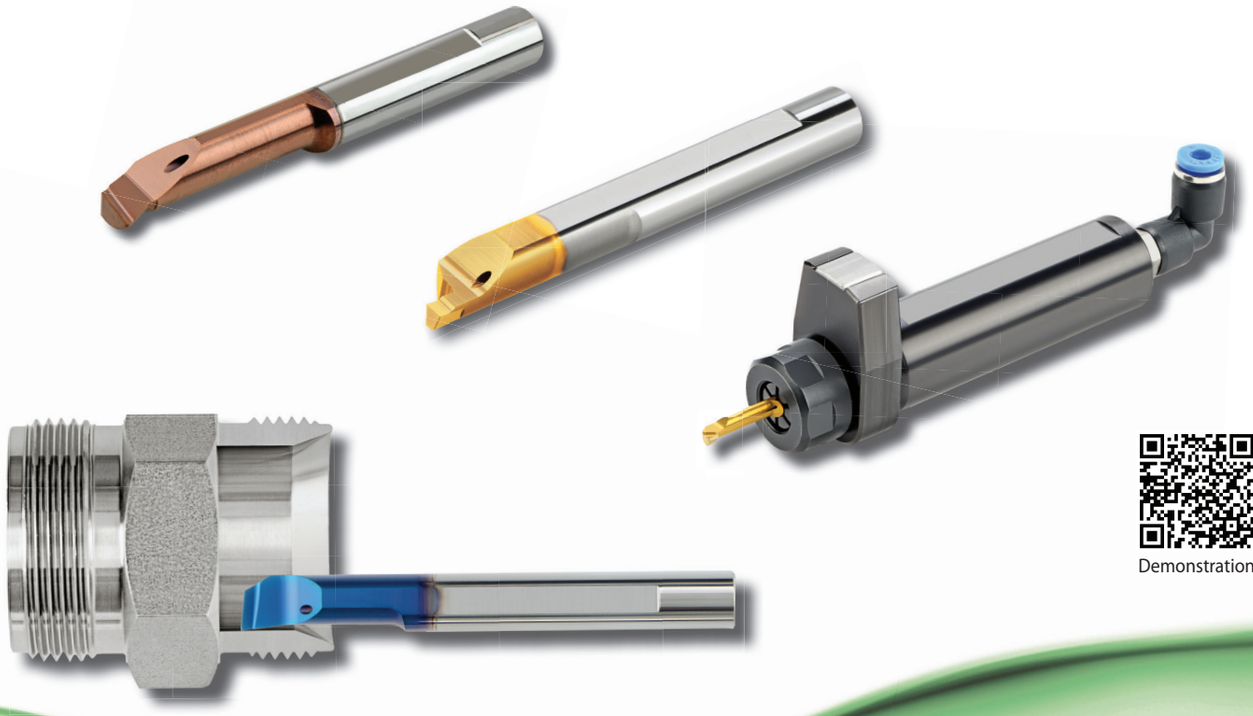
Tiny Tools | A06



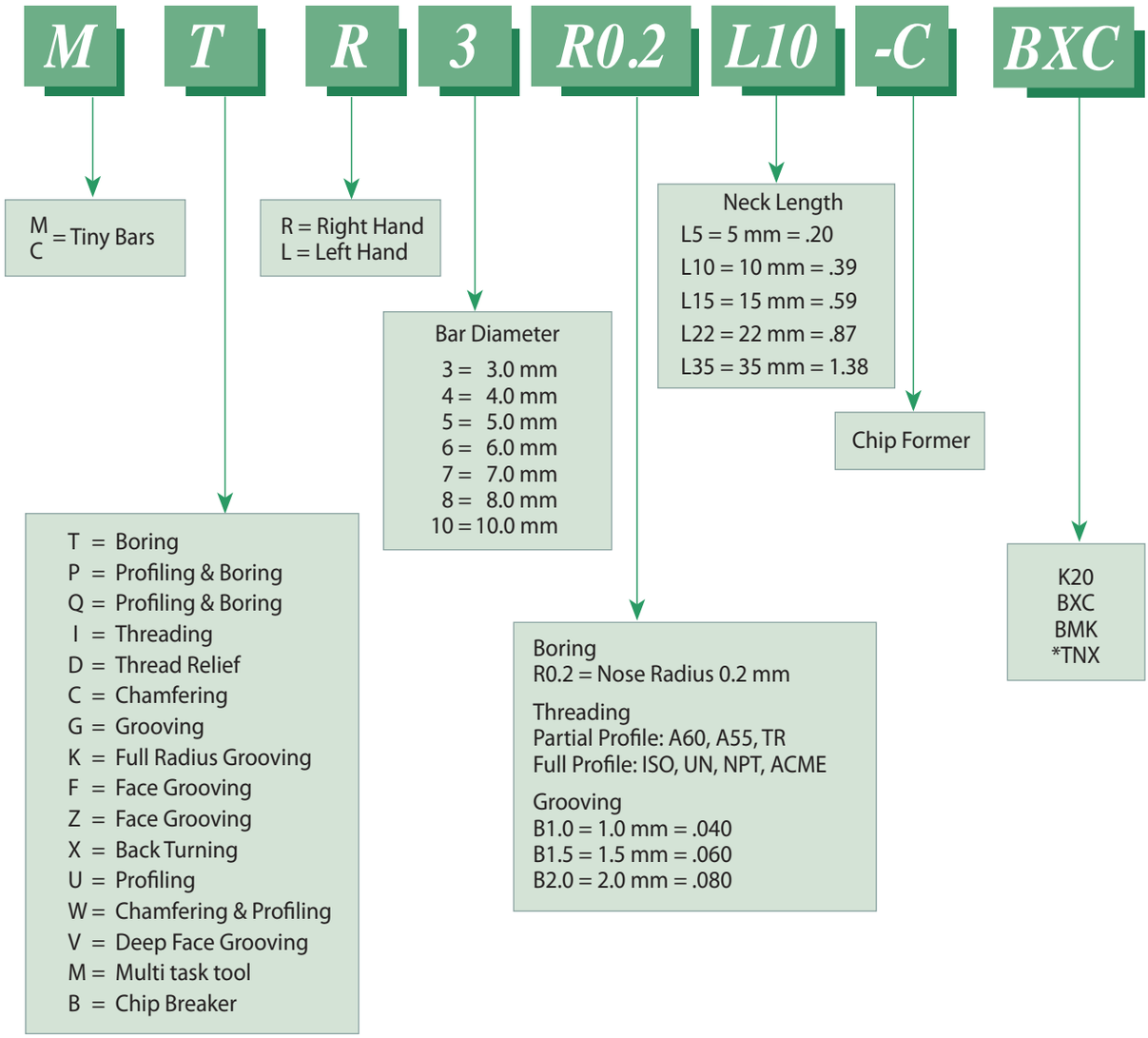
Demonstration

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.

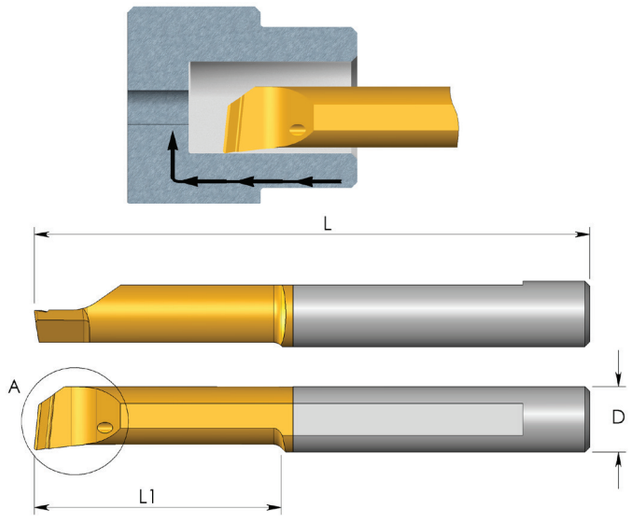
Product Identification

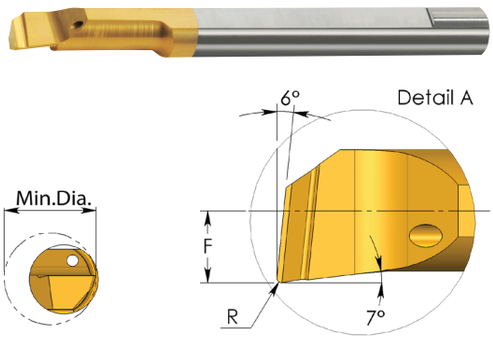
Tiny Bars Ordering Codes



* Available only for CBR bars

MTR Bars Boring





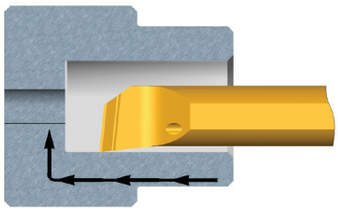
Grade	P	M	K	N	S	H
K20		○	○	●	○	
BXC	●	●	●	○	●	●
BMK	●	●	●	○	●	●

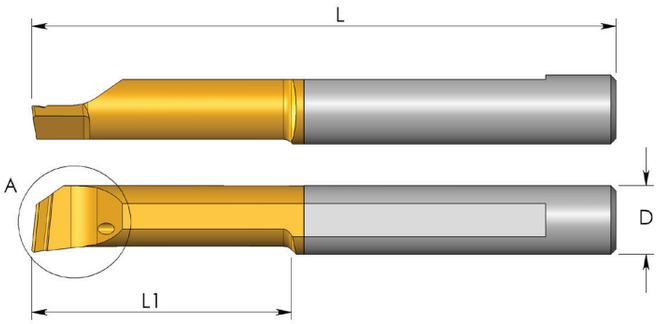
D mm	Ordering Code	L	L1	R	F	Min. Dia.	Holder
3.0	MTR 1 R0 L6	1.5	.24	0	.02	.04	SIM ... H3
	MTR 1 R0.05 L4	1.5	.16	.002	.02	.04	
	MTR 1 R0.05 L6	1.5	.24	.002	.02	.04	
3.0	MTR 1.2 R0 L7	1.5	.28	0	.02	.05	SIM ... H3
	MTR 1.2 R0 L9	1.5	.35	0	.02	.05	
3.0	MTR 1.5 R0 L6	1.5	.24	0	.03	.06	SIM ... H3
	MTR 1.5 R0.1 L6	1.5	.24	.004	.03	.06	
3.0	MTR 2 R0 L10	1.5	.39	0	.03	.08	SIM ... H3
	MTR 2 R0.05 L5	1.5	.20	.002	.03	.08	
	MTR 2 R0.05 L10	1.5	.39	.002	.03	.08	
	MTR 2 R0.1 L10	1.5	.39	.004	.03	.08	
	MTR 2 R0.1 L15	1.5	.59	.004	.03	.08	
	MTR 2 R0.15 L5	1.5	.20	.006	.03	.08	
	MTR 2 R0.15 L10	1.5	.39	.006	.03	.08	
4.0	MTR 2.5 R0 L10	2.0	.39	0	.04	.10	SIM ... H4
	MTR 2.5 R0.1 L10	2.0	.39	.004	.04	.10	
	MTR 2.5 R0.1 L15	2.0	.59	.004	.04	.10	
3.0	MTR 3 R0.05 L10	1.5	.39	.002	.05	.12	SIM ... H3
	MTR 3 R0.05 L15	1.5	.59	.002	.05	.12	
	MTR 3 R0.1 L10	1.5	.39	.004	.05	.12	
	MTR 3 R0.1 L15	1.5	.59	.004	.05	.12	
	MTR 3 R0.2 L10	1.5	.39	.008	.05	.12	
	MTR 3 R0.2 L15	1.5	.59	.008	.05	.12	
4.0	MTR 4 R0.05 L15	2.0	.59	.002	.07	.16	SIM ... H4
	MTR 4 R0.05 L22	2.0	.87	.002	.07	.16	
	MTR 4 R0.1 L10	2.0	.39	.004	.07	.16	
	MTR 4 R0.1 L15	2.0	.59	.004	.07	.16	
	MTR 4 R0.1 L22	2.0	.87	.004	.07	.16	
	MTR 4 R0.2 L10	2.0	.39	.008	.07	.16	
	MTR 4 R0.2 L15	2.0	.59	.008	.07	.16	
	MTR 4 R0.2 L22	2.0	.87	.008	.07	.16	
	MTR 4 R0.2 L30	2.4	1.18	.008	.07	.16	

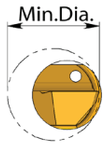
For additional holders see page A06-32 to 41

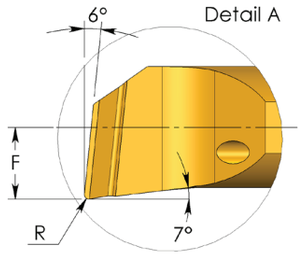
● First choice ○ Alternative

MTR Bars Boring









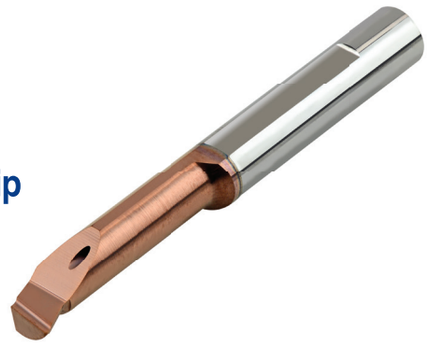
D mm	Ordering Code	L	L1	R	F	Min Dia.	Holder
5.0	**MTR 5 R0.05 L15**	2.0	.59	.002	.08	.20	SIM ... H5
	MTR 5 R0.1 L15	2.0	.59	.004	.08	.20	
	MTR 5 R0.1 L22	2.0	.87	.004	.08	.20	
	MTR 5 R0.1 L30	3.0	1.18	.004	.08	.20	
	MTR 5 R0.2 L10	2.0	.39	.008	.08	.20	
	MTR 5 R0.2 L15	2.0	.59	.008	.08	.20	
	MTR 5 R0.2 L22	2.0	.87	.008	.08	.20	
	MTR 5 R0.2 L30	3.0	1.18	.008	.08	.20	
	MTR 5 R0.2 L40	3.0	1.57	.008	.08	.20	
6.0	**MTR 6 R0.05 L15**	2.0	.59	.002	.11	.24	SIM ... H6
	MTR 6 R0.05 L22	2.0	.87	.002	.11	.24	
	MTR 6 R0.1 L15	2.0	.59	.004	.11	.24	
	MTR 6 R0.1 L22	2.0	.87	.004	.11	.24	
	MTR 6 R0.2 L15	2.0	.59	.008	.11	.24	
	MTR 6 R0.2 L22	2.0	.87	.008	.11	.24	
	MTR 6 R0.2 L30	2.3	1.18	.008	.11	.24	
	MTR 6 R0.2 L35	3.0	1.38	.008	.11	.24	
	MTR 6 R0.2 L40	3.0	1.57	.008	.11	.24	
7.0	**MTR 7 R0.2 L22**	2.4	.87	.008	.13	.28	SIM ... H7
	MTR 7 R0.2 L30	2.4	1.18	.008	.13	.28	
8.0	**MTR 8 R0.2 L15**	2.5	.59	.008	.15	.32	SIM ... H8
	MTR 8 R0.2 L22	2.5	.87	.008	.15	.32	
	MTR 8 R0.2 L35	3.0	1.38	.008	.15	.32	
10.0	**MTR 10 R0.2 L35**	2.9	1.38	.008	.19	.40	SIM ... H10

Order example: MTR 6 R0.2 L22 BXC
For L.H. bars specify MTL instead of MTR
For additional holders see page A06-32 to 41

Carmex Precision Tools Ltd.

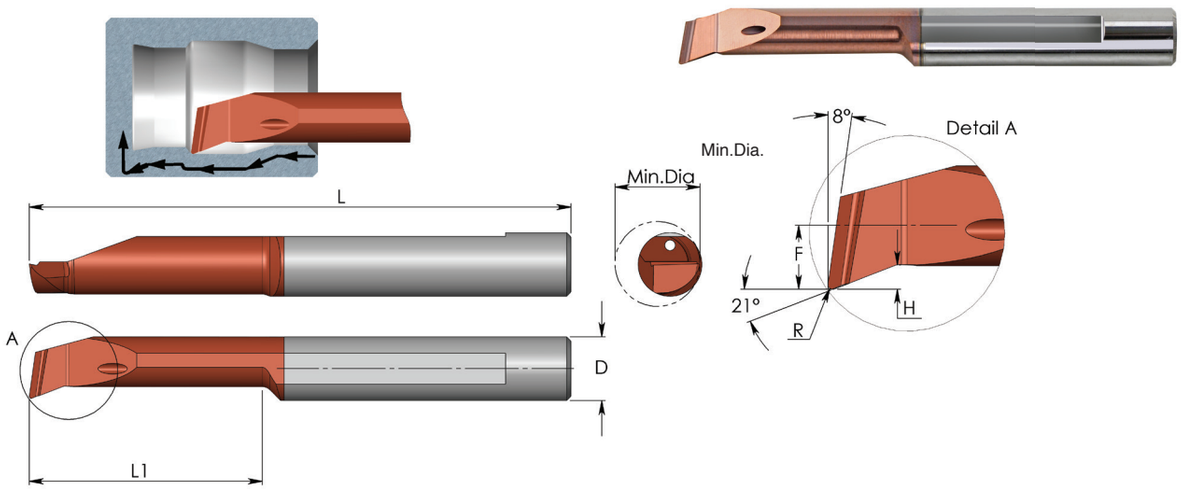
CBR Bars *Profiling and Boring*

With advanced Chip Breaker



Chip evacuation is obtained thanks to advanced Chip Breaker and the internal coolant through the tool, pushing the chips out of the hole.

Excellent solution for machining stainless steels, super alloys and other "difficult" materials that create curly chips around the tool and the application. Can be used also as general purpose for a wide range of materials.



Grade	P	M	K	N	S	H
TNX	●	●	●	●	●	●

D mm	Ordering Code	L	L1	R	H	F	Min. Dia.	Holder
4.0	**CBR 4 R0.2 L10**	2.0	.39	.008	.02	.07	.16	SIM ... H4
	CBR 4 R0.2 L15	2.0	.59	.008	.02	.07	.16	
5.0	**CBR 5 R0.2 L15**	2.0	.59	.008	.03	.09	.20	SIM ... H5
	CBR 5 R0.2 L22	2.0	.87	.008	.03	.09	.20	
6.0	**CBR 6 R0.2 L15**	2.0	.59	.008	.04	.11	.24	SIM ... H6
	CBR 6 R0.2 L22	2.0	.87	.008	.04	.11	.24	

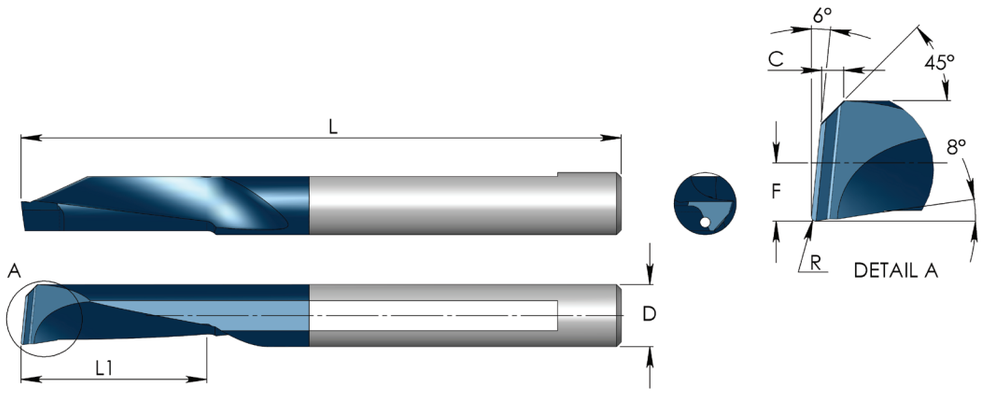
Order example: CBR 5 R0.2 L15 TNX

For L.H. bars specify CBL instead of CBR

For additional holders see page A06-32 to 41

CMR Multi-Task Tiny Bars

Multi-Task Tiny Tool CMR for Boring, Turning, Facing and Chamfering with a single tool



Grade	P	M	K	N	S	H
BMK	●	●	●	○	●	●

D mm	Ordering Code	L	L1	R	F	C	Hole Dia.*	Holder
4.0	**CMR 4 R0.1 L10**	2.0	.39	.004	.07	.04	.16	SIM...H4
	CMR 4 R0.1 L15	2.0	.59	.004	.07	.04	.16	
5.0	**CMR 5 R0.2 L10**	2.0	.39	.008	.09	.05	.20	SIM...H5
	CMR 5 R0.2 L15	2.0	.59	.008	.09	.05	.20	
6.0	**CMR 6 R0.2 L12**	2.3	.47	.008	.11	.06	.24	SIM...H6
	CMR 6 R0.2 L18	2.3	.71	.008	.11	.06	.24	

Order example: CMR 6 R0.2 L12 BMK

● First choice ○ Alternative

For L.H. bars specify CML instead of CMR

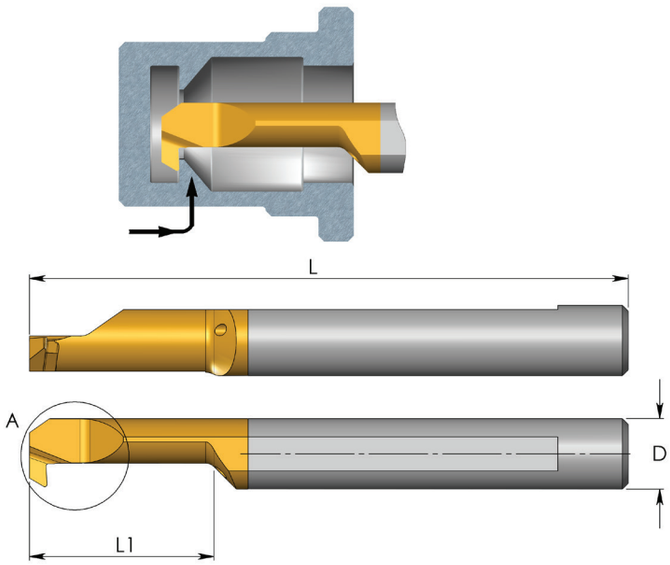
* The minimum diameter the tool can produce from a full material

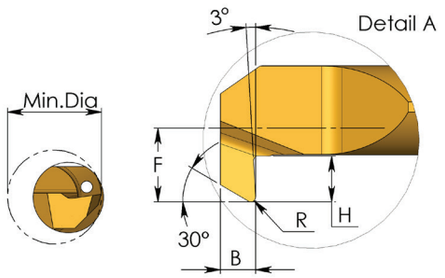
For additional holders see page A06-32 to 41

Demonstration

Carmex Precision Tools Ltd.

MXR Bars Back Turning





Grade	P	M	K	N	S	H
K20		○	○	●	○	
BXC	●	●	●	○	●	●
BMK	●	●	●	○	●	●

D mm	Ordering Code	L	L1	B	R	H	F	Min. Dia.	Holder
4.0	**MXR 4 R0.1 L10**	2.0	.39	.05	.004	.02	.05	.12	SIM ... H4
4.0	**MXR 4 R0.15 L10**	2.0	.39	.05	.006	.03	.07	.16	SIM ... H4
	MXR 4 R0.15 L15	2.0	.59	.05	.006	.03	.07	.16	
5.0	**MXR 5 R0.2 L15**	2.0	.59	.06	.008	.04	.09	.20	SIM ... H5
	MXR 5 R0.2 L22	2.0	.87	.06	.008	.04	.09	.20	
6.0	**MXR 6 R0.2 L15**	2.0	.59	.06	.008	.07	.11	.24	SIM ... H6
	MXR 6 R0.2 L22	2.0	.87	.06	.008	.07	.11	.24	

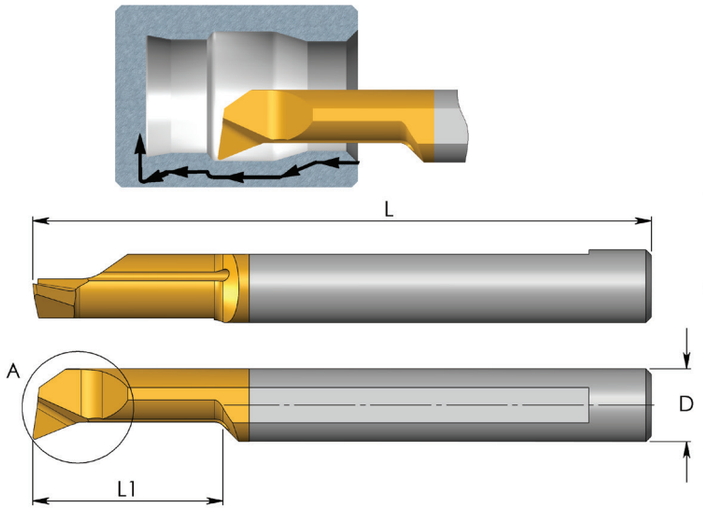
Order example: MXR 4 R0.15 L15 BXC

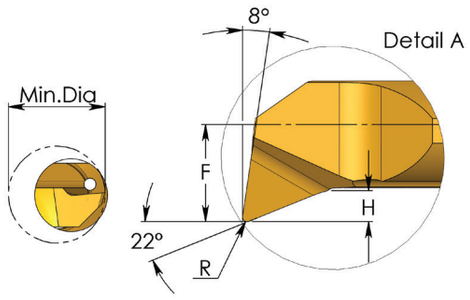
● First choice ○ Alternative

For L.H. bars specify MXL instead of MXR

For additional holders see page A06-32 to 41

MPR Bars *Profiling and Boring*





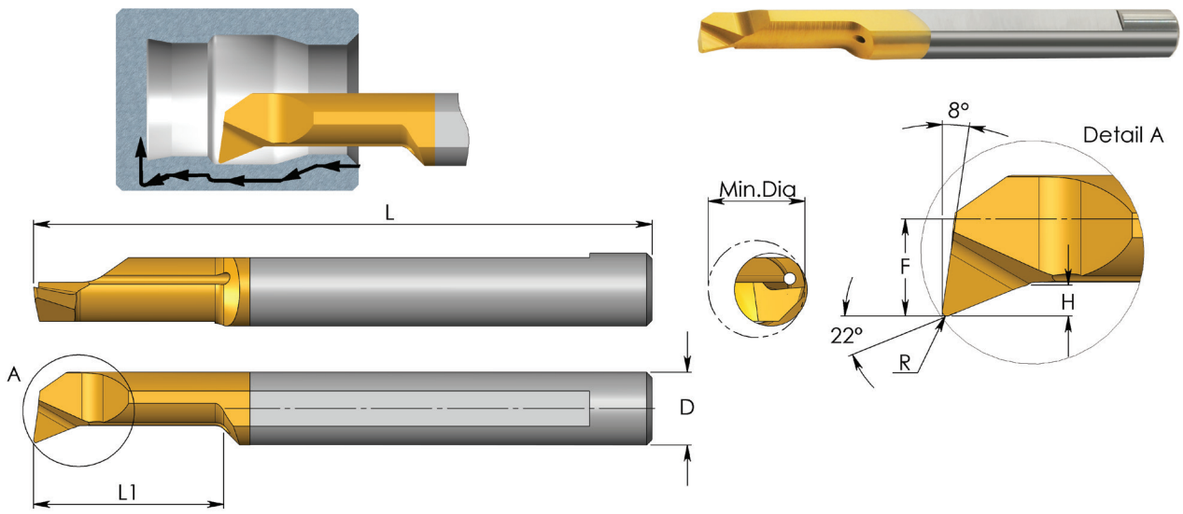
Grade	P	M	K	N	S	H
K20		○	○	●	○	
BXC	●	●	●	○	●	●
BMK	●	●	●	○	●	●

D mm	Ordering Code	L	L1	R	H	F	Min. Dia.	Holder
3.0	MPR 1 R0.05 L4	1.5	.16	.002	.01	.02	.04	SIM ... H3
	MPR 1 R0.05 L8	1.5	.31	.002	.01	.02	.04	
3.0	MPR 1.2 R0.1 L5	1.5	.20	.004	.01	.02	.05	SIM ... H3
	MPR 1.2 R0.1 L9	1.5	.35	.004	.01	.02	.05	
3.0	MPR 1.5 R0.05 L10	1.5	.39	.002	.01	.03	.06	SIM ... H3
	MPR 1.5 R0.1 L6	1.5	.24	.004	.01	.03	.06	
	MPR 1.5 R0.1 L10	1.5	.39	.004	.01	.03	.06	
3.0	MPR 2 R0.05 L10	1.5	.39	.002	.02	.03	.08	SIM ... H3
	MPR 2 R0.1 L10	1.5	.39	.004	.02	.03	.08	
	MPR 2 R0.15 L5	1.5	.20	.006	.02	.03	.08	
	MPR 2 R0.15 L10	1.5	.39	.006	.02	.03	.08	
	MPR 2 R0.15 L15	1.5	.59	.006	.02	.03	.08	
4.0	MPR 2.5 R0.1 L10	2.0	.39	.004	.02	.04	.10	SIM ... H4
	MPR 2.5 R0.1 L15	2.0	.59	.004	.02	.04	.10	
3.0	MPR 3 R0.05 L10	1.5	.39	.002	.03	.05	.12	SIM ... H3
	MPR 3 R0.05 L15	1.5	.59	.002	.03	.05	.12	
	MPR 3 R0.1 L10	1.5	.39	.004	.03	.05	.12	
	MPR 3 R0.1 L15	1.5	.59	.004	.03	.05	.12	
	MPR 3 R0.1 L22	1.9	.87	.004	.03	.05	.12	
	MPR 3 R0.2 L10	1.5	.39	.008	.03	.05	.12	
	MPR 3 R0.2 L15	1.5	.59	.008	.03	.05	.12	
	MPR 3 R0.2 L22	1.9	.87	.008	.03	.05	.12	
4.0	MPR 4 R0.1 L10	2.0	.39	.004	.03	.07	.16	SIM ... H4
	MPR 4 R0.1 L15	2.0	.59	.004	.03	.07	.16	
	MPR 4 R0.1 L22	2.0	.87	.004	.03	.07	.16	
	MPR 4 R0.2 L10	2.0	.39	.008	.03	.07	.16	
	MPR 4 R0.2 L15	2.0	.59	.008	.03	.07	.16	
	MPR 4 R0.2 L22	2.0	.87	.008	.03	.07	.16	
	MPR 4 R0.2 L30	2.4	1.18	.008	.03	.07	.16	

For additional holders see page A06-32 to 41

● First choice ○ Alternative

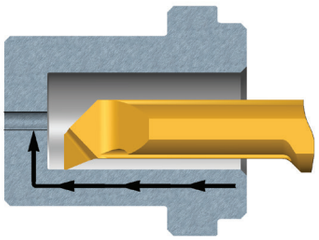
MPR Bars *Profiling and Boring*

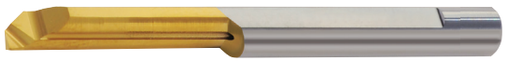


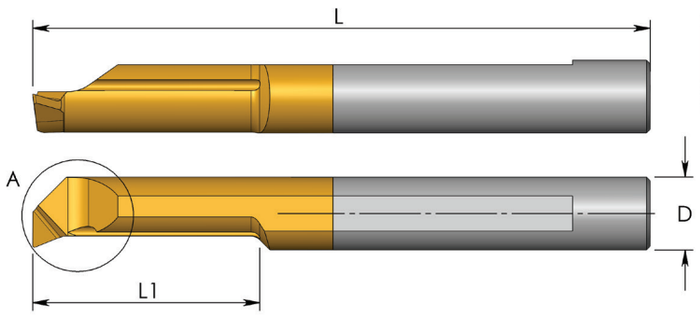
D mm	Ordering Code	L	L1	R	H	F	Min. Dia.	Holder
5.0	**MPR 5 R0.1 L22**	2.0	.87	.004	.05	.08	.20	SIM ... H5
	MPR 5 R0.1 L30	3.0	1.18	.004	.05	.08	.20	
	MPR 5 R0.2 L10	2.0	.39	.008	.05	.08	.20	
	MPR 5 R0.2 L15	2.0	.59	.008	.05	.08	.20	
	MPR 5 R0.2 L22	2.0	.87	.008	.05	.08	.20	
	MPR 5 R0.2 L30	3.0	1.18	.008	.05	.08	.20	
	MPR 5 R0.2 L40	3.0	1.57	.008	.04	.08	.20	
6.0	**MPR 6 R0.2 L10**	2.0	.39	.008	.06	.11	.24	SIM ... H6
	MPR 6 R0.2 L15	2.0	.59	.008	.06	.11	.24	
	MPR 6 R0.2 L22	2.0	.87	.008	.06	.11	.24	
	MPR 6 R0.2 L30	3.0	1.18	.008	.06	.11	.24	
	MPR 6 R0.2 L40	3.0	1.57	.008	.04	.11	.24	
7.0	**MPR 7 R0.2 L22**	2.4	.87	.008	.06	.13	.28	SIM ... H7
	MPR 7 R0.2 L30	2.4	1.18	.008	.06	.13	.28	
	MPR 7 R0.2 L35	2.4	1.38	.008	.06	.13	.28	
8.0	**MPR 8 R0.2 L15**	2.5	.59	.008	.06	.15	.32	SIM ... H8
	MPR 8 R0.2 L22	2.5	.87	.008	.06	.15	.32	
	MPR 8 R0.2 L35	3.0	1.38	.008	.06	.15	.32	
10.0	**MPR 10 R0.2 L35**	2.9	1.38	.008	.08	.19	.40	SIM ... H10

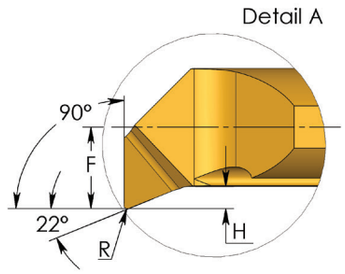
Order example: MPR 4 R0.2 L15 BXC
For L.H. Bars specify MPL instead of MPR
For additional holders see page A06-32 to 41

MUR Bars *Profiling, 90° Face Cutting*









Grade	P	M	K	N	S	H
K20		○	○	●	○	
BXC	●	●	●	○	●	●
BMK	●	●	●	○	●	●

D mm	Ordering Code	L	L1	R	H	F	Min. Dia.	Holder
3.0	**MUR 3 R0.05 L10**	1.5	.39	.002	.016	.05	.12	SIM ... H3
	MUR 3 R0.05 L15	1.5	.59	.002	.016	.05	.12	
4.0	**MUR 4 R0.1 L10**	2.0	.39	.004	.020	.07	.16	SIM ... H4
	MUR 4 R0.1 L15	2.0	.59	.004	.020	.07	.16	
5.0	**MUR 5 R0.15 L15**	2.0	.59	.006	.030	.08	.20	SIM ... H5
	MUR 5 R0.15 L22	2.0	.87	.006	.030	.08	.20	
6.0	**MUR 6 R0.15 L15**	2.0	.59	.006	.035	.11	.24	SIM ... H6
	MUR 6 R0.15 L22	2.0	.87	.006	.035	.11	.24	
8.0	**MUR 8 R0.2 L22**	2.5	.87	.008	.043	.15	.32	SIM ... H8

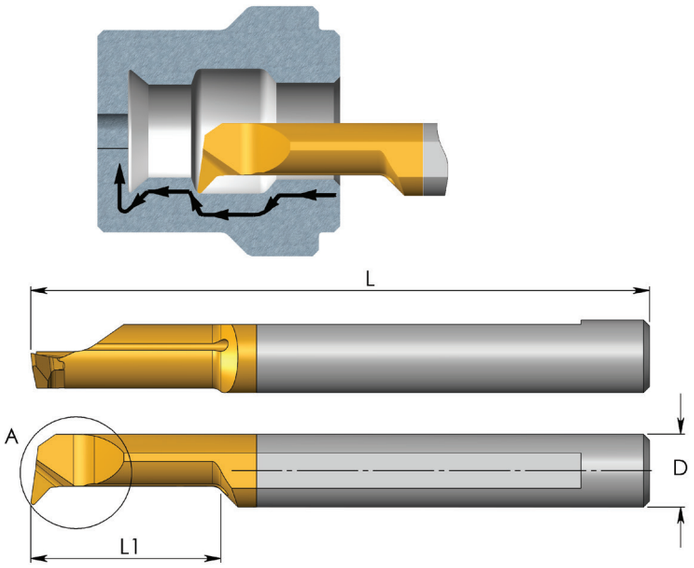
Order example: MUR 5 R0.15 L15 BXC

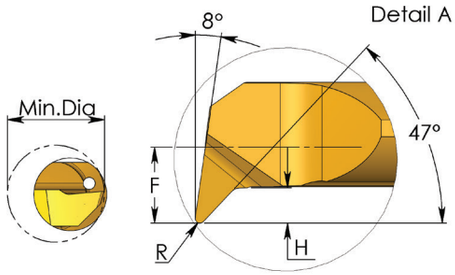
● First choice ○ Alternative

For L.H. bars specify MUL instead of MUR

For additional holders see page A06-32 to 41

MQR Bars *Profiling and Boring*





Grade	P	M	K	N	S	H
K20		○	○	●	○	
BXC	●	●	●	○	●	●
BMK	●	●	●	○	●	●

D mm	Ordering Code	L	L1	R	H	F	Min. Dia.	Holder
3.0	**MQR 3 R0.1 L10**	1.5	.39	.004	.02	.05	.12	SIM ... H3
	MQR 3 R0.1 L15	1.5	.59	.004	.02	.05	.12	
4.0	**MQR 4 R0.1 L22**	2.0	.87	.004	.03	.07	.16	SIM ... H4
	MQR 4 R0.2 L10	2.0	.39	.008	.03	.07	.16	
	MQR 4 R0.2 L15	2.0	.59	.008	.03	.07	.16	
	MQR 4 R0.2 L22	2.0	.87	.008	.03	.07	.16	
5.0	**MQR 5 R0.2 L15**	2.0	.59	.008	.04	.09	.20	SIM ... H5
	MQR 5 R0.2 L22	2.0	.87	.008	.04	.09	.20	
6.0	**MQR 6 R0.2 L15**	2.0	.59	.008	.06	.11	.24	SIM ... H6
	MQR 6 R0.2 L22	2.0	.87	.008	.06	.11	.24	
	MQR 6 R0.2 L30	2.3	1.18	.008	.06	.11	.24	
8.0	**MQR 8 R0.2 L22**	2.5	.87	.008	.06	.15	.32	SIM ... H8
	MQR 8 R0.2 L27	2.5	1.06	.008	.08	.15	.32	

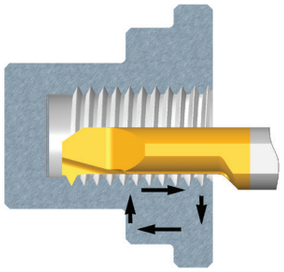
Order example: MQR 5 R0.2 L15 BXC

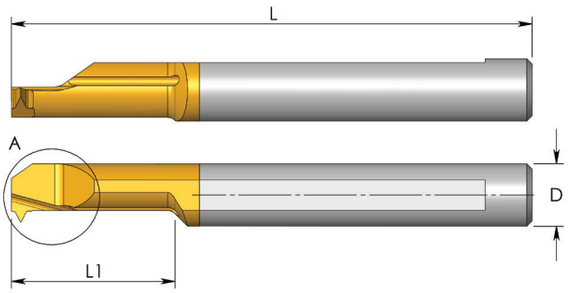
● First choice ○ Alternative

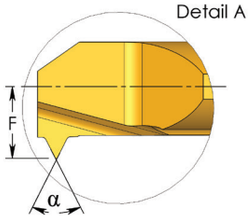
For L.H. bars specify MQL instead of MQR

For additional holders see page A06-32 to 41

MIR Bars Threading







Grade	P	M	K	N	S	H
K20		○	○	●	○	
BXC	●	●	●	○	●	●
BMK	●	●	●	○	●	●

Partial Profile 55°

D mm	Ordering Code	Pitch Range mm	Pitch Range TPI	L	L1	α	F	Min. Dia.	Holder
3.0	**MIR 3 L15 A55**	0.5 - 1.0	48 - 24	1.5	.59	55	.06	.13	SIM ... H3
4.0	**MIR 4 L15 A55**	0.5 - 1.0	48 - 24	2.0	.59	55	.07	.16	SIM ... H4
5.0	**MIR 5 L15 A55**	0.5 - 1.25	48 - 20	2.0	.59	55	.09	.20	SIM ... H5
	MIR 5 L22 A55	0.5 - 1.25	48 - 20	2.0	.87	55	.09	.20	
6.0	**MIR 6 L15 A55**	0.5 - 1.5	48 - 16	2.0	.59	55	.10	.24	SIM ... H6
	MIR 6 L22 A55	0.5 - 1.5	48 - 16	2.0	.87	55	.10	.24	

Order example: MIR 5 L15 A55 BXC

Partial Profile 60°

D mm	Ordering Code	Pitch Range mm	Pitch Range TPI	L	L1	α	F	Min. Dia.	Holder
3.0	**MIR 1 L5 A60**	0.25 - 0.35	100 - 72	1.5	.19	60	.02	.05	SIM ... H3
	MIR 1.5 L6 A60	0.35 - 0.45	72 - 56	1.5	.25	60	.03	.06	
3.0	**MIR 2 L8 A60**	0.45 - 0.7	56 - 32	1.5	.31	60	.04	.08	SIM ... H3
3.0	**MIR 3 L15 A60**	0.7 - 1.0	32 - 24	1.5	.59	60	.06	.13	SIM ... H3
4.0	**MIR 4 L17 A60**	0.35 - 0.45	72 - 56	2.0	.67	60	.07	.16	SIM ... H4
	MIR 4 L15 A60	0.8 - 1.0	32 - 24	2.0	.59	60	.07	.16	
5.0	**MIR 5 L15 A60**	1.0 - 1.25	24 - 20	2.0	.59	60	.09	.20	SIM ... H5
	MIR 5 L22 A60	1.0 - 1.25	24 - 20	2.0	.87	60	.09	.20	
6.0	**MIR 6 L15 A60**	1.0 - 1.5	24 - 16	2.0	.59	60	.10	.24	SIM ... H6
	MIR 6 L22 A60	1.0 - 1.5	24 - 16	2.0	.87	60	.10	.24	
8.0	**MIR 8 L22 A60**	1.0 - 2.0	24 - 13	2.5	.87	60	.15	.31	SIM ... H8

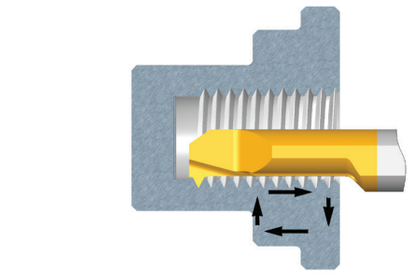
Order example: MIR 5 L15 A60 BXC

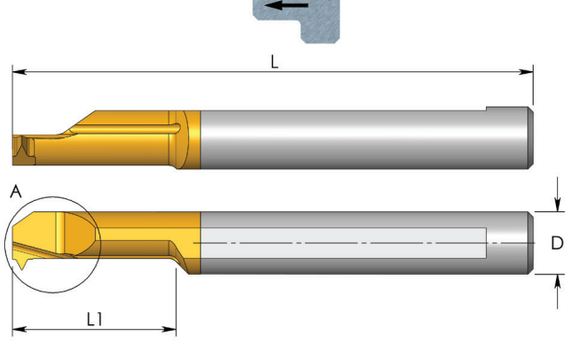
For L.H. bars specify MIL instead of MIR

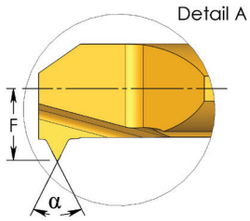
For additional holders see page A06-32 to 41

● First choice ○ Alternative

MIR Bars Threading







Grade	P	M	K	N	S	H
K20		○	○	●	○	
BXC	●	●	●	○	●	●
BMK	●	●	●	○	●	●

Full Profile - ISO 60°

D mm	Ordering Code	Pitch mm	M Coarse	M Fine	L	L1	α	F	Min. Dia.	Holder
3.0	**MIR 3 L10 0.5 ISO**	0.5	M3	M3.5	1.5	.39	60	.04	.09	SIM ... H3
3.0	**MIR 3 L15 0.5 ISO**	0.5		M4	1.5	.59	60	.06	.13	SIM ... H3
	MIR 3 L15 0.7 ISO	0.7	M4		1.5	.59	60	.06	.13	
	MIR 3 L15 0.75 ISO	0.75	M4.5		1.5	.59	60	.06	.13	
4.0	**MIR 4 L15 0.5 ISO**	0.5		M5	2.0	.59	60	.07	.16	SIM ... H4
	MIR 4 L15 0.75 ISO	0.75		M5	2.0	.59	60	.07	.16	
	MIR 4 L15 0.8 ISO	0.8	M5		2.0	.59	60	.07	.16	
5.0	**MIR 5 L15 1.0 ISO**	1.0	M6, M7	M8	2.0	.59	60	.09	.19	SIM ... H5
6.0	**MIR 6 L22 1.25 ISO**	1.25	M8, M9	M10	2.0	.87	60	.11	.24	SIM ... H6
	MIR 6 L22 1.5 ISO	1.5	M10, M11		2.0	.87	60	.11	.24	

Order example: MIR 5 L15 1.0 ISO BXC

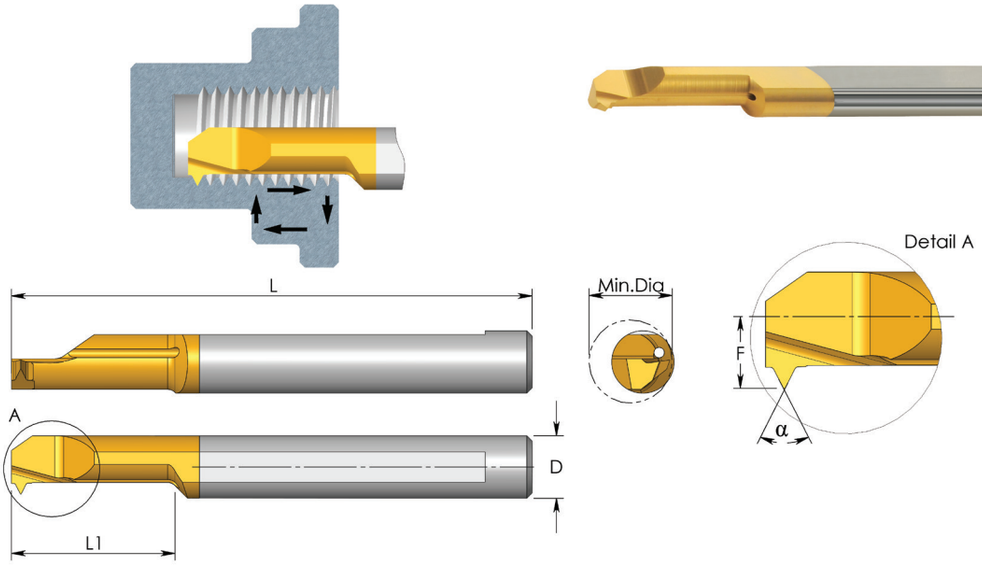
Full Profile - UN 60°

D mm	Ordering Code	Pitch TPI	UNC	UNF	UNEF	UNS	L	L1	α	F	Min. Dia.	Holder
3.0	**MIR 3 L10 32 UN**	32	6				1.5	.39	60	.04	.11	SIM...H3
3.0	**MIR 3 L15 32 UN**	32	8	10			1.5	.59	60	.06	.13	SIM...H3
	MIR 3 L15 36 UN	36		8		10	1.5	.59	60	.06	.13	
4.0	**MIR 4 L15 36 UN**	36				12	2.0	.59	60	.07	.16	SIM...H4
	MIR 4 L15 32 UN	32			12		2.0	.59	60	.07	.16	
5.0	**MIR 5 L15 28 UN**	28		1/4			2.0	.59	60	.09	.19	SIM...H5
	MIR 5 L18 20 UN	20	1/4				2.0	.71	60	.09	.20	
6.0	**MIR 6 L18 24 UN**	24		5/16			2.0	.71	60	.11	.26	SIM...H6
	MIR 6 L18 18 UN	18	5/6			3/8	2.0	.71	60	.11	.24	

Order example: MIR 4 L15 36 UN BXC
For L.H. bars specify MIL instead of MIR
For additional holders see page A06-32 to 41

● First choice ○ Alternative

MIR Bars *Threading*



Grade	P	M	K	N	S	H
K20		○	○	●	○	
BXC	●	●	●	○	●	●
BMK	●	●	●	○	●	●

Full Profile - MJ 60°

D mm	Ordering Code	Thread Size	L	L1	α	F	Min. Dia.	Holder
3.0	**MIR 3 L15 0.7 MJ**	MJ4x0.7	1.5	.59	60	.06	.13	SIM ... H3
4.0	**MIR 4 L15 0.8 MJ**	MJ5x0.8	2.0	.59	60	.07	.16	SIM ... H4
5.0	**MIR 5 L15 1.0 MJ**	MJ6x1.0	2.0	.59	60	.09	.19	SIM ... H5

Order example: MIR 4 L15 0.8 MJ BXC

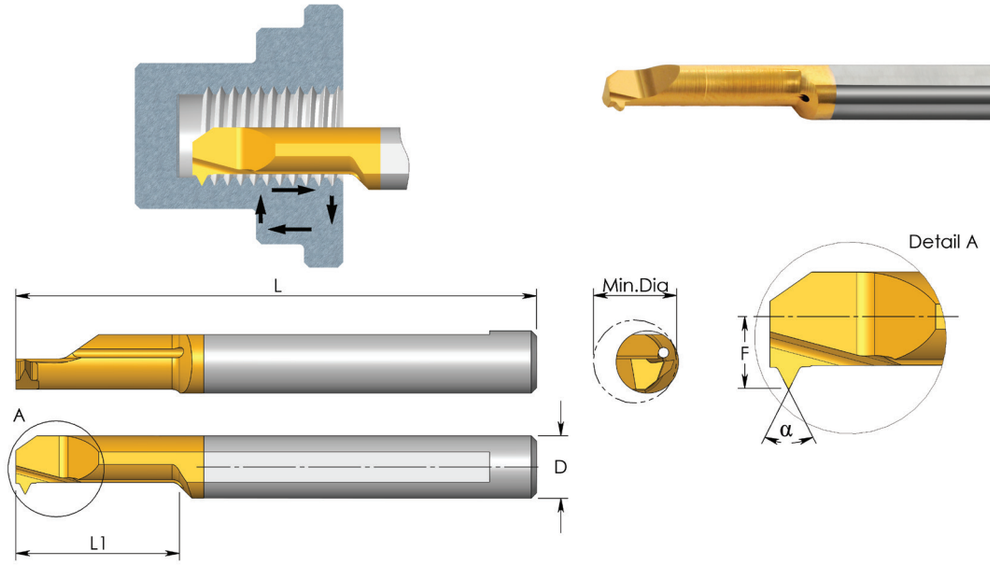
Full Profile - UNJ 60°

D mm	Ordering Code	Thread Size	L	L1	α	F	Min. Dia.	Holder
3.0	**MIR 3 L15 32 UNJ**	8-32 UNJC	1.5	.59	60	.06	.13	SIM...H3
5.0	**MIR 5 L15 28 UNJ**	1/4-28 UNJF	2.0	.59	60	.09	.19	SIM...H5
	MIR 5 L18 20 UNJ	1/4-20 UNJC	2.0	.71	60	.09	.20	SIM...H5

Order example: MIR 3 L15 32 UNJ BXC
For L.H. bars specify MIL instead of MIR
For additional holders see page A06-32 to 41

● First choice ○ Alternative

MIR Bars *Threading*



Grade	P	M	K	N	S	H
K20		○	○	●	○	
BXC	●	●	●	○	●	●
BMK	●	●	●	○	●	●

Full Profile - G 55° BSP

D mm	Ordering Code	Thread Size	L	L1	α	F	Min. Dia.	Holder
6.0	**MIR 6 L17 28 W**	1/16-28 BSP	2.0	.67	55	.11	.26	SIM ... H6
	MIR 6 L17 19 W	1/4 -19 BSP	2.0	.67	55	.11	.28	

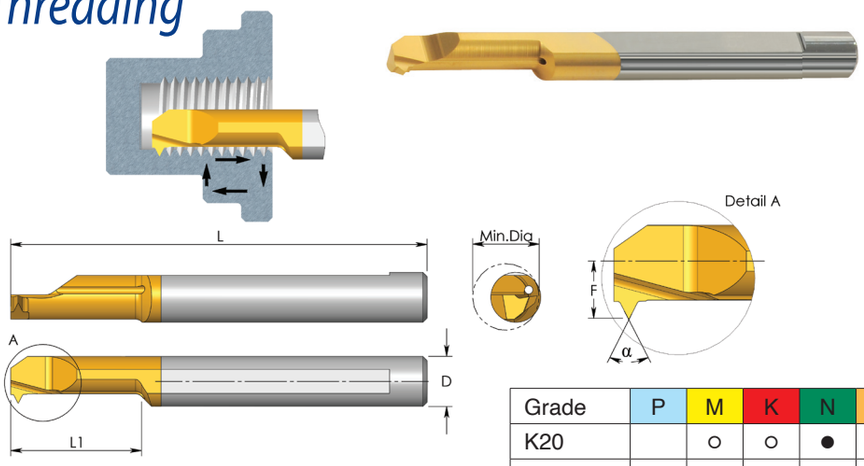
Full Profile - Whitworth 55° BSW

D mm	Ordering Code	Thread Size	L	L1	α	F	Min. Dia.	Holder
5.0	**MIR 5 L17 20 W**	1/4-20 BSW	2.0	.67	55	.08	.19	SIM ... H5

Order example: MIR 6 L17 28 W BMK
For L.H. bars specify MIL instead of MIR
For additional holders see page A06-32 to 41

● First choice ○ Alternative

MIR Bars Threading

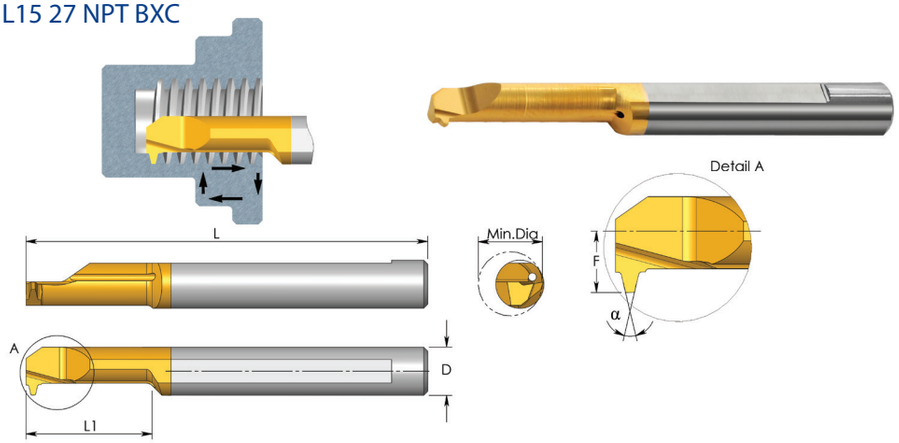


Grade	P	M	K	N	S	H
K20		○	○	●	○	
BXC	●	●	●	○	●	●
BMK	●	●	●	○	●	●

Full Profile - NPT 60°

D mm	Ordering Code	Pitch TPI	Thread Size	L	L1	α	F	Min. Dia.	Holder
6.0	**MIR 6 L15 27 NPT**	27	1/16 x 27 NPT 1/8 x 27 NPT	2.0	.59	60	.11	.23	SIM ... H6

Order example: MIR 6 L15 27 NPT BXC



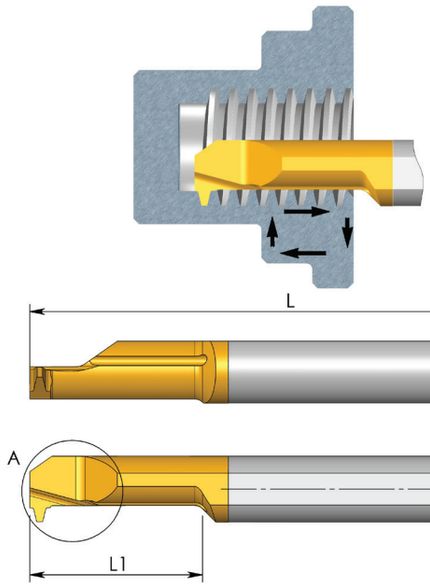
Acme

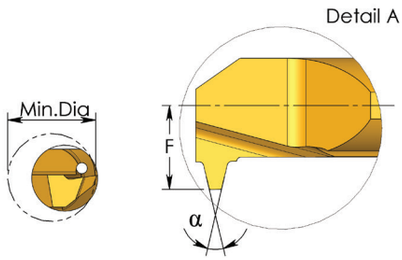
D mm	Ordering Code	Pitch TPI	Thread Size	L	L1	α	F	Min. Dia.	Holder
4.0	**MIR 4 L15 16 ACME**	16	1/4 x 16	2.0	.59	29	.07	.18	SIM ... H4
6.0	**MIR 6 L20 14 ACME**	14	5/16 x 14	2.0	.79	29	.11	.24	SIM ... H6
7.0	**MIR 7 L22 12 ACME**	12	3/8 x 12 7/16 x 12	2.4	.87	29	.13	.28	SIM ... H7
8.0	**MIR 8 L30 10 ACME**	10	1/2 x 10	3.0	1.18	29	.15	.39	SIM ... H8
10.0	**MIR 10 L35 8 ACME**	8	5/8 x 8	2.9	1.38	29	.19	.49	SIM ... H10
10.0	**MIR 10 L45 6 ACME**	6	3/4 x 6 7/8 x 6	4.1	1.77	29	.19	.57	SIM ... H10
10.0	**MIR 10 L52 5 ACME**	5	1 x 5	4.1	2.05	29	.19	.79	SIM ... H10

Order example: MIR 6 L 20 14 ACME BXC
For L.H. bars specify MIL instead of MIR
For additional holders see page A06-32 to 41

● First choice ○ Alternative

MIR Bars *Threading*





Grade	P	M	K	N	S	H
K20		○	○	●	○	
BXC	●	●	●	○	●	●
BMK	●	●	●	○	●	●

Stub Acme

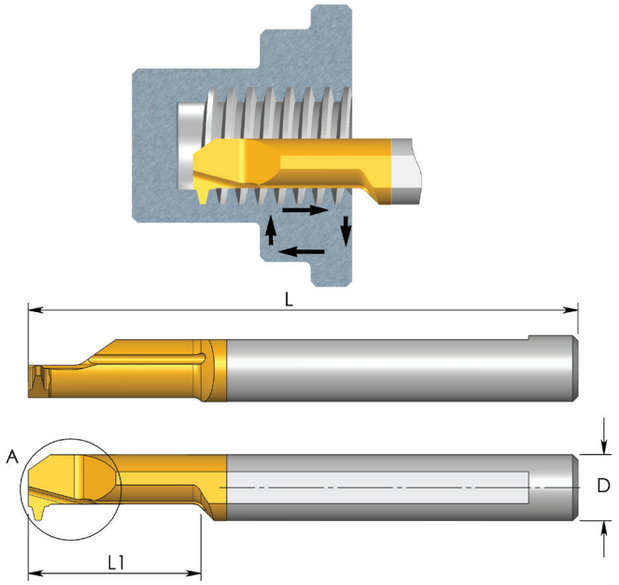
D mm	Ordering Code	Pitch TPI	Thread Size	L	L1	α	F	Min. Dia.	Holder
4.0	**MIR 4 L15 16 STACME**	16	1/4 x 16	2.0	.59	29	.07	.20	SIM ... H4
6.0	**MIR 6 L20 14 STACME**	14	5/16 x 14	2.0	.79	29	.11	.26	SIM ... H6
7.0	**MIR 7 L22 12 STACME**	12	3/8 x 12 7/16 x 12	2.4	.87	29	.13	.32	SIM ... H7
8.0	**MIR 8 L30 10 STACME**	10	1/2 x 10	3.0	1.18	29	.15	.43	SIM ... H8
10.0	**MIR 10 L35 8 STACME**	8	5/8 x 8	2.9	1.38	29	.19	.54	SIM ... H10
10.0	**MIR 10 L45 6 STACME**	6	3/4 x 6 7/8 x 6	4.1	1.77	29	.19	.64	SIM ... H10

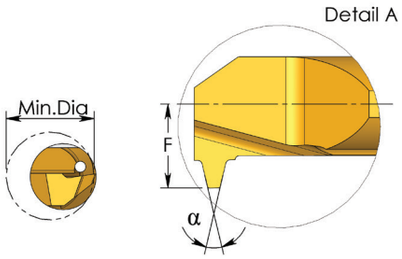
Order example: MIR 7 L22 12 STACME K20

● First choice ○ Alternative

For additional holders see page A06-32 to 41

MIR Bars Threading





Grade	P	M	K	N	S	H
K20		○	○	●	○	
BXC	●	●	●	○	●	●
BMK	●	●	●	○	●	●

Trapez - DIN 103

D mm	Ordering Code	Pitch mm	Thread Size	L	L1	α	F	Min. Dia.	Holder
6.0	**MIR 6 L22 1.5 TR**	1.5	TR 8 x 1.5 TR 9 x 1.5 TR10 x 1.5	2.0	.87	30	.11	.25	SIM ... H6
7.0	**MIR 7 L25 2 TR**	2	TR 9 x 2 TR10 x 2 TR11 x 2 TR12 x 2	2.4	.98	30	.13	.27	SIM ... H7
10.0	**MIR 10 L35 2 TR**	2	TR14 x 2 TR16 x 2 TR18 x 2 TR20 x 2	2.9	1.38	30	.19	.43	SIM ... H10
7.0	**MIR 7 L35 3 TR**	3	TR11 x 3 TR12 x 3	2.4	1.38	30	.13	.30	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	2.9	1.38	30	.19	.41	SIM ... H10
10.0	**MIR 10 L45 4 TR**	4	TR16 x 4 TR18 x 4 TR20 x 4	4.1	1.77	30	.19	.45	SIM ... H10
10.0	**MIR 10 L55 5 TR**	5	TR22 x 5 TR24 x 5 TR28 x 5	4.1	2.17	30	.19	.43	SIM ... H10

Order example: MIR 10 L35 3 TR BXC

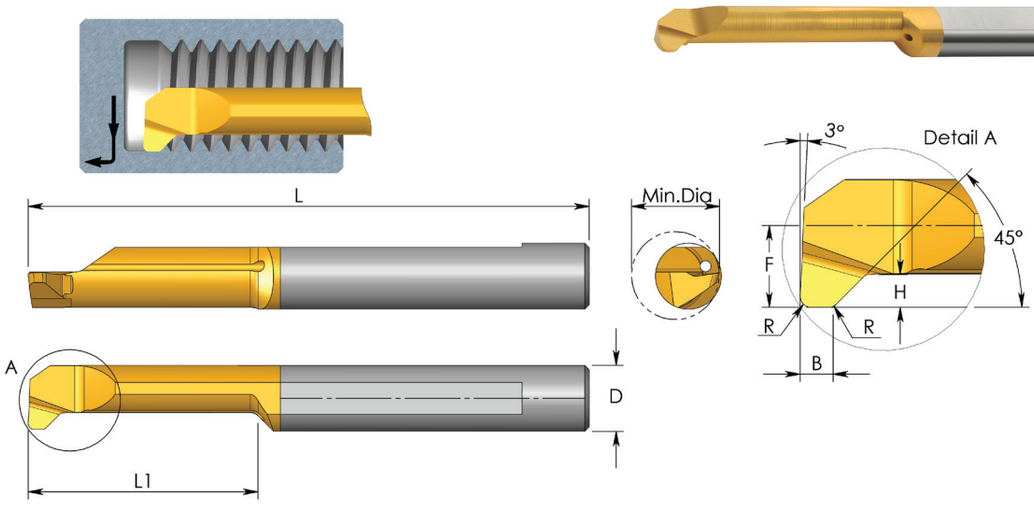
● First choice ○ Alternative

For L.H. bars specify MIL instead of MIR

For additional holders see page A06-32 to 41

Carmex Precision Tools Ltd.

MDR Bars *Thread Relief, Chamfering and Grooving*



Grade	P	M	K	N	S	H
K20		○	○	●	○	
BXC	●	●	●	○	●	●
BMK	●	●	●	○	●	●

D mm	Ordering Code	L	L1	B	R	H	F	Min. Dia.	Holder
4.0	**MDR 4 R0.5 L18**	2.0	.71	.06	.02	.03	.07	.16	SIM ... H4
5.0	**MDR 5 R0.5 L24**	2.0	.94	.06	.02	.05	.09	.20	SIM ... H5
6.0	**MDR 6 R0.5 L27**	2.3	1.06	.06	.02	.06	.11	.24	SIM ... H6

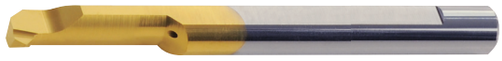
Order example: MDR 5 R0.5 L24 BXC

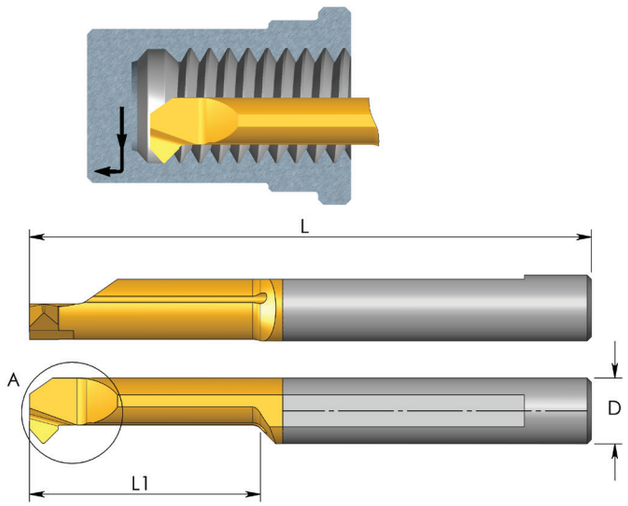
● First choice ○ Alternative

For L.H. bars specify MDL instead of MDR

For additional holders see page A06-32 to 41

MCR Bars *Chamfering and Boring*





Grade	P	M	K	N	S	H
K20		○	○	●	○	
BXC	●	●	●	○	●	●
BMK	●	●	●	○	●	●

D mm	Ordering Code	L	L1	R	H	H1	F	Min. Dia.	Holder
3.0	**MCR 3 R0.2 L10**	1.5	.39	.008	.03	.01	.05	.12	SIM ... H3
4.0	**MCR 4 R0.2 L15**	2.0	.59	.008	.03	.02	.07	.16	SIM ... H4
5.0	**MCR 5 R0.2 L15**	2.0	.59	.008	.05	.03	.08	.20	SIM ... H5
6.0	**MCR 6 R0.2 L15**	2.0	.59	.008	.06	.03	.11	.24	SIM ... H6
7.0	**MCR 7 R0.2 L20**	2.4	.79	.008	.06	.03	.13	.28	SIM ... H7

Order example: MCR 4 R0.2 L15 BXC

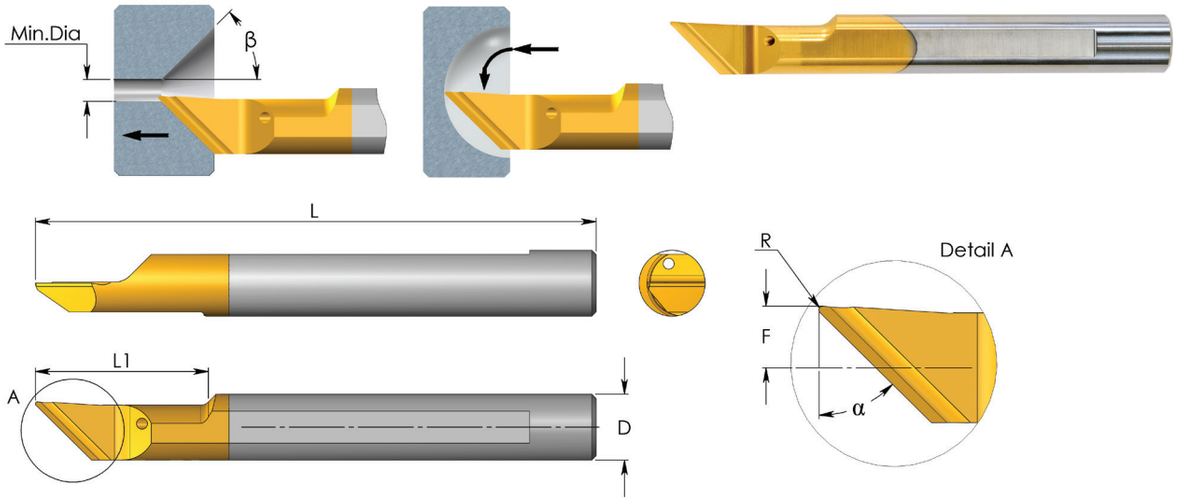
● First choice ○ Alternative

For L.H. bars specify MCL instead of MCR

For additional holders see page A06-32 to 41

Carmex Precision Tools Ltd.

MWR Bars *Chamfering and Profiling*



Grade	P	M	K	N	S	H
K20		○	○	●	○	
BXC	●	●	●	○	●	●
BMK	●	●	●	○	●	●

D mm	Ordering Code	L	L1	R	α	β	F	Min. Dia.	Holder
6.0	**MWR 6 R0.2 A90**	2.0	.59	.008	45°	45°	.09	.04	SIM ... H6
	MWR 6 R0.2 A60	2.0	.59	.008	60°	30°	.09	.04	
	*** MWR 6 R0.4 A90**	2.0	.87	.016	45°	45°	.09	.24	
	*** MWR 6 R0.4 A60**	2.0	.87	.016	60°	30°	.09	.24	

Order example: MWR 6 R0.2 A90 BXC

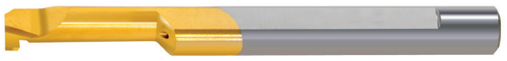
● First choice ○ Alternative

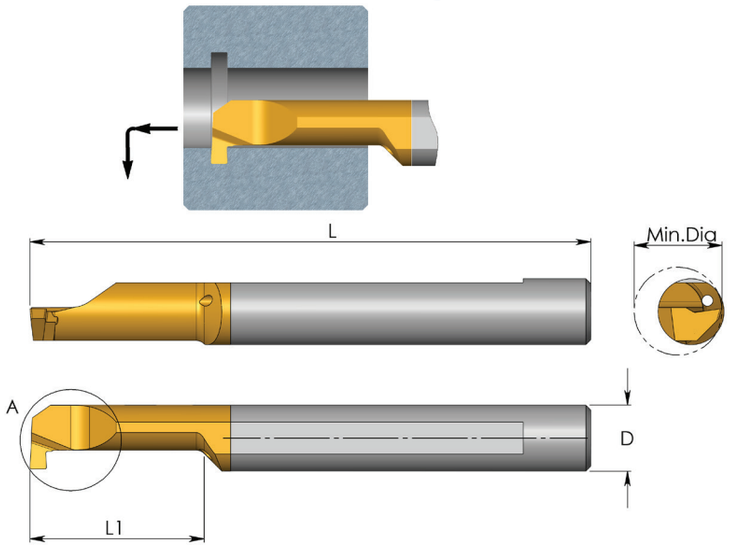
For L.H. bars specify MWL instead of MWR

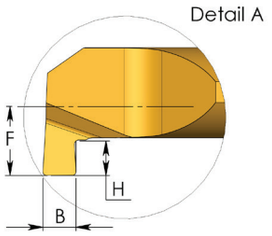
*Can be used also for boring

For additional holders see page A06-32 to 41

MGR Bars Grooving







Grade	P	M	K	N	S	H
K20		○	○	●	○	
BXC	●	●	●	○	●	●
BMK	●	●	●	○	●	●

D mm	Ordering Code	L	L1	B mm	B in	H	F	Min. Dia.	Holder
4.0	**MGR 2 B0.5 L10**	2.0	.39	0.5	.020	.02	.04	.08	SIM ... H4
3.0	**MGR 3 B0.5 L10**	1.5	.39	0.5	.020	.02	.05	.12	SIM ... H3
	MGR 3 B0.7 L10	1.5	.39	0.7	.028	.02	.05	.12	
4.0	**MGR 4 B0.5 L10**	2.0	.39	0.5	.020	.02	.07	.16	SIM ... H4
	MGR 4 B0.5 L15	2.0	.59	0.5	.028	.02	.07	.16	
	MGR 4 B0.7 L10	2.0	.39	0.7	.028	.02	.07	.16	
	MGR 4 B0.79 L15	2.0	.59	0.79	.031	.04	.07	.16	
	MGR 4 B0.79 L22	2.0	.87	0.79	.031	.04	.07	.16	
	MGR 4 B1.0 L10	2.0	.39	1.0	.039	.04	.07	.16	
	MGR 4 B1.0 L15	2.0	.59	1.0	.039	.04	.07	.16	
	MGR 4 B1.0 L22	2.0	.87	1.0	.039	.04	.07	.16	
	MGR 4 B1.5 L10	2.0	.39	1.5	.059	.04	.07	.16	
	MGR 4 B1.5 L15	2.0	.59	1.5	.059	.04	.07	.16	
	MGR 4 B1.5 L22	2.0	.87	1.5	.059	.04	.07	.16	
5.0	**MGR 5 B0.79 L15**	2.0	.59	0.79	.031	.04	.09	.20	SIM ... H5
	MGR 5 B0.79 L22	2.0	.87	0.79	.031	.04	.09	.20	
	MGR 5 B1.0 L15	2.0	.59	1.0	.039	.05	.09	.20	
	MGR 5 B1.0 L22	2.0	.87	1.0	.039	.05	.09	.20	
	MGR 5 B1.19 L15	2.0	.59	1.19	.047	.05	.09	.20	
	MGR 5 B1.19 L22	2.0	.87	1.19	.047	.05	.09	.20	
	MGR 5 B1.5 L15	2.0	.59	1.5	.059	.05	.09	.20	
	MGR 5 B1.5 L22	2.0	.87	1.5	.059	.05	.09	.20	
	MGR 5 B1.59 L15	2.0	.59	1.59	.063	.05	.09	.20	
	MGR 5 B1.59 L22	2.0	.87	1.59	.063	.05	.09	.20	
	MGR 5 B2.0 L10	2.0	.39	2.0	.079	.05	.09	.20	
	MGR 5 B2.0 L15	2.0	.59	2.0	.079	.05	.09	.20	
	MGR 5 B2.0 L22	2.0	.87	2.0	.079	.05	.09	.20	

● First choice ○ Alternative

For additional holders see page A06-32 to 41

MGR Bars Grooving

D mm	Ordering Code	L	L1	B mm	B in	H	F	Min. Dia.	Holder
6.0	**MGR 6 B1.0 L15**	2.0	.59	1.0	.039	.06	.11	.24	SIM ... H6
	MGR 6 B1.0 L22	2.0	.87	1.0	.039	.06	.11	.24	
	MGR 6 B1.5 L15	2.0	.59	1.5	.059	.06	.11	.24	
	MGR 6 B1.5 L22	2.0	.87	1.5	.059	.06	.11	.24	
	MGR 6 B2.0 L15	2.0	.59	2.0	.079	.06	.11	.24	
	MGR 6 B2.0 L22	2.0	.87	2.0	.079	.06	.11	.24	
6.0	**MGR 6 B0.79 L17**	2.0	.67	0.79	.031	.07	.11	.24	SIM ... H6
	MGR 6 B0.79 L23	2.0	.91	0.79	.031	.07	.11	.24	
	MGR 6 B1.0 L17	2.0	.67	1.0	.039	.07	.11	.24	
	MGR 6 B1.19 L17	2.0	.67	1.19	.047	.07	.11	.24	
	MGR 6 B1.19 L23	2.0	.91	1.19	.047	.07	.11	.24	
	MGR 6 B1.5 L17	2.0	.67	1.5	.059	.07	.11	.24	
	MGR 6 B1.5 L23	2.0	.91	1.5	.059	.07	.11	.24	
	MGR 6 B1.59 L17	2.0	.67	1.59	.063	.07	.11	.24	
	MGR 6 B1.59 L23	2.0	.91	1.59	.063	.07	.11	.24	
	MGR 6 B2.0 L17	2.0	.67	2.0	.079	.07	.11	.24	
	MGR 6 B2.0 L23	2.0	.91	2.0	.079	.07	.11	.24	
7.0	**MGR 7 B1.0 L15**	2.4	.59	1.0	.039	.10	.13	.28	SIM ... H7
	MGR 7 B1.0 L22	2.4	.87	1.0	.039	.10	.13	.28	
	MGR 7 B1.0 L30	2.4	1.18	1.0	.039	.10	.13	.28	
	MGR 7 B1.19 L22	2.4	.87	1.19	.047	.10	.13	.28	
	MGR 7 B1.19 L30	2.4	1.18	1.19	.047	.10	.13	.28	
	MGR 7 B1.5 L15	2.4	.59	1.5	.059	.10	.13	.28	
	MGR 7 B1.5 L22	2.4	.87	1.5	.059	.10	.13	.28	
	MGR 7 B1.5 L30	2.4	1.18	1.5	.059	.10	.13	.28	
	MGR 7 B1.59 L22	2.4	.87	1.59	.063	.10	.13	.28	
	MGR 7 B1.59 L30	2.4	1.18	1.59	.063	.10	.13	.28	
	MGR 7 B2.0 L15	2.4	.59	2.0	.079	.10	.13	.28	
	MGR 7 B2.0 L22	2.4	.87	2.0	.079	.10	.13	.28	
	MGR 7 B2.0 L30	2.4	1.18	2.0	.079	.10	.13	.28	
8.0	**MGR 8 B1.0 L22**	2.5	.87	1.0	.039	.07	.15	.32	SIM ... H8
	MGR 8 B1.5 L22	2.5	.87	1.5	.059	.07	.15	.32	
	MGR 8 B2.0 L15	2.5	.59	2.0	.079	.10	.15	.32	
	MGR 8 B2.0 L22	2.5	.87	2.0	.079	.10	.15	.32	
	MGR 8 B2.38 L15	2.5	.59	2.38	.094	.10	.15	.32	
	MGR 8 B2.38 L22	2.5	.87	2.38	.094	.10	.15	.32	

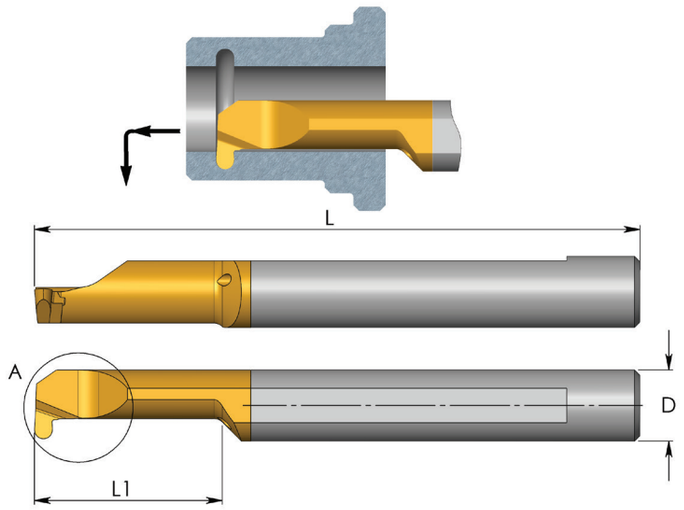
Tolerance: B±0.025 mm/.001

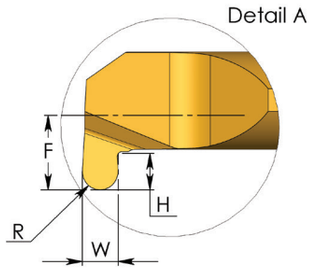
Order example: MGR 5 B1.5 L15 BXC

For L.H. bars specify MGL instead of MGR

For additional holders see page A06-32 to 41

MKR Bars *Full Radius Grooving*





Grade	P	M	K	N	S	H
K20		○	○	●	○	
BXC	●	●	●	○	●	●
BMK	●	●	●	○	●	●

D mm	Ordering Code	L	L1	R	W	H	F	Min. Dia.	Holder
4.0	**MKR 4 R0.5 L10**	2.0	.39	.020	.04	.04	.07	.16	SIM ... H4
	MKR 4 R0.5 L15	2.0	.59	.020	.04	.04	.07	.16	
	MKR 4 R0.75 L10	2.0	.39	.030	.06	.04	.07	.16	
5.0	**MKR 5 R0.5 L15**	2.0	.59	.020	.04	.05	.09	.20	SIM ... H5
	MKR 5 R0.75 L15	2.0	.59	.030	.06	.05	.09	.20	
	MKR 5 R1.0 L15	2.0	.59	.039	.08	.05	.09	.20	
	MKR 5 R1.0 L22	2.0	.87	.039	.08	.05	.09	.20	
6.0	**MKR 6 R0.5 L15**	2.0	.59	.020	.04	.06	.11	.24	SIM ... H6
	MKR 6 R0.75 L15	2.0	.59	.030	.06	.06	.11	.24	
	MKR 6 R1.0 L15	2.0	.59	.039	.08	.06	.11	.24	
	MKR 6 R1.0 L23	2.0	.91	.039	.08	.07	.11	.24	
7.0	**MKR 7 R0.5 L22**	2.4	.87	.020	.04	.10	.13	.28	SIM ... H7
	MKR 7 R0.75 L22	2.4	.87	.030	.06	.10	.13	.28	
	MKR 7 R1.0 L22	2.4	.87	.039	.08	.10	.13	.28	

Tolerance: R±.001

● First choice ○ Alternative

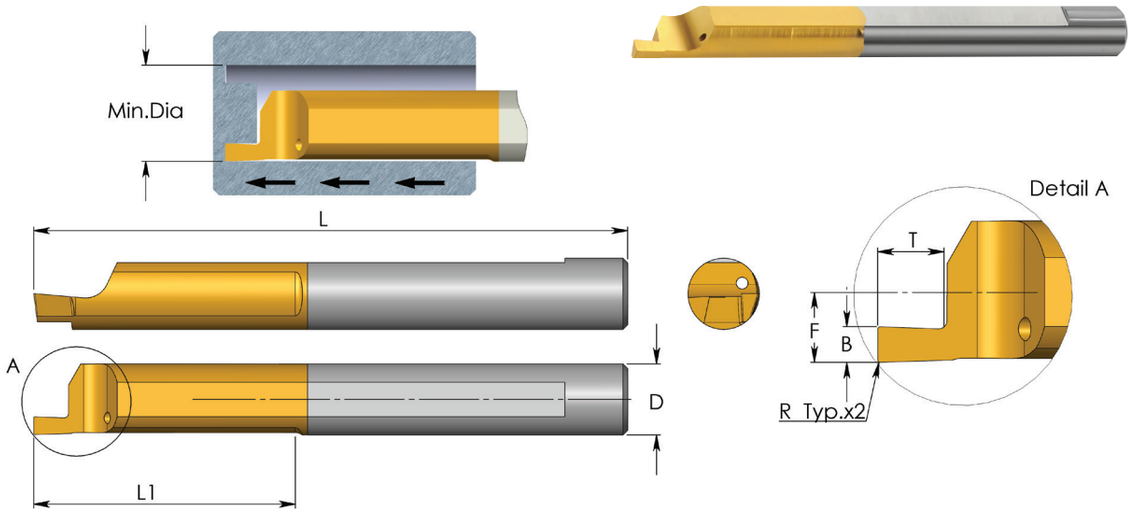
Order example: MKR 5 R1.0 L15 BXC

For L.H. bars specify MKL instead of MKR

For additional holders see page A06-32 to 41

Carmex Precision Tools Ltd.

MFR Bars Face Grooving



Grade	P	M	K	N	S	H
K20		○	○	●	○	
BXC	●	●	●	○	●	●
BMK	●	●	●	○	●	●

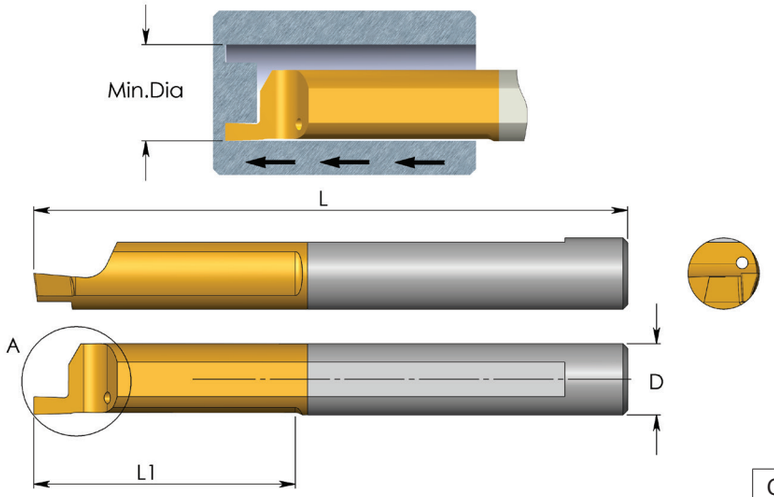
D mm	Ordering Code	L	L1	R	B	T	F	Min. Dia.	Holder
4.0	**MFR 4 B0.5 L15**	2.0	.59	.002	.02	.05	.08	.20	SIM ... H4
	MFR 4 B0.75 L15	2.0	.59	.004	.03	.05	.08	.20	
	MFR 4 B1.0 L15	2.0	.59	.004	.04	.06	.08	.20	
	MFR 4 B1.5 L15	2.0	.59	.004	.06	.11	.08	.20	
	MFR 4 B1.5 L17	2.0	.67	.004	.06	.14	.08	.20	
	MFR 4 B2.0 L17	2.0	.67	.004	.08	.20	.08	.20	
5.0	**MFR 5 B0.5 L22**	2.0	.87	.002	.02	.05	.10	.24	SIM ... H5
	MFR 5 B0.75 L22	2.0	.87	.004	.03	.05	.10	.24	
	MFR 5 B1.0 L22	2.0	.87	.004	.04	.06	.10	.24	
	MFR 5 B1.0 L23	2.0	.91	.004	.04	.10	.10	.24	
	MFR 5 B1.5 L22	2.0	.87	.004	.06	.10	.10	.24	
	MFR 5 B1.5 L23	2.0	.91	.004	.06	.14	.10	.24	
	MFR 5 B2.0 L22	2.0	.87	.004	.08	.15	.10	.24	
	MFR 5 B2.0 L23	2.0	.91	.004	.08	.20	.10	.24	
6.0	**MFR 6 B1.0 L22**	2.0	.87	.004	.04	.06	.12	.31	SIM ... H6
	MFR 6 B1.5 L22	2.0	.87	.004	.06	.10	.12	.31	
	MFR 6 B2.0 L22	2.0	.87	.004	.08	.12	.12	.31	
	MFR 6 B2.5 L22	2.0	.87	.004	.10	.19	.12	.31	
	MFR 6 B3.0 L30	2.3	1.18	.004	.12	.24	.12	.31	
8.0	**MFR 8 B2.5 L22**	2.5	.87	.004	.10	.14	.16	.39	SIM ... H8

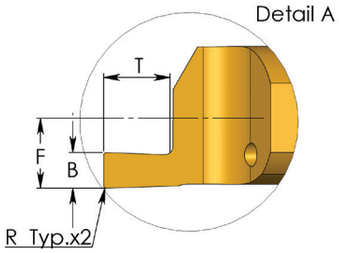
Order example: MFR 5 B1.0 L22 BXC

● First choice ○ Alternative

For additional holders see page A06-32 to 41

MFR Bars *Face Grooving with Chip Former*





Grade	P	M	K	N	S	H
K20		○	○	●	○	
BXC	●	●	●	○	●	●
BMK	●	●	●	○	●	●

D mm	Ordering Code	L	L1	R	B	T	F	Min. Dia.	Holder
4.0	**MFR 4 B1.5 L15-C**	2.0	.59	.004	.06	.11	.08	.20	SIM ... H4
5.0	**MFR 5 B1.5 L22-C**	2.0	.87	.004	.06	.10	.10	.24	SIM ... H5
	MFR 5 B2.0 L22-C	2.0	.87	.004	.08	.15	.10	.24	
6.0	**MFR 6 B1.5 L22-C**	2.0	.87	.004	.06	.10	.12	.31	SIM ... H6
	MFR 6 B2.0 L22-C	2.0	.87	.004	.08	.12	.12	.31	
	MFR 6 B3.0 L22-C	2.0	.87	.004	.12	.24	.12	.31	

Order example: MFR 5 B2.0 L22-C BXC

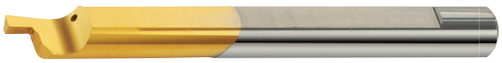
● First choice ○ Alternative

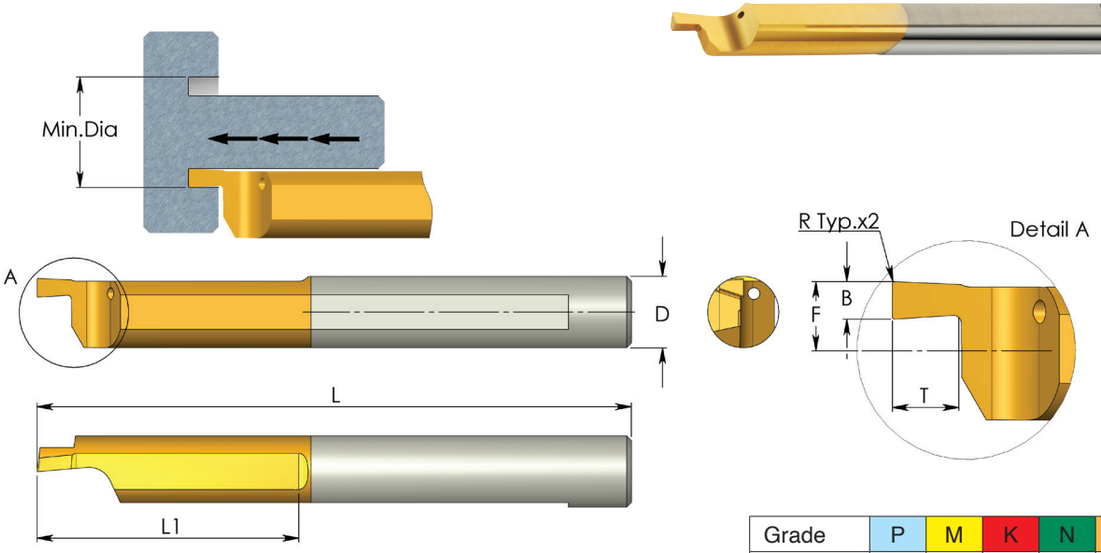
For L.H. bars specify MFL instead of MFR

For additional holders see page A06-32 to 41

Carmex Precision Tools Ltd.

MFL Bars *Face Grooving*





Grade	P	M	K	N	S	H
K20		○	○	●	○	
BXC	●	●	●	○	●	●
BMK	●	●	●	○	●	●

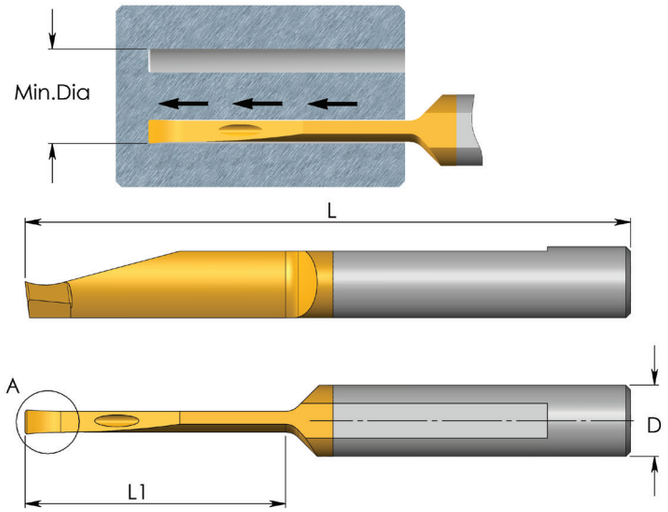
D mm	Ordering Code	L	L1	R	B	T	F	Min. Dia.	Holder
4.0	**MFL 4 B0.5 L15**	2.0	.59	.002	.02	.05	.07	.20	SIM ... H4
	MFL 4 B0.75 L15	2.0	.59	.004	.03	.05	.07	.20	
	MFL 4 B1.0 L15	2.0	.59	.004	.04	.06	.07	.20	
	MFL 4 B1.5 L15	2.0	.59	.004	.06	.11	.07	.20	
	MFL 4 B1.5 L17	2.0	.67	.004	.06	.14	.07	.20	
	MFL 4 B2.0 L17	2.0	.67	.004	.08	.20	.07	.20	
5.0	**MFL 5 B0.5 L22**	2.0	.87	.002	.02	.05	.09	.24	SIM ... H5
	MFL 5 B0.75 L22	2.0	.87	.004	.03	.05	.09	.24	
	MFL 5 B1.0 L22	2.0	.87	.004	.04	.06	.09	.24	
	MFL 5 B1.0 L23	2.0	.91	.004	.04	.10	.09	.24	
	MFL 5 B1.5 L22	2.0	.87	.004	.06	.10	.09	.24	
	MFL 5 B1.5 L23	2.0	.91	.004	.06	.14	.09	.24	
	MFL 5 B2.0 L22	2.0	.87	.004	.08	.15	.09	.24	
	MFL 5 B2.0 L23	2.0	.91	.004	.08	.20	.09	.24	
6.0	**MFL 6 B1.0 L22**	2.0	.87	.004	.04	.06	.11	.31	SIM ... H6
	MFL 6 B1.5 L22	2.0	.87	.004	.06	.10	.11	.31	
	MFL 6 B2.0 L22	2.0	.87	.004	.08	.12	.11	.31	
	MFL 6 B2.5 L22	2.0	.87	.004	.10	.19	.11	.31	
	MFL 6 B3.0 L30	2.3	1.18	.004	.12	.24	.11	.31	
8.0	**MFL 8 B2.5 L22**	2.5	.87	.004	.10	.14	.15	.39	SIM ... H8

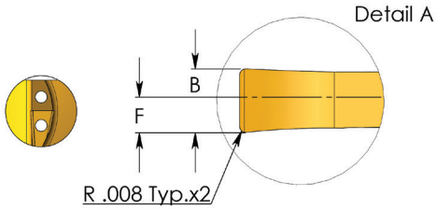
Order example: MFL 4 B2.0 L17 BMK

● First choice ○ Alternative

For additional holders see page A06-32 to 41

MVR Bars *Deep Face Grooving - with 2 coolant bores*





Grade	P	M	K	N	S	H
K20		○	○	●	○	
BXC	●	●	●	○	●	●
BMK	●	●	●	○	●	●

D mm	Ordering Code	L	L1	B	F	Min. Dia.	Holder
6.0	**MVR 6 B2.0 L10**	2.5	.39	.08	.04	.39	SIM ... H6
	MVR 6 B2.0 L15	2.5	.59	.08	.04	.47	
	MVR 6 B2.0 L22	2.5	.87	.08	.04	.47	
	MVR 6 B2.5 L15	2.5	.59	.10	.06	.39	
	MVR 6 B2.5 L22	2.5	.87	.10	.06	.47	
	MVR 6 B3.0 L22	2.5	.87	.12	.06	.39	
8.0	**MVR 8 B3.0 L27**	2.5	1.06	.12	.06	.59	SIM ... H8
	MVR 8 B3.0 L43	3.1	1.69	.12	.06	.59	
8.0	**MVR 8 B4.0 L43**	3.1	1.69	.16	.08	.79	SIM ... H8

Order example: MVR 6 B2.0 L22 BXC

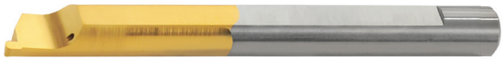
● First choice ○ Alternative

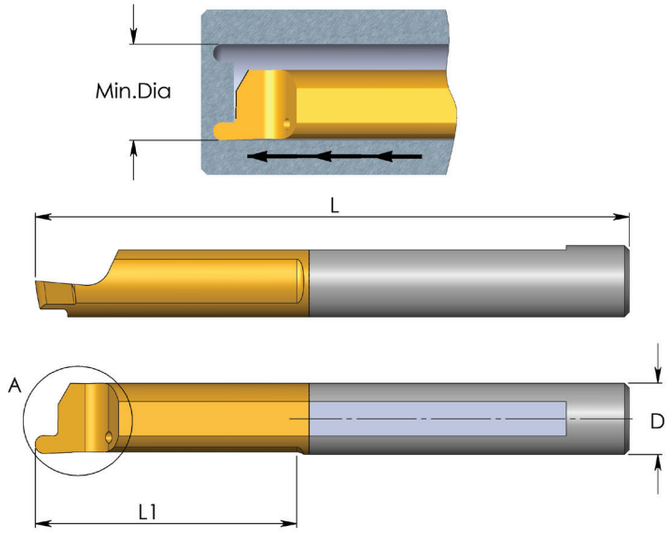
For L.H. bars specify MVL instead of MVR

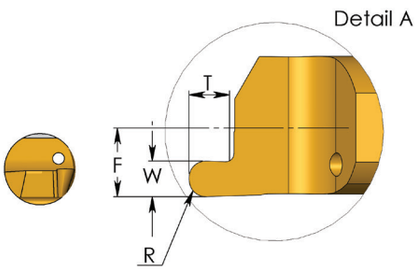
For additional holders see page A06-32 to 41

Carmex Precision Tools Ltd.

MZR Bars Face Grooving







Grade	P	M	K	N	S	H
K20		○	○	●	○	
BXC	●	●	●	○	●	●
BMK	●	●	●	○	●	●

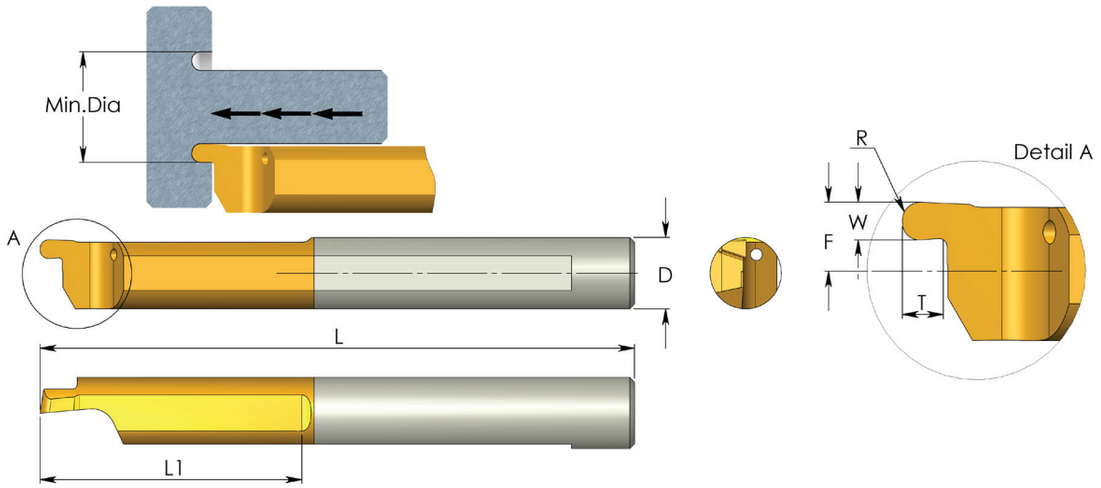
D mm	Ordering Code	L	L1	R	W	T	F	Min. Dia.	Holder
4.0	**MZR 4 R0.5 L15**	2.0	.59	.020	.04	.05	.08	.20	SIM ... H4
	MZR 4 R0.75 L15	2.0	.59	.030	.06	.06	.08	.20	
5.0	**MZR 5 R0.5 L22**	2.0	.87	.020	.04	.05	.10	.24	SIM ... H5
	MZR 5 R0.75 L22	2.0	.87	.030	.06	.06	.10	.24	
	MZR 5 R1.0 L22	2.0	.87	.039	.08	.10	.10	.24	
6.0	**MZR 6 R0.5 L22**	2.0	.87	.020	.04	.05	.12	.31	SIM ... H6
	MZR 6 R0.75 L22	2.0	.87	.030	.06	.06	.12	.31	
	MZR 6 R1.0 L22	2.0	.87	.039	.08	.10	.12	.31	

Order example: MZR 5 R0.5 L22 BXC

● First choice ○ Alternative

For additional holders see page A06-32 to 41

MZL Bars *Face Grooving*



Grade	P	M	K	N	S	H
K20		○	○	●	○	
BXC	●	●	●	○	●	●
BMK	●	●	●	○	●	●

D mm	Ordering Code	L	L1	R	W	T	F	Min. Dia.	Holder
4.0	**MZL 4 R0.5 L15**	2.0	.59	.020	.04	.05	.07	.20	SIM ... H4
	MZL 4 R0.75 L15	2.0	.59	.030	.06	.06	.07	.20	
5.0	**MZL 5 R0.5 L22**	2.0	.87	.020	.04	.05	.09	.24	SIM ... H5
	MZL 5 R0.75 L22	2.0	.87	.030	.06	.06	.09	.24	
	MZL 5 R1.0 L22	2.0	.87	.039	.08	.10	.09	.24	
6.0	**MZL 6 R0.5 L22**	2.0	.87	.020	.04	.05	.11	.31	SIM ... H6
	MZL 6 R0.75 L22	2.0	.87	.030	.06	.06	.11	.31	
	MZL 6 R1.0 L22	2.0	.87	.039	.08	.10	.11	.31	

Order example: MZL 5 R0.5 L22 BXC

● First choice ○ Alternative

For additional holders see page A06-32 to 41

Carmex Precision Tools Ltd.

HK Broaching Tools for Hexagon Keys

Product Identification - Ordering Codes

HK → Hexagon Keys

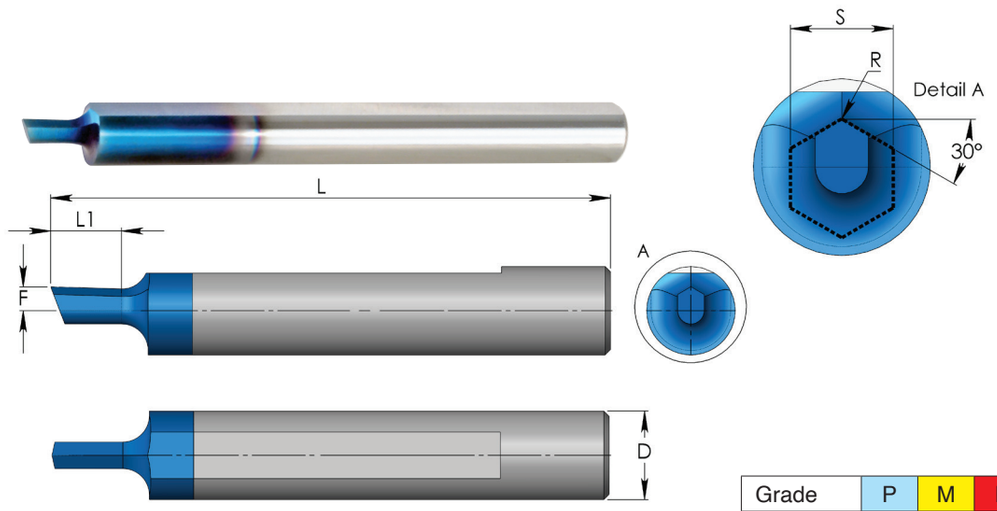
3 → Min. Bore Dia.
1 = .05 - .06
2 = .09
3 = .11
4 = .15
5 = .19

S30 → Socket Size
S12 = 1.2 - 1.6 mm
S16 = 1.6 - 2.3 mm
S23 = 2.3 - 2.9 mm
S30 = 3.0 - 4.0 mm
S40 = 4.0 - 5.0 mm
S50 = 5.0 - 8.0 mm

L5 → Maximum Cutting depth
L2= .09 - .10
L4 = .16
L5 = .22
L6 = .26
L9 = .37

BMK → Grade

Demonstration



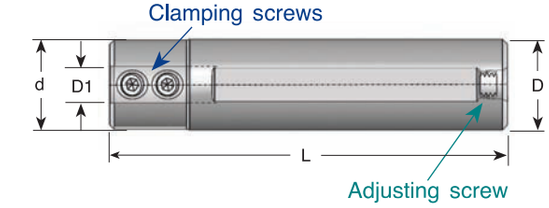
Grade	P	M	K	N	S	H
BMK	●	●	●	●	●	

D mm	S mm	S in	Ordering Code	L	L1	R	F	Min. Dia.	Holder
4.0	1.2-1.6	.050-.063	**HK 1 S12 L2**	2.0	.09	.002	.004	.05	SIM…H4
	1.6-2.3	.063-.090	**HK 1 S16 L2**	2.0	.10	.002	.004	.06	
5.0	2.3-2.9	.090-.114	**HK 2 S23 L4**	2.0	.16	.002	.053	.09	SIM…H5
	3.0-4.0	.118-.157	**HK 3 S30 L5**	2.0	.22	.002	.053	.11	
	4.0-5.0	.157-.197	**HK 4 S40 L6**	2.0	.26	.004	.053	.15	
7.0	5.0-8.0	.197-.315	**HK 5 S50 L9**	2.4	.37	.004	.053	.19	SIM…H7

S = Socket Size
Order example: HK 1 S12 L2 BMK
For additional holders see page A06-32 to 41

Tiny Tools Toolholders
Product Identification - Ordering Codes

S	I	M	0020	H3	
Clamping Method S = Screw	I = Internal	M = Tiny Bars	Shank Cross Section Metric 0012 = 12 mm 0016 = 16 mm 0020 = 20 mm 0022 = 22 mm 0025 = 25 mm Inch 0750 = 3/4 1000 = 1	Bar Diameter 3 = 3.0 mm 4 = 4.0 mm 5 = 5.0 mm 6 = 6.0 mm 7 = 7.0 mm 8 = 8.0 mm 10 = 10.0 mm	S = Swiss Type Total length K = 120 mm (4.7) M = 150 mm (5.7)



Metric Shank Version

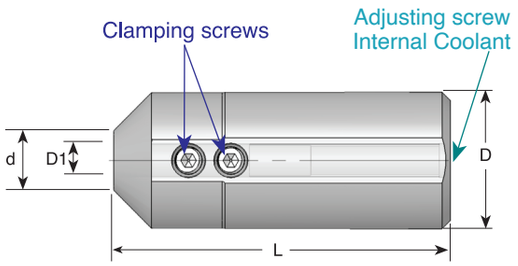
D1 mm	Ordering Code	D mm	d mm/in	L mm/in	Key	Clamping Screw	Adjusting Screw
3.0	SIM 0010 H3	10	12 / .47	65 / 2.6	K16	S24	S28M
	SIM 0012 H3	12	12 / .47	88 / 3.5	K16,K25	S24	S35
	SIM 0016 H3S	16	20 / .79	75 / 3.0	K25	S25	S35S
	SIM 0016 H3	16	20 / .79	88 / 3.5	K25	S25	S35
	SIM 0020 H3	20	20 / .79	88 / 3.5	K25	S25	S35
	SIM 0022 H3	22	22 / .87	88 / 3.5	K25	S25	S35
	SIM 0022 H3K	22	22 / .87	120 / 4.7	K25	S25	S55
	SIM 0025 H3M	25	25 / .98	150 / 5.9	K25	S25	---

D1 mm	Ordering Code	D mm	d mm/in	L mm/in	Key	Clamping Screw	Adjusting Screw
4.0	SIM 0010 H4	10	12 / .47	65 / 2.6	K16	S24	S28M
	SIM 0012 H4	12	12 / .47	88 / 3.5	K16, K25	S24	S35
	SIM 0016 H4S	16	20 / .79	75 / 3.0	K25	S25	S35S
	SIM 0016 H4	16	20 / .79	88 / 3.5	K25	S25	S35
	SIM 0020 H4	20	20 / .79	88 / 3.5	K25	S25	S35
	SIM 0022 H4	22	22 / .87	88 / 3.5	K25	S25	S35
	SIM 0022 H4K	22	22 / .87	120 / 4.7	K25	S25	S55
	SIM 0025 H4M	25	25 / .98	150 / 5.9	K25	S25	---
5.0	SIM 0010 H5	10	12 / .47	65 / 2.6	K16	S24	S28M
	SIM 0012 H5	12	12 / .47	88 / 3.5	K16, K25	S24	S35
	SIM 0016 H5S	16	20 / .79	75 / 3.0	K25	S25	S35S
	SIM 0016 H5	16	20 / .79	88 / 3.5	K25	S25	S35
	SIM 0020 H5	20	20 / .79	88 / 3.5	K25	S25	S35
	SIM 0022 H5	22	22 / .87	88 / 3.5	K25	S25	S35
	SIM 0022 H5K	22	22 / .87	120 / 4.7	K25	S25	S55
	SIM 0025 H5M	25	25 / .98	150 / 5.9	K25	S25	---
6.0	SIM 0012 H6	12	14 / .55	88 / 3.5	K16, K25	S24	S35
	SIM 0016 H6S	16	20 / .79	75 / 3.0	K25	S25	S35S
	SIM 0016 H6	16	20 / .79	88 / 3.5	K25	S25	S35
	SIM 0020 H6	20	20 / .79	88 / 3.5	K25	S25	S35
	SIM 0022 H6	22	22 / .87	88 / 3.5	K25	S25	S35
	SIM 0022 H6K	22	22 / .87	120 / 4.7	K25	S25	S55
	SIM 0025 H6M	25	25 / .98	150 / 5.9	K25	S25	---
7.0	SIM 0016 H7	16	20 / .79	88 / 3.5	K25	S25	S35
	SIM 0020 H7	20	20 / .79	88 / 3.5	K25	S25	S35
	SIM 0022 H7	22	22 / .79	88 / 3.5	K25	S25	S35
8.0	SIM 0016 H8	16	20 / .79	88 / 3.5	K25	S25	S35
	SIM 0020 H8	20	20 / .79	88 / 3.5	K25	S25	S35
	SIM 0022 H8	22	22 / .79	88 / 3.5	K25	S25	S35
10.0	SIM 0016 H10	16	20 / .79	88 / 3.5	K25	S25S	S35
	SIM 0020 H10	20	20 / .79	88 / 3.5	K25	S25S	S35
	SIM 0022 H10	22	22 / .87	88 / 3.5	K25	S25	S35

Inch Shank Version

D1 mm	Ordering Code	D	d	L	Key	Clamping Screw	Adjusting Screw
3.0	SIM 0750 H3	3/4	.75	3.5	K25	S25	S35
	SIM 0750 H3K	3/4	.75	4.7	K25	S25	S35
	SIM 1000 H3	1	1.00	3.5	K25	S25	S35
4.0	SIM 0750 H4	3/4	.75	3.5	K25	S25	S35
	SIM 0750 H4K	3/4	.75	4.7	K25	S25	S35
	SIM 1000 H4	1	1.00	3.5	K25	S25	S35
5.0	SIM 0750 H5	3/4	.75	3.5	K25	S25	S35
	SIM 1000 H5	1	1.00	3.5	K25	S25	S35
6.0	SIM 0750 H6	3/4	.75	3.5	K25	S25	S35
	SIM 0750 H6K	3/4	.75	4.7	K25	S25	S35
	SIM 1000 H6	1	1.00	3.5	K25	S25	S35
7.0	SIM 0750 H7	3/4	.75	3.5	K25	S25	S35
	SIM 1000 H7	1	1.00	3.5	K25	S25	S35
8.0	SIM 0750 H8	3/4	.75	3.5	K25	S25	S35
	SIM 1000 H8	1	1.00	3.5	K25	S25	S35
10.0	SIM 0750 H10	3/4	.75	3.5	K25	S25	S35
	SIM 1000 H10	1	1.00	3.5	K25	S25	S35

Metric Shank Version

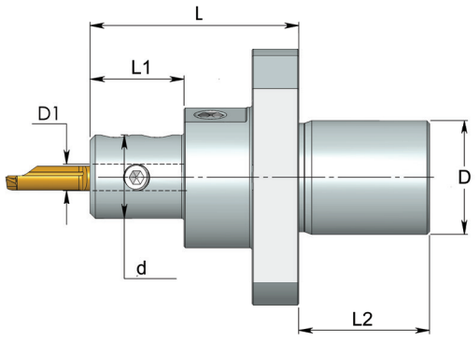


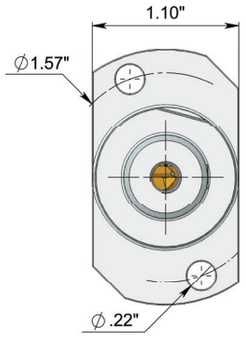
D1 mm	Ordering Code	D mm	d mm/in	L mm/in	Key	Clamping Screw	Adjusting Screw
3.0	**SIM 0025 H3**	25	10.8 / .43	62 / 2.4	K25	S25	S35M
4.0	**SIM 0025 H4**	25	10.8 / .43	62 / 2.4	K25	S25	S35M
5.0	**SIM 0025 H5**	25	10.8 / .43	62 / 2.4	K25	S25	S35M
6.0	**SIM 0025 H6**	25	10.8 / .43	62 / 2.4	K25	S25	S35M
7.0	**SIM 0025 H7**	25	10.8 / .43	62 / 2.4	K25	S25	S35M
8.0	**SIM 0025 H8**	25	10.8 / .43	62 / 2.4	K25	S25	S35M

Carmex Precision Tools Ltd.

Tiny Tools Toolholders for Star Swiss machines

Carmex has developed a unique external turning holder for the sub-spindle on CNC Swiss type lathes.

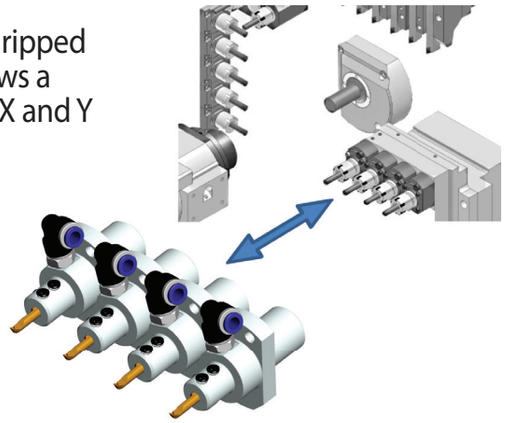


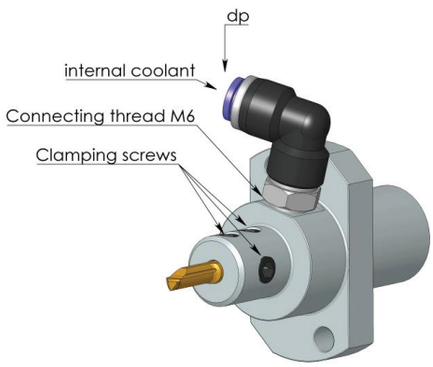


D1 mm	Ordering Code	D mm	d mm/in		L mm/in		L1 mm/in		L2 mm/in		*dp mm	key	Clamping Screw
3.0	**SIM 22S H3**	22	16	.63	40	1.57	18	.71	25	.98	4/6	K16, K25	S24P
	SIM 22S H3-L	22	16	.63	50	1.97	28	1.10	25	.98	4/6	K16, K25	S24P
4.0	**SIM 22S H4**	22	16	.63	40	1.57	18	.71	25	.98	4/6	K16, K25	S24P
	SIM 22S H4-L	22	16	.63	50	1.97	28	1.10	25	.98	4/6	K16, K25	S24P
5.0	**SIM 22S H5**	22	16	.63	40	1.57	18	.71	25	.98	4/6	K16, K25	S24M
	SIM 22S H5-L	22	16	.63	50	1.97	28	1.10	25	.98	4/6	K16, K25	S24M
6.0	**SIM 22S H6**	22	16	.63	40	1.57	18	.71	25	.98	4/6	K16, K25	S24M
	SIM 22S H6-L	22	16	.63	50	1.97	28	1.10	25	.98	4/6	K16, K25	S24M
7.0	**SIM 22S H7**	22	20	.79	40	1.57	18	.71	25	.98	4/6	K25	S25
8.0	**SIM 22S H8**	22	20	.79	40	1.57	18	.71	25	.98	4/6	K25	S25
	SIM 22S H8-L	22	20	.79	50	1.97	28	1.10	25	.98	4/6	K25	S25
10.0	**SIM 22S H10**	22	20	.79	40	1.57	18	.71	25	.98	4/6	K25	S25S
	SIM 22S H10-L	22	20	.79	50	1.97	28	1.10	25	.98	4/6	K25	S25S

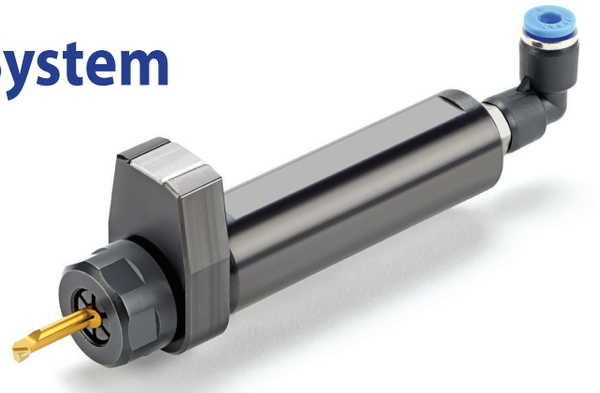
* Coolant pipe diameter. Standard packing with ø4 mm

The Tiny tool can be gripped in two directions, allows a turning operation on X and Y axis.





CIM-Fast Clamping System



The new innovative *CIM* clamping system provides high precision and repeatability of the Tiny Tools cutting edge, as well as fast and easy tool exchange without removing the holder.
The *CIM* system includes an internal tool indexing mechanism which index the tool in the correct orientation, as well as strong and rigid collet clamping for high stability.

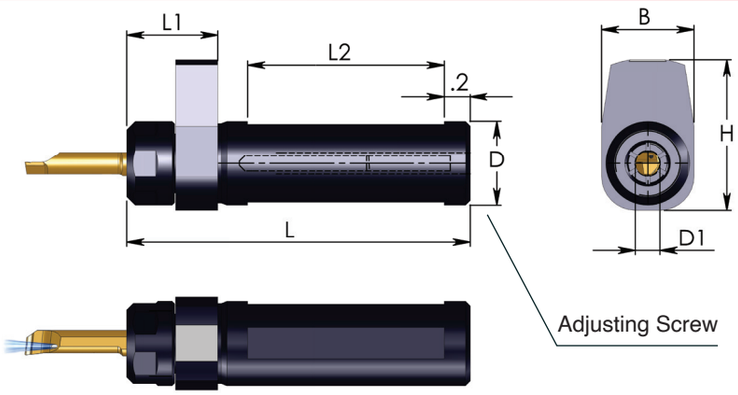
- No screws required
- Enable fast and accurate exchange of the Tiny Tool inside the machine without removing the *CIM* holder from the machine, or additional tool setup.
- Holders with three clamping flats on the shank for maximum flexibility.
- Fits standard and special Carmex Tiny Tools
- Internal coolant through the *CIM* holder and the Tiny Tool pointing to the cutting edge.

Product Identification - Ordering Codes

CIM – Toolholder

CIM	0016	H4
Clamping System C = Collet	Shank Cross Section **Metric Version** 16 = Ø16 mm 20 = Ø20 mm **Inch Version** 0625 = Ø5/8 0750 = Ø3/4	Tiny Tools, Bar Diameter 4 = 4.0 mm 5 = 5.0 mm 6 = 6.0 mm

Tiny Tools



Metric Version

D1 mm	Ordering Code	D mm	L	L1	L2	B	H
4.0	**CIM 0016 H4**	16	3.5	.87	2.3	.87	1.4
	CIM 0020 H4	20	3.5	.87	2.3	.87	1.4
5.0	**CIM 0016 H5**	16	3.5	.87	2.3	.87	1.4
	CIM 0020 H5	20	3.5	.87	2.3	.87	1.4
6.0	**CIM 0016 H6**	16	3.5	.87	2.3	.87	1.4
	CIM 0020 H6	20	3.5	.87	2.3	.87	1.4

Inch Version

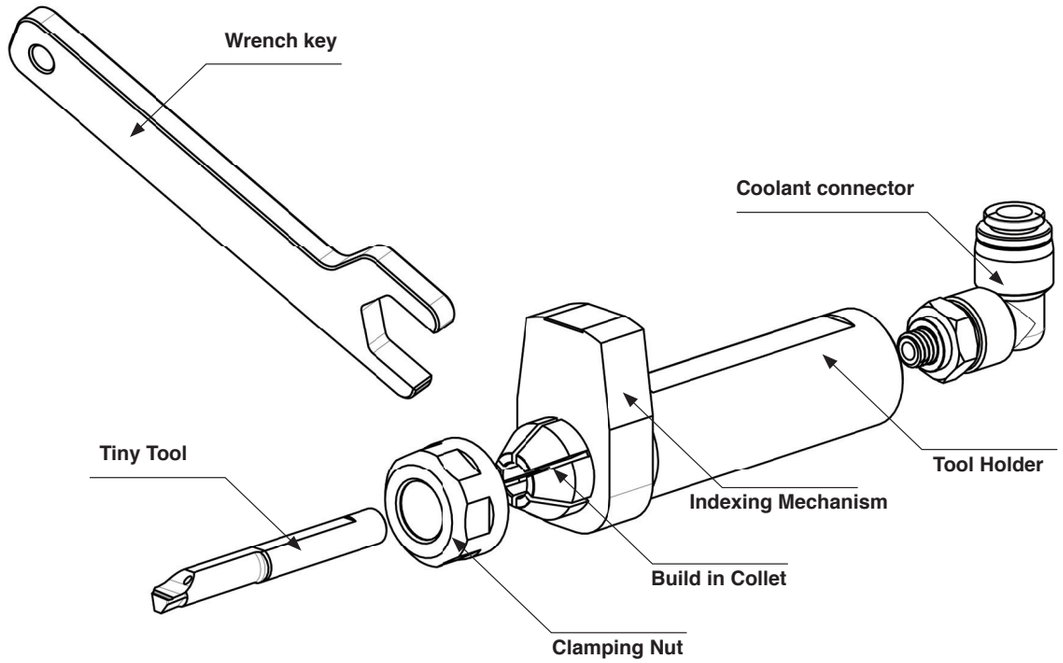
D1 mm	Ordering Code	D	L	L1	L2	B	H
4.0	**CIM 0625 H4**	5/8	3.5	.87	2.3	.87	1.4
	CIM 0750 H4	3/4	3.5	.87	2.3	.87	1.4
5.0	**CIM 0625 H5**	5/8	3.5	.87	2.3	.87	1.4
	CIM 0750 H5	3/4	3.5	.87	2.3	.87	1.4
6.0	**CIM 0625 H6**	5/8	3.5	.87	2.3	.87	1.4
	CIM 0750 H6	3/4	3.5	.87	2.3	.87	1.4

Spare parts

Clamping nut	Wrench key	Adjusting screw	Adjusting screw key	Coolant supply connector
				
CN19	WK19	S35	K25	P-M6-4*

* P-M6-6 also available

CIM – clamping system details



General instructions for use

The CIM toolholder system is designed for a fast and simple way of achieving correct indexing of Tiny Tools inside the machine.

Following is a recommended procedure for the first use:

1. Adjust the rear stopper screw according the tool required over-hang.
   Insert the Tiny Tool into the collet and push it gently until it passes the internal indexing mechanism.
   Adjust the rear stopper screw according the required overhang (do not set the final tool orientation).
   That procedure should be done only once and outside the machine.

2. Remove the Tiny Tool from the CIM toolholder and mount the holder on the machine.
   Clamp it well and it is ready to use. At that point the clamping nut should be screwed on the toolholder collet by hand and remain open.

3. Insert the Tiny Tool into the CIM collet and push it inside gently until you will hear a click.
   Rotate the tool by hand clock wise and counter clock wise until you hear a click and the indexing mechanism set the tool to center.

4. Close the nut by the wrench key.

In that point the tool is ready to use.

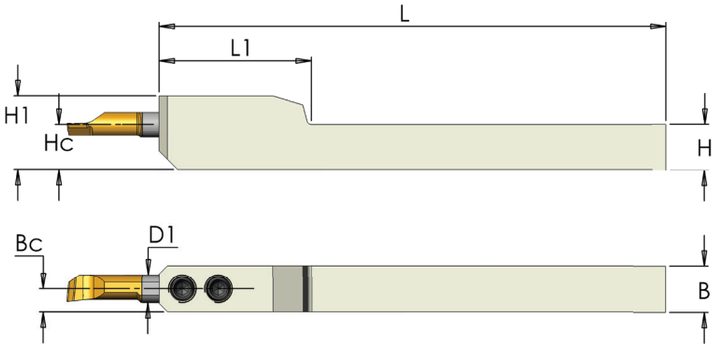
For a tool replacement, open the collet with the wrench key, replace the tool, close the collet and continue working.

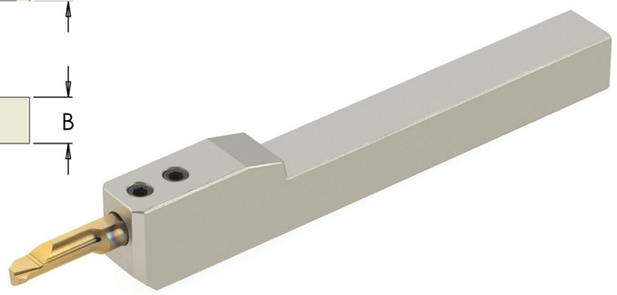
Tiny Tools Toolholders - Square Shank

for internal machining

Product Identification - Ordering Codes

S	E	M	V	1212	H5
Clamping Method S = Screw	E = External Square Shank	M = Tiny	Vertical	Shank Cross Section 1010 = 10x10 mm 1212 = 12x12 mm	Bar Diameter H3 = 3.0 mm H4 = 4.0 mm H5 = 5.0 mm H6 = 6.0 mm



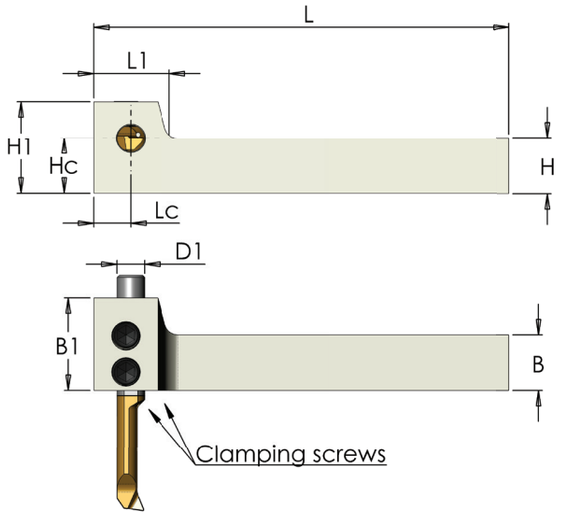


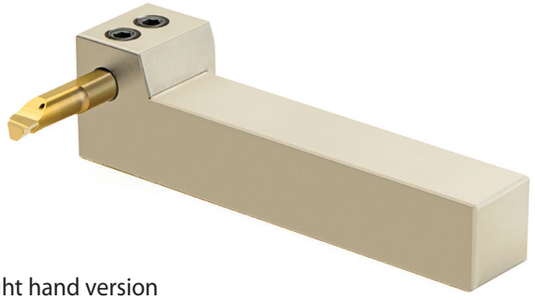
Metric Holders

D1 mm	Ordering Code	H=B mm	L1 mm/in		L mm/in		Hc mm/in		Bc mm/in		H1 mm/in		Key	Clamping Screw
3.0	**SEMV 1010 H3**	10	24	.94	110	4.3	10	.39	5	.20	14.7	.58	K16	S24
	SEMV 1212 H3	12	24	.94	110	4.3	12	.47	6	.24	16.7	.66	K16	S24
4.0	**SEMV 1010 H4**	10	36	1.42	110	4.3	10	.39	5	.20	15.2	.60	K16	S24
	SEMV 1212 H4	12	36	1.42	110	4.3	12	.47	6	.24	17.2	.68	K16	S24
5.0	**SEMV 1010 H5**	10	36	1.42	110	4.3	10	.39	5	.20	15.7	.62	K16	S24
	SEMV 1212 H5	12	36	1.42	110	4.3	12	.47	6	.24	17.7	.70	K16	S24
6.0	**SEMV 1010 H6**	10	33	1.30	110	4.3	10	.39	5	.20	16.2	.64	K16	S24
	SEMV 1212 H6	12	33	1.30	110	4.3	12	.47	6	.24	18.2	.72	K16	S24

Product Identification - Ordering Codes

S	E	M	R	1616	H5
Clamping Method S = Screw	E = External Square Shank	M = Tiny Bars / Tools	Right Hand	Shank Cross Section 1212 = 12x12 mm 1616 = 16x16 mm	Bar Diameter 3 = 3.0 mm 4 = 4.0 mm 5 = 5.0 mm 6 = 6.0 mm



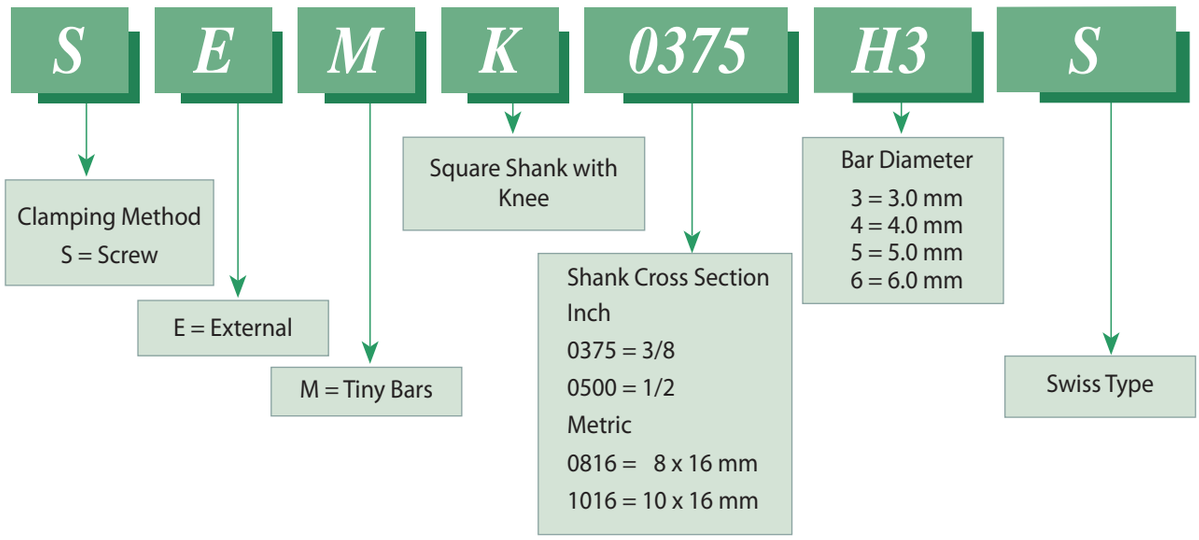


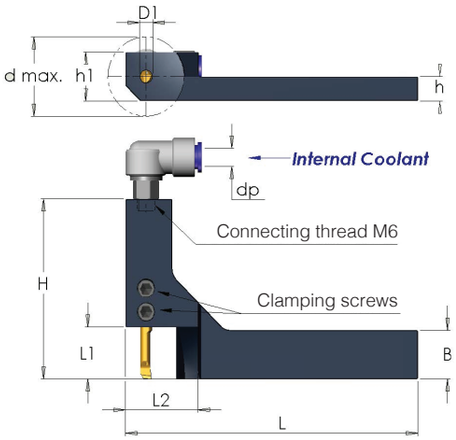
Right hand version

Metric Holders

D1 mm	Ordering Code	H=B mm	B1 mm/in		L mm/in		L1 mm/in		Hc mm/in		LC mm/in		H1 mm/in		Key	Clamping Screw
3.0	**SEM R 1212 H3**	12	20	.79	88	3.5	16	.63	12	.47	7	.28	20	.79	K25	S25
	SEM R 1616 H3	16	24	.94	120	4.7	16	.63	16	.63	7	.28	24	.94	K25	S25
4.0	**SEM R 1212 H4**	12	20	.79	88	3.5	16	.63	12	.47	7	.28	20	.79	K25	S25
	SEM R 1616 H4	16	24	.94	120	4.7	16	.63	16	.63	7	.28	24	.94	K25	S25
5.0	**SEM R 1212 H5**	12	20	.79	88	3.5	16	.63	12	.47	7	.28	20	.79	K25	S25
	SEM R 1616 H5	16	24	.94	120	4.7	16	.63	16	.63	7	.28	24	.94	K25	S25
6.0	**SEM R 1212 H6**	12	20	.79	88	3.5	16	.63	12	.47	7	.28	20	.79	K25	S25S
	SEM R 1616 H6	16	24	.94	120	4.7	16	.63	16	.63	7	.28	24	.94	K25	S25S

Product Identification - Ordering Codes





Metric Holders

D1 mm	Ordering Code	B mm	h mm	L mm/in	L1 mm/in	L2 mm/in	H mm/in	h1 mm/in	d max. mm/in	*dp mm	Key	Clamping Screw
3.0	**SEMK 0816 H3S**	16	8	100/ 3.9	17/.67	25/.98	46/1.81	16/.63	26/1.02	4/6	K25	S25
	SEMK 1016 H3S	16	10	100/ 3.9	17/.67	25/.98	46/1.81	18/.71	26/1.02	4/6	K25	
	SEMK 1216 H3S	16	12	100/ 3.9	17/.67	25/.98	46/1.81	20/.79	26/1.02	4/6	K25	
4.0	**SEMK 0816 H4S**	16	8	100/ 3.9	17/.67	25/.98	46/1.81	16/.63	26/1.02	4/6	K25	S25
	SEMK 1016 H4S	16	10	100/ 3.9	17/.67	25/.98	46/1.81	18/.71	26/1.02	4/6	K25	
	SEMK 1216 H4S	16	12	100/ 3.9	17/.67	25/.98	46/1.81	20/.79	26/1.02	4/6	K25	
5.0	**SEMK 0816 H5S**	16	8	100/ 3.9	17/.67	25/.98	46/1.81	16/.63	26/1.02	4/6	K25	S25
	SEMK 1016 H5S	16	10	100/ 3.9	17/.67	25/.98	46/1.81	18/.71	26/1.02	4/6	K25	
	SEMK 1216 H5S	16	12	100/ 3.9	17/.67	25/.98	46/1.81	20/.79	26/1.02	4/6	K25	
6.0	**SEMK 0816 H6S**	16	8	100/ 3.9	17/.67	25/.98	46/1.81	16/.63	26/1.02	4/6	K25	S25
	SEMK 1016 H6S	16	10	100/ 3.9	17/.67	25/.98	46/1.81	18/.71	26/1.02	4/6	K25	
	SEMK 1216 H6S	16	12	100/ 3.9	17/.67	25/.98	46/1.81	20/.79	26/1.02	4/6	K25	

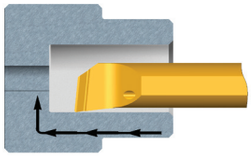
Inch Holders

D1 mm	Ordering Code	B	h	L	L1	L2	H	h1	d max.	*dp mm	Key	Clamping Screw
3.0	**SEMK 0375 H3S**	3/8	3/8	3.9	.67	.98	1.81	.69	1.02	4/6	K25	S25
	SEMK 0500 H3S	1/2	1/2	3.9	.67	.98	1.81	.81	1.02	4/6	K25	
4.0	**SMEK 0375 H4S**	3/8	3/8	3.9	.67	.98	2.28	.69	1.02	4/6	K25	S25
	SEMK 0500 H4S	1/2	1/2	3.9	.67	.98	2.28	.81	1.02	4/6	K25	
5.0	**SMEK 0375 H5S**	3/8	3/8	3.9	.67	.98	2.28	.69	1.02	4/6	K25	S25
	SEMK 0500 H5S	1/2	1/2	3.9	.67	.98	2.28	.81	1.02	4/6	K25	
6.0	**SMEK 0375 H6S**	3/8	3/8	3.9	.67	.98	2.28	.69	1.02	4/6	K25	S25
	SEMK 0500 H6S	1/2	1/2	3.9	.67	.98	2.28	.81	1.02	4/6	K25	

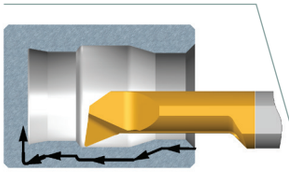
* Optional

Tiny Tools Kits

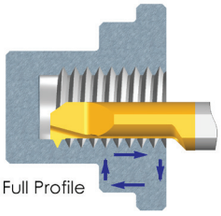
Boring



Profiling & Boring

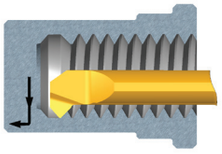


Threading

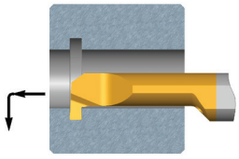


Full Profile

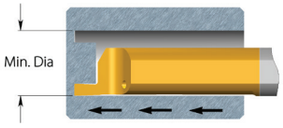
Chamfering & Boring



Grooving



Face Grooving



Min. Dia

KT4-0750	*KT5-0750*	
MTR 4 R0.2 L10	MTR 5 R0.2 L15	Boring
MPR 4 R0.2 L10	MPR 5 R0.2 L15	Profiling
MIR 4 L15 A60	MIR 5 L15 A60	Threading
MCR 4 R0.2 L15	MCR 5 R0.2 L15	Chamfering
MGR 4 B1.5 L10	MGR 5 B1.5 L15	Grooving
MFR 4 B1.0 L15	MFR 5 B1.0 L22	Face Grooving
SIM 0750 H4	SIM 0750 H5	Holder
K25	K25	Key

Order example: KT4-0750

Also available kits with
metric shank diameter bar holder.
Order example: KT4-16

Technical Section

Carbide Grades:

BXC (P30 - P50, K25 - K40)
PVD TiN coated grade for low cutting speed.
Works well with a wide range of stainless steels.

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.

K20 (K10 - K30)
Uncoated Carbide grade for non ferrous metals, aluminum and cast iron.

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

Cutting speed for Tiny Tools

ISO Standard	Material		Condition	Cutting Speed ft/min			
				BXC	BMK	K20	TNX
P	Non-Alloy steel and cast steel, free cutting steel	<0.25%C	Annealed	82-230	98-262		118-262
		≥0.25%C	Annealed				
		< 0.55%C	Quenched and tempered				
		≥0.55%C	Annealed				
			Quenched and tempered				
	Low alloy steel and cast steel (less than 5% alloying elements)		Annealed	66-131	82-164		98-164
			Quenched and tempered				
	High alloy steel, cast steel, and tool steel		Annealed	66-131	82-164		98-164
			Quenched and tempered				
M	Stainless steel and cast steel		Ferritic/martensitic	82-131	98-197		118-197
			Martensitic				
			Austenitic				
K	Cast iron nodular (GGG)		Ferritic/pearlitic	82-197	98-262		118-262
			Pearlitic				
	Grey cast iron (GG)		Ferritic	98-230	98-262		118-262
			Pearlitic				
	Malleable cast iron		Ferritic	66-131	66-164		79-164
			Pearlitic				
N	Aluminum-wrought alloy		Not cureable	164-328	197-394	98-164	236-394
			Cured				
	Aluminum-cast, alloyed	<=12% Si	Not cureable	131-262	164-295	66-131	197-295
			Cured				
		>12% Si	High temperature				
	Copper alloys	>1% Pb	Free cutting	98-197	98-230	66-131	118-230
			Brass				
			Electrolytic copper				
	Non metalic		Duroplastics, fiber plastics	131-262		66-131	
			Hard rubber				
S	High temp. alloys, Super alloys	Fe based	Annealed	49-98	49-131		59-131
			Cured				
		Ni or Co based	Annealed				
			Cured				
			Cast				
	Titanium alloys		Alpha+beta alloys cured	33-98	33-98		39-98
H	Hardened steel		Hardened 45-50 HRc	33-98	49-131		59-131
			Hardened 51-55 HRc				
			Hardened 56-62 HRc				
	Chilled cast iron		Cast	33-98	33-98		39-98
	Cast iron		Hardened	33-66	33-66		39-66

Recommended Feed Rate: .0005 - .001 inch/rev

Threading Passes

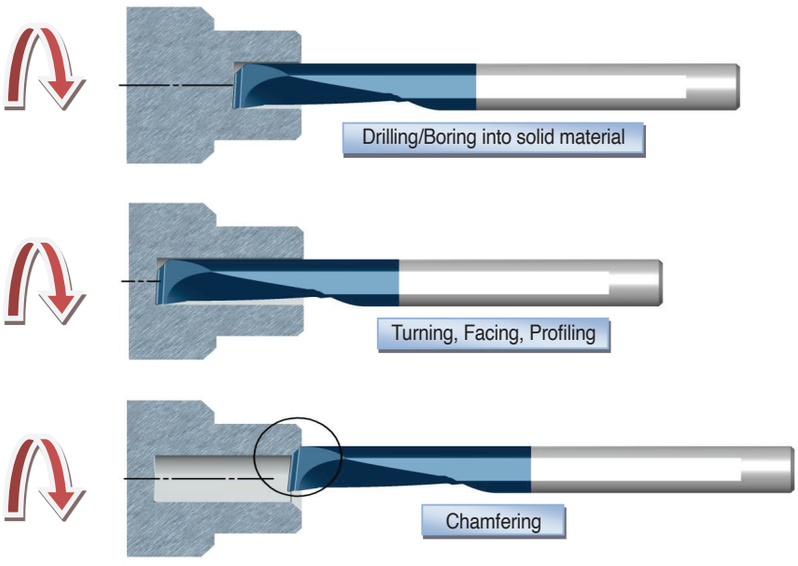
Pitch:	mm TPI	0.5 48	0.7 36	0.8 32	1.0 24	1.25 20	1.5 16	2-5 14-5
Number of Passes		6 - 12	7 - 14	7 - 16	8 - 18	8 - 20	10 - 22	20 - 38

CMR Carmex Multi-Task Tiny Tools

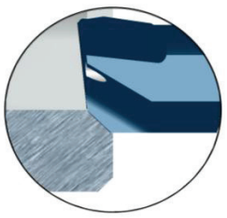
- Carmex is introducing a new and innovative Multi-Task Tiny Tool **CMR** for Boring, Turning, Facing and Chamfering with a single tool.
- The unique design enables machining of the material without the need for a pilot hole.
- The new tool shortens the machining cycle time and the number of tools required - providing **High Productivity**.
- Effective through coolant hole with a spiral flute, evacuates the chips out of the hole uninterruptedly.
- Unique chip breaker and flute design.
- To use with standard SIM toolholders on Swiss Type or CNC lathe machines.
- Available in **BMK** Grade only.

Working Method

- The tool penetrates the work piece and produces the hole compliant with the minimum diameter the tool allows.
- The tool can penetrate the material in one pass or several passes depending on the work piece material, coolant pressure, machine power etc.
- The hole can be enlarged by multi radial passes.



Rear view of the cutting chamfer



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.

CMR General Recommendations

Coolant fluid

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.

The cooling stream is designed to provide three benefits:
1. Cooling the cutting edge of the tool, and the contact area.
2. Pushing the chip away from the tool quickly, thereby reducing wear of the edge.
3. Helping to break the chip into smaller pieces and evacuating them from the cutting area.

Cutting Data

ISO Standard	Material	Cutting Speed ft/min
P	Low and Medium Carbon Steels <0.55%C	65-245
	High Carbon Steels ≥0.55%C	65-245
	Alloy Steels, Treated Steels	65-200
M	Stainless Steels - Free Cutting	65-200
	Stainless Steels - Austenitic	65-230
	Cast Steels	65-230
K	Cast Iron	65-330
N	Aluminum ≤12%Si, Copper	130-490
	Aluminum >12% Si	65-330
	Synthetics, Duroplastics, Thermoplastics	130-490
S	Nickel Alloys, Titanium Alloys	50-200
H	Hardened Steels	-

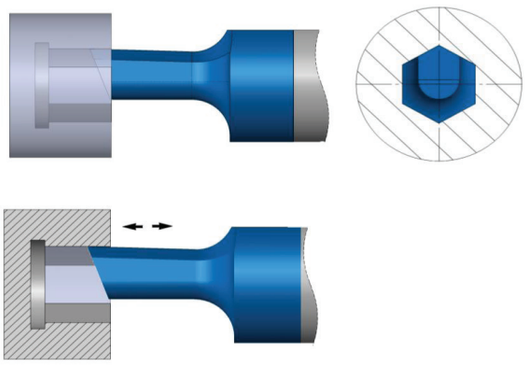
Recommended Feed Rate: .0005 - .001 inch/rev

HK Broaching Tools for Hexagon Keys

The HK broaching system have been developed to machine internal keyways inside blind or through holes, using CNC machines.

- To use with Carmex standard SIM Bar Holders
- The holder can be located directly in the turret or the machine spindle
- Holder with rear clamping screw for full support during operation
- Available in **BMK** Grade only.

Working Demo



Cutting Data

Material Tensile Strength (lbs/in²)	Feed rate (in/min)	In-feed per stroke (inch)
58.000-94.000	276-354	.0024-.0035
101.000-123.000	197-256	.0016-.0028
130.500-145.000	157-217	.0012-.0022
160.500-174.000	118-177	.0008-.0016

The cutting data above is an initial recommendation and depends on the machine condition, workpiece profile and the application clamping

- A relief groove is highly recommended, if not possible a gradual volume decrease should be made at the end of the broaching groove
- The HK tool must be positioned outside of the hole/groove before each stroke
- After setup and first stroke, we recommend to observe the tool and the application to make sure no collision occurred