



RECOMMENDED CUTTING CONDITIONS

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

GM209 SERIES

2FLUTE BALL NOSE - PROFILE

(NORMAL SPEED)

ISO	VDI 3323	Material Description	Ae	Parameter	Diameter (Ø)											
					1/32	1/16	3/32	1/8	3/16	1/4	5/16	3/8	1/2	5/8	3/4	
P	1-4	Non-alloy steel	0.2D	SFM(Vc)	140	285	390	470	495	560	475	500	545	490	455	
				IPT(fz)	.0003	.0004	.0010	.0010	.0018	.0021	.0036	.0043	.0047	.0066	.0078	
				RPM	17110	17420	15890	14360	10090	8560	5810	5090	4160	3000	2320	
	IPM(FEED)		11	15	33	29	36	36	41	44	39	40	36			
	5		Low alloy steel	0.2D	SFM(Vc)	115	220	290	360	395	455	400	410	425	415	410
					IPT(fz)	.0003	.0004	.0009	.0009	.0016	.0020	.0029	.0037	.0044	.0056	.0066
		RPM			14060	13450	11820	11000	8050	6950	4890	4180	3250	2540	2090	
	IPM(FEED)	9		12	21	20	25	27	29	31	29	29	28			
	6-7	Low alloy steel		0.2D	SFM(Vc)	140	285	390	470	495	560	475	500	545	490	455
					IPT(fz)	.0003	.0004	.0010	.0010	.0018	.0021	.0036	.0043	.0047	.0066	.0078
			RPM		17110	17420	15890	14360	10090	8560	5810	5090	4160	3000	2320	
	IPM(FEED)		11	15	33	29	36	36	41	44	39	40	36			
8-9	Low alloy steel		0.2D	SFM(Vc)	115	220	290	360	395	455	400	410	425	415	410	
				IPT(fz)	.0003	.0004	.0009	.0009	.0016	.0020	.0029	.0037	.0044	.0056	.0066	
		RPM		14060	13450	11820	11000	8050	6950	4890	4180	3250	2540	2090		
IPM(FEED)		9	12	21	20	25	27	29	31	29	29	28				
10		High alloyed steel, and tool steel	0.2D	SFM(Vc)	140	285	390	470	495	560	475	500	545	490	455	
				IPT(fz)	.0003	.0004	.0010	.0010	.0018	.0021	.0036	.0043	.0047	.0066	.0078	
	RPM			17110	17420	15890	14360	10090	8560	5810	5090	4160	3000	2320		
IPM(FEED)	11		15	33	29	36	36	41	44	39	40	36				
11.1- 11.2	High alloyed steel, and tool steel		0.2D	SFM(Vc)	115	220	290	360	395	455	400	410	425	415	410	
				IPT(fz)	.0003	.0004	.0009	.0009	.0016	.0020	.0029	.0037	.0044	.0056	.0066	
		RPM		14060	13450	11820	11000	8050	6950	4890	4180	3250	2540	2090		
IPM(FEED)		9	12	21	20	25	27	29	31	29	29	28				
H		38.1- 38.2	Hardened steel	0.1D	SFM(Vc)	50	95	125	165	200	230	190	190	195	210	180
					IPT(fz)	.0003	.0004	.0006	.0006	.0010	.0012	.0018	.0021	.0028	.0032	.0045
	RPM				6110	5810	5090	5040	4080	3510	2320	1940	1490	1280	920	
	IPM(FEED)	4	5	7	7	8	8	8	8	8	8	8				
	40	Chilled Cast Iron	0.1D	SFM(Vc)	115	220	290	360	395	455	400	410	425	415	410	
				IPT(fz)	.0003	.0004	.0009	.0009	.0016	.0020	.0029	.0037	.0044	.0056	.0066	
				RPM	14060	13450	11820	11000	8050	6950	4890	4180	3250	2540	2090	
	IPM(FEED)	9	12	21	20	25	27	29	31	29	29	28				
	41	Hardened Cast Iron	0.1D	SFM(Vc)	50	95	125	165	200	230	190	190	195	210	180	
IPT(fz)				.0003	.0004	.0006	.0006	.0010	.0012	.0018	.0021	.0028	.0032	.0045		
RPM				6110	5810	5090	5040	4080	3510	2320	1940	1490	1280	920		
IPM(FEED)	4	5	7	7	8	8	8	8	8	8	8					

(HIGH SPEED)

ISO	VDI 3323	Material Description	Ae	Parameter	Diameter (Ø)										
					1/32	1/16	3/32	1/8	3/16	1/4	5/16	3/8	1/2	5/8	3/4
P	1- 11.2	Non-alloy steel Low alloy steel High alloyed steel, and tool steel	0.05D	SFM(Vc)	225	415	565	755	1135	1510	1420	1475	1510	1475	1360
				IPT(fz)	.0005	.0006	.0008	.0009	.0017	.0022	.0035	.0044	.0049	.0063	.0079
				RPM	27500	25370	23020	23070	23120	23070	17360	15030	11540	9020	6930
				IPM(FEED)	28	30	38	43	78	100	123	132	114	114	109
H	38.1- 38.2	Hardened steel	0.05D	SFM(Vc)	225	415	515	610	650	755	710	680	760	680	635
				IPT(fz)	.0003	.0004	.0005	.0006	.0010	.0012	.0018	.0026	.0031	.0037	.0035
				RPM	27500	25370	20990	18640	13240	11540	8680	6930	5810	4160	3230
				IPM(FEED)	17	19	21	23	26	27	32	36	36	31	23
H	40- 41	Chilled Cast Iron Hardened Cast Iron	0.05D	SFM(Vc)	225	415	515	610	650	755	710	680	760	680	635
				IPT(fz)	.0003	.0004	.0005	.0006	.0010	.0012	.0018	.0026	.0031	.0037	.0035
				RPM	27500	25370	20990	18640	13240	11540	8680	6930	5810	4160	3230
				IPM(FEED)	17	19	21	23	26	27	32	36	36	31	23

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)

Ap
D3/16~D1/4 = .008
D5/16~D3/4 = .012