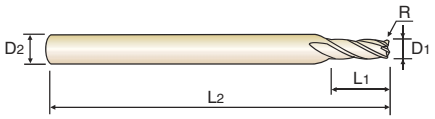
4G MILLS END MILLS

GMF20 SERIES PLAIN SHANK

CARBIDE, 4 FLUTE CORNER RADIUS

- New coating and new tool geometry gives outstanding cutting performance and wear resistance.
- Excellent performance when cutting steels, up to HRc55
- Available in many more various length shanks and corner radiuses.
- Due to Multiple Helix on 1/8°»and over diameter end mills, vibration is minimized and tool life increased.
- 4 flute series has new designs to reduce vibrations



MG HM | 4 | M-Helix | R ±.0008 | PLAIN

P.527

Unit : inch

EDP No.	Corner Radius R	Mill Diameter D1	Shank Diameter D2	Length of Cut L1	Overall Length L2
GMF20003	R.004	3/64	1/4	3/32	2
GMF20005	R.004	5/64	1/4	1/4	2
GMF20901	R.008	5/64	1/4	1/4	2
GMF20008	R.008	1/8	1/4	5/16	2-3/8
GMF20902	R.012	1/8	1/4	5/16	2-3/8
GMF20903	R.020	1/8	1/4	5/16	2-3/8
GMF20933	R.030	1/8	1/4	5/16	2-3/8
GMF20012	R.008	3/16	1/4	3/8	2-3/4
GMF20904	R.012	3/16	1/4	3/8	2-3/4
GMF20905	R.020	3/16	1/4	3/8	2-3/4
GMF20934	R.030	3/16	1/4	3/8	2-3/4
GMF20906	R.040	3/16	1/4	3/8	2-3/4
GMF20013	R.012	13/64	1/4	1/2	3-1/2
GMF20907	R.020	13/64	1/4	1/2	3-1/2
GMF20935	R.030	13/64	1/4	1/2	3-1/2
GMF20016	R.008	1/4	1/4	5/8	3-1/2
GMF20908	R.012	1/4	1/4	5/8	3-1/2
GMF20909	R.020	1/4	1/4	5/8	3-1/2
GMF20936	R.030	1/4	1/4	5/8	3-1/2
GMF20910	R.040	1/4	1/4	5/8	3-1/2
GMF20020	R.012	5/16	5/16	3/4	2-3/4
GMF20911	R.020	5/16	5/16	3/4	2-3/4
GMF20937	R.030	5/16	5/16	3/4	2-3/4
GMF20912	R.040	5/16	5/16	3/4	2-3/4
GMF20913	R.008	5/16	5/16	3/4	4
GMF20914	R.012	5/16	5/16	3/4	4
GMF20915	R.020	5/16	5/16	3/4	4
GMF20938	R.030	5/16	5/16	3/4	4
GMF20916	R.040	5/16	5/16	3/4	4
GMF20917	R.060	5/16	5/16	3/4	4
GMF20918	R.080	5/16	5/16	3/4	4
GMF20024	R.020	3/8	3/8	1	3

◎ : Excellent ○ : Good

Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels		High Hardened Steels	Copper	Graphite	Cast Iron	Aluminum	Stainless Steels	Titanium	Inconel
~HB225	HB225~325	HRc30~40	HRc40~45	HRc45~55	HRc55~70							
◎	◎	◎	◎	○				○				

YG 4G MILLS END MILLS

GMF20 SERIES PLAIN SHANK

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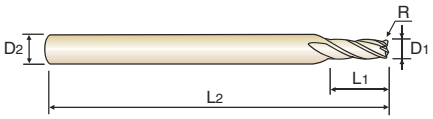


MG HM | 4 | M-Helix | R ±.0008 | PLAIN P.527

Unit : inch

EDP No.	Corner Radius R	Mill Diameter D1	Shank Diameter D2	Length of Cut L1	Overall Length L2
GMF20939	R.030	3/8	3/8	1	3
GMF20919	R.012	3/8	3/8	1	4
GMF20920	R.020	3/8	3/8	1	4
GMF20940	R.030	3/8	3/8	1	4
GMF20921	R.040	3/8	3/8	1	4
GMF20922	R.060	3/8	3/8	1	4
GMF20923	R.080	3/8	3/8	1	4
GMF20032	R.020	1/2	1/2	1-3/16	3-1/8
GMF20924	R.040	1/2	1/2	1-3/16	3-1/8
GMF20925	R.020	1/2	1/2	1-3/16	4-1/4
GMF20941	R.030	1/2	1/2	1-3/16	3-1/8
GMF20942	R.030	1/2	1/2	1-3/16	4-1/4
GMF20926	R.040	1/2	1/2	1-3/16	4-1/4
GMF20927	R.060	1/2	1/2	1-3/16	4-1/4
GMF20928	R.080	1/2	1/2	1-3/16	4-1/4
GMF20040	R.020	5/8	5/8	1-1/4	6
GMF20943	R.030	5/8	5/8	1-1/4	6
GMF20929	R.040	5/8	5/8	1-1/4	6
GMF20930	R.060	5/8	5/8	1-1/4	6
GMF20931	R.080	5/8	5/8	1-1/4	6
GMF20044	R.030	3/4	3/4	1-1/2	6
GMF20048	R.040	3/4	3/4	1-1/2	6
GMF20932	R.080	3/4	3/4	1-1/2	6

Mill Dia. Tolerance (Inch)	Corner Radius Tolerance (Inch)	Shank Dia. Tolerance
0~−.0012	±.0008	h6

◎ : Excellent ○ : Good

Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels		High Hardened Steels	Copper	Graphite	Cast Iron	Aluminum	Stainless Steels	Titanium	Inconel
~HB225	HB225~325	HRc30~40	HRc40~45	HRc45~55	HRc55~70							
◎	◎	◎	◎	○				○				

4G MILLS END MILLS

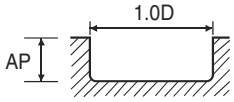
RECOMMENDED CUTTING CONDITIONS

CARBIDE, 2 FLUTE CORNER RADIUS WITH NECK

GMF19 SERIES

MATERIAL		NON-ALLOYED STEELS ALLOY STEELS CAST IRON			ALLOY STEELS HEAT RESISTANT STEELS			HARDENED STEELS		
HARDNESS		~ HRc 35			HRc 35 ~ HRc 45			HRc 45 ~ HRc 55		
STRENGTH		~ 1100N/mm²			1110 ~ 1500N/mm²			1500 ~ 2000N/mm²		
DIA.	LBS	RPM	FEED	Ap(inch)	RPM	FEED	Ap(inch)	RPM	FEED	Ap(inch)
3/16	3/8	11550	20.7	.0375	7350	9.8	.0281	4790	4.9	.0225
3/16	1/2	11550	20.7	.0375	7350	9.8	.0281	4790	4.9	.0225
3/16	5/8	11550	20.7	.0263	7350	9.8	.0197	4790	4.9	.0157
3/16	3/4	11550	20.7	.0263	7350	9.8	.0197	4790	4.9	.0157
3/16	1	10390	16.7	.0150	6610	8.1	.0113	4310	3.9	.0090
3/16	1-3/16	10390	16.7	.0150	6610	8.1	.0113	4310	3.9	.0090
1/4	3/4	8980	22.2	.0500	5670	11.2	.0375	3710	5.1	.0300
1/4	1-3/16	8980	22.2	.0350	5670	11.2	.0263	3710	5.1	.0210
5/16	1	7260	25.4	.0437	4590	11.8	.0328	3040	5.5	.0263
3/8	1-3/16	6300	26.4	.0525	4200	12.4	.0394	2540	5.7	.0315
1/2	1-1/4	4720	18.5	.1000	3160	10.0	.0750	1890	4.5	.0600
5/8	1-3/8	3750	17.9	.1250	2540	8.3	.0937	1550	3.7	.0750
3/4	1-1/2	3150	13.6	.1500	2050	5.7	.1125	1260	3.0	.0900

DIA. = Diameter
LBS = Length Below Shank
RPM = rev./min.
FEED = inch/min.

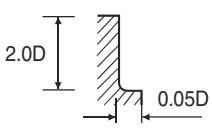


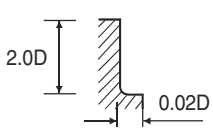
CARBIDE, 4 FLUTE CORNER RADIUS

GMF20 SERIES

MATERIAL	NON-ALLOYED STEELS ALLOY STEELS CAST IRON		ALLOY STEELS HEAT RESISTANT STEELS		HARDENED STEELS	
HARDNESS	~ HRc 35		HRc 35 ~ HRc 45		HRc 45 ~ HRc 55	
STRENGTH	~ 1100N/mm²		1110 ~ 1500N/mm²		1500 ~ 2000N/mm²	
DIAMETER	RPM	FEED	RPM	FEED	RPM	FEED
3/64	25000	12.0	15870	8.9	9830	4.7
5/64	18100	12.8	11650	9.5	7260	5.1
1/8	12500	12.6	8090	9.7	4990	4.9
3/16	9400	15.8	5960	12.2	3830	5.7
13/64	8900	16.3	5620	13.8	3680	6.5
1/4	7500	15.9	4760	13.4	3100	6.3
5/16	6000	18.3	3830	14.4	2540	6.7
3/8	5300	19.1	3440	15.0	2120	7.1
1/2	3900	13.4	2630	11.8	1590	5.1
5/8	3100	11.0	2120	9.1	1290	4.5
3/4	2600	9.5	1720	7.5	1050	3.7

∗ 1.5XD Axial cutting depth should be for DIA over5/8 inch





RPM = rev./min.
FEED = inch/min.