



COATED PM60
ONLY ONE
END MILLS

Perfect solution to protect Carbide chipping problems under vibrations

◎ : Excellent ○ : Good

Recommended cutting conditions : P 628

ISO	VDI 3323	Material Description	Composition / Structure / Heat Treatment		HB	HRc	YG77 GYF97	YG72 GYF99	YG01
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			Quenched & Tempered	325	35	○	○	○
M	12	Stainless steel	Ferritic / Martensitic	Annealed	200	15	◎	◎	◎
	13		Martensitic	Quenched & Tempered	240	23	◎	◎	◎
	14		Austenitic		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	Non Metallic Materials	Duroplastic, Fiber Reinforced Plastic						
	30		Rubber, Wood, etc.						
S	31	Heat Resistant Super Alloys	Fe Based	Annealed	200	15			
	32			Cured	280	30			
	33		Ni or Co Based	Annealed	250	25			
	34			Cured	350	38			
	35			Cast	320	34			
	36	Titanium Alloys	Pure Titanium		400 Rm				
	37		Alpha + Beta Alloys	Hardened	1050 Rm				
H	38	Hardened steel		Hardened	550	55			
	39			Hardened	630	60			
	40	Chilled Cast Iron		Cast	400	42	○	○	○
	41	Hardened Cast Iron		Hardened	550	55			

SERIES	FLUTE	HELIX ANGLE	CUTTING EDGE SHAPE	SIZE MIN	SIZE MAX	PAGE
YG77 GYF97	2	30°	BALL NOSE	R0.5	R12.5	618
YG72 GYF99	2	30°	SQUARE	D1.0	D25.0	619
YG01	3	30°	SQUARE	D1.0	D25.0	620
			SHORT LENGTH	SHORT LENGTH	SHORT LENGTH (Center Cut)	
			Y-Coating	Y-Coating	Y-Coating	



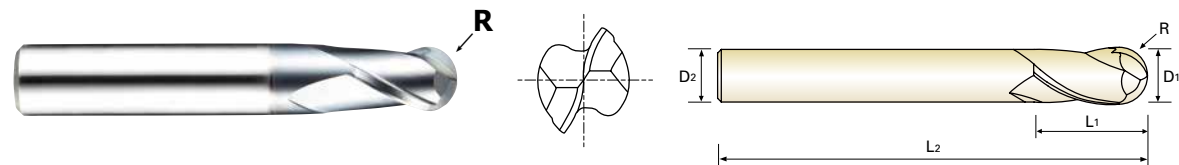
YG74 GYF96	YG52	YG76 GYG02	GYF95	GYF94	GYF98	YG03
4	4	4	Multi Flute	Multi Flute	Multi Flute	Multi Flute
30°	35°/37°	30°	4F: 44°/45° 5F: 44°/44.5°/45°	30°	30°	30°
SQUARE	SQUARE	SQUARE	CORNER RADIUS ROUGHING	ROUGHING	ROUGHING	ROUGHING
D1.0	D3.0	D2.0	D6.0	D6.0	D6.0	D6.0
D25.0	D25.0	D25.0	D25.0	D25.0	D25.0	D25.0
621	622	623	624	625	626	627
SHORT LENGTH (Center Cut)	SHORT LENGTH (Center Cut)	LONG LENGTH (Center Cut)	SHORT LENGTH (Center Cut)	SHORT LENGTH (Center Cut)	LONG LENGTH (Center Cut)	SHORT LENGTH (Center Cut)
Y-Coating	Y-Coating	Y-Coating	Y-Coating	Y-Coating	Y-Coating	Y-Coating



◎	◎	◎	◎	◎	◎	◎	1
◎	◎	◎	◎	◎	◎	◎	2
◎	◎	◎	◎	◎	◎	◎	3
◎	◎	◎	◎	◎	◎	◎	4
◎	◎	◎	◎	◎	◎	◎	5
◎	◎	◎	◎	◎	◎	◎	6
◎	◎	◎	◎	◎	◎	◎	7
◎	◎	◎	◎	◎	◎	◎	8
◎	◎	◎	◎	◎	◎	◎	9
◎	◎	◎	◎	◎	◎	◎	10
◎	◎	◎	◎	◎	◎	◎	11
◎	◎	◎	◎	◎	◎	◎	12
◎	◎	◎	◎	◎	◎	◎	13
◎	◎	◎	◎	◎	◎	◎	14
◎	◎	◎	◎	◎	◎	◎	15
◎	◎	◎	◎	◎	◎	◎	16
◎	◎	◎	◎	◎	◎	◎	17
◎	◎	◎	◎	◎	◎	◎	18
◎	◎	◎	◎	◎	◎	◎	19
◎	◎	◎	◎	◎	◎	◎	20
							21
							22
							23
							24
							25
○	○	○	○	○	○	○	26
○	○	○	○	○	○	○	27
○	○	○	○	○	○	○	28
							29
							30
							31
							32
							33
							34
							35
							36
							37
							38
○	○	○	○	○	○	○	39
							40
							41

PM60, 2 FLUTE BALL NOSE SHORT LENGTH

- PM60, 2 Schneiden, Stirnradius kurz
- Revêtue YG-AICrN - PM60, 2 dents, série courte, hémisphérique
- Rivestita PM60, 2 TAGLIENTI SERIE CORTA SEMISFERICA



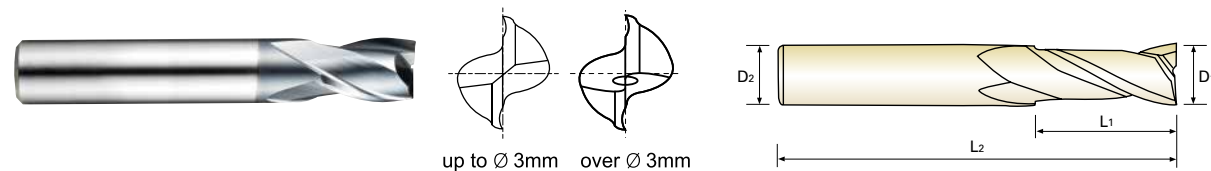
Unit : mm

EDP No.		Radius of Ball Nose	Mill Diameter	Shank Diameter	Length of Cut	Overall Length
PLAIN	FLAT	R(±0.02)	D1	D2	L1	L2
GYG77010	GYF97010	R0.5	1.0	6	2.5	47
GYG77020	GYF97020	R1.0	2.0	6	4	48
GYG77030	GYF97030	R1.5	3.0	6	5	49
GYG77040	GYF97040	R2.0	4.0	6	7	51
GYG77050	GYF97050	R2.5	5.0	6	8	52
GYG77060	GYF97060	R3.0	6.0	6	8	52
GYG77070	GYF97070	R3.5	7.0	8	10	60
GYG77080	GYF97080	R4.0	8.0	8	11	61
GYG77090	GYF97090	R4.5	9.0	10	11	61
GYG77100	GYF97100	R5.0	10.0	10	13	63
GYG77120	GYF97120	R6.0	12.0	12	16	73
GYG77140	GYF97140	R7.0	14.0	12	16	73
GYG77160	GYF97160	R8.0	16.0	16	19	79
GYG77180	GYF97180	R9.0	18.0	16	19	79
GYG77200	GYF97200	R10.0	20.0	20	22	88
GYG77250	GYF97250	R12.5	25.0	25	26	102

Mill Dia. Tolerance (mm)	Shank Dia. Tolerance
0 ~ -0.03	h6

PM60, 2 FLUTE SHORT LENGTH

- PM60, 2 Schneiden, kurz, Zentrumschnitt
- Revêtue YG-AICrN - PM60, 2 dents, série courte (Coupe au centre)
- Rivestita PM60, 2 TAGLIENTI SERIE CORTA (Tagliente al centro)



Unit : mm

EDP No.		Mill Diameter	Shank Diameter	Length of Cut	Overall Length
PLAIN	FLAT	D1	D2	L1	L2
GYG72010	GYF99010	1.0	6	2.5	47
GYG72020	GYF99020	2.0	6	4	48
GYG72030	GYF99030	3.0	6	5	49
GYG72040	GYF99040	4.0	6	7	51
GYG72050	GYF99050	5.0	6	8	52
GYG72060	GYF99060	6.0	6	8	52
GYG72070	GYF99070	7.0	8	10	60
GYG72080	GYF99080	8.0	8	11	61
GYG72090	GYF99090	9.0	10	11	61
GYG72100	GYF99100	10.0	10	13	63
GYG72120	GYF99120	12.0	12	16	73
GYG72140	GYF99140	14.0	12	16	73
GYG72160	GYF99160	16.0	16	19	79
GYG72180	GYF99180	18.0	16	19	79
GYG72200	GYF99200	20.0	20	22	88
GYG72220	GYF99220	22.0	20	22	88
GYG72250	GYF99250	25.0	25	26	102

Mill Dia. Tolerance (mm)	Shank Dia. Tolerance
0 ~ -0.03	h6

◎ : Excellent ○ : Good

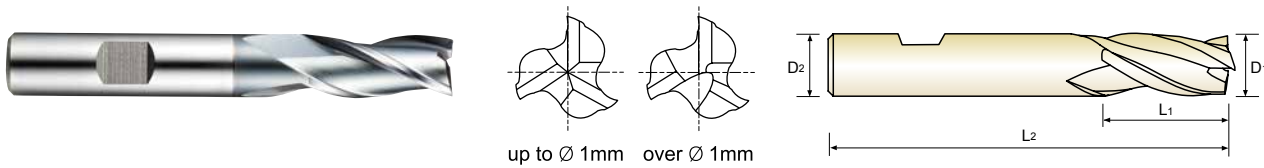
ISO	P										M					K				
Material Description	Non-alloy steel					Low alloy steel					High alloy steel, and tool steel					Stainless steel				
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRC	13	25	28	32	38	10	29	32	38	15	35	15	23	10	10	26	3	25	21	
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommend	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎
ISO	N										S					H				
Material Description	Aluminum-wrought alloy					Aluminum-cast, alloyed					Copper and Copper Alloys (Bronze / Brass)					Non Metallic Materials				
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
HRC	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400
Recommend	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎

◎ : Excellent ○ : Good

ISO	P										M					K				
Material Description	Non-alloy steel					Low alloy steel					High alloy steel, and tool steel					Stainless steel				
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRC	13	25	28	32	38	10	29	32	38	15	35	15	23	10	10	26	3	25	21	
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommend	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎
ISO	N										S					H				
Material Description	Aluminum-wrought alloy					Aluminum-cast, alloyed					Copper and Copper Alloys (Bronze / Brass)					Non Metallic Materials				
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
HRC	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400
Recommend	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎

PM60, 3 FLUTE SHORT LENGTH (Center Cut)

- PM60, 3 Schneiden, kurz, Zentrumschnitt
- Revêtue YG-AICrN - PM60, 3 dents, série courte (Coupe au centre)
- Rivestita PM60, 3 TAGLIENTI SERIE CORTA (Tagliente al centro)



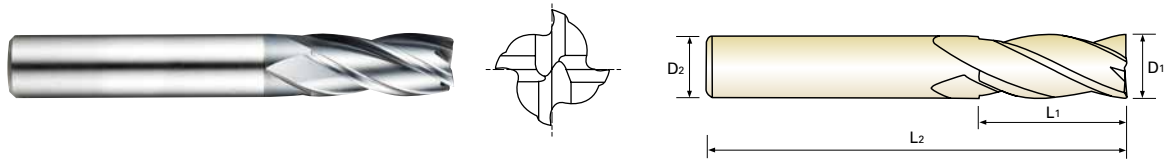
EDP No.	Mill Diameter	Shank Diameter	Length of Cut	Overall Length
	D1	D2	L1	L2
GYG01010	1.0	6	3	47
GYG01020	2.0	6	7	51
GYG01030	3.0	6	8	52
GYG01040	4.0	6	11	55
GYG01050	5.0	6	13	57
GYG01060	6.0	6	13	57
GYG01070	7.0	8	16	66
GYG01080	8.0	8	19	69
GYG01090	9.0	10	19	69
GYG01100	10.0	10	22	72
GYG01120	12.0	12	26	83
GYG01140	14.0	12	26	83
GYG01160	16.0	16	32	92
GYG01180	18.0	16	32	92
GYG01200	20.0	20	38	104
GYG01220	22.0	20	38	104
GYG01250	25.0	25	45	121

Mill Dia. Tolerance (mm)	Shank Dia. Tolerance
0 ~ - 0.03	h6

ISO Material Description	P										M					K				
	Non-alloy steel					Low alloy steel					High alloy steel, and tool steel					Stainless steel				
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRC	13	25	28	32	30	10	29	32	38	15	35	15	23	10	10	26	3	25	21	
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommend	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎
ISO Material Description	N										S					H				
	Aluminum-wrought alloy					Aluminum-cast, alloyed					Copper and Copper Alloys (Bronze / Brass)					Non Metallic Materials				
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
HRC	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400
Recommend	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎

PM60, 4 FLUTE SHORT LENGTH (Center Cut)

- PM60, 4 Schneiden, kurz, Zentrumschnitt
- Revêtue YG-AICrN - PM60, 4 dents, série courte (Coupe au centre)
- Rivestita PM60, 4 TAGLIENTI SERIE CORTA (Tagliente al centro)



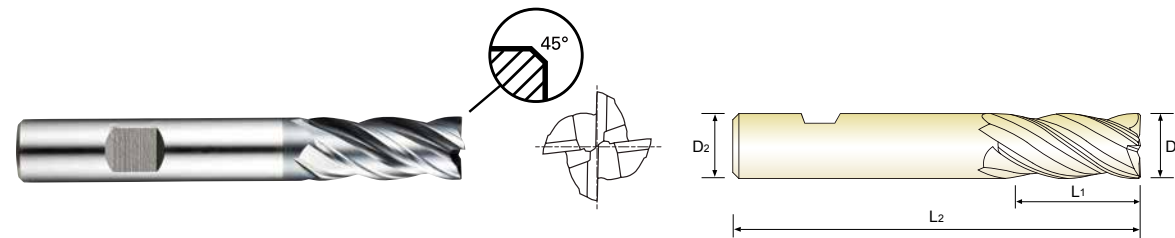
EDP No.		Mill Diameter	Shank Diameter	Length of Cut	Overall Length
		D1	D2	L1	L2
GYG74010	GYF96010	1.0	6	3	49
GYG74020	GYF96020	2.0	6	7	51
GYG74030	GYF96030	3.0	6	8	52
GYG74040	GYF96040	4.0	6	11	55
GYG74050	GYF96050	5.0	6	13	57
GYG74060	GYF96060	6.0	6	13	57
GYG74070	GYF96070	7.0	8	16	66
GYG74080	GYF96080	8.0	8	19	69
GYG74090	GYF96090	9.0	10	19	69
GYG74100	GYF96100	10.0	10	22	72
GYG74120	GYF96120	12.0	12	26	83
GYG74140	GYF96140	14.0	12	26	83
GYG74160	GYF96160	16.0	16	32	92
GYG74180	GYF96180	18.0	16	32	92
GYG74200	GYF96200	20.0	20	38	104
GYG74220	GYF96220	22.0	20	38	104
GYG74250	GYF96250	25.0	25	45	121

Mill Dia. Tolerance (mm)	Shank Dia. Tolerance
0 ~ - 0.03	h6

ISO Material Description	P										M					K				
	Non-alloy steel					Low alloy steel					High alloy steel, and tool steel					Stainless steel				
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRC	13	25	28	32	30	10	29	32	38	15	35	15	23	10	10	26	3	25	21	
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommend	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎
ISO Material Description	N										S					H				
	Aluminum-wrought alloy					Aluminum-cast, alloyed					Copper and Copper Alloys (Bronze / Brass)					Non Metallic Materials				
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
HRC	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400
Recommend	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎

PM60, 4 FLUTE MULTIPLE HELIX SHORT LENGTH (Center Cut)

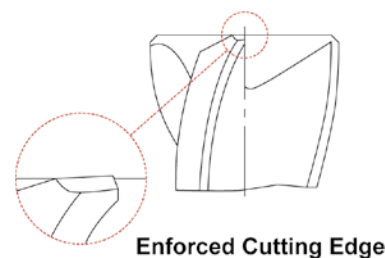
- PM60, 4 Schneiden, mit ungleichem Drall, kurz, Zentrumschnitt
- Revêtue YG-AICrN - PM60, 4 dents, hélice multiple, série courte (Coupe au centre)
- Rivestita PM60, 4 TAGLIENTI elica variabile SERIE CORTA (Tagliente al centro)



Unit : mm

EDP No.	Mill Diameter D1	Shank Diameter D2	Length of Cut L1	Overall Length L2	Chamfer
GYG52030	3.0	6	8	52	0.1
GYG52040	4.0	6	11	55	0.1
GYG52050	5.0	6	13	57	0.1
GYG52060	6.0	6	13	57	0.1
GYG52070	7.0	8	16	66	0.1
GYG52080	8.0	8	19	69	0.1
GYG52090	9.0	10	19	69	0.1
GYG52100	10.0	10	22	72	0.1
GYG52120	12.0	12	26	83	0.1
GYG52140	14.0	12	26	83	0.2
GYG52160	16.0	16	32	92	0.2
GYG52180	18.0	16	32	92	0.2
GYG52200	20.0	20	38	104	0.2
GYG52220	22.0	20	38	104	0.2
GYG52250	25.0	25	45	121	0.2

Mill Dia. Tolerance (mm)	Shank Dia. Tolerance
0 ~ -0.03	h6

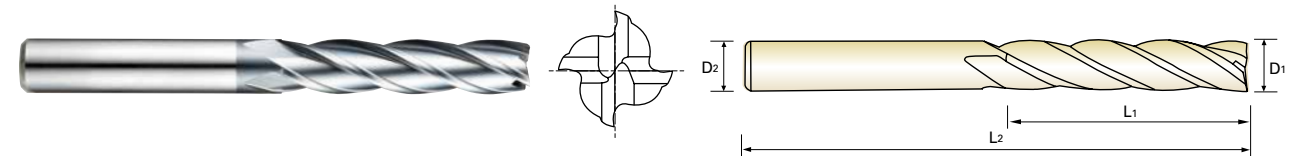


◎ : Excellent ○ : Good

ISO	P										M				K			
Material Description	Non-alloy steel					Low alloy steel					High alloy steel, and tool steel				Stainless steel			
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
HRc	13	25	28	32	30	10	29	32	38	15	35	15	23	10	10	26	3	25
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250
Recommend	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎
ISO	N										S				H			
Material Description	Aluminum-wrought alloy					Aluminum-cast, alloyed					Copper and Copper Alloys (Bronze / Brass)				Non Metallic Materials			
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38
HRc	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550
Recommend						○	○	○										○

PM60, 4 FLUTE LONG LENGTH (Center Cut)

- PM60, 4 Schneiden, lang, Zentrumschnitt
- Revêtue YG-AICrN - PM60, 4 dents, série longue (Coupe au centre)
- Rivestita PM60, 4 TAGLIENTI SERIE LUNGA (Tagliente al centro)



Unit : mm

EDP No.	Mill Diameter D1	Shank Diameter D2	Length of Cut L1	Overall Length L2
GYG76020	2.0	6	10	54
GYG76030	3.0	6	12	56
GYG76040	4.0	6	19	63
GYG76050	5.0	6	24	68
GYG76060	6.0	6	24	68
GYG76070	7.0	8	30	80
GYG76080	8.0	8	38	88
GYG76090	9.0	10	38	88
GYG76100	10.0	10	45	95
GYG76120	12.0	12	53	110
GYG76140	14.0	12	53	110
GYG76160	16.0	16	63	123
GYG76180	18.0	16	63	123
GYG76200	20.0	20	75	141
GYG76220	22.0	20	75	141
GYG76250	25.0	25	90	166

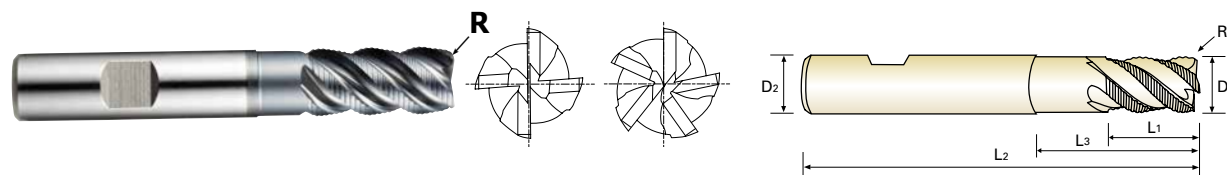
Mill Dia. Tolerance (mm)	Shank Dia. Tolerance
0 ~ -0.03	h6

◎ : Excellent ○ : Good

ISO	P										M				K			
Material Description	Non-alloy steel					Low alloy steel					High alloy steel, and tool steel				Stainless steel			
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
HRc	13	25	28	32	30	10	29	32	38	15	35	15	23	10	10	26	3	25
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250
Recommend	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎
ISO	N										S				H			
Material Description	Aluminum-wrought alloy					Aluminum-cast, alloyed					Copper and Copper Alloys (Bronze / Brass)				Non Metallic Materials			
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38
HRc	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550
Recommend						○	○	○										○

PM60, MULTI FLUTE MULTIPLE HELIX SHORT LENGTH CORNER RADIUS ROUGHING - FINE (Center Cut)

PM60, Mehrschneiden, mit ungleichem Drall, kurz, Eckenradius, Feinkordel-Schruppfräser, Zentrumschnitt
 Revêtue YG-AICrN - PM60, multi-dents, hélice multiple, série courte, rayonnée, ravageuse, pas fins (Coupe au centre)
 Rivestita PM60, MULTI TAGLIENTE ELICA VARIABILE SERIE CORTA TORICA PER SGROSSATURA - BOMBATO FINE (Tagliente al centro)



Unit : mm

EDP No.	Corner Radius	Mill Diameter	Shank Diameter	Length of Cut	Length Below Shank	Overall length	No. of Flute
	R	D1(js12)	D2(h6)	L1	L3	L2	
GYF95060	R0.5	6.0	6	13	-	57	4
GYF95070	R0.5	7.0	10	16	-	66	4
GYF95080	R0.5	8.0	10	19	-	69	4
GYF95090	R0.5	9.0	10	19	-	69	4
GYF95100	R0.5	10.0	10	22	31	72	4
GYF95120	R0.5	12.0	12	26	37	83	4
GYF95140	R1.0	14.0	12	26	-	83	5
GYF95160	R1.0	16.0	16	32	44	92	5
GYF95180	R1.0	18.0	16	32	-	92	5
GYF95200	R1.0	20.0	20	38	54	104	5
GYF95250	R1.0	25.0	25	45	63	121	5

Tolerances according to DIN 7160 & 7161

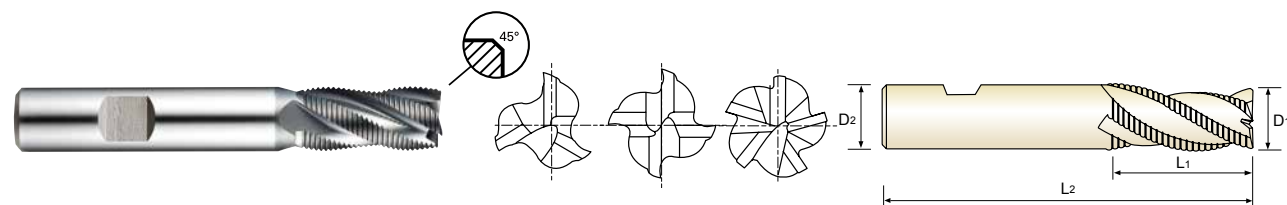
	Tolerance range in μ m		
	Nominal-Diameter in mm		
	over 6 to 10	over 10 to 18	over 18 to 30
js12	± 75	± 90	± 105
h6	0	0	0
	- 9	- 11	- 13

◎ : Excellent ○ : Good

ISO	P										M					K				
	Non-alloy steel					Low alloy steel					High alloy steel, and tool steel					Stainless steel				
Material Description	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc	13	25	28	32	30	10	29	32	38	15	35	15	23	10	10	26	3	25	21	21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommend	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎
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	39	40
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
HRc	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400
Recommend						○	○	○												○

PM60, MULTI FLUTE SHORT LENGTH ROUGHING - FINE (Center Cut)

PM60, Mehrschneiden, kurz, Feinkordel-Schruppfräser, Zentrumschnitt
 Revêtue YG-AICrN - PM60, multi-dents, série courte, ravageuse, pas fins (Coupe au centre)
 Rivestita PM60, MULTI TAGLIENTE SERIE CORTA PER SGROSSATURA - BOMBATO FINE (Tagliente al centro)

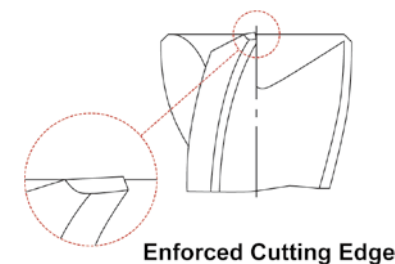


Unit : mm

EDP No.	Mill Diameter	Shank Diameter	Length of Cut	Overall Length	No. of Flute	Chamfer
	D1(js12)	D2(h6)	L1	L2		
GYF94060	6.0	6	13	57	3	0.18
GYF94070	7.0	10	16	66	3	0.18
GYF94080	8.0	10	19	69	3	0.18
GYF94090	9.0	10	19	69	3	0.18
GYF94100	10.0	10	22	72	4	0.18
GYF94120	12.0	12	26	83	4	0.18
GYF94140	14.0	12	26	83	4	0.25
GYF94160	16.0	16	32	92	4	0.25
GYF94180	18.0	16	32	92	4	0.25
GYF94200	20.0	20	38	104	4	0.25
GYF94250	25.0	25	45	121	5	0.36

Tolerances according to DIN 7160 & 7161

	Tolerance range in μ m		
	Nominal-Diameter in mm		
	over 6 to 10	over 10 to 18	over 18 to 30
js12	± 75	± 90	± 105
h6	0	0	0
	- 9	- 11	- 13

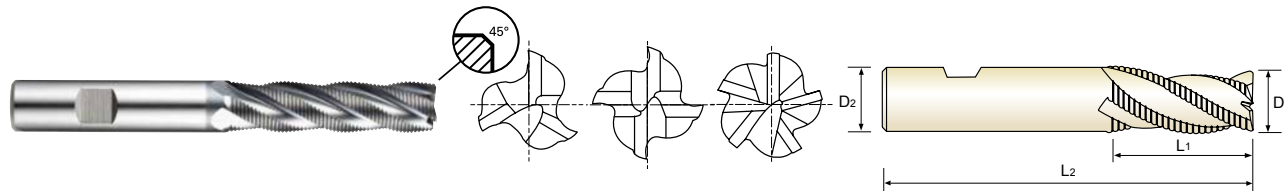


◎ : Excellent ○ : Good

ISO	P										M					K				
	Non-alloy steel					Low alloy steel					High alloy steel, and tool steel					Stainless steel				
Material Description	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc	13	25	28	32	30	10	29	32	38	15	35	15	23	10	10	26	3	25	21	21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommend	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎
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	39	40
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
HRc	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400
Recommend						○	○	○												○

PM60, MULTI FLUTE LONG LENGTH ROUGHING - FINE (Center Cut)

- PM60, Mehrschneiden, lang, Feinkordel-Schruppfräser, Zentrumschnitt
- Revêtue YG-AICrN - PM60, multi-dents, série longue, ravageuse, pas fins (Coupe au centre)
- Rivestita PM60, MULTI TAGLIENTE SERIE LUNGA PER SGROSSATURA - BOMBATO FINE (Tagliente al centro)

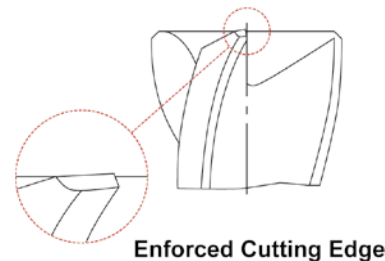


Unit : mm

EDP No.	Mill Diameter D1(js12)	Shank Diameter D2(h6)	Length of Cut L1	Overall Length L2	No. of Flute	Chamfer
GYF98060	6.0	6	24	68	3	0.18
GYF98070	7.0	10	30	80	3	0.18
GYF98080	8.0	10	38	88	3	0.18
GYF98090	9.0	10	38	88	3	0.18
GYF98100	10.0	10	45	95	4	0.18
GYF98120	12.0	12	53	110	4	0.18
GYF98140	14.0	12	53	110	4	0.25
GYF98160	16.0	16	63	123	4	0.25
GYF98180	18.0	16	63	123	4	0.25
GYF98200	20.0	20	75	141	4	0.25
GYF98250	25.0	25	90	166	5	0.36

Tolerances according to DIN 7160 & 7161

Tolerance range in μm			
Nominal-Diameter in mm			
	over 6 to 10	over 10 to 18	over 18 to 30
js12	± 75	± 90	± 105
h6	0 - 9	0 - 11	0 - 13

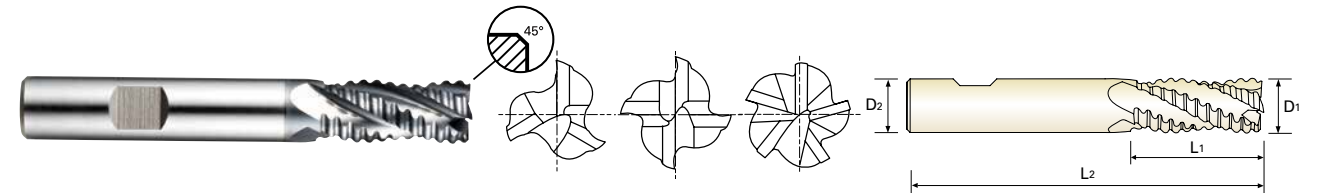


◎ : Excellent ○ : Good

ISO	P										M					K				
Material Description	Non-alloy steel					Low alloy steel					High alloy steel, and tool steel					Stainless steel				
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc	13	25	28	32	38	10	29	32	38	15	35	15	23	10	10	26	3	25	21	21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommend	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎
ISO	N										S					H				
Material Description	Aluminum-wrought alloy					Aluminum-cast, alloyed					Copper and Copper Alloys (Bronze / Brass)					Non Metallic Materials				
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
HRc	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400
Recommend	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎

PM60, MULTI FLUTE SHORT LENGTH ROUGHING - COARSE (Center Cut)

- PM60, Mehrschneiden, kurz, Schrappfräser, Zentrumschnitt
- Revêtue YG-AICrN - PM60, multi-dents, série courte, ravageuse, pas grossiers (Coupe au centre)
- Rivestita PM60, MULTI TAGLIENTE SERIE CORTA PER SGROSSATURA - BOMBATO GROSSO (Tagliente al centro)

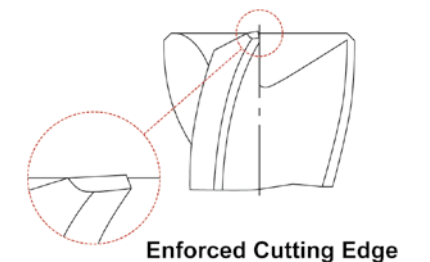


Unit : mm

EDP No.	Mill Diameter D1(js12)	Shank Diameter D2(h6)	Length of Cut L1	Overall Length L2	No. of Flute	Chamfer
GYG03060	6.0	6	13	57	3	0.25
GYG03070	7.0	10	16	66	3	0.25
GYG03080	8.0	10	19	69	3	0.25
GYG03090	9.0	10	19	69	3	0.36
GYG03100	10.0	10	22	72	4	0.36
GYG03120	12.0	12	26	83	4	0.56
GYG03140	14.0	12	26	83	4	0.6
GYG03160	16.0	16	32	92	4	0.6
GYG03180	18.0	16	32	92	4	0.6
GYG03200	20.0	20	38	104	4	0.6
GYG03250	25.0	25	45	121	5	0.6

Tolerances according to DIN 7160 & 7161

Tolerance range in μm			
Nominal-Diameter in mm			
	over 6 to 10	over 10 to 18	over 18 to 30
js12	± 75	± 90	± 105
h6	0 - 9	0 - 11	0 - 13



◎ : Excellent ○ : Good

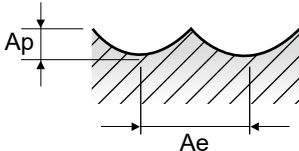
ISO	P										M					K				
Material Description	Non-alloy steel					Low alloy steel					High alloy steel, and tool steel					Stainless steel				
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc	13	25	28	32	38	10	29	32	38	15	35	15	23	10	10	26	3	25	21	21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommend	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎
ISO	N										S					H				
Material Description	Aluminum-wrought alloy					Aluminum-cast, alloyed					Copper and Copper Alloys (Bronze / Brass)					Non Metallic Materials				
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
HRc	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400
Recommend	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎

GYG77 , GYF97 SERIES

2 FLUTE BALL NOSE

Vc = m/min.
fz = mm/tooth
RPM = rev./min.
FEED = mm/min.

ISO	VDI 3323	Material Description	Ae	Ap	Parameter	Diameter (Ø)								
						3.0	4.0	6.0	8.0	10.0	12.0	16.0	20.0	25.0
P	1	Non-alloy steel	0.5D	0.2D	Vc	83	90	100	101	104	104	103	102	90
					fz	0.023	0.036	0.054	0.079	0.109	0.115	0.141	0.156	0.162
					RPM	8807	7162	5305	4019	3310	2759	2049	1623	1146
					FEED	405	516	573	635	722	634	578	506	371
	2		0.5D	0.2D	Vc	66	70	79	78	79	81	78	75	70
					fz	0.020	0.032	0.046	0.067	0.095	0.097	0.123	0.140	0.140
					RPM	7003	5570	4191	3104	2515	2149	1552	1194	891
					FEED	280	357	386	416	478	417	382	334	250
	3-4		0.5D	0.2D	Vc	44	45	52	54	53	54	54	52	44
					fz	0.016	0.026	0.039	0.056	0.082	0.083	0.1	0.11	0.125
					RPM	4669	3581	2759	2149	1687	1432	1074	828	560
					FEED	149	186	215	241	277	238	215	182	140
	5	0.5D	0.2D	Vc	23	24	27	27	26	26	27	27	24	
				fz	0.014	0.023	0.035	0.047	0.073	0.071	0.090	0.099	0.100	
				RPM	2440	1910	1432	1074	828	690	537	430	306	
				FEED	68	88	100	101	121	98	97	85	61	
	6	Low alloy steel	0.5D	0.2D	Vc	66	70	79	78	79	81	78	75	70
					fz	0.020	0.032	0.046	0.067	0.095	0.097	0.123	0.140	0.140
					RPM	7003	5570	4191	3104	2515	2149	1552	1194	891
					FEED	280	357	386	416	478	417	382	334	250
	7		0.5D	0.2D	Vc	44	45	52	54	53	54	54	52	44
					fz	0.016	0.026	0.039	0.056	0.082	0.083	0.1	0.11	0.125
					RPM	4669	3581	2759	2149	1687	1432	1074	828	560
					FEED	149	186	215	241	277	238	215	182	140
8-9	0.5D		0.2D	Vc	23	24	27	27	26	26	27	27	24	
				fz	0.014	0.023	0.035	0.047	0.073	0.071	0.090	0.099	0.100	
				RPM	2440	1910	1432	1074	828	690	537	430	306	
				FEED	68	88	100	101	121	98	97	85	61	
10	High alloyed steel, and tool steel	0.5D	0.2D	Vc	66	70	79	78	79	81	78	75	70	
				fz	0.020	0.032	0.046	0.067	0.095	0.097	0.123	0.140	0.140	
				RPM	7003	5570	4191	3104	2515	2149	1552	1194	891	
				FEED	280	357	386	416	478	417	382	334	250	
11.1		0.5D	0.2D	Vc	23	24	27	27	26	26	27	27	24	
				fz	0.014	0.023	0.035	0.047	0.073	0.071	0.090	0.099	0.100	
				RPM	2440	1910	1432	1074	828	690	537	430	306	
				FEED	68	88	100	101	121	98	97	85	61	
11.2		0.3D	0.2D	Vc	16	17	19	19	18	18	19	19	16	
				fz	0.013	0.024	0.035	0.047	0.075	0.071	0.088	0.1	0.095	
				RPM	1698	1353	1008	756	573	477	378	302	204	
				FEED	44	65	71	71	86	68	67	60	39	
M	14.1	Stainless steel	0.5D	0.2D	Vc	25	27	30	30	28	29	30	30	26
					fz	0.013	0.023	0.036	0.049	0.072	0.075	0.093	0.099	0.098
					RPM	2653	2149	1592	1194	891	769	597	477	331
					FEED	69	99	115	117	128	115	111	95	65
K	15-20	Grey cast iron Nodular cast iron Malleable cast iron	0.5D	0.2D	Vc	66	70	79	78	79	81	78	75	70
					fz	0.02	0.032	0.046	0.067	0.095	0.097	0.123	0.14	0.14
					RPM	7003	5570	4191	3104	2515	2149	1552	1194	891
					FEED	280	357	386	416	478	417	382	334	250
H	40	Chilled Cast Iron	0.3D	0.2D	Vc	16	17	19	19	18	18	19	19	16
					fz	0.013	0.024	0.035	0.047	0.075	0.071	0.088	0.1	0.095
					RPM	1698	1353	1008	756	573	477	378	302	204
					FEED	44	65	71	71	86	68	67	60	39

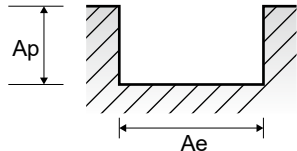


GYG72 , GYF99 SERIES

2 FLUTE - **SLOTTING**

$V_c = \text{m/min.}$
 $f_z = \text{mm/tooth}$
 $\text{RPM} = \text{rev./min.}$
 $\text{FEED} = \text{mm/min.}$

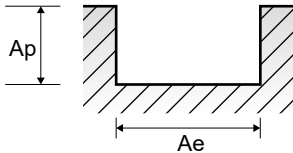
ISO	VDI 3323	Material Description	Ae	Ap	Parameter	Diameter (Ø)													
						2.0	3.0	4.0	5.0	6.0	8.0	10.0	12.0	14.0	16.0	18.0	20.0	22.0	25.0
P	1	Non-alloy steel	1.0D	0.5D	Vc	53	57	65	74	79	78	79	81	84	81	78	72	70	71
					fz	0.008	0.016	0.027	0.033	0.038	0.053	0.071	0.076	0.083	0.099	0.105	0.116	0.109	0.103
					RPM	8435	6048	5173	4711	4191	3104	2515	2149	1910	1611	1379	1146	1013	904
					FEED	135	194	279	311	319	329	357	327	317	319	290	266	221	186
	2		1.0D	0.5D	Vc	44	46	54	61	66	66	68	66	66	69	64	59	59	60
					fz	0.008	0.016	0.024	0.031	0.036	0.055	0.074	0.083	0.083	0.085	0.103	0.106	0.106	0.112
					RPM	7003	4881	4297	3883	3501	2626	2165	1751	1501	1373	1132	939	854	764
					FEED	112	156	206	241	252	289	320	291	249	233	199	181	171	171
	3-4		1.0D	0.5D	Vc	37	38	48	49	52	54	55	52	53	54	54	53	50	46
					fz	0.008	0.017	0.025	0.035	0.042	0.056	0.079	0.091	0.098	0.1	0.1	0.107	0.104	0.119
					RPM	5889	4032	3820	3119	2759	2149	1751	1379	1205	1074	955	844	723	586
					FEED	94	137	191	218	232	241	277	251	236	215	191	181	150	139
	5	1.0D	0.5D	Vc	24	26	30	32	33	35	34	34	33	34	34	33	33	34	
				fz	0.011	0.017	0.023	0.029	0.037	0.051	0.069	0.079	0.086	0.09	0.1	0.104	0.099	0.105	
				RPM	3820	2759	2387	2037	1751	1393	1082	902	750	676	601	525	477	433	
				FEED	84	94	110	118	130	142	149	142	129	122	120	109	95	91	
	6	Low alloy steel	1.0D	0.5D	Vc	44	46	54	61	66	66	68	66	66	69	64	59	59	60
					fz	0.008	0.016	0.024	0.031	0.036	0.055	0.074	0.083	0.083	0.085	0.103	0.106	0.106	0.112
					RPM	7003	4881	4297	3883	3501	2626	2165	1751	1501	1373	1132	939	854	764
					FEED	112	156	206	241	252	289	320	291	249	233	199	181	171	171
7	1.0D		0.5D	Vc	37	38	48	49	52	54	55	52	53	54	54	53	50	46	
				fz	0.008	0.017	0.025	0.035	0.042	0.056	0.079	0.091	0.098	0.1	0.1	0.107	0.104	0.119	
				RPM	5889	4032	3820	3119	2759	2149	1751	1379	1205	1074	955	844	723	586	
				FEED	94	137	191	218	232	241	277	251	236	215	191	181	150	139	
8	1.0D		0.5D	Vc	24	26	30	32	33	35	34	34	33	34	34	33	33	34	
				fz	0.011	0.017	0.023	0.029	0.037	0.051	0.069	0.079	0.086	0.09	0.1	0.104	0.099	0.105	
				RPM	3820	2759	2387	2037	1751	1393	1082	902	750	676	601	525	477	433	
				FEED	84	94	110	118	130	142	149	142	129	122	120	109	95	91	
9	1.0D	0.3D	Vc	15	20	24	25	26	27	26	26	26	27	27	27	26	24		
			fz	0.01	0.017	0.023	0.028	0.036	0.047	0.071	0.071	0.079	0.09	0.094	0.099	0.086	0.1		
			RPM	2387	2122	1910	1592	1379	1074	828	690	591	537	477	430	376	306		
			FEED	48	72	88	89	99	101	118	98	93	97	90	85	65	61		
10	High alloyed steel, and tool steel	1.0D	0.5D	Vc	44	46	54	61	66	66	68	66	66	69	64	59	59	60	
				fz	0.008	0.016	0.024	0.031	0.036	0.055	0.074	0.083	0.083	0.085	0.103	0.106	0.106	0.112	
				RPM	7003	4881	4297	3883	3501	2626	2165	1751	1501	1373	1132	939	854	764	
				FEED	112	156	206	241	252	289	320	291	249	233	193	199	181	171	
11.1		1.0D	0.5D	Vc	24	26	30	32	33	35	34	34	33	34	34	33	33	34	
				fz	0.011	0.017	0.023	0.029	0.037	0.051	0.069	0.079	0.086	0.09	0.1	0.104	0.099	0.105	
				RPM	3820	2759	2387	2037	1751	1393	1082	902	750	676	601	525	477	433	
				FEED	84	94	110	118	130	142	149	142	129	122	120	109	95	91	
11.2		1.0D	0.3D	Vc	11	14	17	18	18	19	19	18	18	19	19	19	19	16	
				fz	0.01	0.018	0.024	0.029	0.036	0.047	0.072	0.071	0.077	0.088	0.096	0.1	0.083	0.095	
				RPM	1751	1485	1353	1146	955	756	605	477	409	378	336	302	275	204	
				FEED	35	53	65	66	69	71	87	68	63	67	65	60	46	39	
M	14.1	Stainless steel	1.0D	0.5D	Vc	17	22	27	28	29	30	29	29	29	29	30	30	29	26
					fz	0.01	0.018	0.024	0.028	0.036	0.047	0.071	0.071	0.08	0.091	0.094	0.101	0.083	0.098
					RPM	2706	2334	2149	1783	1538	1194	923	769	659	577	531	477	420	331
					FEED	54	84	103	100	111	112	131	109	105	105	100	96	70	65
K	15-20	Grey cast iron Nodular cast iron Malleable cast iron	1.0D	0.5D	Vc	44	46	54	61	66	66	68	66	66	69	64	59	59	60
					fz	0.008	0.016	0.024	0.031	0.036	0.055	0.074	0.083	0.083	0.085	0.103	0.106	0.106	0.112
					RPM	7003	4881	4297	3883	3501	2626	2165	1751	1501	1373	1132	939	854	764
					FEED	112	156	206	241	252	289	320	291	249	233	233	199	181	171
H	40	Chilled Cast Iron	1.0D	0.3D	Vc	11	14	17	18	18	19	19	18	18	19	19	19	19	16
					fz	0.01	0.018	0.024	0.029	0.036	0.047	0.072	0.071	0.077	0.088	0.096	0.1	0.083	0.095
					RPM	1751	1485	1353	1146	955	756	605	477	409	378	336	302	275	204
					FEED	35	53	65	66	69	71	87	68	63	67	65	60	46	39



GYG01 SERIES 3 FLUTE - **SLOTTING**

Vc = m/min.
fz = mm/tooth
RPM = rev/min.
FEED = mm/min.

ISO	VDI 3323	Material Description	Ae	Ap	Parameter	Diameter (Ø)															
						2.0	3.0	4.0	5.0	6.0	8.0	10.0	12.0	14.0	16.0	18.0	20.0	22.0	25.0		
P	1	Non-alloy steel	1.0D	0.5D	Vc	49	52	65	72	76	78	79	81	84	81	78	72	70	71		
					fz	0.004	0.007	0.011	0.014	0.023	0.031	0.04	0.051	0.052	0.06	0.07	0.08	0.091	0.107		
					RPM	7799	5517	5173	4584	4032	3104	2515	2149	1910	1611	1379	1146	1013	904		
					FEED	94	116	171	193	278	289	302	329	298	290	275	276	290			
	2		1.0D	0.5D	Vc	41	44	54	60	63	66	68	66	71	69	61	60	61	60		
					fz	0.003	0.007	0.011	0.013	0.023	0.032	0.039	0.053	0.055	0.06	0.072	0.081	0.089	0.11		
					RPM	6525	4669	4297	3820	3342	2626	2165	1751	1614	1373	1079	955	883	764		
					FEED	59	98	142	149	231	252	253	278	266	247	233	232	236	252		
	3-4		1.0D	0.5D	Vc	36	38	45	49	52	54	53	54	53	54	54	53	50	46		
					fz	0.003	0.005	0.009	0.012	0.021	0.028	0.038	0.047	0.053	0.056	0.063	0.067	0.083	0.107		
					RPM	5730	4032	3581	3119	2759	2149	1687	1432	1205	1074	955	844	723	586		
					FEED	52	60	97	112	174	180	192	202	192	180	180	170	180	188		
	5	1.0D	0.5D	Vc	23	25	29	32	33	35	34	34	35	34	34	33	33	34			
				fz	0.004	0.007	0.009	0.012	0.021	0.029	0.044	0.052	0.055	0.06	0.064	0.069	0.08	0.093			
				RPM	3661	2653	2308	2037	1751	1393	1082	902	796	676	601	525	477	433			
				FEED	44	56	62	73	110	121	143	141	131	122	115	109	115	121			
	6	Low alloy steel	1.0D	0.5D	Vc	41	44	54	60	63	66	68	66	71	69	61	60	61	60		
					fz	0.003	0.007	0.011	0.013	0.023	0.032	0.039	0.053	0.055	0.06	0.072	0.081	0.089	0.11		
					RPM	6525	4669	4297	3820	3342	2626	2165	1751	1614	1373	1079	955	883	764		
					FEED	59	98	142	149	231	252	253	278	266	247	233	232	236	252		
	7		1.0D	0.5D	Vc	36	38	45	49	52	54	53	54	53	54	54	53	50	46		
					fz	0.003	0.005	0.009	0.012	0.021	0.028	0.038	0.047	0.053	0.056	0.063	0.067	0.083	0.107		
					RPM	5730	4032	3581	3119	2759	2149	1687	1432	1205	1074	955	844	723	586		
					FEED	52	60	97	112	174	180	192	202	192	180	180	170	180	188		
8	1.0D		0.5D	Vc	23	25	29	32	33	35	34	34	35	34	34	33	33	34			
				fz	0.004	0.007	0.009	0.012	0.021	0.029	0.044	0.052	0.055	0.06	0.064	0.069	0.08	0.093			
				RPM	3661	2653	2308	2037	1751	1393	1082	902	796	676	601	525	477	433			
				FEED	44	56	62	73	110	121	143	141	131	122	115	109	115	121			
9	1.0D	0.3D	Vc	14	20	23	25	25	27	26	26	26	27	27	27	26	24				
			fz	0.005	0.008	0.012	0.014	0.023	0.031	0.045	0.052	0.056	0.063	0.066	0.074	0.088	0.111				
			RPM	2228	2122	1830	1592	1326	1074	828	690	591	537	477	430	376	306				
			FEED	33	51	66	67	92	100	112	108	99	102	95	95	99	102				
10	High alloyed steel, and tool steel	1.0D	0.5D	Vc	41	44	54	60	63	66	68	66	71	69	61	60	61	60			
				fz	0.003	0.007	0.011	0.013	0.023	0.032	0.039	0.053	0.055	0.06	0.072	0.081	0.089	0.11			
				RPM	6525	4669	4297	3820	3342	2626	2165	1751	1614	1373	1079	955	883	764			
				FEED	59	98	142	149	231	252	253	278	266	247	233	232	236	252			
11.1		1.0D	0.5D	Vc	23	25	29	32	33	35	34	34	35	34	34	33	33	34			
				fz	0.004	0.007	0.009	0.012	0.021	0.029	0.044	0.052	0.055	0.06	0.064	0.069	0.08	0.093			
				RPM	3661	2653	2308	2037	1751	1393	1082	902	796	676	601	525	477	433			
				FEED	44	56	62	73	110	121	143	141	131	122	115	109	115	121			
11.2		1.0D	0.3D	Vc	10	14	16	17	17	19	18	18	18	19	19	19	19	16			
				fz	0.005	0.009	0.012	0.014	0.024	0.031	0.044	0.051	0.056	0.063	0.064	0.072	0.086	0.111			
				RPM	1592	1485	1273	1082	902	756	573	477	409	378	336	302	275	204			
				FEED	24	40	46	45	65	70	76	73	69	71	65	65	71	68			
M	14.1	Stainless steel	1.0D	0.5D	Vc	41	44	54	60	63	66	68	66	71	69	61	60	61			
					fz	0.003	0.007	0.011	0.013	0.023	0.032	0.039	0.053	0.055	0.06	0.072	0.081	0.089	0.11		
					RPM	6525	4669	4297	3820	3342	2626	2165	1751	1614	1373	1079	955	883	764		
					FEED	59	98	142	149	231	252	253	278	266	247	233	232	236	252		
K	15-20	Grey cast iron Nodular cast iron Malleable cast iron	1.0D	0.5D	Vc	41	44	54	60	63	66	68	66	71	69	61	60	61			
					fz	0.003	0.007	0.011	0.013	0.023	0.032	0.039	0.053	0.055	0.06	0.072	0.081	0.089	0.11		
					RPM	6525	4669	4297	3820	3342	2626	2165	1751	1614	1373	1079	955	883	764		
					FEED	59	98	142	149	231	252	253	278	266	247	233	232	236	252		
H	40	Chilled Cast Iron	1.0D	0.3D	Vc	10	14	16	17	17	19	18	18	19	19	19	19	16			
					fz	0.005	0.009	0.012	0.014	0.024	0.031	0.044	0.051	0.056	0.063	0.064	0.072	0.086	0.111		
					RPM	1592	1485	1273	1082	902	756	573	477	409	378	336	302	275	204		
					FEED	24	40	46	45	65	70	76	73	69	71	65	65	71	68		



GYG01 SERIES 3 FLUTE - **SIDE CUTTING**

Vc = m/min.
fz = mm/tooth
RPM = rev/min.
FEED = mm/min.

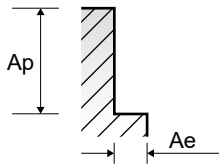
ISO	VDI 3323	Material Description	Ae	Ap	Parameter	Diameter (Ø)															
						2.0	3.0	4.0	5.0	6.0	8.0	10.0	12.0	14.0	16.0	18.0	20.0	22.0	25.0		
P	1	Non-alloy steel	0.1D	1.5D	Vc	62	66	78	89	95	97	94	95	95	97	92	94	95	94		
					fz	0.004	0.008	0.012	0.015	0.024	0.034	0.047	0.056	0.065	0.069	0.076	0.08	0.089	0.11		
					RPM	9868	7003	6207	5666	5040	3860	2992	2520	2160	1930	1627	1496	1375	1197		
					FEED	118	168	223	255	363	394	422	423	421	399	371	359	367	395		
	2		0.1D	1.5D	Vc	51	54	66	75	81	78	79	81	79	78	78	79	79	79		
					fz	0.004	0.008	0.012	0.015	0.023	0.035	0.046	0.056	0.063	0.071	0.077	0.081	0.094	0.109		
					RPM	8117	5730	5252	4775	4297	3104	2515	2149	1796	1552	1379	1257	1143	1006		
					FEED	97	138	189	215	297	326	347	361	339	331	319	306	322	329		
	3-4		0.1D	1.5D	Vc	41	43	53	55	59	60	60	63	61	60	61	59	62	60		
					fz	0.004	0.007	0.01	0.014	0.025	0.033	0.043	0.055	0.06	0.067	0.073	0.082	0.088	0.11		
					RPM	6525	4562	4218	3501	3130	2387	1910	1671	1387	1194	1079	939	897	764		
					FEED	78	96	127	147	235	236	246	276	250	240	236	231	237	252		
5	0.1D	1.5D	Vc	29	31	35	38	41	39	38	41	41	40	40	39	39	39				
			fz	0.004	0.008	0.011	0.014	0.023	0.036	0.05	0.056	0.06	0.072	0.074	0.081	0.092	0.107				
			RPM	4615	3289	2785	2419	2175	1552	1210	1088	932	796	707	621	564	497				
			FEED	55	79	92	102	150	168	181	183	168	172	157	151	156	159				
6	0.1D	1.5D	Vc	51	54	66	75	81	78	79	81	79	78	78	79	79	79				
			fz	0.004	0.008	0.012	0.015	0.023	0.035	0.046	0.056	0.063	0.071	0.077	0.081	0.094	0.109				
			RPM	8117	5730	5252	4775	4297	3104	2515	2149	1796	1552	1379	1257	1143	1006				
			FEED	97	138	189	215	297	326	347	361	339	331	319	306	322	329				
7	0.1D	1.5D	Vc	41	43	53	55	59	60	60	63	61	60	61	59	62	60				
			fz	0.004	0.007	0.01	0.014	0.025	0.033	0.043	0.055	0.06	0.067	0.073	0.082	0.088	0.11				
			RPM	6525	4562	4218	3501	3130	2387	1910	1671	1387	1194	1079	939	897	764				
			FEED	78	96	127	147	235	236	246	276	250	240	236	231	237	252				
8	0.1D	1.5D	Vc	29	31	35	38	41	39	38	41	41	40	40	39	39	39				
			fz	0.004	0.008	0.011	0.014	0.023	0.036	0.05	0.056	0.06	0.072	0.074	0.081	0.092	0.107				
			RPM	4615	3289	2785	2419	2175	1552	1210	1088	932	796	707	621	564	497				
			FEED	55	79	92	102	150	168	181	183	168	172	157	151	156	159				
9	0.05D	1.5D	Vc	18	25	29	32	34	33	34	34	33	33	34	33	33	34				
			fz	0.006	0.01	0.013	0.015	0.022	0.035	0.047	0.056	0.064	0.071	0.072	0.082	0.09	0.112				
			RPM	2865	2653	2308	2037	1804	1313	1082	902	750	657	601	525	477	433				
			FEED	52	80	90	92	119	138	153	152	144	140	130	129	129	145				
10	0.1D	1.5D	Vc	51	54	66	75	81	78	79	81	79	78	78	79	79	79				
			fz	0.004	0.008	0.012	0.015	0.023	0.035	0.046	0.056	0.063	0.071	0.077	0.081	0.094	0.109				
			RPM	8117	5730	5252	4775	4297	3104	2515	2149	1796	1552	1379	1257	1143	1006				
			FEED	97	138	189	215	297	326	347	361	339	331	319	306	322	329				
11.1	0.1D	1.5D	Vc	29	31	35	38	41	39	38	41	41	40	40	39	39	39				
			fz	0.004	0.008	0.011	0.014	0.023	0.036	0.05	0.056	0.06	0.072	0.074	0.081	0.092	0.107				
			RPM	4615	3289	2785	2419	2175	1552	1210	1088	932	796	707	621	564	497				
			FEED	55	79	92	102	150	168	181	183	168	172	157	151	156	159				
11.2	0.05D	1.5D	Vc	13	17	20	22	24	23	24	23	23	23	24	23	23	24				
			fz	0.006	0.01	0.014	0.015	0.022	0.036	0.047	0.056	0.063	0.072	0.071	0.081	0.088	0.111				
			RPM	2069	1804	1592	1401	1273	915	764	610	523	458	424	366	333	306				
			FEED	37	54	67	63	84	99	108	102	99	99	90	89	88	102				
M	14.1	Stainless steel	0.1D	1.5D	Vc	20	27	32	35	37	36	37	37	37	37	36	37	37			
					fz	0.006	0.01	0.013	0.015	0.022	0.036	0.047	0.056	0.063	0.071	0.073	0.083	0.091	0.113		
					RPM	3183	2865	2546	2228	1963	1432	1178	981	841	736	654	573	535	471		
					FEED	57	86	99	100	130	155	166	165	159	157	143	143	146	160		
K	15-20	Grey cast iron Nodular cast iron Malleable cast iron	0.1D	1.5D	Vc	51	54	66	75	81	78	79	81	79	78	78	79	79			
					fz	0.004	0.008	0.012	0.015	0.023	0.035	0.046	0.056	0.063	0.071	0.077	0.081	0.094	0.109		
					RPM	8117	5730	5252	4775	4297	3104	2515	2149	1796	1552	1379	1257	1143	1006		
					FEED	97	138	189	215	297	326	347	361	339	331	319	306	322	329		
H	40	Chilled Cast Iron	0.05D	1.5D	Vc	13	17	20	22	24	23	24	23	23	23	24	23	24			
					fz	0.006	0.01	0.014	0.015	0.022	0.036	0.047	0.056	0.063	0.072	0.071	0.081	0.088	0.111		
					RPM	2069	1804	1592	1401	1273	915	764	610	523	458	424	366	333	306		
					FEED	37	54	67	63	84	99	108	102	99	99	90	89	88	102		

GYG74, GYF96, GYG76, GYG02 SERIES 4 FLUTE - **SIDE CUTTING**

Vc = m/min.
fz = mm/tooth
RPM = rev/min.
FEED = mm/min.

ISO	VDI 3323	Material Description	Ae	Ap	Parameter	Diameter (Ø)																
						2.0	3.0	4.0	5.0	6.0	8.0	10.0	12.0	14.0	16.0	18.0	20.0	22.0	25.0			
P	1	Non-alloy steel	0.1D	1.5D	Vc	69	75	80	83	88	93	87	90	95	97	102	94	87	94			
					fz	0.008	0.015	0.023	0.029	0.035	0.046	0.068	0.071	0.076	0.079	0.076	0.088	0.097	0.093			
					RPM	10982	7958	6366	5284	4669	3700	2769	2387	2160	1930	1804	1496	1259	1197			
	FEED		351	477	586	613	654	681	753	678	657	610	548	527	488	445						
	2		0.1D	1.5D	Vc	63	68	71	75	81	78	79	81	84	84	85	79	79	79			
					fz	0.007	0.015	0.021	0.026	0.031	0.046	0.063	0.067	0.072	0.077	0.08	0.088	0.084	0.09			
					RPM	10027	7215	5650	4775	4297	3104	2515	2149	1910	1671	1503	1257	1143	1006			
	FEED		281	433	475	497	533	571	634	576	550	515	481	443	384	362						
	3-4		0.1D	1.5D	Vc	46	50	54	55	59	60	60	63	58	60	61	59	57	60			
					fz	0.007	0.014	0.021	0.028	0.032	0.046	0.059	0.066	0.08	0.085	0.086	0.088	0.093	0.09			
					RPM	7321	5305	4297	3501	3130	2387	1910	1671	1319	1194	1079	939	825	764			
	FEED		205	297	361	392	401	439	451	441	422	406	371	331	307	275						
	5	0.1D	1.5D	Vc	31	31	35	38	41	42	38	40	42	41	43	40	39	39				
				fz	0.008	0.017	0.022	0.028	0.032	0.043	0.067	0.068	0.072	0.081	0.077	0.082	0.085	0.09				
				RPM	4934	3289	2785	2419	2175	1671	1210	1061	955	816	760	637	564	497				
	FEED	158	224	245	271	278	287	324	289	275	264	234	209	192	179							
	6	Low alloy steel	0.1D	1.5D	Vc	63	68	71	75	81	78	79	81	84	84	85	79	79	79			
					fz	0.007	0.015	0.021	0.026	0.031	0.046	0.063	0.067	0.072	0.077	0.08	0.088	0.084	0.09			
					RPM	10027	7215	5650	4775	4297	3104	2515	2149	1910	1671	1503	1257	1143	1006			
	FEED		281	433	475	497	533	571	634	576	550	515	481	443	384	362						
	7		0.1D	1.5D	Vc	46	50	54	55	59	60	60	63	58	60	61	59	57	60			
					fz	0.007	0.014	0.021	0.028	0.032	0.046	0.059	0.066	0.08	0.085	0.086	0.088	0.093	0.09			
					RPM	7321	5305	4297	3501	3130	2387	1910	1671	1319	1194	1079	939	825	764			
	FEED		205	297	361	392	401	439	451	441	422	406	371	331	307	275						
8	0.1D		1.5D	Vc	31	31	35	38	41	42	38	40	42	41	43	40	39	39				
				fz	0.008	0.017	0.022	0.028	0.032	0.043	0.067	0.068	0.072	0.081	0.077	0.082	0.085	0.09				
				RPM	4934	3289	2785	2419	2175	1671	1210	1061	955	816	760	637	564	497				
FEED	158		224	245	271	278	287	324	289	275	264	234	209	192	179							
9	0.05D	1.5D	Vc	25	27	30	32	33	35	34	32	33	33	34	33	33	34					
			fz	0.006	0.013	0.019	0.023	0.031	0.04	0.056	0.064	0.067	0.076	0.075	0.08	0.081	0.087					
			RPM	3979	2865	2387	2037	1751	1393	1082	849	750	657	601	525	477	433					
FEED	95	149	181	187	217	223	242	217	201	200	180	168	155	151								
10	High alloyed steel, and tool steel	0.1D	1.5D	Vc	63	68	71	75	81	78	79	81	84	84	85	79	79	79				
				fz	0.007	0.015	0.021	0.026	0.031	0.046	0.063	0.067	0.072	0.077	0.08	0.088	0.084	0.09				
				RPM	10027	7215	5650	4775	4297	3104	2515	2149	1910	1671	1503	1257	1143	1006				
FEED		281	433	475	497	533	571	634	576	550	515	481	443	384	362							
11.1		0.1D	1.5D	Vc	31	31	35	38	41	42	38	40	42	41	43	40	39	39				
				fz	0.008	0.017	0.022	0.028	0.032	0.043	0.067	0.068	0.072	0.081	0.077	0.082	0.085	0.09				
				RPM	4934	3289	2785	2419	2175	1671	1210	1061	955	816	760	637	564	497				
FEED		158	224	245	271	278	287	324	289	275	264	234	209	192	179							
11.2		0.05D	1.5D	Vc	17	19	21	22	23	24	24	23	23	23	24	23	23	24				
				fz	0.006	0.013	0.019	0.024	0.031	0.04	0.057	0.065	0.068	0.076	0.074	0.081	0.081	0.088				
				RPM	2706	2016	1671	1401	1220	955	764	610	523	458	424	366	333	306				
FEED		65	105	127	134	151	153	174	159	142	139	126	119	108	108							
M	14.1	Stainless steel	0.1D	1.5D	Vc	27	30	33	35	36	38	37	36	37	37	37	36	37				
K	15-20	Grey cast iron Nodular cast iron Malleable cast iron	0.1D	1.5D	fz	0.006	0.013	0.019	0.023	0.031	0.039	0.056	0.063	0.067	0.075	0.076	0.08	0.08	0.088			
					RPM	4297	3183	2626	2228	1910	1512	1178	955	841	736	654	573	535	471			
					FEED	103	166	200	205	237	236	264	241	225	221	199	183	171	166			
H	40	Chilled Cast Iron	0.05D	1.5D	Vc	63	68	71	75	81	78	79	81	84	84	85	79	79	79			
					fz	0.007	0.015	0.021	0.026	0.031	0.046	0.063	0.067	0.072	0.077	0.08	0.088	0.084	0.09			
					RPM	10027	7215	5650	4775	4297	3104	2515	2149	1910	1671	1503	1257	1143	1006			
FEED	281	433	475	497	533	571	634	576	550	515	481	443	384	362								
H	40	Chilled Cast Iron	0.05D	1.5D	Vc	17	19	21	22	23	24	24	23	23	23	24	23	23	24			
					fz	0.006	0.013	0.019	0.024	0.031	0.04	0.057	0.065	0.068	0.076	0.074	0.081	0.081	0.088			
					RPM	2706	2016	1671	1401	1220	955	764	610	523	458	424	366	333	306			
FEED	65	105	127	134	151	153	174	159	142	139	126	119	108	108								

GYF95 SERIES		MULTI FLUTE ROUGHING - SIDE CUTTING												Vc = m/min. fz = mm/tooth RPM = rev/min. FEED = mm/min.	
ISO	VDI 3323	Material Description	Ae	Ap	Parameter	6.0	8.0	10.0	12.0	14.0	16.0	18.0	20.0	25.0	
P	1	Non-alloy steel	0.5D	1.5D	Vc	76	87	86	87	89	87	85	87	90	
					fz	0.02	0.03	0.055	0.065	0.059	0.069	0.079	0.088	0.105	
					RPM	4032	3462	2737	2308	2024	1731	1503	1385	1146	
					FEED	323	415	602	600	597	597	594	609	602	
	2		0.5D	1.5D	Vc	60	69	68	65	66	69	72	68	68	
					fz	0.021	0.03	0.053	0.069	0.063	0.069	0.074	0.087	0.106	
					RPM	3183	2745	2165	1724	1501	1373	1273	1082	866	
					FEED	267	329	459	476	473	474	471	471	459	
	3		0.5D	1.5D	Vc	43	51	47	49	48	48	50	48	47	
					fz	0.018	0.028	0.046	0.063	0.061	0.069	0.075	0.086	0.107	
					RPM	2281	2029	1496	1300	1091	955	884	764	598	
					FEED	164	227	275	328	333	329	332	328	320	
	4	0.5D	1.5D	Vc	43	51	47	49	48	48	50	48	47		
				fz	0.018	0.028	0.046	0.063	0.061	0.069	0.075	0.086	0.107		
				RPM	2281	2029	1496	1300	1091	955	884	764	598		
				FEED	164	227	275	328	266	264	265	263	256		
	5	0.5D	1.5D	Vc	35	38	40	40	40	40	40	40	41		
				fz	0.02	0.03	0.045	0.061	0.057	0.066	0.073	0.081	0.1		
				RPM	1857	1512	1273	1061	909	796	707	637	522		
				FEED	149	181	229	259	259	263	258	258	261		
	6	Low alloy steel	0.5D	1.5D	Vc	60	69	68	65	66	69	72	68	68	
					fz	0.021	0.03	0.053	0.069	0.063	0.069	0.074	0.087	0.106	
					RPM	3183	2745	2165	1724	1501	1373	1273	1082	866	
					FEED	267	329	459	476	473	474	471	471	459	
7	0.5D		1.5D	Vc	43	51	47	49	48	48	50	48	47		
				fz	0.018	0.028	0.046	0.063	0.061	0.069	0.075	0.086	0.107		
				RPM	2281	2029	1496	1300	1091	955	884	764	598		
				FEED	164	227	275	328	333	329	332	328	320		
8-9	0.5D		1.5D	Vc	35	38	40	40	40	40	40	40	41		
				fz	0.02	0.03	0.045	0.061	0.057	0.066	0.073	0.081	0.1		
				RPM	1857	1512	1273	1061	909	796	707	637	522		
				FEED	149	181	229	259	259	263	258	258	261		
10	High alloyed steel, and tool steel	0.5D	1.5D	Vc	60	69	68	65	66	69	72	68	68		
				fz	0.021	0.03	0.053	0.069	0.063	0.069	0.074	0.087	0.106		
				RPM	3183	2745	2165	1724	1501	1373	1273	1082	866		
				FEED	267	329	459	476	473	474	471	471	459		
11.1		0.5D	1.5D	Vc	35	38	40	40	40	40	40	40	41		
				fz	0.02	0.03	0.045	0.061	0.057	0.066	0.073	0.081	0.1		
				RPM	1857	1512	1273	1061	909	796	707	637	522		
				FEED	149	181	229	259	259	263	258	258	261		
11.2		0.3D	1.5D	Vc	25	27	28	28	28	28	28	28	28		
				fz	0.02	0.029	0.044	0.06	0.056	0.065	0.072	0.08	0.1		
				RPM	1326	1074	891	743	637	557	495	446	357		
				FEED	106	125	157	178	178	181	178	178	178		
M	14.1	Stainless steel	0.5D	1.5D	Vc	39	43	43	43	44	43	45	44	44	
					fz	0.019	0.03	0.045	0.064	0.059	0.069	0.075	0.084	0.104	
					RPM	2069	1711	1369	1141	1000	855	796	700	560	
					FEED	157	205	246	292	295	295	298	294	291	
K	15-20	Grey cast iron Nodular cast iron Malleable cast iron	0.5D	1.5D	Vc	60	69	68	65	66	69	72	68	68	
					fz	0.021	0.03	0.053	0.069	0.063	0.069	0.074	0.087	0.106	
					RPM	3183	2745	2165	1724	1501	1373	1273	1082	866	
					FEED	267	329	459	476	473	474	471	471	459	
H	40	Chilled Cast Iron	0.3D	1.5D	Vc	25	27	28	28	28	28	28	28	28	
					fz	0.02	0.029	0.044	0.06	0.056	0.065	0.072	0.08	0.1	
					RPM	1326	1074	891	743	637	557	495	446	357	
					FEED	106	125	157	178	178	181	178	178	178	



GYF94, GYF98, GYG03 SERIES						MULTI FLUTE ROUGHING - SIDE CUTTING									Vc = m/min. fz = mm/tooth RPM = rev/min. FEED = mm/min.	
ISO	VDI 3323	Material Description	Ae	Ap	Parameter	Diameter (Ø)										
						6.0	8.0	10.0	12.0	14.0	16.0	18.0	20.0	25.0		
P	1	Non-alloy steel	0.5D	1.5D	Vc	63	72	72	72	74	72	71	72	75		
					fz	0.027	0.041	0.055	0.065	0.074	0.087	0.099	0.111	0.105		
					RPM	3342	2865	2292	1910	1682	1432	1256	1146	955		
					FEED	271	352	504	497	498	498	497	509	501		
	2		0.5D	1.5D	Vc	50	57	57	54	55	57	61	57	57		
					fz	0.027	0.04	0.053	0.069	0.078	0.087	0.092	0.109	0.106		
					RPM	2653	2268	1814	1432	1251	1134	1079	907	726		
					FEED	215	272	385	395	390	395	397	396	385		
	3-4		0.5D	1.5D	Vc	36	42	40	41	40	40	41	40	39		
					fz	0.024	0.038	0.047	0.064	0.076	0.087	0.094	0.107	0.106		
					RPM	1910	1671	1273	1088	909	796	725	637	497		
					FEED	138	191	239	278	276	277	273	272	263		
	5	0.5D	1.5D	Vc	29	32	34	34	33	33	33	33	34			
				fz	0.027	0.04	0.044	0.06	0.071	0.081	0.091	0.101	0.1			
				RPM	1538	1273	1082	902	750	657	584	525	433			
				FEED	125	153	190	216	213	213	212	212	216			
	6	Low alloy steel	0.5D	1.5D	Vc	50	57	57	54	55	57	61	57	57		
					fz	0.027	0.04	0.053	0.069	0.078	0.087	0.092	0.109	0.106		
					RPM	2653	2268	1814	1432	1251	1134	1079	907	726		
					FEED	215	272	385	395	390	395	397	396	385		
	7		0.5D	1.5D	Vc	36	42	40	41	40	40	41	40	39		
					fz	0.024	0.038	0.047	0.064	0.076	0.087	0.094	0.107	0.106		
					RPM	1910	1671	1273	1088	909	796	725	637	497		
					FEED	138	191	239	278	276	277	273	272	263		
8-9	0.5D		1.5D	Vc	29	32	34	34	33	33	33	33	34			
				fz	0.027	0.04	0.044	0.06	0.071	0.081	0.091	0.101	0.1			
				RPM	1538	1273	1082	902	750	657	584	525	433			
				FEED	125	153	190	216	213	213	212	212	216			
10	High alloyed steel, and tool steel	0.5D	1.5D	Vc	50	57	57	54	55	57	61	57	57			
				fz	0.027	0.04	0.053	0.069	0.078	0.087	0.092	0.109	0.106			
				RPM	2653	2268	1814	1432	1251	1134	1079	907	726			
				FEED	215	272	385	395	390	395	397	396	385			
11.1		0.5D	1.5D	Vc	29	32	34	34	33	33	33	33	34			
				fz	0.027	0.04	0.044	0.06	0.071	0.081	0.091	0.101	0.1			
				RPM	1538	1273	1082	902	750	657	584	525	433			
				FEED	125	153	190	216	213	213	212	212	216			
11.2		0.3D	1.5D	Vc	21	22	24	23	23	23	23	23	24			
				fz	0.028	0.04	0.045	0.06	0.071	0.082	0.091	0.101	0.1			
				RPM	1114	875	764	610	523	458	407	366	306			
				FEED	94	105	138	146	149	150	148	148	153			
M	14.1	Stainless steel	0.5D	1.5D	Vc	33	36	36	36	37	36	37	36	37		
					fz	0.025	0.039	0.045	0.064	0.074	0.085	0.093	0.106	0.102		
					RPM	1751	1432	1146	955	841	716	654	573	471		
					FEED	131	168	206	244	249	244	243	243	240		
K	15-20	Grey cast iron Nodular cast iron Malleable cast iron	0.5D	1.5D	Vc	50	57	57	54	55	57	61	57	57		
					fz	0.027	0.04	0.053	0.069	0.078	0.087	0.092	0.109	0.106		
					RPM	2653	2268	1814	1432	1251	1134	1079	907	726		
					FEED	215	272	385	395	390	395	397	396	385		
H	40	Chilled Cast Iron	0.3D	1.5D	Vc	21	22	24	23	23	23	23	23	24		
					fz	0.028	0.04	0.045	0.06	0.071	0.082	0.091	0.101	0.1		
					RPM	1114	875	764	610	523	458	407	366	306		
					FEED	94	105	138	146	149	150	148	148	153		