



Being the best through innovation



HSS PM60

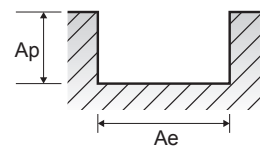
**ONLY ONE COATED
PM60 END MILLS**

- Perfect Solution of Carbide Chipping under Vibrations

GYG64 SERIES 2 FLUTE - **SLOTTING**

SFM(Vc) = ft./min.
 IPT(fz) = in./tooth
 RPM = rev./min.
 IPM(Feed) = in./min.

ISO	VDI 3323	Material Description	Ae	Ap	Parameter	Diameter (Ø)												
						1/8	3/16	1/4	5/16	3/8	1/2	5/8	3/4	1				
P	1	Non-alloy steel	1.0D	0.5D	SFM(Vc)	185	245	260	255	260	265	265	235	235				
					IPT(fz)	.0006	.0013	.0015	.0021	.0028	.0030	.0039	.0046	.0041				
					RPM	5710	4950	3960	3130	2640	2030	1620	1200	890				
	2		1.0D	0.5D	SFM(Vc)	150	200	215	215	225	215	225	195	195				
					IPT(fz)	.0006	.0012	.0014	.0022	.0029	.0033	.0034	.0042	.0044				
					RPM	4610	4080	3310	2650	2270	1650	1380	990	750				
	3-4		1.0D	0.5D	SFM(Vc)	125	160	170	180	180	170	175	175	150				
					IPT(fz)	.0007	.0014	.0017	.0022	.0031	.0036	.0039	.0042	.0047				
					RPM	3810	3280	2610	2170	1840	1300	1080	890	580				
	5		1.0D	0.5D	SFM(Vc)	85	105	110	115	110	110	110	110	115				
					IPT(fz)	.0007	.0011	.0015	.0020	.0027	.0031	.0036	.0041	.0041				
					RPM	2610	2140	1650	1400	1140	850	680	550	430				
6	1.0D	0.5D	SFM(Vc)	150	200	215	215	225	215	225	195	195						
			IPT(fz)	.0006	.0012	.0014	.0022	.0029	.0033	.0034	.0042	.0044						
			RPM	4610	4080	3310	2650	2270	1650	1380	990	750						
7	1.0D	0.5D	SFM(Vc)	125	160	170	180	180	170	175	175	150						
			IPT(fz)	.0007	.0014	.0017	.0022	.0031	.0036	.0039	.0042	.0047						
			RPM	3810	3280	2610	2170	1840	1300	1080	890	580						
8	1.0D	0.5D	SFM(Vc)	85	105	110	115	110	110	110	110	115						
			IPT(fz)	.0007	.0011	.0015	.0020	.0027	.0031	.0036	.0041	.0041						
			RPM	2610	2140	1650	1400	1140	850	680	550	430						
9	1.0D	0.5D	SFM(Vc)	65	80	85	90	85	85	90	90	80						
			IPT(fz)	.0007	.0011	.0014	.0019	.0028	.0028	.0036	.0039	.0040						
			RPM	2010	1670	1300	1080	870	650	540	450	300						
10	1.0D	0.5D	SFM(Vc)	150	200	215	215	225	215	225	195	195						
			IPT(fz)	.0006	.0012	.0014	.0022	.0029	.0033	.0034	.0042	.0044						
			RPM	4610	4080	3310	2650	2270	1650	1380	990	750						
11.1	1.0D	0.5D	SFM(Vc)	85	105	110	115	110	110	110	110	115						
			IPT(fz)	.0007	.0011	.0015	.0020	.0027	.0031	.0036	.0041	.0041						
			RPM	2610	2140	1650	1400	1140	850	680	550	430						
11.2	1.0D	0.3D	SFM(Vc)	45	60	60	60	60	60	60	65	50						
			IPT(fz)	.0007	.0011	.0014	.0019	.0029	.0028	.0035	.0039	.0038						
			RPM	1400	1200	900	760	630	450	380	320	200						
M	14.1	Stainless steel	1.0D	0.5D	SFM(Vc)	70	90	95	100	95	95	95	100	85				
					IPT(fz)	.0007	.0011	.0014	.0019	.0028	.0028	.0036	.0040	.0038				
					RPM	2210	1870	1450	1200	970	730	580	500	330				
K	15-20	Grey cast iron Nodular cast iron Malleable cast iron	1.0D	0.5D	SFM(Vc)	150	200	215	215	225	215	225	195	195				
					IPT(fz)	.0006	.0012	.0014	.0022	.0029	.0033	.0034	.0042	.0044				
					RPM	4610	4080	3310	2650	2270	1650	1380	990	750				
H	40	Hardened Cast Iron	1.0D	0.3D	SFM(Vc)	45	60	60	60	60	60	60	65	50				
					IPT(fz)	.0007	.0011	.0014	.0019	.0029	.0028	.0035	.0039	.0038				
					RPM	1400	1200	900	760	630	450	380	320	200				





**ONLY ONE
END MILLS**

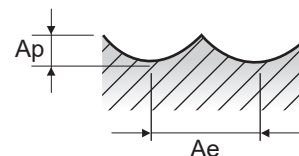
RECOMMENDED CUTTING CONDITIONS

SFM(Vc) = ft./min.
IPT(fz) = in./tooth
RPM = rev./min.
IPM(Feed) = in./min.

GYG67 SERIES

4 FLUTE BALL NOSE - PLANE

ISO	VDI 3323	Material Description	Ae	Ap	Parameter	Diameter (Ø)									
						1/8	3/16	1/4	5/16	3/8	1/2	5/8	3/4	1	
P	1	Non-alloy steel	0.5D	0.2D	SFM(Vc)	270	310	330	330	340	340	340	335	295	
					IPT(fz)	.0007	.0012	.0016	.0023	.0032	.0034	.0042	.0048		
					RPM	8320	6270	5010	4050	3480	2610	2070	1700	1130	
	2		SFM(Vc)	215	245	260	255	260	265	255	245	230			
			IPT(fz)	.0006	.0010	.0014	.0020	.0028	.0029	.0037	.0041	.0041			
			RPM	6620	4950	3960	3130	2640	2030	1560	1250	880			
	3-4		SFM(Vc)	145	160	170	180	175	175	175	170	145			
			IPT(fz)	.0005	.0008	.0011	.0016	.0024	.0025	.0030	.0032	.0037			
			RPM	4410	3260	2610	2170	1770	1350	1080	870	550			
	5		SFM(Vc)	75	85	90	90	85	85	90	90	80			
			IPT(fz)	.0004	.0007	.0010	.0014	.0022	.0021	.0027	.0030	.0030			
			RPM	2310	1690	1350	1080	870	650	540	450	300			
6	SFM(Vc)	215	245	260	255	260	265	255	245	230					
	IPT(fz)	.0006	.0010	.0014	.0020	.0028	.0029	.0037	.0041	.0041					
	RPM	6620	4950	3960	3130	2640	2030	1560	1250	880					
7	SFM(Vc)	145	160	170	180	175	175	175	170	145					
	IPT(fz)	.0005	.0008	.0011	.0016	.0024	.0025	.0030	.0032	.0037					
	RPM	4410	3260	2610	2170	1770	1350	1080	870	550					
8	SFM(Vc)	75	85	90	90	85	85	90	90	80					
	IPT(fz)	.0004	.0007	.0010	.0014	.0022	.0021	.0027	.0030	.0030					
	RPM	2310	1690	1350	1080	870	650	540	450	300					
9	SFM(Vc)	75	85	90	90	85	85	90	90	80					
	IPT(fz)	.0004	.0007	.0010	.0014	.0022	.0021	.0027	.0030	.0030					
	RPM	2310	1690	1350	1080	870	650	540	450	300					
10	SFM(Vc)	215	245	260	255	260	265	255	245	230					
	IPT(fz)	.0006	.0010	.0014	.0020	.0028	.0029	.0037	.0041	.0041					
	RPM	6620	4950	3960	3130	2640	2030	1560	1250	880					
11.1	SFM(Vc)	75	85	90	90	85	85	90	90	80					
	IPT(fz)	.0004	.0007	.0010	.0014	.0022	.0021	.0027	.0030	.0030					
	RPM	2310	1690	1350	1080	870	650	540	450	300					
11.2	SFM(Vc)	50	60	60	60	60	60	60	65	50					
	IPT(fz)	.0004	.0007	.0010	.0014	.0023	.0021	.0027	.0029	.0028					
	RPM	1600	1190	950	760	600	450	380	320	200					
M	14.1	Stainless steel	0.5D	0.2D	SFM(Vc)	80	90	100	100	90	95	100	100	85	
					IPT(fz)	.0004	.0008	.0011	.0015	.0021	.0022	.0028	.0030	.0030	
					RPM	2510	1880	1500	1200	940	730	600	500	330	
K	15-20	Grey cast iron Nodular cast iron Malleable cast iron	0.5D	0.2D	SFM(Vc)	215	245	260	255	260	265	255	245	230	
					IPT(fz)	.0006	.0010	.0014	.0020	.0028	.0029	.0037	.0041	.0041	
					RPM	6620	4950	3960	3130	2640	2030	1560	1250	880	
H	40	Hardened Cast Iron	0.3D	0.2D	SFM(Vc)	50	60	60	60	60	60	60	65	50	
					IPT(fz)	.0004	.0007	.0010	.0014	.0023	.0021	.0027	.0029	.0028	
					RPM	1600	1190	950	760	600	450	380	320	200	



YG ONLY ONE END MILLS

RECOMMENDED CUTTING CONDITIONS

CARBIDE

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

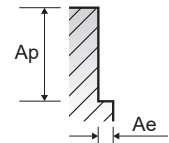
STANDARD
COBALT &
HSS

TECHNICAL
DATA

SFM(Vc) = ft./min.
IPT(fz) = in./tooth
RPM = rev./min.
IPM(Feed) = in./min.

GYG65 SERIES 4 FLUTE - SIDE CUTTING

ISO	VDI 3323	Material Description	Ae	Ap	Parameter	Diameter (Ø)									
						1/8	3/16	1/4	5/16	3/8	1/2	5/8	3/4	7/8	1
P	1	Non-alloy steel	0.1D	1.5D	SFM(Vc)	245	270	290	305	285	295	320	310	285	310
					IPT(fz)	.0006	.0011	.0014	.0018	.0027	.0028	.0031	.0035	.0038	.0037
					RPM	7520	5550	4410	3730	2910	2260	1950	1570	1250	1180
	2		0.1D	1.5D	SFM(Vc)	225	245	265	255	260	265	275	260	260	260
					IPT(fz)	.0006	.0010	.0012	.0018	.0025	.0026	.0030	.0035	.0033	.0035
					RPM	6820	5010	4060	3130	2640	2030	1680	1320	1130	990
	3-4		0.1D	1.5D	SFM(Vc)	165	180	195	195	195	205	195	195	190	195
					IPT(fz)	.0006	.0011	.0013	.0018	.0023	.0026	.0034	.0034	.0036	.0036
					RPM	5010	3680	2960	2410	2010	1580	1200	990	820	750
	5		0.1D	1.5D	SFM(Vc)	100	125	135	135	125	130	135	130	130	130
					IPT(fz)	.0007	.0011	.0013	.0017	.0026	.0027	.0032	.0032	.0033	.0035
					RPM	3110	2540	2060	1680	1270	1000	820	670	560	490
6	0.1D	1.5D	SFM(Vc)	225	245	265	255	260	265	275	260	260	260		
			IPT(fz)	.0006	.0010	.0012	.0018	.0025	.0026	.0030	.0035	.0033	.0035		
			RPM	6820	5010	4060	3130	2640	2030	1680	1320	1130	990		
7	0.1D	1.5D	SFM(Vc)	165	180	195	195	195	205	195	195	190	195		
			IPT(fz)	.0006	.0011	.0013	.0018	.0023	.0026	.0034	.0034	.0036	.0036		
			RPM	5010	3680	2960	2410	2010	1580	1200	990	820	750		
8	0.1D	1.5D	SFM(Vc)	100	125	135	135	125	130	135	130	130	130		
			IPT(fz)	.0007	.0011	.0013	.0017	.0026	.0027	.0032	.0032	.0033	.0035		
			RPM	3110	2540	2060	1680	1270	1000	820	670	560	490		
9	0.1D	1.5D	SFM(Vc)	90	105	110	115	110	105	110	110	110	115		
			IPT(fz)	.0005	.0009	.0012	.0016	.0022	.0025	.0030	.0032	.0032	.0034		
			RPM	2710	2140	1650	1400	1140	800	660	550	470	430		
10	0.1D	1.5D	SFM(Vc)	225	245	265	255	260	265	275	260	260	260		
			IPT(fz)	.0006	.0010	.0012	.0018	.0025	.0026	.0030	.0035	.0033	.0035		
			RPM	6820	5010	4060	3130	2640	2030	1680	1320	1130	990		
11.1	0.1D	1.5D	SFM(Vc)	100	125	135	135	125	130	135	130	130	130		
			IPT(fz)	.0007	.0011	.0013	.0017	.0026	.0027	.0032	.0032	.0033	.0035		
			RPM	3110	2540	2060	1680	1270	1000	820	670	560	490		
11.2	0.05D	1.5D	SFM(Vc)	60	70	75	80	80	75	75	75	75	80		
			IPT(fz)	.0005	.0009	.0012	.0016	.0023	.0025	.0030	.0032	.0032	.0035		
			RPM	1900	1470	1150	960	800	580	460	380	330	300		
M	14.1	Stainless steel	0.1D	1.5D	SFM(Vc)	100	115	120	125	120	120	120	120	120	120
					IPT(fz)	.0005	.0009	.0012	.0015	.0022	.0025	.0030	.0032	.0032	.0035
					RPM	3010	2340	1800	1520	1240	900	740	600	530	460
K	15-20	Grey cast iron Nodular cast iron Malleable cast iron	0.1D	1.5D	SFM(Vc)	225	245	265	255	260	265	275	260	260	260
					IPT(fz)	.0006	.0010	.0012	.0018	.0025	.0026	.0030	.0035	.0033	.0035
					RPM	6820	5010	4060	3130	2640	2030	1680	1320	1130	990
H	40	Hardened Cast Iron	0.05D	1.5D	SFM(Vc)	60	70	75	80	80	75	75	75	75	80
					IPT(fz)	.0005	.0009	.0012	.0016	.0023	.0025	.0030	.0032	.0032	.0035
					RPM	1900	1470	1150	960	800	580	460	380	330	300
					IPM(Feed)	4	6	6	6	7	6	6	5	4	4





**ONLY ONE
END MILLS**

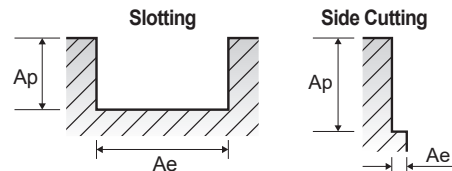
RECOMMENDED CUTTING CONDITIONS

SFM(Vc) = ft./min.
IPT(fz) = in./tooth
RPM = rev./min.
IPM(Feed) = in./min.

GYG66 SERIES

4 FLUTE - SLOTTING & SIDE CUTTING

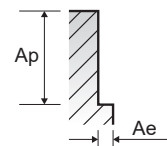
ISO	VDI 3323	Material Description	SLOTTING		SIDE CUTTING		Parameter	Diameter (Ø)								
			Ae	Ap	Ae	Ap		1/8	3/16	1/4	5/16	3/8	1/2	5/8	3/4	1
P	1-2	Non-alloy steel	1.0D	0.5D	0.3D	1.5D	SFM(Vc)	230	230	230	230	250	255	250	255	255
							IPT(fz)	.0002	.0005	.0006	.0011	.0015	.0019	.0021	.0026	.0025
	RPM		7020	4680	3510	2810	2570	1930	1540	1290	970					
	IPM(Feed)		6	9	9	12	16	14	13	13	10					
	3-4		1.0D	0.5D	0.3D	1.5D	SFM(Vc)	210	205	210	210	230	230	230	230	230
							IPT(fz)	.0002	.0004	.0006	.0011	.0015	.0019	.0021	.0026	.0025
	RPM		6420	4210	3210	2570	2340	1750	1400	1170	880					
	IPM(Feed)		5	7	8	11	14	13	12	12	9					
	5		1.0D	0.5D	0.3D	1.5D	SFM(Vc)	145	145	145	145	160	160	160	160	160
							IPT(fz)	.0002	.0004	.0006	.0011	.0015	.0018	.0021	.0026	.0026
RPM	4410	2940	2210	1760	1640	1230	980	820	610							
IPM(Feed)	3	5	6	8	10	9	8	9	6							
6	1.0D	0.5D	0.3D	1.5D	SFM(Vc)	230	230	230	230	250	255	250	255	255		
					IPT(fz)	.0002	.0005	.0006	.0011	.0015	.0019	.0021	.0026	.0025		
RPM	7020	4680	3510	2810	2570	1930	1540	1290	970							
IPM(Feed)	6	9	9	12	16	14	13	13	10							
7	1.0D	0.5D	0.3D	1.5D	SFM(Vc)	210	205	210	210	230	230	230	230	230		
					IPT(fz)	.0002	.0004	.0006	.0011	.0015	.0019	.0021	.0026	.0025		
RPM	6420	4210	3210	2570	2340	1750	1400	1170	880							
IPM(Feed)	5	7	8	11	14	13	12	12	9							
8	1.0D	0.5D	0.3D	1.5D	SFM(Vc)	145	145	145	145	160	160	160	160	160		
					IPT(fz)	.0002	.0004	.0006	.0011	.0015	.0018	.0021	.0026	.0026		
RPM	4410	2940	2210	1760	1640	1230	980	820	610							
IPM(Feed)	3	5	6	8	10	9	8	9	6							
9	1.0D	0.5D	0.15D	1.5D	SFM(Vc)	90	90	90	90	100	95	100	100	95		
					IPT(fz)	.0002	.0004	.0006	.0009	.0013	.0016	.0017	.0022	.0021		
RPM	2710	1800	1350	1080	1000	730	600	500	360							
IPM(Feed)	2	3	3	4	5	5	4	4	3							
10	1.0D	0.5D	0.3D	1.5D	SFM(Vc)	230	230	230	230	250	255	250	255	255		
					IPT(fz)	.0002	.0005	.0006	.0011	.0015	.0019	.0021	.0026	.0025		
RPM	7020	4680	3510	2810	2570	1930	1540	1290	970							
IPM(Feed)	6	9	9	12	16	14	13	13	10							
11.1	1.0D	0.5D	0.3D	1.5D	SFM(Vc)	145	145	145	145	160	160	160	160	160		
					IPT(fz)	.0002	.0004	.0006	.0011	.0015	.0018	.0021	.0026	.0026		
RPM	4410	2940	2210	1760	1640	1230	980	820	610							
IPM(Feed)	3	5	6	8	10	9	8	9	6							
11.2	1.0D	0.3D	0.15D	1.5D	SFM(Vc)	90	90	90	90	100	95	100	100	95		
					IPT(fz)	.0002	.0004	.0006	.0009	.0013	.0016	.0017	.0022	.0021		
RPM	2710	1800	1350	1080	1000	730	600	500	360							
IPM(Feed)	2	3	3	4	5	5	4	4	3							
M	14.1	Stainless steel	1.0D	0.5D	0.3D	1.5D	SFM(Vc)	155	160	160	160	155	155	155	155	
K	15-20	Grey cast iron Nodular cast iron Malleable cast iron	1.0D	0.5D	0.3D	1.5D	SFM(Vc)	230	230	230	230	250	255	250	255	255
							IPT(fz)	.0002	.0005	.0006	.0011	.0015	.0019	.0021	.0026	.0025
RPM	7020	4680	3510	2810	2570	1930	1540	1290	970							
IPM(Feed)	6	9	9	12	16	14	13	13	10							
H	40	Chilled Cast Iron	1.0D	0.3D	0.15D	1.5D	SFM(Vc)	90	90	90	90	100	95	100	100	95
							IPT(fz)	.0002	.0004	.0006	.0009	.0013	.0016	.0017	.0022	.0021
RPM	2710	1800	1350	1080	1000	730	600	500	360							
IPM(Feed)	2	3	3	4	5	5	4	4	3							



SFM(Vc) = ft./min.
 IPT(fz) = in./tooth
 RPM = rev./min.
 IPM(Feed) = in./min.

GYG69 SERIES MULTI FLUTE - SIDE CUTTING

ISO	VDI 3323	Material Description	Ae	Ap	Parameter	Diameter (Ø)						
						1/4	5/16	3/8	1/2	5/8	3/4	1
P	1	Non-alloy steel	0.5D	1.5D	SFM (Vc)	250	285	280	285	285	285	295
					IPT (fz)	.0008	.0012	.0022	.0026	.0027	.0035	.0041
					RPM	3810	3490	2870	2180	1740	1450	1130
					IPM (FEED)	12	16	25	22	24	25	23
	2		0.5D	1.5D	SFM (Vc)	195	225	225	215	225	225	225
					IPT (fz)	.0008	.0012	.0021	.0027	.0027	.0034	.0042
					RPM	3010	2770	2270	1630	1380	1140	850
					IPM (FEED)	10	13	19	18	19	19	18
	3-4		0.5D	1.5D	SFM (Vc)	140	170	155	160	155	155	155
					IPT (fz)	.0007	.0011	.0018	.0025	.0027	.0034	.0042
					RPM	2160	2050	1570	1230	960	800	590
					IPM (FEED)	6	9	11	12	13	14	12
5	0.5D	1.5D	SFM (Vc)	115	125	130	130	130	130	135		
			IPT (fz)	.0008	.0012	.0018	.0024	.0026	.0032	.0040		
			RPM	1750	1520	1340	1000	800	670	510		
			IPM (FEED)	6	7	9	10	10	11	10		
6	0.5D	1.5D	SFM (Vc)	195	225	225	215	225	225	225		
			IPT (fz)	.0008	.0012	.0021	.0027	.0027	.0034	.0042		
			RPM	3010	2770	2270	1630	1380	1140	850		
			IPM (FEED)	10	13	19	18	19	19	18		
7	0.5D	1.5D	SFM (Vc)	140	170	155	160	155	155	155		
			IPT (fz)	.0007	.0011	.0018	.0025	.0027	.0034	.0042		
			RPM	2160	2050	1570	1230	960	800	590		
			IPM (FEED)	6	9	11	12	13	14	12		
8-9	0.5D	1.5D	SFM (Vc)	115	125	130	130	130	130	135		
			IPT (fz)	.0008	.0012	.0018	.0024	.0026	.0032	.0040		
			RPM	1750	1520	1340	1000	800	670	510		
			IPM (FEED)	6	7	9	10	10	11	10		
10	0.5D	1.5D	SFM (Vc)	195	225	225	215	225	225	225		
			IPT (fz)	.0008	.0012	.0021	.0027	.0027	.0034	.0042		
			RPM	3010	2770	2270	1630	1380	1140	850		
			IPM (FEED)	10	13	19	18	19	19	18		
11.1	0.5D	1.5D	SFM (Vc)	115	125	130	130	130	130	135		
			IPT (fz)	.0008	.0012	.0018	.0024	.0026	.0032	.0040		
			RPM	1750	1520	1340	1000	800	670	510		
			IPM (FEED)	6	7	9	10	10	11	10		
11.2	0.3D	1.5D	SFM (Vc)	80	90	90	90	90	90	90		
			IPT (fz)	.0008	.0011	.0017	.0024	.0026	.0031	.0039		
			RPM	1250	1080	940	700	560	470	350		
			IPM (FEED)	4	5	6	7	7	7	7		
M	14.1	Stainless steel	0.5D	1.5D	SFM (Vc)	130	140	140	140	140	145	145
					IPT (fz)	.0007	.0012	.0018	.0025	.0027	.0033	.0041
					RPM	1960	1720	1440	1080	860	740	550
					IPM (FEED)	6	8	10	11	12	12	11
K	15-20	Grey cast iron Nodular cast iron Malleable cast iron	0.5D	1.5D	SFM (Vc)	195	225	225	215	225	225	225
					IPT (fz)	.0008	.0012	.0021	.0027	.0027	.0034	.0042
					RPM	3010	2770	2270	1630	1380	1140	850
					IPM (FEED)	10	13	19	18	19	19	18
H	40	Hardened Cast Iron	0.3D	1.5D	SFM (Vc)	80	90	90	90	90	90	90
					IPT (fz)	.0008	.0011	.0017	.0024	.0026	.0031	.0039
					RPM	1250	1080	940	700	560	470	350
					IPM (FEED)	4	5	6	7	7	7	7



GYG68, GYG70 SERIES

MULTI FLUTE - SIDE CUTTING

SFM(Vc) = ft./min.
 IPT(fz) = in./tooth
 RPM = rev./min.
 IPM(FEED) = in./min.

ISO	VDI 3323	Material Description	Ae	Ap	Parameter	Diameter (Ø)								
						1/4	5/16	3/8	1/2	5/8	3/4	1	1-1/4	
P	1	Non-alloy steel	0.5D	1.5D	SFM(Vc)	205	235	235	235	235	235	245	175	
					IPT(fz)	.0011	.0016	.0022	.0026	.0034	.0044	.0041	.0044	
					RPM	3160	2890	2410	1800	1440	1200	940	670	
	2		0.5D	1.5D	SFM(Vc)	165	185	185	175	185	185	185	185	130
					IPT(fz)	.0011	.0016	.0021	.0027	.0034	.0043	.0042	.0045	
					RPM	2510	2290	1900	1350	1140	950	710	500	
	3-4		0.5D	1.5D	SFM(Vc)	120	135	130	135	130	130	130	130	90
					IPT(fz)	.0009	.0015	.0018	.0025	.0034	.0042	.0042	.0045	
					RPM	1800	1680	1340	1030	800	670	490	350	
	5		0.5D	1.5D	SFM(Vc)	95	105	110	110	110	110	110	115	80
					IPT(fz)	.0011	.0016	.0017	.0024	.0032	.0040	.0041	.0043	
					RPM	1450	1280	1140	850	660	550	430	300	
6	0.5D	1.5D	SFM(Vc)	165	185	185	175	185	185	185	185	130		
			IPT(fz)	.0011	.0016	.0021	.0027	.0034	.0043	.0042	.0045			
			RPM	2510	2290	1900	1350	1140	950	710	500			
7	0.5D	1.5D	SFM(Vc)	120	135	130	135	130	130	130	130	90		
			IPT(fz)	.0009	.0015	.0018	.0025	.0034	.0042	.0042	.0045			
			RPM	1800	1680	1340	1030	800	670	490	350			
8-9	0.5D	1.5D	SFM(Vc)	95	105	110	110	110	110	110	115	80		
			IPT(fz)	.0011	.0016	.0017	.0024	.0032	.0040	.0041	.0043			
			RPM	1450	1280	1140	850	660	550	430	300			
10	0.5D	1.5D	SFM(Vc)	165	185	185	175	185	185	185	185	130		
			IPT(fz)	.0011	.0016	.0021	.0027	.0034	.0043	.0042	.0045			
			RPM	2510	2290	1900	1350	1140	950	710	500			
11.1	0.5D	1.5D	SFM(Vc)	95	105	110	110	110	110	110	115	80		
			IPT(fz)	.0011	.0016	.0017	.0024	.0032	.0040	.0041	.0043			
			RPM	1450	1280	1140	850	660	550	430	300			
11.2	0.3D	1.5D	SFM(Vc)	70	70	80	75	75	75	80	55			
			IPT(fz)	.0011	.0016	.0018	.0023	.0032	.0040	.0039	.0042			
			RPM	1050	880	800	580	460	380	300	210			
M	14.1	Stainless steel	0.5D	1.5D	SFM(Vc)	110	120	120	120	120	120	120	85	
					IPT(fz)	.0010	.0015	.0018	.0025	.0034	.0042	.0040	.0043	
					RPM	1650	1440	1200	900	720	600	460	330	
K	15-20	Grey cast iron Nodular cast iron Malleable cast iron	0.5D	1.5D	SFM(Vc)	165	185	185	175	185	185	185	130	
					IPT(fz)	.0011	.0016	.0021	.0027	.0034	.0043	.0042	.0045	
					RPM	2510	2290	1900	1350	1140	950	710	500	
H	40	Hardened Cast Iron	0.3D	1.5D	SFM(Vc)	70	70	80	75	75	75	80	55	
					IPT(fz)	.0011	.0016	.0018	.0023	.0032	.0040	.0039	.0042	
					RPM	1050	880	800	580	460	380	300	210	
					IPM(FEED)	3	4	6	5	6	6	6	6	6

