



X-POWER PRO END MILLS

RECOMMENDED CUTTING CONDITIONS

GM963 SERIES

2FLUTE BALL NOSE - PROFILE

(NORMAL SPEED)

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)

ISO	VDI 3323	Material Description	Ae	Parameter	Diameter (Ø)						
					1/16	1/8	3/16	1/4	5/16	3/8	1/2
P	1-11.2	Non-alloy steel Low alloy steel High alloyed steel, and tool steel	0.2D	SFM(Vc)	175	290	315	365	320	325	340
				IPT(fz)	.0004	.0009	.0016	.0019	.0029	.0037	.0044
				RPM	10700	8860	6420	5580	3910	3310	2600
				IPM(FEED)	9	16	20	22	23	25	23
H	38.1	Hardened steel	0.1D	SFM(Vc)	250	365	405	495	505	525	625
				IPT(fz)	.0007	.0017	.0023	.0026	.0029	.0032	.0036
				RPM	15280	11150	8250	7560	6170	5350	4780
				IPM(FEED)	22	38	38	40	36	35	35
	38.2	Hardened steel	0.1D	SFM(Vc)	245	355	390	470	475	505	600
				IPT(fz)	.0007	.0017	.0023	.0027	.0030	.0032	.0036
				RPM	14970	10850	7950	7180	5810	5140	4580
				IPM(FEED)	20	37	37	38	35	33	33
	40	Chilled Cast Iron	0.2D	SFM(Vc)	175	290	315	365	320	325	340
				IPT(fz)	.0004	.0009	.0016	.0019	.0029	.0037	.0044
				RPM	10700	8860	6420	5580	3910	3310	2600
				IPM(FEED)	9	16	20	22	23	25	23
41	Hardened Cast Iron	0.1D	SFM(Vc)	245	355	390	470	475	505	600	
			IPT(fz)	.0007	.0017	.0023	.0027	.0030	.0032	.0036	
			RPM	14970	10850	7950	7180	5810	5140	4580	
			IPM(FEED)	20	37	37	38	35	33	33	

AP	~HRc45	HRc45~55
	D1/8 ~ D1/4 = .008 D5/16 ~ D5/8 = .012	D1/8 = .006 D3/16 ~ D5/16 = .010 D3/8 ~ D1 = .012

(HIGH SPEED)

ISO	VDI 3323	Material Description	Ae	Parameter	Diameter (Ø)						
					1/16	1/8	3/16	1/4	5/16	3/8	1/2
P	1-11.2	Non-alloy steel Low alloy steel High alloyed steel, and tool steel	0.05D	SFM(Vc)	330	605	905	1210	1135	1180	1210
				IPT(fz)	.0006	.0009	.0017	.0022	.0035	.0044	.0049
				RPM	20170	18490	18440	18490	13870	12020	9240
				IPM(FEED)	24	35	62	80	98	106	91
H	38.1	Hardened steel	0.05D	SFM(Vc)	250	365	405	495	505	525	625
				IPT(fz)	.0010	.0027	.0035	.0040	.0044	.0047	.0051
				RPM	15280	11150	8250	7560	6170	5350	4780
				IPM(FEED)	32	61	57	61	54	50	49
	38.2	Hardened steel	0.05D	SFM(Vc)	245	355	390	470	475	505	600
				IPT(fz)	.0011	.0026	.0034	.0041	.0043	.0046	.0050
				RPM	14970	10850	7950	7180	5810	5140	4580
				IPM(FEED)	33	56	54	58	50	48	45
	40	Chilled Cast Iron	0.05D	SFM(Vc)	330	605	905	1210	1135	1180	1210
				IPT(fz)	.0006	.0009	.0017	.0022	.0035	.0044	.0049
				RPM	20170	18490	18440	18490	13870	12020	9240
				IPM(FEED)	24	35	62	80	98	106	91
41	Hardened Cast Iron	0.05D	SFM(Vc)	245	355	390	470	475	505	600	
			IPT(fz)	.0011	.0026	.0034	.0041	.0043	.0046	.0050	
			RPM	14970	10850	7950	7180	5810	5140	4580	
			IPM(FEED)	33	56	54	58	50	48	45	

AP	~HRc45	HRc45~55
	D1/8 ~ D1/4 = .008 D5/16 ~ D5/8 = .012	D1/8 = .006 D3/16 ~ D5/16 = .010 D3/8 ~ D1 = .012