X-POWER END MILLS

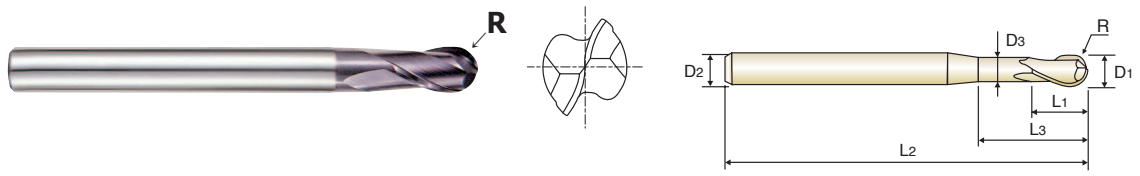
EM899 SERIES PLAIN SHANK
GLATTER ZYLINDERSCHAFT

EM900 SERIES FLAT SHANK
SEITLICHE MITNAHMEFLÄCHEN

CARBIDE, 2 FLUTE MEDIUM BALL NOSE with NECK
VOLLHARTMETALL, 2 SCHNEIDEN MEDIUM STIRNRADIUS mit ABGESETZTEM SCHAFTTEIL

- ▶ Deep slotting milling is possible by reduced neck.
- ▶ High efficiency milling is possible in deep slotting with projection of the end mill being long.

- ▶ Mit abgesetztem Schaftteil ist Tiefnutenfräsen möglich.
- ▶ Effizientes Tiefnutenfräsen von tiefliegenden Bereichen möglich.



MG HM | 2 | 30° | R ±0.02 | PLAIN | FLAT

P.893

Unit : mm

EDP No.		Radius of Ball Nose	Mill Diameter	Shank Diameter	Length of Cut	Length Below Shank	Overall Length	Neck Diameter
PLAIN	FLAT	R (±0.02)	D1	D2	L1	L3	L2	D3
EM899030	EM900030	R1.5	3.0	6	8	—	70	—
EM899040	EM900040	R2.0	4.0	6	8	—	70	—
EM899050	EM900050	R2.5	5.0	6	12	—	80	—
EM899060	EM900060	R3.0	6.0	6	12	22	80	5.8
EM899070	EM900070	R3.5	7.0	8	14	—	90	—
EM899080	EM900080	R4.0	8.0	8	14	27	90	7.8
EM899100	EM900100	R5.0	10.0	10	18	31	100	9.8
EM899120	EM900120	R6.0	12.0	12	22	35	110	11.8
EM899140	EM900140	R7.0	14.0	12	26	—	120	—
EM899160	EM900160	R8.0	16.0	16	30	50	140	15.8
EM899180	EM900180	R9.0	18.0	16	34	—	140	—
EM899200	EM900200	R10.0	20.0	20	38	58	160	19.8
EM899250	EM900250	R12.5	25.0	25	55	75	180	24.8

Mill Dia. Tolerance(mm)	Shank Dia. Tolerance
0~−0.03	h6

◎ : Excellent ○ : Good

Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels		High Hardened Steels	Copper	Graphite	Cast Iron	Aluminum	Stainless Steels	Titanium	Inconel	Acrylic	CFRP
~HB225	HB225~325	HRc30~40	HRc40~45	HRc45~55	HRc55~70									
○	◎	◎	◎	○	○			○						

X-POWER END MILLS

RECOMMENDED CUTTING CONDITIONS
EMPFOHLENE SCHNEIDKONDITIONEN

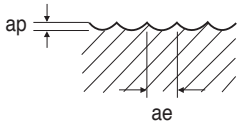
CARBIDE, 2 FLUTE BALL NOSE
VOLLHARTMETALL, 2 SCHNEIDEN STIRNRADIUS

EM899, EM900 SERIES

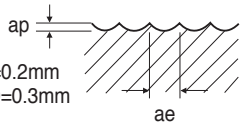
■ NORMAL SPEED

MATERIAL	NON-ALLOYED STEELS ALLOY STEELS CAST IRON				ALLOY STEELS HEAT RESISTANT STEELS				HARDENED STEELS			
HARDNESS	~ HRc30				HRc30 ~ HRc40				HRc45 ~ HRc65			
STRENGTH	~ 1000N/mm²				1000 ~ 1250N/mm²				1500N/mm² ~			
DIAMETER	RPM	FEED	Vc	fz	RPM	FEED	Vc	fz	RPM	FEED	Vc	fz
R0.5 × 1.0	15760	250	50	0.008	12720	200	40	0.008	5800	90	20	0.008
R0.75 × 1.5	15760	350	75	0.011	12140	270	55	0.011	5320	120	25	0.011
R1.0 × 2.0	14400	750	90	0.026	10700	490	65	0.023	4680	150	30	0.016
R1.25 × 2.5	14400	750	115	0.026	10700	490	85	0.023	4680	150	35	0.016
R1.5 × 3.0	13100	680	125	0.026	10000	460	95	0.023	4520	150	45	0.017
R2.0 × 4.0	10500	740	130	0.035	8400	530	105	0.032	4200	180	55	0.021
R2.5 × 5.0	9140	820	145	0.045	7300	580	115	0.040	3680	180	60	0.024
R3.0 × 6.0	8490	1020	160	0.060	6900	830	130	0.060	3180	190	60	0.030
R4.0 × 8.0	7160	1290	180	0.090	5770	920	145	0.080	2470	220	60	0.045
R5.0 × 10.0	6370	1530	200	0.120	5090	1020	160	0.100	2040	225	65	0.055
R6.0 × 12.0	5840	1750	220	0.150	4640	1110	175	0.120	1750	245	65	0.070
R8.0 × 16.0	4770	1720	240	0.180	3780	1060	190	0.140	1350	245	70	0.091
R10.0 × 20.0	4140	1660	260	0.200	3260	1040	205	0.160	1110	250	70	0.113

ap: D1~D6=0.2mm
D8~D20=0.3mm
ae: 0.2 × D



ap: D1~D6=0.2mm
D8~D20=0.3mm
ae: 0.1 × D

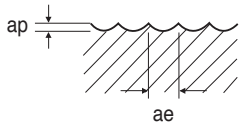


RPM = rev./min. Vc = m/min.
FEED = mm/min. fz = mm/t

■ HIGH SPEED

MATERIAL	NON-ALLOYED STEELS ALLOY STEELS CAST IRON				HARDENED STEELS			
HARDNESS	~ HRc45				HRc45 ~ HRc65			
STRENGTH	~ 1500N/mm²				1500N/mm² ~			
DIAMETER	RPM	FEED	Vc	fz	RPM	FEED	Vc	fz
R0.5 × 1.0	25000	1300	80	0.026	25000	800	80	0.016
R0.75 × 1.5	23000	1400	110	0.030	23000	860	110	0.019
R1.0 × 2.0	21000	1480	130	0.035	21000	940	130	0.022
R1.25 × 2.5	21000	1760	165	0.042	19000	980	150	0.026
R1.5 × 3.0	21000	2000	200	0.048	17000	1040	160	0.031
R2.0 × 4.0	21000	2940	265	0.070	13660	1160	170	0.042
R2.5 × 5.0	21000	3600	330	0.086	12000	1200	190	0.050
R3.0 × 6.0	21000	4000	395	0.095	10500	1250	200	0.060
R4.0 × 8.0	16700	4000	420	0.120	8360	1250	210	0.075
R5.0 × 10.0	14000	3900	440	0.139	7000	1200	220	0.086
R6.0 × 12.0	12200	3900	460	0.160	6100	1160	230	0.095
R8.0 × 16.0	9550	3450	480	0.181	4770	1000	240	0.105
R10.0 × 20.0	7960	3180	500	0.200	3980	920	250	0.116

ap: D1~D6=0.2mm
D8~D20=0.3mm
ae: 0.05 × D



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FEED = mm/min. fz = mm/t