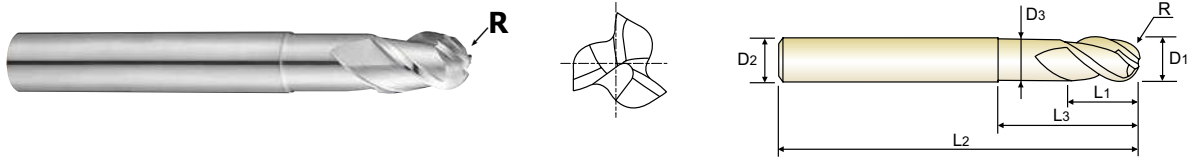


### CARBIDE, 3 FLUTE 40° HELIX BALL NOSE with NECK

- VOLLHARTMETALL, 3 SCHNEIDEN 40° RECHTSSPIRALE STIRNRADIUS mit ABGESETZTEM SCHAFTTETL
- Fraise carbure, 3 dents, hémisphérique, hélice 40°, détalonnée
- 3 TAGLIANTI, ELICA 40°, SEMISFERICA, SCARICATA

- ▶ Excellent cutting qualities on aluminum and copper
- ▶ Increased tool life and higher cutting accuracy
- ▶ Mirror surface - Excellent surface finish

- ▶ Ausgezeichnete Schneideigenschaften in Aluminium, Kupfer
- ▶ Verbesserte Standzeiten und höhere Fräsgenauigkeit.
- ▶ Spiegel-Oberfläche - Hervorragendes Oberflächenfinishing.



Unit : mm

EDP No.	Radius of Ball Nose	Mill Diameter	Shank Diameter	Length of Cut	Length Below Shank	Overall Length	Neck Diameter
	R(±0.02)	D1	D2	L1	L3	L2	D3
E5908020	R1.0	2.0	6	3	5	60	1.9
E5908025	R1.25	2.5	6	4	6	60	2.4
E5908030	R1.5	3.0	6	4.5	6.5	60	2.8
E5908035	R1.75	3.5	6	5	7	65	3.2
E5908040	R2.0	4.0	6	6	8	65	3.7
E5908050	R2.5	5.0	6	7.5	10	65	4.6
E5908060	R3.0	6.0	6	9	12	75	5.6
E5908080	R4.0	8.0	8	12	25	75	7.4
E5908100	R5.0	10.0	10	15	30	80	9.4
E5908120	R6.0	12.0	12	18	36	90	11.4
E5908160	R8.0	16.0	16	24	40	100	15.4

▶ TiN, TiCN and TiAlN Coatings are available on your request.

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	13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25	42	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			15	30	25	38	34			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	◎	◎	◎	◎	◎	◎	◎	◎															

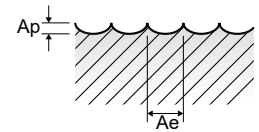
# YG ALU-POWER END MILLS

## RECOMMENDED CUTTING CONDITIONS EMPFOHLENE SCHNEIDPARAMETER

### E5910 SERIES 2 FLUTE BALL

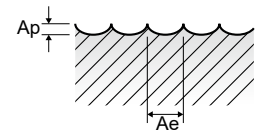
Vc = m/min.  
fz = mm/tooth  
RPM = rev./min.  
FEED = mm/min.

ISO	VDI 3323	Material Description	Ae	Ap	Parameter	Mill Diameter (Ø)										
						6.0	8.0	10.0	12.0	16.0	20.0					
N	21~22	Aluminum-wrought alloy	0.2D	0.5D	Vc	270	280	350	420	440	350					
					fz	0.049	0.071	0.084	0.107	0.123	0.157					
					RPM	14324	11141	11141	11141	8754	5570					
	23~24	Aluminum-cast, alloyed	0.2D	0.5D	Vc	176	182	228	273	286	228					
					fz	0.049	0.071	0.084	0.107	0.123	0.157					
					RPM	9311	7242	7242	7242	5690	3621					
	26-28	Copper and Copper Alloys (Bronze / Brass)	0.2D	0.5D	Vc	85	85	105	125	135	105					
					fz	0.04	0.06	0.069	0.089	0.101	0.131					
					RPM	4509	3382	3342	3316	2686	1671					
FEED	1404	1582	1872	2384	2153	1749	912	1028	1217	1550	1400	1137	361	406	461	590



### E5908 SERIES 3 FLUTE BALL

ISO	VDI 3323	Material Description	Ae	Ap	Parameter	Mill Diameter (Ø)																																																												
						2.0	2.5	3.0	3.5	4.0	5.0	6.0	8.0	10.0	12.0	16.0																																																		
N	21~22	Aluminum-wrought alloy	0.2D	0.5D	Vc	135	140	135	160	180	225	270	280	350	420	440																																																		
					fz	0.018	0.022	0.026	0.028	0.035	0.038	0.049	0.071	0.084	0.107	0.123																																																		
					RPM	21486	17825	14324	14551	14324	14324	14324	11141	11141	11141	8754																																																		
	23~24	Aluminum-cast, alloyed	0.2D	0.5D	Vc	88	91	88	104	117	146	176	182	228	273	286																																																		
					fz	0.018	0.022	0.026	0.028	0.035	0.038	0.049	0.071	0.084	0.107	0.123																																																		
					RPM	13966	11586	9311	9458	9311	9311	9311	7242	7242	7242	5690																																																		
	26-28	Copper and Copper Alloys (Bronze / Brass)	0.2D	0.5D	Vc	40	40	40	50	55	70	85	85	105	125	135																																																		
					fz	0.015	0.018	0.022	0.022	0.028	0.031	0.04	0.06	0.069	0.089	0.101																																																		
					RPM	6366	5093	4244	4547	4377	4456	4509	3382	3342	3316	2686																																																		
FEED	1160	1176	1117	1222	1504	1633	2106	2373	2807	3576	3230	88	91	88	104	117	146	176	182	228	273	286	754	765	726	795	978	1061	1369	1542	1825	2325	2100	40	40	40	50	55	70	85	85	105	125	135	0.015	0.018	0.022	0.022	0.028	0.031	0.04	0.06	0.069	0.089	0.101	6366	5093	4244	4547	4377	4456	4509	3382	3342	3316	2686



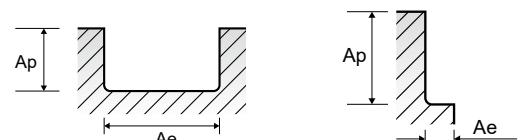
### E5930 SERIES

#### 2 FLUTE CORNER RADIUS - SLOTTING

ISO	VDI 3323	Material Description	Ae	Ap	Parameter	Mill Diameter (Ø)														
						2.0	3.0	4.0	5.0	6.0	8.0	10.0	12.0	16.0	20.0					
N	21~22	Aluminum-wrought alloy	1.0D	0.5D	Vc	65	100	130	165	195	200	250	300	320	250					
					fz	0.022	0.035	0.046	0.05	0.058	0.09	0.11	0.135	0.156	0.2					
					RPM	10345	10610	10345	10504	10345	7958	7958	7958	7958	6366	3979				
	23~24	Aluminum-cast, alloyed	1.0D	0.5D	Vc	42	65	85	107	127	130	163	195	208	163					
					fz	0.022	0.035	0.046	0.05	0.058	0.09	0.11	0.135	0.156	0.2					
					RPM	6724	6897	6724	6828	6724	5173	5173	5173	4138	2586					
FEED	455	743	952	1050	1200	1432	1751	2149	1986	1592	296	483	619	683	780	931	1138	1397	1291	1035

#### 2 FLUTE CORNER RADIUS - SIDE CUTTING

ISO	VDI 3323	Material Description	Ae	Ap	Parameter	Mill Diameter (Ø)														
						2.0	3.0	4.0	5.0	6.0	8.0	10.0	12.0	16.0	20.0					
N	21~22	Aluminum-wrought alloy	0.2~0.10-0.25D 0.12~0.20-0.5D	1.0D	Vc	65	100	130	165	195	200	250	300	320	250					
					fz	0.039	0.046	0.054	0.065	0.077	0.115	0.135	0.170	0.194	0.250					
					RPM	10345	10610	10345	10504	10345	7958	7958	7958	6366	3979					
	23~24	Aluminum-cast, alloyed	0.2~0.10-0.25D 0.12~0.20-0.5D	1.0D	Vc	42	65	85	107	127	130	163	195	208	163					
					fz	0.039	0.046	0.054	0.065	0.077	0.115	0.135	0.170	0.194	0.250					
					RPM	6724	6897	6724	6828	6724	5173	5173	5173	4138	2586					
FEED	807	976	1117	1366	1593	1830	2149	2706	2470	1989	524	634	726	888	1036	1190	1397	1759	1606	1293



SELECTION GUIDE



SERIES	E5910	E5908	E5909
FLUTE	2	3	2
HELIX ANGLE	50°	40°	30°
CUTTING EDGE SHAPE	BALL NOSE	BALL NOSE	CORNER RADIUS
SIZE MIN	R3.0	R1.0	D4.0
SIZE MAX	R10.0	R8.0	D20.0
PAGE	480	481	482

**SOLID CARBIDE**  
**ALU POWER**  
**END MILLS**

Aluminium Alloys and Silent Cutting

NECK	NECK	NECK
Uncoated	Uncoated	Uncoated



Please visit [globalyg1.com/mat](http://globalyg1.com/mat) for material search

◎ : Excellent ○ : Good

Recommended cutting conditions : P 494

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	Cutting Alloys, PB>1%	110		○	○	○
	27		CuZn, CuSnZn (Brass)	90		○	○	○
	28	(Bronze / Brass)	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			