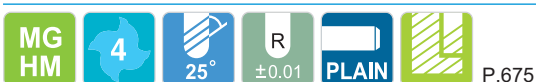
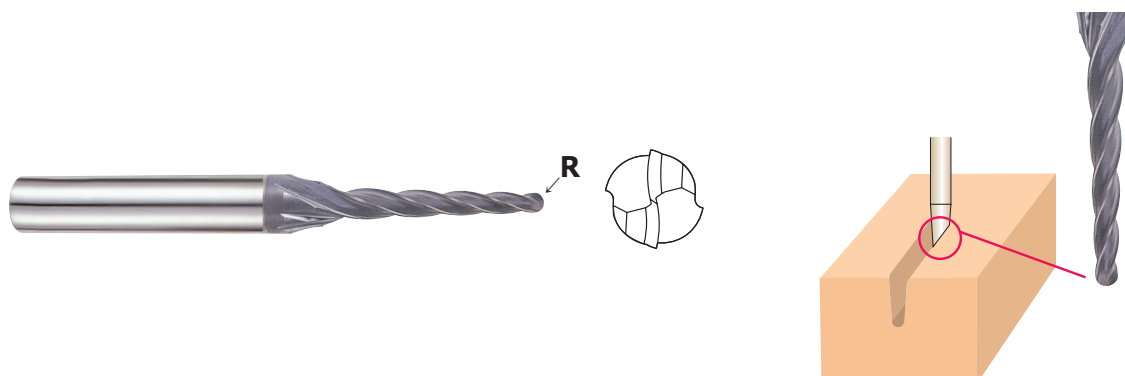


**CARBIDE, 4 FLUTE 25° HELIX TAPER BALL NOSE for RIB PROCESSING**  
**VOLLHARTMETALL, 4 SCHNEIDEN 25° RECHTSSPIRALE KONISCH STIRNRADIUS für SCHMALE RIPPEN**


Unit : mm

EDP No.	Radius of Ball Nose	Mill Diameter	Shank Diameter	Length of Cut	Overall Length	Taper Angle
PLAIN	R (±0.01)					
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

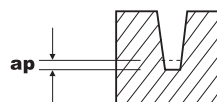
Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels		High Hardened Steels	Copper	Graphite	Cast Iron	Aluminum	Stainless Steels	Titanium	Inconel
~HB225	HB225~325	HRc30~40	HRc40~45	HRc45~55	HRc55~70							
○	◎	◎	◎	○				○				

**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 <sup>2</sup>			1000 ~ 1500N/mm <sup>2</sup>			1500 ~ 2000N/mm <sup>2</sup>		
DIAMETER	RPM	FEED	ap (mm)	RPM	FEED	ap (mm)	RPM	FEED	ap (mm)
1.0	20000	700	0.020~0.040	15000	500	0.020~0.030	10000	300	0.010~0.020
1.2	16000	700	0.025~0.050	13000	500	0.025~0.040	8000	300	0.012~0.025
1.5	13000	700	0.030~0.060	10000	500	0.030~0.050	6500	300	0.015~0.030
2.0	10000	700	0.040~0.080	8000	500	0.040~0.060	5000	300	0.020~0.040

(Depth of Cut per one pass)



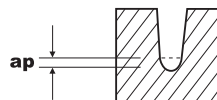
RPM = rev./min.  
FEED = mm/min.

**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 <sup>2</sup>			1000 ~ 1500N/mm <sup>2</sup>			1500 ~ 2000N/mm <sup>2</sup>		
DIAMETER	RPM	FEED	ap (mm)	RPM	FEED	ap (mm)	RPM	FEED	ap (mm)
R0.5 × 1.0	20000	700	0.020~0.040	15000	500	0.020~0.030	10000	300	0.010~0.020
R0.6 × 1.2	16000	700	0.025~0.050	13000	500	0.025~0.040	8000	300	0.012~0.025
R0.75 × 1.5	13000	700	0.030~0.060	10000	500	0.030~0.050	6500	300	0.015~0.030
R1.0 × 2.0	10000	700	0.040~0.080	8000	500	0.040~0.060	5000	300	0.020~0.040

(Depth of Cut per one pass)



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