

YU-EV25 AMERICAS

BEST VALUE IN THE WORLD OF CUTTING TOOLS



EV MILLS
Economical High Performance
Solid Carbide End Mills





Optimized Versatility for Various Materials

EV MILLS

SOLID CARBIDE END MILL



2 Flute Ball Nose

- Ensures smooth chip evacuation and enhanced cutting performance at the ball tip.



2 Flute Square

- Strengthens the cutting edge by incorporating bottom land touch for improved durability.



4 Flute Square

- Reduces vibration during machining, ensuring superior surface finish and tool life.

GUIDE TO ICONS



Tool Material



No. of Flutes



Tolerance of
Ball Radius



Helix Angle



PLAIN

Type of
Shank



Y
Coating

Type of
Coating



Cutting
Conditions



SELECTION GUIDE

SERIES

FLUTE

HELIX ANGLE

CUTTING EDGE SHAPE

SIZE MIN

SIZE MAX

PAGE

	GMK53	GMK31	GMK32	GMK54	GMK33
2	2	2	2	4	4
30°	30°	30°	30°	35°/38°	37°, 35°/38°
BALL NOSE	BALL NOSE	SQUARE	SQUARE	SQUARE	SQUARE
R1/32	R1.0	D1.0	D1/4	D2.0	D2.0
R1/4	R8.0	D10.0	D3/4	D20.0	D20.0
4	5	6	7	8	

Y-Coating

EV MILLS

SOLID CARBIDE END MILL



Please visit
globalyg1.com/mat
for material search

Recommended cutting conditions : p.9-13

◎ : Excellent ○ : Good

ISO	VDI 3323	Material Description	Composition / Structure / Heat Treatment		HB	HRc					
P	1	Non-alloy steel	About 0.15% C	Annealed	125		◎	◎	◎	◎	◎
	2		About 0.45% C	Annealed	190	13	◎	◎	◎	◎	◎
	3		About 0.45% C	Quenched & tempered	250	25	◎	◎	◎	◎	◎
	4		About 0.75% C	Annealed	270	28	◎	◎	◎	◎	◎
	5		About 0.75% C	Quenched & tempered	300	32	◎	◎	◎	◎	◎
	6	Low alloy steel		Annealed	180	10	◎	◎	◎	◎	◎
	7			Quenched & tempered	275	29	◎	◎	◎	◎	◎
	8			Quenched & tempered	300	32	◎	◎	◎	◎	◎
	9			Quenched & tempered	350	38	◎	◎	◎	◎	◎
	10	High alloyed steel, and tool steel		Annealed	200	15	◎	◎	◎	◎	◎
	11.1			Quenched & Tempered	325	35	◎	◎	◎	◎	◎
	11.2			Quenched & Tempered	409	44	◎	◎	◎	◎	◎
M	12	Stainless steel	Ferritic / Martensitic	Annealed	200	15				○	○
	13		Martensitic	Quenched & Tempered	240	23				○	○
	14.1			Austenitic	180	10			○	○	○
	14.2			PH Stainless steel	180	10					
K	15	Grey cast iron	Pearlitic / ferritic		180	10	○	○	○	○	○
	16		Pearlitic (Martensitic)		260	26	○	○	○	○	○
	17	Nodular cast iron	Ferritic		160	3	○	○	○	○	○
	18		Pearlitic		250	25	○	○	○	○	○
	19	Malleable cast iron	Ferritic		130		○	○	○	○	○
	20		Pearlitic		230	21	○	○	○	○	○
N	21	Aluminum-wrought alloy	Not Curable		60						
	22		Curable	Hardened	100						
	23	Aluminum-cast, alloyed	≤ 12% Si, Not Curable		75						
	24		≤ 12% Si, Curable		Hardened	90					
	25		> 12% Si, Not Curable			130					
	26	Copper and Copper Alloys (Bronze / Brass)	Cutting Alloys, PB>1%		110						
	27		CuZn, CuSnZn (Brass)		90						
	28		CuSn, lead-free copper and electrolytic copper		100						
	29.1	Non Metallic Materials	Duroplastic								
	29.2		GRAPHITE								
	29.3		CFRP, GFRP								
	30		Rubber, Wood, etc.								
S	31	Heat Resistant Super Alloys	Fe Based	Annealed	200	15					
	32			Cured	280	30					
	33			Annealed	250	25					
	34		Ni or Co Based	Cured	350	38					
	35			Cast	320	34					
	36	Titanium Alloys	Pure Titanium		400 Rm						
	37		Alpha + Beta Alloys	Hardened	1050 Rm						
H	38.1	Hardened steel		Hardened	421-469	45-49	○	○	○	○	○
	38.2			Hardened	481-560	50-55					
	39.1			Hardened	577-654	56-60					
	39.2			Hardened	670-739	61-65					
	39.3			Hardened		66-70					
	40	Chilled Cast Iron		Cast	400	42	○	○	○	○	○
	41	Hardened Cast Iron		Hardened	550	55					



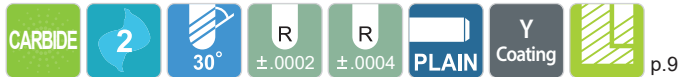
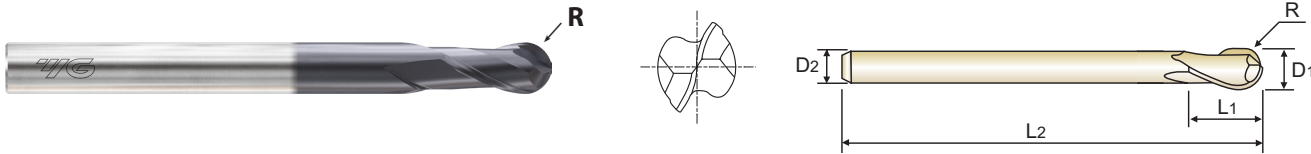
SOLID CARBIDE END MILLS
2 FLUTE BALL NOSE

SERIES

PLAIN SHANK

GMK53

►Ensures smooth chip evacuation and enhanced cutting performance at the ball tip.



R1/32~R1/8 R3/16~R1/4					
EDP No.	Radius of Ball Nose	Mill Diameter	Shank Diameter	Length of Cut	Overall Length
	R	D ₁	D ₂	L ₁	L ₂
GMK53004	R1/32	1/16	1/4	1/16	2-1/2
GMK53008	R1/16	1/8	1/4	5/16	2-3/4
GMK53901	R1/16	1/8	1/8	5/16	2-3/8
GMK53012	R3/32	3/16	3/16	3/8	3-1/8
GMK53016	R1/8	1/4	1/4	1/2	3-1/2
GMK53024	R3/16	3/8	3/8	3/4	4"
GMK53032	R1/4	1/2	1/2	7/8	4-1/4

Size	Ball Radius Tolerance	Mill Dia. Tolerance	Shank Dia. Tolerance
Up to Ø1/4	±.0002	0 ~ -.0005	h5
Over Ø1/4	±.0004	0 ~ -.0006	

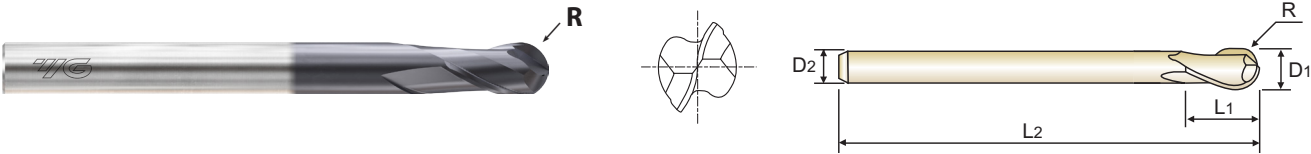
SOLID CARBIDE END MILLS
2 FLUTE BALL NOSE

SERIES

PLAIN SHANK

GMK31

►Ensures smooth chip evacuation and enhanced cutting performance at the ball tip.



R1.0~R3.0 R4.0~R8.0					
EDP No.	Radius of Ball Nose	Mill Diameter	Shank Diameter	Length of Cut	Overall Length
	R	D ₁	D ₂	L ₁	L ₂
GMK31020	R1.0	2.0	6	5	50
GMK31030	R1.5	3.0	6	6	60
GMK31040	R2.0	4.0	6	8	70
GMK31050	R2.5	5.0	6	10	80
GMK31060060	R3.0	6.0	6	9	60
GMK31060	R3.0	6.0	6	12	90
GMK31080060	R4.0	8.0	8	12	60
GMK31100	R5.0	10.0	10	18	100
GMK31120	R6.0	12.0	12	22	110
GMK31160	R8.0	16.0	16	30	150

Size	Ball Radius Tolerance (mm)	Mill Dia. Tolerance (mm)	Shank Dia. Tolerance
Up to Ø6	±0.005	0 ~ -0.012	h5
Over Ø6	±0.010	0 ~ -0.015	

◎ : Excellent ○ : Good

ISO	P												M				K			
	Non-alloy steel						Low alloy steel						High alloyed steel, and tool steel				Stainless steel			
Material Description	1	2	3	4	5	6	7	8	9	10	11.1	11.2	12	13	14.1	14.2	15	16	17	18
VDI 3323	1	2	3	4	5	6	7	8	9	10	11.1	11.2	12	13	14.1	14.2	15	16	17	18
HRc	13	25	28	32	36	40	44	48	52	56	60	64	68	72	76	80	84	88	92	96
HB	125	190	250	270	300	320	340	360	380	400	420	440	460	480	500	520	540	560	580	600
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎
ISO	N												S				H			
	Aluminum-wrought alloy						Aluminum-cast, alloyed						Copper and Copper Alloys (Bronze / Brass)				Non Metallic Materials			
Material Description	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38.1	38.2	39.1
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38.1	38.2	39.1
HRc	60	100	75	90	130	110	90	100			15	30	25	38	34	320	400 Rm	45-49	50-55	56-60
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	421-469	481-560	577-654
Recommended																		○		

◎ : Excellent ○ : Good

ISO	P												M				K			
	Non-alloy steel						Low alloy steel						High alloyed steel, and tool steel				Stainless steel			
Material Description	1	2	3	4	5	6	7	8	9	10	11.1	11.2	12	13	14.1	14.2	15	16	17	18
VDI 3323	1	2	3	4	5	6	7	8	9	10	11.1	11.2	12	13	14.1	14.2	15	16	17	18
HRc	13	25	28	32	36	40	44	48	52	56	60	64	68	72	76	80	84	88	92	96
HB	125	190	250	270	300	320	340	360	380	400	420	440	460	480	500	520	540	560	580	600
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎
ISO	N												S				H			
	Aluminum-wrought alloy						Aluminum-cast, alloyed						Copper and Copper Alloys (Bronze / Brass)				Non Metallic Materials			
Material Description	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38.1	38.2	39.1
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38.1	38.2	39.1
HRc	60	100	75	90	130	110	90	100			15	30	25	38	34	320	400 Rm	45-49	50-55	56-60
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	421-469	481-560	577-654
Recommended																		○		



SOLID CARBIDE MILLING TOOLS
FOR VARIOUS PURPOSE



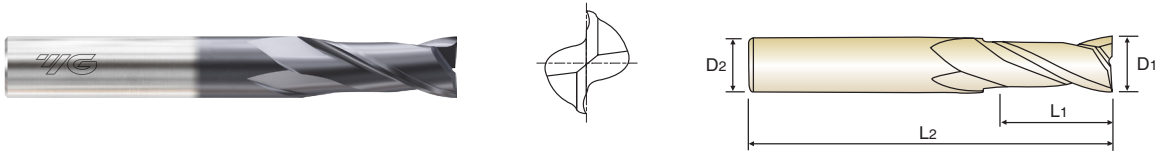
SOLID CARBIDE END MILLS
2 FLUTE SQUARE

SERIES

PLAIN SHANK

GMK32

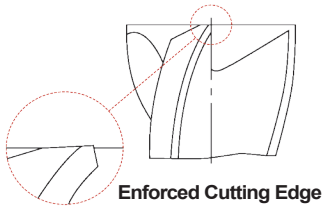
►Strengthens the cutting edge by incorporating bottom land touch for improved durability.



EDP No.	Mill Diameter	Shank Diameter	Length of Cut	Overall Length
	D ₁	D ₂	L ₁	L ₂
GMK320104S	1.0	4	2.5	50
GMK32010	1.0	6	2.5	50
GMK32020	2.0	6	6	50
GMK32035	3.5	6	10	50
GMK32040	4.0	6	10	50
GMK32050	5.0	6	15	60
GMK32060	6.0	6	15	60
GMK32070	7.0	8	20	60
GMK32080	8.0	8	20	70
GMK32090	9.0	10	22	70
GMK32100	10.0	10	25	75

Unit : mm

Size	Mill Dia. Tolerance (mm)	Shank Dia. Tolerance
Up to Ø6	0 ~ -0.012	h5
Over Ø6	0 ~ -0.015	



◎ : Excellent ○ : Good

ISO	P											M				K								
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel			Stainless steel				Grey cast iron		Nodular cast iron		Malleable cast iron			
VDI 3323	1	2	3	4	5	6	7	8	9	10	11.1	11.2	12	13	14.1	14.2	15	16	17	18	19	20		
HRc																								
HB	125	130	150	250	270	300	180	275	300	350	200	325	409	200	240	180	180	180	260	160	250	130	230	
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎				○	○	○	○	○	○	○	
ISO	N										S							H						
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel					Chilled Cast iron	Hardened Cast iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38.1	38.2	39.1	39.2	39.3	40	41
HRc																								
HB	60	100	75	90	130	110	90	100			150	280	250	350	320	400 Rm	1050 Rm	421-469	450-550	560-650	610-650	660-730	400	550
Recommended																		○				○		

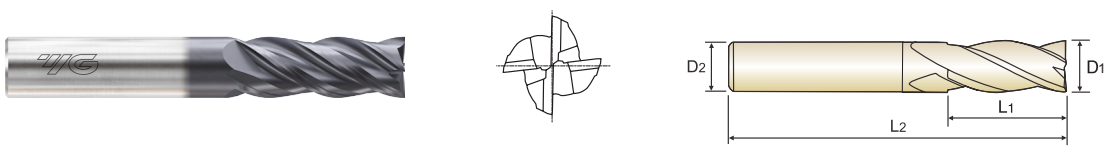
SOLID CARBIDE END MILLS
4 FLUTE SQUARE

SERIES

PLAIN SHANK

GMK54

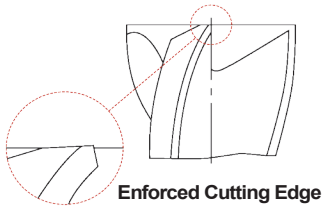
►Strengthens the cutting edge by incorporating bottom land touch for improved durability.



EDP No.	Mill Diameter	Shank Diameter	Length of Cut	Overall Length
	D ₁	D ₂	L ₁	L ₂
GMK54016	1/4	1/4	3/4	2-1/2
GMK54020	5/16	5/16	13/16	2-1/2
GMK54024	3/8	3/8	1"	2-1/2
GMK54032	1/2	1/2	1"	3"
GMK54040	5/8	5/8	1-1/4	3-1/2
GMK54048	3/4	3/4	1-1/2	4"
GMK54901	3/4	3/4	2-1/4	5"

Unit : Inch

Mill Dia. Tolerance	Shank Dia. Tolerance
0 ~ -.0008	h5



◎ : Excellent ○ : Good

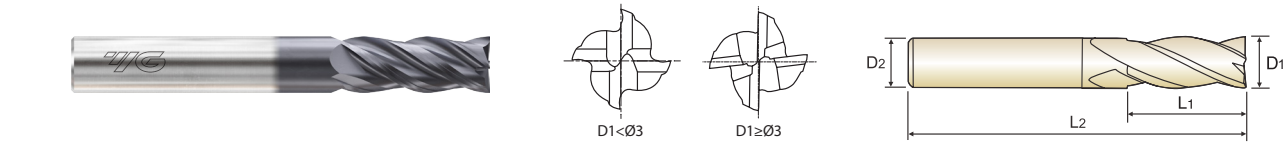
ISO	P										M						K								
Material Description	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel			Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron				
VDI 3323	1	2	3	4	5	6	7	8	9	10	11.1	11.2	12	13	14.1	14.2	15	16	17	18	19	20			
HRc																									
HB	125	13	25	28	32	10	29	32	38	15	35	44	15	23	10	10	10	26	3	25		21			
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	○	○	○	○	○	○			
ISO	N										S							H							
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed		Copper and Copper Alloys (Bronze / Brass)				Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel				Chilled Cast iron	Hardened Cast iron		
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38.1	38.2	39.1	39.2	39.3	40	41	
HRc																									
HB	60	100	75	90	130	110	90	100			15	30	25	38	34	320	400 Rm	1050 Rm	45-49	50-55	56-60	61-65	66-70	42	55
Recommended																									



SOLID CARBIDE END MILLS
4 FLUTE SQUARE

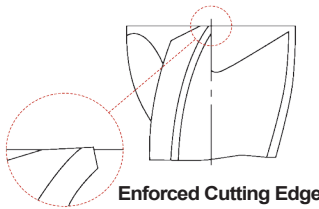
► Strengthens the cutting edge by incorporating bottom land touch for improved durability.

PLAIN SHANK **GMK33** SERIES



D1<Ø3		D1≥Ø3		Unit : mm	
EDP No.	Mill Diameter	Shank Diameter	Length of Cut	Overall Length	
	D ₁	D ₂	L ₁	L ₂	
GMK33020	2.0	6	6	50	
GMK33030	3.0	6	8	50	
GMK33040	4.0	6	10	50	
GMK33045	4.5	6	14	50	
GMK33060	6.0	6	15	60	
GMK33080	8.0	8	20	70	
GMK33100	10.0	10	25	75	
GMK33120	12.0	12	30	80	
GMK33200	20.0	20	45	100	

Mill Dia. Tolerance (mm)	Shank Dia. Tolerance
0 ~ -0.020	h5



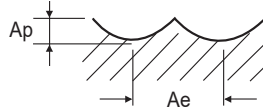
◎ : Excellent ○ : Good																								
ISO	P										M				K									
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel			Stainless steel				Grey cast iron		Nodular cast iron		Malleable cast iron			
VDI 3323	1	2	3	4	5	6	7	8	9	10	11.1	11.2	12	13	14.1	14.2	15	16	17	18	19	20		
HRc		13	25	28	32	10	29	32	38	15	35	44	15	23	10	10	10	26	3	25		21		
HB	125	190	250	270	300	180	275	300	350	200	325	409	200	240	180	180	180	260	160	250	130	230		
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	○	○	○		○	○	○	○	○	○		
ISO	N										S							H						
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed		Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel				Chilled Cast Iron	Hardened Cast Iron		
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38.1	38.2	39.1	39.2	39.3	40	41
HRc											15	30	25	38	34			45-49	50-55	56-60	61-65	66-70	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	421-469	481-560	577-654	670-739		400	550
Recommended																							○	

RECOMMENDED CUTTING CONDITIONS



GMK53 SERIES

2 FLUTE BALL NOSE



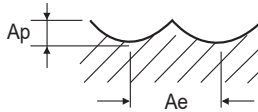
FLUTE BALL NOSE						SFM = Surface Feet per Minute IPM = Inches Per Minute		RPM = Revolutions Per Minute Ap : Inch (Axial Depth of Cut)		IPT = Inches Per Tooth Ae : Inch (Radial Depth of Cut)	
ISO	VDI 3323	Material Description	Ae	Ap	Parameter	Diameter (Ø)					
						1/16	1/8	3/16	1/4	3/8	1/2
P	1	Non-alloy steel	0.2D	0.1D	SFM	235	390	460	510	635	700
					IPT	.0004	.0011	.0017	.0025	.0045	.0062
					RPM	14360	11920	9370	7790	6470	5350
					IPM	12	25	32	40	58	67
	2		0.2D	0.1D	SFM	235	390	460	510	635	700
					IPT	.0004	.0011	.0017	.0025	.0045	.0062
					RPM	14360	11920	9370	7790	6470	5350
					IPM	12	25	32	40	58	67
	3		0.2D	0.1D	SFM	235	390	460	510	635	700
					IPT	.0004	.0011	.0017	.0025	.0045	.0062
					RPM	14360	11920	9370	7790	6470	5350
					IPM	12	25	32	40	58	67
	4	0.2D	0.1D	SFM	235	390	460	510	635	700	
				IPT	.0004	.0011	.0017	.0025	.0045	.0062	
				RPM	14360	11920	9370	7790	6470	5350	
				IPM	12	25	32	40	58	67	
	5	0.2D	0.1D	SFM	180	300	365	415	510	560	
				IPT	.0004	.0011	.0017	.0025	.0045	.0062	
				RPM	11000	9170	7440	6340	5200	4280	
				IPM	9	19	26	32	47	53	
	6	Low alloy steel	0.2D	0.1D	SFM	235	390	460	510	635	700
					IPT	.0004	.0011	.0017	.0025	.0045	.0062
					RPM	14360	11920	9370	7790	6470	5350
					IPM	12	25	32	40	58	67
7	0.2D		0.1D	SFM	235	390	460	510	635	700	
				IPT	.0004	.0011	.0017	.0025	.0045	.0062	
				RPM	14360	11920	9370	7790	6470	5350	
				IPM	12	25	32	40	58	67	
8	0.2D		0.1D	SFM	180	300	365	415	510	560	
				IPT	.0004	.0011	.0017	.0025	.0045	.0062	
				RPM	11000	9170	7440	6340	5200	4280	
				IPM	9	19	26	32	47	53	
9	0.2D	0.1D	SFM	180	300	365	415	510	560		
			IPT	.0004	.0011	.0017	.0025	.0045	.0062		
			RPM	11000	9170	7440	6340	5200	4280		
			IPM	9	19	26	32	47	53		
10	High alloyed steel, and tool steel	0.2D	0.1D	SFM	235	390	460	510	635	700	
				IPT	.0004	.0011	.0017	.0025	.0045	.0062	
				RPM	14360	11920	9370	7790	6470	5350	
				IPM	12	25	32	40	58	67	
11.1		0.2D	0.1D	SFM	180	300	365	415	510	560	
				IPT	.0004	.0011	.0017	.0025	.0045	.0062	
				RPM	11000	9170	7440	6340	5200	4280	
				IPM	9	19	26	32	47	53	
11.2		0.1D	0.1D	SFM	80	140	185	190	205	210	
				IPT	.0005	.0011	.0017	.0025	.0045	.0063	
				RPM	4890	4280	3770	2900	2090	1600	
				IPM	4	9	13	15	19	20	



RECOMMENDED CUTTING CONDITIONS

GMK31 SERIES

2 FLUTE BALL NOSE



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

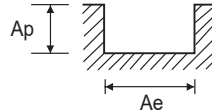
ISO	VDI 3323	Material Description	Ae	Ap	Parameter	Diameter (Ø)									
						2	3	4	5	6	8	10	12	16	
P	1	Non-alloy steel	0.2D	0.1D	SFM	285	390	420	460	510	575	635	700	765	
					IPT	.0010	.0010	.0014	.0018	.0024	.0035	.0047	.0059	.0071	
	RPM				13850	12630	10190	8910	8220	6960	6180	5650	4640		
	IPM				28	26	28	31	39	49	58	67	66		
	2		0.2D	0.1D	SFM	285	390	420	460	510	575	635	700	765	
					IPT	.0010	.0010	.0014	.0018	.0024	.0035	.0047	.0059	.0071	
	RPM				13850	12630	10190	8910	8220	6960	6180	5650	4640		
	IPM				28	26	28	31	39	49	58	67	66		
	3		0.2D	0.1D	SFM	285	390	420	460	510	575	635	700	765	
					IPT	.0010	.0010	.0014	.0018	.0024	.0035	.0047	.0059	.0071	
	RPM				13850	12630	10190	8910	8220	6960	6180	5650	4640		
	IPM				28	26	28	31	39	49	58	67	66		
	4		0.2D	0.1D	SFM	285	390	420	460	510	575	635	700	765	
					IPT	.0010	.0010	.0014	.0018	.0024	.0035	.0047	.0059	.0071	
	RPM				13850	12630	10190	8910	8220	6960	6180	5650	4640		
	IPM				28	26	28	31	39	49	58	67	66		
	5		0.2D	0.1D	SFM	215	300	340	365	415	465	510	560	605	
					IPT	.0010	.0010	.0014	.0018	.0024	.0035	.0047	.0059	.0071	
					RPM	10350	9660	8200	7130	6680	5610	4930	4510	3660	
					IPM	21	20	22	25	31	40	46	53	52	
	6	Low alloy steel	0.2D	0.1D	SFM	285	390	420	460	510	575	635	700	765	
					IPT	.0010	.0010	.0014	.0018	.0024	.0035	.0047	.0059	.0071	
					RPM	13850	12630	10190	8910	8220	6960	6180	5650	4640	
					IPM	28	26	28	31	39	49	58	67	66	
	7		0.2D	0.1D	SFM	285	390	420	460	510	575	635	700	765	
					IPT	.0010	.0010	.0014	.0018	.0024	.0035	.0047	.0059	.0071	
					RPM	13850	12630	10190	8910	8220	6960	6180	5650	4640	
					IPM	28	26	28	31	39	49	58	67	66	
	8		0.2D	0.1D	SFM	215	300	340	365	415	465	510	560	605	
					IPT	.0010	.0010	.0014	.0018	.0024	.0035	.0047	.0059	.0071	
					RPM	10350	9660	8200	7130	6680	5610	4930	4510	3660	
					IPM	21	20	22	25	31	40	46	53	52	
	9		0.2D	0.1D	SFM	215	300	340	365	415	465	510	560	605	
					IPT	.0010	.0010	.0014	.0018	.0024	.0035	.0047	.0059	.0071	
					RPM	10350	9660	8200	7130	6680	5610	4930	4510	3660	
					IPM	21	20	22	25	31	40	46	53	52	
	10	High alloyed steel, and tool steel	0.2D	0.1D	SFM	285	390	420	460	510	575	635	700	765	
					IPT	.0010	.0010	.0014	.0018	.0024	.0035	.0047	.0059	.0071	
					RPM	13850	12630	10190	8910	8220	6960	6180	5650	4640	
					IPM	28	26	28	31	39	49	58	67	66	
	11.1		0.2D	0.1D	SFM	215	300	340	365	415	465	510	560	605	
					IPT	.0010	.0010	.0014	.0018	.0024	.0035	.0047	.0059	.0071	
					RPM	10350	9660	8200	7130	6680	5610	4930	4510	3660	
					IPM	21	20	22	25	31	40	46	53	52	
	11.2		0.1D	0.1D	SFM	90	140	165	185	190	195	205	210	215	
					IPT	.0010	.0010	.0014	.0018	.0024	.0035	.0047	.0059	.0071	
					RPM	4460	4460	4060	3570	3080	2390	1970	1700	1310	
					IPM	9	9	11	13	15	17	19	20	19	



RECOMMENDED CUTTING CONDITIONS

GMK32 SERIES

2 FLUTE SQUARE - SLOTTING



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

ISO	VDI 3323	Material Description	Ae	Ap	Parameter	Diameter (Ø)										
						1	2	3.5	4	5	6	7	8	9	10	
P	1	Non-alloy steel	1.0D	D=1:0.15D 1<D≤3:0.2D D>3:0.5D	SFM	215	235	265	300	315	335	340	340	325	325	
					IPT	.0002	.0003	.0006	.0008	.0010	.0012	.0015	.0018	.0019	.0020	
	RPM				21010	11300	7350	7320	6110	5410	4710	4100	3500	3150		
	IPM				7	7	8	11	12	13	14	15	13	13		
	2		1.0D	D=1:0.15D 1<D≤3:0.2D D>3:0.5D	SFM	215	235	265	300	315	335	340	340	325	325	
					IPT	.0002	.0003	.0006	.0008	.0010	.0012	.0015	.0018	.0019	.0020	
					RPM	21010	11300	7350	7320	6110	5410	4710	4100	3500	3150	
					IPM	7	7	8	11	12	13	14	15	13	13	
	3		1.0D	D=1:0.15D 1<D≤3:0.2D D>3:0.5D	SFM	215	235	265	300	315	335	340	340	325	325	
					IPT	.0002	.0003	.0006	.0008	.0010	.0012	.0015	.0018	.0019	.0020	
					RPM	21010	11300	7350	7320	6110	5410	4710	4100	3500	3150	
					IPM	7	7	8	11	12	13	14	15	13	13	
	4		1.0D	D=1:0.15D 1<D≤3:0.2D D>3:0.5D	SFM	215	235	265	300	315	335	340	340	325	325	
					IPT	.0002	.0003	.0006	.0008	.0010	.0012	.0015	.0018	.0019	.0020	
					RPM	21010	11300	7350	7320	6110	5410	4710	4100	3500	3150	
					IPM	7	7	8	11	12	13	14	15	13	13	
	5		1.0D	D=1:0.15D 1<D≤3:0.2D D>3:0.5D	SFM	130	155	190	185	185	200	200	200	200	200	
					IPT	.0002	.0005	.0007	.0008	.0010	.0013	.0014	.0015	.0015	.0016	
					RPM	12730	7480	5270	4460	3630	3240	2770	2430	2160	1940	
					IPM	4	7	7	7	7	8	8	7	7	6	
	6	Low alloy steel	1.0D	D=1:0.15D 1<D≤3:0.2D D>3:0.5D	SFM	215	235	265	300	315	335	340	340	325	325	
					IPT	.0002	.0003	.0006	.0008	.0010	.0012	.0015	.0018	.0019	.0020	
					RPM	21010	11300	7350	7320	6110	5410	4710	4100	3500	3150	
					IPM	7	7	8	11	12	13	14	15	13	13	
	7		1.0D	D=1:0.15D 1<D≤3:0.2D D>3:0.5D	SFM	215	235	265	300	315	335	340	340	325	325	
					IPT	.0002	.0003	.0006	.0008	.0010	.0012	.0015	.0018	.0019	.0020	
					RPM	21010	11300	7350	7320	6110	5410	4710	4100	3500	3150	
					IPM	7	7	8	11	12	13	14	15	13	13	
	8		1.0D	D=1:0.15D 1<D≤3:0.2D D>3:0.5D	SFM	130	155	190	185	185	200	200	200	200	200	
					IPT	.0002	.0005	.0007	.0008	.0010	.0013	.0014	.0015	.0015	.0016	
					RPM	12730	7480	5270	4460	3630	3240	2770	2430	2160	1940	
					IPM	4	7	7	7	7	8	8	7	7	6	
9		1.0D	D=1:0.15D 1<D≤3:0.2D D>3:0.5D	SFM	130	155	190	185	185	200	200	200	200	200		
				IPT	.0002	.0005	.0007	.0008	.0010	.0013	.0014	.0015	.0015	.0016		
				RPM	12730	7480	5270	4460	3630	3240	2770	2430	2160	1940		
				IPM	4	7	7	7	7	8	8	7	7	6		
10	High alloyed steel, and tool steel	1.0D	D=1:0.15D 1<D≤3:0.2D D>3:0.5D	SFM	215	235	265	300	315	335	340	340	325	325		
				IPT	.0002	.0003	.0006	.0008	.0010	.0012	.0015	.0018	.0019	.0020		
				RPM	21010	11300	7350	7320	6110	5410	4710	4100	3500	3150		
				IPM	7	7	8	11	12	13	14	15	13	13		
11.1		1.0D	D=1:0.15D 1<D≤3:0.2D D>3:0.5D	SFM	130	155	190	185	185	200	200	200	200	200		
				IPT	.0002	.0005	.0007	.0008	.0010	.0013	.0014	.0015	.0015	.0016		
				RPM	12730	7480	5270	4460	3630	3240	2770	2430	2160	1940		
				IPM	4	7	7	7	7	8	8	7	7	6		
11.2		1.0D	D=1:0.15D 1<D≤3:0.2D D>3:0.5D	SFM	130	155	190	185	185	200	200	200	200	200		
				IPT	.0002	.0005	.0007	.0008	.0010	.0013	.0014	.0015	.0015	.0016		
				RPM	12730	7480	5270	4460	3630	3240	2770	2430	2160	1940		
				IPM	4	7	7	7	7	8	8	7	7	6		
M	14.1	Stainless steel	1.0D	D=1:0.15D 1<D≤3:0.2D D>3:0.5D	SFM	110	130	140	155	160	170	170	165	165	165	
					IPT	.0001	.0003	.0006	.0008	.0010	.0013	.0015	.0016	.0017	.0019	
					RPM	10500	6210	3880	3820	3120	2760	2360	2030	1780	1620	
					IPM	3	4	5	6	6	7	7	7	6	6	



RECOMMENDED CUTTING CONDITIONS

GMK54 SERIES

4 FLUTE SQUARE - SIDE CUTTING

ISO	VDI 3323	Material Description	Ae	Ap	Parameter	Diameter (Ø)						
						1/4	5/16	3/8	1/2	5/8	3/4	
P	1	Non-alloy steel	0.3D	1.5D	SFM	350	350	390	385	390	390	
					IPT	.0007	.0011	.0014	.0020	.0021	.0024	
					RPM	5350	4280	3970	2940	2380	1990	
					IPM	14	18	23	23	20	19	
	2		0.3D	1.5D	SFM	350	350	390	385	390	390	
					IPT	.0007	.0011	.0014	.0020	.0021	.0024	
					RPM	5350	4280	3970	2940	2380	1990	
					IPM	14	18	23	23	20	19	
	3		0.3D	1.5D	SFM	350	350	390	385	390	390	
					IPT	.0007	.0011	.0014	.0020	.0021	.0024	
					RPM	5350	4280	3970	2940	2380	1990	
					IPM	14	18	23	23	20	19	
	4		0.3D	1.5D	SFM	350	350	390	385	390	390	
					IPT	.0007	.0011	.0014	.0020	.0021	.0024	
					RPM	5350	4280	3970	2940	2380	1990	
					IPM	14	18	23	23	20	19	
	5		0.3D	1.5D	SFM	245	245	270	270	270	270	
					IPT	.0007	.0010	.0014	.0020	.0021	.0024	
					RPM	3740	2990	2750	2060	1650	1380	
					IPM	10	13	16	16	14	13	
	6	Low alloy steel	0.3D	1.5D	SFM	350	350	390	385	390	390	
					IPT	.0007	.0011	.0014	.0020	.0021	.0024	
					RPM	5350	4280	3970	2940	2380	1990	
					IPM	14	18	23	23	20	19	
	7		0.3D	1.5D	SFM	350	350	390	385	390	390	
					IPT	.0007	.0011	.0014	.0020	.0021	.0024	
					RPM	5350	4280	3970	2940	2380	1990	
					IPM	14	18	23	23	20	19	
	8		0.3D	1.5D	SFM	245	245	270	270	270	270	
					IPT	.0007	.0010	.0014	.0020	.0021	.0024	
					RPM	3740	2990	2750	2060	1650	1380	
					IPM	10	13	16	16	14	13	
	9		0.3D	1.5D	SFM	245	245	270	270	270	270	
					IPT	.0007	.0010	.0014	.0020	.0021	.0024	
					RPM	3740	2990	2750	2060	1650	1380	
					IPM	10	13	16	16	14	13	
	10	High alloyed steel, and tool steel	0.3D	1.5D	SFM	350	350	390	385	390	390	
					IPT	.0007	.0011	.0014	.0020	.0021	.0024	
					RPM	5350	4280	3970	2940	2380	1990	
					IPM	14	18	23	23	20	19	
	11.1		0.3D	1.5D	SFM	245	245	270	270	270	270	
					IPT	.0007	.0010	.0014	.0020	.0021	.0024	
					RPM	3740	2990	2750	2060	1650	1380	
					IPM	10	13	16	16	14	13	
	11.2		0.3D	1.5D	SFM	245	245	270	270	270	270	
					IPT	.0007	.0010	.0014	.0020	.0021	.0024	
					RPM	3740	2990	2750	2060	1650	1380	
					IPM	10	13	16	16	14	13	
M	12	Stainless steel	0.1D	1.5D	SFM	340	340	340	340	340	340	
					IPT	.0005	.0008	.0013	.0016	.0017	.0021	
					RPM	5200	4160	3460	2600	2080	1730	
					IPM	11	14	18	17	15	14	
	13		0.1D	1.5D	SFM	340	340	340	340	340	340	
					IPT	.0005	.0008	.0013	.0016	.0017	.0021	
					RPM	5200	4160	3460	2600	2080	1730	
					IPM	11	14	18	17	15	14	
	14.1		0.1D	1.5D	SFM	245	240	245	240	240	245	
					IPT	.0007	.0011	.0018	.0023	.0024	.0029	
					RPM	3740	2930	2500	1830	1470	1250	
					IPM	11	13	18	17	14	14	



RECOMMENDED CUTTING CONDITIONS

GMK33 SERIES

4 FLUTE SQUARE - SIDE CUTTING

ISO	VDI 3323	Material Description	Ae	Ap	Parameter	Diameter (Ø)									
						2	3	4	4.5	6	8	10	12	20	
P	1	Non-alloy steel	D≤3 : 0.1D D>3 : 0.3D	D<3 : 1.0D D≥3 : 1.5D	SFM	260	350	350	350	350	350	390	385	390	
					IPT	.0001	.0002	.0003	.0004	.0006	.0011	.0015	.0019	.0026	
					RPM	12730	11250	8440	7550	5620	4220	3760	3130	1880	
					IPM	5	9	11	11	14	18	22	23	19	
	2		D≤3 : 0.1D D>3 : 0.3D	D<3 : 1.0D D≥3 : 1.5D	SFM	260	350	350	350	350	350	390	385	390	
					IPT	.0001	.0002	.0003	.0004	.0006	.0011	.0015	.0019	.0026	
					RPM	12730	11250	8440	7550	5620	4220	3760	3130	1880	
					IPM	5	9	11	11	14	18	22	23	19	
	3		D≤3 : 0.1D D>3 : 0.3D"	D<3 : 1.0D D≥3 : 1.5D	SFM	260	350	350	350	350	350	390	385	390	
					IPT	.0001	.0002	.0003	.0004	.0006	.0011	.0015	.0019	.0026	
					RPM	12730	11250	8440	7550	5620	4220	3760	3130	1880	
					IPM	5	9	11	11	14	18	22	23	19	
	4		D≤3 : 0.1D D>3 : 0.3D"	D<3 : 1.0D D≥3 : 1.5D	SFM	260	350	350	350	350	350	390	385	390	
					IPT	.0001	.0002	.0003	.0004	.0006	.0011	.0015	.0019	.0026	
					RPM	12730	11250	8440	7550	5620	4220	3760	3130	1880	
					IPM	5	9	11	11	14	18	22	23	19	
	5		D≤3 : 0.1D D>3 : 0.3D"	D<3 : 1.0D D≥3 : 1.5D	SFM	195	245	245	250	245	245	270	270	270	
					IPT	.0001	.0002	.0003	.0004	.0006	.0011	.0015	.0019	.0026	
					RPM	9550	7960	5970	5380	3980	2980	2610	2180	1310	
					IPM	4	6	7	9	10	13	16	16	13	
	6	Low alloy steel	D≤3 : 0.1D D>3 : 0.3D"	D<3 : 1.0D D≥3 : 1.5D	SFM	260	350	350	350	350	350	390	385	390	
					IPT	.0001	.0002	.0003	.0004	.0006	.0011	.0015	.0019	.0026	
					RPM	12730	11250	8440	7550	5620	4220	3760	3130	1880	
					IPM	5	9	11	11	14	18	22	23	19	
	7		D≤3 : 0.1D D>3 : 0.3D"	D<3 : 1.0D D≥3 : 1.5D	SFM	260	350	350	350	350	350	390	385	390	
					IPT	.0001	.0002	.0003	.0004	.0006	.0011	.0015	.0019	.0026	
					RPM	12730	11250	8440	7550	5620	4220	3760	3130	1880	
					IPM	5	9	11	11	14	18	22	23	19	
	8		D≤3 : 0.1D D>3 : 0.3D"	D<3 : 1.0D D≥3 : 1.5D	SFM	195	245	245	250	245	245	270	270	270	
					IPT	.0001	.0002	.0003	.0004	.0006	.0011	.0015	.0019	.0026	
					RPM	9550	7960	5970	5380	3980	2980	2610	2180	1310	
					IPM	4	6	7	9	10	13	16	16	13	
	9		D≤3 : 0.1D D>3 : 0.3D	D<3 : 1.0D D≥3 : 1.5D	SFM	195	245	245	250	245	245	270	270	270	
					IPT	.0001	.0002	.0003	.0004	.0006	.0011	.0015	.0019	.0026	
RPM		9550			7960	5970	5380	3980	2980	2610	2180	1310			
IPM		4			6	7	9	10	13	16	16	13			
10	High alloyed steel, and tool steel	D≤3 : 0.1D D>3 : 0.3D	D<3 : 1.0D D≥3 : 1.5D	SFM	260	350	350	350	350	350	390	385	390		
				IPT	.0001	.0002	.0003	.0004	.0006	.0011	.0015	.0019	.0026		
				RPM	12730	11250	8440	7550	5620	4220	3760	3130	1880		
				IPM	5	9	11	11	14	18	22	23	19		
11.1		D≤3 : 0.1D D>3 : 0.3D	D<3 : 1.0D D≥3 : 1.5D	SFM	195	245	245	250	245	245	270	270	270		
				IPT	.0001	.0002	.0003	.0004	.0006	.0011	.0015	.0019	.0026		
				RPM	9550	7960	5970	5380	3980	2980	2610	2180	1310		
				IPM	4	6	7	9	10	13	16	16	13		
11.2		D≤3 : 0.1D D>3 : 0.3D	D<3 : 1.0D D≥3 : 1.5D	SFM	195	245	245	250	245	245	270	270	270		
				IPT	.0001	.0002	.0003	.0004	.0006	.0011	.0015	.0019	.0026		
				RPM	9550	7960	5970	5380	3980	2980	2610	2180	1310		
				IPM	4	6	7	9	10	13	16	16	13		
M		12	Stainless steel	0.1D	D<3 : 1.0D D≥3 : 1.5D	SFM	230	340	340	340	340	340	340	340	340
						IPT	.0001	.0002	.0002	.0003	.0005	.0009	.0013	.0015	.0022
	RPM					11140	11030	8280	7330	5520	4140	3310	2760	1660	
	IPM					4	7	8	8	11	14	18	17	15	
	13	0.1D		D<3 : 1.0D D≥3 : 1.5D	SFM	230	340	340	340	340	340	340	340	340	
					IPT	.0001	.0002	.0002	.0003	.0005	.0009	.0013	.0015	.0022	
					RPM	11140	11030	8280	7330	5520	4140	3310	2760	1660	
					IPM	4	7	8	8	11	14	18	17	15	
	14.1	0.1D		D<3 : 1.0D D≥3 : 1.5D	SFM	165	245	245	250	245	240	245	240	245	
					IPT	.0001	.0002	.0003	.0004	.0007	.0011	.0019	.0022	.0030	
					RPM	7960	7850	5890	5380	3930	2940	2360	1960	1180	
					IPM	4	6	7	9	11	13	18	17	14	

MEMO



HIGH QUALITY PRODUCTS and ON TIME DELIVERY for WORLD-WIDE CUSTOMERS

Since 1981, YG-1 has been committed to quality, innovation and the unique customer experience. Our performance and experience have granted YG-1 the global impression of one of the leading manufacturers of high quality cutting tool solutions. This global footprint expands over 75 countries, with international logistic centers, pledging to our customers to give the best service available today - and tomorrow.

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