COUNTERBORES

EL950 SERIES

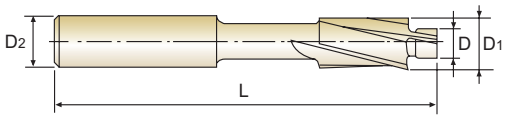
HSS-E, 3 FLUTE COUNTERBORES for 180° CAPSCREW

HSS-E, 3 SCHNEIDEN FLACHSENKER MIT FESTEM FÜHRUNGSZAPFEN
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 Führungszapfen dienen dem 180° Ansenken für Zylinderkopfschrauben und Auswerferstiften in Formen





HSS-E | DIN 373 | 3 | PLAIN | Bright p.A421

Recommended ToolHolder — Plain Shank — ER COLLET CHUCK

MEDIUM

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
EL950003	YG54M3-M	M3	3.4	6.0	5	71
EL950035	YG54M3.5-M	M3.5	3.9	6.5	5	71
EL950004	YG54M4-M	M4	4.5	8.0	5	71
EL950005	YG54M5-M	M5	5.5	10.0	8	80
EL950006	YG54M6-M	M6	6.6	11.0	8	80
EL950008	YG54M8-M	M8	9.0	15.0	12.5	100
EL950010	YG54M10-M	M10	11.0	18.0	12.5	100
EL950012	YG54M12-M	M12	14.0	20.0	12.5	100

FINE

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
EL950901	YG54M3-F	M3	3.2	6.0	5	71
EL950902	YG54M3.5-F	M3.5	3.7	6.5	5	71
EL950903	YG54M4-F	M4	4.3	8.0	5	71
EL950904	YG54M5-F	M5	5.3	10.0	8	80
EL950905	YG54M6-F	M6	6.4	11.0	8	80
EL950906	YG54M8-F	M8	8.4	15.0	12.5	100
EL950907	YG54M10-F	M10	10.5	18.0	12.5	100
EL950908	YG54M12-F	M12	13.0	20.0	12.5	100

▶ NEXT PAGE

◎ : 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	
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		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
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	400Rm	1050Rm	550	630	400	550
Recommended	○	○	○	○																	

COUNTERBORES

EL950 SERIES

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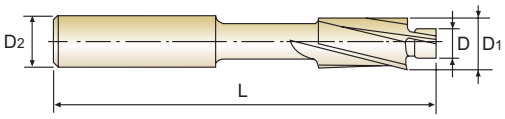

HSS-E | DIN 373 | 3 | PLAIN | Bright

p.A421

Recommended ToolHolder | Plain Shank | ER COLLET CHUCK

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
EL950909	YG54M3-T	M3	2.5	6.0	5	71
EL950910	YG54M3.5-T	M3.5	2.9	6.5	5	71
EL950911	YG54M4-T	M4	3.3	8.0	5	71
EL950912	YG54M5-T	M5	4.2	10.0	8	80
EL950913	YG54M6-T	M6	5.0	11.0	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				
	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
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

Nominal-Diameter in mm / Nennmaßbereich in mm				
	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				
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	
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		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
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	400Rm	1050Rm	550	630	400	550
Recommended	○	○	○	○																	

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YG-1 CO., LTD.

COUNTERBORES

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	Low alloy steel	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	High alloyed steel, and tool steel	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