



Being the best through innovation



**SOLID CARBIDE**

***i* - SMART MODULAR TYPE  
END MILL**

- For General Steels, Hardened Steels and Cast Iron

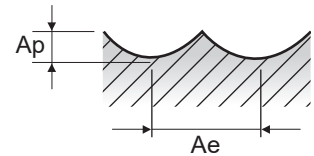


**XGMF15 SERIES**

**2 FLUTE BALL NOSE - Plain Cutting**

RPM = rev./min. FEED = inch/min.  
Vc = ft/min. fz = inch/tooth

ISO	VDI 3323	Material Description	Ae	Ap	Parameter	O.D SIZE						
						R3/16 x3/8	R1/4 x1/2	R5/16 x5/8	R3/8 x3/4	R1/2 x1	R5/8x1-1/4	
<b>P</b>	1-5	Non-alloy steel	0.08D	0.03D	SFM(Vc)	558	558	558	558	558	558	
					IPT(fz)	0.008	0.008	0.009	0.01	0.011	0.012	
					RPM	5680	4260	3410	2840	2130	1700	
	6-8	Low alloy steel	0.08D	0.03D	SFM(Vc)	558	558	558	558	558	558	
					IPT(fz)	0.008	0.008	0.009	0.01	0.011	0.012	
					RPM	5680	4260	3410	2840	2130	1700	
	9	High alloyed steel, and tool steel	0.08D	0.03D	SFM(Vc)	541	541	541	541	541	541	
					IPT(fz)	0.007	0.007	0.008	0.009	0.009	0.01	
					RPM	5510	4140	3310	2760	2070	1650	
	10-11.1	High alloyed steel, and tool steel	0.08D	0.03D	SFM(Vc)	558	558	558	558	558	558	
					IPT(fz)	0.008	0.008	0.009	0.01	0.011	0.012	
					RPM	5680	4260	3410	2840	2130	1700	
11.2	High alloyed steel, and tool steel	0.08D	0.03D	SFM(Vc)	541	541	541	541	541	541		
				IPT(fz)	0.007	0.007	0.008	0.009	0.009	0.01		
				RPM	5510	4140	3310	2760	2070	1650		
<b>K</b>	15-20	Grey cast iron Nodular cast iron Malleable cast iron	0.08D	0.03D	SFM(Vc)	558	558	558	558	558	558	
					IPT(fz)	0.008	0.008	0.009	0.01	0.011	0.012	
					RPM	5680	4260	3410	2840	2130	1700	
<b>H</b>	38.1-38.2	Hardened steel	0.08D	0.03D	SFM(Vc)	453	453	453	453	453	453	
					IPT(fz)	0.006	0.007	0.007	0.008	0.008	0.009	
					RPM	4610	3460	2770	2310	1730	1380	
	40	Chilled Cast Iron	0.08D	0.03D	SFM(Vc)	541	541	541	541	541	541	
					IPT(fz)	0.007	0.007	0.008	0.009	0.009	0.01	
					RPM	5510	4140	3310	2760	2070	1650	
	41	Hardened Cast Iron	0.08D	0.03D	SFM(Vc)	453	453	453	453	453	453	
					IPT(fz)	0.006	0.007	0.007	0.008	0.008	0.009	
					RPM	4610	3460	2770	2310	1730	1380	
						IPM(FEED)	58.1	46.3	41.2	37.8	28.7	25.1

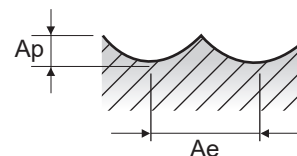


**XGMF17** SERIES

**4 FLUTE BALL NOSE - Plain Cutting**

RPM = rev./min. FEED = inch/min.  
Vc = ft/min. fz = inch/tooth

ISO	VDI 3323	Material Description	Ae	Ap	Parameter	O.D SIZE					
						R3/16 x3/8	R1/4 x1/2	R5/16 x5/8	R3/8 x3/4	R1/2 x1	R5/8x1-1/4
P	1-5	Non-alloy steel	0.05D	0.02D	SFM(Vc)	968	968	968	968	968	968
					IPT(fz)	0.006	0.006	0.007	0.007	0.007	0.008
					RPM	9860	7390	5920	4930	3700	2960
					IPM(FEED)	229.8	192.1	163	138.9	108.3	93.6
	6-8	Low alloy steel	0.05D	0.02D	SFM(Vc)	968	968	968	968	968	968
					IPT(fz)	0.006	0.006	0.007	0.007	0.007	0.008
					RPM	9860	7390	5920	4930	3700	2960
					IPM(FEED)	229.8	192.1	163	138.9	108.3	93.6
	9	Low alloy steel	0.05D	0.02D	SFM(Vc)	771	771	771	771	771	771
					IPT(fz)	0.005	0.006	0.006	0.006	0.006	0.007
					RPM	7850	5890	4710	3930	2940	2360
					IPM(FEED)	155.8	129.9	110.6	96.5	76.1	65.3
10-11.1	High alloyed steel, and tool steel	0.05D	0.02D	SFM(Vc)	968	968	968	968	968	968	
				IPT(fz)	0.006	0.006	0.007	0.007	0.007	0.008	
				RPM	9860	7390	5920	4930	3700	2960	
				IPM(FEED)	229.8	192.1	163	138.9	108.3	93.6	
11.2	High alloyed steel, and tool steel	0.05D	0.02D	SFM(Vc)	771	771	771	771	771	771	
				IPT(fz)	0.005	0.006	0.006	0.006	0.006	0.007	
				RPM	7850	5890	4710	3930	2940	2360	
				IPM(FEED)	155.8	129.9	110.6	96.5	76.1	65.3	
K	15-20	Grey cast iron Nodular cast iron Malleable cast iron	0.05D	0.02D	SFM(Vc)	968	968	968	968	968	968
					IPT(fz)	0.006	0.006	0.007	0.007	0.007	0.008
					RPM	9860	7390	5920	4930	3700	2960
					IPM(FEED)	229.8	192.1	163	138.9	108.3	93.6
H	38.1-38.2	Hardened steel	0.05D	0.02D	SFM(Vc)	689	689	689	689	689	689
					IPT(fz)	0.005	0.005	0.005	0.006	0.006	0.006
					RPM	7020	5260	4210	3510	2630	2110
					IPM(FEED)	129.3	107.8	89.5	79.0	62.2	54.7
	40	Chilled Cast Iron	0.05D	0.02D	SFM(Vc)	771	771	771	771	771	771
					IPT(fz)	0.005	0.006	0.006	0.006	0.006	0.007
					RPM	7850	5890	4710	3930	2940	2360
					IPM(FEED)	155.8	129.9	110.6	96.5	76.1	65.3
	41	Hardened Cast Iron	0.05D	0.02D	SFM(Vc)	689	689	689	689	689	689
					IPT(fz)	0.005	0.005	0.005	0.006	0.006	0.006
					RPM	7020	5260	4210	3510	2630	2110
					IPM(FEED)	129.3	107.8	89.5	79.0	62.2	54.7



HSS

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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



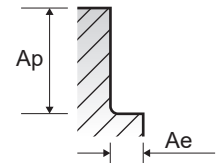
**XGMF20 SERIES**

**4 FLUTE CORNER RADIUS - Side Cutting**

RPM = rev./min. FEED = inch/min.  
Vc = ft/min. fz = inch/tooth

ISO	VDI 3323	Material Description	Ae	Ap	Parameter	O.D SIZE					
						3/8	1/2	5/8	3/4	1	1*1/4
P	1-5	Non-alloy steel	0.05D	0.8D	SFM(Vc)	512	512	512	512	512	512
					IPT(fz)	0.001	0.001	0.001	0.001	0.001	0.001
					RPM	5210	3910	3130	2610	1950	1560
	6-8	Low alloy steel	0.05D	0.8D	SFM(Vc)	512	512	512	512	512	512
					IPT(fz)	0.001	0.001	0.001	0.001	0.001	0.001
					RPM	5210	3910	3130	2610	1950	1560
	9	High alloyed steel, and tool steel	0.05D	0.8D	SFM(Vc)	344	344	344	344	344	344
					IPT(fz)	0.001	0.001	0.001	0.001	0.001	0.001
					RPM	3510	2630	2110	1750	1320	1050
	10-11.1	High alloyed steel, and tool steel	0.05D	0.8D	SFM(Vc)	512	512	512	512	512	512
					IPT(fz)	0.001	0.001	0.001	0.001	0.001	0.001
					RPM	5210	3910	3130	2610	1950	1560
11.2	High alloyed steel, and tool steel	0.05D	0.8D	SFM(Vc)	344	344	344	344	344	344	
				IPT(fz)	0.001	0.001	0.001	0.001	0.001	0.001	
				RPM	3510	2630	2110	1750	1320	1050	
K	15-20	Grey cast iron Nodular cast iron Malleable cast iron	0.02D	0.8D	SFM(Vc)	512	512	512	512	512	512
					IPT(fz)	0.001	0.001	0.001	0.001	0.001	0.001
					RPM	5210	3910	3130	2610	1950	1560
H	38.1-38.2	Hardened steel	0.02D	0.8D	SFM(Vc)	207	207	207	207	207	207
					IPT(fz)	0.001	0.001	0.001	0.001	0.001	0.001
					RPM	2110	1580	1260	1050	790	630
	40	Chilled Cast Iron	0.05D	0.8D	SFM(Vc)	344	344	344	344	344	344
					IPT(fz)	0.001	0.001	0.001	0.001	0.001	0.001
					RPM	3510	2630	2110	1750	1320	1050
	41	Hardened Cast Iron	0.02D	0.8D	SFM(Vc)	207	207	207	207	207	207
					IPT(fz)	0.001	0.001	0.001	0.001	0.001	0.001
					RPM	2110	1580	1260	1050	790	630

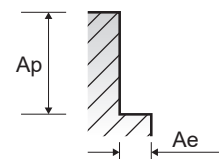
\* 1.5xD Axial cutting depth should be for DIA over 5/8inch



**XGMF25 SERIES 6 FLUTE SQUARE - Side Cutting**

RPM = rev./min. FEED = inch/min.  
Vc = ft/min. fz = inch/tooth

ISO	VDI 3323	Material Description	Ae	Ap	Parameter	O.D SIZE					
						3/8	1/2	5/8	3/4	1	1*1/4
<b>P</b>	1-5	Non-alloy steel	0.05D	0.6D	SFM(Vc)	427	427	427	427	427	427
					IPT(fz)	0.002	0.002	0.002	0.002	0.002	0.002
					RPM	4340	3260	2610	2170	1630	1300
	6-8	Low alloy steel	0.05D	0.6D	SFM(Vc)	427	427	427	427	427	427
					IPT(fz)	0.002	0.002	0.002	0.002	0.002	0.002
					RPM	4340	3260	2610	2170	1630	1300
	9	Low alloy steel	0.05D	0.6D	SFM(Vc)	262	262	262	262	262	262
					IPT(fz)	0.001	0.001	0.001	0.001	0.001	0.001
					RPM	2670	2010	1600	1340	1000	800
	10-11.1	High alloyed steel, and tool steel	0.05D	0.6D	SFM(Vc)	427	427	427	427	427	427
					IPT(fz)	0.002	0.002	0.002	0.002	0.002	0.002
					RPM	4340	3260	2610	2170	1630	1300
11.2	High alloyed steel, and tool steel	0.05D	0.6D	SFM(Vc)	262	262	262	262	262	262	
				IPT(fz)	0.001	0.001	0.001	0.001	0.001	0.001	
				RPM	2670	2010	1600	1340	1000	800	
<b>M</b>	14.1	Stainless steel	0.05D	0.6D	SFM(Vc)	217	217	217	217	217	217
					IPT(fz)	0.001	0.001	0.001	0.001	0.001	0.001
					RPM	2210	1650	1320	1100	830	660
<b>K</b>	15-20	Grey cast iron Nodular cast iron Malleable cast iron	0.05D	0.6D	SFM(Vc)	427	427	427	427	427	427
					IPT(fz)	0.002	0.002	0.002	0.002	0.002	0.002
					RPM	4340	3260	2610	2170	1630	1300
<b>H</b>	38.1-38.2	Hardened steel	0.05D	0.6D	SFM(Vc)	174	174	174	174	174	174
					IPT(fz)	0.001	0.001	0.001	0.001	0.001	0.001
					RPM	1770	1330	1060	890	660	530
	40	Chilled Cast Iron	0.05D	0.6D	SFM(Vc)	262	262	262	262	262	262
					IPT(fz)	0.001	0.001	0.001	0.001	0.001	0.001
					RPM	2670	2010	1600	1340	1000	800
	41	Hardened Cast Iron	0.02D	0.6D	SFM(Vc)	174	174	174	174	174	174
					IPT(fz)	0.001	0.001	0.001	0.001	0.001	0.001
					RPM	1770	1330	1060	890	660	530



HSS

CBN  
END MILLS

i-Xmill  
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**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



**XGMF29** SERIES

**6 FLUTE SQUARE - Side Cutting**

**Normal**

RPM = rev./min. FEED = inch/min.  
Vc = ft/min. fz = inch/tooth

ISO	VDI 3323	Material Description	Ae	Ap	Parameter	O.D SIZE					
						3/8	1/2	5/8	3/4	1	1*1/4
<b>P</b>	1-5	Non-alloy steel	0.1D	0.8D	SFM(Vc)	364	364	364	364	364	364
					IPT(fz)	0.004	0.004	0.004	0.004	0.004	0.004
					RPM	3710	2780	2230	1850	1390	1110
	6-8	Low alloy steel	0.1D	0.8D	SFM(Vc)	364	364	364	364	364	364
					IPT(fz)	0.004	0.004	0.004	0.004	0.004	0.004
					RPM	3710	2780	2230	1850	1390	1110
	9	High alloyed steel, and tool steel	0.1D	0.8D	SFM(Vc)	253	253	253	253	253	253
					IPT(fz)	0.004	0.004	0.004	0.004	0.004	0.004
					RPM	2570	1930	1540	1290	960	770
	10-11.1	High alloyed steel, and tool steel	0.1D	0.8D	SFM(Vc)	364	364	364	364	364	364
					IPT(fz)	0.004	0.004	0.004	0.004	0.004	0.004
					RPM	3710	2780	2230	1850	1390	1110
11.2	High alloyed steel, and tool steel	0.1D	0.8D	SFM(Vc)	253	253	253	253	253	253	
				IPT(fz)	0.004	0.004	0.004	0.004	0.004	0.004	
				RPM	2570	1930	1540	1290	960	770	
<b>K</b>	15-20	Grey cast iron Nodular cast iron Malleable cast iron	0.1D	0.8D	SFM(Vc)	364	364	364	364	364	364
					IPT(fz)	0.004	0.004	0.004	0.004	0.004	0.004
					RPM	3710	2780	2230	1850	1390	1110
<b>H</b>	38.1-38.2	Hardened steel	0.05D	0.6D	SFM(Vc)	108	108	108	108	108	108
					IPT(fz)	0.001	0.001	0.001	0.001	0.001	0.001
					RPM	1100	830	660	550	410	330
	40	Chilled Cast Iron	0.05D	0.8D	SFM(Vc)	253	253	253	253	253	253
					IPT(fz)	0.004	0.004	0.004	0.004	0.004	0.004
					RPM	2570	1930	1540	1290	960	770
	41	Hardened Cast Iron	0.05D	0.6D	SFM(Vc)	108	108	108	108	108	108
					IPT(fz)	0.001	0.001	0.001	0.001	0.001	0.001
					RPM	1100	830	660	550	410	330

**High**

ISO	VDI 3323	Material Description	Ae	Ap	Parameter	O.D SIZE					
						3/8	1/2	5/8	3/4	1	1*1/4
<b>P</b>	11.2	High alloyed steel, and tool steel	0.05D	0.6D	SFM(Vc)	1089	1089	1089	1089	1089	1089
					IPT(fz)	0.004	0.004	0.004	0.004	0.004	0.004
					RPM	11090	8320	6660	5550	4160	3330
					IPM(FEED)	249	186.7	149.4	124.5	93.4	74.7
<b>H</b>	38.1-38.2	Hardened steel	0.05D	0.4D	SFM(Vc)	545	545	545	545	545	545
					IPT(fz)	0.004	0.004	0.004	0.004	0.004	0.004
					RPM	5550	4160	3330	2770	2080	1660
	40	Chilled Cast Iron	0.05D	0.6D	SFM(Vc)	1089	1089	1089	1089	1089	1089
					IPT(fz)	0.004	0.004	0.004	0.004	0.004	0.004
					RPM	11090	8320	6660	5550	4160	3330
	41	Hardened Cast Iron	0.05D	0.4D	SFM(Vc)	545	545	545	545	545	545
					IPT(fz)	0.004	0.004	0.004	0.004	0.004	0.004
					RPM	5550	4160	3330	2770	2080	1660

