

YE-E219



YG X5070

BLUE-COATED SOLID CARBIDE END MILLS

For Machining High Hardened Steels
For High Speed Cutting & Dry Cutting
For Mold & Die

YG YG-1 CO., LTD.

HEAD OFFICE

211, Sewolcheon-ro, Bupyeong-gu, Incheon, South Korea

Phone: +82-32-526-0909

Http://www.yg1.kr

E-mail: yg1@yg1.kr

Note The information is provided for reference only. Tool specifications are subject to change without prior notice. Although we endeavor to supply accurate and timely information, there can be no guarantee to cover every particular application. YG-1 or publishers are not liable for any damage for use of the information.



Search 'YG-1' on social media outlets

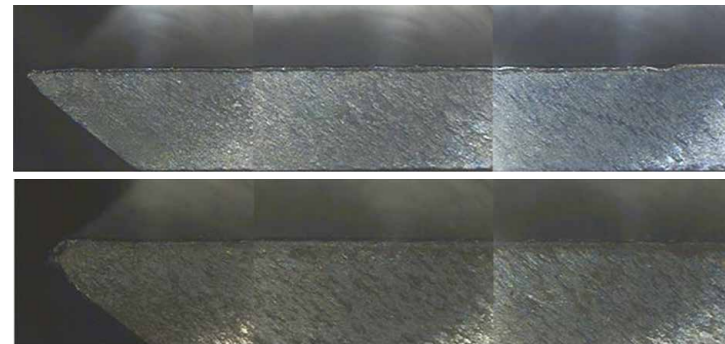
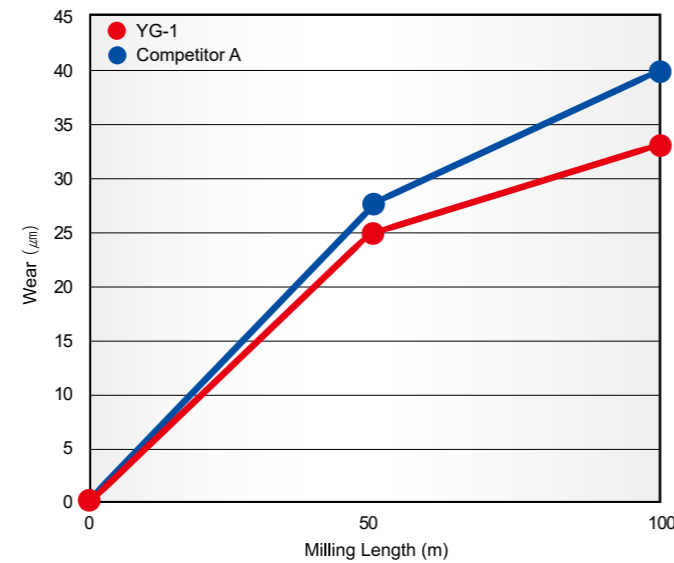
YG1E2191025007



CASE STUDY - TEST 1

► Solid Carbide 6 Flute 45° Helix End Mill for Hardened Steels

Tools	6Flute, X5070 45° Helix
Size	Ø16×Ø16×40×110
Work Material	- DIN:X40CrMoV5-1(1.2344) - JIS:SKD61(HRc50) - AISI:H13
Cutting Speed	96.5 m/min.
R.P.M	1,920 rev./min.
Feed	912 mm/min.
Milling Method	Down & Side Cutting
Milling Depth	Axial : 24 mm Radial : 0.96 mm
Coolant	Dry Cut
Overhang	52 mm
Machine	Machining Center



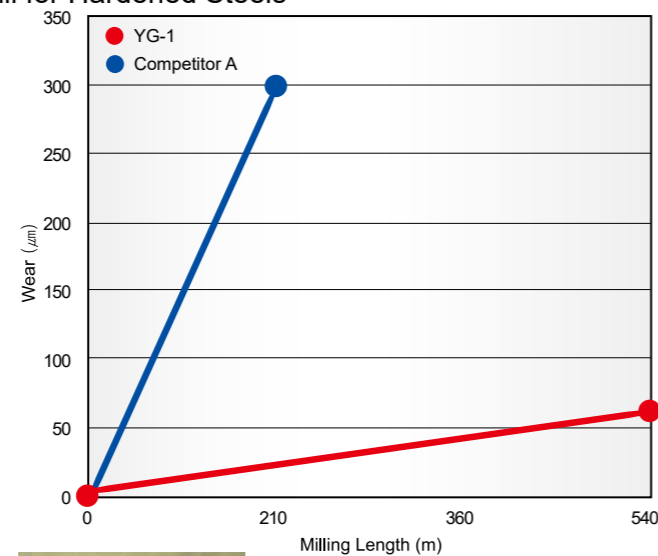
YG-1
(Total Milling Length 100m)

Competitor A
(Total Milling Length 100m)

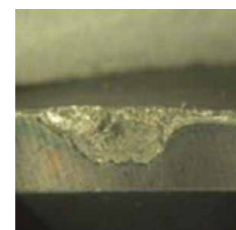
CASE STUDY - TEST 2

► Solid Carbide 4 Flute Center Match Ball End Mill for Hardened Steels

Tools	4Flute, X5070 Ball Nose
Size	Ø10×Ø10×18×100
Work Material	- DIN:X155CrVMo12-1(1.2379) - JIS:SKD11(HRc60) - AISI:D2
Cutting Speed	210.486 m/min.
R.P.M	6,700 rev./min.
Feed	2,800 mm/min.
Milling Method	Side Cutting
Milling Depth	Axial : 0.2 mm Radial : 0.5 mm
Coolant	Oil Mist
Overhang	32 mm
Machine	Machining Center



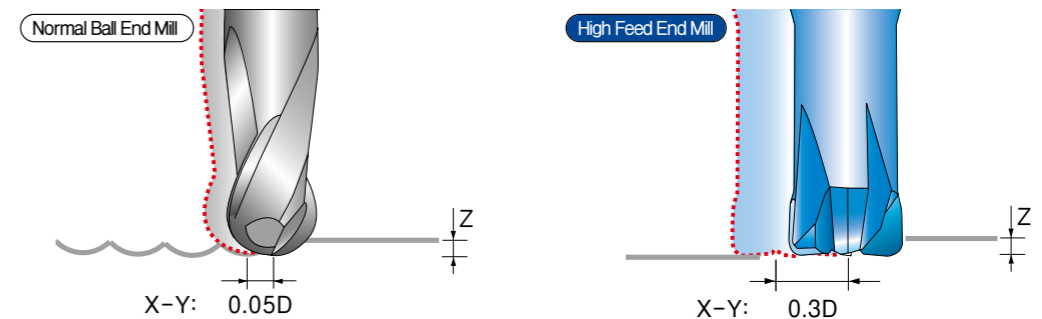
YG-1
(Total Milling Length 540m)



Competitor A
(Total Milling Length 210m)

High Feed End Mill Capabilities :

- ✓ High speed roughing
- ✓ High speed finishing... Mirror-like surface

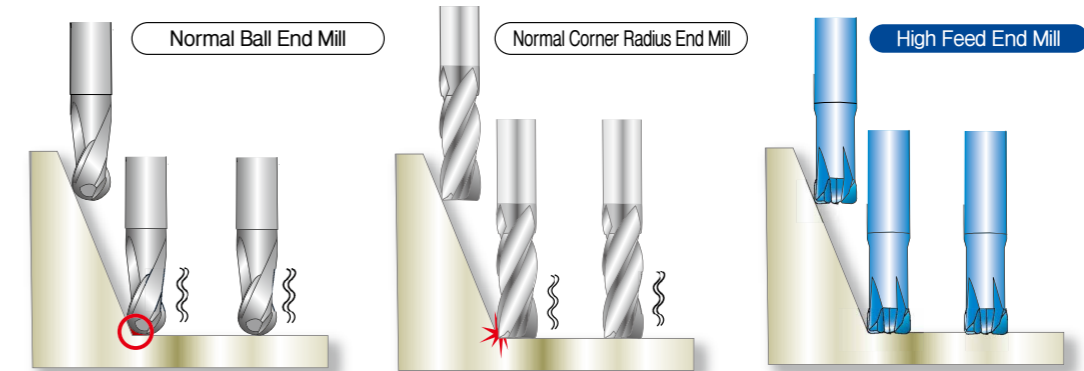


► More number of flutes than the normal 2F ball E/M results in high-feed cutting. For X - Y wide cutting pitch, high effective cutting performs in short tool working time.

(Example of performance : for the material HRc 50~55)

ITEM	SIZE	RPM	FEED	DEPTH OF CUT	
				Z(mm)	X-Y(mm)
HIGH FEED END MILL	4F Ø10 X R2	5,400	11,000	0.2	3.0
NORMAL BALL END MILL	2F Ø10 X R5	7,500	2,500	0.2	0.5

► For cutting on slopes and corners, the remaining part to be cut is smaller than one that remains after working with normal ball End Mill. It saves the time and cost



► By using straight flute, the rigidity of corner radius is improved. And it's also possible to get less damage to end teeth and radius than normal radius End Mill.

GUIDE LINE TO ICONS

Tool Raw Material

CARBIDE

Tolerance of Radius

R ±0.005 R ±0.010

Tolerance of Ball Radius

R ±0.005 R ±0.010 R ±0.015

Tolerance of Corner Radius

Type of Shank

PLAIN

Surface Treatment

BLUE

Cutting Condition pages

No. of Flutes

2 3 4 6 6&8

Helix Angle

30° 0° 30° 45°

SELECTION GUIDE



SOLID CARBIDE X5070 END MILLS

High Hardened Steels HRC45 to HRC70,
High Speed Machining, Dry Cutting



Please visit globalyg1.com/mat for material search

◎: Excellent ○: Good

Recommended cutting conditions : P. 41

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
	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		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	Hardened steel	Hardened	550	55
	39		Hardened	630	60
	40	Chilled Cast Iron	Cast	400	42
	41	Hardened Cast Iron	Hardened	550	55

SERIES	G8B59	G8B54	G8A46	G8A54
FLUTE	4	4	2	2
HELIX ANGLE	0°	0°	30°	30°
CUTTING EDGE SHAPE	CORNER RADIUS	CORNER RADIUS	BALL NOSE	BALL NOSE
SIZE MIN	D2.0	D2.0	R0.05	R0.25
SIZE MAX	D12.0	D16.0	R2.0	R1.0
PAGE	7	8	9	13
	HIGH FEED	HIGH FEED LONG SHANK	RIB PROCESSING	RIB PROCESSING
	Blue Coating	Blue Coating	Blue Coating	Blue Coating



SERIES	G8A28	G8A38	G8A53	G8A59	G8D62	G8A60	G8A36	G8A52	G8A50	G8A47	G8A37	G8B08	G8A39
FLUTE	2	2	2	3	4	2	2	2	2	4	4	4	6
HELIX ANGLE	30°	30°	30°	30°	30°	30°	30°	30°	30°	30°	30°	30°	45°
CUTTING EDGE SHAPE	BALL NOSE	BALL NOSE	BALL NOSE	BALL NOSE	BALL NOSE	CORNER RADIUS	CORNER RADIUS	CORNER RADIUS	CORNER RADIUS	CORNER RADIUS	CORNER RADIUS	CORNER RADIUS	CORNER RADIUS
SIZE MIN	R0.05	R0.5	R0.2	R1.5	R1.5	D0.5	D0.3	D0.5	D0.3	D3.0	D1.0	D6.0	D6.0
SIZE MAX	R6.0	R12.5	R1.0	R10.0	R10.0	D12.0	D20.0	D2.0	D2.0	D12.0	D20.0	D12.0	D20.0
PAGE	14	16	17	18	19	20	25	27	28	29	30	31	32
	EXTENDED NECK	EXTENDED NECK	MINIATURE	Center Match	Center Match	RIB PROCESSING	EXTENDED NECK	RIB PROCESSING	MINIATURE	EXTENDED NECK	EXTENDED NECK	EXTENDED NECK	EXTENDED NECK
	Blue Coating	Blue Coating	Blue Coating	Blue Coating	Blue Coating	Blue Coating	Blue Coating	Blue Coating	Blue Coating	Blue Coating	Blue Coating	Blue Coating	Blue Coating



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
	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		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	Hardened steel	Hardened	550	55
	39		Hardened	630	60
	40	Chilled Cast Iron	Cast	400	42
	41	Hardened Cast Iron	Hardened	550	55



SERIES	G8A45	G8A01	G8A02	G8D63	G8D64
FLUTE	2	2	4	6&8	6&8
HELIX ANGLE	30°	30°	30°	45°	45°
CUTTING EDGE SHAPE	SQUARE	SQUARE	SQUARE	SQUARE	SQUARE
SIZE MIN	D0.1	D0.1	D1.0	D6.0	D6.0
SIZE MAX	D4.0	D20.0	D20.0	D25.0	D25.0
PAGE	33	37	38	39	40
RIB PROCESSING	Blue Coating	Blue Coating	Blue Coating	Blue Coating	Blue Coating
EXTENDED NECK					
EXTENDED NECK					
LONG LENGTH					
EXTRA LONGLENGTH					

SOLID CARBIDE X5070 END MILLS

High Hardened Steels HRc45 to HRc70,
High Speed Machining, Dry Cutting



Please visit globalyg1.com/mat for material search

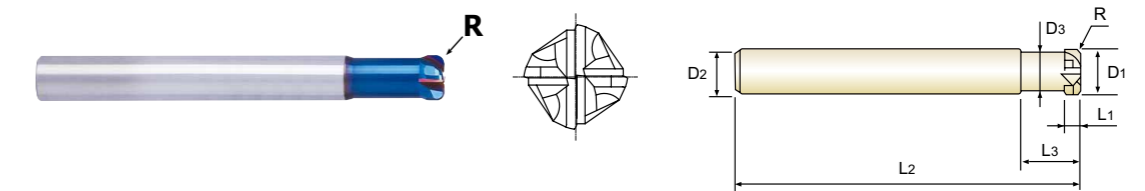
◎ : Excellent ○ : Good

Recommended cutting conditions : P. 41

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			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		Ferritic		130						
20	Malleable cast iron	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)	CuZn, CuSnZn (Brass)	90						
	27	Non Metallic Materials			100						
	28										
	29										
	30										
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	Hardened steel		Hardened	550	55	◎	◎	◎	◎	◎
	39			Hardened	630	60	◎	◎	◎	◎	◎
	40		Chilled Cast Iron	Cast	400	42	○	○	○	○	○
	41		Hardened Cast Iron	Hardened	550	55	◎	◎	◎	◎	◎

BLUE-COATED SOLID CARBIDE END MILLS 4 FLUTE STUB LENGTH CORNER RADIUS HIGH FEED **G8B59** SERIES

- ▶ Excellent wear resistance at heavy feed rates on high hardened material.
- ▶ Designed with reduced clearance angles and short flutes for strength.
- ▶ High hardness & heat resistance coating for long life in dry applications.



CARBIDE 4 BLUE 0° ±0.005 PLAIN P. 41

Unit : mm

EDP No.	Corner Radius	Mill Diameter	Shank Diameter	Length of Cut	Length Below Shank	Overall Length	Neck Diameter
	R (±0.005)	D1	D2	L1	L3	L2	D3
G8B5902005	R0.5	2.0	6	1	6	50	1.8
G8B5903005	R0.5	3.0	6	1.2	8	50	2.8
G8B5904005	R0.5	4.0	6	1.5	10	50	3.8
G8B5906005	R0.5	6.0	6	2.5	12	60	5.4
G8B5906010	R1.0	6.0	6	2.5	12	60	5.4
G8B5908010	R1.0	8.0	8	3.5	16	60	7.2
G8B5908020	R2.0	8.0	8	3.5	16	60	7.2
G8B5910010	R1.0	10.0	10	4	20	70	9
G8B5910020	R2.0	10.0	10	4	20	70	9
G8B5912020	R2.0	12.0	12	5	25	80	11
G8B5912030	R3.0	12.0	12	5	25	80	11

Mill Dia. Tolerance (mm)	Corner Radius Tolerance (mm)	Shank Dia. Tolerance
0 ~ -0.02	± 0.005	h5

Due to the characteristics of the blue decoration layer, it might be erased during short-term use and the color layer may become non-uniform. However, this doesn't affect the performance of the tool.

Comparison of the endteeth shape

High Feed End Mill

Normal End Mill

- Reduced clearance angles and short flutes strengthens corner radius and reduces chattering
- Extra-short flute length for high rigidity
- Heavy core with reduced diameter allows greater depths and maximum rigidity

◎ : Excellent ○ : Good

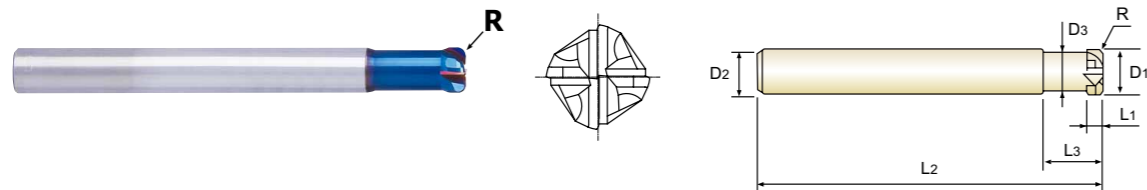
ISO	P										M				K					
	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel		Stainless steel		Grey cast iron		Nodular cast iron		Malleable cast iron	
Material Description	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
VDI 3323																				
HRc																				
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	Heat Resistant Super Alloys					Titanium Alloys		Hardened steel		Chilled Cast Iron	Hardened Cast Iron
Material Description	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
VDI 3323																					
HRc																					
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommend																		◎	◎	○	◎

BLUE-COATED SOLID CARBIDE END MILLS

4 FLUTE STUB LENGTH CORNER RADIUS HIGH FEED (Long Shank) PLAIN SHANK G8B54 SERIES

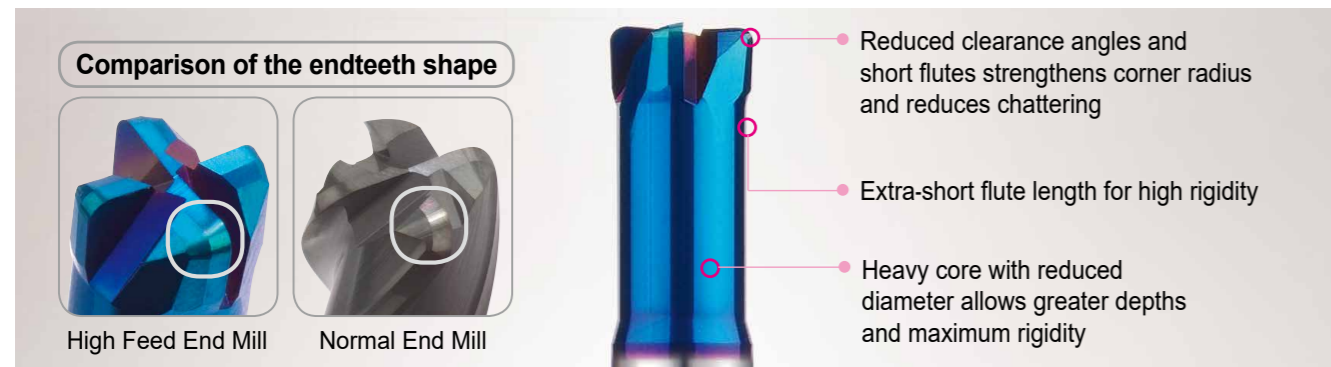
- ▶ Excellent wear resistance at heavy feed rates on high hardened material.
- ▶ Designed with reduced clearance angles and short flutes for strength.
- ▶ High hardness & heat resistance coating for long life in dry applications.



EDP No.	Corner Radius	Mill Diameter	Shank Diameter	Length of Cut	Length Below Shank	Overall Length	Neck Diameter
	R (±0.005)	D1	D2	L1	L3	L2	D3
G8B5402005	R0.5	2.0	6	1	6	70	1.8
G8B5403005	R0.5	3.0	6	1.2	8	70	2.8
G8B5404005	R0.5	4.0	6	1.5	10	70	3.8
G8B5405005	R0.5	5.0	6	2	10	70	4.6
G8B5406005	R0.5	6.0	6	2.5	12	90	5.4
G8B5406010	R1.0	6.0	6	2.5	12	90	5.4
G8B5408010	R1.0	8.0	8	3.5	16	100	7.2
G8B5408020	R2.0	8.0	8	3.5	16	100	7.2
G8B5410010	R1.0	10.0	10	4	20	100	9
G8B5410020	R2.0	10.0	10	4	20	100	9
G8B5412020	R2.0	12.0	12	5	25	110	11
G8B5412030	R3.0	12.0	12	5	25	110	11
G8B5416030	R3.0	16.0	16	6.5	30	130	15

Mill Dia. Tolerance (mm)	Corner Radius Tolerance (mm)	Shank Dia. Tolerance
0 ~ -0.02	± 0.005	h5

Due to the characteristics of the blue decoration layer, it might be erased during short-term use and the color layer may become non-uniform. However, this doesn't affect the performance of the tool.



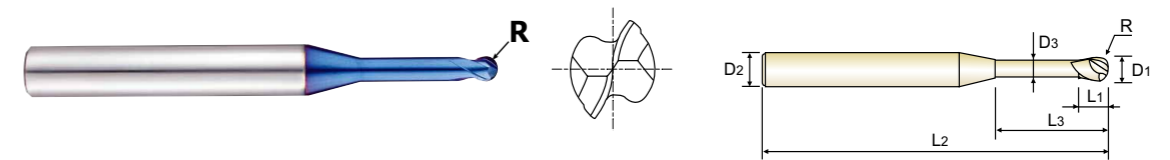
◎ : Excellent ○ : Good

ISO Material Description	P										M					K									
	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	12	13	14	15	16	17	18	19	20	21	22	23	24	25
HRc	13	25	28	32	35	38	40	42	45	48	50	52	54	56	58	60	62	64	66	68	70	72	74	76	78
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	260	160	250	130	230	210	125	190	250	270	300
Recommend	○					○					○					○									

BLUE-COATED SOLID CARBIDE END MILLS

2 FLUTE BALL NOSE for RIB PROCESSING PLAIN SHANK G8A46 SERIES

- ▶ Designed to machine high hardened materials.
- ▶ Suitable for dry cutting and high speed cutting thanks to the newly-developed raw material and new coating
- ▶ Excellent workpiece finish.
- ▶ Designed for high precision milling operation.
- ▶ Higher wear-resistance.



EDP No.	Radius of Ball Nose	Mill Diameter	Shank Diameter	Length of Cut	Length Below Shank	Overall Length	Neck Diameter
	R (±0.005)	D1	D2	L1	L3	L2	D3
G8A46805	R0.05	0.1	4	0.1	0.3	45	0.085
G8A46806	R0.05	0.1	4	0.1	0.5	45	0.085
G8A46002	R0.1	0.2	4	0.2	0.5	45	0.17
G8A46977	R0.1	0.2	4	0.2	1	45	0.17
G8A46958	R0.1	0.2	4	0.2	1.5	45	0.17
G8A46003	R0.15	0.3	4	0.3	1	45	0.27
G8A46959	R0.15	0.3	4	0.3	2	45	0.27
G8A46986	R0.15	0.3	4	0.3	3	45	0.27
G8A46004	R0.2	0.4	4	0.4	1	45	0.37
G8A46960	R0.2	0.4	4	0.4	2	45	0.37
G8A46961	R0.2	0.4	4	0.4	3	45	0.37
G8A46981	R0.2	0.4	4	0.4	4	45	0.37
G8A46987	R0.2	0.4	4	0.4	5	45	0.37
G8A46005	R0.25	0.5	4	0.4	2	45	0.45
G8A46804	R0.25	0.5	4	0.4	2.5	45	0.45
G8A46962	R0.25	0.5	4	0.4	4	45	0.45
G8A46963	R0.25	0.5	4	0.4	6	45	0.45
G8A46964	R0.25	0.5	4	0.4	8	45	0.45
G8A46957	R0.3	0.6	4	0.5	2	45	0.55
G8A46988	R0.3	0.6	4	0.5	3	45	0.55
G8A46915	R0.3	0.6	4	0.5	4	45	0.55
G8A46989	R0.3	0.6	4	0.5	5	45	0.55

Due to the characteristics of the blue decoration layer, it might be erased during short-term use and the color layer may become non-uniform. However, this doesn't affect the performance of the tool. ▶ NEXT PAGE

Mill Dia. Tolerance (mm)	Shank Dia. Tolerance
0 ~ -0.012	h5

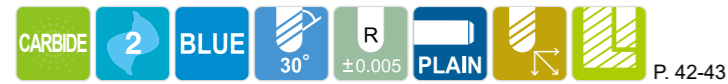
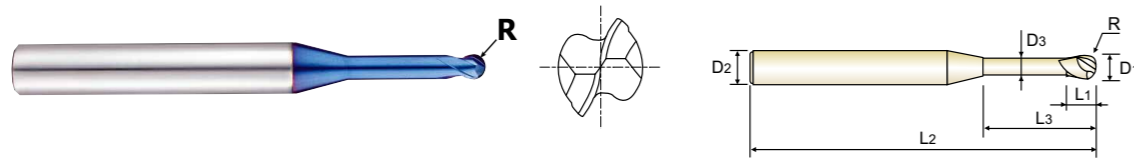
◎ : Excellent ○ : Good

ISO Material Description	P										M					K									
	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	12	13	14	15	16	17	18	19	20	21	22	23	24	25
HRc	13	25	28	32	35	38	40	42	45	48	50	52	54	56	58	60	62	64	66	68	70	72	74	76	78
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	260	160	250	130	230	210	125	190	250	270	300
Recommend	○					○					○					○									

BLUE-COATED SOLID CARBIDE END MILLS
2 FLUTE BALL NOSE for RIB PROCESSING

PLAIN SHANK **G8A46** SERIES

- ▶ Designed to machine high hardened materials.
- ▶ Suitable for dry cutting and high speed cutting thanks to the newly-developed raw material and new coating
- ▶ Excellent workpiece finish.
- ▶ Designed for high precision milling operation.
- ▶ Higher wear-resistance.



Unit : mm

EDP No.	Radius of Ball Nose	Mill Diameter	Shank Diameter	Length of Cut	Length Below Shank	Overall Length	Neck Diameter
	R (±0.005)	D1	D2	L1	L3	L2	D3
G8A46916	R0.3	0.6	4	0.5	6	45	0.55
G8A46917	R0.3	0.6	4	0.5	8	45	0.55
G8A46990	R0.3	0.6	4	0.5	10	45	0.55
G8A46918	R0.4	0.8	4	0.6	2	45	0.75
G8A46919	R0.4	0.8	4	0.6	4	45	0.75
G8A46008	R0.4	0.8	4	0.6	6	45	0.75
G8A46901	R0.4	0.8	4	0.6	8	45	0.75
G8A46965	R0.4	0.8	4	0.6	10	45	0.75
G8A46920	R0.5	1.0	4	0.8	3	45	0.95
G8A46921	R0.5	1.0	4	0.8	4	45	0.95
G8A46923	R0.5	1.0	4	0.8	5	45	0.95
G8A46010	R0.5	1.0	4	0.8	6	45	0.95
G8A46924	R0.5	1.0	4	0.8	7	45	0.95
G8A46902	R0.5	1.0	4	0.8	8	45	0.95
G8A46925	R0.5	1.0	4	0.8	9	45	0.95
G8A46903	R0.5	1.0	4	0.8	10	45	0.95
G8A46904	R0.5	1.0	4	0.8	12	45	0.95
G8A46926	R0.5	1.0	4	0.8	14	50	0.95
G8A46927	R0.5	1.0	4	0.8	16	50	0.95
G8A46966	R0.5	1.0	4	0.8	20	55	0.95
G8A46982	R0.6	1.2	4	1.0	6	45	1.15
G8A46012	R0.6	1.2	4	1.0	8	45	1.15

Due to the characteristics of the blue decoration layer, it might be erased during short-term use and the color layer may become non-uniform. However, this doesn't affect the performance of the tool. ▶ NEXT PAGE

Mill Dia. Tolerance (mm)	Shank Dia. Tolerance
0 ~ - 0.012	h5

◎ : Excellent ○ : Good

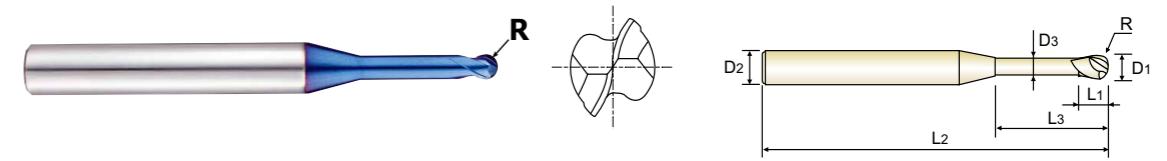
ISO Material Description	P											M			K					
	Non-alloy steel				Low alloy steel				High alloyed steel, and tool steel			Stainless steel			Grey cast iron	Nodular cast iron		Malleable cast iron		
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc	13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25	19	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)	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	39	40	41
HRc	21	22	23	24	25	26	27	28	29	30	15	30	25	38	34	36	37	55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommend	○					○					○			○							

BLUE-COATED SOLID CARBIDE END MILLS
2 FLUTE BALL NOSE for RIB PROCESSING

PLAIN SHANK **G8A46** SERIES

- ▶ Designed to machine high hardened materials.
- ▶ Suitable for dry cutting and high speed cutting thanks to the newly-developed raw material and new coating
- ▶ Excellent workpiece finish.
- ▶ Designed for high precision milling operation.
- ▶ Higher wear-resistance.



Unit : mm

EDP No.	Radius of Ball Nose	Mill Diameter	Shank Diameter	Length of Cut	Length Below Shank	Overall Length	Neck Diameter
	R (±0.005)	D1	D2	L1	L3	L2	D3
G8A46983	R0.6	1.2	4	1.0	10	45	1.15
G8A46905	R0.6	1.2	4	1.0	12	45	1.15
G8A46930	R0.75	1.5	4	1.2	6	45	1.45
G8A46015	R0.75	1.5	4	1.2	8	45	1.45
G8A46931	R0.75	1.5	4	1.2	10	45	1.45
G8A46906	R0.75	1.5	4	1.2	12	45	1.45
G8A46992	R0.75	1.5	4	1.2	14	50	1.45
G8A46907	R0.75	1.5	4	1.2	16	50	1.45
G8A46932	R0.75	1.5	4	1.2	20	55	1.45
G8A46939	R1.0	2.0	4	1.6	4	45	1.95
G8A46940	R1.0	2.0	4	1.6	6	45	1.95
G8A46020	R1.0	2.0	4	1.6	8	45	1.95
G8A46941	R1.0	2.0	4	1.6	10	45	1.95
G8A46942	R1.0	2.0	4	1.6	12	50	1.95
G8A46943	R1.0	2.0	4	1.6	14	50	1.95
G8A46909	R1.0	2.0	4	1.6	16	50	1.95
G8A46993	R1.0	2.0	4	1.6	18	55	1.95
G8A46910	R1.0	2.0	4	1.6	20	55	1.95
G8A46944	R1.0	2.0	4	1.6	22	60	1.95
G8A46945	R1.0	2.0	4	1.6	25	60	1.95
G8A46967	R1.0	2.0	4	1.6	30	70	1.95
G8A46948	R1.5	3.0	6	2.4	12	50	2.85

Due to the characteristics of the blue decoration layer, it might be erased during short-term use and the color layer may become non-uniform. However, this doesn't affect the performance of the tool. ▶ NEXT PAGE

Mill Dia. Tolerance (mm)	Shank Dia. Tolerance
0 ~ - 0.012	h5

◎ : Excellent ○ : Good

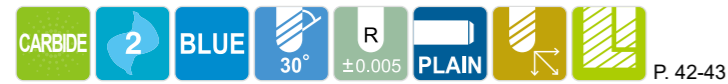
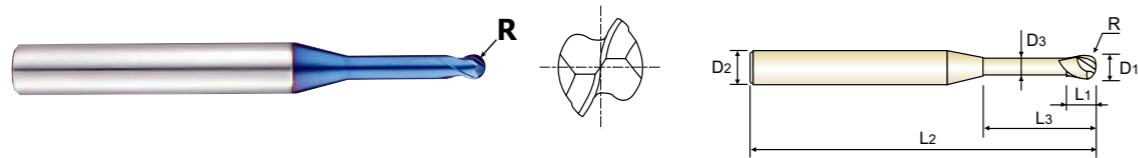
ISO Material Description	P											M			K					
	Non-alloy steel				Low alloy steel				High alloyed steel, and tool steel			Stainless steel			Grey cast iron	Nodular cast iron		Malleable cast iron		
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc	13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25	19	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)	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	39	40	41
HRc	21	22	23	24	25	26	27	28	29	30	15	30	25	38	34	36	37	55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommend	○					○					○			○							

BLUE-COATED SOLID CARBIDE END MILLS
2 FLUTE BALL NOSE for RIB PROCESSING

PLAIN SHANK **G8A46** SERIES

- ▶ Designed to machine high hardened materials.
- ▶ Suitable for dry cutting and high speed cutting thanks to the newly-developed raw material and new coating
- ▶ Excellent workpiece finish.
- ▶ Designed for high precision milling operation.
- ▶ Higher wear-resistance.



Unit : mm

EDP No.	Radius of Ball Nose	Mill Diameter	Shank Diameter	Length of Cut	Length Below Shank	Overall Length	Neck Diameter
	R (±0.005)	D1	D2	L1	L3	L2	D3
G8A46984	R1.5	3.0	6	2.4	14	55	2.85
G8A46030	R1.5	3.0	6	2.4	16	55	2.85
G8A46985	R1.5	3.0	6	2.4	18	60	2.85
G8A46911	R1.5	3.0	6	2.4	20	60	2.85
G8A46968	R1.5	3.0	6	2.4	25	65	2.85
G8A46969	R1.5	3.0	6	2.4	30	70	2.85
G8A46970	R1.5	3.0	6	2.4	35	80	2.85
G8A46950	R2.0	4.0	6	3.2	12	60	3.85
G8A46040	R2.0	4.0	6	3.2	16	60	3.85
G8A46912	R2.0	4.0	6	3.2	20	65	3.85
G8A46913	R2.0	4.0	6	3.2	25	70	3.85
G8A46971	R2.0	4.0	6	3.2	30	70	3.85
G8A46972	R2.0	4.0	6	3.2	35	80	3.85
G8A46973	R2.0	4.0	6	3.2	40	90	3.85
G8A46974	R2.0	4.0	6	3.2	45	90	3.85
G8A46975	R2.0	4.0	6	3.2	50	100	3.85

Due to the characteristics of the blue decoration layer, it might be erased during short-term use and the color layer may become non-uniform. However, this doesn't affect the performance of the tool.

Mill Dia. Tolerance (mm)	Shank Dia. Tolerance
0 ~ - 0.012	h5

◎ : Excellent ○ : Good

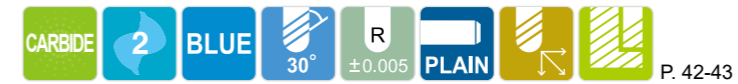
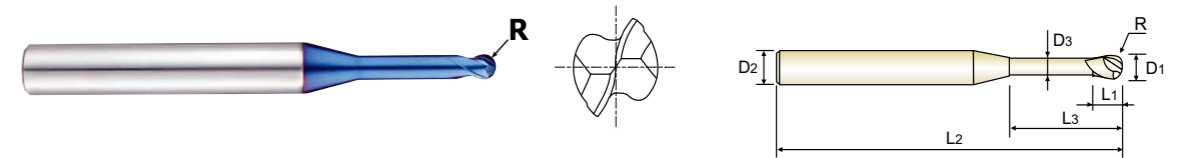
ISO Material Description	P											M				K					
	Non-alloy steel					Low alloy steel						High alloyed steel, and tool steel		Stainless steel		Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
HRc	13	25	28	32	30	29	32	38	35	35	35	15	23	10	10	26	3	25	3	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		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	39	40	41
HRc	21	22	23	24	25	26	27	28	29	30	15	30	25	38	34	36	37	55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommend	○		○		○		○		○			○		○		○		○		○	

BLUE-COATED SOLID CARBIDE END MILLS
2 FLUTE BALL NOSE for RIB PROCESSING

PLAIN SHANK **G8A54** SERIES

- ▶ Designed to machine high hardened materials.
- ▶ Suitable for dry cutting and high speed cutting thanks to the newly-developed raw material and new coating
- ▶ Excellent workpiece finish.
- ▶ Designed for high precision milling operation.
- ▶ Higher wear-resistance.



Unit : mm

EDP No.	Radius of Ball Nose	Mill Diameter	Shank Diameter	Length of Cut	Length Below Shank	Overall Length	Neck Diameter
	R (±0.005)	D1	D2	L1	L3	L2	D3
G8A54005	R0.25	0.5	6	0.5	1.5	50	0.45
G8A54901	R0.25	0.5	6	0.5	3.3	50	0.45
G8A54006	R0.3	0.6	6	0.6	2	50	0.55
G8A54902	R0.3	0.6	6	0.6	4	50	0.55
G8A54008	R0.4	0.8	6	0.8	2.5	50	0.75
G8A54903	R0.4	0.8	6	0.8	5.5	50	0.75
G8A54010	R0.5	1.0	6	1	3.3	50	0.95
G8A54904	R0.5	1.0	6	1	6.7	50	0.95
G8A54905	R0.5	1.0	6	1	12	50	0.95
G8A54012	R0.6	1.2	6	1.2	4.4	50	1.15
G8A54906	R0.6	1.2	6	1.2	8	50	1.15
G8A54015	R0.75	1.5	6	1.5	5	50	1.45
G8A54907	R0.75	1.5	6	1.5	9.7	50	1.45
G8A54908	R0.75	1.5	6	1.5	15	50	1.45
G8A54020	R1.0	2.0	6	2	6	50	1.95
G8A54909	R1.0	2.0	6	2	13	50	1.95
G8A54910	R1.0	2.0	6	2	20	60	1.95

Due to the characteristics of the blue decoration layer, it might be erased during short-term use and the color layer may become non-uniform. However, this doesn't affect the performance of the tool.

Mill Dia. Tolerance (mm)	Shank Dia. Tolerance
0 ~ - 0.012	h5

◎ : Excellent ○ : Good

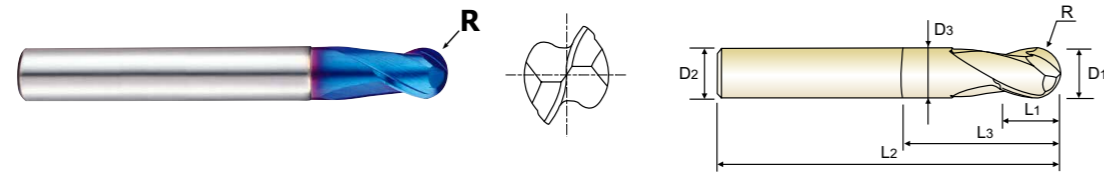
ISO Material Description	P											M				K					
	Non-alloy steel					Low alloy steel						High alloyed steel, and tool steel		Stainless steel		Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
HRc	13	25	28	32	30	29	32	38	35	35	35	15	23	10	10	26	3	25	3	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		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	39	40	41
HRc	21	22	23	24	25	26	27	28	29	30	15	30	25	38	34	36	37	55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommend	○		○		○		○		○			○		○		○		○		○	

BLUE-COATED SOLID CARBIDE END MILLS 2 FLUTE BALL NOSE with EXTENDED NECK

PLAIN SHANK **G8A28** SERIES

- ▶ Designed to machine high hardened materials.
- ▶ Suitable for dry cutting and high speed cutting thanks to the newly-developed raw material and new coating
- ▶ Excellent workpiece finish.
- ▶ Designed for high precision milling operation.
- ▶ Higher wear-resistance.



CARBIDE 2 BLUE 30° R ±0.005 R ±0.010 PLAIN P. 44-45

EDP No.	Radius of Ball Nose	Mill Diameter	Shank Diameter	Length of Cut	Length Below Shank	Overall Length	Neck Diameter
	R	D1	D2	L1	L3	L2	D3
G8A28001	R0.05	0.1	4	0.2	-	40	-
G8A28002	R0.1	0.2	4	0.3	-	40	-
G8A28003	R0.15	0.3	4	0.5	-	40	-
G8A28004	R0.2	0.4	4	0.6	-	40	-
G8A28005	R0.25	0.5	4	0.7	-	40	-
G8A28006	R0.3	0.6	4	0.9	-	40	-
G8A28007	R0.35	0.7	4	1.1	-	40	-
G8A28008	R0.4	0.8	4	1.2	-	40	-
G8A28009	R0.45	0.9	4	1.4	-	40	-
G8A280104S	R0.5	1.0	4	1.5	3	50	0.95
G8A28010	R0.5	1.0	6	1.5	3	50	0.95
G8A280154S	R0.75	1.5	4	2	4	50	1.45
G8A28015	R0.75	1.5	6	2	4	50	1.45
G8A280204S	R1.0	2.0	4	2.5	5	50	1.95
G8A28020	R1.0	2.0	6	2.5	5	50	1.95
G8A280254S	R1.25	2.5	4	3	7	50	2.4
G8A28025	R1.25	2.5	6	3	7	50	2.4
G8A28030	R1.5	3.0	6	4	10	60	2.85
G8A28035	R1.75	3.5	6	4.5	10	60	3.35
G8A28040	R2.0	4.0	6	5	10	60	3.85
G8A28045	R2.25	4.5	6	5.5	10	60	4.35
G8A28050	R2.5	5.0	6	6	12	60	4.85

Due to the characteristics of the blue decoration layer, it might be erased during short-term use and the color layer may become non-uniform. However, this doesn't affect the performance of the tool. ▶ NEXT PAGE

Size	Radius Tolerance (mm)	Mill Dia. Tolerance (mm)	Shank Dia. Tolerance
up to R3	± 0.005	0 ~ - 0.012	h5
over R3	± 0.010	0 ~ - 0.015	

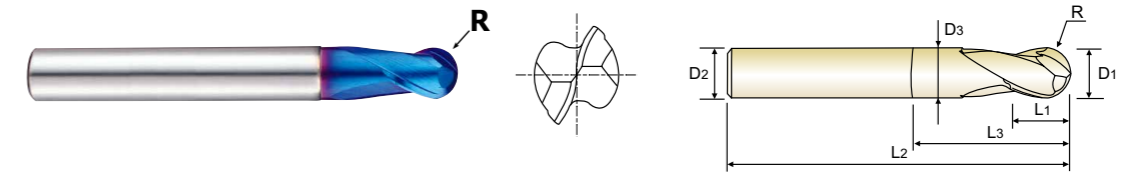
ISO Material Description	P											M				K								
	Non-alloy steel					Low alloy steel						High alloyed steel, and tool steel				Stainless steel		Grey cast iron		Nodular cast iron		Malleable cast iron		
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20				
HRc	13	25	28	32	30	29	32	38	30	35	35	15	23	10	10	26	3	25	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			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	39	40	41
HRc	21	22	23	24	25	26	27	28	29	30	31	32	25	38	34	36	37	55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommend						○						◎			◎	○	◎				

BLUE-COATED SOLID CARBIDE END MILLS 2 FLUTE BALL NOSE with EXTENDED NECK

PLAIN SHANK **G8A28** SERIES

- ▶ Designed to machine high hardened materials.
- ▶ Suitable for dry cutting and high speed cutting thanks to the newly-developed raw material and new coating
- ▶ Excellent workpiece finish.
- ▶ Designed for high precision milling operation.
- ▶ Higher wear-resistance.



CARBIDE 2 BLUE 30° R ±0.005 R ±0.010 PLAIN P. 44-45

EDP No.	Radius of Ball Nose	Mill Diameter	Shank Diameter	Length of Cut	Length Below Shank	Overall Length	Neck Diameter
	R	D1	D2	L1	L3	L2	D3
G8A28055	R2.75	5.5	6	6.5	12	60	5.35
G8A28060	R3.0	6.0	6	7	15	60	5.85
G8A28903	R3.0	6.0	6	9	30	90	5.85
G8A28901	R4.0	8.0	8	9	15	60	7.7
G8A28080	R4.0	8.0	8	9	15	80	7.7
G8A28904	R4.0	8.0	8	12	30	100	7.7
G8A28902	R5.0	10.0	10	11	25	60	9.7
G8A28100	R5.0	10.0	10	11	25	80	9.7
G8A28905	R5.0	10.0	10	15	30	100	9.7
G8A28120	R6.0	12.0	12	14	25	80	11.7

Due to the characteristics of the blue decoration layer, it might be erased during short-term use and the color layer may become non-uniform. However, this doesn't affect the performance of the tool.

Size	Radius Tolerance (mm)	Mill Dia. Tolerance (mm)	Shank Dia. Tolerance
up to R3	± 0.005	0 ~ - 0.012	h5
over R3	± 0.010	0 ~ - 0.015	

ISO Material Description	P											M				K								
	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	12	13	14	15	16	17	18	19	20				
HRc	13	25	28	32	30	29	32	38	30	35	35	15	23	10	10	26	3	25	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						○						○				○								

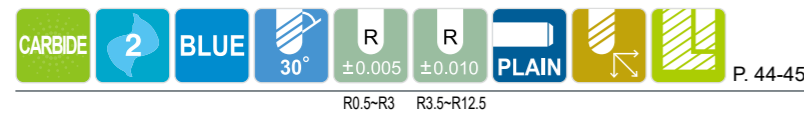
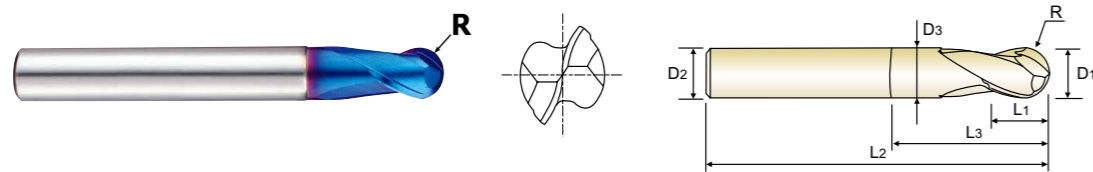
ISO Material Description	N					S						H									
	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials			Heat Resistant Super Alloys			Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron		
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc	21	22	23	24	25	26	27	28	29	30	31	32	25	38	34	36	37	55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommend						○						◎			◎	○	◎				

BLUE-COATED SOLID CARBIDE END MILLS

2 FLUTE STUB LENGTH BALL NOSE with EXTENDED NECK

PLAIN SHANK **G8A38** SERIES

- ▶ Designed to machine high hardened materials.
- ▶ Suitable for dry cutting and high speed cutting thanks to the newly-developed raw material and new coating
- ▶ Excellent workpiece finish.
- ▶ Designed for high precision milling operation.
- ▶ Higher wear-resistance.



EDP No.	Radius of Ball Nose	Mill Diameter	Shank Diameter	Length of Cut	Length Below Shank	Overall Length	Neck Diameter
	R	D1	D2	L1	L3	L2	D3
G8A38010	R0.5	1.0	4	1	2.2	50	0.95
G8A38012	R0.6	1.2	4	1.2	2.6	50	1.15
G8A38015	R0.75	1.5	4	1.5	3	50	1.45
G8A380204S	R1.0	2.0	4	2	4	50	1.95
G8A38020	R1.0	2.0	6	2	4	50	1.95
G8A38030	R1.5	3.0	6	3	6	60	2.85
G8A38040	R2.0	4.0	6	4	8	70	3.85
G8A38050	R2.5	5.0	6	5	10	80	4.85
G8A38060	R3.0	6.0	6	6	12	90	5.85
G8A38070	R3.5	7.0	8	7	14	90	6.7
G8A38080	R4.0	8.0	8	8	16	100	7.7
G8A38090	R4.5	9.0	10	9	18	100	8.7
G8A38100	R5.0	10.0	10	10	20	100	9.7
G8A38120	R6.0	12.0	12	12	24	110	11.7
G8A38140	R7.0	14.0	14	14	28	110	13.7
G8A38160	R8.0	16.0	16	16	32	140	15.7
G8A38180	R9.0	18.0	18	18	36	140	17.7
G8A38200	R10.0	20.0	20	20	40	160	19.7
G8A38250	R12.5	25.0	25	25	50	180	24.7

Unit : mm

Due to the characteristics of the blue decoration layer, it might be erased during short-term use and the color layer may become non-uniform. However, this doesn't affect the performance of the tool.

Size	Radius Tolerance (mm)	Mill Dia. Tolerance (mm)	Shank Dia. Tolerance
up to R3	± 0.005	0 ~ - 0.012	h5
over R3	± 0.010	0 ~ - 0.015	

◎ : Excellent ○ : Good

ISO Material Description	P										M				K						
	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	12	13	14	15	16	17	18	19	20	
HRc	13	25	28	32	38	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110	
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230	
Recommend	○					○					○				○						

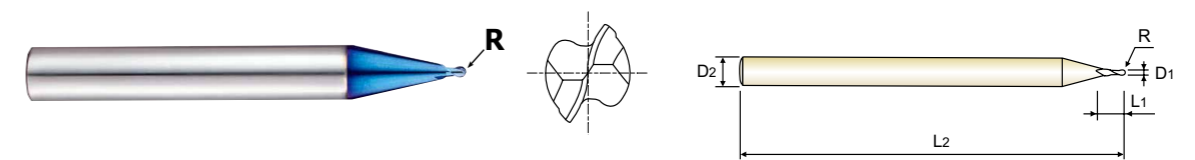
ISO Material Description	N										S					H					
	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)					Non Metallic Materials		Heat Resistant Super Alloys			Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron	
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommend	○										○					○			○	○	○

BLUE-COATED SOLID CARBIDE END MILLS

2 FLUTE MINIATURE BALL NOSE

PLAIN SHANK **G8A53** SERIES

- ▶ Applied center match type & special new design on ball center shape.
- ▶ Excellent high wear resistance and high performance.
- ▶ Applied for high speed and feed.
- ▶ Increased surface roughness.



EDP No.	Radius of Ball Nose	Mill Diameter	Shank Diameter	Length of Cut	Overall Length
	R (±0.005)	D1	D2	L1	L2
G8A53004	R0.2	0.4	6	0.4	50
G8A53005	R0.25	0.5	6	0.5	50
G8A53006	R0.3	0.6	6	0.6	50
G8A53008	R0.4	0.8	6	0.8	50
G8A53010	R0.5	1.0	6	1.0	50
G8A53012	R0.6	1.2	6	1.2	50
G8A53015	R0.75	1.5	6	1.5	50
G8A53020	R1.0	2.0	6	2.0	50

Unit : mm

Due to the characteristics of the blue decoration layer, it might be erased during short-term use and the color layer may become non-uniform. However, this doesn't affect the performance of the tool.

Mill Dia. Tolerance (mm)	Shank Dia. Tolerance
0 ~ - 0.012	h5

◎ : Excellent ○ : Good

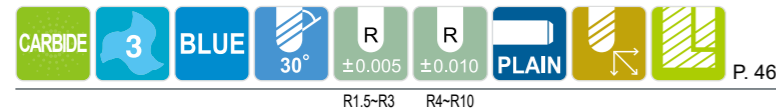
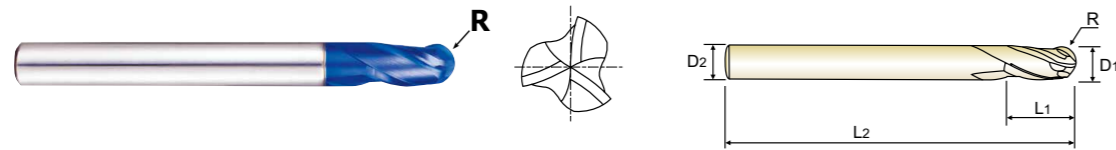
ISO Material Description	P										M				K						
	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel				Stainless steel		Grey cast iron		Nodular cast iron		Malleable cast iron
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
HRc	13	25	28	32	38	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110	
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		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	39	40	41
HRc	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommend	○										○					○			○	○	○

BLUE-COATED SOLID CARBIDE END MILLS 3 FLUTE BALL NOSE - Center Match

PLAIN SHANK **G8A59** SERIES

- ▶ Designed to machine high hardened materials.
- ▶ Suitable for dry cutting and high speed cutting thanks to the newly-developed raw material and new coating
- ▶ Excellent workpiece finish.
- ▶ Designed for high precision milling operation.
- ▶ Higher wear-resistance.



EDP No.	Radius of Ball Nose	Mill Diameter	Shank Diameter	Length of Cut	Overall Length
	R	D1	D2	L1	L2
G8A59030	R1.5	3.0	6	8	60
G8A59040	R2.0	4.0	6	8	70
G8A59050	R2.5	5.0	6	10	80
G8A59060	R3.0	6.0	6	12	90
G8A59080	R4.0	8.0	8	14	100
G8A59100	R5.0	10.0	10	18	100
G8A59120	R6.0	12.0	12	22	110
G8A59160	R8.0	16.0	16	30	140
G8A59200	R10.0	20.0	20	38	160

Unit : mm

Due to the characteristics of the blue decoration layer, it might be erased during short-term use and the color layer may become non-uniform. However, this doesn't affect the performance of the tool.

Size	Radius Tolerance (mm)	Mill Dia. Tolerance (mm)	Shank Dia. Tolerance
up to R3	± 0.005	0 ~ - 0.012	h5
over R3	± 0.010	0 ~ - 0.015	

◎ : Excellent ○ : Good

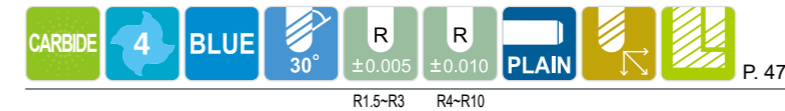
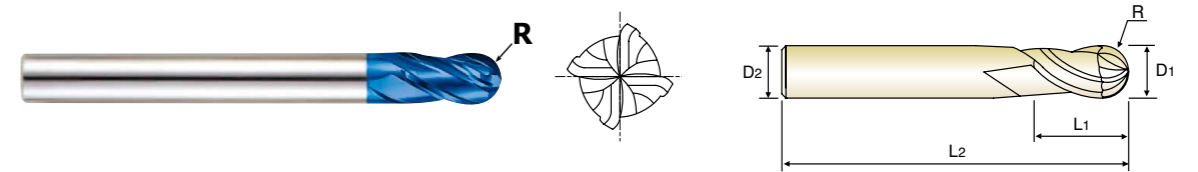
ISO Material Description	P										M			K						
	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel		Stainless steel			Grey cast iron	Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRC	13	25	28	32	30	29	32	38	35	15	15	23	10	10	26	3	25			
HB	125	190	250	270	300	180	275	300	350	200	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		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	39	40	41
HRC											15	30	25	38	34	36	37	55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommend	○				○						○		○	○	○	○	○	○	○	○	○

BLUE-COATED SOLID CARBIDE END MILLS 4 FLUTE BALL NOSE - Center Match

PLAIN SHANK **G8D62** SERIES

- ▶ Applied center match type & special new design on ball center shape.
- ▶ Excellent high wear resistance and high performance.
- ▶ Applied for high speed and feed.
- ▶ Increased surface roughness.



EDP No.	Radius of Ball Nose	Mill Diameter	Shank Diameter	Length of Cut	Overall Length
	R	D1	D2	L1	L2
G8D62030	R1.5	3.0	6	8	60
G8D62040	R2.0	4.0	6	8	70
G8D62050	R2.5	5.0	6	10	80
G8D62060	R3.0	6.0	6	12	90
G8D62080	R4.0	8.0	8	14	100
G8D62100	R5.0	10.0	10	18	100
G8D62120	R6.0	12.0	12	22	110
G8D62160	R8.0	16.0	16	30	140
G8D62200	R10.0	20.0	20	38	160

Unit : mm

Due to the characteristics of the blue decoration layer, it might be erased during short-term use and the color layer may become non-uniform. However, this doesn't affect the performance of the tool.

Size	Radius Tolerance (mm)	Mill Dia. Tolerance (mm)	Shank Dia. Tolerance
up to R3	± 0.005	0 ~ - 0.012	h5
over R3	± 0.010	0 ~ - 0.015	

◎ : Excellent ○ : Good

ISO Material Description	P										M			K						
	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	12	13	14	15	16	17	18	19	20
HRC	13	25	28	32	30	29	32	38	35	15	15	23	10	10	26	3	25			
HB	125	190	250	270	300	180	275	300	350	200	200	240	180	180	260	160	250	130	230	
Recommend	○										○	○			○	○		○		

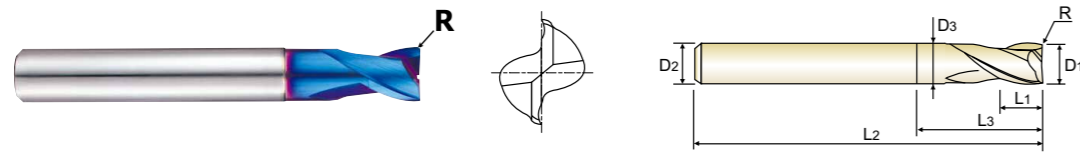
ISO Material Description	N				S						H										
	Aluminum-wrought alloy		Aluminum-cast, alloyed		Copper and Copper Alloys (Bronze / Brass)		Non Metallic Materials		Heat Resistant Super Alloys			Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron					
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRC											15	30	25	38	34	36	37	55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommend	○				○						○		○	○	○	○	○	○	○	○	○

BLUE-COATED SOLID CARBIDE END MILLS

2 FLUTE STUB LENGTH CORNER RADIUS with EXTENDED NECK

PLAIN SHANK **G8A36** SERIES

- ▶ Designed to machine high hardened materials.
- ▶ Suitable for dry cutting and high speed cutting thanks to the newly-developed raw material and new coating
- ▶ Excellent workpiece finish.
- ▶ Deep slotting is possible due to the reduced neck.
- ▶ Corner radius for preventing chipping in high speed machining.
- ▶ Higher wear-resistance.



CARBIDE 2 BLUE 30° ±0.010 ±0.015 PLAIN P. 55-57

EDP No.	Corner Radius	Mill Diameter	Shank Diameter	Length of Cut	Length Below Shank	Overall Length	Neck Diameter
	R	D1	D2	L1	L3	L2	D3
G8A36040	R0.1	4.0	6	5	9	45	3.85
G8A36045	R0.1	4.5	6	6	10	45	4.35
G8A36050	R0.2	5.0	6	6	11	50	4.85
G8A36060	R0.2	6.0	6	7	14	50	5.85
G8A36080	R0.2	8.0	8	9	18	60	7.7
G8A36100	R0.2	10.0	10	12	25	75	9.7
G8A36120	R0.3	12.0	12	15	30	75	11.7
G8A36160	R0.3	16.0	16	18	38	90	15.7
G8A36200	R0.3	20.0	20	24	45	100	19.7

Due to the characteristics of the blue decoration layer, it might be erased during short-term use and the color layer may become non-uniform. However, this doesn't affect the performance of the tool.

Size	Corner Radius Tolerance (mm)	Mill Dia. Tolerance (mm)	Shank Dia. Tolerance
up to Ø6	± 0.010	0 ~ - 0.012	h5
over Ø6	± 0.015	0 ~ - 0.015	

◎ : Excellent ○ : Good

ISO Material Description	P										M				K					
	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	12	13	14	15	16	17	18	19	20
HRc	13	25	28	32	30	29	32	38	35	32	15	23	10	10	26	3	25	21	21	21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommend	○					○					○				○					

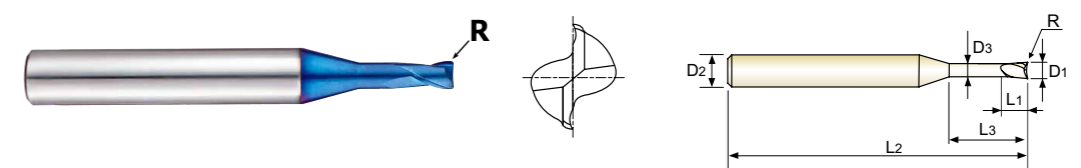
ISO Material Description	N					S					H										
	Aluminum-wrought alloy		Aluminum-cast, alloyed		Copper and Copper Alloys (Bronze / Brass)	Non Metallic Materials		Heat Resistant Super Alloys			Titanium Alloys		Hardened steel		Chilled Cast Iron	Hardened Cast Iron					
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommend	○					○					◎					○	◎				

BLUE-COATED SOLID CARBIDE END MILLS

2 FLUTE CORNER RADIUS for RIB PROCESSING

PLAIN SHANK **G8A52** SERIES

- ▶ Designed to machine high hardened materials.
- ▶ Suitable for dry cutting and high speed cutting thanks to the newly-developed raw material and new coating
- ▶ Excellent workpiece finish.
- ▶ Deep slotting is possible due to the reduced neck.
- ▶ Corner radius for preventing chipping in high speed machining.
- ▶ Higher wear-resistance.



CARBIDE 2 BLUE 30° ±0.010 PLAIN P. 50

EDP No.	Corner Radius	Mill Diameter	Shank Diameter	Length of Cut	Length Below Shank	Overall Length	Neck Diameter
	R (±0.010)	D1	D2	L1	L3	L2	D3
G8A52005	R0.05	0.5	6	0.7	1.5	50	0.45
G8A52901	R0.05	0.5	6	0.7	3.3	50	0.45
G8A52006	R0.05	0.6	6	0.9	2	50	0.55
G8A52902	R0.05	0.6	6	0.9	4	50	0.55
G8A52008	R0.05	0.8	6	1.2	2.5	50	0.75
G8A52903	R0.05	0.8	6	1.2	5.5	50	0.75
G8A52010	R0.10	1.0	6	1.5	3.3	50	0.95
G8A52904	R0.10	1.0	6	1.5	6.7	50	0.95
G8A52012	R0.10	1.2	6	1.8	4.4	50	1.15
G8A52905	R0.10	1.2	6	1.8	8	50	1.15
G8A52015	R0.15	1.5	6	2.2	5	50	1.45
G8A52906	R0.15	1.5	6	2.2	9.7	50	1.45
G8A52020	R0.15	2.0	6	2.2	6	50	1.95
G8A52907	R0.15	2.0	6	2.2	13	50	1.95

Due to the characteristics of the blue decoration layer, it might be erased during short-term use and the color layer may become non-uniform. However, this doesn't affect the performance of the tool.

Mill Dia. Tolerance (mm)	Shank Dia. Tolerance
0 ~ - 0.012	h5

◎ : Excellent ○ : Good

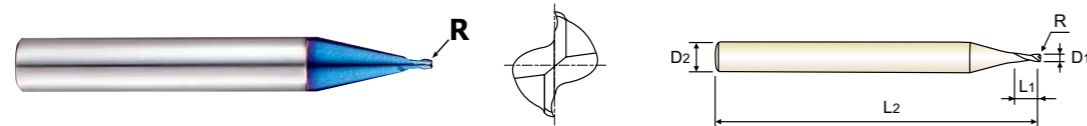
ISO Material Description	P										M				K					
	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel		Stainless steel		Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc	13	25	28	32	30	29	32	38	35	32	15	23	10	10	26	3	25	21	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 Material Description	N					S					H										
	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	39	40	41
HRc	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommend	○					○					◎					○	◎				

BLUE-COATED SOLID CARBIDE END MILLS 2 FLUTE MINIATURE CORNER RADIUS

PLAIN SHANK **G8A50** SERIES

- ▶ Designed to machine high hardened materials.
- ▶ Suitable for dry cutting and high speed cutting thanks to the newly-developed raw material and new coating
- ▶ Excellent workpiece finish.
- ▶ Deep slotting is possible due to the reduced neck.
- ▶ Corner radius for preventing chipping in high speed machining.
- ▶ Higher wear-resistance.



EDP No.	Corner Radius	Mill Diameter	Shank Diameter	Length of Cut	Overall Length
	R	D1	D2	L1	L2
G8A50003	-	0.3	6	0.45	50
G8A50004	-	0.4	6	0.6	50
G8A50005	R0.05	0.5	6	0.7	50
G8A50006	R0.05	0.6	6	0.9	50
G8A50008	R0.05	0.8	6	1.2	50
G8A50010	R0.10	1.0	6	1.5	50
G8A50012	R0.10	1.2	6	1.8	50
G8A50015	R0.15	1.5	6	2.2	50
G8A50020	R0.15	2.0	6	2.2	50

Due to the characteristics of the blue decoration layer, it might be erased during short-term use and the color layer may become non-uniform. However, this doesn't affect the performance of the tool.

Mill Dia. Tolerance (mm)	Shank Dia. Tolerance
0 ~ - 0.012	h5

◎ : Excellent ○ : Good

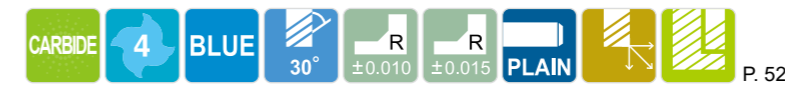
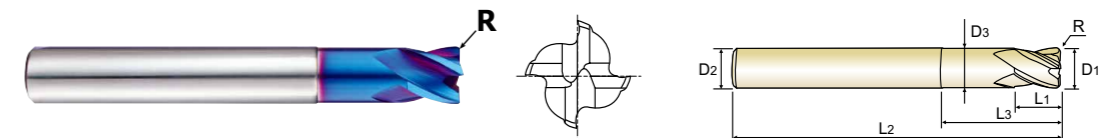
ISO Material Description	P										M				K					
	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel		Stainless steel		Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc	13	25	28	32	30	29	32	38	35	15	15	23	10	10	26	3	25	21		
HB	125	190	250	270	300	180	275	300	350	200	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		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	39	40	41
HRc	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommend	○					○					◎			◎	○	◎					

BLUE-COATED SOLID CARBIDE END MILLS 4 FLUTE CORNER RADIUS with EXTENDED NECK

PLAIN SHANK **G8A47** SERIES

- ▶ Designed to machine high hardened materials.
- ▶ Suitable for dry cutting and high speed cutting thanks to the newly-developed raw material and new coating
- ▶ Excellent workpiece finish.
- ▶ Deep slotting is possible due to the reduced neck.
- ▶ Corner radius for preventing chipping in high speed machining.
- ▶ Higher wear-resistance.



Unit : mm

EDP No.	Corner Radius	Mill Diameter	Shank Diameter	Length of Cut	Length Below Shank	Overall Length	Neck Diameter
	R (±0.010)	D1	D2	L1	L3	L2	D3
G8A47916	R0.3	3.0	6	4	12	55	2.85
G8A47917	R0.3	3.0	6	4	16	55	2.85
G8A47918	R0.3	3.0	6	4	20	55	2.85
G8A47030	R0.5	3.0	6	4	10	55	2.85
G8A47901	R0.5	3.0	6	4	16	55	2.85
G8A47902	R0.5	3.0	6	4	20	55	2.85
G8A47919	R0.3	4.0	6	5	12	55	3.85
G8A47920	R0.3	4.0	6	5	16	55	3.85
G8A47921	R0.3	4.0	6	5	20	55	3.85
G8A47040	R0.5	4.0	6	5	12	55	3.85
G8A47903	R0.5	4.0	6	5	16	55	3.85
G8A47904	R0.5	4.0	6	5	20	55	3.85
G8A47922	R1.0	4.0	6	5	12	55	3.85
G8A47060	R0.5	6.0	6	7	20	60	5.85
G8A47905	R1.0	6.0	6	7	20	60	5.85
G8A47906	R1.5	6.0	6	7	20	60	5.85
G8A47910	R0.5	8.0	8	9	25	60	7.7
G8A47080	R1.0	8.0	8	9	25	60	7.7
G8A47907	R1.5	8.0	8	9	25	60	7.7
G8A47913	R2.0	8.0	8	9	25	60	7.7
G8A47911	R0.5	10.0	10	11	32	70	9.7
G8A47100	R1.0	10.0	10	11	32	70	9.7
G8A47908	R1.5	10.0	10	11	32	70	9.7
G8A47914	R2.0	10.0	10	11	32	70	9.7
G8A47912	R0.5	12.0	12	12	38	80	11.7
G8A47120	R1.0	12.0	12	12	38	80	11.7
G8A47909	R1.5	12.0	12	12	38	80	11.7
G8A47915	R2.0	12.0	12	12	38	80	11.7

Size	Corner Radius Tolerance (mm)	Mill Dia. Tolerance (mm)	Shank Dia. Tolerance
up to Ø6	± 0.010	0 ~ - 0.012	h5
over Ø6	± 0.015	0 ~ - 0.015	

Due to the characteristics of the blue decoration layer, it might be erased during short-term use and the color layer may become non-uniform. However, this doesn't affect the performance of the tool.

◎ : Excellent ○ : Good

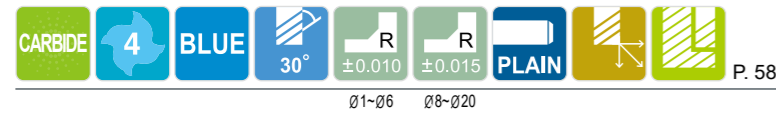
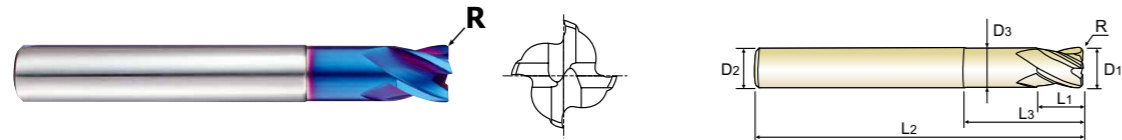
ISO Material Description	P										M				K					
	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel		Stainless steel		Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc	13	25	28	32	30	29	32	38	35	15	15	23	10	10	26	3	25	21		
HB	125	190	250	270	300	180	275	300	350	200	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		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	39	40	41
HRc	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommend	○					○					◎			◎	○	◎					

BLUE-COATED SOLID CARBIDE END MILLS

4 FLUTE STUB LENGTH CORNER RADIUS with EXTENDED NECK PLAIN SHANK **G8A37** SERIES

- ▶ Designed to machine high hardened materials.
- ▶ Suitable for dry cutting and high speed cutting thanks to the newly-developed raw material and new coating
- ▶ Excellent workpiece finish.
- ▶ Deep slotting is possible due to the reduced neck.
- ▶ Corner radius for preventing chipping in high speed machining.
- ▶ Higher wear-resistance.



EDP No.	Corner Radius	Mill Diameter	Shank Diameter	Length of Cut	Length Below Shank	Overall Length	Neck Diameter
	R (±0.010)	D1	D2	L1	L3	L2	D3
G8A37010	R0.1	1.0	3	1.5	-	40	-
G8A37901	R0.1	1.0	6	1.5	-	40	-
G8A37015	R0.1	1.5	3	2.2	-	40	-
G8A37902	R0.1	1.5	6	2.2	-	40	-
G8A37020	R0.1	2.0	3	3	6	40	1.95
G8A37903	R0.1	2.0	6	3	6	40	1.95
G8A37025	R0.1	2.5	3	4	6	40	2.4
G8A37904	R0.1	2.5	6	4	6	40	2.4
G8A37030	R0.1	3.0	6	4	7	45	2.85
G8A37035	R0.1	3.5	6	5	9	45	3.35
G8A37040	R0.1	4.0	6	5	9	45	3.85
G8A37045	R0.1	4.5	6	6	10	45	4.35
G8A37050	R0.2	5.0	6	6	11	50	4.85
G8A37060	R0.2	6.0	6	7	14	50	5.85
G8A37080	R0.2	8.0	8	9	18	60	7.7
G8A37100	R0.2	10.0	10	12	25	75	9.7
G8A37120	R0.3	12.0	12	15	30	75	11.7
G8A37160	R0.3	16.0	16	18	38	90	15.7
G8A37200	R0.3	20.0	20	24	45	100	19.7

Due to the characteristics of the blue decoration layer, it might be erased during short-term use and the color layer may become non-uniform. However, this doesn't affect the performance of the tool.

Size	Corner Radius Tolerance (mm)	Mill Dia. Tolerance (mm)	Shank Dia. Tolerance
up to Ø6	± 0.010	0 ~ - 0.012	h5
over Ø6	± 0.015	0 ~ - 0.015	

◎ : Excellent ○ : Good

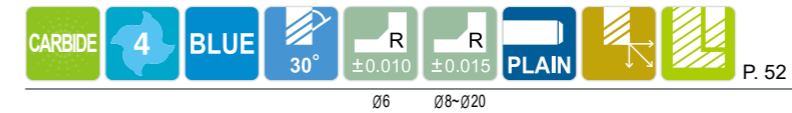
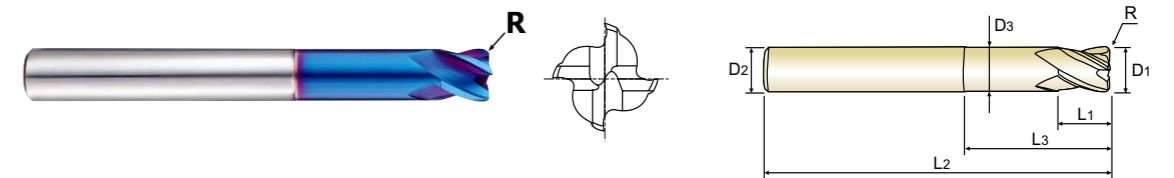
ISO Material Description	P										M				K					
	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel		Stainless steel		Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRC	13	25	28	32	10	29	32	38	15	15	23	10	26	3	25	3	25	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		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	39	40	41
HRC	15	30	25	38	34	15	30	25	38	34	36	37	55	60	42	55	55	60	42	55	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommend	○								○				◎				◎				

BLUE-COATED SOLID CARBIDE END MILLS

4 FLUTE CORNER RADIUS with EXTENDED NECK PLAIN SHANK **G8B08** SERIES

- ▶ Designed to machine high hardened materials.
- ▶ Suitable for dry cutting and high speed cutting thanks to the newly-developed raw material and new coating
- ▶ Excellent workpiece finish.
- ▶ Deep slotting is possible due to the reduced neck.
- ▶ Corner radius for preventing chipping in high speed machining.
- ▶ Higher wear-resistance.



EDP No.	Corner Radius	Mill Diameter	Shank Diameter	Length of Cut	Length Below Shank	Overall Length	Neck Diameter
	R (±0.010)	D1	D2	L1	L3	L2	D3
G8B0806005090	R0.5	6.0	6	9	20	90	5.85
G8B0806010090	R1.0	6.0	6	9	20	90	5.85
G8B0808005100	R0.5	8.0	8	12	25	100	7.7
G8B0808010100	R1.0	8.0	8	12	25	100	7.7
G8B0810005100	R0.5	10.0	10	15	32	100	9.7
G8B0810010100	R1.0	10.0	10	15	32	100	9.7
G8B0810020100	R2.0	10.0	10	15	32	100	9.7
G8B0812005110	R0.5	12.0	12	18	38	110	11.7
G8B0812010110	R1.0	12.0	12	18	38	110	11.7
G8B0812020110	R2.0	12.0	12	18	38	110	11.7

Due to the characteristics of the blue decoration layer, it might be erased during short-term use and the color layer may become non-uniform. However, this doesn't affect the performance of the tool.

Size	Corner Radius Tolerance (mm)	Mill Dia. Tolerance (mm)	Shank Dia. Tolerance
up to Ø6	± 0.010	0 ~ - 0.012	h5
over Ø6	± 0.015	0 ~ - 0.015	

◎ : Excellent ○ : Good

ISO Material Description	P										M				K					
	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	12	13	14	15	16	17	18	19	20
HRC	13	25	28	32	10	29	32	38	15	15	23	10	26	3	25	3	25	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	○					○					○		○		○		○		○	

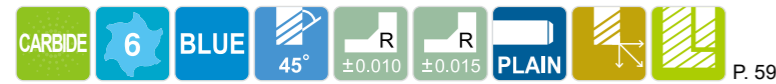
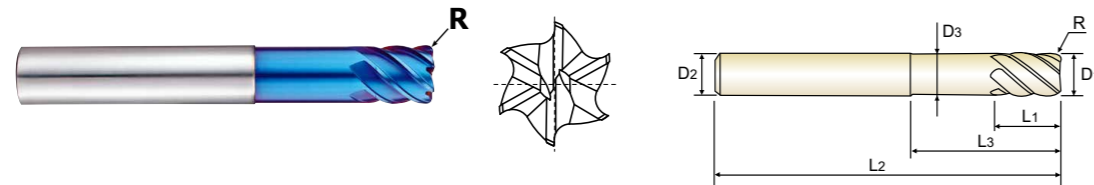
ISO Material Description	N								S				H								
	Aluminum-wrought alloy		Aluminum-cast, alloyed		Copper and Copper Alloys (Bronze / Brass)		Non Metallic Materials		Heat Resistant Super Alloys		Titanium Alloys		Hardened steel		Chilled Cast Iron		Hardened Cast Iron				
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRC	15	30	25	38	34	15	30	25	38	34	36	37	55	60	42	55	55	60	42	55	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommend	○								○				◎				◎				

BLUE-COATED SOLID CARBIDE END MILLS

6 FLUTE 45° HELIX CORNER RADIUS with EXTENDED NECK

PLAIN SHANK **G8A39** SERIES

- ▶ Designed to machine high hardened materials.
- ▶ Suitable for dry cutting and high speed cutting thanks to the newly-developed raw material and new coating
- ▶ Excellent workpiece finish.
- ▶ Deep slotting is possible due to the reduced neck.
- ▶ Corner radius for preventing chipping in high speed machining.
- ▶ Higher wear-resistance.



P. 59

EDP No.	Corner Radius	Mill Diameter	Shank Diameter	Length of Cut	Length Below Shank	Overall Length	Neck Diameter
	R (±0.010)	D1	D2	L1	L3	L2	D3
G8A39916	R0.25	6.0	6	6	14	50	5.85
G8A39060	R0.5	6.0	6	6	14	50	5.85
G8A39901	R0.5	6.0	6	13	-	70	-
* G8A39910	R0.5	6.0	6	26	-	70	-
G8A39080	R0.5	8.0	8	8	24	60	7.7
G8A39902	R0.5	8.0	8	19	-	90	-
* G8A39911	R0.5	8.0	8	36	-	90	-
G8A39903	R0.5	10.0	10	22	-	100	-
G8A39100	R1.0	10.0	10	10	30	70	9.7
G8A39904	R1.0	10.0	10	22	-	100	-
* G8A39912	R1.0	10.0	10	46	-	100	-
G8A39905	R0.5	12.0	12	26	-	110	-
G8A39120	R1.0	12.0	12	12	30	75	11.7
G8A39906	R1.0	12.0	12	26	-	110	-
* G8A39913	R1.0	12.0	12	56	-	110	-
G8A39160	R1.0	16.0	16	32	-	130	-
G8A39907	R1.5	16.0	16	32	-	130	-
* G8A39914	R1.5	16.0	16	66	-	130	-
G8A39200	R1.0	20.0	20	38	-	140	-
G8A39908	R1.5	20.0	20	38	-	140	-
G8A39909	R2.0	20.0	20	38	-	140	-
* G8A39915	R2.0	20.0	20	76	-	140	-

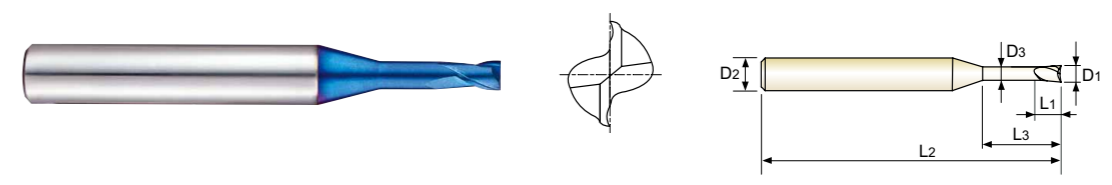
Unit : mm

BLUE-COATED SOLID CARBIDE END MILLS

2 FLUTE for RIB PROCESSING

PLAIN SHANK **G8A45** SERIES

- ▶ Designed to machine high hardened materials.
- ▶ Suitable for dry cutting and high speed cutting thanks to the newly-developed raw material and new coating
- ▶ Excellent workpiece finish.
- ▶ Deep slotting is possible due to the reduced neck.
- ▶ Corner radius for preventing chipping in high speed machining.
- ▶ Higher wear-resistance.



P. 53-54

EDP No.	Mill Diameter	Shank Diameter	Length of Cut	Length Below Shank	Overall Length	Neck Diameter
	D1	D2	L1	L3	L2	D3
G8A45863	0.1	4	0.15	0.3	45	0.085
G8A45864	0.1	4	0.15	0.5	45	0.085
G8A45002	0.2	4	0.3	0.5	45	0.17
G8A45815	0.2	4	0.3	1	45	0.17
G8A45816	0.2	4	0.3	1.5	45	0.17
G8A45003	0.3	4	0.45	1	45	0.27
G8A45844	0.3	4	0.45	1.5	45	0.27
G8A45817	0.3	4	0.45	2	45	0.27
G8A45818	0.3	4	0.45	3	45	0.27
G8A45842	0.3	4	0.45	4	45	0.27
G8A45843	0.4	4	0.6	1	45	0.37
G8A45004	0.4	4	0.6	2	45	0.37
G8A45984	0.4	4	0.6	3	45	0.37
G8A45985	0.4	4	0.6	4	45	0.37
G8A45986	0.4	4	0.6	5	45	0.37
G8A45005	0.5	4	0.7	2	45	0.45
G8A45861	0.5	4	0.7	2.5	45	0.45
G8A45988	0.5	4	0.7	4	45	0.45
G8A45989	0.5	4	0.7	6	45	0.45
G8A45990	0.5	4	0.7	8	45	0.45
G8A45006	0.6	4	0.9	2	45	0.55
G8A45860	0.6	4	0.9	3	45	0.55

Unit : mm

Due to the characteristics of the blue decoration layer, it might be erased during short-term use and the color layer may become non-uniform. However, this doesn't affect the performance of the tool.

Due to the characteristics of the blue decoration layer, it might be erased during short-term use and the color layer may become non-uniform. However, this doesn't affect the performance of the tool.

▶ NEXT PAGE

Size	Corner Radius Tolerance (mm)	Mill Dia. Tolerance (mm)	Shank Dia. Tolerance
up to Ø6	± 0.010	0 ~ - 0.012	h5
over Ø6	± 0.015	0 ~ - 0.015	

* Mill Dia. Tolerance(mm) for Extra Long Type : 0~-0.03

◎ : Excellent ○ : Good

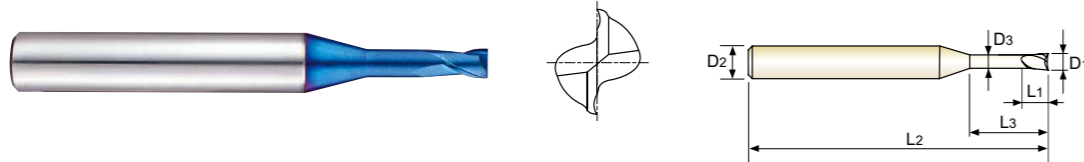
ISO	P										M				K						
	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel				Stainless steel		Grey cast iron		Nodular cast iron		Malleable cast iron
Material Description	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
HRc	13	25	28	32	35	38	40	42	45	48	50	52	54	56	58	60	62	64	66	68	
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		Heat Resistant Super Alloys			Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron		
Material Description	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	
HRc	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550	
Recommend	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

BLUE-COATED SOLID CARBIDE END MILLS 2 FLUTE for RIB PROCESSING

PLAIN SHANK **G8A45** SERIES

- ▶ Designed to machine high hardened materials.
- ▶ Suitable for dry cutting and high speed cutting thanks to the newly-developed raw material and new coating
- ▶ Excellent workpiece finish.
- ▶ Deep slotting is possible due to the reduced neck.
- ▶ Corner radius for preventing chipping in high speed machining.
- ▶ Higher wear-resistance.



P. 53-54

EDP No.	Mill Diameter	Shank Diameter	Length of Cut	Length Below Shank	Overall Length	Neck Diameter
	D1	D2	L1	L3	L2	D3
G8A45979	3.0	6	4.5	18	55	2.85
G8A45980	3.0	6	4.5	20	60	2.85
G8A45981	3.0	6	4.5	25	65	2.85
G8A45832	3.0	6	4.5	30	70	2.85
G8A45833	3.0	6	4.5	35	80	2.85
G8A45983	3.0	6	4.5	40	90	2.85
G8A45040	4.0	6	6	12	50	3.85
G8A45801	4.0	6	6	16	60	3.85
G8A45802	4.0	6	6	20	60	3.85
G8A45803	4.0	6	6	25	70	3.85
G8A45834	4.0	6	6	30	70	3.85
G8A45835	4.0	6	6	35	80	3.85
G8A45836	4.0	6	6	40	90	3.85
G8A45837	4.0	6	6	45	90	3.85
G8A45838	4.0	6	6	50	100	3.85

Unit : mm

Due to the characteristics of the blue decoration layer, it might be erased during short-term use and the color layer may become non-uniform. However, this doesn't affect the performance of the tool.

Mill Dia. Tolerance (mm)	Shank Dia. Tolerance
0 ~ - 0.012	h5

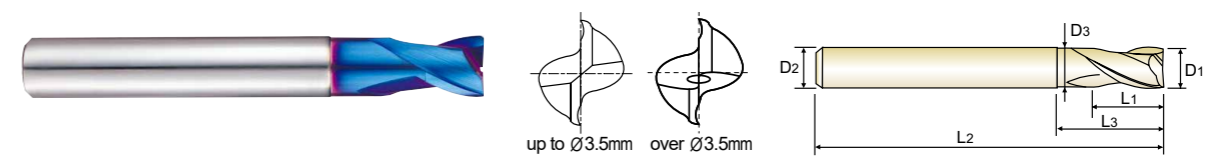
ISO Material Description	P										M					K																																		
	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel					Stainless steel					Grey cast iron					Nodular cast iron					Malleable cast iron																			
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	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									
HRC	13	13	25	28	32	10	29	32	38	10	11	15	23	10	10	26	3	25	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10							
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230	130	230	130	230	130	230	130	230	130	230	130	230	130	230	130	230	130	230	130	230	130	230	130	230	130	230				
Recommend					○				○	○																																								

◎ : Excellent ○ : Good

BLUE-COATED SOLID CARBIDE END MILLS 2 FLUTE with EXTENDED NECK

PLAIN SHANK **G8A01** SERIES

- ▶ Designed to machine high hardened materials.
- ▶ Suitable for dry cutting and high speed cutting thanks to the newly-developed raw material and new coating
- ▶ Excellent workpiece finish.
- ▶ Designed for high precision milling operation.
- ▶ Higher wear-resistance.



P. 55-57

EDP No.	Mill Diameter	Shank Diameter	Length of Cut	Length Below Shank	Overall Length	Neck Diameter
	D1	D2	L1	L3	L2	D3
G8A01001	0.1	4	0.2	-	40	-
G8A01002	0.2	4	0.4	-	40	-
G8A01003	0.3	4	0.6	-	40	-
G8A01004	0.4	4	0.8	-	40	-
G8A01005	0.5	4	1	-	40	-
G8A01006	0.6	4	1.2	-	40	-
G8A01007	0.7	4	1.4	-	40	-
G8A01008	0.8	4	1.6	-	40	-
G8A01009	0.9	4	2	-	40	-
G8A010104S	1.0	4	1.5	3	50	0.95
G8A01010	1.0	6	1.5	3	50	0.95
G8A010154S	1.5	4	1.7	4	50	1.45
G8A01015	1.5	6	1.7	4	50	1.45
G8A010204S	2.0	4	2	5	50	1.95
G8A01020	2.0	6	2	5	50	1.95
G8A010254S	2.5	4	2.5	6	55	2.4
G8A01025	2.5	6	2.5	6	55	2.4
G8A01030	3.0	6	3	8	55	2.85
G8A01035	3.5	6	3.5	9	55	3.35
G8A01040	4.0	6	4	10	55	3.85
G8A01050	5.0	6	5	13	55	4.85
G8A01060	6.0	6	6	15	55	5.85
G8A01080	8.0	8	8	20	65	7.7
G8A01100	10.0	10	10	25	75	9.7
G8A01120	12.0	12	12	28	85	11.7
G8A01160	16.0	16	16	32	90	15.7
G8A01200	20.0	20	20	40	105	19.7

Unit : mm

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

Due to the characteristics of the blue decoration layer, it might be erased during short-term use and the color layer may become non-uniform. However, this doesn't affect the performance of the tool.

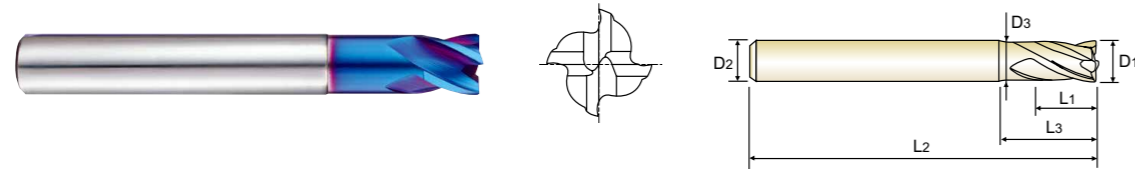
ISO Material Description	P										M					K																																			
	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel					Stainless steel					Grey cast iron					Nodular cast iron					Malleable cast iron																				
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	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										
HRC	13	13	25	28	32	10	29	32	38	10	11	15	23	10	10	26	3	25	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10				
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230	130	230	130	230	130	230	130	230	130	230	130	230	130	230	130	230	130	230	130	230	130	230	130	230	130	230	130	230			
Recommend					○				○	○																																									

◎ : Excellent ○ : Good

BLUE-COATED SOLID CARBIDE END MILLS 4 FLUTE with EXTENDED NECK

PLAIN SHANK **G8A02** SERIES

- ▶ Designed to machine high hardened materials.
- ▶ Suitable for dry cutting and high speed cutting thanks to the newly-developed raw material and new coating
- ▶ Excellent workpiece finish.
- ▶ Deep slotting is possible due to the reduced neck.
- ▶ Corner radius for preventing chipping in high speed machining.
- ▶ Higher wear-resistance.



P. 58

Unit : mm

EDP No.	Mill Diameter	Shank Diameter	Length of Cut	Length Below Shank	Overall Length	Neck Diameter
	D1	D2	L1	L3	L2	D3
G8A02010	1.0	6	1.5	3	50	0.95
G8A02020	2.0	6	2	5	50	1.95
G8A02030	3.0	6	3	8	55	2.85
G8A02040	4.0	6	4	10	55	3.85
G8A02050	5.0	6	5	13	55	4.85
G8A02060	6.0	6	6	15	55	5.85
G8A02080	8.0	8	8	20	65	7.7
G8A02100	10.0	10	10	25	75	9.7
G8A02120	12.0	12	12	28	85	11.7
G8A02160	16.0	16	16	32	90	15.7
G8A02200	20.0	20	20	40	105	19.7

Due to the characteristics of the blue decoration layer, it might be erased during short-term use and the color layer may become non-uniform. However, this doesn't affect the performance of the tool.

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

◎ : Excellent ○ : Good

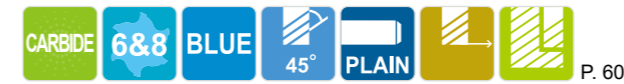
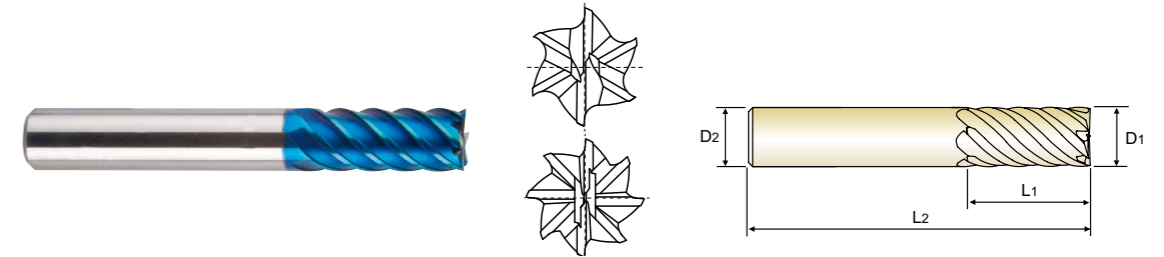
ISO Material Description	P										M				K										
	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel				Stainless steel		Grey cast iron		Nodular cast iron		Malleable cast iron				
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
HRC	13	25	28	32	30	10	29	32	38	10	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	130	230					
Recommend	○					○					○				○										

ISO Material Description	N										S					H									
	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	39	40	41	42	43	44	45
HRC	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550	400	550	400	550
Recommend	○		○			○			○		○					◎		◎		○		◎		◎	

BLUE-COATED SOLID CARBIDE END MILLS 6&8 FLUTE 45° HELIX LONG LENGTH

PLAIN SHANK **G8D63** SERIES

- ▶ Designed to machine high hardened materials.
- ▶ Designed for high abrasion resistance thanks to negative rake angle.
- ▶ Excellent side-cutting of press mold field.



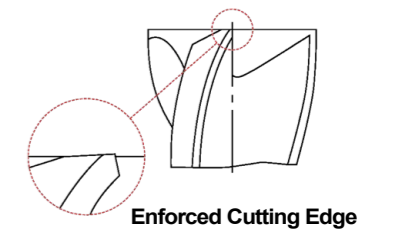
P. 60

Unit : mm

EDP No.	Mill Diameter	Shank Diameter	Length of Cut	Overall Length	No. of Flute
	D1	D2	L1	L2	
G8D63060	6.0	6	13	57	6
G8D63080	8.0	8	19	63	6
G8D63100	10.0	10	22	72	6
G8D63120	12.0	12	26	83	6
G8D63140	14.0	14	26	83	6
G8D63160	16.0	16	32	92	6
G8D63180	18.0	18	32	92	8
G8D63200	20.0	20	38	104	8
G8D63250	25.0	25	44	104	8

Due to the characteristics of the blue decoration layer, it might be erased during short-term use and the color layer may become non-uniform. However, this doesn't affect the performance of the tool.

Mill Dia. Tolerance (mm)	Shank Dia. Tolerance
0 ~ - 0.02	h5



◎ : Excellent ○ : Good

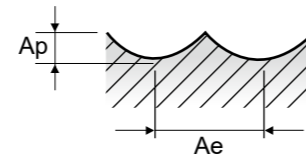
ISO Material Description	P										M				K										
	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel				Stainless steel		Grey cast iron		Nodular cast iron		Malleable cast iron				
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
HRC	13	25	28	32	30	10	29	32	38	10	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	130	230					
Recommend	○					○					○				○										

ISO Material Description	N										S					H									
	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	39	40	41	42	43	44	45
HRC	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550	400	550	400	550
Recommend	○		○			○			○		○					◎		◎		○		◎		◎	

G8A59 SERIES 3 FLUTE BALL NOSE

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

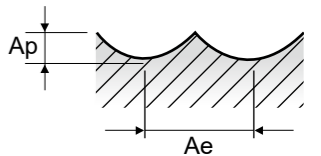
ISO	VDI 3323	Material Description	Ae	Ap	Parameter	Diameter (Ø)										
						3.0	4.0	5.0	6.0	8.0	10.0	12.0	16.0	20.0		
P	5	Non-alloy steel	0.05D	0.02D	Vc	300	305	315	340	340	340	340	335	340		
					fz	0.09	0.107	0.121	0.159	0.181	0.202	0.225	0.229	0.222		
					RPM	31831	24271	20054	18038	13528	10823	9019	6665	5411		
	8-9	Low alloy steel	0.05D	0.02D	Vc	300	305	315	340	340	340	340	335	340		
					fz	0.09	0.107	0.121	0.159	0.181	0.202	0.225	0.229	0.222		
					RPM	31831	24271	20054	18038	13528	10823	9019	6665	5411		
	11.1 - 11.2	High alloyed steel and tool steel	0.05D	0.02D	Vc	300	305	315	340	340	340	340	335	340		
					fz	0.09	0.107	0.121	0.159	0.181	0.202	0.225	0.229	0.222		
					RPM	31831	24271	20054	18038	13528	10823	9019	6665	5411		
H	38.1 - 38.2	Hardened steel	0.05D	0.02D	Vc	255	255	265	285	285	285	285	285	285		
					fz	0.072	0.09	0.108	0.136	0.155	0.168	0.187	0.19	0.192		
					RPM	27056	20292	16870	15120	11340	9072	7560	5670	4536		
	39.1		Hardened steel	0.05D	0.02D	Vc	185	185	195	230	230	230	230	230	230	
						fz	0.072	0.087	0.099	0.123	0.144	0.156	0.173	0.18	0.18	
						RPM	19629	14722	12414	12202	9151	7321	6101	4576	3661	
	39.2			Hardened steel	0.05D	0.02D	Vc	175	180	185	210	210	210	210	210	205
							fz	0.072	0.086	0.099	0.115	0.134	0.144	0.145	0.144	0.145
							RPM	18568	14324	11777	11141	8356	6685	5570	4178	3263
	39.3	Hardened steel			0.05D	0.02D	Vc	120	120	125	145	145	145	145	145	145
							fz	0.072	0.087	0.099	0.108	0.125	0.144	0.144	0.144	0.143
							RPM	12732	9549	7958	7692	5769	4615	3846	2885	2308
	40		Chilled Cast Iron		0.05D	0.02D	Vc	300	305	315	340	340	340	340	335	340
							fz	0.09	0.107	0.121	0.159	0.181	0.202	0.225	0.229	0.222
							RPM	31831	24271	20054	18038	13528	10823	9019	6665	5411
	41			Hardened Cast Iron	0.05D	0.02D	Vc	255	255	265	285	285	285	285	285	285
							fz	0.072	0.09	0.108	0.136	0.155	0.168	0.187	0.19	0.192
							RPM	27056	20292	16870	15120	11340	9072	7560	5670	4536



G8D62 SERIES 4 FLUTE BALL NOSE

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

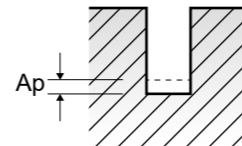
ISO	VDI 3323	Material Description	Ae	Ap	Parameter	Diameter (Ø)										
						3.0	4.0	5.0	6.0	8.0	10.0	12.0	16.0	20.0		
P	5	Non-alloy steel	0.05D	0.02D	Vc	340	340	340	340	340	340	340	340	340		
					fz	0.071	0.08	0.09	0.101	0.116	0.128	0.145	0.144	0.144		
					RPM	36075	27056	21645	18038	13528	10823	9019	6764	5411		
	8-9	Low alloy steel	0.05D	0.02D	Vc	340	340	340	340	340	340	340	340	340		
					fz	0.071	0.08	0.09	0.101	0.116	0.128	0.145	0.144	0.144		
					RPM	36075	27056	21645	18038	13528	10823	9019	6764	5411		
	11.1 - 11.2	High alloyed steel and tool steel	0.05D	0.02D	Vc	340	340	340	340	340	340	340	340	340		
					fz	0.071	0.08	0.09	0.101	0.116	0.128	0.145	0.144	0.144		
					RPM	36075	27056	21645	18038	13528	10823	9019	6764	5411		
H	38.1 - 38.2	Hardened steel	0.05D	0.02D	Vc	285	285	280	285	285	285	285	285	285		
					fz	0.06	0.07	0.081	0.092	0.103	0.111	0.125	0.129	0.126		
					RPM	30239	22680	17825	15120	11340	9072	7560	5670	4536		
	39.1		Hardened steel	0.05D	0.02D	Vc	230	230	230	230	230	230	230	230	230	
						fz	0.05	0.06	0.071	0.082	0.096	0.104	0.115	0.119	0.119	
						RPM	24404	18303	14642	12202	9151	7321	6101	4576	3661	
	39.2			Hardened steel	0.05D	0.02D	Vc	210	210	210	210	210	210	210	210	205
							fz	0.045	0.055	0.067	0.077	0.089	0.095	0.097	0.096	0.096
							RPM	22282	16711	13369	11141	8356	6685	5570	4178	3263
	39.3	Hardened steel			0.05D	0.02D	Vc	145	145	145	145	145	145	145	145	140
							fz	0.04	0.05	0.062	0.072	0.082	0.096	0.094	0.096	0.097
							RPM	15385	11539	9231	7692	5769	4615	3846	2885	2228
	40		Chilled Cast Iron		0.05D	0.02D	Vc	340	340	340	340	340	340	340	340	340
							fz	0.071	0.08	0.09	0.101	0.116	0.128	0.145	0.144	0.144
							RPM	36075	27056	21645	18038	13528	10823	9019	6764	5411
	41			Hardened Cast Iron	0.05D	0.02D	Vc	285	285	280	285	285	285	285	285	285
							fz	0.06	0.07	0.081	0.092	0.103	0.111	0.125	0.129	0.126
							RPM	30239	22680	17825	15120	11340	9072	7560	5670	4536



G8A45 SERIES 2 FLUTE for RIB PROCESSING - SLOTTING

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

ISO	VDI 3323	Material Description	Parameter	Diameter (Ø)						
				1.0	1.2	1.5	2.0	3.0	4.0	
P	5	Non-alloy steel	Vc	39~59	39~66	43~83	40~66	41~66	40~67	
			fz	0.014~0.014	0.017~0.017	0.024~0.024	0.027~0.027	0.064~0.064	0.063~0.064	
			RPM	12300~18700	10450~17600	9100~17600	6350~10550	4300~7050	3200~5300	
	8-9	Low alloy steel	Vc	39~59	39~66	43~83	40~66	41~66	40~67	
			fz	0.014~0.014	0.017~0.017	0.024~0.024	0.027~0.027	0.064~0.064	0.063~0.064	
			RPM	12300~18700	10450~17600	9100~17600	6350~10550	4300~7050	3200~5300	
	11.1 - 11.2	High alloyed steel, and tool steel	Vc	39~59	39~66	43~83	40~66	41~66	40~67	
			fz	0.014~0.014	0.017~0.017	0.024~0.024	0.027~0.027	0.064~0.064	0.063~0.064	
			RPM	12300~18700	10450~17600	9100~17600	6350~10550	4300~7050	3200~5300	
	H	38.1 - 38.2	Hardened steel	Vc	33~36	34~38	33~38	38~42	38~43	38~43
				fz	0.012~0.012	0.014~0.014	0.018~0.018	0.022~0.022	0.056~0.056	0.056~0.056
				RPM	10500~11500	9100~10000	7000~8000	6100~6700	3990~4600	3000~3400
39.1 - 39.2		Hardened steel	Vc	20~25	20~26	20~26	23~30	23~30	23~30	
			fz	0.008~0.007	0.009~0.008	0.012~0.01	0.014~0.013	0.022~0.048	0.021~0.048	
			RPM	6300~8050	5400~7000	4300~5500	3600~4700	2400~3200	1800~2400	
40		Chilled Cast Iron	Vc	39~59	39~66	43~83	40~66	41~66	40~67	
			fz	0.014~0.014	0.017~0.017	0.024~0.024	0.027~0.027	0.064~0.064	0.063~0.064	
			RPM	12300~18700	10450~17600	9100~17600	6350~10550	4300~7050	3200~5300	
41		Hardened Cast Iron	Vc	33~36	34~38	33~38	38~42	38~43	38~43	
			fz	0.012~0.012	0.014~0.014	0.018~0.018	0.022~0.022	0.056~0.056	0.056~0.056	
			RPM	10500~11500	9100~10000	7000~8000	6100~6700	3990~4600	3000~3400	

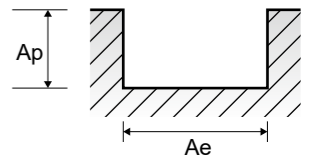


G8A01, G8A36 SERIES 2 FLUTE - SLOTTING

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

ISO	VDI 3323	Material Description	Ae	Ap	Parameter	Diameter (Ø)										
						0.2	0.3	0.4	0.5	0.6	0.8	0.9	1.0	2.0		
P	5	Non-alloy steel	1.0D	0.05D	Vc	30	45	65	80	95	125	140	150	210		
					fz	0.001	0.002	0.002	0.004	0.005	0.006	0.007	0.01	0.013		
					RPM	47746	47746	51725	50930	50399	49736	49515	47746	33423		
	8-9	Low alloy steel	1.0D	0.05D	Vc	30	45	65	80	95	125	140	150	210		
					fz	0.001	0.002	0.002	0.004	0.005	0.006	0.007	0.01	0.013		
					RPM	47746	47746	51725	50930	50399	49736	49515	47746	33423		
	11.1	High alloyed steel, and tool steel	1.0D	0.05D	Vc	30	45	65	80	95	125	140	150	210		
					fz	0.001	0.002	0.002	0.004	0.005	0.006	0.007	0.01	0.013		
					RPM	47746	47746	51725	50930	50399	49736	49515	47746	33423		
	11.2	High alloyed steel, and tool steel	1.0D	0.05D	Vc	30	40	55	70	85	100	110	120	165		
					fz	0.001	0.002	0.002	0.003	0.004	0.006	0.007	0.008	0.013		
					RPM	47746	42441	43768	44563	45094	39789	38905	38197	26261		
H	38.1	Hardened steel	1.0D	0.05D	Vc	30	40	55	70	85	100	110	120	165		
					fz	0.001	0.002	0.002	0.003	0.004	0.006	0.007	0.008	0.013		
					RPM	47746	42441	43768	44563	45094	39789	38905	38197	26261		
	38.2	Hardened steel	1.0D	0.05D	Vc	25	40	50	65	75	80	80	110			
					fz	0.001	0.001	0.002	0.003	0.004	0.005	0.006	0.007	0.012		
					RPM	39789	42441	39789	41380	39789	29842	28294	25465	17507		
	39.1	Hardened steel	1.0D	0.05D	Vc	20	30	40	50	55	65	65	90			
					fz	0.001	0.001	0.001	0.002	0.003	0.004	0.005	0.005	0.009		
					RPM	31831	31831	31831	31831	29178	25863	22989	20690	14324		
	39.2	Hardened steel	1.0D	0.05D	Vc	20	25	30	40	45	50	50	70			
					fz	0.001	0.001	0.001	0.002	0.002	0.003	0.004	0.004	0.007		
					RPM	31831	26526	23873	25465	23873	19894	17684	15915	11141		
39.3	Hardened steel	1.0D	0.02D	Vc	15	20	25	30	40	40	40	60				
				fz	0.001	0.001	0.001	0.002	0.002	0.003	0.003	0.003	0.006			
				RPM	23873	21221	19894	19099	21221	15915	14147	12732	9549			
40	Chilled Cast Iron	1.0D	0.05D	Vc	30	40	55	70	85	100	110	120	165			
				fz	0.001	0.002	0.002	0.003	0.004	0.006	0.007	0.008	0.013			
				RPM	47746	42441	43768	44563	45094	39789	38905	38197	26261			
41	Hardened Cast Iron	1.0D	0.05D	Vc	25	40	50	65	75	80	80	110				
				fz	0.001	0.001	0.002	0.003	0.004	0.005	0.006	0.007	0.012			
				RPM	39789	42441	39789	41380	39789	29842	28294	25465	17507			

▶ NEXT PAGE

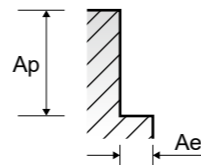


G8D63 SERIES

6&8 FLUTE LONG LENGTH - 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	5	Non-alloy steel	0.04D	1.5D	Vc	120	120	120	120	120	120	120	120	125
					fz	0.039	0.052	0.063	0.07	0.081	0.09	0.095	0.08	0.11
					RPM	6366	4775	3820	3183	2728	2387	2122	1910	1592
					FEED	1490	1490	1444	1337	1326	1289	1613	1222	1401
	8-9	Low alloy steel	0.04D	1.5D	Vc	120	120	120	120	120	120	120	120	125
					fz	0.039	0.052	0.063	0.07	0.081	0.09	0.095	0.08	0.11
					RPM	6366	4775	3820	3183	2728	2387	2122	1910	1592
					FEED	1490	1490	1444	1337	1326	1289	1613	1222	1401
	11.1	High alloyed steel, and tool steel	0.04D	1.5D	Vc	120	120	120	120	120	120	120	120	125
					fz	0.039	0.052	0.063	0.07	0.081	0.09	0.095	0.08	0.11
					RPM	6366	4775	3820	3183	2728	2387	2122	1910	1592
					FEED	1490	1490	1444	1337	1326	1289	1613	1222	1401
	11.2	High alloyed steel, and tool steel	0.04D	1.5D	Vc	95	95	95	95	95	95	95	100	95
					fz	0.035	0.046	0.055	0.062	0.07	0.079	0.08	0.091	0.096
					RPM	5040	3780	3024	2520	2160	1890	1680	1592	1210
					FEED	1058	1043	998	937	907	896	1075	1159	929
H	38.1 - 38.2	Hardened steel	0.04D	1.5D	Vc	95	95	95	95	95	95	95	100	95
					fz	0.035	0.046	0.055	0.062	0.07	0.079	0.08	0.091	0.096
					RPM	5040	3780	3024	2520	2160	1890	1680	1592	1210
					FEED	1058	1043	998	937	907	896	1075	1159	929
	39.1 - 39.2	Hardened steel	0.04D	1.5D	Vc	70	70	70	70	70	70	70	75	75
					fz	0.031	0.042	0.05	0.056	0.066	0.072	0.073	0.069	0.087
					RPM	3714	2785	2228	1857	1592	1393	1238	1194	955
					FEED	691	702	668	624	630	602	723	659	665
	39.3	Hardened steel	0.04D	1.5D	Vc	50	50	50	50	45	50	50	45	50
					fz	0.028	0.037	0.045	0.05	0.051	0.064	0.066	0.071	0.079
					RPM	2653	1989	1592	1326	1023	995	884	716	637
					FEED	446	442	430	398	313	382	467	407	403
	40	Chilled Cast Iron	0.04D	1.5D	Vc	95	95	95	95	95	95	95	100	95
					fz	0.035	0.046	0.055	0.062	0.07	0.079	0.08	0.091	0.096
					RPM	5040	3780	3024	2520	2160	1890	1680	1592	1210
					FEED	1058	1043	998	937	907	896	1075	1159	929
41	Hardened Cast Iron	0.04D	1.5D	Vc	95	95	95	95	95	95	95	100	95	
				fz	0.035	0.046	0.055	0.062	0.07	0.079	0.08	0.091	0.096	
				RPM	5040	3780	3024	2520	2160	1890	1680	1592	1210	
				FEED	1058	1043	998	937	907	896	1075	1159	929	

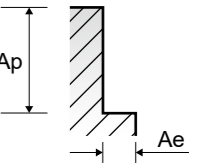


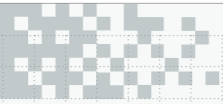
G8D64 SERIES

6&8 FLUTE EXTRA LONG LENGTH - 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	5	Non-alloy steel	0.01D	3.0D	Vc	60	60	60	60	60	60	60	60	60
					fz	0.04	0.05	0.06	0.07	0.075	0.081	0.085	0.086	0.089
					RPM	3183	2387	1910	1592	1364	1194	1061	955	764
					FEED	764	716	688	669	614	580	721	657	544
	8-9	Low alloy steel	0.01D	3.0D	Vc	60	60	60	60	60	60	60	60	60
					fz	0.04	0.05	0.06	0.07	0.075	0.081	0.085	0.086	0.089
					RPM	3183	2387	1910	1592	1364	1194	1061	955	764
					FEED	764	716	688	669	614	580	721	657	544
	11.1	High alloyed steel, and tool steel	0.01D	3.0D	Vc	60	60	60	60	60	60	60	60	60
					fz	0.04	0.05	0.06	0.07	0.075	0.081	0.085	0.086	0.089
					RPM	3183	2387	1910	1592	1364	1194	1061	955	764
					FEED	764	716	688	669	614	580	721	657	544
	11.2	High alloyed steel, and tool steel	0.01D	3.0D	Vc	60	60	60	60	60	60	60	60	60
					fz	0.03	0.04	0.05	0.061	0.066	0.071	0.08	0.09	0.08
					RPM	3183	2387	1910	1592	1364	1194	1061	955	764
					FEED	573	573	573	583	540	509	679	688	489
H	38.1 - 38.2	Hardened steel	0.01D	3.0D	Vc	60	60	60	60	60	60	60	60	60
					fz	0.03	0.04	0.05	0.061	0.066	0.071	0.08	0.09	0.08
					RPM	3183	2387	1910	1592	1364	1194	1061	955	764
					FEED	573	573	573	583	540	509	679	688	489
	39.1 - 39.2	Hardened steel	0.01D	3.0D	Vc	50	50	50	50	50	50	50	50	50
					fz	0.03	0.04	0.05	0.06	0.066	0.071	0.081	0.091	0.081
					RPM	2653	1989	1592	1326	1137	995	884	796	637
					FEED	478	477	478	477	450	424	573	579	413
	40	Chilled Cast Iron	0.01D	3.0D	Vc	60	60	60	60	60	60	60	60	60
					fz	0.03	0.04	0.05	0.061	0.066	0.071	0.08	0.09	0.08
					RPM	3183	2387	1910	1592	1364	1194	1061	955	764
					FEED	573	573	573	583	540	509	679	688	489
	41	Hardened Cast Iron	0.01D	3.0D	Vc	60	60	60	60	60	60	60	60	60
					fz	0.03	0.04	0.05	0.061	0.066	0.071	0.08	0.09	0.08
					RPM	3183	2387	1910	1592	1364	1194	1061	955	764
					FEED	573	573	573	583	540	509	679	688	489





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

Since 1982, 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.

EUROPE



ASIA PACIFIC



AMERICAS



AFRICA

