



4G MILL END MILLS

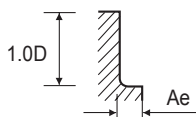
RECOMMENDED CUTTING CONDITIONS

GMF21 SERIES

4FLUTE CORNER RADIUS - SIDE CUTTING

ISO	VDI 3323	Material Description	Parameter	Diameter (Ø) / LBS														
				3/64	3/64	3/64	1/16	1/16	1/16	1/16	5/64	5/64	5/64	5/64	1/8	1/8	1/8	
				LBS	5/32	1/4	5/16	1/4	5/16	3/8	1/2	1/4	5/16	3/8	1/2	5/16	3/8	1/2
P	1-8	Non-alloy steel Low alloy steel	SFM(Vc)	370	330	330	410	410	365	365	445	445	445	400	490	490	490	
			IPT(fz)	.0001	.0001	.0001	.0001	.0001	.0001	.0001	.0002	.0002	.0002	.0002	.0002	.0002	.0002	.0002
			RPM	29980	26990	26990	24940	24940	22450	22450	21770	21770	21770	19590	15020	15020	15020	
			IPM(FEED)	15	12	12	14	14	11	11	15	15	15	12	15	15	15	
			Ap	.0010	.0006	.0006	.0013	.0013	.0007	.0007	.0017	.0017	.0017	.0009	.0037	.0037	.0026	
	9	Low alloy steel	SFM(Vc)	235	210	210	250	250	225	225	285	285	285	255	320	320	320	
			IPT(fz)	.0001	.0001	.0001	.0002	.0002	.0001	.0001	.0002	.0002	.0002	.0002	.0003	.0003	.0003	
			RPM	19050	17140	17140	15310	15310	13780	13780	13910	13910	13910	12520	9730	9730	9730	
			IPM(FEED)	10	9	9	10	10	8	8	11	11	11	9	12	12	12	
			Ap	.0007	.0004	.0004	.0010	.0010	.0006	.0006	.0012	.0012	.0012	.0007	.0028	.0028	.0020	
	10	High alloyed steel, and tool steel	SFM(Vc)	370	330	330	410	410	365	365	445	445	445	400	490	490	490	
			IPT(fz)	.0001	.0001	.0001	.0001	.0001	.0001	.0001	.0002	.0002	.0002	.0002	.0002	.0002	.0002	
			RPM	29980	26990	26990	24940	24940	22450	22450	21770	21770	21770	19590	15020	15020	15020	
			IPM(FEED)	15	12	12	14	14	11	11	15	15	15	12	15	15	15	
			Ap	.0010	.0006	.0006	.0013	.0013	.0007	.0007	.0017	.0017	.0017	.0009	.0037	.0037	.0026	
11.1-11.2		SFM(Vc)	235	210	210	250	250	225	225	285	285	285	255	320	320	320		
		IPT(fz)	.0001	.0001	.0001	.0002	.0002	.0001	.0001	.0002	.0002	.0002	.0002	.0003	.0003	.0003		
		RPM	19050	17140	17140	15310	15310	13780	13780	13910	13910	13910	12520	9730	9730	9730		
		IPM(FEED)	10	9	9	10	10	8	8	11	11	11	9	12	12	12		
		Ap	.0007	.0004	.0004	.0010	.0010	.0006	.0006	.0012	.0012	.0012	.0007	.0028	.0028	.0020		
K	15-20	Grey cast iron Nodular cast iron Malleable cast iron	SFM(Vc)	370	330	330	410	410	365	365	445	445	445	400	490	490	490	
			IPT(fz)	.0001	.0001	.0001	.0001	.0001	.0001	.0001	.0002	.0002	.0002	.0002	.0002	.0002	.0002	
			RPM	29980	26990	26990	24940	24940	22450	22450	21770	21770	21770	19590	15020	15020	15020	
			IPM(FEED)	15	12	12	14	14	11	11	15	15	15	12	15	15	15	
			Ap	.0010	.0006	.0006	.0013	.0013	.0007	.0007	.0017	.0017	.0017	.0009	.0037	.0037	.0026	
H	38.1-38.2	Hardened steel	SFM(Vc)	145	130	130	160	160	140	140	180	180	180	160	195	195	195	
			IPT(fz)	.0001	.0001	.0001	.0001	.0001	.0001	.0001	.0002	.0002	.0002	.0001	.0002	.0002	.0002	
			RPM	11790	10610	10610	9640	9640	8670	8670	8710	8710	8710	7840	5950	5950	5950	
			IPM(FEED)	6	5	5	5	5	4	4	6	6	6	5	6	6	6	
			Ap	.0006	.0004	.0004	.0008	.0008	.0004	.0004	.0010	.0010	.0010	.0006	.0022	.0022	.0016	
	40	Chilled Cast Iron	SFM(Vc)	235	210	210	250	250	225	225	285	285	285	255	320	320	320	
			IPT(fz)	.0001	.0001	.0001	.0002	.0002	.0001	.0001	.0002	.0002	.0002	.0002	.0003	.0003	.0003	
			RPM	19050	17140	17140	15310	15310	13780	13780	13910	13910	13910	12520	9730	9730	9730	
			IPM(FEED)	10	9	9	10	10	8	8	11	11	11	9	12	12	12	
			Ap	.0007	.0004	.0004	.0010	.0010	.0006	.0006	.0012	.0012	.0012	.0007	.0028	.0028	.0020	
	41	Hardened Cast Iron	SFM(Vc)	145	130	130	160	160	140	140	180	180	180	160	195	195	195	
			IPT(fz)	.0001	.0001	.0001	.0001	.0001	.0001	.0001	.0002	.0002	.0002	.0001	.0002	.0002	.0002	
			RPM	11790	10610	10610	9640	9640	8670	8670	8710	8710	8710	7840	5950	5950	5950	
			IPM(FEED)	6	5	5	5	5	4	4	6	6	6	5	6	6	6	
			Ap	.0006	.0004	.0004	.0008	.0008	.0004	.0004	.0010	.0010	.0010	.0006	.0022	.0022	.0016	

SFM = Surface Feet per Minute
 RPM = Revolutions Per Minute
 IPT = Inches Per Tooth
 IPM = Inches Per Minute
 Ap : Inch (Axial Depth of Cut)
 Ae : Inch (Radial Depth of Cut)



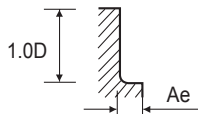
YG 4G MILL END MILLS

RECOMMENDED CUTTING CONDITIONS

GMF21 SERIES 4FLUTE CORNER RADIUS - SIDE CUTTING

ISO	VDI 3323	Parameter	Diameter (Ø) / LBS																	
			1/8	1/8	1/8	3/16	3/16	3/16	3/16	3/16	1/4	5/16	5/16	3/8	3/8	1/2	1/2	5/8	3/4	
			LBS	5/8	3/4	1	3/8	1/2	5/8	3/4	1	3/4	1	1 3/8	1 3/16	1 1/2	1 1/4	1 3/4	1 3/8	1 1/2
P	1-8	SFM(Vc)	490	440	440	565	565	565	565	510	590	595	595	620	620	620	620	615	620	
		IPT(fz)	.0002	.0002	.0002	.0005	.0005	.0005	.0005	.0004	.0005	.0008	.0008	.0009	.0009	.0008	.0008	.0009	.0009	
		RPM	15020	13520	13520	11550	11550	11550	11550	10390	8980	7260	7260	6300	6300	4720	4720	3750	3150	
		IPM(FEED)	15	12	12	21	21	21	21	17	19	22	22	23	23	16	16	13	11	
		Ap	.0026	.0015	.0015	.0056	.0056	.0039	.0039	.0022	.0075	.0066	.0066	.0079	.0079	.0150	.0105	.0187	.0225	
	9	SFM(Vc)	320	285	285	360	360	360	360	325	370	375	375	410	410	415	415	415	400	
		IPT(fz)	.0003	.0003	.0003	.0006	.0006	.0006	.0006	.0005	.0007	.0009	.0009	.0011	.0011	.0011	.0011	.0011	.0011	
		RPM	9730	8760	8760	7350	7350	7350	7350	6610	5670	4590	4590	4200	4200	3160	3160	2540	2050	
		IPM(FEED)	12	9	9	18	18	18	18	14	16	17	17	18	18	14	14	11	9	
		Ap	.0020	.0011	.0011	.0042	.0042	.0030	.0030	.0017	.0056	.0049	.0049	.0059	.0059	.0113	.0079	.0141	.0169	
	10	SFM(Vc)	490	440	440	565	565	565	565	510	590	595	595	620	620	620	620	615	620	
		IPT(fz)	.0002	.0002	.0002	.0005	.0005	.0005	.0005	.0004	.0005	.0008	.0008	.0009	.0009	.0008	.0008	.0009	.0009	
		RPM	15020	13520	13520	11550	11550	11550	11550	10390	8980	7260	7260	6300	6300	4720	4720	3750	3150	
		IPM(FEED)	15	12	12	21	21	21	21	17	19	22	22	23	23	16	16	13	11	
		Ap	.0026	.0015	.0015	.0056	.0056	.0039	.0039	.0022	.0075	.0066	.0066	.0079	.0079	.0150	.0105	.0187	.0225	
	11.1-11.2	SFM(Vc)	320	285	285	360	360	360	360	325	370	375	375	410	410	415	415	415	400	
		IPT(fz)	.0003	.0003	.0003	.0006	.0006	.0006	.0006	.0005	.0007	.0009	.0009	.0011	.0011	.0011	.0011	.0011	.0011	
		RPM	9730	8760	8760	7350	7350	7350	7350	6610	5670	4590	4590	4200	4200	3160	3160	2540	2050	
		IPM(FEED)	12	9	9	18	18	18	18	14	16	17	17	18	18	14	14	11	9	
		Ap	.0020	.0011	.0011	.0042	.0042	.0030	.0030	.0017	.0056	.0049	.0049	.0059	.0059	.0113	.0079	.0141	.0169	
K	15-20	SFM(Vc)	490	440	440	565	565	565	565	510	590	595	595	620	620	620	620	615	620	
		IPT(fz)	.0002	.0002	.0002	.0005	.0005	.0005	.0005	.0004	.0005	.0008	.0008	.0009	.0009	.0008	.0008	.0009	.0009	
		RPM	15020	13520	13520	11550	11550	11550	11550	10390	8980	7260	7260	6300	6300	4720	4720	3750	3150	
		IPM(FEED)	15	12	12	21	21	21	21	17	19	22	22	23	23	16	16	13	11	
		Ap	.0026	.0015	.0015	.0056	.0056	.0039	.0039	.0022	.0075	.0066	.0066	.0079	.0079	.0150	.0105	.0187	.0225	
H	38.1-38.2	SFM(Vc)	195	175	175	235	235	235	235	210	245	250	250	250	250	245	245	255	245	
		IPT(fz)	.0002	.0002	.0002	.0004	.0004	.0004	.0004	.0004	.0005	.0006	.0006	.0008	.0008	.0008	.0008	.0009	.0008	
		RPM	5950	5360	5360	4790	4790	4790	4790	4310	3710	3040	3040	2540	2540	1890	1890	1550	1260	
		IPM(FEED)	6	5	5	8	8	8	8	7	8	8	8	8	8	6	6	5	4	
		Ap	.0016	.0009	.0009	.0034	.0034	.0024	.0024	.0013	.0045	.0039	.0039	.0047	.0047	.0090	.0063	.0113	.0135	
	40	SFM(Vc)	320	285	285	360	360	360	360	325	370	375	375	410	410	415	415	415	400	
		IPT(fz)	.0003	.0003	.0003	.0006	.0006	.0006	.0006	.0005	.0007	.0009	.0009	.0011	.0011	.0011	.0011	.0011	.0011	
		RPM	9730	8760	8760	7350	7350	7350	7350	6610	5670	4590	4590	4200	4200	3160	3160	2540	2050	
		IPM(FEED)	12	9	9	18	18	18	18	14	16	17	17	18	18	14	14	11	9	
		Ap	.0020	.0011	.0011	.0042	.0042	.0030	.0030	.0017	.0056	.0049	.0049	.0059	.0059	.0113	.0079	.0141	.0169	
	41	SFM(Vc)	195	175	175	235	235	235	235	210	245	250	250	250	250	245	245	255	245	
		IPT(fz)	.0002	.0002	.0002	.0004	.0004	.0004	.0004	.0004	.0005	.0006	.0006	.0008	.0008	.0008	.0008	.0009	.0008	
		RPM	5950	5360	5360	4790	4790	4790	4790	4310	3710	3040	3040	2540	2540	1890	1890	1550	1260	
		IPM(FEED)	6	5	5	8	8	8	8	7	8	8	8	8	8	6	6	5	4	
		Ap	.0016	.0009	.0009	.0034	.0034	.0024	.0024	.0013	.0045	.0039	.0039	.0047	.0047	.0090	.0063	.0113	.0135	

SFM = Surface Feet per Minute
 RPM = Revolutions Per Minute
 IPT = Inches Per Tooth
 IPM = Inches Per Minute
 Ap : Inch (Axial Depth of Cut)
 Ae : Inch (Radial Depth of Cut)



HSS

CBN END MILLS

i-Xmill END MILLS

i-SMART MODULAR END MILLS

X5070 END MILLS

4G MILL END MILLS

X-POWER PRO END MILLS

TitaNox-POWER END MILLS

JET-POWER END MILLS

V7 PLUS A END MILLS

V7 MILL INOX

ALU-POWER HPC END MILLS

ALU-POWER END MILLS

D-POWER GRAPHITE END MILLS

STANDARD CARBIDE

ONLY ONE COATED PM60 END MILLS

SINE-POWER

TANK-POWER END MILLS

STANDARD COBALT & HSS

TECHNICAL DATA