

TOOLS FOR

Die/Mold & Hardened Materials

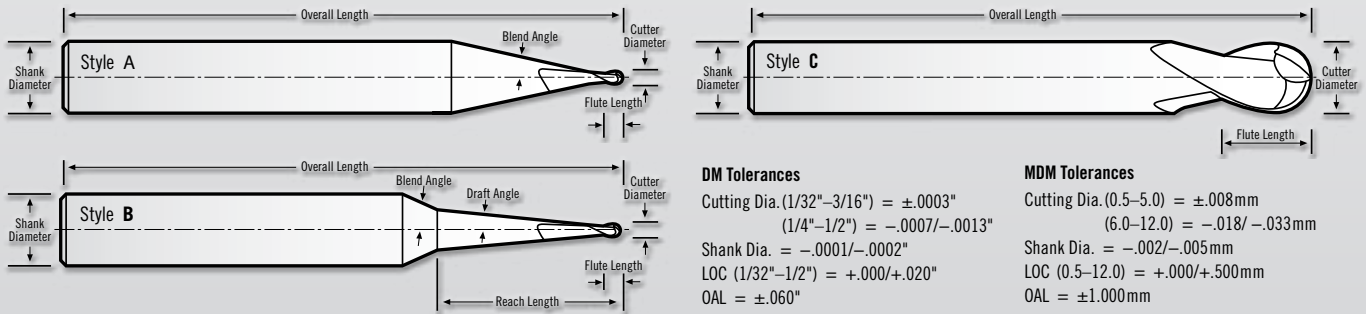
TOOLS FOR

Die/Mold & Hardened Materials

Die/Mold & Hardened Materials Tools

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DM Die/Mold End Mills



DM-201 2 Flute Grade Ball End Extended Length

Cutting Diameter	Shank Diameter	Flute Length	Reach Length	Draft Angle	Blend Angle	Tool Style	Overall Length	Tool Number AITiN Coated
1/32"	1/4"	1/32"	-	-	8°	A	2-1/2"	DM-201-01
1/32"	1/4"	1/32"	1/8"	3°	18°	B	2-1/2"	DM-202-01
1/32"	1/4"	1/32"	3/16"	1.5°	16.5°	B	2-1/2"	DM-203-01
1/32"	1/4"	1/32"	3/8"	1.5°	16.5°	B	2-1/2"	DM-204-01
1/32"	1/4"	1/32"	9/16"	1.5°	16.5°	B	2-1/2"	DM-205-01
1/16"	1/4"	1/16"	-	-	8°	A	2-1/2"	DM-201-02
1/16"	1/4"	1/16"	3/16"	3°	18°	B	2-1/2"	DM-202-02
1/16"	1/4"	1/16"	3/8"	1.5°	16.5°	B	2-1/2"	DM-203-02
1/16"	1/4"	1/16"	3/4"	1.5°	16.5°	B	2-1/2"	DM-204-02
1/16"	1/4"	1/16"	1-1/8"	1.5°	16.5°	B	2-1/2"	DM-205-02
3/32"	1/4"	3/32"	-	-	8°	A	2-1/2"	DM-201-03
3/32"	1/4"	3/32"	1/4"	3°	18°	B	2-1/2"	DM-202-03
3/32"	1/4"	3/32"	1/2"	1.5°	16.5°	B	2-1/2"	DM-203-03
3/32"	1/4"	3/32"	15/16"	1.5°	16.5°	B	2-1/2"	DM-204-03
3/32"	1/4"	3/32"	1-5/16"	1.5°	16.5°	B	2-1/2"	DM-205-03
1/8"	1/4"	1/8"	-	-	8°	A	3"	DM-201-04
1/8"	1/4"	1/8"	5/16"	3°	18°	B	3"	DM-202-04
1/8"	1/4"	1/8"	5/8"	1.5°	16.5°	B	3"	DM-203-04
1/8"	1/4"	1/8"	1"	1°	16°	B	3"	DM-204-04
1/8"	1/4"	1/8"	1-1/2"	1°	16°	B	3"	DM-205-04

Die/Mold End Mills **DM/MDM**

DM-201 2 Flute Grade Ball End Extended Length —CONTINUED FROM PREVIOUS

Cutting Diameter	Shank Diameter	Flute Length	Reach Length	Draft Angle	Blend Angle	Tool Style	Overall Length	Tool Number AlTiN Coated
3/16"	1/4"	3/16"	—	—	8°	A	3"	DM-201-06
3/16"	1/4"	3/16"	3/8"	2°	17°	B	3"	DM-202-06
3/16"	1/4"	3/16"	3/4"	1.5°	16.5°	B	3"	DM-203-06
3/16"	1/4"	3/16"	1-1/8"	1°	16°	B	3"	DM-204-06
3/16"	1/4"	3/16"	1-9/16"	1°	16°	B	3"	DM-205-06
1/4"	1/4"	1/4"	—	—	—	C	3"	DM-201-08
5/16"	5/16"	5/16"	—	—	—	C	3-1/8"	DM-201-10
3/8"	3/8"	3/8"	—	—	—	C	3-1/4"	DM-201-12
7/16"	7/16"	7/16"	—	—	—	C	3-3/4"	DM-201-14
1/2"	1/2"	1/2"	—	—	—	C	4"	DM-201-16

MDM-201 2 Flute Tuffy Ball End Extended Length **METRIC**

Cutting Diameter	Shank Diameter	Flute Length	Reach Length	Draft Angle	Blend Angle	Tool Style	Overall Length	Tool Number AlTiN Coated
0.5mm	6mm	0.5mm	—	—	8°	A	63mm	MDM-201-0.5
0.5mm	6mm	0.5mm	1mm	3°	18°	B	63mm	MDM-203-0.5
0.5mm	6mm	0.5mm	3mm	1.5°	16.5°	B	63mm	MDM-204-0.5
0.5mm	6mm	0.5mm	5mm	1.5°	16.5°	B	63mm	MDM-205-0.5
0.5mm	6mm	0.5mm	10mm	1.5°	16.5°	B	63mm	MDM-206-0.5
0.8mm	6mm	0.8mm	—	—	8°	A	63mm	MDM-201-0.8
0.8mm	6mm	0.8mm	3mm	3°	18°	B	63mm	MDM-203-0.8
0.8mm	6mm	0.8mm	5mm	1.5°	16.5°	B	63mm	MDM-204-0.8
0.8mm	6mm	0.8mm	10mm	1.5°	16.5°	B	63mm	MDM-205-0.8
0.8mm	6mm	0.8mm	15mm	1.5°	16.5°	B	63mm	MDM-206-0.8
1mm	6mm	1mm	—	—	8°	A	63mm	MDM-201-1
1mm	6mm	1mm	3mm	3°	18°	B	63mm	MDM-203-1
1mm	6mm	1mm	5mm	1.5°	16.5°	B	63mm	MDM-204-1
1mm	6mm	1mm	10mm	1.5°	16.5°	B	63mm	MDM-205-1
1mm	6mm	1mm	20mm	1.5°	16.5°	B	63mm	MDM-206-1
1.5mm	6mm	1.5mm	—	—	8°	A	63mm	MDM-201-1.5
1.5mm	6mm	1.5mm	5mm	3°	18°	B	63mm	MDM-203-1.5
1.5mm	6mm	1.5mm	10mm	1.5°	16.5°	B	63mm	MDM-204-1.5
1.5mm	6mm	1.5mm	20mm	1.5°	16.5°	B	63mm	MDM-205-1.5
1.5mm	6mm	1.5mm	30mm	1.5°	16.5°	B	63mm	MDM-206-1.5
2mm	6mm	2mm	—	—	8°	A	63mm	MDM-201-2
2mm	6mm	2mm	5mm	3°	18°	B	63mm	MDM-203-2
2mm	6mm	2mm	10mm	1.5°	16.5°	B	63mm	MDM-204-2
2mm	6mm	2mm	20mm	1.5°	16.5°	B	63mm	MDM-205-2
2mm	6mm	2mm	30mm	1.5°	16.5°	B	63mm	MDM-206-2
3mm	6mm	3mm	—	—	8°	A	75mm	MDM-201-3
3mm	6mm	3mm	5mm	3°	18°	B	75mm	MDM-203-3
3mm	6mm	3mm	15mm	1.5°	16.5°	B	75mm	MDM-204-3
3mm	6mm	3mm	30mm	1°	16°	B	75mm	MDM-205-3
3mm	6mm	3mm	45mm	1°	16°	B	75mm	MDM-206-3
4mm	6mm	4mm	—	—	8°	A	75mm	MDM-201-4
4mm	6mm	4mm	10mm	2°	17°	B	75mm	MDM-203-4
4mm	6mm	4mm	15mm	1.5°	16.5°	B	75mm	MDM-204-4
4mm	6mm	4mm	20mm	1°	16°	B	75mm	MDM-205-4
5mm	6mm	5mm	—	—	8°	B	75mm	MDM-201-5
5mm	6mm	5mm	10mm	2°	17°	B	75mm	MDM-203-5
5mm	6mm	5mm	25mm	1°	16°	B	75mm	MDM-204-5
6mm	6mm	6mm	—	—	—	C	75mm	MDM-201-6
8mm	8mm	8mm	—	—	—	C	80mm	MDM-201-8
10mm	10mm	10mm	—	—	—	C	82mm	MDM-201-10
12mm	12mm	12mm	—	—	—	C	100mm	MDM-201-12

Die/Mold

DM Die/Mold End Mills

DM SERIES SPEED & FEED (Chipload per Tooth)

Tool Number	Cutter Diameter	Steels 30-40 HRc		Steels 40-50 HRc		Steels 50-60 HRc	
		ROUGHING	FINISHING	ROUGHING	FINISHING	ROUGHING	FINISHING
DM-201-01	1/32"	0.0006-0.0008	0.0005-0.0006	0.0005-0.0006	0.0004-0.0005	0.0004-0.0005	0.0003-0.0004
DM-201-02	1/16"	0.0013-0.0015	0.0010-0.0013	0.0010-0.0013	0.0008-0.0010	0.0008-0.0010	0.0005-0.0008
DM-201-03	3/32"	0.0019-0.0023	0.0015-0.0019	0.0015-0.0019	0.0011-0.0015	0.0011-0.0015	0.0008-0.0011
DM-201-04	1/8"	0.0025-0.0030	0.0020-0.0025	0.0020-0.0025	0.0015-0.0020	0.0015-0.0020	0.0010-0.0015
DM-201-06	3/16"	0.0038-0.0045	0.0030-0.0038	0.0030-0.0038	0.0023-0.0030	0.0023-0.0030	0.0015-0.0023
DM-201-08	1/4"	0.0050-0.0060	0.0040-0.0050	0.0040-0.0050	0.0030-0.0040	0.0030-0.0040	0.0020-0.0030
DM-201-10	5/16"	0.0063-0.0075	0.0050-0.0063	0.0050-0.0063	0.0038-0.0050	0.0038-0.0050	0.0025-0.0038
DM-201-12	3/8"	0.0075-0.0090	0.0060-0.0075	0.0060-0.0075	0.0045-0.0060	0.0045-0.0060	0.0030-0.0045
DM-201-14	7/16"	0.0088-0.0105	0.0070-0.0088	0.0070-0.0088	0.0053-0.0070	0.0053-0.0070	0.0035-0.0053
DM-201-16	1/2"	0.0100-0.0120	0.0080-0.0100	0.0080-0.0100	0.0060-0.0080	0.0060-0.0080	0.0040-0.0060

DM SERIES SPEED & FEED (Roughing & Semi-Finishing)

Tool Number	Cutter Diameter	Rotations Per Minute (RPM)		
		STEELS 30-40HRc	STEELS 40-50HRc	STEELS 50-60HRc
DM-201-01	1/32"	20,000-40,000	20,000-40,000	20,000-40,000
DM-201-02	1/16"	20,000-40,000	20,000-40,000	20,000-36,000
DM-201-03	3/32"	20,000-32,000	20,000-32,000	16,000-24,000
DM-201-04	1/8"	15,000-24,000	18,000-24,000	12,000-18,000
DM-201-06	3/16"	10,000-16,000	12,000-16,000	8,100-12,000
DM-201-08	1/4"	7,600-12,000	9,100-12,000	6,100-9,100
DM-201-10	5/16"	6,000-9,700	7,300-9,700	4,800-7,300
DM-201-12	3/8"	5,000-8,100	6,100-8,100	4,000-6,100
DM-201-14	7/16"	4,300-6,900	5,200-6,900	3,400-5,200
DM-201-16	1/2"	3,800-6,100	4,500-6,100	3,000-4,500

DM Series Guidelines

- Special diameters and lengths are available on a make-to-order basis.
- Air or mist coolant on materials greater than 40 HRc.



Roughing or Semi-Finishing Radial Step Over for finishing depends on finish requirements. 25%-40% of tool diameter

DM SERIES SPEED & FEED (Finishing)

Tool Number	Cutter Diameter	Rotations Per Minute (RPM)		
		STEELS 30-40HRc	STEELS 40-50HRc	STEELS 50-60HRc
DM-201-01	1/32"	20,000-40,000	20,000-40,000	20,000-40,000
DM-201-02	1/16"	20,000-40,000	20,000-40,000	20,000-36,000
DM-201-03	3/32"	20,000-32,000	20,000-32,000	16,000-24,000
DM-201-04	1/8"	15,000-24,000	18,000-24,000	12,000-18,000
DM-201-06	3/16"	10,000-16,000	12,000-16,000	8,100-12,000
DM-201-08	1/4"	7,600-12,000	9,100-12,000	6,100-9,100
DM-201-10	5/16"	6,000-9,700	7,300-9,700	4,800-7,300
DM-201-12	3/8"	5,000-8,100	6,100-8,100	4,000-6,100
DM-201-14	7/16"	4,300-6,900	5,200-6,900	3,400-5,200
DM-201-16	1/2"	3,800-6,100	4,500-6,100	3,000-4,500

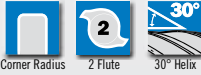
Axial Depth



30-40 HRc Axial depth = 10% of tool diameter
40-50 HRc Axial depth = 5% of tool diameter
50-60 HRc Axial depth = 4% of tool diameter

Solid Carbide Toroid Style End Mills **TM**

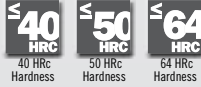
Characteristics



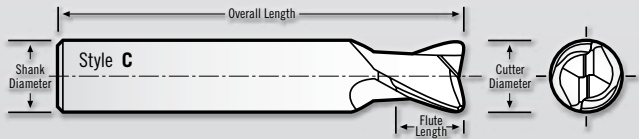
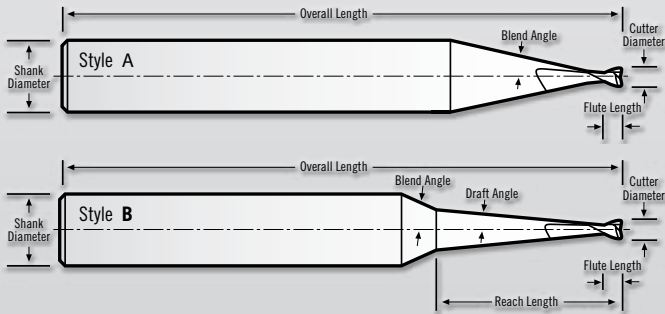
Applications



Materials



Coatings



TM Tolerances:

Cutting Dia. = $-.001/-0.002$ "
 Shank Dia. = $-.0001/-0.0002$ "
 LOC (1/32" to 1/2") = $+.000/+0.020$ "
 OAL = $\pm .060$ "



TM-201 2 Flute Tuffy Grade Toroid End Mill

Cutting Diameter	Shank Diameter	Flute Length	Reach Length	Draft Angle	Blend Angle	Corner Radius	Tool Style	Overall Length	Tool Number AlTiN Coated
1/32"	1/4"	1/32"	—	—	8°	.008"	A	2-1/2"	TM-201-01
1/32"	1/4"	1/32"	1/8"	3°	18°	.008"	B	2-1/2"	TM-202-01
1/32"	1/4"	1/32"	3/16"	1.5°	16.5°	.008"	B	2-1/2"	TM-203-01
1/32"	1/4"	1/32"	3/8"	1.5°	16.5°	.008"	B	2-1/2"	TM-204-01
1/32"	1/4"	1/32"	9/16"	1.5°	16.5°	.008"	B	2-1/2"	TM-205-01
1/16"	1/4"	1/16"	—	—	8°	.012"	A	2-1/2"	TM-201-02
1/16"	1/4"	1/16"	3/16"	3°	18°	.012"	B	2-1/2"	TM-202-02
1/16"	1/4"	1/16"	3/8"	1.5°	16.5°	.012"	B	2-1/2"	TM-203-02
1/16"	1/4"	1/16"	3/4"	1.5°	16.5°	.012"	B	2-1/2"	TM-204-02
1/16"	1/4"	1/16"	1-1/8"	1.5°	16.5°	.012"	B	2-1/2"	TM-205-02
3/32"	1/4"	3/32"	—	—	8°	.020"	A	2-1/2"	TM-201-03
3/32"	1/4"	3/32"	1/4"	3°	18°	.020"	B	2-1/2"	TM-202-03
3/32"	1/4"	3/32"	1/2"	1.5°	16.5°	.020"	B	2-1/2"	TM-203-03
3/32"	1/4"	3/32"	15/16"	1.5°	16.5°	.020"	B	2-1/2"	TM-204-03
3/32"	1/4"	3/32"	1-5/16"	1.5°	16.5°	.020"	B	2-1/2"	TM-205-03
1/8"	1/4"	1/8"	—	—	8°	.020"	A	3"	TM-201-04
1/8"	1/4"	1/8"	5/16"	3°	18°	.020"	B	3"	TM-202-04
1/8"	1/4"	1/8"	5/8"	1.5°	16.5°	.020"	B	3"	TM-203-04
1/8"	1/4"	1/8"	1"	1°	16°	.020"	B	3"	TM-204-04
1/8"	1/4"	1/8"	1-1/2"	1°	16°	.020"	B	3"	TM-205-04
3/16"	1/4"	3/16"	—	—	8°	.040"	A	3"	TM-201-06
3/16"	1/4"	3/16"	3/8"	2°	17°	.040"	B	3"	TM-202-06
3/16"	1/4"	3/16"	3/4"	1.5°	16.5°	.040"	B	3"	TM-203-06
3/16"	1/4"	3/16"	1-1/8"	1°	16°	.040"	B	3"	TM-204-06
3/16"	1/4"	3/16"	1-9/16"	1°	16°	.040"	B	3"	TM-205-06
1/4"	1/4"	1/4"	—	—	—	.040"	C	3"	TM-201-08
5/16"	5/16"	5/16"	—	—	—	.040"	C	3-1/8"	TM-201-10
3/8"	3/8"	3/8"	—	—	—	.080"	C	3-1/4"	TM-201-12
7/16"	7/16"	7/16"	—	—	—	.080"	C	3-3/4"	TM-201-14
1/2"	1/2"	1/2"	—	—	—	.120"	C	4"	TM-201-16

TM/MTM Solid Carbide Toroid Style End Mills

MTM-201 Metrics 2 Flute Tuffy Grade Toroid End Mill METRIC



Cutting Diameter	Shank Diameter	Flute Length	Reach Length	Draft Angle	Blend Angle	Tool Style	Overall Length	Tool Number ATTN Coated
0.8mm	6mm	0.8mm	—	—	8°	A	63mm	MTM-201-0.8
0.8mm	6mm	0.8mm	3mm	3°	18°	B	63mm	MTM-202-0.8
0.8mm	6mm	0.8mm	5mm	1.5°	16.5°	B	63mm	MTM-203-0.8
0.8mm	6mm	0.8mm	10mm	1.5°	16.5°	B	63mm	MTM-204-0.8
0.8mm	6mm	0.8mm	15mm	1.5°	16.5°	B	63mm	MTM-205-0.8
1mm	6mm	1mm	—	—	8°	A	63mm	MTM-201-01
1mm	6mm	1mm	3mm	3°	18°	B	63mm	MTM-202-01
1mm	6mm	1mm	5mm	1.5°	16.5°	B	63mm	MTM-203-01
1mm	6mm	1mm	10mm	1.5°	16.5°	B	63mm	MTM-204-01
1mm	6mm	1mm	20mm	1.5°	16.5°	B	63mm	MTM-205-01
1.5mm	6mm	1.5mm	—	—	8°	A	63mm	MTM-201-01.5
1.5mm	6mm	1.5mm	5mm	3°	18°	B	63mm	MTM-202-01.5
1.5mm	6mm	1.5mm	10mm	1.5°	16.5°	B	63mm	MTM-203-01.5
1.5mm	6mm	1.5mm	20mm	1.5°	16.5°	B	63mm	MTM-204-01.5
1.5mm	6mm	1.5mm	30mm	1.5°	16.5°	B	63mm	MTM-205-01.5
2mm	6mm	2mm	—	—	8°	A	63mm	MTM-201-02
2mm	6mm	2mm	5mm	3°	18°	B	63mm	MTM-202-02
2mm	6mm	2mm	10mm	1.5°	16.5°	B	63mm	MTM-203-02
2mm	6mm	2mm	20mm	1.5°	16.5°	B	63mm	MTM-204-02
2mm	6mm	2mm	30mm	1.5°	16.5°	B	63mm	MTM-205-02
3mm	6mm	3mm	—	—	8°	A	75mm	MTM-201-03
3mm	6mm	3mm	5mm	3°	18°	B	75mm	MTM-202-03
3mm	6mm	3mm	15mm	1.5°	16.5°	B	75mm	MTM-203-03
3mm	6mm	3mm	30mm	1°	16°	B	75mm	MTM-204-03
3mm	6mm	3mm	45mm	1°	16°	B	75mm	MTM-205-03
4mm	6mm	4mm	—	—	8°	A	75mm	MTM-201-04
4mm	6mm	4mm	10mm	2°	17°	B	75mm	MTM-202-04
4mm	6mm	4mm	15mm	1.5°	16.5°	B	75mm	MTM-203-04
4mm	6mm	4mm	20mm	1°	16°	B	75mm	MTM-204-04
5mm	6mm	5mm	—	—	8°	A	75mm	MTM-201-05
5mm	6mm	5mm	10mm	3°	18°	B	75mm	MTM-202-05
5mm	6mm	5mm	25mm	1°	16°	B	75mm	MTM-203-05
6mm	6mm	6mm	—	—	—	C	75mm	MTM-201-06
8mm	8mm	8mm	—	—	—	C	80mm	MTM-201-08
10mm	10mm	10mm	—	—	—	C	82mm	MTM-201-10
12mm	12mm	12mm	—	—	—	C	100mm	MTM-201-12

TM SERIES SPEED & FEED (Semi-Finishing & Finishing)

Tool Number	Cutter Diameter	Steels 30–40 HRC		Steels 40–50 HRC		Steels 50–60 HRC	
		ROUGHING	FINISHING	ROUGHING	FINISHING	ROUGHING	FINISHING
TM-201-01	1/32"	34,000–40,000	0.0001–0.00025	26,000–30,000	0.0001–0.0002	16,000–18,000	0.0001–0.0002
TM-201-02	1/16"	34,000–40,000	0.0003–0.0005	25,000–30,000	0.0003–0.0005	16,000–18,000	0.0002–0.0004
TM-201-03	3/32"	22,000–26,000	0.0006–0.00075	16,000–19,000	0.0005–0.0007	10,000–12,000	0.0005–0.0006
TM-201-04	1/8"	17,000–20,000	0.0008–0.001	13,000–17,000	0.0007–0.0009	8,000–13,000	0.0006–0.0008
TM-201-06	3/16"	12,000–14,000	0.0011–0.0015	9,000–12,000	0.001–0.0014	5,300–9,000	0.0009–0.0012
TM-201-08	1/4"	9,000–10,400	0.0015–0.002	7,000–9,000	0.0014–0.0018	4,000–6,600	0.0012–0.0016
TM-201-10	5/16"	7,200–8,300	0.0019–0.0025	5,500–7,200	0.0017–0.0023	3,200–5,400	0.0015–0.0020
TM-201-12	3/8"	6,000–6,900	0.0020–0.003	4,600–6,000	0.0018–0.0027	2,700–4,500	0.0016–0.0024
TM-201-14	7/16"	5,200–6,000	0.0023–0.0035	4,000–5,200	0.0021–0.0032	2,300–3,900	0.0019–0.0028
TM-201-16	1/2"	4,500–5,200	0.0025–0.004	3,500–4,500	0.0023–0.0036	2,100–3,500	0.0020–0.0032

(Use maximum RPM if suggested RPM is higher than the machine's capabilities)

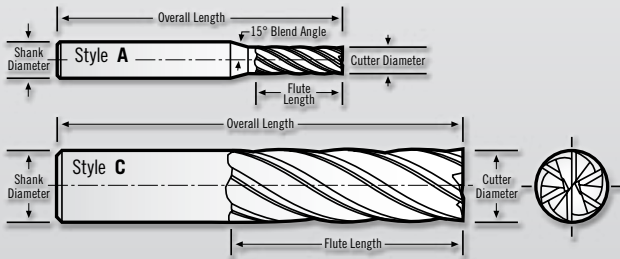
TM Series Guidelines

- Speed and Feeds are only general starting points and may vary depending on specific applications.
- Use Climb Milling for better finish and longer tool life.
- Air or mist coolant on materials greater than 40 HRC.
- Good machines, tool holders, and programming methods all help in extending tool life.
- The best way to engage into the material is by helical interpolation or entering from off the part.
- Use for tight areas like helical bores or tight corners. For large open areas use HM/MMH Series.

Additional Notes

- Facing radial width = 25% of Dia.
- Facing axial depth = 2% of Dia.
- Special diameters, lengths, and corner radii are available on a make-to-order basis.
- Special draft angles (blend angle) or necked shanks for part clearance are available upon request and usually ship within the next business day.

Die/Mold End Mills **HM/MHM**



HM Tolerances

Cutting Dia. = $-.001/-0.002$ "
 Shank Dia. = $-.0001/-0.0002$ "
 LOC = $+0.060/-0.000$ "
 OAL = ± 0.060 "

MHM Tolerances

Cutting Dia. = $-.025/-0.050$ mm
 Shank Dia. = $-.002/-0.005$ mm
 LOC = $+0.50/+1.50$ mm
 OAL = ± 1.000 mm



HM Multi-Flute Tuffy Grade

Cutting Diameter	Shank Diameter	Number of Flutes	Flute Length	Corner Radius	Tool Style	Overall Length	Tool Number AITiN Coated
1/8"	1/4"	4	3/8"	0.015"	A	3"	HM-402-04
3/16"	1/4"	4	9/16"	0.02"	A	3"	HM-402-06
1/4"	1/4"	6	5/8"	0.02"	C	3-1/2"	HM-602-08
5/16"	5/16"	6	3/4"	0.03"	C	4"	HM-602-10
3/8"	3/8"	6	1"	0.03"	C	4"	HM-602-12
7/16"	7/16"	6	1-1/8"	0.04"	C	4"	HM-602-14
1/2"	1/2"	6	1-1/4"	0.04"	C	4"	HM-602-16
5/8"	5/8"	6	1-5/8"	0.04"	C	6"	HM-602-20
3/4"	3/4"	8	1-3/4"	0.06"	C	6"	HM-802-24
1"	1"	10	2"	0.06"	C	6"	HM-102-32

MHM Metric Multi-Flute Tuffy Grade **METRIC**

Cutting Diameter	Shank Diameter	Number of Flutes	Flute Length	Corner Radius	Tool Style	Overall Length	Tool Number AITiN Coated
3mm	6mm	4	9mm	0.4mm	A	76mm	MHM-402-03
4mm	6mm	4	12mm	0.5mm	A	76mm	MHM-402-04
5mm	6mm	4	15mm	0.5mm	C	90mm	MHM-402-05
6mm	6mm	6	15mm	0.5mm	C	90mm	MHM-602-06
8mm	8mm	6	20mm	0.75mm	C	100mm	MHM-602-08
10mm	10mm	6	25mm	0.75mm	C	100mm	MHM-602-10
12mm	12mm	6	30mm	1mm	C	100mm	MHM-602-12
16mm	16mm	6	40mm	1mm	C	150mm	MHM-602-16
20mm	20mm	8	45mm	1.5mm	C	150mm	MHM-802-20
25mm	25mm	10	50mm	1.5mm	C	150mm	MHM-102-25

HM Die/Mold End Mills

HM SERIES SPEED & FEED (Semi-Finishing & Finishing)

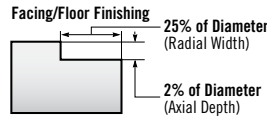
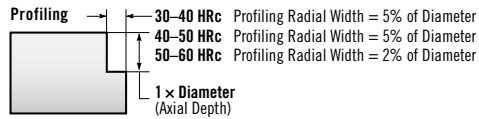
Tool Number	Cutter Diameter	Steels 30-40 HRc		Steels 40-50 HRc		Steels 50-60 HRc	
		RPM	CLPT	RPM	CLPT	RPM	CLPT
HM-402-04	1/8"	17,000-20,000	0.0008-0.001	13,000-17,000	0.0007-0.0009	8,000-13,000	0.0006-0.0008
HM-402-06	3/16"	12,000-14,000	0.0011-0.0015	9,000-12,000	0.0010-0.0014	5,300-9,000	0.0009-0.0012
HM-602-08	1/4"	9,000-10,400	0.0015-0.002	7,000-9,000	0.0014-0.0018	4,000-6,600	0.0012-0.0016
HM-602-10	5/16"	7,200-8,300	0.0019-0.0025	5,500-7,200	0.0017-0.0023	3,200-5,400	0.0015-0.0020
HM-602-12	3/8"	6,000-6,900	0.0020-0.003	4,600-6,000	0.0018-0.0027	2,700-4,500	0.0016-0.0024
HM-602-14	7/16"	5,200-6,000	0.0023-0.0035	4,000-5,200	0.0021-0.0032	2,300-3,900	0.0019-0.0028
HM-602-16	1/2"	4,500-5,200	0.0025-0.004	3,500-4,500	0.0023-0.0036	2,100-3,500	0.0020-0.0032
HM-602-20	5/8"	3,600-4,150	0.0026-0.0042	2,800-3,600	0.0023-0.0038	1,600-2,750	0.0021-0.0034
HM-802-24	3/4"	3,000-3,500	0.0028-0.005	2,300-3,000	0.0025-0.0045	1,350-2,250	0.0023-0.0041
HM-102-32	1"	2,200-2,600	0.0030-0.006	1,700-2,200	0.0027-0.0054	1,000-1,700	0.0024-0.0049

HM Series Guidelines

- Speed and Feeds are only general starting points and may vary depending on specific applications.
- Use Climb Milling for better finish and longer tool life.
- Air or mist coolant on materials greater than 40 HRc.
- Good machines, tool holders, and programming methods all help in extending tool life.
- The best way to engage into the material is by helical interpolation or entering from off the part.
- Use for open areas of floors or walls. For tight areas like helical bores or tight corners use TM/MTM Series.

Additional Notes

- Special draft angles (blend angle) or necked shanks for part clearance are available upon request.
- Special diameters, lengths, and corner radii are available on a make-to-order basis.



Die/Mold Tools in Other Sections

ET

Engraving Tools
(See Multiple Applications)



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