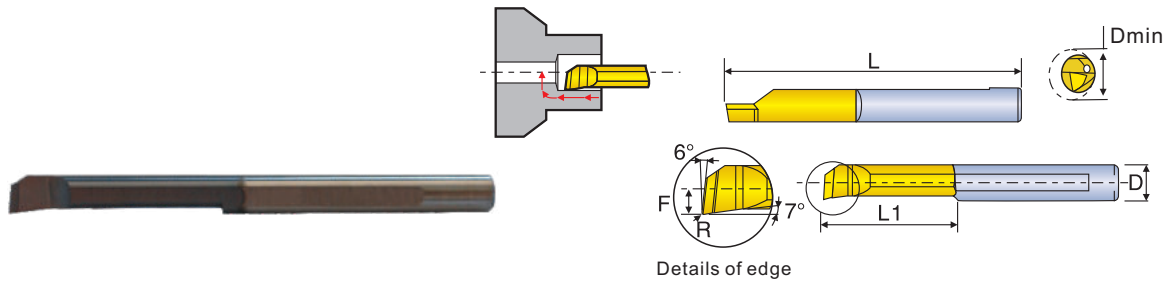


MT SERIES

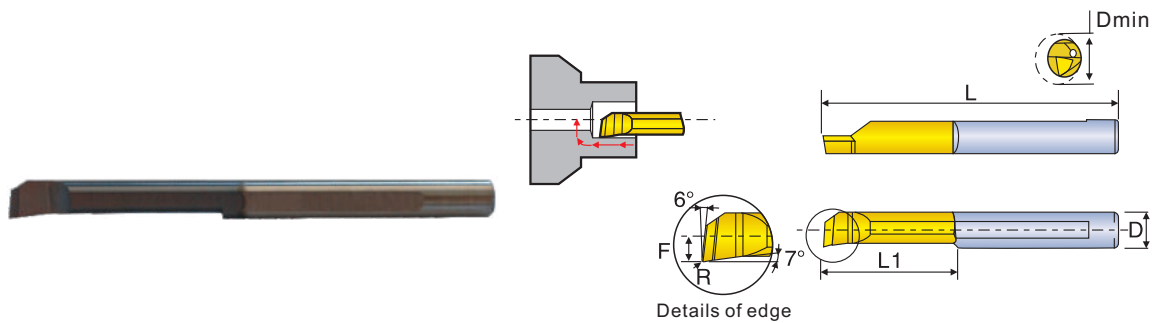
Solid Boring Bar for Boring



Order No.	Dimensions (mm)						Sleeve No.
	D	L	L1	R	F	Dmin	
MTR1R0.05L4	3	40	4	0.05	0.5	1.0	NC1603-100-2N
MTR1.5R0.1L6	3	40	6	0.10	0.7	1.5	
MTR2R0.05L10	3	40	10	0.05	0.8	2.1	
MTR2R0.15L5	3	40	5	0.15	0.8	2.1	
MTR2R0.15L10	3	40	10	0.15	0.8	2.1	
MTR2R0.15L15	3	40	15	0.15	0.8	2.1	
MTR2R0.15L20	3	40	20	0.15	0.8	2.1	
MTR3R0.05L10	3	40	10	0.05	1.3	3.1	
MTR3R0.05L15	3	40	15	0.05	1.3	3.1	
MTR3R0.1L10	3	40	10	0.10	1.3	3.1	
MTR3R0.1L15	3	40	15	0.10	1.3	3.1	
MTR3R0.2L10	3	40	10	0.20	1.3	2.1	
MTR3R0.2L15	3	40	15	0.20	1.3	3.1	
MTR3R0.2L20	3	40	20	0.20	1.3	3.1	
MTR4R0.05L15	4	50	15	0.05	1.7	4.1	NC. . 04-100-2N
MTR4R0.1L15	4	50	15	0.10	1.7	4.1	
MTR4R0.1L22	4	50	22	0.10	1.7	4.1	
MTR4R0.2L10	4	50	10	0.20	1.7	4.1	
MTR4R0.2L15	4	50	15	0.20	1.7	4.1	
MTR4R0.2L22	4	50	22	0.20	1.7	4.1	
MTR4R0.2L30	4	65	30	0.20	1.7	4.1	NC. . 05-100-2N
MTR5R0.05L15	5	50	15	0.05	2.1	5.1	
MTR5R0.1L22	5	50	22	0.10	2.1	5.1	
MTR5R0.2L10	5	50	10	0.20	2.1	5.1	
MTR5R0.2L15	5	50	15	0.20	2.1	5.1	
MTR5R0.2L22	5	50	22	0.20	2.1	5.1	
MTR5R0.2L30	5	65	30	0.20	2.1	5.1	
MTR5R0.2L35	5	65	35	0.20	2.1	5.1	

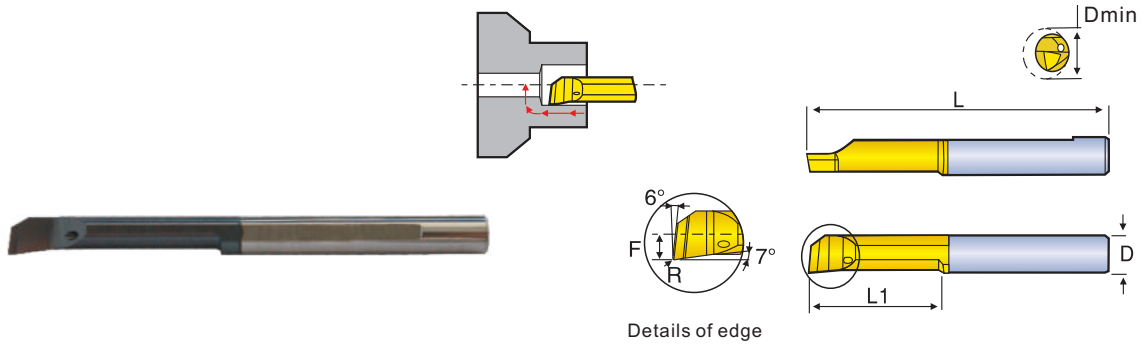
Insert
External Toolholder
Internal Toolholder
Threading
Parting, Grooving
Miniature Tool

MT SERIES Solid Boring Bar for Boring



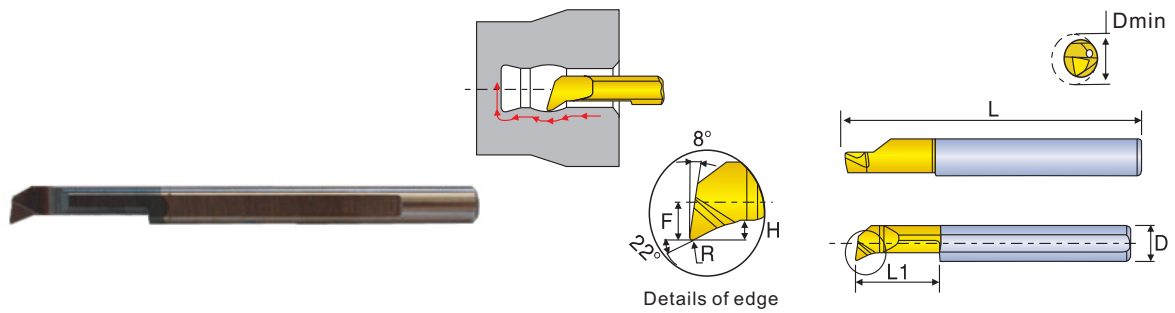
Order No.	Dimensions (mm)						Sleeve No.
	D	L	L1	R	F	Dmin	
MTR6R0. 05L15	6	50	15	0.05	2.8	6.1	NC. .06-100-2N
MTR6R0. 1L22	6	50	22	0.10	2.8	6.1	
MTR6R0. 2L15	6	50	15	0.20	2.8	6.1	
MTR6R0. 2L22	6	50	22	0.20	2.8	6.1	
MTR6R0. 2L30	6	65	30	0.20	2.8	6.1	
MTR6R0. 2L40	6	65	40	0.20	2.8	6.1	
MTR7R0. 2L30	7	65	30	0.20	3.3	7.1	NC. .07-100-2N
MTR7R0. 2L35	7	65	35	0.20	3.3	7.1	
MTR7R0. 2L42	7	80	42	0.20	3.3	7.1	
MTR7R0. 2L49	7	80	49	0.20	3.3	7.1	
MTR8R0. 2L40	8	80	40	0.20	3.8	8.1	NC. .08-100-2N
MTR10R0. 2L35	10	65	35	0.20	4.8	10.1	NC2010-100-2N
MTR10R0. 2L50	10	80	50	0.20	4.8	10.1	
MTL2R0. 15L10	3	40	10	0.15	0.8	2.1	NC1603-100-2N
MTL3R0. 2L15	3	40	15	0.20	1.3	3.1	
MTL4R0. 2L22	4	50	22	0.20	1.7	4.1	NC. .04-100-2N
MTL5R0. 2L22	5	50	22	0.20	2.1	5.1	NC. .05-100-2N
MTL6R0. 2L22	6	50	22	0.20	2.8	6.1	NC. .06-100-2N
MTL7R0. 2L30	7	65	30	0.20	3.3	7.1	NC. .07-100-2N

MTR SERIES
Solid Boring Bar for Boring (Internal Coolant)



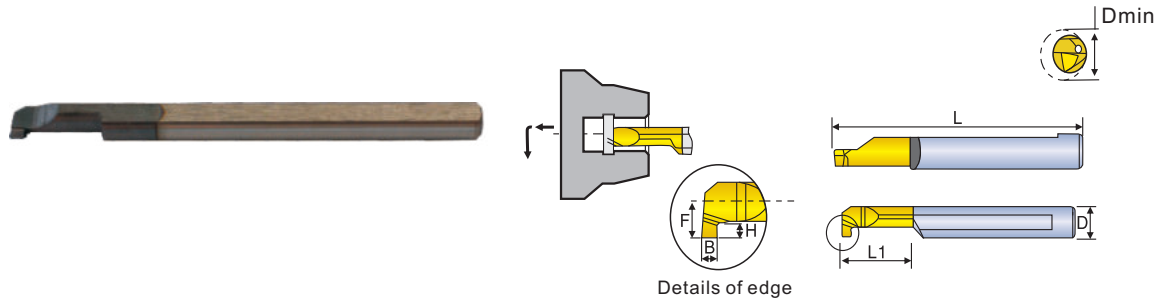
Order No.	Dimensions (mm)						Sleeve No.
	D	L	L1	R	F	Dmin	
MTR4R0. 2L15-N	4	50	15	0.2	1.7	4.1	NC. . 04-100-2N
MTR4R0. 2L22-N	4	50	22	0.2	1.7	4.1	
MTR5R0. 2L15-N	5	50	15	0.2	2.1	5.1	NC. . 05-100-2N
MTR5R0. 2L22-N	5	50	22	0.2	2.1	5.1	
MTR6R0. 2L22-N	6	50	22	0.1	2.8	6.1	NC. . 06-100-2N

MPR SERIES
Solid Boring Bar for Profiling



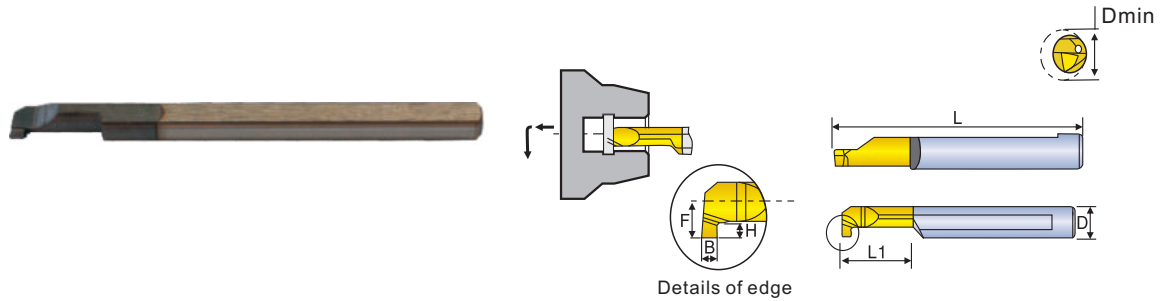
Order No.	Dimensions (mm)							Sleeve No.
	D	L	L1	R	H	F	Dmin	
MPR1R0. 05L4	3	40	4	0.05	0.2	0.5	1.0	NC1603-100-2N
MPR1. 5R0. 1L6	3	40	6	0.10	0.3	0.7	1.5	
MPR2R0. 15L10	3	40	10	0.15	0.5	0.8	2.1	
MPR3R0. 2L10	3	40	10	0.20	0.7	1.3	3.1	
MPR3R0. 2L15	3	40	15	0.20	0.7	1.3	3.1	
MPR4R0. 2L15	4	50	15	0.20	0.8	1.7	4.1	NC. . 04-100-2N
MPR4R0. 2L22	4	50	22	0.20	0.8	1.7	4.1	
MPR5R0. 2L22	5	50	22	0.20	1.2	2.1	5.1	NC. . 05-100-2N
MPR5R0. 2L30	5	65	30	0.20	1.2	2.1	5.1	
MPR6R0. 2L22	6	50	22	0.20	1.4	2.8	6.1	NC. . 06-100-2N
MPR6R0. 2L30	6	65	30	0.20	1.4	2.8	6.1	

MG SERIES
Solid Boring Bar for Internal Grooving



Order No.	Dimensions (mm)							Sleeve No.
	B	H	D	L	L1	F	Dmin	
MGR2B0. 5L6	0.5	0.4	3	40	6	0.8	2.1	NC1603-100-2N
MGR3B0. 5L10	0.5	0.5	3	40	10	1.3	3.1	
MGR3B0. 7L10	0.7	0.6	3	40	10	1.3	3.1	
MGR3B1. 0L10	1.0	0.7	3	40	10	1.3	3.1	
MGR4B1. 0L10	1.0	1.0	4	50	10	1.7	4.1	NC. . 04-100-2N
MGR4B1. 5L10	1.5	1.0	4	50	10	1.7	4.1	
MGR4B1. 0L15	1.0	1.0	4	50	15	1.7	4.1	
MGR4B1. 5L15	1.5	1.0	4	50	15	1.7	4.1	
MGR5B1. 0L15	1.0	1.2	5	50	15	2.3	5.1	NC. . 05-100-2N
MGR5B1. 5L15	1.5	1.2	5	50	15	2.3	5.1	
MGR5B2. 0L15	2.0	1.2	5	50	15	2.3	5.1	
MGR5B1. 0L22	1.0	1.2	5	50	22	2.3	5.1	
MGR5B1. 5L22	1.5	1.2	5	50	22	2.3	5.1	
MGR5B2. 0L22	2.0	1.2	5	50	22	2.3	5.1	
MGR6B1. 0L15	1.0	1.8	6	50	15	2.8	6.1	NC. . 06-100-2N
MGR6B1. 5L15	1.5	1.8	6	50	15	2.8	6.1	
MGR6B2. 0L15	2.0	1.8	6	50	15	2.8	6.1	
MGR6B1. 0L22	1.0	1.8	6	50	22	2.8	6.1	
MGR6B1. 5L22	1.5	1.8	6	50	22	2.8	6.1	
MGR6B2. 0L22	2.0	1.8	6	50	22	2.8	6.1	
MGR6B1. 0L30	1.0	1.8	6	65	30	2.8	6.1	
MGR6B1. 5L30	1.5	1.8	6	65	30	2.8	6.1	
MGR6B2. 0L30	2.0	1.8	6	65	30	2.8	6.1	
MGR6B1. 0L17-2. 0	1.0	2.0	6	50	17	2.8	6.1	
MGR6B1. 5L17-2. 0	1.5	2.0	6	50	17	2.8	6.1	
MGR6B2. 0L17-2. 0	2.0	2.0	6	50	17	2.8	6.1	

MG SERIES Solid Boring Bar for Internal Grooving



Order No.	Dimensions (mm)							Sleeve No.
	B	H	D	L	L1	F	Dmin	
MGR7B1. 0L22	1.0	2.5	7	65	22	3.3	7.1	NC. . 07-100-2N
MGR7B1. 5L22	1.5	2.5	7	65	22	3.3	7.1	
MGR7B2. 0L22	2.0	2.5	7	65	22	3.3	7.1	
MGR7B1. 0L30	1.0	2.5	7	65	30	3.3	7.1	
MGR7B1. 5L30	1.5	2.5	7	65	30	3.3	7.1	
MGR7B2. 0L30	2.0	2.5	7	65	30	3.3	7.1	
MGR8B1. 0L22	1.0	2.6	8	65	22	3.8	8.1	NC. . 08-100-2N
MGR8B1. 5L22	1.5	2.6	8	65	22	3.8	8.1	
MGR8B2. 0L22	2.0	2.6	8	65	22	3.8	8.1	
MGR8B1. 5L22X	1.5	3.1	8	65	22	3.8	8.1	
MGR8B2. 0L22X	2.0	3.1	8	65	22	3.8	8.1	
MGR8B2. 0L30X	2.0	3.1	8	65	30	3.8	8.1	
MGR8B2. 0L40X	2.0	3.1	8	80	40	3.8	8.1	
MGL3B0. 7L10	0.7	0.6	3	40	10	1.3	3.1	NC1603-100-2N
MGL4B1. 5L10	1.5	1.0	4	50	10	1.7	4.1	NC. . 04-100-2N
MGL5B2. 0L15	2.0	1.2	5	50	15	2.3	5.1	NC. . 05-100-2N
MGL6B2. 0L15	2.0	1.8	6	50	15	2.8	6.1	NC. . 06-100-2N
MGL6B2. 0L22	2.0	1.8	6	50	22	2.3	6.1	
MGL7B2. 0L30	2.0	2.5	7	65	30	2.8	7.1	NC. . 07-100-2N

Insert

External Toolholder

Internal Toolholder

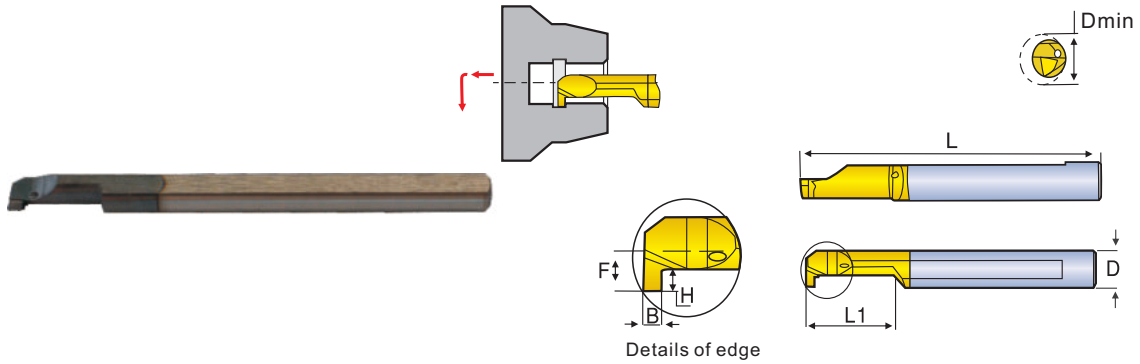
Threading

Parting, Grooving

Miniature Tool

MGR SERIES

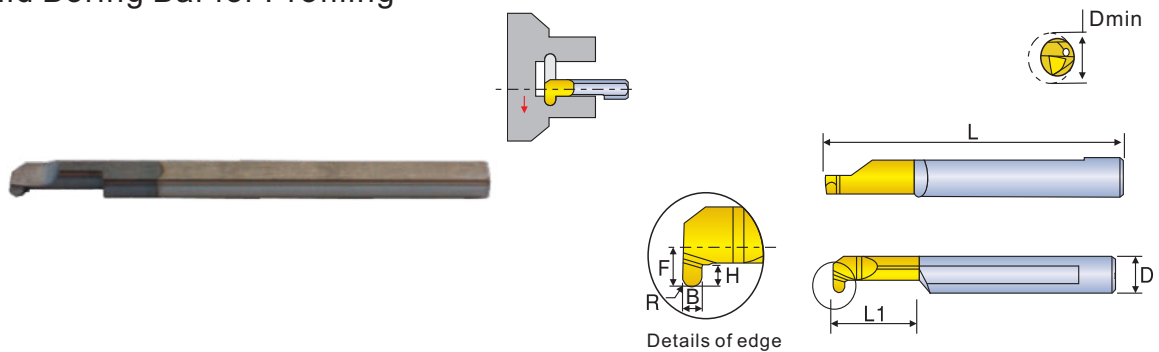
Solid Boring Bar for Internal Grooving (Internal Coolant)



Order No.	Dimensions (mm)								Sleeve No.
	B	H	D	L	L1	F	Dmin		
MGR4B1.0L10-N	1.0	1.0	4	50	10	1.7	4.1	NC. .04-100-2N	
MGR4B1.5L10-N	1.5	1.0	4	50	10	1.7	4.1		
MGR5B1.0L15-N	1.0	1.2	5	50	15	2.3	5.1	NC. .05-100-2N	
MGR5B1.5L15-N	1.5	1.2	5	50	15	2.3	5.1		
MGR5B2.0L15-N	2.0	1.2	5	50	15	2.3	5.1	NC. .06-100-2N	
MGR6B1.0L15-N	1.0	1.8	6	50	15	2.8	6.1		
MGR6B1.5L15-N	1.5	1.8	6	50	15	2.8	6.1		
MGR6B2.0L15-N	2.0	1.8	6	50	15	2.8	6.1		

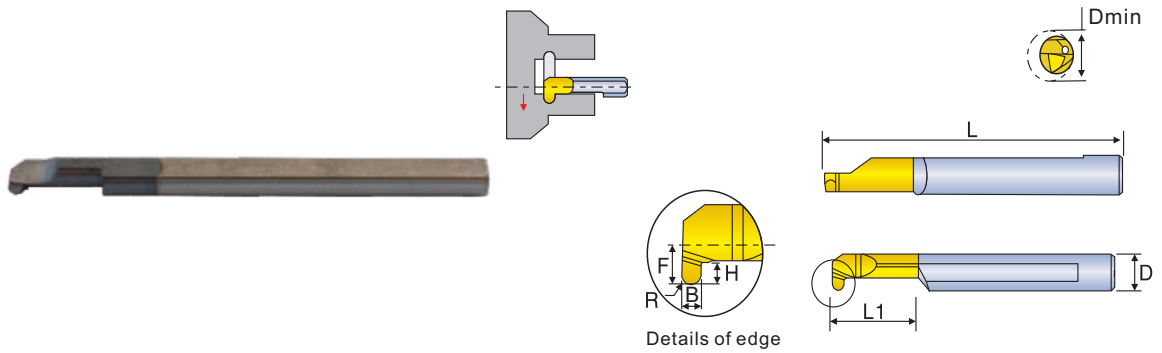
MKR SERIES

Solid Boring Bar for Profiling



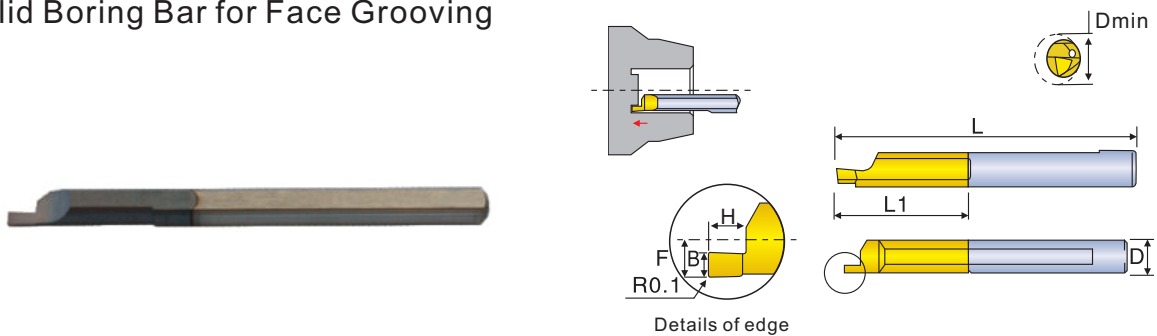
Order No.	Dimensions (mm)								Sleeve No.
	B	R	H	D	L	L1	F	Dmin	
MKR4R0.5L10	1.0	0.50	1.0	4	50	10	1.7	4.1	NC. .04-100-2N
MKR4R0.75L10	1.5	0.75	1.0	4	50	10	1.7	4.1	

MKR SERIES
Solid Boring Bar for Profiling



Order No.	Dimensions (mm)								Sleeve No.
	B	R	H	D	L	L1	F	Dmin	
MKR5R0.5L15	1.0	0.50	1.2	5	50	15	2.3	5.1	NC. .05-100-2N
MKR5R0.75L15	1.5	0.75	1.2	5	50	15	2.3	5.1	
MKR5R1.0L15	2.0	1.00	1.2	5	50	15	2.3	5.1	
MKR6R0.5L15	1.0	0.50	1.6	6	50	15	2.8	6.1	NC. .06-100-2N
MKR6R0.75L15	1.5	0.75	1.6	6	50	15	2.8	6.1	
MKR6R1.0L15	2.0	1.00	1.6	6	50	15	2.8	6.1	

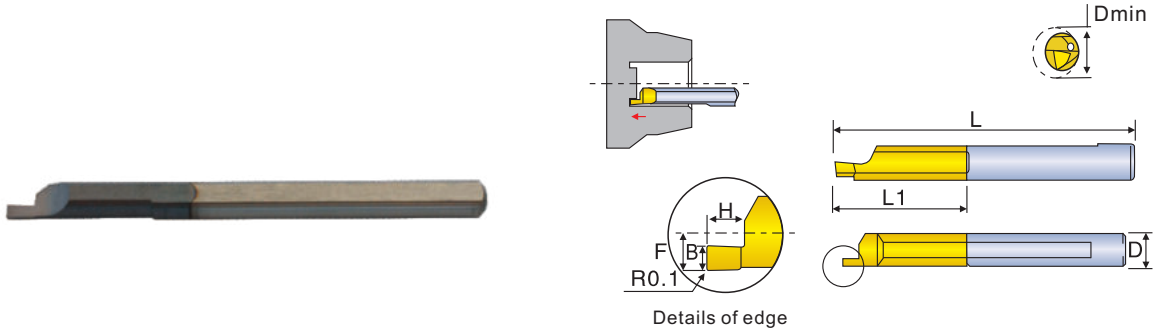
MFR SERIES
Solid Boring Bar for Face Grooving



Order No.	Dimensions (mm)							Sleeve No.
	B	H	D	L	L1	F	Dmin	
MFR4B1.0L15	1.0	1.5	4	50	15	1.95	5	NC. .04-100-2N
MFR4B1.5L15	1.5	2.8	4	50	15	1.95	5	
MFR5B1.0L22	1.0	1.5	5	50	22	2.45	6	NC. .05-100-2N
MFR5B1.5L22	1.5	2.5	5	50	22	2.45	6	
MFR5B2.0L22	2.0	3.8	5	50	22	2.45	6	

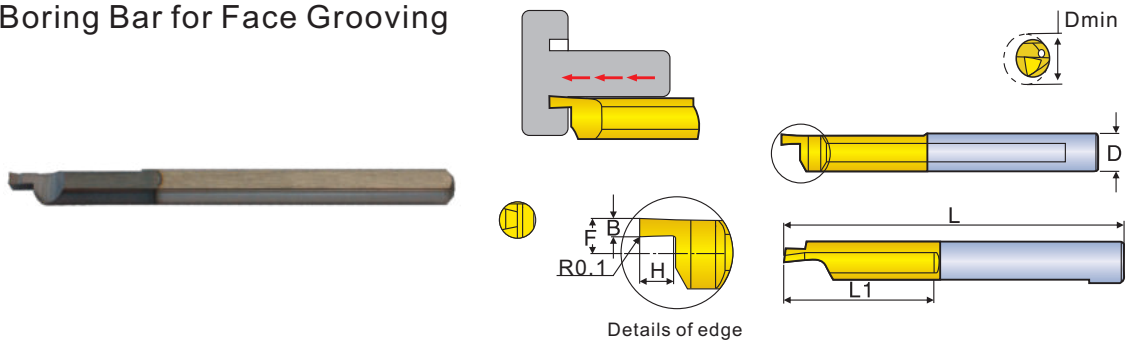
Insert
External Toolholder
Internal Toolholder
Threading
Parting, Grooving
Miniature Tool

MFR SERIES
Solid Boring Bar for Face Grooving



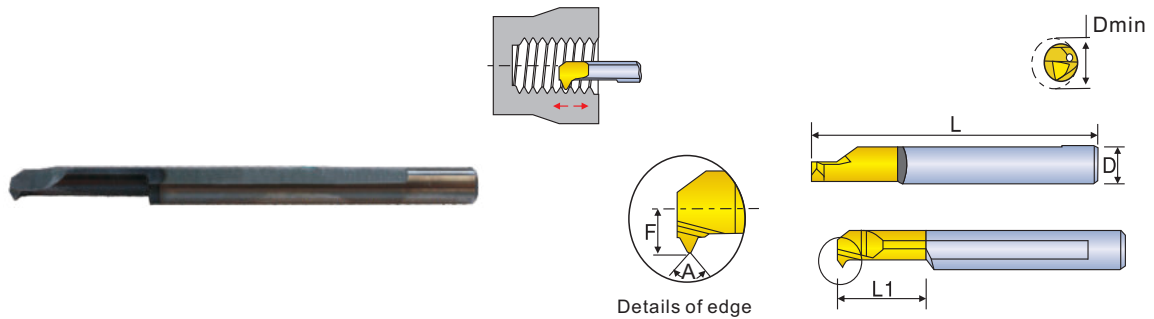
Order No.	Dimensions (mm)							Sleeve No.
	B	H	D	L	L1	F	Dmin	
MFR6B1. 0L22	1.0	1.5	6	50	22	2.95	8	NC. . 06-100-2N
MFR6B1. 5L22	1.5	2.5	6	50	22	2.95	8	
MFR6B2. 0L22	2.0	3.0	6	50	22	2.95	8	
MFR6B3. 0L30	3.0	6.0	6	65	30	2.95	8	

MFL SERIES
Solid Boring Bar for Face Grooving



Order No.	Dimensions (mm)							Sleeve No.
	B	H	D	L	L1	F	Dmin	
MFL4B1. 0L15	1.0	1.5	4	50	15	1.75	5	NC. . 04-100-2N
MFL4B1. 5L15	1.5	2.8	4	50	15	1.75	5	
MFL5B1. 0L22	1.0	1.5	5	50	22	2.25	6	NC. . 05-100-2N
MFL5B1. 5L22	1.5	2.5	5	50	22	2.25	6	
MFL5B2. 0L22	2.0	3.8	5	50	22	2.25	6	NC. . 06-100-2N
MFL6B1. 0L22	1.0	1.5	6	50	22	2.75	8	
MFL6B1. 5L22	1.5	2.5	6	50	22	2.75	8	
MFL6B2. 0L22	2.0	3.0	6	50	22	2.75	8	
MFL6B3. 0L30	3.0	6.0	6	65	30	2.75	8	

MI SERIES Solid Boring Bar for Threading



Order No.	Dimensions (mm)								Sleeve No.
	D	L	L1	Thread angle	Pitch		F	Dmin	
				A	mm	TPI			
MIR2L8A60	3	40	8	60	0.45-0.70	56-32	1.0	2.1	NC1603-100-2N
MIR3L15A60	3	40	15	60	0.50-1.00	48-24	1.4	3.2	
MIR4L15A60	4	50	15	60	0.50-1.00	48-24	1.8	4.1	NC..04-100-2N
MIR5L15A60	5	50	15	60	0.50-1.25	48-20	2.3	5.1	NC..05-100-2N
MIR5L22A60	5	50	22	60	1.00-1.25	24-20	2.3	5.1	
MIR6L15A60	6	50	15	60	0.50-1.50	48-16	2.6	6.0	NC..06-100-2N
MIR6L22A60	6	50	22	60	0.50-1.50	48-16	2.6	6.0	
MIR8L22A60	8	65	22	60	1.00-2.00	24-13	3.6	8.0	NC..08-100-2N
MIR3L15A55	3	40	15	55	0.50-1.00	48-24	1.4	3.2	NC1603-100-2N
MIR4L15A55	4	50	15	55	0.50-1.00	48-24	1.8	4.1	NC..04-100-2N
MIR5L15A55	5	50	15	55	0.50-1.25	48-20	2.3	5.1	NC..05-100-2N
MIR6L15A55	6	50	15	55	0.50-1.50	48-16	2.6	6.0	NC..06-100-2N
MIL3L15A60	3	40	15	60	0.50-1.00	32-24	1.4	3.2	NC1603-100-2N
MIL4L15A60	4	50	15	60	0.50-1.00	48-24	1.8	4.1	NC..04-100-2N
MIL5L15A60	5	50	15	60	0.50-1.25	48-20	2.3	5.1	NC..05-100-2N
MIL6L15A60	6	50	15	60	0.50-1.50	48-16	2.6	6.0	NC..06-100-2N
MIL3L15A55	3	40	15	55	0.50-1.00	48-24	1.4	3.2	NC1603-100-2N
MIL4L15A55	4	50	15	55	0.50-1.00	48-24	1.8	4.1	NC..04-100-2N
MIL5L15A55	5	50	15	55	0.50-1.25	48-20	2.3	5.1	NC..05-100-2N
MIL6L15A55	6	50	15	55	0.50-1.50	48-16	2.6	6.0	NC..06-100-2N

Insert

External Toolholder

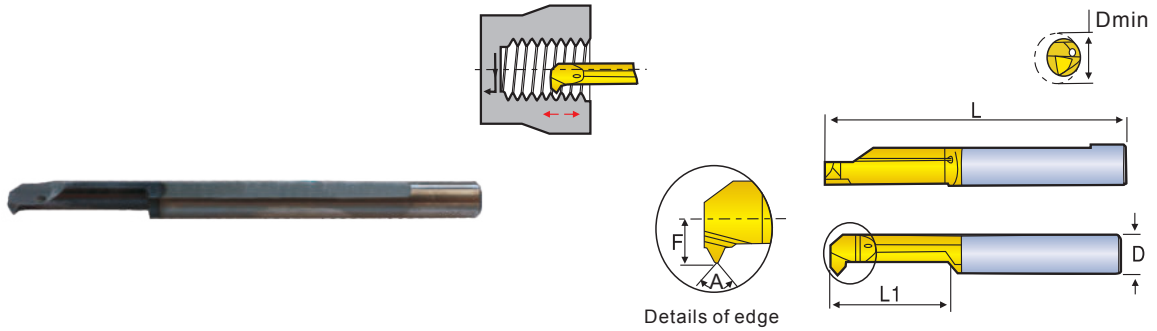
Internal Toolholder

Threading

Parting, Grooving

Miniature Tool

MIR SERIES
Solid Boring Bar for Threading (Internal Coolant)



Order No.	Dimensions (mm)								Sleeve No.
	D	L	L1	Thread angle	Pitch		F	Dmin	
				A	mm	TPI			
MIR4L15A60-N	4	50	15	60	0.80-1.00	32-24	1.8	4.1	NC..04-100-2N
MIR5L15A60-N	5	50	15	60	1.00-1.25	24-20	2.3	5.1	NC..05-100-2N
MIR6L15A60-N	6	50	15	60	1.00-1.50	24-16	2.6	6.0	NC..06-100-2N
MIR6L22A60-N	8	50	22	60	1.00-1.50	24-16	2.6	6.0	

Sleeve for Coolant Supply



Order No.	Dimensions (mm)				Wrench	Screw
	D1	L	D	d		
NC1603-100-2N	3	100	16	12.0	WT15	S34
NC1604-100-2N	4	100	16	13.0	WT20	S44
NC1605-100-2N	5	100	16	14.7	WT25	S44
NC1606-100-2N	6	100	16	15.0	WT25	S54
NC1608-100-2N	8	100	16	15.7	WT30	S66
NC2004-100-2N	4	100	20	13.0	WT20	S44
NC2005-100-2N	5	100	20	16.0	WT25	S44
NC2006-100-2N	6	100	20	17.0	WT30	S55
NC2007-100-2N	7	100	20	17.5	WT30	S66
NC2008-100-2N	8	100	20	19.0	WT30	S66
NC2010-100-2N	10	100	20	19.7	WT30	S66
NC2012-100-2N	12	100	20	19.7	WT30	S66

Standard Cutting Conditions of Boring

ISO	Workpiece material		Vc (m/min)	f (mm/min)
P	Non-Alloy steel	<0.25%C	50-120	0.05
		0.25%C- 0.55%C	40-100	0.04
		≥0.55%C	30-80	0.03
	Low Alloy Steel		30-70	0.04
	High Alloy Steel		25-50	0.03
M	Martensitic Stainless Steel		40-100	0.04
	Austenitic Stainless Steel		40-90	0.04
K	Grey Cast Iron		40-70	0.02
	Ductile Cast Iron		50-80	0.02
N	Cast Aluminum Alloy		100-300	0.03
	Aluminum Alloy		60-150	0.03
	Copper Alloy		100-150	0.03
S	Heat-resistance Alloy		10-45	0.02
	Titanium Alloy		40-60	0.02
H	Hardened Alloy	45-50 HRC	20-40	0.01
		51-55 HRC	20-35	0.01

Standard Cutting Conditions of Grooving

ISO	Workpiece material		Vc (m/min)	f (mm/min)
P	Non-Alloy steel	<0.25%C	50-120	0.03
		0.25%C- 0.55%C	40-100	0.02
		≥0.55%C	30-80	0.01
	Low Alloy Steel		30-70	0.02
	High Alloy Steel		25-50	0.01
M	Martensitic Stainless Steel		40-100	0.01
	Austenitic Stainless Steel		40-90	0.01
K	Grey Cast Iron		40-70	0.02
	Ductile Cast Iron		50-80	0.01
N	Cast Aluminum Alloy		100-300	0.03
	Aluminum Alloy		60-150	0.03
	Copper Alloy		100-150	0.03
S	Heat-resistance Alloy		10-45	0.01
	Titanium Alloy		40-60	0.01
H	Hardened Alloy	45-50 HRC	20-40	0.01
		51-55 HRC	20-35	0.01

Insert

External Toolholder

Internal Toolholder

Threading

Parting, Grooving

Miniature Tool

Insert

External Toolholder

Internal Toolholder

Threading

Parting, Grooving

Miniature Tool

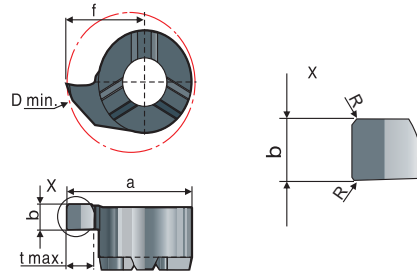
Standard Cutting Conditions of Threading

ISO	Workpiece material		Vc(m/min)
P	Non-Alloy steel	<0.25%C	50-120
		0.25%C- 0.55%C	40-100
		≥0.55%C	30-80
P	Low Alloy Steel		30-70
	High Alloy Steel		25-50
M	Martensitic Stainless Steel		40-100
	Austenitic Stainless Steel		40-90
K	Grey Cast Iron		40-70
	Ductile Cast Iron		50-80
N	Cast Aluminum Alloy		100-300
	Aluminum Alloy		60-150
	Copper Alloy		100-150
S	Heat-resistance Alloy		10-45
	Titanium Alloy		40-60
H	Hardened Alloy	45-50 HRC	20-40
		51-55 HRC	20-35

Standard Cutting Conditions of Face Grooving

ISO	Workpiece material		Vc(m/min)	f(mm/min)
P	Non-Alloy steel	<0.25%C	40-140	0.01-0.05
		0.25%C- 0.55%C		
		≥0.55%C		
P	Low Alloy Steel		40-140	0.01-0.05
	High Alloy Steel			
M	Martensitic Stainless Steel		40-140	0.01-0.05
	Austenitic Stainless Steel			
K	Grey Cast Iron		30-130	0.01-0.05
	Ductile Cast Iron			
N	Cast Aluminum Alloy		90-120	0.01-0.05
	Aluminum Alloy			
	Copper Alloy			
S	Heat-resistance Alloy		30-100	0.01-0.05
	Titanium Alloy			

Modular Small Hole Cutter for Inserts



Order No.	Dimensions (mm)					
	b	t max	a	f	R	Dmin
MB-05GR075-1.4D07	0.75	1.4	6.8	4.3	0.05	7.0
MB-05GR100-1.4D07	1.00	1.4	6.8	4.3	0.05	7.0
MB-05GR150-1.4D07	1.50	1.4	6.8	4.3	0.10	7.0
MB-05GR200-1.4D07	2.00	1.4	6.8	4.3	0.20	7.0
MB-05GR100-2.3D08	1.00	2.3	7.8	5.2	0.05	8.0
MB-05GR150-2.3D08	1.50	2.3	7.8	5.2	0.10	8.0
MB-05GR200-2.3D08	2.00	2.3	7.8	5.2	0.20	8.0
MB-05GR100-2.8D09	1.00	2.8	8.3	5.8	0.05	8.8
MB-05GR150-2.8D09	1.50	2.8	8.3	5.8	0.10	8.8
MB-05GR200-2.8D09	2.00	2.8	8.3	5.8	0.20	8.8
MB-07GR075-2.0D10	0.75	2.0	9.5	6.0	0.05	10.0
MB-07GR100-2.0D10	1.00	2.0	9.5	6.0	0.05	10.0
MB-07GR150-2.0D10	1.50	2.0	9.5	6.0	0.05	10.0
MB-07GR200-2.0D10	2.00	2.0	9.5	6.0	0.20	10.0
MB-07GR300-2.0D10	3.00	2.0	9.5	6.0	0.20	10.0
MB-07GR100-3.0D11	1.00	3.0	10.5	7.0	0.05	11.0
MB-07GR150-3.0D11	1.50	3.0	10.5	7.0	0.10	11.0
MB-07GR200-3.0D11	2.00	3.0	10.5	7.0	0.20	11.0
MB-07GR300-3.0D11	3.00	3.0	10.5	7.0	0.20	11.0
MB-07GR100-3.5D12	1.00	3.5	11.5	7.5	0.05	12.0
MB-09GR150-4.0D14	1.50	4.0	13.5	9.0	0.10	14.0
MB-09GR200-4.0D14	2.00	4.0	13.5	9.0	0.20	14.0
MB-09GR250-4.0D14	2.50	4.0	13.5	9.0	0.20	14.0
MB-09GR150-5.5D16	1.50	5.5	15.0	10.3	0.10	16.0
MB-09GR200-5.5D16	2.00	5.5	15.0	10.5	0.20	16.0
MB-09GR250-5.5D16	2.50	5.5	15.0	10.5	0.20	16.0
MB-09GR300-5.5D16	3.00	5.5	15.0	10.5	0.20	16.0
MB-09GR150-6.5D17	1.50	6.5	16.0	11.5	0.10	17.0
MB-09GR200-6.5D17	2.00	6.5	16.0	11.5	0.20	17.0
MB-09GR250-6.5D17	2.50	6.5	16.0	11.5	0.20	17.0
MB-09GR300-6.5D17	3.00	6.5	16.0	11.5	0.20	17.0

Insert
 External Toolholder
 Internal Toolholder
 Threading
 Parting, Grooving
 Miniature Tool

MG SERIES

Modular Small Hole Cutter for Toolholders

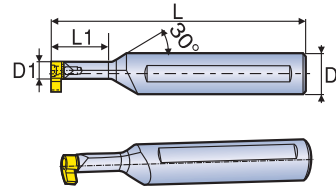


Fig.1

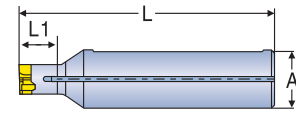


Fig.2

Order No.	D	D1	L1	L	A	Insert	Wrench	Screw	Fig.
MG-H12-18-05R	12	5	18	100	11.6	MB-05..	WC06	CSTB22	1
MG-H16-20-07R	16	7	20	120	15.0	MB-07..	WC10	CSTB30	2
MG-H16-30-09R	16	9	30	120	15.0	MB-09..	WC15	CSTB40	2

Standard Cutting Conditions

ISO	Workpiece material		Vc(m/min)	f(mm/min)
P	Non-Alloy steel	<0.25%C	40-180	0.30-0.50
		0.25%C- 0.55%C	40-170	0.30-0.50
		≥ 0.55%C	40-160	0.25-0.35
	Low Alloy Steel		40-190	0.25-0.45
	High Alloy Steel		40-115	0.18-0.30
M	Martensitic Stainless Steel		40-100	0.20-0.35
	Austenitic Stainless Steel		40-90	0.15-0.35
K	Grey Cast Iron		40-70	0.20-0.35
	Ductile Cast Iron		50-80	0.15-0.30
N	Cast Aluminum Alloy		100-300	0.50-1.00
	Aluminum Alloy		60-150	0.50-0.90
	Copper Alloy		100-150	0.50-0.90
S	Heat-resistance Alloy		10-45	0.10-0.20
	Titanium Alloy		40-60	0.10-0.20