1	Ordering Code 订货号	L	D	d	Key 扳手	锁紧螺丝 Clamping Screw	调整螺丝 Adjusting Screw
3.0	SIM 0012 H3	88	12	12	K25	S24	S35
	SIM 0016 H3S	75	16	20	K25	S25	S35S
	SIM 0016 H3	88	16	20	K25	S25	S35
	SIM 0020 H3	88	20	20	K25	S25	S35
	SIM 0022 H3	88	22	22	K25	S25	S35
4.0	SIM 0012 H4	88	12	12	K25	S24	S35
	SIM 0016 H4S	75	16	20	K25	S25	S35S
	SIM 0016 H4	88	16	20	K25	S25	S35
	SIM 0020 H4	88	20	20	K25	S25	S35
	SIM 0022 H4	88	22	22	K25	S25	S35

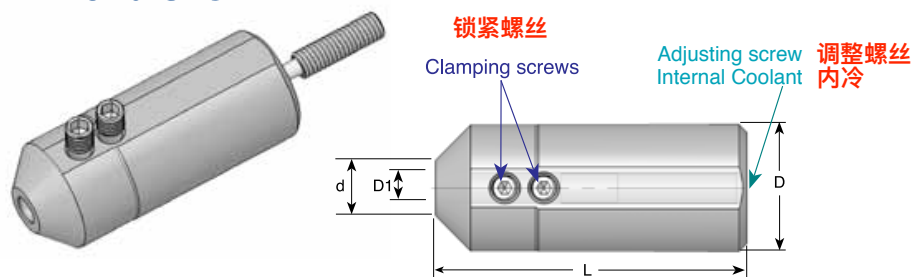


Tiny Tools Bar Holders 微型刀变径套

D1	Ordering Code 订货号	L	D	d	Key 扳手	Clamping Screw 锁紧螺丝	Adjusting Screw 调整螺丝
5.0	SIM 0012 H5	88	12	12	K25	S24	S35
	SIM 0016 H5S	75	16	20	K25	S25	S35S
	SIM 0016 H5	88	16	20	K25	S25	S35
	SIM 0020 H5	88	20	20	K25	S25	S35
	SIM 0022 H5	88	22	22	K25	S25	S35
6.0	SIM 0016 H6S	75	16	20	K25	S25	S35S
	SIM 0016 H6	88	16	20	K25	S25	S35
	SIM 0020 H6	88	20	20	K25	S25	S35
	SIM 0022 H6	88	22	22	K25	S25	S35
7.0	SIM 0016 H7	88	16	20	K25	S25	S35
	SIM 0020 H7	88	20	20	K25	S25	S35
	SIM 0022 H7	88	22	22	K25	S25	S35
8.0	SIM 0016 H8	88	16	20	K25	S25	S35
	SIM 0020 H8	88	20	20	K25	S25	S35
	SIM 0022 H8	88	22	22	K25	S25	S35
10.0	SIM 0016 H10	88	16	20	K25	S25S	S35
	SIM 0020 H10	88	20	20	K25	S25S	S35
	SIM 0022 H10	88	22	22	K25	S25	S35

微型刀变径套

Tiny Tools Bar Holders

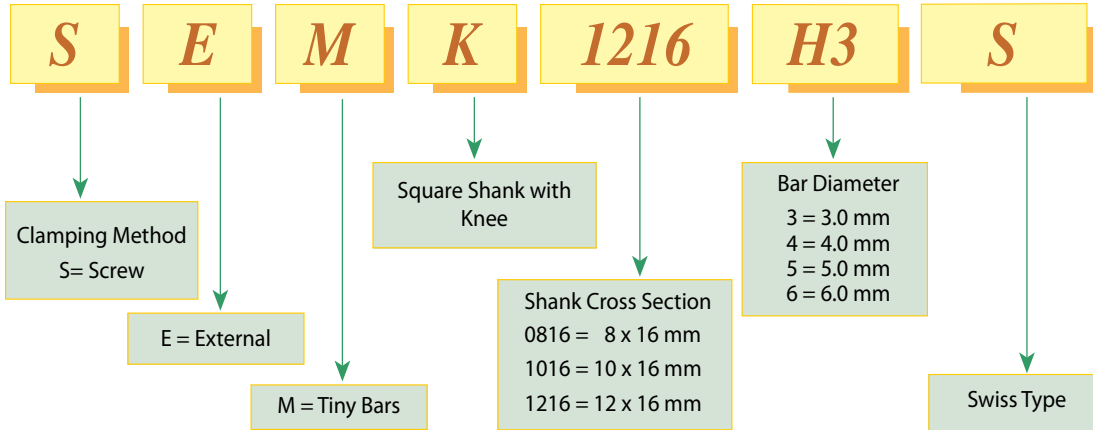


D1	Ordering Code 订货号	D	d	L	Key 扳手	Clamping Screw 锁紧螺丝	Adjusting Screw 调整螺丝
3.0	SIM 0025 H3	25	10.8	62	K25	S25	S35M
4.0	SIM 0025 H4	25	10.8	62	K25	S25	S35M
5.0	SIM 0025 H5	25	10.8	62	K25	S25	S35M
6.0	SIM 0025 H6	25	10.8	62	K25	S25	S35M
8.0	SIM 0025 H8	25	10.8	62	K25	S25	S35M



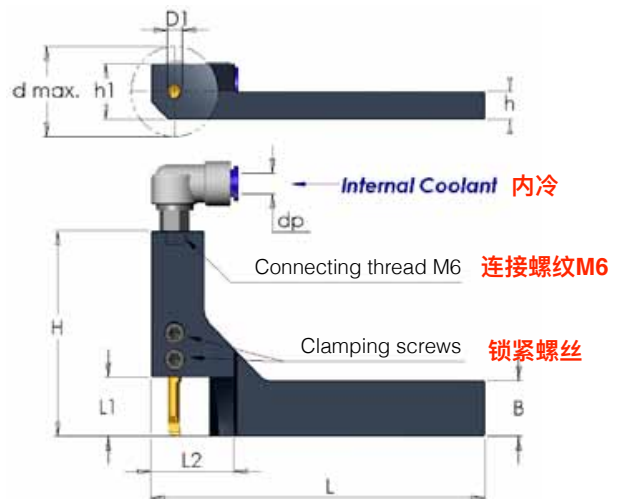
Product Identification 产品标识

Tiny Bar Holders Ordering Codes 微型刀变径套订货编码



Square Shank Holders

方柄刀杆

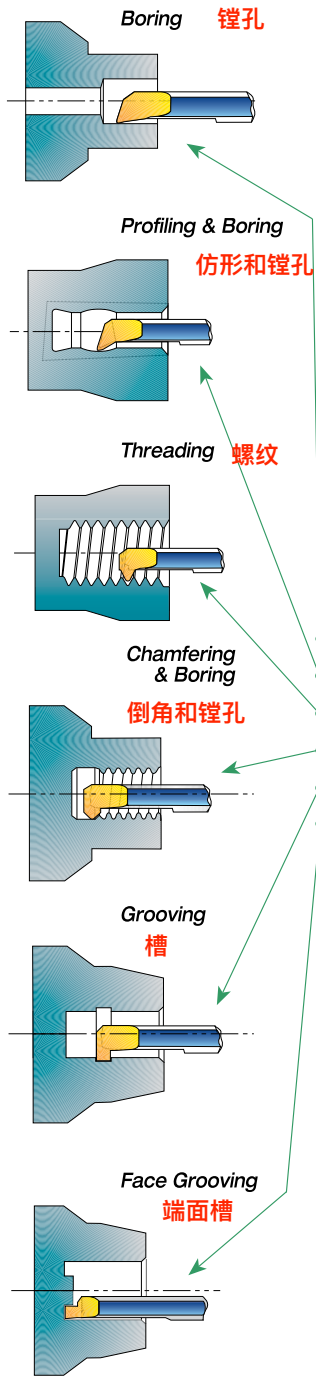


D1	Ordering Code 订货号	B	L	L1	L2	H	h	h1	d max. 最大	*dp	Key 扳手	Clamping Screw 锁紧螺丝
3.0	SEMK 0816 H3S	16	100	17	25	46	8	16	26	4/6	K25	S25
	SEMK 1016 H3S	16	100	17	25	46	10	18	26	4/6	K25	
	SEMK 1216 H3S	16	100	17	25	46	12	20	26	4/6	K25	
4.0	SEMK 0816 H4S	16	100	17	25	58	8	16	26	4/6	K25	S25
	SEMK 1016 H4S	16	100	17	25	58	10	18	26	4/6	K25	
	SEMK 1216 H4S	16	100	17	25	58	12	20	26	4/6	K25	
5.0	SEMK 0816 H5S	16	100	17	25	58	8	16	26	4/6	K25	S25
	SEMK 1016 H5S	16	100	17	25	58	10	18	26	4/6	K25	
	SEMK 1216 H5S	16	100	17	25	58	12	20	26	4/6	K25	
6.0	SEMK 0816 H6S	16	100	17	25	58	8	16	26	4/6	K25	S25
	SEMK 1016 H6S	16	100	17	25	58	10	18	26	4/6	K25	
	SEMK 1216 H6S	16	100	17	25	58	12	20	26	4/6	K25	

* Optional * 可选的



Tiny Tools Kits 微型刀具套盒



KT4-20	KT5-20
MTR 4 R0.2 L10	MTR 5 R0.2 L15
MPR 4 R0.2 L10	MPR 5 R0.2 L15
MIR 4 L15 A60	MIR 5 L15 A60
MCR 4 R0.2 L15	MCR 5 R0.2 L15
MGR 4 B1.5 L10	MGR 5 B1.5 L15
MFR 4 B1.0 L15	MFR 5 B1.0 L22
SIM 0020 H4	SIM 0020 H5
K25	K25

-  Boring 镗孔
-  Profiling 仿形
-  Threading 螺纹
-  Chamfering 倒角
-  Grooving 内槽
-  Face Grooving 端面槽
-  Tiny Tools Bar Holder 变径套
-  扳手

Order example: KT4-20 订货样式: KT4-20

Also available are kits with a 16mm or 22mm shank diameter bar holder.
Order example: KT4-16

也可以一个套盒配16mm或22mm变径套。订货式样: KT4-16



Technical Section 技术部分

Carbide Grades: 硬质合金级别

BXC (P30 - P50, K25 - K40) BXC(P30-P50,K25-K40)

PVD TiN coated grade for low cutting speed. PVD-TiN涂层低切削速度
Works well with a wide range of stainless steels. 宽范围加工钢和不锈钢



BMK (K10 - K20) BMK(K10-K20)

Sub-micron grade with advanced PVD triple coating. Extremely high heat resistant and smooth cutting operation, for high performance, and normal machining conditions. General purpose for all materials. 亚微米颗粒级带PVD涂层, 特耐热和耐磨和光滑切削, 高效能和常态加工。适用于所有材料

K20 (K10 - K30) K20(K10-K30)

Uncoated Carbide grade for non ferrous metals, aluminum and cast iron. 非涂层硬质合金用于非铁金属、铝和铸铁

Cutting speed for Tiny Tools* 切削参数 - 微型刀具 *

ISO Standard 标准	Material 材料	Condition 条件	Cutting Speed m/min 切削速度			
			BXC	BMK	K20	
P	Non-Alloy steel and cast steel, free cutting steel 非合金钢、铸钢、易切钢	<0.25%C	25-70	30-80	15-30	
		≥0.25%C				
		<0.55%C				
		≥0.55%C				
		≥0.55%C				
Low alloy steel and cast steel (less than 5% alloying elements) 低合金钢	Annealed 回火的	20-40	25-50	10-20		
	Quenched and tempered 淬硬的	20-40	25-50	10-20		
High alloy steel, cast steel, and tool steel 高合金钢、铸钢、工具钢	Annealed 回火的	20-40	25-50	10-20		
	Quenched and tempered 淬硬的	20-40	25-50	10-20		
M	Stainless steel and cast steel 不锈钢	Ferritic/martensitic 铁素体/马氏体	25-40	30-60	15-25	
		Martensitic 马氏体	25-40	30-60	15-25	
		Austenitic 奥氏体	25-40	30-60	15-25	
K	Cast iron nodular (GGG) 球铁	Ferritic/pearlitic 铁素体/珠光体	25-60	30-80	15-30	
		Pearlitic 珠光体	25-60	30-80	15-30	
		Ferritic 铁素体	30-70	30-80	20-40	
Grey cast iron (GG) 灰铁	Pearlitic 珠光体	30-70	30-80	20-40		
	Ferritic 铁素体	20-40	20-50	10-20		
Malleable cast iron 可锻铸铁	Pearlitic 珠光体	20-40	20-50	10-20		
	Pearlitic 珠光体	20-40	20-50	10-20		
N	Aluminum-wrought alloy 锻制铝合金	Not cureable 非硬化	50-100	60-120	30-50	
		Cured 硬化	50-100	60-120	30-50	
	Aluminum-cast, alloyed 铸铝合金	<=12% Si	Not cureable 非硬化	40-80	50-90	20-40
		>12% Si	Cured 硬化	40-80	50-90	20-40
	Copper alloys 铜合金	>1% Pb	High temperature 高温	30-60	30-70	20-40
Free cutting 易切		30-60	30-70	20-40		
Non metallic 非金属材料	Brass 黄铜	Electrolytic copper 电解铜	30-60	30-70	20-40	
	Duroplastics, fiber plastics 硬塑料/纤维/塑料	Hard rubber 硬橡皮	40-80	40-80	20-40	
S	High temp. alloys, Super alloys 高温合金、超合金	Fe based 铁基	Annealed 回火的	15-30	15-40	10-20
		Ni or Co based 镍或钴基	Cured 硬化			
			Annealed 回火的			
			Cured 硬化			
Titanium alloys 钛合金	Cast 铸造	0-30	10-30	5-15		
H	Hardened steel 硬钢	Alpha+beta alloys cured 固溶硬化	0-30	10-30	5-15	
		Hardened 45-50 HRC 硬度	10-30	15-40	5-15	
		Hardened 51-55 HRC 硬度	10-30	15-40	5-15	
	Chilled cast iron 冷硬铸铁	Hardened 56-62 HRC 硬度	10-30	15-40	5-15	
Cast iron 硬铸铁	Cast 铸造	10-30	10-30	5-15		
Cast iron 硬铸铁	Hardened 硬化	10-20	10-20	5-15		

* For CMR see page 104 * CMR见104页

Recommended Feed Rate: 0.01 - 0.03 mm/rev

推荐进给: 0.01-0.03mm/rev



Threading Passes 车螺纹进给次数

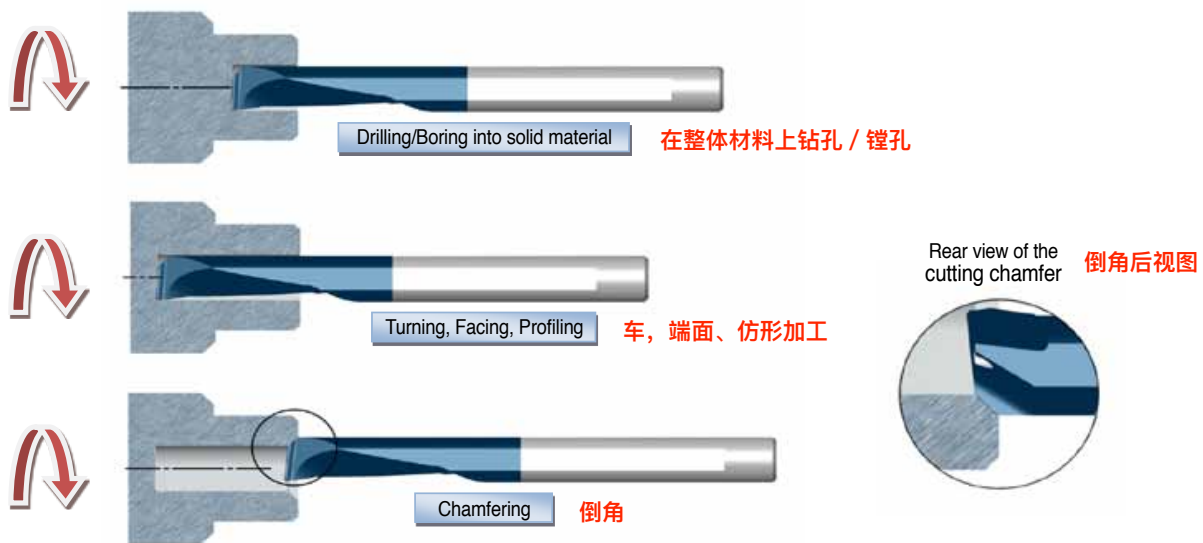
Pitch: 螺距牙数	mm	0.5	0.7	0.8	1.0	1.25	1.5	2-5
	TPI	48	36	32	24	20	16	14-5
Number of Passes 走刀次数		6-12	7-14	7-16	8-18	8-20	10-22	20-38

CMR Carmex Multi-Task Tiny Tools CMR Carmex 多功能微型刀具

- Carmex is introducing a new and innovative Multi-Task Tiny Tool **CMR** for Boring, Turning, Facing and Chamfering with a single tool. **Carmex**推出一个创新的微型多功能刀具**CMR**，集镗孔、车削、端面槽和倒角于一身。
- The unique design enables machining of the material without the need for a pilot hole. 独特的设计-钻孔并不需要事先钻引导孔
- The new tool shortens the machining cycle time and the number of tools required - providing **High Productivity**. 新刀具缩短加工周期和减少刀具数量，提供生产效率。
- Effective through coolant hole with a spiral flute, evacuates the chips out of the hole uninterruptedly. 切屑通过冷却液由螺旋槽排出。
- Unique chip breaker and flute design. 独特的断屑槽设计
- To use with standard SIM toolholders on Swiss Type or CNC lathe machines. 使用标准SIM刀杆在瑞士机床货数控机床
- Available in **BMK** Grade only. 只提供BMK级材质

Working Method 加工方法

- The tool penetrates the work piece and produces the hole compliant with the minimum diameter the tool allows. 在工件上直接钻孔和允许的小径孔加工
- The tool can penetrate the material in one pass or several passes depending on the work piece material, coolant pressure, machine power etc. 刀具能钻几个孔取决于工件材料、冷却压力、机床功率
- The hole can be enlarged by multi radial passes. 可用于扩孔



The tool is equipped with an additional cutting edge, which is located across the main front edge. This allows production of an additional 45° chamfer on the work piece without the need to stop the spindle or processing operation.

刀具前端配备了一个额外的切削刃，允许45°倒角的加工而无需停止机床主轴旋转



CMR切削数据和通用推荐

CMR Cutting Data and General Recommendations

Coolant fluid 冷却液

Dry machining should not be performed under any circumstances. It is necessary to use an internal coolant in all applications. Oil or Emulsion lubricants are recommended for best performance. In the event of low coolant pressure, adding an external coolant can improve the tool operation.

在任何情况下都不应进行干式加工。在所有应用程序中使用内部冷却液是必要的。油或乳化液润滑剂被推荐为最佳操作。在低的冷却液压力的情况下，添加一个外部冷却液可以提高刀具的作用

The cooling stream is designed to provide three benefits: 冷却液设计是为了提供三种效益

1. Cooling the cutting edge of the tool, and the contact area. 1.冷却液直达切削刃表面
2. Pushing the chip away from the tool quickly, thereby reducing wear of the edge. 2.迅速推开切屑离开刀具，较少切削刃磨损
3. Helping to break the chip into smaller pieces and evacuating them from the cutting area. 3.帮助切屑破碎并排出切削刃表面

标准 ISO Standard	材料 Materials	切削速度 Cutting Speed m/min
P	Low and Medium Carbon Steels <0.55%C 低和中碳钢，含碳量小于0.55%	20- 75
	High Carbon Steels ≥0.55%C 高碳钢含量大于0.55%	20- 75
	Alloy Steels, Treated Steels 合金钢，热处理钢	20- 60
M	Stainless Steels - Free Cutting 易切不锈钢	20- 60
	Stainless Steels - Austenitic 奥氏体不锈钢	20- 50
	Cast Steels 铸钢	20- 70
K	Cast Iron 铸铁	20- 90
N	Aluminum ≤12%Si, Copper 硅含量小于12%的铝合金，铜	40-150
	Aluminum >12% Si 硅含量大于12%的铝合金	20-100
	Synthetics, Duroplastics, Thermoplastics 合成材料，硬质塑料，热塑性塑料	40-150
S	Nickel Alloys, Titanium Alloys 镍基合金，钛合金	15- 60
H	Hardened Steels 硬钢	

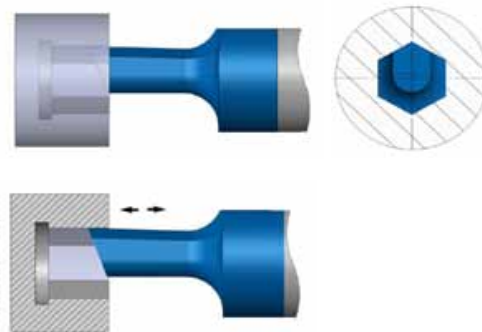
Recommended Feed Rate: 0.01 - 0.03 mm/rev 推荐进给0.01-0.03mm/rev

HK Broaching Tools for Hexagon Keys 内六方拉削刀具

The HK broaching system have been developed to machine internal keyways inside blind or through holes, using CNC machines. HK拉削系统已经发展到使用在数控机床上加工盲孔或通孔内键槽

Working Demo 加工示意

- To use with Carmex standard SIM Bar Holders 使用Carmex标准SIM刀杆
- The holder can be located directly in the turret or the machine spindle 刀杆可以直接安装在刀塔或机床主轴
- Holder with rear clamping screw for full support during operation 刀杆完全由后面夹紧螺丝固定
- Available in BMK Grade only. 只提供BMK材质



三 禄 切 削 刀 具
SUNROXM



上海三禄贸易有限公司



Carmex
Precision Tools Ltd.