

PLAIN SHANK
GLATTER ZYLINDERSCHAFT

FLAT SHANK
SEITLICHE MITNAHMEFLÄCHEN

CARBIDE, 2 FLUTE LONG LENGTH BALL NOSE VOLLHARTMETALL, 2 SCHNEIDEN LANG STIRNRADIUS

- ▶ Designed to machine tool steel, alloy steel, mold steel and other high hardened materials.
- ▶ For copy - milling machines.

- ▶ Zur Bearbeitung: Werkzeugstählen, Legierten Stählen, Stahlguß und gehärteten Stählen.
- ▶ Kopierbearbeitungen.



Unit : mm

EDP No.		Radius of Ball Nose	Mill Diameter	Shank Diameter	Length of Cut	Overall Length
PLAIN	FLAT	R (±0.02)				
EM813010	—	R0.5	1.0	4	2.5	50
EM813901	EM823901	R0.5	1.0	6	2.5	50
EM813012	—	R0.6	1.2	4	3	50
EM813015	—	R0.75	1.5	4	4	50
EM813902	EM823902	R0.75	1.5	6	4	50
EM813020	EM823020	R1.0	2.0	6	5	50
EM813025	EM823025	R1.25	2.5	6	6	60
EM813030	EM823030	R1.5	3.0	6	8	60
EM813035	EM823035	R1.75	3.5	6	8	70
EM813040	EM823040	R2.0	4.0	6	8	70
EM813050	EM823050	R2.5	5.0	6	10	80
EM813060	EM823060	R3.0	6.0	6	12	90
EM813070	EM823070	R3.5	7.0	8	14	90
EM813080	EM823080	R4.0	8.0	8	14	100
EM813090	EM823090	R4.5	9.0	10	18	100
EM813100	EM823100	R5.0	10.0	10	18	100
EM813120	EM823120	R6.0	12.0	12	22	110
EM813140	EM823140	R7.0	14.0	14	26	110
EM813903	EM823903	R7.0	14.0	16	26	110
EM813160	EM823160	R8.0	16.0	16	30	140
EM813180	EM823180	R9.0	18.0	18	34	140
EM813200	EM823200	R10.0	20.0	20	38	160
EM813250	EM823250	R12.5	25.0	25	50	180

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

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

◎ : Excellent ○ : Good



RECOMMENDED CUTTING CONDITIONS
EMPFOHLENE SCHNEIDKONDITIONEN

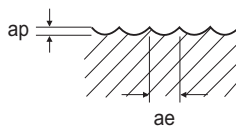
CARBIDE, 2 FLUTE BALL NOSE
VOLLHARTMETALL, 2 SCHNEIDEN STIRNRADIUS

EM876, EM877, EM813, EM823, EM878, EM879 SERIES

■ **NORMAL SPEED**

MATERIAL	NON-ALLOYED STEELS ALLOY STEELS CAST IRON		ALLOY STEELS HEAT RESISTANT STEELS		HARDENED STEELS	
	~ HRC30		HRC30 ~ HRC40		HRC45 ~ HRC65	
STRENGTH	~ 1000N/mm ²		1000 ~ 1250N/mm ²		1500N/mm ² ~	
DIAMETER	RPM	FEED	RPM	FEED	RPM	FEED
R0.5 × 1.0	15760	250	12720	200	5800	90
R0.75 × 1.5	15760	350	12140	270	5320	120
R1.0 × 2.0	14400	750	10700	490	4680	150
R1.25 × 2.5	14400	750	10700	490	4680	150
R1.5 × 3.0	13100	680	10000	460	4520	150
R2.0 × 4.0	10500	740	8400	530	4200	180
R2.5 × 5.0	9140	820	7300	580	3680	180
R3.0 × 6.0	8490	1020	6900	830	3180	190
R4.0 × 8.0	7160	1290	5770	920	2470	220
R5.0 × 10.0	6370	1530	5090	1020	2040	225
R6.0 × 12.0	5840	1750	4640	1110	1750	245
R8.0 × 16.0	4770	1720	3780	1060	1350	245
R10.0 × 20.0	4140	1660	3260	1040	1110	250

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



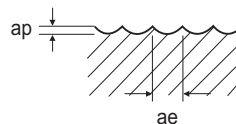
ap: D1~D6=0.2mm
D8~D20=0.3mm
ae: 0.1 × D

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

■ **HIGH SPEED**

MATERIAL	NON-ALLOYED STEELS ALLOY STEELS CAST IRON		HARDENED STEELS	
	~ HRC45		HRC45 ~ HRC65	
STRENGTH	~ 1500N/mm ²		1500N/mm ² ~	
DIAMETER	RPM	FEED	RPM	FEED
R0.5 × 1.0	25000	1300	25000	800
R0.75 × 1.5	23000	1400	23000	860
R1.0 × 2.0	21000	1480	21000	940
R1.25 × 2.5	21000	1760	19000	980
R1.5 × 3.0	21000	2000	17000	1040
R2.0 × 4.0	21000	2940	13660	1160
R2.5 × 5.0	21000	3600	12000	1200
R3.0 × 6.0	21000	4000	10500	1250
R4.0 × 8.0	16700	4000	8360	1250
R5.0 × 10.0	14000	3900	7000	1200
R6.0 × 12.0	12200	3900	6100	1160
R8.0 × 16.0	9550	3450	4770	1000
R10.0 × 20.0	7960	3180	3980	920

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



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