

CARBIDE

HSS

i-ONE
DRILLS

i-DREAM
DRILLS

DREAM
DRILLS
-PRO

DREAM
DRILLS
-X

DREAM
DRILLS
-GENERAL

DREAM
DRILLS
-HIGH FEED

DREAM
DRILLS
-FLAT BOTTOM

DREAM
DRILLS
-INOX

DREAM
DRILLS
-ALU

DREAM
DRILLS
-MQL

DREAM DRILLS
for HIGH
HARDENED STEELS

GENERAL
CARBIDE
DRILLS

MULTI-1
DRILLS

HPD
DRILLS

GOLD-P
DRILLS

SUPER-GP
DRILLS

STRAIGHT
SHANK
DRILLS

TAPER SHANK
DRILLS

NC-
SPOTTING
DRILLS

CENTER
DRILLS

SPADE
DRILLS

REAMERS

COUNTER
SINKS

COUNTER
BORES

C1136, C3136, C1139,
C3139, C1132, C3132 SERIES

3 FLUTE COUNTERSINKS

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

ISO	VDI 3323	Material Description	Vc	Feed							
				5.0	10.0	15.0	20.0	25.0	30.0	40.0	50.0
P	1	Non-alloy steel	20	0.12-0.16	0.16-0.20	0.20-0.23	0.23-0.26	0.26-0.29	0.29-0.33	0.33-0.37	0.37-0.41
	2		20	0.12-0.16	0.16-0.20	0.20-0.23	0.23-0.26	0.26-0.29	0.29-0.33	0.33-0.37	0.37-0.41
	3		13	0.10-0.14	0.14-0.18	0.18-0.21	0.21-0.24	0.24-0.27	0.27-0.31	0.31-0.35	0.35-0.39
	4		10	0.06-0.10	0.10-0.14	0.14-0.17	0.17-0.21	0.21-0.24	0.24-0.27	0.27-0.31	0.31-0.35
	5		10	0.06-0.10	0.10-0.14	0.14-0.17	0.17-0.21	0.21-0.24	0.24-0.27	0.27-0.31	0.31-0.35
M	12	Stainless steel	6	0.06-0.08	0.06-0.08	0.08-0.10	0.08-0.10	0.10-0.12	0.10-0.12	0.12-0.15	0.12-0.15
	13		5	0.06-0.08	0.06-0.08	0.08-0.10	0.08-0.10	0.10-0.12	0.10-0.12	0.12-0.15	0.12-0.15
	14		4	0.06-0.08	0.06-0.08	0.08-0.10	0.08-0.10	0.10-0.12	0.10-0.12	0.12-0.15	0.12-0.15
K	15	Grey cast iron	22	0.09-0.11	0.11-0.13	0.13-0.16	0.16-0.19	0.19-0.22	0.22-0.25	0.25-0.28	0.28-0.32
	16		17	0.08-0.10	0.10-0.12	0.12-0.15	0.15-0.18	0.18-0.21	0.21-0.24	0.24-0.27	0.27-0.31
	17	Nodular cast iron	17	0.09-0.11	0.11-0.13	0.13-0.16	0.16-0.19	0.19-0.22	0.22-0.25	0.25-0.28	0.28-0.32
	18		15	0.08-0.10	0.10-0.12	0.12-0.15	0.15-0.18	0.18-0.21	0.21-0.24	0.24-0.27	0.27-0.31
	19	Malleable cast iron	17	0.09-0.11	0.11-0.13	0.13-0.16	0.16-0.19	0.19-0.22	0.22-0.25	0.25-0.28	0.28-0.32
	20		15	0.08-0.10	0.10-0.12	0.12-0.15	0.15-0.18	0.18-0.21	0.21-0.24	0.24-0.27	0.27-0.31
N	21	Aluminum-wrought alloy	42	0.15-0.18	0.18-0.21	0.21-0.24	0.24-0.27	0.27-0.31	0.31-0.35	0.35-0.40	0.40-0.45
	22		42	0.15-0.18	0.18-0.21	0.21-0.24	0.24-0.27	0.27-0.31	0.31-0.35	0.35-0.40	0.40-0.45
	23	Aluminum-cast, alloyed	39	0.15-0.18	0.18-0.21	0.21-0.24	0.24-0.27	0.27-0.31	0.31-0.35	0.35-0.40	0.40-0.45
	24		37	0.12-0.15	0.15-0.18	0.18-0.21	0.21-0.24	0.24-0.28	0.28-0.32	0.32-0.37	0.37-0.42
	25		35	0.15-0.18	0.18-0.21	0.21-0.24	0.24-0.27	0.27-0.31	0.31-0.35	0.35-0.40	0.40-0.45
	26	Copper and Copper Alloys (Bronze / Brass)	28	0.12-0.15	0.15-0.18	0.18-0.21	0.21-0.24	0.24-0.28	0.28-0.32	0.32-0.37	0.37-0.42
	27		25	0.12-0.15	0.15-0.18	0.18-0.21	0.21-0.24	0.24-0.28	0.28-0.32	0.32-0.37	0.37-0.42
	28		15	0.12-0.15	0.15-0.18	0.18-0.21	0.21-0.24	0.24-0.28	0.28-0.32	0.32-0.37	0.37-0.42

HSS-E

COUNTERBORES

FLACHSENKER

- For Machining Screw Head Seats
- Zur Herstellung von Schraubenkopfsenkungen

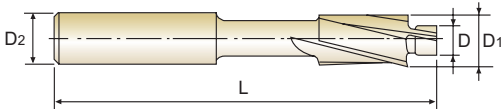


EL950 SERIES

HSS-E, 3 FLUTE COUNTERBORES for 180° CAPSCREW

HSS-E, 3 SCHNEIDEN FLACHSENKER MIT FESTEM FÜHRUNGZAPFEN
FRAISES À LAMER HSS-E 3 DENTS TÊTE DE VIS À 180°
LAMATORI A TRE TAGLIENTI IN HSS-E per sedi di viti a testa cilindrica a 180°

- The counterbores with solid pilot are designed for machining as fillister screw caps or ejector caps in molds.
- Die Flachsenker mit festem Führungzapfen dienen dem 180° Ansenken für Zylinderkopfschrauben und Auswerferstiften in Formen



BEFORE THREADING

Unit : mm

EDP No.	ITEM No.	Screw Size	Pilot Diameter	Cutter Diameter	Shank Diameter	Overall Length
PLAIN	PLAIN		D(e8)	D1(z9)	D2(h9)	L
EL950911	YG54M4-T	M4	3.3	8.0	5	71
EL950912	YG54M5-T	M5	4.2	10.0	8	80
EL950914	YG54M8-T	M8	6.8	15.0	12.5	100
EL950915	YG54M10-T	M10	8.5	18.0	12.5	100
EL950916	YG54M12-T	M12	10.2	20.0	12.5	100

Tolerances according to DIN 7160 & 7161
Toleranzen nach DIN 7160 & 7161

Nominal-Diameter in mm / Nennmaßbereich in mm					Nominal-Diameter in mm / Nennmaßbereich in mm				
	from 1 to 3 von 1 bis 3	over 3 to 6 über 3 bis 6	over 6 to 10 über 6 bis 10	over 10 to 18 über 10 bis 18		from 6 to 10 von 6 bis 10	over 10 to 14 über 10 bis 14	over 14 to 18 über 14 bis 18	over 18 to 24 über 18 bis 24
Tolerance range in µm / Toleranzwerte in µm					Tolerance range in µm / Toleranzwerte in µm				
e8	- 14 - 28	- 20 - 38	- 25 - 47	- 32 - 59					
h9	0 - 25	0 - 30	0 - 36	0 - 43	z9	+ 78 + 42	+ 93 + 50	+ 103 + 60	+ 125 + 73

◎ : Excellent ○ : Good

ISO	P										M				K									
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel	Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron						
	1	2	3	4	5	6	7	8	9		10	11	12	13	14	15	16	17	18	19	20			
VDI 3323																								
HRC		13	25	37	32	10	29	32	38	15	35	15	23	10	10	26	3	25	21					
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230				
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎				
ISO	N										S										H			
Material Description	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	
	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	400Rm	1050Rm	550	630	400	550			
Recommended	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	



RECOMMENDED CUTTING CONDITIONS
EMPFOHLENE SCHNEIDPARAMETER

EL950 SERIES

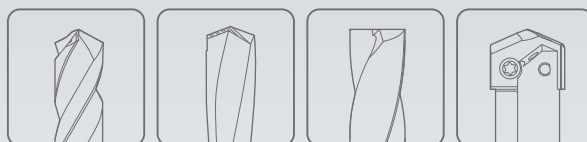
HSS-E, 3 FLUTE COUNTERBORES for 180° CAPSCREW

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

ISO	VDI 3323	Material Description	Parameter	Cutter Diameter (Ø)									
				6.0	6.5	8.0	10.0	11.0	15.0	18.0	20.0		
P	1	Non-alloy steel	Vc	25	25	25	25	25	25	25	25		
			fz	0.08	0.08	0.08	0.11	0.11	0.11	0.13	0.13		
			RPM	1326	1224	995	796	723	531	442	398		
			FEED	322	297	242	258	234	172	167	150		
	2		Vc	24	24	24	24	24	24	24	24		
			fz	0.08	0.08	0.08	0.11	0.11	0.11	0.13	0.13		
			RPM	1273	1175	955	764	694	509	424	382		
			FEED	309	286	232	248	225	165	160	144		
	3		Vc	18	18	18	18	18	18	18	18		
			fz	0.08	0.08	0.08	0.11	0.11	0.11	0.13	0.13		
			RPM	955	881	716	573	521	382	318	286		
			FEED	232	214	174	186	169	124	120	108		
	4		Vc	18	18	18	18	18	18	18	18		
			fz	0.08	0.08	0.08	0.11	0.11	0.11	0.13	0.13		
			RPM	955	881	716	573	521	382	318	286		
			FEED	232	214	174	186	169	124	120	108		
	5		Vc	18	18	18	18	18	18	18	18		
			fz	0.08	0.08	0.08	0.11	0.11	0.11	0.13	0.13		
			RPM	955	881	716	573	521	382	318	286		
			FEED	232	214	174	186	169	124	120	108		
	6		Vc	24	24	24	24	24	24	24	24		
			fz	0.08	0.08	0.08	0.11	0.11	0.11	0.13	0.13		
			RPM	1273	1175	955	764	694	509	424	382		
			FEED	309	286	232	248	225	165	160	144		
	7		Vc	18	18	18	18	18	18	18	18		
			fz	0.08	0.08	0.08	0.11	0.11	0.11	0.13	0.13		
			RPM	955	881	716	573	521	382	318	286		
			FEED	232	214	174	186	169	124	120	108		
	8		Vc	18	18	18	18	18	18	18	18		
			fz	0.08	0.08	0.08	0.11	0.11	0.11	0.13	0.13		
			RPM	955	881	716	573	521	382	318	286		
			FEED	232	214	174	186	169	124	120	108		
	9		Vc	15	15	15	15	15	15	15	15		
			fz	0.08	0.08	0.08	0.11	0.11	0.11	0.13	0.13		
			RPM	796	735	597	477	434	318	265	239		
			FEED	193	178	145	155	141	103	100	90		
	10		Vc	24	24	24	24	24	24	24	24		
			fz	0.08	0.08	0.08	0.11	0.11	0.11	0.13	0.13		
			RPM	1273	1175	955	764	694	509	424	382		
			FEED	309	286	232	248	225	165	160	144		
	11		Vc	18	18	18	18	18	18	18	18		
			fz	0.08	0.08	0.08	0.11	0.11	0.11	0.13	0.13		
			RPM	955	881	716	573	521	382	318	286		
			FEED	232	214	174	186	169	124	120	108		
	N		21	Aluminum-wrought alloy	Vc	30	30	30	30	30	30	30	30
					fz	0.08	0.08	0.08	0.11	0.11	0.11	0.13	0.13
					RPM	1592	1469	1194	955	868	637	531	477
					FEED	382	353	286	315	286	210	207	186
22		Vc	30		30	30	30	30	30	30	30		
		fz	0.08		0.08	0.08	0.11	0.11	0.11	0.13	0.13		
		RPM	1592		1469	1194	955	868	637	531	477		
		FEED	382		353	286	315	286	210	207	186		
23		Aluminum-cast, alloyed	Vc	20	20	20	20	20	20	20	20		
			fz	0.08	0.08	0.08	0.11	0.11	0.11	0.13	0.13		
			RPM	1061	979	796	637	579	424	354	318		
			FEED	255	235	191	210	191	140	138	124		
24			Vc	20	20	20	20	20	20	20	20		
			fz	0.08	0.08	0.08	0.11	0.11	0.11	0.13	0.13		
			RPM	1061	979	796	637	579	424	354	318		
			FEED	255	235	191	210	191	140	138	124		



Global Cutting Tool Leader **YG-1**



HOLEMAKING