

CARBIDE, 2 FLUTE SHORT LENGTH BALL NOSE

- VOLLHARTMETALL, 2 SCHNEIDEN KURZ STIRNRADIUS
- Fraise carbure, 2 dents, hémisphérique, courte
- 2 TAGLIANTI, SEMISFERICA, SERIE CORTA

- ▶ Suitable for dry milling applications at high temperatures.
- ▶ Für die Trockenbearbeitung.
- ▶ Excellent high-performance end mills.
- ▶ Hervorragendes Preis - Leistungsverhältnis.
- ▶ Designed for milling of radius bottom slots, fillets and special contours.
- ▶ Bestimmt für das Fräsen von Nuten mit konvexem Grund, Sonderprofilen und zum Kopieren.



CARBIDE

2

30°

R
±0.02

DIN
6535HA

P.597

Unit : mm

EDP No.	Radius of Ball Nose	Mill Diameter	Shank Diameter	Length of Cut	Overall Length
	R (±0.02)				
G9A70010	R0.5	1.0	3	3	39
G9A70015	R0.75	1.5	3	5	39
G9A70020	R1.0	2.0	3	7	39
G9A70025	R1.25	2.5	3	8	39
G9A70030	R1.5	3.0	3	9	39
G9A70040	R2.0	4.0	4	14	51
G9A70050	R2.5	5.0	5	16	51
G9A70060	R3.0	6.0	6	19	64
G9A70080	R4.0	8.0	8	21	64
G9A70100	R5.0	10.0	10	22	70
G9A70110	R5.5	11.0	11	25	70
G9A70120	R6.0	12.0	12	25	76
G9A70160	R8.0	16.0	16	32	89
G9A70200	R10.0	20.0	20	38	102

Mill Dia. Tolerance(mm)	Shank Dia. Tolerance
0 ~ - 0.03	h5

◎ : Excellent ○ : Good

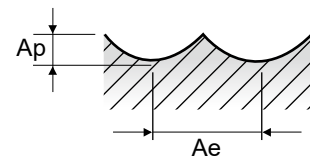
ISO Material Description	P										M				K								
	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel				Stainless steel				Grey cast iron		Nodular cast iron		Malleable cast iron
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20			
HRc	13	25	28	32	10	29	32	38	15	35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

G9624, G9A70, G9437, G9438, G9454, G9455 SERIES 2 FLUTE BALL NOSE

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

ISO	VDI 3323	Material Description	Ae	Parameter	Mill Diameter (Ø)													
					2.0	3.0	4.0	5.0	6.0	8.0	10.0	12.0	14.0	16.0	18.0	20.0		
P	1-4	Non-alloy steel	0.2D	Vc	80	105	110	125	135	155	170	190	200	205	215	225		
				fz	0.026	0.025	0.035	0.045	0.06	0.089	0.122	0.15	0.165	0.18	0.188	0.201		
				RPM	12732	11141	8754	7958	7162	6167	5411	5040	4547	4078	3802	3581		
				FEED	662	557	613	716	859	1098	1320	1512	1501	1468	1430	1440		
				Ap	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3		
	5		Low alloy steel	0.2D	Vc	55	80	90	95	110	125	135	150	160	160	170	175	
					fz	0.023	0.023	0.031	0.04	0.06	0.08	0.1	0.12	0.128	0.141	0.148	0.158	
					RPM	8754	8488	7162	6048	5836	4974	4297	3979	3638	3183	3006	2785	
					FEED	403	390	444	484	700	796	859	955	931	898	890	880	
					Ap	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	
	6-7	High alloyed steel, and tool steel		0.2D	Vc	80	105	110	125	135	155	170	190	200	205	215	225	
					fz	0.026	0.025	0.035	0.045	0.06	0.089	0.122	0.15	0.165	0.18	0.188	0.201	
					RPM	12732	11141	8754	7958	7162	6167	5411	5040	4547	4078	3802	3581	
					FEED	662	557	613	716	859	1098	1320	1512	1501	1468	1430	1440	
					Ap	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	
	8-9		Grey cast iron Nodular cast iron Malleable cast iron	0.2D	Vc	55	80	90	95	110	125	135	150	160	160	170	175	
					fz	0.023	0.023	0.031	0.04	0.06	0.08	0.1	0.12	0.128	0.141	0.148	0.158	
					RPM	8754	8488	7162	6048	5836	4974	4297	3979	3638	3183	3006	2785	
FEED					403	390	444	484	700	796	859	955	931	898	890	880		
Ap					0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3		
10	Aluminum-wrought alloy	0.2D		Vc	80	105	110	125	135	155	170	190	200	205	215	225		
				fz	0.026	0.025	0.035	0.045	0.06	0.089	0.122	0.15	0.165	0.18	0.188	0.201		
				RPM	12732	11141	8754	7958	7162	6167	5411	5040	4547	4078	3802	3581		
				FEED	662	557	613	716	859	1098	1320	1512	1501	1468	1430	1440		
				Ap	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3		
11.1 - 11.2		Aluminum-cast, alloyed	0.2D	Vc	55	80	90	95	110	125	135	150	160	160	170	175		
				fz	0.023	0.023	0.031	0.04	0.06	0.08	0.1	0.12	0.128	0.141	0.148	0.158		
				RPM	8754	8488	7162	6048	5836	4974	4297	3979	3638	3183	3006	2785		
				FEED	403	390	444	484	700	796	859	955	931	898	890	880		
				Ap	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3		
K	Hardened steel		0.7D	Vc	65	65	65	65	65	65	65	65	65	60	65	60	65	
				fz	0.01	0.016	0.028	0.04	0.053	0.092	0.112	0.131	0.164	0.177	0.209	0.2		
				RPM	10345	6897	5173	4138	3448	2586	2069	1724	1364	1293	1061	1035		
				FEED	207	221	290	331	366	476	463	452	447	458	444	414		
				Ap	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3		
N		38.1	Chilled Cast Iron	0.2D	Vc	195	195	195	190	195	200	195	195	190	195	190	185	
					fz	0.006	0.01	0.013	0.019	0.023	0.034	0.044	0.061	0.073	0.07	0.079	0.092	
					RPM	31035	20690	15518	12096	10345	7958	6207	5173	4320	3879	3360	2944	
					FEED	372	414	403	460	476	541	546	631	631	543	531	542	
					Ap	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	
	40	ROUTERS		CRX S END MILLS	0.2D	Vc	25	35	45	50	50	50	55	55	55	60	60	60
						fz	0.016	0.016	0.021	0.024	0.03	0.046	0.054	0.07	0.081	0.091	0.1	0.111
						RPM	3979	3714	3581	3183	2653	1989	1751	1459	1251	1194	1061	955
						FEED	127	119	150	153	159	183	189	204	203	217	212	212
						Ap	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3
H	ONLY ONE COATED PM60 END MILLS	0.2D	Vc		55	80	90	95	110	125	135	150	160	160	170	175		
			fz		0.023	0.023	0.031	0.04	0.06	0.08	0.1	0.12	0.128	0.141	0.148	0.158		
			RPM		8754	8488	7162	6048	5836	4974	4297	3979	3638	3183	3006	2785		
			FEED		403	390	444	484	700	796	859	955	931	898	890	880		
			Ap		0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3		

※ The FEED, in long & extra long types, should be reduced by around 50%



SELECTION GUIDE

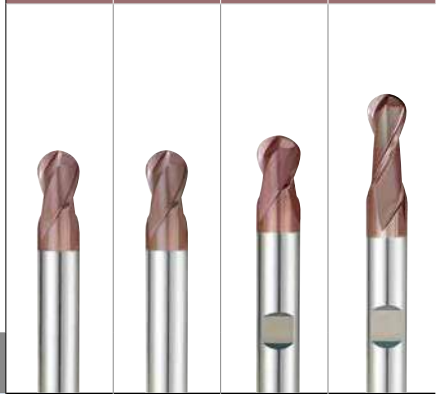


SERIES	G9624	G9A70	G9437	G9438
FLUTE	2	2	2	2
HELIX ANGLE	30°	30°	≈ 30°	≈ 30°
CUTTING EDGE SHAPE	BALL NOSE	BALL NOSE	BALL NOSE	BALL NOSE
SIZE MIN	R1.0	R0.5	R1.0	R1.0
SIZE MAX	R10.0	R10.0	R10.0	R10.0
PAGE	548	549	550	551

SOLID CARBIDE
K-2
END MILLS

General Purpose
Conventional or High Speed Milling
Wet & Dry Cutting

SHORT LENGTH	SHORT LENGTH	SHORT LENGTH	LONG LENGTH
TiAlN based	TiAlN based	TiAlN based	TiAlN based



Please visit
globalyg1.com/mat
for material search

◎ : Excellent ○ : Good

Recommended cutting conditions : P 597

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)	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					