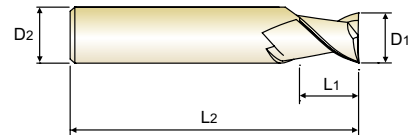
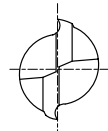


CARBIDE, 2 FLUTE 45° HELIX SHORT LENGTH

- **VOLLHARTMETALL, 2 SCHNEIDEN 45° RECHTSSPIRALE KURZ**
- **Fraise carbure, 2 dents, hélice 45°, courte**
- **2 TAGLIENTI, ELICA 45°, SERIE CORTA**

- ▶ Suitable for high speed machining in aluminum and other non-ferrous materials
- ▶ Mirror surface - Excellent surface finish
- ▶ Superior chip evacuation

- ▶ Zur HSC-Bearbeitung von Aluminium und anderen Nichteisenmetallen.
- ▶ Spiegel-Oberfläche - Hervorragendes Oberflächenfinishing.
- ▶ Überlegene Spanabfuhr

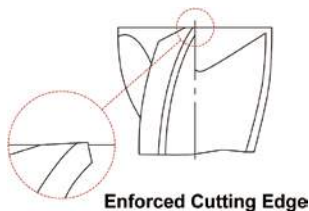
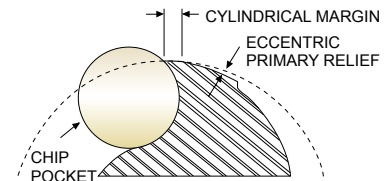


Unit : mm

EDP No.	Mill Diameter	Shank Diameter	Length of Cut	Overall Length
	D1	D2	L1	L2
E5E48030	3.0	6	5	50
E5E48040	4.0	6	8	54
E5E48050	5.0	6	9	54
E5E48060	6.0	6	10	54
E5E48080	8.0	8	12	58
E5E48100	10.0	10	14	66
E5E48120	12.0	12	16	73
E5E48140	14.0	14	18	75
E5E48160	16.0	16	22	82
E5E48180	18.0	18	24	84
E5E48200	20.0	20	26	92

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

Mill Dia. Tolerance(mm)	Shank Dia. Tolerance
0 ~ -0.015	h5



◎ : Excellent ○ : Good

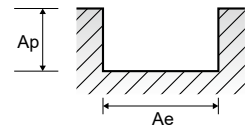
ISO Material Description	P										M				K						
	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel				Stainless steel		Grey cast iron		Nodular cast iron		Malleable cast iron
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
HRc	13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25				
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			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	◎	◎	◎	◎	◎																

E5E47 SERIES

1 FLUTE - SLOTTING

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

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	
N	21~22	Aluminum-wrought alloy	1.0D	1.5D	Vc	145	170	190	190	190	195	190	190	
					fz	0.065	0.094	0.120	0.150	0.180	0.244	0.333	0.440	
					RPM	23077	18038	15120	12096	10080	7759	6048	5040	
N	23~24	Aluminum-cast, alloyed	1.0D	1.5D	Vc	94	111	124	124	124	127	124	124	
					fz	0.065	0.094	0.120	0.150	0.180	0.244	0.333	0.440	
					RPM	15000	11724	9828	7862	6552	5043	3931	3276	
N	29.1	Non Metallic Materials (Duroplastic)	1.0D	1.5D	Vc	200	235	250	235	255	250	250	255	
					fz	0.069	0.096	0.120	0.147	0.170	0.240	0.300	0.343	
					RPM	31831	24934	19894	14961	13528	9947	7958	6764	
					FEED	2196	2394	2387	2199	2300	2387	2387	2387	2320



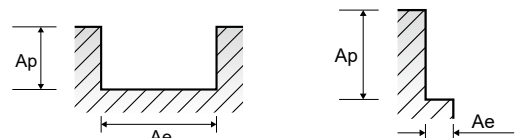
E5E48, E5522, E5521 SERIES

2 FLUTE - SLOTTING

ISO	VDI 3323	Material Description	Ae	Ap	Parameter	Mill Diameter (Ø)										
						3.0	4.0	5.0	6.0	8.0	10.0	12.0	14.0	16.0	18.0	20.0
N	21~22	Aluminum-wrought alloy	1.0D	0.5D	Vc	95	125	155	190	200	250	300	265	300	225	250
					fz	0.035	0.045	0.050	0.060	0.088	0.106	0.131	0.150	0.158	0.175	0.200
					RPM	10080	9947	9868	10080	7958	7958	7958	6025	5968	3979	3979
N	23~24	Aluminum-cast, alloyed	1.0D	0.5D	Vc	62	81	101	124	130	163	195	172	195	146	163
					fz	0.035	0.045	0.050	0.060	0.088	0.106	0.131	0.150	0.158	0.175	0.200
					RPM	6552	6466	6414	6552	5173	5173	5173	3916	3879	2586	2586
					FEED	459	582	641	786	910	1097	1355	1175	1226	905	1035

2 FLUTE - SIDE CUTTING

ISO	VDI 3323	Material Description	Ae	Ap	Parameter	Mill Diameter (Ø)										
						3.0	4.0	5.0	6.0	8.0	10.0	12.0	14.0	16.0	18.0	20.0
N	21~22	Aluminum-wrought alloy	0.3~0.10-0.25D 0.12~0.20-0.5D	1.0D	Vc	95	125	155	190	200	250	300	265	300	225	250
					fz	0.045	0.055	0.065	0.075	0.113	0.131	0.163	0.183	0.200	0.225	0.238
					RPM	10080	9947	9868	10080	7958	7958	7958	6025	5968	3979	3979
					FEED	907	1094	1283	1512	1798	2085	2594	2205	2387	1790	1894
N	23~24	Aluminum-cast, alloyed	0.3~0.10-0.25D 0.12~0.20-0.5D	1.0D	Vc	62	81	101	124	130	163	195	172	195	146	163
					fz	0.045	0.055	0.065	0.075	0.113	0.131	0.163	0.183	0.200	0.225	0.238
					RPM	6552	6466	6414	6552	5173	5173	5173	3916	3879	2586	2586
					FEED	590	711	834	983	1169	1355	1686	1433	1552	1164	1231



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



Please visit 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			

E5930	E5E51	E5E47	E5E48	E5522 E5521	E5E49	E5E50	E5742 E5711	E5E39 E5E40	EP922 EP923	EP924 EP925
2	3	1	2	2	3	3	3	3	3	3
25°	45°	30°	45°	45°	45°	45°	30°	30°	42°	42°
CORNER RADIUS	CORNER RADIUS	SQUARE	SQUARE	SQUARE	SQUARE	SQUARE	ROUGHING	ROUGHING	ROUGHING	ROUGHING
D2.0	D3.0	D2.0	D3.0	D3.0	D3.0	D3.0	D6.0	D6.0	D12.0	D12.0
D20.0	D20.0	D12.0	D20.0	D20.0	D20.0	D20.0	D25.0	D20.0	D28.0	D32.0
483	484	485	486	487	488	489	490	491	492	493
NECK	LONG LENGTH	-	SHORT LENGTH	LONG LENGTH	LONG LENGTH	NECK	LONG LENGTH	NECK	SHORT LENGTH	LONG LENGTH
Uncoated	Uncoated	Uncoated	Uncoated	Uncoated	Uncoated	Uncoated	Uncoated	Uncoated	TiAIN	TiAIN



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HSS

CBN END MILLS

i-Xmill END MILLS

i-SMART MODULARTYPE END MILLS

X5070 END MILLS

4G MILL END MILLS

X-POWER PRO END MILLS

TitaNox-POWER END MILLS

JET-POWER END MILLS

V7 PLUS END MILLS

ALU-POWER HPC END MILLS

ALU-POWER END MILLS

D-POWER GRAPHITE END MILLS

D-POWER CFRP END MILLS

ROUTERS

CRX S END MILLS

K-2 END MILLS

ONLY ONE COATED PM60 END MILLS

TANK-POWER END MILLS

GENERAL HSS END MILLS

MILLING CUTTER

TECHNICAL DATA