



EM815 SERIES

PLAIN SHANK
GLATTER ZYLINDERSCHAFT

EM825 SERIES

FLAT SHANK
SEITLICHE MITNAHMEFLÄCHEN

CARBIDE, 4 FLUTE LONG LENGTH BALL NOSE VOLLHARTMETALL, 4 SCHNEIDEN LANG STIRNRADIUS

- ▶ Designed to machine tool steels, alloy steels, mold steels and other high hardened materials.
- ▶ For copy - milling machines.
- ▶ 4 Flute design - higher feed than EM813, EM823 series

- ▶ Zur Bearbeitung: Werkzeugstählen, Legierten Stählen, Stahlguß und gehärteten Stählen.
- ▶ Kopierbearbeitungen.
- ▶ 4 Schneiden - Höherer Vorschub als bei EM 813, EM 823 serien.



P.899

Unit : mm

EDP No.		Radius of Ball Nose	Mill Diameter	Shank Diameter	Length of Cut	Overall Length
PLAIN	FLAT	R (±0.02)				
EM815010	—	R0.5	1.0	4	2.5	50
EM815901	EM825901	R0.5	1.0	6	2.5	50
EM815015	—	R0.75	1.5	4	4	50
EM815902	EM825902	R0.75	1.5	6	4	50
EM815020	EM825020	R1.0	2.0	6	5	50
EM815030	EM825030	R1.5	3.0	6	8	60
EM815040	EM825040	R2.0	4.0	6	8	70
EM815050	EM825050	R2.5	5.0	6	10	80
EM815060	EM825060	R3.0	6.0	6	12	90
EM815070	EM825070	R3.5	7.0	8	14	90
EM815080	EM825080	R4.0	8.0	8	14	100
EM815090	EM825090	R4.5	9.0	10	18	100
EM815100	EM825100	R5.0	10.0	10	18	100
EM815120	EM825120	R6.0	12.0	12	22	110
EM815140	EM825140	R7.0	14.0	14	26	110
EM815903	EM825903	R7.0	14.0	16	26	110
EM815160	EM825160	R8.0	16.0	16	30	140
EM815180	EM825180	R9.0	18.0	18	34	140
EM815200	EM825200	R10.0	20.0	20	38	160
EM815250	EM825250	R12.5	25.0	25	50	180

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									
○	◎	◎	◎	○	○			○						

CARBIDE, 4 FLUTE LONG BALL NOSE

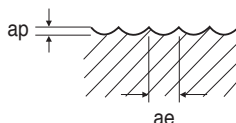
VOLLHARTMETALL, 4 SCHNEIDEN LANG STIRNRADIUS

EM815, EM825 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/mm ²				1000 ~ 1250N/mm ²				1500N/mm ² ~			
DIAMETER	RPM	FEED	Vc	fz	RPM	FEED	Vc	fz	RPM	FEED	Vc	fz
R0.5 × 1.0	15760	380	50	0.006	12720	300	40	0.006	5800	130	20	0.006
R0.75 × 1.5	15760	530	75	0.008	12140	410	55	0.008	5320	180	25	0.008
R1.0 × 2.0	15760	800	100	0.013	11560	480	75	0.010	4840	160	30	0.008
R1.5 × 3.0	13100	1020	125	0.019	10000	690	95	0.017	4520	220	45	0.012
R2.0 × 4.0	10500	1110	130	0.026	8400	800	105	0.024	4200	270	55	0.016
R2.5 × 5.0	9140	1230	145	0.034	7300	870	115	0.030	3680	270	60	0.018
R3.0 × 6.0	8490	1530	160	0.045	6900	1250	130	0.045	3180	280	60	0.022
R4.0 × 8.0	7160	1950	180	0.068	5770	1380	145	0.060	2470	330	60	0.033
R5.0 × 10.0	6370	2300	200	0.090	5090	1530	160	0.075	2040	340	65	0.042
R6.0 × 12.0	5840	2600	220	0.111	4640	1650	175	0.089	1750	370	65	0.053
R8.0 × 16.0	4770	2600	240	0.136	3780	1600	190	0.106	1350	370	70	0.069
R10.0 × 20.0	4140	2500	260	0.151	3260	1560	205	0.120	1110	375	70	0.084

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



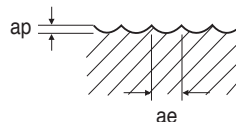
ap: D1~D6=0.2mm
D8~D20=0.3mm
ae: 0.1 × D

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/mm ²				1500N/mm ² ~			
DIAMETER	RPM	FEED	Vc	fz	RPM	FEED	Vc	fz
R0.5 × 1.0	25000	1950	80	0.020	25000	1200	80	0.012
R0.75 × 1.5	23000	2100	110	0.023	23000	1290	110	0.014
R1.0 × 2.0	21000	2200	130	0.026	21000	1400	130	0.017
R1.5 × 3.0	21000	3000	200	0.036	17000	1560	160	0.023
R2.0 × 4.0	21000	4400	265	0.052	13660	1740	170	0.032
R2.5 × 5.0	21000	5400	330	0.064	12000	1800	190	0.038
R3.0 × 6.0	21000	6000	395	0.071	10500	1880	200	0.045
R4.0 × 8.0	16700	6000	420	0.090	8360	1880	210	0.056
R5.0 × 10.0	14000	5850	440	0.104	7000	1800	220	0.064
R6.0 × 12.0	12200	5850	460	0.120	6100	1740	230	0.071
R8.0 × 16.0	9550	5180	480	0.136	4770	1500	240	0.079
R10.0 × 20.0	7960	4770	500	0.150	3980	1380	250	0.087

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



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