

T•MICRO™

Internal Turning, Profiling, Grooving & Face Machining of Small Diameters

Insert Styles/ Applications:

MINT... Turning/Chamfering
MINP... Turning/Profiling
MINC... Turning/45° Chamfering
MING... Grooving
MINF... Deep Face Grooving/Face Grooving
MINA... Face Grooving
MINR... Profiling
MINN... Threading
MINB... Backturning

Grade:

TT9030

Submicron Substrate
PVD-TiAlN

Sleeve Sizes:

.500"
.625"
.750"
1.00"
12mm
14mm
16mm
20mm
22mm
25mm

Sleeve Type:

MINSL - Double Ended

MINS - Single Ended **NEW**



Ingersoll introduces the T•Micro specifically designed for the machining of very small internal diameters.

T•Micro system is a 2 piece design, consisting of a sleeve and replaceable carbide inserts that provide solutions for a wide range of applications including turning, boring, profiling and face grooving.

Features

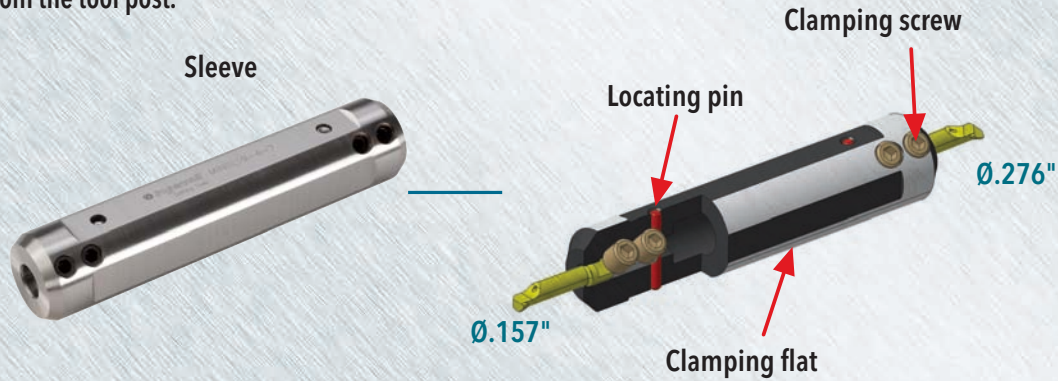
- Replaceable carbide inserts with thru coolant.
- Internal machining starting at .024" (.6mm).
- TiAlN coating along with sub-micron grade substrate.

AHB Tooling & Machinery, Inc.
Complete Metalworking Solutions
Roseville Saginaw & Jackson, MI
ISO Certified
(800) 991-4225
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Member IMC Group
Ingersoll
Cutting Tools

SLEEVES

The new sleeves have been designed to accommodate T-Micro inserts. Located inside the sleeve is a set pin for inserts to locate, allowing operators to start operations without resetting after indexing. It also enables users to replace inserts without removing the sleeve from the tool post.



MACHINING PROGRAM

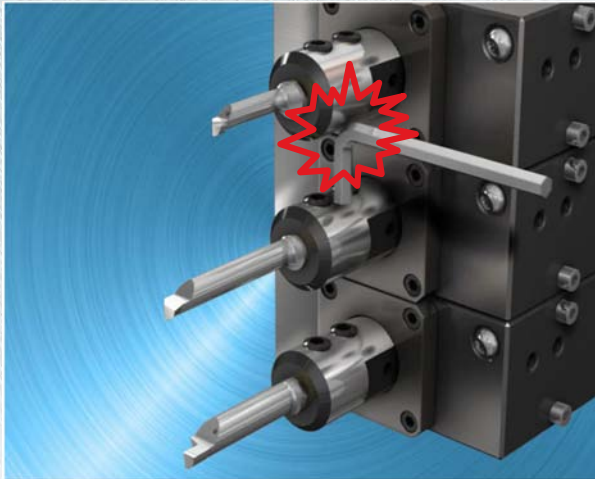
Includes a large variety of tools for various applications.

Turning & Chamfering	MINT Type Min. Bore Dia. : Ø.024"-.276" (0.6-7.0mm)	
Turning & Profiling	MINP Type Min. Bore Dia. : Ø.110"-.197" (2.8-5.0mm)	
Turning & 45° Chamfering	MINC Type Min. Bore Dia. : Ø.197"-.268" (5.0-6.8mm)	
Grooving	MING Type Min. Bore Dia. : Ø.079"-.268" 9 (2.0-6.8mm)	
Deep Face Grooving	MINF Type Min. Bore Dia. : Ø.591" (15mm)	
Face Grooving	MINF Type Min. Bore Dia. : Ø.236"-.315" (6.0-8.0mm)	
Face Grooving	MINA Type Min. Bore Dia. : Ø.236" (6.0mm)	
Profiling	MINR Type Min. Bore Dia. : Ø.197"-.268" (5.0-6.8mm)	
Threading	MINN Type Min. Bore Dia. : Ø.157"-.276" (4.0-7.0mm)	
Back Turning	MINB Type Min. Bore Dia. : Ø.118"-.276" (3.0-7.0mm)	

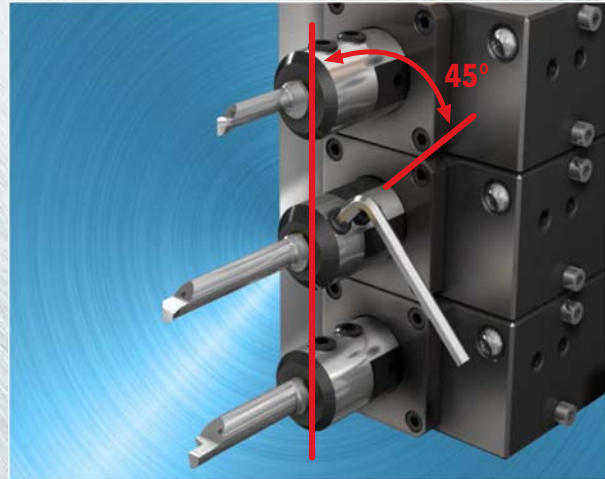
SLEEVES

- Angular clamping design avoids interference with the other sleeves at the tool post during tool change
- The unique design facilitates simplified tool change on Swiss type and other multi-spindle lathes
- Reduced machine downtime, tool inventory and overall costs

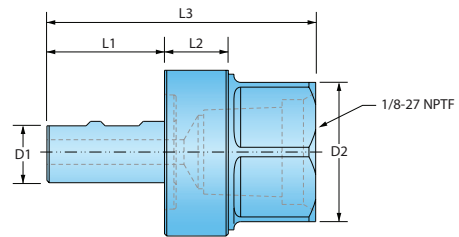
Conventional



TOMICRO™



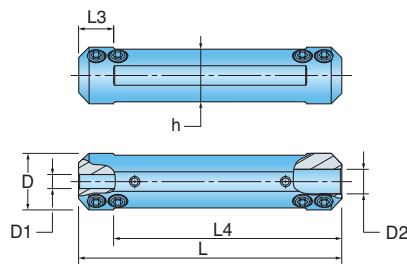
COOLANT FITTING



Designation	Dimensions				
	D1	L1	L2	L3	D2
PF-MIN4	.156 (3.96mm)	.525 (13.34mm)	.285 (7.24mm)	1.200 (30.48mm)	.740 (18.80mm)
PF-MIN7	.274 (6.96mm)	.525 (13.34mm)	.285 (7.24mm)	1.200 (30.48mm)	.740 (18.80mm)

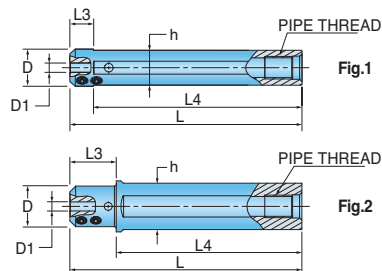
SLEEVES

DOUBLE ENDED



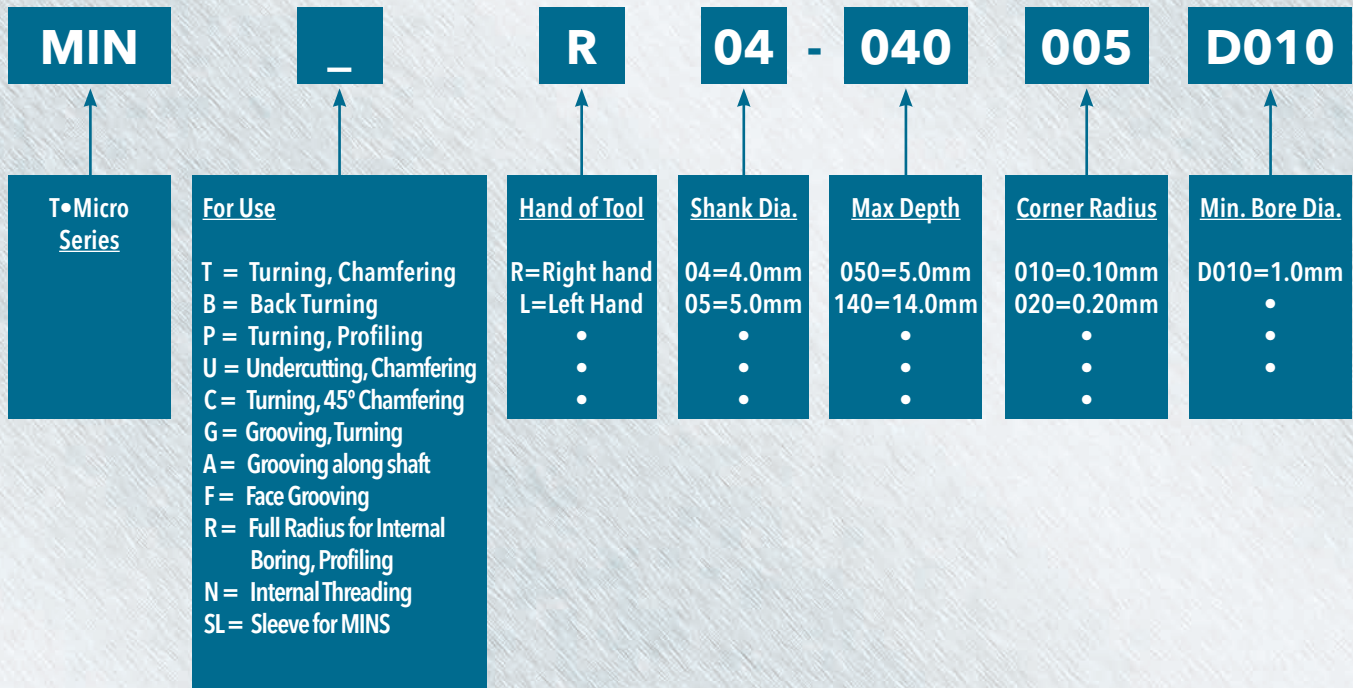
Designation	Dimensions							Set Screw	Wrench
	D	D1	D2	L	L3	L4	h		
INCH									
MINSL12.7-4-4	.500	.157	.157	2.953	.394	2.165	.460	SSM5X0.8X4-MG	L-W2.5
MINSL15.9-4-7	.625	.157	.276	2.953	.394	2.165	.550		
MINSL19-4-7	.750	.157	.276	3.543	.394	2.756	.680		
MINSL25.4-4-7	1.000	.157	.276	3.543	.394	2.756	.920		
METRIC									
MINSL12-4-4	12	4.0	4.0	75	10	55	10.3	SSM5X0.8X4-MG	L-W2.5
MINSL14-4-4	14	4.0	4.0	75	10	55	12		
MINSL16-4-7	16	4.0	7.0	75	10	55	15		
MINSL20-4-7	20	4.0	7.0	90	10	70	18		
MINSL22-4-7	22	4.0	7.0	90	10	70	20	SSM5X0.8X6-MG	L-W2.5
MINSL25-4-7	25	4.0	7.0	90	10	80	23		

SINGLE ENDED



Designation	Dimensions							Figure	Set Screw	Wrench			
	D	D1	Pipe Thread	L	L3	L4	h						
INCH													
MINS15.9-4-L100C	.625	.157	1/8 BSPT	3.937	.394	3.543	.590	1	SSM5X0.8X6-MG	L-W2.5			
MINS15.9-7-L100C	.625	.276		3.937	.394	3.543	.590	1					
MINS19-4-L100C	.750	.157		3.937	.787	3.150	.708	2					
MINS19-7-L100C	.750	.276		3.937	.787	3.150	.708	2					
MINS25.4-4-L100C	1.000	.157		3.937	.905	3.032	.905	2					
MINS25.4-7-L100C	1.000	.276		3.937	.905	3.032	.905	2					
METRIC													
MINS16-4-L100C	16	4.0		1/8 BSPT	100	10	90	15			1	SSM5X0.8X6-MG	L-W2.5
MINS16-7-L100C	16	7.0	100		10	90	15	1					
MINS20-4-L100C	20	4.0	100		20	80	18	2					
MINS20-7-L100C	20	7.0	100		20	80	18	2					
MINS22-4-L100C	22	4.0	100		20	80	20	2					
MINS22-7-L100C	22	7.0	100		20	80	20	2					
MINS25-4-L100C	25	4.0	100		23	77	23	2					
MINS25-7-L100C	25	7.0	100		23	77	23	2					

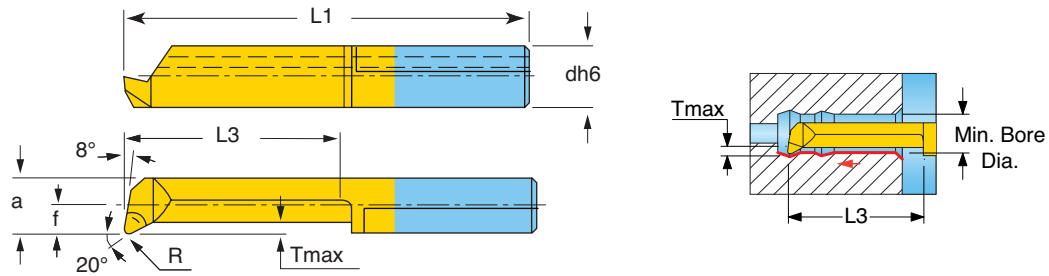
DESIGNATION SYSTEM



CUTTING CONDITIONS

Cutting Speed (sfm)		Feed Rate		
		Turning/Back Turning	Grooving/Threading	Face Grooving
P (Steel)	100-500	.0004"-.003"	.0004"-.002"	.0004"-.0015"
M (Stainless Steel)	100-430			
N (Non-Ferrous)	165-670			
S (Super Alloy)	35-165			

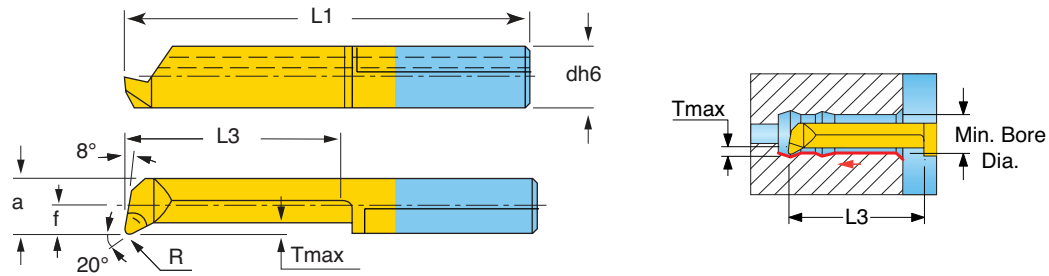
MINT - MINI CARBIDE BARS FOR INTERNAL TURNING AND CHAMFERING



Designation	Dimensions (inches)									
	dh6	f	a	L1	L3	R±0.002	Tmax	Dmin	R/L	Grade
*MINTRO4-020004D006	.157	-	.020	.728	.138	.002	.003	.024	R	TT9030
*MINTRO4-030004D006	.157	-	.020	.768	.177	.002	.003	.024	R	TT9030
MINTRO4-045005D010	.157	-	.035	.827	.236	.002	.004	.039	R	TT9030
MINTRO4-065005D010	.157	-	.035	.906	.315	.002	.004	.039	R	TT9030
MINTRO4-040005D020	.157	-	.067	.807	.217	.002	.004	.079	R	TT9030
MINTRO4-090005D020	.157	-	.067	1.004	.415	.002	.004	.079	R	TT9030
MINTRO4-140005D020	.157	-	.067	1.201	.610	.002	.004	.079	R	TT9030
MINTL04-090010D028	.157	.024	.102	1.004	.413	.004	.008	.110	L	TT9030
MINTRO4-090010D028	.157	.024	.102	1.004	.413	.004	.008	.110	R	TT9030
MINTL04-150010D028	.157	.024	.102	1.240	.650	.004	.008	.110	L	TT9030
MINTRO4-150010D028	.157	.024	.102	1.240	.650	.004	.008	.110	R	TT9030
MINTL04-190010D028	.157	.024	.102	1.398	.807	.004	.008	.110	L	TT9030
MINTRO4-190010D028	.157	.024	.102	1.339	.807	.004	.008	.110	R	TT9030
MINTL04-090010D040	.157	.059	.138	1.004	.413	.004	.012	.157	L	TT9030
MINTRO4-090010D040	.157	.059	.138	1.004	.413	.004	.012	.157	R	TT9030
MINTL04-150010D040	.157	.059	.138	1.240	.650	.004	.012	.157	L	TT9030
MINTRO4-150010D040	.157	.059	.138	1.240	.650	.004	.012	.157	R	TT9030
MINTL04-190010D040	.157	.059	.138	1.398	.807	.004	.012	.157	L	TT9030
MINTRO4-190010D040	.157	.059	.138	1.398	.807	.004	.012	.157	R	TT9030
MINTRO4-230010D040	.157	.059	.138	1.555	.965	.004	.012	.157	R	TT9030
MINTRO4-270010D040	.157	.059	.138	1.713	1.120	.004	.012	.157	R	TT9030

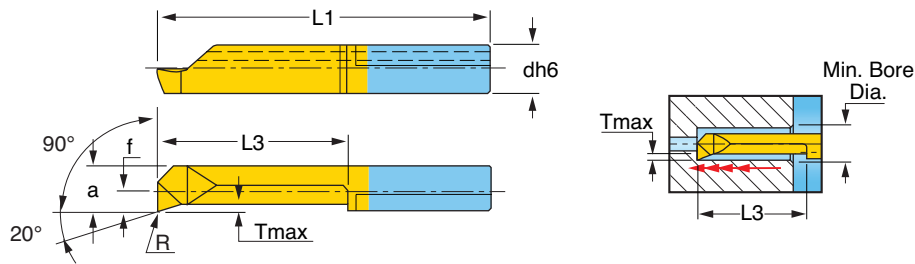
*Max DOC = .0004"~.0012", Max feed = .0004" ipr

MINT - MINI CARBIDE BARS FOR INTERNAL TURNING AND CHAMFERING



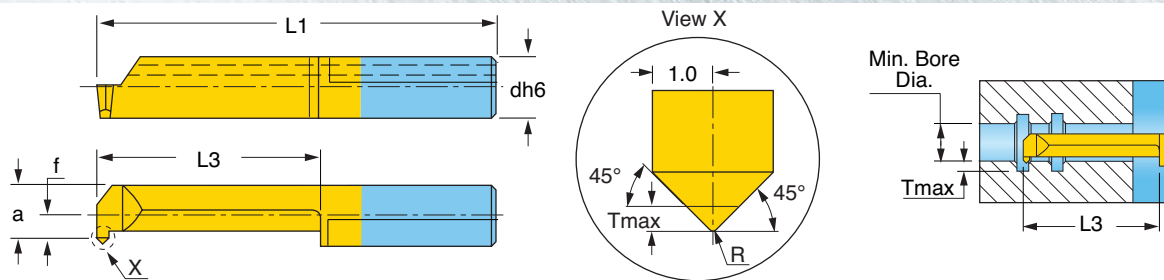
Designation	Dimensions (inches)									
	dh6	f	a	L1	L3	R±0.002	Tmax	Dmin	R/L	Grade
MINTL07-090015D050	.276	.035	.173	.984	.394	.006	.020	.197	L	TT9030
MINTR07-090015D050	.276	.035	.173	.984	.394	.006	.020	.197	R	TT9030
MINTL07-140015D050	.276	.035	.173	1.181	.590	.006	.020	.197	L	TT9030
MINTR07-140015D050	.276	.035	.173	1.181	.590	.006	.020	.197	R	TT9030
MINTL07-190015D050	.276	.035	.173	1.378	.787	.006	.020	.197	L	TT9030
MINTR07-190015D050	.276	.035	.173	1.378	.787	.006	.020	.197	R	TT9030
MINTL07-240015D050	.276	.035	.173	1.575	.984	.006	.020	.197	L	TT9030
MINTR07-240015D050	.276	.035	.173	1.575	.984	.006	.020	.197	R	TT9030
MINTL07-290015D050	.276	.035	.173	1.772	1.181	.006	.020	.197	L	TT9030
MINTR07-290015D050	.276	.035	.173	1.772	1.181	.006	.020	.197	R	TT9030
MINTR07-340015D050	.276	.035	.173	1.969	1.378	.006	.020	.197	R	TT9030
MINTL07-140015D060	.276	.071	.209	1.181	.590	.006	.020	.236	L	TT9030
MINTR07-140015D060	.276	.071	.209	1.181	.590	.006	.020	.236	R	TT9030
MINTL07-210015D060	.276	.071	.209	1.457	.866	.006	.020	.236	L	TT9030
MINTR07-210015D060	.276	.071	.209	1.457	.866	.006	.020	.236	R	TT9030
MINTL07-240015D060	.276	.071	.209	1.575	.984	.006	.020	.236	L	TT9030
MINTR07-240015D060	.276	.071	.209	1.575	.984	.006	.020	.236	R	TT9030
MINTL07-290015D060	.276	.071	.209	1.772	1.181	.006	.020	.236	L	TT9030
MINTR07-290015D060	.276	.071	.209	1.772	1.181	.006	.020	.236	R	TT9030
MINTR07-340015D060	.276	.071	.209	1.969	1.378	.006	.020	.236	R	TT9030
MINTR07-410015D060	.276	.071	.209	2.244	1.653	.006	.020	.236	R	TT9030
MINTL07-190015D068	.276	.110	.248	1.378	.787	.006	.024	.268	L	TT9030
MINTR07-190015D068	.276	.110	.248	1.378	.787	.006	.024	.268	R	TT9030
MINTR07-240015D068	.276	.110	.248	1.575	.984	.006	.024	.268	R	TT9030
MINTL07-290015D068	.276	.110	.248	1.772	1.181	.006	.024	.268	L	TT9030
MINTR07-290015D068	.276	.110	.248	1.772	1.181	.006	.024	.268	R	TT9030
MINTL07-340015D070	.276	.110	.248	1.969	1.378	.006	.024	.276	L	TT9030
MINTR07-340015D070	.276	.110	.248	1.969	1.378	.006	.024	.276	R	TT9030
MINTR07-390015D070	.276	.110	.248	2.165	1.575	.006	.024	.276	R	TT9030
MINTR07-440015D070	.276	.110	.248	2.362	1.772	.006	.024	.276	R	TT9030
MINTR07-490015D070	.276	.110	.248	2.559	1.969	.006	.024	.276	R	TT9030

MINP - MINI CARBIDE BARS FOR INTERNAL TURNING AND PROFILING



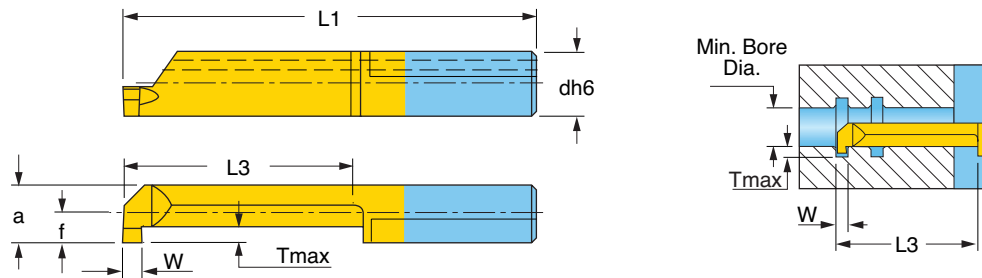
Designation	Dimensions (inches)									
	dh6	f	a	L1	L3	R±0.002	Tmax	Dmin	R/L	Grade
MINPR04-090010D028	.157	.024	.102	1.004	.413	.004	.008	.110	R	TT9030
MINPR04-150010D028	.157	.024	.102	1.240	.650	.004	.008	.110	R	TT9030
MINPR04-090010D040	.157	.059	.138	1.004	.413	.004	.012	.157	R	TT9030
MINPR04-150010D040	.157	.059	.138	1.240	.650	.004	.012	.157	R	TT9030
MINPR07-140015D050	.276	.035	.173	1.181	.591	.006	.020	.197	R	TT9030
MINPR07-190015D050	.276	.035	.173	1.378	.787	.006	.020	.197	R	TT9030

MINC - MINI CARBIDE BARS FOR INTERNAL TURNING AND 45° CHAMFERING



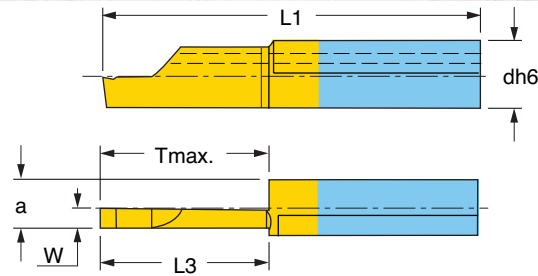
Designation	Dimensions (inches)									
	dh6	R±0.0016	f	a	L1	L3	Tmax	Dmin	R/L	Grade
MINCR07-140020D050	.276	.008	.035	.173	1.181	.591	.028	.197	R	TT9030
MINCR07-190020D050	.276	.008	.035	.173	1.378	.787	.028	.197	R	TT9030
MINCR07-190020D068	.276	.008	.110	.248	1.378	.787	.028	.268	R	TT9030

MING - MINI CARBIDE BARS FOR GROOVING AND TURNING



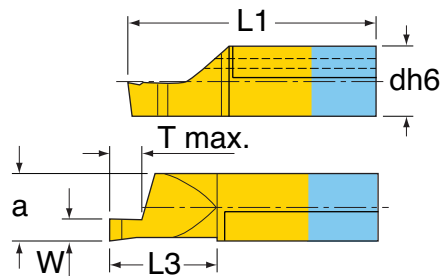
Designation	Dimensions (inches)									
	dh6	W±0.05	f	a	L1	L3	Tmax	Dmin	R/L	Grade
MINGR04-050050-D20	.157	.020	.008	.071	.827	.236	.016	.079	R	TT9030
MINGR04-100050-D20	.157	.020	.008	.071	1.024	.433	.016	.079	R	TT9030
MINGR04-050070-D30	.157	.028	.028	.106	.827	.236	.024	.118	R	TT9030
MINGR04-100070-D30	.157	.028	.028	.106	1.024	.433	.024	.118	R	TT9030
MINGR04-090100-D40	.157	.039	.059	.138	1.004	.413	.031	.157	R	TT9030
MINGR04-150100-D40	.157	.039	.059	.138	1.240	.650	.031	.157	R	TT9030
MINGR07-090100-D50	.276	.039	.035	.173	.984	.394	.039	.197	R	TT9030
MINGR07-140100-D50	.276	.039	.035	.173	1.181	.591	.039	.197	R	TT9030
MINGR07-090150-D50	.276	.059	.035	.173	.984	.394	.039	.197	R	TT9030
MINGR07-140150-D50	.276	.059	.035	.173	1.181	.591	.039	.197	R	TT9030
MINGR07-090200-D50	.276	.079	.035	.173	.984	.394	.039	.197	R	TT9030
MINGR07-190200-D50	.276	.079	.035	.173	1.378	.787	.039	.197	R	TT9030
MINGR07-090100D060	.276	.039	.071	.209	.984	.394	.071	.236	R	TT9030
MINGL07-090100D060	.276	.039	.071	.209	.984	.394	.071	.236	L	TT9030
MINGR07-140100D060	.276	.039	.071	.209	1.181	.591	.071	.236	R	TT9030
MINGR07-210100D060	.276	.039	.071	.209	1.457	.866	.071	.236	R	TT9030
MINGR07-290100D060	.276	.039	.071	.209	1.772	1.181	.071	.236	R	TT9030
MINGR07-090150D060	.276	.059	.071	.209	.984	.394	.071	.236	R	TT9030
MINGL07-090150D060	.276	.059	.071	.209	.984	.394	.071	.236	L	TT9030
MINGR07-140150D060	.276	.059	.071	.209	1.181	.591	.071	.236	R	TT9030
MINGR07-210150D060	.276	.059	.071	.209	1.457	.866	.071	.236	R	TT9030
MINGR07-240150D060	.276	.059	.071	.209	1.575	.984	.071	.236	R	TT9030
MINGR07-290150D060	.276	.059	.071	.209	1.772	1.181	.071	.236	R	TT9030
MINGR07-090200D060	.276	.079	.071	.209	.984	.394	.071	.236	R	TT9030
MINGR07-140200D060	.276	.079	.071	.209	1.181	.591	.071	.236	R	TT9030
MINGR07-210200D060	.276	.079	.071	.209	1.457	.866	.071	.236	R	TT9030
MINGR07-240200D060	.276	.079	.071	.209	1.575	.984	.071	.236	R	TT9030
MINGR07-290200D060	.276	.079	.071	.209	1.772	1.181	.071	.236	R	TT9030
MINGR07-090100D068	.276	.039	.106	.244	.984	.394	.098	.268	R	TT9030
MINGR07-140100D068	.276	.039	.106	.244	1.181	.591	.098	.268	R	TT9030
MINGR07-210100D068	.276	.039	.106	.244	1.457	.866	.098	.268	R	TT9030
MINGR07-090150D068	.276	.059	.106	.244	.984	.394	.098	.268	R	TT9030
MINGR07-140150D068	.276	.059	.106	.244	1.181	.591	.098	.268	R	TT9030
MINGR07-210150D068	.276	.059	.106	.244	1.457	.866	.098	.268	R	TT9030
MINGR07-290150D068	.276	.059	.106	.244	1.772	1.181	.098	.268	R	TT9030
MINGR07-090200D068	.276	.079	.106	.244	.984	.394	.098	.268	R	TT9030
MINGR07-140200D068	.276	.079	.106	.244	1.181	.591	.098	.268	R	TT9030
MINGL07-140200D068	.276	.079	.106	.244	1.181	.591	.098	.268	L	TT9030
MINGR07-210200D068	.276	.079	.106	.244	1.457	.866	.098	.268	R	TT9030
MINGR07-240200D068	.276	.079	.106	.244	1.575	.945	.098	.268	R	TT9030
MINGR07-290200D068	.276	.079	.106	.244	1.772	1.142	.098	.268	R	TT9030

MINF - MINI CARBIDE BARS FOR DEEP FACE GROOVING



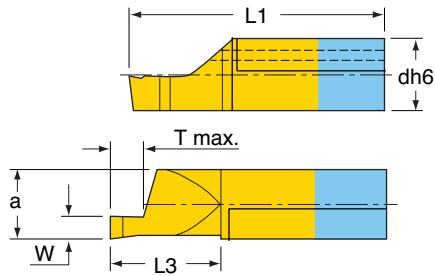
Designation	Dimensions (inches)								
	dh6	W	a	L3	L1	Tmax	Dmin	R/L	Grade
MINFR07-200250D150	.276	.098	.232	.827	1.417	.787	.591	R	TT9030
MINFR07-200300D150	.276	.118	.232	.827	1.417	.787	.591	R	TT9030
MINFR07-300300D150	.276	.118	.232	1.220	1.811	1.181	.591	R	TT9030

MINF - MINI CARBIDE BARS FOR FACE GROOVING



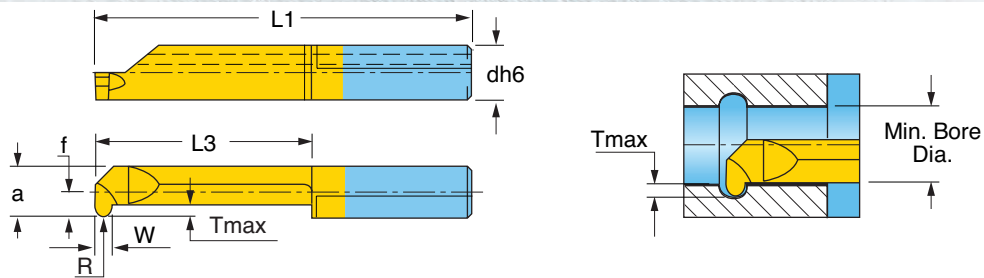
Designation	Dimensions (inches)								
	dh6	W	a	L3	L1	Tmax	Dmin	R/L	Grade
MINFR07-110100D060	.276	.039	.205	.433	1.024	.059	.236	R	TT9030
MINFR07-110100D080	.276	.039	.232	.472	1.063	.059	.315	R	TT9030
MINFR07-110150D060	.276	.059	.205	.433	1.024	.079	.236	R	TT9030
MINFR07-110200D060	.276	.079	.232	.472	1.063	.118	.315	R	TT9030
MINFR07-200200D080	.276	.079	.205	.433	1.024	.118	.315	R	TT9030
MINFL07-210150D080	.276	.059	.232	.827	1.417	.098	.315	L	TT9030
MINFR07-110150D080	.276	.059	.232	.866	1.417	.098	.315	R	TT9030
MINFR07-210150D080	.276	.059	.232	.866	1.417	.098	.315	R	TT9030
MINFL07-300200D080	.276	.079	.232	1.220	1.811	.118	.315	L	TT9030
MINFR07-110200D080	.276	.079	.232	.472	1.063	.118	.315	R	TT9030
MINFR07-210200D080	.276	.079	.232	.866	1.417	.118	.315	R	TT9030
MINFR07-110250D080	.276	.098	.232	.472	1.063	.138	.315	R	TT9030
MINFR07-210250D080	.276	.098	.232	.866	1.417	.138	.315	R	TT9030
MINFR07-110300D080	.276	.118	.232	.472	1.063	.138	.315	R	TT9030
MINFR07-210300D080	.276	.118	.232	.866	1.417	.138	.315	R	TT9030
MINFR07-300300D080	.276	.118	.232	1.220	1.811	.138	.315	R	TT9030

MINA - MINI CARBIDE BARS FOR SHAFT GROOVING



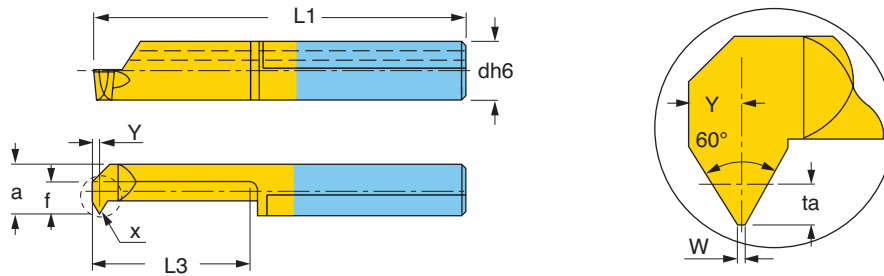
Designation	Dimensions (inches)									
	dh6	W	a	L3	L1	Tmax	Dmin	R/L	Grade	
MINAR07-200200D060	.276	.079	.205	.827	1.417	.157	.236	R	TT9030	

MINR - MINI CARBIDE BARS, FULL RADIUS FOR INTERNAL BORING AND PROFILING



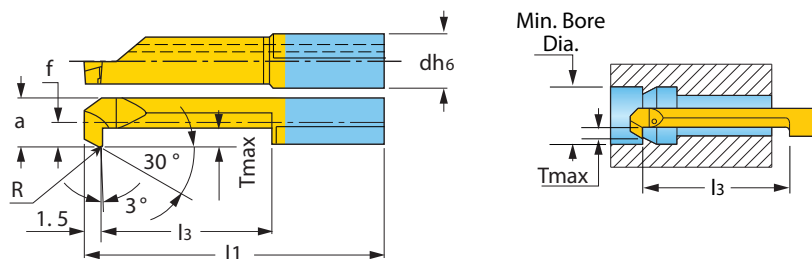
Designation	Dimensions (inches)										
	dh6	W±0.002	f	a	R	L1	L3	Tmax	Dmin	R/L	Grade
MINRR07-190050D050	.276	.039	.035	.173	.020	1.378	.787	.039	.197	R	TT9030
MINRR07-240050D060	.276	.039	.071	.209	.020	1.575	.984	.071	.236	R	TT9030
MINRR07-290050D068	.276	.039	.110	.248	.020	1.772	1.181	.098	.268	R	TT9030

MINN - MINI CARBIDE BARS FOR ISO FULL PROFILE INTERNAL THREAD TURNING



Designation	dh6	Pitch	ta	Dimensions (inches)							
				W+.000 -.001	Y	f	a	L3	L1	Dmin	Grade
MINNR04-140050D040	.157	.50	.012	.002	.014	.059	.138	.591	1.181	.157	TT9030
MINNR07-140050D050	.276	.50	.012	.002	.014	.035	.173	.591	1.181	.197	TT9030
MINNR07-140050D075	.276	.75	.016	.035	.018	.035	.173	.591	1.181	.197	TT9030
MINNR07-140100D048	.276	1.00	.024	.005	.022	.035	.173	.591	1.181	.189	TT9030
MINNR07-140100D060	.276	1.00	.024	.005	.022	.071	.209	.591	1.181	.236	TT9030
MINNR07-140125D060	.276	1.25	.028	.006	.026	.071	.209	.591	1.181	.236	TT9030
MINNR07-140150D060	.276	1.50	.031	.007	.030	.071	.209	.591	1.181	.236	TT9030
MINNR07-140150D070	.276	1.50	.031	.007	.030	.110	.248	.591	1.181	.276	TT9030

MINB - MINI CARBIDE BARS FOR INTERNAL BACK TURNING



Designation	dh6	f	a	Dimensions (inches)						
				L1	L3	R±0.002	Tmax	Dmin	R/L	Grade
MINBR04-140010D030	.157	.024	.102	1.181	.591	.008	.020	.118	R	TT9030
MINBR04-190010D030	.157	.024	.102	1.378	.787	.008	.020	.118	R	TT9030
MINBR04-140015D040	.157	.059	.138	1.181	.591	.006	.031	.157	R	TT9030
MINBR04-240015D040	.157	.059	.138	1.575	.984	.006	.031	.157	R	TT9030
MINBR07-190020D050	.276	.035	.173	1.378	.787	.008	.039	.197	R	TT9030
MINBR07-290020D050	.276	.035	.173	1.772	1.181	.008	.039	.197	R	TT9030
MINBR07-190020D060	.276	.071	.209	1.378	.787	.008	.071	.236	R	TT9030
MINBR07-290020D060	.276	.071	.209	1.772	1.181	.008	.071	.236	R	TT9030
MINBR07-190020D070	.276	.110	.248	1.378	.787	.008	.098	.276	R	TT9030
MINBR07-290020D070	.276	.110	.248	1.772	1.181	.008	.098	.276	R	TT9030

Availability

In stock

Price

Available in the GAL system