MILLING CUTTERS

PLAIN SHANK **ML012, ML022 SERIES**
FLAT SHANK **ML112, ML122 SERIES**

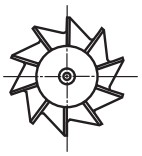
HSS-E, DOVETAIL CUTTERS TYPE “A”, “C”, “E”

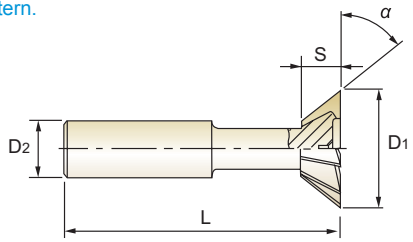
HSS-E, WINKELFRÄSER FORM “A”, “C”, “E”
FRAISE HSS-E POUR QUEUE D'ARONDE TYPE "A", "C", "E"
FRESE AD ANGOLO DIVERGENTE TIPO “A”, “C”, “E”

▶ Recommanded for use in place of arbor and threaded hole type cutters to reduce set time and facilitate handling.

▶ Empfohlen zur Nutzung anstelle von Arbor und threaded hole type Cutters um Montierzeit zu verkürzen und Handhabung zu erleichtern.







HSS-E | DIN 1833 | N | 0° | DIN 1835A | DIN 1835B | UNCOATED

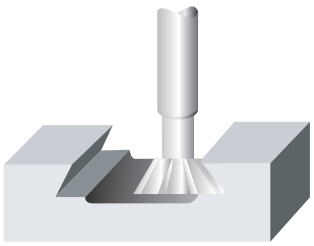
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Unit : mm

EDP No.		Cutter Diameter	Width of Face	Divergent Taper Angle	Shank Diameter	Overall Length	No. of Teeth
PLAIN	FLAT	D_1(js16)	S(js14)	α(±15′)	D_2(h6)	L(js18)	Z
ML01201601	**ML11201601**	**16.0**	4	45°	12	60	6
ML01202001	**ML11202001**	**20.0**	5	45°	12	63	6
ML01202201	**ML11202201**	**22.0**	6	45°	12	67	6
ML01202501	**ML11202501**	**25.0**	6.3	45°	16	67	8
ML01202801	**ML11202801**	**28.0**	7.5	45°	16	67	8
ML01203201	**ML11203201**	**32.0**	8	45°	16	71	10
ML01203801	**ML11203801**	**38.0**	10	45°	16	80	12
ML02201601	**ML12201601**	**16.0**	6.3	60°	12	60	6
ML02202001	**ML12202001**	**20.0**	8	60°	12	63	6
ML02202201	**ML12202201**	**22.0**	9	60°	12	67	6
ML02202501	**ML12202501**	**25.0**	10	60°	16	67	8
ML02202801	**ML12202801**	**28.0**	11	60°	16	67	8
ML02203201	**ML12203201**	**32.0**	12.5	60°	16	71	10
ML02203801	**ML12203801**	**38.0**	16	60°	16	80	12
ML02204001	**ML12204001**	**40.0**	13	60°	25	85	12
ML02205001	**ML12205001**	**50.0**	16	60°	25	100	16

Tolerances according to DIN 7160 & 7161

Nominal-Diameter in mm	over 3 to 6	over 6 to 10	over 10 to 18	over 18 to 30	over 30 to 50	over 50 to 80	over 80 to 120
Tolerance range in mm							
js16	±0.375	±0.45	±0.55	±0.65	±0.80	±0.95	±1.10
js14	±0.15	±0.18	±0.215	±0.26	±0.31	±0.37	±0.435
js18	±0.90	±1.10	±1.35	±1.65	±1.95	±2.30	±2.70
Tolerance range in μm							
h6	0 / −8	0 / −9	0 / −11	0 / −13	0 / −16	0 / −19	0 / −22



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

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