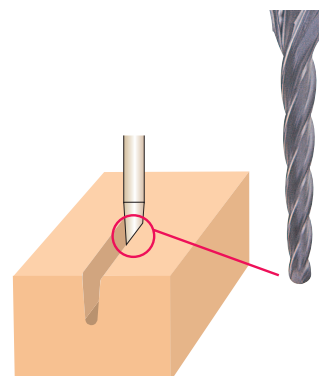



**X-POWER
END MILLS**
EM890 SERIES

 PLAIN SHANK
GLATTER ZYLINDERSCHAFT

CARBIDE, 4 FLUTE 25° HELIX TAPER BALL NOSE for RIB PROCESSING
VOLLHARTMETALL, 4 SCHNEIDEN 25° RECHTSSPIRALE KONISCH STIRNRADIUS für SCHMALE RIPPEN


Unit : mm

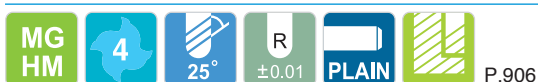
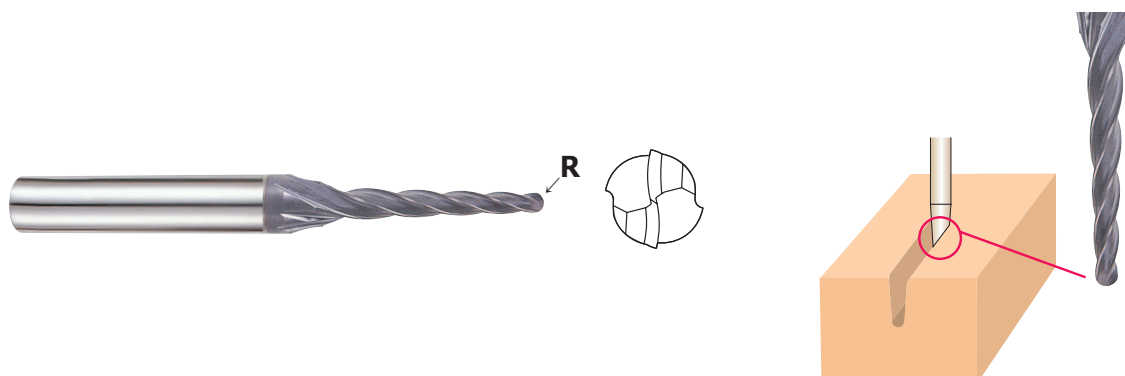
EDP No.	Radius of Ball Nose	Mill Diameter	Shank Diameter	Length of Cut	Overall Length	Taper Angle
PLAIN	R (±0.01)					
EM890909	RO.5	1.0	4	8	45	30°
EM890911	RO.5	1.0	4	12	45	30°
EM890010	RO.5	1.0	4	8	45	1°
EM890916	RO.5	1.0	4	12	45	1°
EM890917	RO.5	1.0	4	8	45	1° 30'
EM890919	RO.5	1.0	4	12	45	1° 30'
EM890920	RO.5	1.0	4	8	45	2°
EM890922	RO.5	1.0	4	12	45	2°
EM890923	RO.6	1.2	4	8	45	30°
EM890925	RO.6	1.2	4	12	45	30°
EM890012	RO.6	1.2	4	8	45	1°
EM890932	RO.6	1.2	4	12	45	1°
EM890934	RO.6	1.2	4	8	45	1° 30'
EM890936	RO.6	1.2	4	12	45	1° 30'
EM890938	RO.6	1.2	4	8	45	2°
EM890940	RO.6	1.2	4	12	45	2°
EM890942	RO.75	1.5	4	8	45	30°
EM890944	RO.75	1.5	4	12	45	30°
EM890945	RO.75	1.5	4	16	50	30°
EM890015	RO.75	1.5	4	8	45	1°
EM890953	RO.75	1.5	4	12	45	1°
EM890954	RO.75	1.5	4	16	50	1°
EM890956	RO.75	1.5	4	8	45	1° 30'
EM890958	RO.75	1.5	4	12	45	1° 30'
EM890959	RO.75	1.5	4	16	50	1° 30'
EM890961	RO.75	1.5	4	8	45	2°
EM890963	RO.75	1.5	4	12	45	2°
EM890964	RO.75	1.5	4	16	50	2°

◎ : 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 25° HELIX TAPER BALL NOSE for RIB PROCESSING

VOLLHARTMETALL, 4 SCHNEIDEN 25° RECHTSSPIRALE KONISCH STIRNRADIUS für SCHMALE RIPPEN



Unit : mm

EDP No.	Radius of Ball Nose R (±0.01)	Mill Diameter	Shank Diameter	Length of Cut	Overall Length	Taper Angle
PLAIN						
EM890816	R1.0	2.0	4	12	45	30'
EM890817	R1.0	2.0	4	16	50	30'
EM890825	R1.0	2.0	4	12	45	1°
EM890826	R1.0	2.0	4	16	50	1°
EM890830	R1.0	2.0	4	12	45	1° 30'
EM890831	R1.0	2.0	4	16	50	1° 30'
EM890835	R1.0	2.0	4	12	45	2°
EM890836	R1.0	2.0	4	16	50	2°

Mill Dia. Tolerance(mm)	Shank Dia. Tolerance	Taper Angle Tolerance
0~-0.015	0~-0.008	±5'

◎ : 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									
○	◎	◎	◎	○			○						



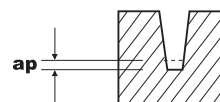
RECOMMENDED CUTTING CONDITIONS EMPFOHLENE SCHNEIDKONDITIONEN

CARBIDE, 4 FLUTE TAPER for RIB PROCESSING VOLLHARTMETALL, 4 SCHNEIDEN KONISCH für SCHMALE RIPPEN

EM889 SERIES

MATERIAL	NON-ALLOYED STEELS ALLOY STEELS CAST IRON					ALLOY STEELS HEAT RESISTANT STEELS					HARDENED STEELS				
HARDNESS	~ HRC30					HRC30 ~ HRC45					HRC45 ~ HRC55				
STRENGTH	~ 1000N/mm ²					1000 ~ 1500N/mm ²					1500 ~ 2000N/mm ²				
DIAMETER	RPM	FEED	ap(mm)	Vc	fz	RPM	FEED	ap(mm)	Vc	fz	RPM	FEED	ap(mm)	Vc	fz
1.0	20000	700	0.020~0.040	65	0.009	15000	500	0.020~0.030	45	0.008	10000	300	0.010~0.020	30	0.008
1.2	16000	700	0.025~0.050	60	0.011	13000	500	0.025~0.040	50	0.010	8000	300	0.012~0.025	30	0.009
1.5	13000	700	0.030~0.060	60	0.013	10000	500	0.030~0.050	45	0.013	6500	300	0.015~0.030	30	0.012
2.0	10000	700	0.040~0.080	65	0.018	8000	500	0.040~0.060	50	0.016	5000	300	0.020~0.040	30	0.015

(Depth of Cut per one pass)



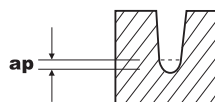
RPM = rev./min.
FEED = mm/min.
Vc = m/min.
fz = mm/t

CARBIDE, 4 FLUTE TAPER BALL NOSE for RIB PROCESSING VOLLHARTMETALL, 4 SCHNEIDEN KONISCH STIRNRADIUS für SCHMALE RIPPEN

EM890 SERIES

MATERIAL	NON-ALLOYED STEELS ALLOY STEELS CAST IRON					ALLOY STEELS HEAT RESISTANT STEELS					HARDENED STEELS				
HARDNESS	~ HRC30					HRC30 ~ HRC45					HRC45 ~ HRC55				
STRENGTH	~ 1000N/mm ²					1000 ~ 1500N/mm ²					1500 ~ 2000N/mm ²				
DIAMETER	RPM	FEED	ap(mm)	Vc	fz	RPM	FEED	ap(mm)	Vc	fz	RPM	FEED	ap(mm)	Vc	fz
R0.5 × 1.0	20000	700	0.020~0.040	65	0.009	15000	500	0.020~0.030	45	0.008	10000	300	0.010~0.020	30	0.008
R0.6 × 1.2	16000	700	0.025~0.050	60	0.011	13000	500	0.025~0.040	50	0.010	8000	300	0.012~0.025	30	0.009
R0.75 × 1.5	13000	700	0.030~0.060	60	0.013	10000	500	0.030~0.050	45	0.013	6500	300	0.015~0.030	30	0.012
R1.0 × 2.0	10000	700	0.040~0.080	65	0.018	8000	500	0.040~0.060	50	0.016	5000	300	0.020~0.040	30	0.015

(Depth of Cut per one pass)



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