X-POWER END MILLS

EM814 SERIES PLAIN SHANK / GLATTER ZYLINDERSCHAFT
EM824 SERIES FLAT SHANK / SEITLICHE MITNAHMEFLÄCHEN

CARBIDE, MULTI FLUTE 20° HELIX LONG LENGTH ROUGHING - FINE

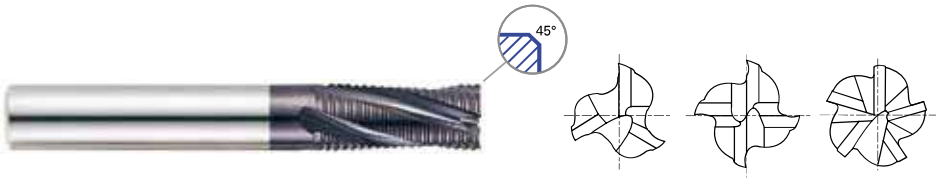
VOLLHARTMETALL, MULTI SCHNEIDEN 20° RECHTSSPIRALE LANG SCHRUPPFRÄSER - FEIN

Fraise carbure, multi-dents ébauche, hélice 20°, pas fin, longue

3 - 4 - 5 TAGLIENTI, BOMBATO FINE PER SGROSSATURA, ELICA 20° SERIE LUNGA

- Designed to machine tool steels, alloy steels, mold steels and other hardened materials.
- High velocity milling of hardened steels.
- For dry and wet milling.
- Fast chip ejection.
- Longer flute length than EM832, EM842 series.

- Zur Bearbeitung: Werkzeugstählen, Legierten Stählen, Stahlguß und gehärteten Stählen.
- Hochgeschwindigkeitsfräsen von gehärteten Stählen.
- Für Trocken - und Nabfräsen.
- Schnelle Spanausfuhr.
- Längere Schneiden als bei EM832 und EM842 Serien.



MG HM | FINE | 3-5 | 20° | PLAIN | FLAT | C x 45°

P.1053

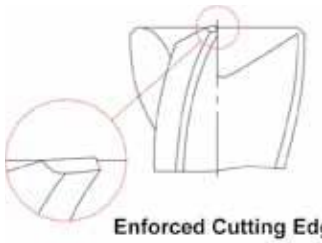
Unit : mm

EDP No. PLAIN	EDP No. FLAT	Mill Diameter h10	Shank Diameter h6	Length of Cut	Overall Length	No. of Flute	Chamfer
EM814060	EM824060	6.0	6	16	57	3	0.38
EM814070	EM824070	7.0	8	16	63	3	0.38
EM814080	EM824080	8.0	8	16	63	3	0.38
EM814090	EM824090	9.0	10	19	72	4	0.38
EM814100	EM824100	10.0	10	22	72	4	0.60
EM814120	EM824120	12.0	12	26	83	4	0.60
EM814140	EM824140	14.0	14	26	83	4	0.60
EM814901	EM824901	14.0	16	26	83	4	0.60
EM814160	EM824160	16.0	16	32	92	4	0.60
EM814180	EM824180	18.0	18	32	92	4	0.60
EM814200	EM824200	20.0	20	38	104	4	0.60
EM814250	EM824250	25.0	25	45	121	5	0.60

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

Tolerance range in μm / Toleranzwerte in μm
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	over 18 to 30 über 18 bis 30
h10	0 / – 40	0 / – 48	0 / – 58	0 / – 70	0 / – 84
h6	0 / – 6	0 / – 8	0 / – 9	0 / – 11	0 / – 13


Enforced Cutting Edge

◎ : Excellent ○ : Good

P					H	M	K	N					S	
Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels		High Hardened Steels	Stainless Steels	Cast Iron	Copper	Graphite	Aluminum	Acrylic	CFRP	Titanium	High Temperature Alloy
~HB225	HB225~325	HRc30~40	HRc40~45	HRc45~55	HRc55~70									
○	◎	◎	◎	○		○	○							

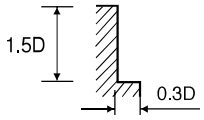
X-POWER END MILLS

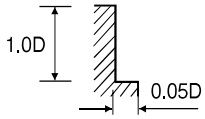
RECOMMENDED CUTTING CONDITIONS
EMPFOHLENE SCHNEIDKONDITIONEN

CARBIDE, MULTI FLUTE 20° HELIX ROUGHING - SIDE CUTTING
VOLLHARTMETALL, MULTI SCHNEIDEN 20° RECHTSSPIRALE SCHRUPPFRÄSER - SEITENFRÄSEN

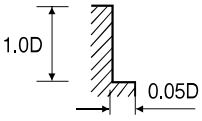
EM832, EM842, EM814, EM824 SERIES

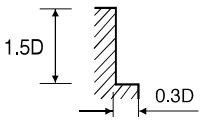
MATERIAL	P											
	NON-ALLOYED STEELS ALLOY STEELS				ALLOY STEELS HEAT RESISTANT STEELS				HARDENED STEELS			
HARDNESS	~ HRc30				HRc30 ~ HRc38				HRc45 ~ HRc55			
STRENGTH	~ 1000N/mm²				1000 ~ 1200N/mm²				1400 ~ 2000N/mm²			
DIAMETER	RPM	FEED	Vc	fz	RPM	FEED	Vc	fz	RPM	FEED	Vc	fz
6.0	15600	2320	295	0.050	12400	840	235	0.023	3400	260	65	0.025
8.0	11600	2320	290	0.067	9200	840	230	0.030	2400	240	60	0.033
10.0	9200	2320	290	0.063	7600	840	240	0.028	2000	290	65	0.036
12.0	8000	2400	300	0.075	6000	800	225	0.033	1680	260	65	0.039
14.0	6800	2400	300	0.088	5200	840	230	0.040	1400	200	60	0.036
16.0	6000	2400	300	0.100	4800	760	240	0.040	1200	160	60	0.033
18.0	5200	2320	295	0.112	4400	720	250	0.041	1100	150	60	0.034
20.0	4800	2160	300	0.113	3600	560	225	0.039	1000	150	65	0.038
25.0	4300	2150	340	0.100	3200	620	250	0.039	900	160	70	0.036





MATERIAL	H				M				K			
	HARDENED STEELS				STAINLESS STEELS				CAST IRON			
HARDNESS	HRc55 ~ HRc65				HRc38 ~ HRc45							
STRENGTH	2000N/mm² ~				1200 ~ 1400N/mm²							
DIAMETER	RPM	FEED	Vc	fz	RPM	FEED	Vc	fz	RPM	FEED	Vc	fz
6.0	2400	190	45	0.026	8400	570	160	0.023	15600	2320	295	0.050
8.0	1800	180	45	0.033	6300	570	160	0.030	11600	2320	290	0.067
10.0	1300	190	40	0.037	5100	570	160	0.028	9200	2320	290	0.063
12.0	1200	190	45	0.040	4200	570	160	0.034	8000	2400	300	0.075
14.0	900	130	40	0.036	3600	570	160	0.040	6800	2400	300	0.088
16.0	800	110	40	0.034	3300	510	165	0.039	6000	2400	300	0.100
18.0	700	100	40	0.036	2700	420	155	0.039	5200	2320	295	0.112
20.0	660	100	40	0.038	2400	360	150	0.038	4800	2160	300	0.113
25.0	600	100	45	0.033	2160	410	170	0.038	4300	2150	340	0.100





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