



2017 Master Catalog

WIDIA  TM



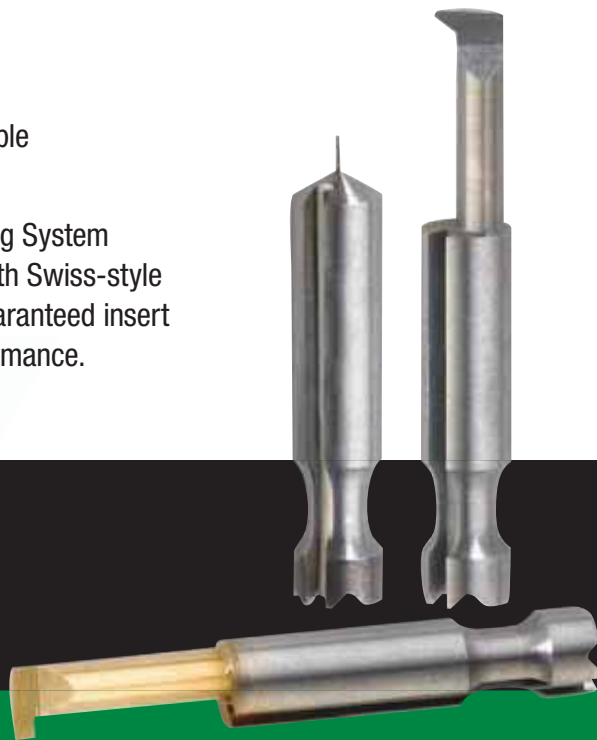
Quadralock™ •

High-Precision Products for I.D. Applications

Easy access, quick-change toolholders and inserts perform multiple I.D. applications for maximum productivity with one toolholder.

The unique cutting tip of the Quadralock I.D. Quick-Change Tooling System can be locked in four different positions, enabling operation in both Swiss-style and conventional machines. Four quick, easy setup steps and guaranteed insert repeatability within $\pm 0.0005"$ ($\pm 0,013\text{mm}$) ensures superior performance.

Quadralock



Quadralock Ultra-Precision Tooling

Features

- Fixed-limit stop for precise and repeatable cutting edge positioning.
- Tight insert seat pocket ensures secure hold.
- V-slots and limit-stop bolts for increased indexability.

Benefits

- Internal coolant supply directly lubricates cutting edge.
- Ability to rotate tool at 90° increments.
- For all boring, grooving, profiling, and threading applications.

Boring

Bore holes as small as .010" (0,25mm).



Profiling

Profile in diameters as small as .062" (1,57mm).



Grooving

Groove in a .110" (2,79mm) diameter hole.



Threading

Thread down to a No. 5; .100" (2,54mm).



Technical drawing of a shaft with a keyway. The drawing shows two views: a front view and a side view. The front view shows a shaft with a keyway of width 10 mm. The side view shows the shaft with a diameter of 20 mm. The drawing is labeled with dimensions in mm.

Section	Material	Length (mm)	Outer Diameter (mm)	Inner Diameter (mm)	Keyway Width (mm)	Keyway Depth (mm)	Keyway Position (mm)
1	Stainless Steel	100	20	10	10	2	50
2	Aluminum	50	20	10	10	2	25
3	Carbon Steel	150	20	10	10	2	75
4	Stainless Steel	100	20	10	10	2	50
5	Aluminum	50	20	10	10	2	25
6	Carbon Steel	150	20	10	10	2	75
7	Stainless Steel	100	20	10	10	2	50
8	Aluminum	50	20	10	10	2	25
9	Carbon Steel	150	20	10	10	2	75
10	Stainless Steel	100	20	10	10	2	50
11	Aluminum	50	20	10	10	2	25
12	Carbon Steel	150	20	10	10	2	75
13	Stainless Steel	100	20	10	10	2	50
14	Aluminum	50	20	10	10	2	25
15	Carbon Steel	150	20	10	10	2	75
16	Stainless Steel	100	20	10	10	2	50
17	Aluminum	50	20	10	10	2	25
18	Carbon Steel	150	20	10	10	2	75
19	Stainless Steel	100	20	10	10	2	50
20	Aluminum	50	20	10	10	2	25
21	Carbon Steel	150	20	10	10	2	75
22	Stainless Steel	100	20	10	10	2	50
23	Aluminum	50	20	10	10	2	25
24	Carbon Steel	150	20	10	10	2	75
25	Stainless Steel	100	20	10	10	2	50
26	Aluminum	50	20	10	10	2	25
27	Carbon Steel	150	20	10	10	2	75
28	Stainless Steel	100	20	10	10	2	50
29	Aluminum	50	20	10	10	2	25
30	Carbon Steel	150	20	10	10	2	75
31	Stainless Steel	100	20	10	10	2	50
32	Aluminum	50	20	10	10	2	25
33	Carbon Steel	150	20	10	10	2	75
34	Stainless Steel	100	20	10	10	2	50
35	Aluminum	50	20	10	10	2	25
36	Carbon Steel	150	20	10	10	2	75
37	Stainless Steel	100	20	10	10	2	50
38	Aluminum	50	20	10	10	2	25
39	Carbon Steel	150	20	10	10	2	75
40	Stainless Steel	100	20	10	10	2	50
41	Aluminum	50	20	10	10	2	25
42	Carbon Steel	150	20	10	10	2	75
43	Stainless Steel	100	20	10	10	2	50
44	Aluminum	50	20	10	10	2	25
45	Carbon Steel	150	20	10	10	2	75
46	Stainless Steel	100	20	10	10	2	50
47	Aluminum	50	20	10	10	2	25
48	Carbon Steel	150	20	10	10	2	75
49	Stainless Steel	100	20	10	10	2	50
50	Aluminum	50	20	10	10	2	25
51	Carbon Steel	150	20	10	10	2	75
52	Stainless Steel	100	20	10	10	2	50
53	Aluminum	50	20	10	10	2	25
54	Carbon Steel	150	20	10	10	2	75
55	Stainless Steel	100	20	10	10	2	50
56							

MTMI50015

Quadralock Boring System

Type

I = Inch
M = Metric

Shank Diameter
shown as "D"

Inch

375 = .375"

500 = .500"

625 = .625"

750 = .750"

1000 = 1.000"

Metric

8 = 8,00mm

10 = 10,00mm

12 = 12,00mm

16 = 16,00mm

22 = 22,00mm

Length
shown as "L"

Inch

15 = 1.50"

4 = 4.00"

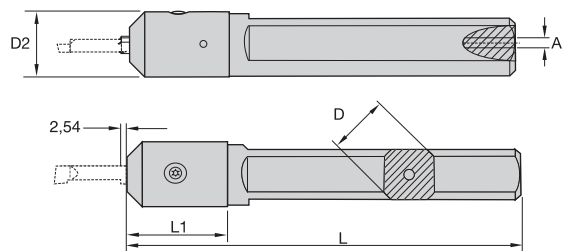
5 = 5.00"

Metric

40 = 38,10mm

100 = 101,60mm

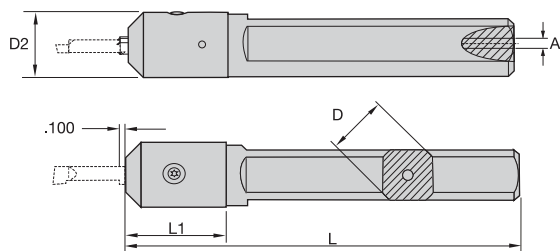
127 = 127,00mm



■ **MTMM**

order number	catalog number	D	D2	L	L1	A	insert screw	hex
3896202	MTMM840	8,00	12,95	38	19	3,18	MSM46	2 mm
3896198	MTMM1040	10,00	12,95	38	19	3,00	MSM46	2 mm
3896200	MTMM1240	12,00	12,95	38	19	3,18	MSM46	2 mm
3896199	MTMM12100	12,00	12,95	102	19	3,00	MSM46	2 mm
3896201	MTMM22127	22,00	12,95	127	19	3,00	MSM46	2 mm



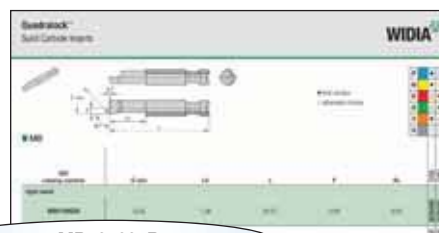


■ MTMI

order number	catalog number	D	D2	L	L1	A	insert screw	hex
2839815	MTMI37515	.375	.510	1.500	.750	.118	MSM46	2 mm
2839803	MTMI50015	.500	.510	1.500	.750	.125	MSM46	2 mm
2839792	MTMI62515	.625	.510	1.500	.760	.125	MSM46	2 mm
2839785	MTMI6254	.625	.510	4.000	.760	.125	MSM46	2 mm
2839779	MTMI75015	.750	.510	1.500	.760	.125	MSM46	2 mm
2839774	MTMI7504	.750	.510	4.000	.760	.125	MSM46	2 mm
3896197	MTMI10005	1.000	.510	5.000	.760	.125	MSM46	2 mm



Quadralock Boring Bar Insert Identification System

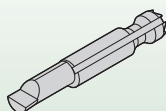


MB125625R

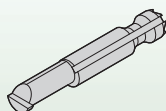
MB

Insert Style

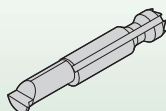
MB = Boring



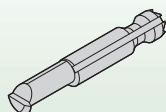
MG = Grooving



MP = Profiling



MT = Threading



125

Minimum Bore
shown as "D min"

Inch

010	=	.010"
030	=	.030"
062	=	.062"
094	=	.094"
125	=	.125"
156	=	.156"

(for MG and MT style only)

095	=	.110"
125	=	.140"
156	=	.175"

Metric

010	=	0,25mm
030	=	0,76mm
062	=	1,58mm
094	=	2,39mm
125	=	3,18mm
156	=	3,96mm

(for MG and MT style only)

095	=	2,79mm
125	=	3,56mm
156	=	4,45mm

625

Bore Depth, Groove Width,
Flat on Thread
shown as "L4, W"

Inch

Bore Depth

062	=	.062"
187	=	.187"
281	=	.281"
312	=	.312"
375	=	.375"
500	=	.500"
625	=	.625"
875	=	.875"

**Groove Width
(for MG style only)**

030	=	.030"
040	=	.040"
050	=	.050"

**Thread
(for MT style only)**

60F2	=	.002"
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Flat on 60° thread

Metric

Bore Depth

062	=	1,58mm
187	=	4,75mm
281	=	7,14mm
312	=	7,93mm
375	=	9,53mm
500	=	12,70mm
625	=	15,88mm
875	=	22,23mm

**Groove Width
(for MG style only)**

030	=	0,76mm
040	=	1,02mm
050	=	1,27mm

**Thread
(for MT style only)**

60F2	=	0,05mm
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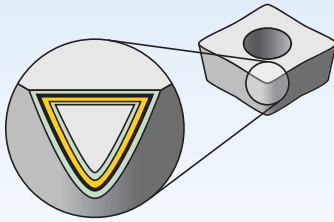
Flat on 60° thread

R

Hand
of Tool

R =
Right hand

L =
Left hand



Coatings provide high-speed capability and are engineered for finishing to light roughing.

P	Steel
M	Stainless Steel
K	Cast Iron
N	Non-Ferrous
S	High-Temp Alloys
H	Hardened Materials

wear resistance ← → toughness

Coating		Grade Description		05	10	15	20	25	30	35	40	45
CM1		Uncoated carbide. A very tough, ultra-fine grain unalloyed substrate. For general-purpose machining of most steels, stainless steels, high-temperature alloys, titanium, irons, and non-ferrous materials. Performs best at low speeds and will handle interruptions and high feed rates. Use when C2, C3, or C25 fail due to chipping or breaking.	P									
			M									
			K									
			N									
			S									
CG5		A PVD-TiN-coated grade. Straight 9.5% Co substrate. Submicron grain. For general-purpose machining of most steels, stainless steels, high-temperature alloys, titanium, irons, and non-ferrous materials. Performs best at low speeds and will handle interruptions and high feed rates.	P									
			M									
			K									
			N									
			S									
	HC-S25											



Speed and Feed Chart

Quadralock™ Inserts • Inch

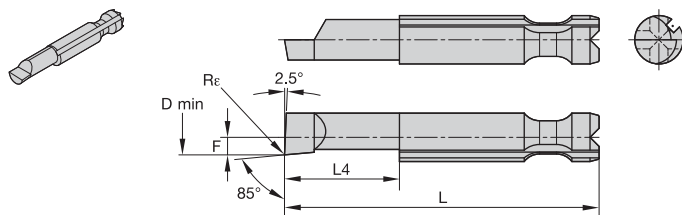


Cutting Speed — vc SFM							
Material Group		CG5			CM1		
		min	Start	max	min	Start	max
P	ap [inch]	0.0008	-	0.008	0.0008	-	0.008
	f [inch]	0.0008	-	0.0028	0.0008	-	0.0028
	0/1	340	420	505	210	260	315
	2	230	280	340	145	175	215
	3	230	280	340	145	175	215
	4	175	220	265	115	140	170
	5	225	280	340	145	175	215
	6	150	185	225	100	120	145
M	ap [inch]	0.0008	-	0.008	0.0008	-	0.008
	f [inch]	0.0008	-	0.0028	0.0008	-	0.0028
	1	240	300	360	180	220	265
	2	220	270	325	160	200	240
	3	165	200	245	120	150	180
K	ap [inch]	0.0008	-	0.008	0.0008	-	0.008
	f [inch]	0.0008	-	0.0028	0.0008	-	0.0028
	1	195	245	295	155	190	230
	2	250	310	375	190	240	290
	3	180	225	270	140	175	210
N	ap [inch]	0.0008	—	0.020	0.0008	—	0.020
	f [inch]	0.0004	—	0.0035	0.0004	—	0.0035
	1	1320	1650	1980	1320	1650	1980
	2	970	1215	1455	970	1215	1455
	3	240	300	360	225	280	340
	4	455	570	685	325	405	490
	5	320	400	480	260	320	385
	6	320	400	480	260	320	385
7	785	985	1180	780	975	1175	
S	ap [inch]	0.0008	-	0.008	0.0008	-	0.008
	f [inch]	0.0008	-	0.0024	0.0008	-	0.0024
	1	90	105	130	175	215	260
	2	65	80	100	135	170	205
	3	105	130	160	90	110	135
H		—	—	—	—	—	—
	4	—	—	—	—	—	—
	ap [inch]	—	—	—	—	—	—
	f [inch]	—	—	—	—	—	—
	1	—	—	—	—	—	—
	2	—	—	—	—	—	—
	3	—	—	—	—	—	—
	4	—	—	—	—	—	—

NOTE: Speed and feed rates and depth of cut may vary depending on materials and machining conditions including, but not limited to, tool overhang, tool size, and finished surface requirements.

Cutting Speed — vc m/min							
Material Group		CG5			CM1		
		min	Start	max	min	Start	max
P	ap [mm]	.001	-	.008	.001	-	.008
	f [mm/rev]	.0005	-	.007	.0005	-	.007
	0/1	105	130	155	65	80	100
	2	70	90	105	45	55	65
	3	70	90	105	45	55	65
	4	55	70	85	40	45	55
	5	70	90	105	45	55	70
	6	50	60	70	35	40	45
M	ap [mm]	.001	-	.008	.001	-	.008
	f [mm/rev]	.0005	-	.007	.0005	-	.007
	1	75	95	110	55	70	85
	2	70	85	100	50	65	75
K	ap [mm]	.001	-	.010	.001	-	.010
	f [mm/rev]	.0005	-	.007	.0005	-	.007
	1	65	80	95	50	60	75
	2	80	95	115	60	75	90
K	3	55	70	85	45	55	65
	ap [mm]	.001	-	.025	.001	-	.025
	f [mm/rev]	.0005	-	.007	.0005	-	.007
	N	1	405	505	605	405	505
2		300	370	445	300	370	445
3		75	95	110	70	90	105
4		140	175	210	105	125	155
5		100	125	150	80	100	120
6		100	125	150	80	100	120
7		240	300	360	240	300	360
S		ap [mm]	.001	-	.008	.001	-
	f [mm/rev]	.001	-	.007	.001	-	.007
	1	30	35	40	55	70	85
	2	20	30	35	45	55	65
	3	35	40	50	30	35	45
H	4	-	-	-	-	-	-
	ap [mm]	-	-	-	-	-	-
	f [mm/rev]	-	-	-	-	-	-
	1	-	-	-	-	-	-
	2	-	-	-	-	-	-
H	3	-	-	-	-	-	-
	4	-	-	-	-	-	-

NOTE: Speed and feed rates and depth of cut may vary depending on materials and machining conditions including, but not limited to, tool overhang, tool size, and finished surface requirements.



■ MB

P			
M			
K			
N			
S			
H			

● first choice
○ alternate choice

Tools for Small Hole Boring

ISO catalog number	ANSI catalog number	D min		L4		L		F		Rε		CG5	CM1
		mm	in	mm	in	mm	in	mm	in	mm	in		
right hand												2836098	2836095
MB010062R	MB010062R	0,25	.010	1,58	.062	20,57	.810	0,09	.004	0,03	.001	2836098	2836095
MB062187R	MB062187R	1,58	.062	5,41	.213	21,92	.863	0,66	.026	0,05	.002	2836423	2836095
MB062312R	MB062312R	1,58	.062	7,93	.312	24,44	.962	0,66	.026	0,05	.002	2836418	2836263
MB094281R	MB094281R	2,39	.094	7,14	.281	23,65	.931	1,04	.041	0,05	.002	I	3857732
MB094500R	MB094500R	2,39	.094	12,70	.500	29,21	1.150	1,04	.041	0,05	.002	2836405	2836251
MB125625R	MB125625R	3,18	.125	15,88	.625	32,39	1.275	1,45	.057	0,10	.004	I	2836240
MB156500R	MB156500R	3,96	.156	12,70	.500	29,21	1.150	1,85	.073	0,10	.004	2836388	3885997
MB156875R	MB156875R	3,96	.156	22,23	.875	38,74	1.525	1,85	.073	0,10	.004	I	2836229

(continued)

(MB — continued)

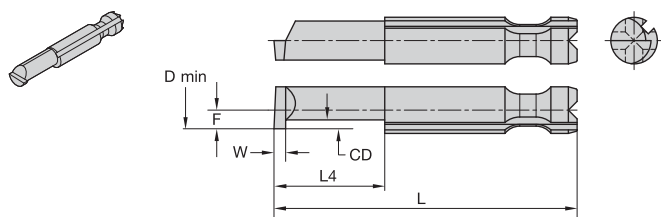
● first choice
○ alternate choice

P	●	○
M	●	○
K	○	●
N	○	●
S	●	○
H		

ISO catalog number	ANSI catalog number	D min		L4		L		F		Re		CG5	CM1
		mm	in	mm	in	mm	in	mm	in	mm	in		
left hand													
MB010062L	MB010062L	0,25	.010	1,58	.062	20,57	.810	0,09	.004	0,03	.001	3885960	3885959
MB030187L	MB030187L	0,76	.030	4,75	.187	21,26	.837	0,34	.014	0,03	.001	3885961	3885962
MB062187L	MB062187L	1,58	.062	5,41	.213	21,92	.863	0,66	.026	0,05	.002	3885983	3885984
MB062312L	MB062312L	1,58	.062	7,93	.312	24,44	.962	0,66	.026	0,05	.002	3885986	3885987
MB094281L	MB094281L	2,39	.094	7,14	.281	23,65	.931	1,04	.041	0,05	.002	-	3885989
MB094500L	MB094500L	2,39	.094	12,70	.500	29,21	1.150	1,04	.041	0,05	.002	3885990	3885991
MB125375L	MB125375L	3,18	.125	9,53	.375	26,04	1.025	1,45	.057	0,10	.004	3885992	3885993
MB125625L	MB125625L	3,18	.125	15,88	.625	32,39	1.275	1,45	.057	0,10	.004	3885994	3885995
MB156500L	MB156500L	3,96	.156	12,70	.500	29,21	1.150	1,85	.073	0,10	.004	3027643	3885996
MB156875L	MB156875L	3,96	.156	22,23	.875	38,74	1.525	1,85	.073	0,10	.004	3885998	3885999

NOTE: Actual bore depth for MB062187R and MB062187L equals 5,41mm.
ANSI Catalog Number MB062187R and ANSI Catalog Number MB062187L have an actual bore depth of .213".

Tools for Small Hole Boring

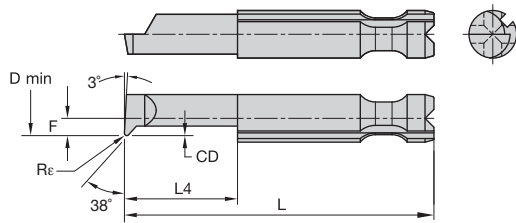
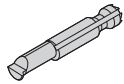


● first choice
○ alternate choice

P	●	○
M	●	○
K	○	●
N	○	●
S	●	○
H	●	○

■ MG

ISO catalog number	ANSI catalog number	D min		L4		L		F		CD		W		CG5	CM4
		mm	in	mm	in	mm	in	mm	in	mm	in	mm	in		
right hand															
MG095030R	MG095030R	2,79	.110	7,93	.312	24,44	.962	1,17	.046	0,76	.030	0,76	.030	I	3897442
MG125040R	MG125040R	3,56	.140	9,53	.375	26,04	1.025	1,55	.061	0,89	.035	1,02	.040	I	3897442
MG156050R	MG156050R	4,45	.175	12,70	.500	29,21	1.150	1,93	.076	1,27	.050	1,27	.050	I	3897442
left hand															
MG095030L	MG095030L	2,79	.110	7,93	.312	24,44	.962	1,17	.046	0,76	.030	0,76	.030	I	3886000
MG125040L	MG125040L	3,56	.140	9,53	.375	26,04	1.025	1,55	.061	0,89	.035	1,02	.040	I	3886002
MG156050L	MG156050L	4,45	.175	12,70	.500	29,21	1.150	1,93	.076	1,27	.050	1,27	.050	I	3886002



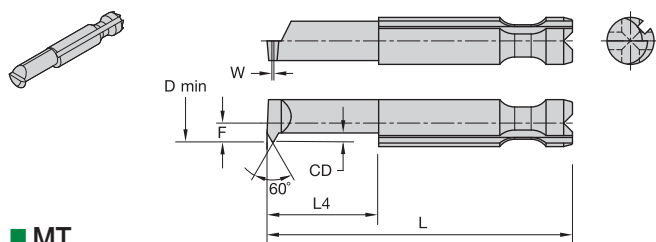
● first choice
○ alternate choice

P	●	○
M	●	○
K	○	●
N	○	●
S	●	○
H	○	○

■ MP

ISO catalog number	ANSI catalog number	D min		L4		L		F		CD		Re		CG5	CM1
mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in		
right hand															
MP062187R	MP062187R	1,58	.062	4,75	.187	21,26	.837	0,66	.026	0,43	.017	0,10	.004	2836357	2836357
MP094281R	MP094281R	2,39	.094	7,14	.281	23,65	.931	1,07	.042	0,71	.028	0,10	.004	2836351	3897488
MP125375R	MP125375R	3,18	.125	9,53	.375	26,04	1.025	1,45	.057	1,02	.040	0,20	.008	2836345	2836190
MP156500R	MP156500R	3,96	.156	12,70	.500	29,21	1.150	1,85	.073	1,27	.050	0,20	.008	2836339	2836184
left hand															
MP062187L	MP062187L	1,58	.062	4,75	.187	21,26	.837	0,66	.026	0,43	.017	0,10	.004	3644074	3897486
MP094281L	MP094281L	2,39	.094	7,14	.281	23,65	.931	1,07	.042	0,71	.028	0,10	.004	3644074	3897487
MP125375L	MP125375L	3,18	.125	9,53	.375	26,04	1.025	1,45	.057	1,02	.040	0,20	.008	3897491	3897490
MP156500L	MP156500L	3,96	.156	12,70	.500	29,21	1.150	1,85	.073	1,27	.050	0,20	.008	3897491	3897492

Tools for Small Hole Boring



● first choice
○ alternate choice

P			
M			
K			
N			
S			
H			

MT

ISO catalog number	ANSI catalog number	D min		L4		L		F		CD		W		CG5	CM1
		mm	in	mm	in	mm	in	mm	in	mm	in	mm	in		
right hand															
MT09560F2R	MT09560F2R	2,79	.110	7,93	.312	24,44	.962	1,17	.046	0,56	.022	0,05	.002	I	2836180
MT12560F2R	MT12560F2R	3,56	.140	9,53	.375	26,04	1.025	1,55	.061	0,69	.027	0,05	.002		2836328
MT15660F2R	MT15660F2R	4,45	.175	12,70	.500	29,21	1.150	1,93	.076	0,81	.032	0,05	.002	I	2836168
left hand															
MT09560F2L	MT09560F2L	2,79	.110	7,93	.312	24,44	.962	1,17	.046	0,56	.022	0,05	.002		3897493
MT12560F2L	MT12560F2L	3,56	.140	9,53	.375	26,04	1.025	1,55	.061	0,69	.027	0,05	.002		3897496
MT15660F2L	MT15660F2L	4,45	.175	12,70	.500	29,21	1.150	1,93	.076	0,81	.032	0,05	.002		3897498

■ Insert Screws

order number	ISO catalog number	ANSI catalog number	Torx/hex	internal thread
2840098	MSM46	MSM46	2 mm	M4X0.7
2840186	AS832/AS-8-32	AS832/AS-8-32	5/64	#8-32
2892513	BS832	BS832	5/64	—
2820981	LTM16	LTM16	T5	M2X0.4
2832647	CC11	CC11	T6	#1-72
2832635	CT11	CT11	T6	#1-72
2830477	FC11	FC11	T7	—
2828337	GT21	GT21	T7	#2-56
2825941	QTM20	QTM20	T7	M2.5X0.45
2825948	QTM26	QTM26	T7	M2.5X0.45
2826005	QC15	QC15	T8	#3-48
2826038	QC21	QC21	T9	#4-40
2823227	SC30	SC30	T10	#4-40
2823203	STM31	STM31	T15	M3.5 X 0.6
2832641	CT15	CT15	T16	#1-72

Tools for Small Hole Boring

■ Wrenches

order number	ISO catalog number	ANSI catalog number	Torx/hex
2840094	MKEY	MKEY	2.0 mm
2840174	AKEY	AKEY	5/64
2828318	GTKEY	GTKEY	T5
2832628	CKEY	CKEY	T6
2830492	FKEY	FKEY	T7
2825973	Q8KEY	Q8KEY	T8
2825982	QKEY	QKEY	T9
2823182	SKEY	SKEY	T10

■ Drive Bits

order number	ISO catalog number	ANSI catalog number	Torx/hex
2840089	MBIT	MBIT	2 mm
2832661	CBIT	CBIT	T6
2830497	FBIT	FBIT	T7
2825963	QTBIT	QTBIT	T7
2825964	Q8BIT	Q8BIT	T8
2826045	QBIT	QBIT	T9
2823236	SBIT	SBIT	T10
2823196	STBIT	STBIT	T15

■ Wedges

order number	ISO catalog number	ANSI catalog number
2840192	AW250/AW-250	AW250/AW-250
2836024	BW312	BW312