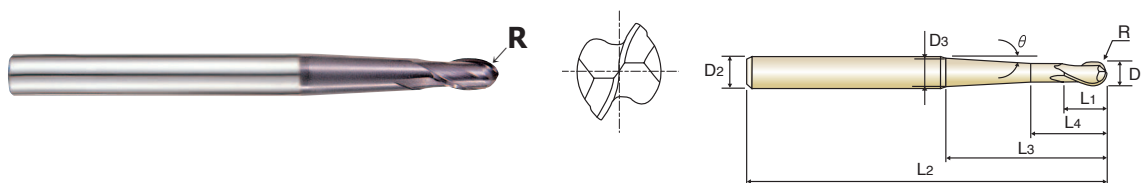


CARBIDE, 2 FLUTE BALL NOSE with TAPER NECK

VOLLHARTMETALL, 2 SCHNEIDEN STIRNRADIUS mit KONISCH ABGESETZTEM SCHAFTTEIL

► High efficiency milling in deep slotting due to long projection of the end mills.

► Effizientes Tiefnutenfräsen von tiefliegenden Bereichen möglich.



Unit : mm

EDP No.		Radius of Ball Nose	Mill Diameter	Shank Diameter	Length of Cut	Under Neck Parallel Length	Length Below Shank	Overall Length	Neck Diameter	Neck Taper Angle
PLAIN	FLAT	R (±0.01)	D1	D2	L1	L4	L3	L2	D3	θ
EM902010	EM904010	R0.5	1.0	6	2	4	23	60	2	1°30'
EM902901	EM904901	R0.5	1.0	6	2	4	23	60	4.3	5°
EM902902	EM904902	R0.5	1.0	6	2	4	42	80	5	3°
EM902020	EM904020	R1.0	2.0	6	4	6	23	60	2.9	1°30'
EM902903	EM904903	R1.0	2.0	6	4	6	23	60	5	5°
EM902904	EM904904	R1.0	2.0	6	4	6	41	80	5.7	3°
EM902030	EM904030	R1.5	3.0	6	6	8	32	70	5.6	3°
EM902905	EM904905	R1.5	3.0	6	6	8	52	90	5.3	1°30'
EM902040	EM904040	R2.0	4.0	6	8	10	28	70	6	3°
EM902906	EM904906	R2.0	4.0	6	8	10	49	90	6	1°30'
EM902050	EM904050	R2.5	5.0	8	10	12	41	90	8	3°
EM902907	EM904907	R2.5	5.0	8	10	12	61	110	7	1°30'
EM902060	EM904060	R3.0	6.0	8	12	15	34	90	8	3°
EM902908	EM904908	R3.0	6.0	8	12	15	53	110	8	1°30'
EM902080	EM904080	R4.0	8.0	10	14	17	36	100	10	3°
EM902909	EM904909	R4.0	8.0	10	14	17	55	120	10	1°30'
EM902100	EM904100	R5.0	10.0	12	18	21	40	110	12	3°
EM902910	EM904910	R5.0	10.0	12	18	21	59	130	12	1°30'
EM902120	EM904120	R6.0	12.0	16	22	25	63	140	16	3°
EM902911	EM904911	R6.0	12.0	16	22	25	83	160	15	1°30'

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									
○	○	◎	◎	○									

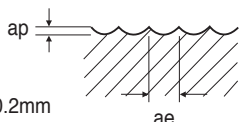
CARBIDE, 2 FLUTE BALL NOSE with TAPER NECK

VOLLHARTMETALL, 2 SCHNEIDEN STIRNRADIUS mit KONISCH ABGESETZTEM SCHAFTTEIL

EM902, EM904 SERIES

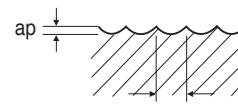
■ NORMAL SPEED

MATERIAL	ALLOY STEELS HEAT RESISTANT STEELS				HARDENED STEELS				HARDENED STEELS			
HARDNESS	HRC30 ~ HRC40				HRC40 ~ HRC50				HRC50 ~ HRC55			
STRENGTH	1000 ~ 1250N/mm ²				1250 ~ 1750N/mm ²				1750 ~ 2000N/mm ²			
DIAMETER	RPM	FEED	Vc	fz	RPM	FEED	Vc	fz	RPM	FEED	Vc	fz
R0.5 × 1.0	10180	160	30	0.008	16000	370	50	0.012	16000	320	50	0.010
R1.0 × 2.0	9250	260	60	0.014	11500	640	70	0.028	11300	590	70	0.026
R1.5 × 3.0	8000	370	75	0.023	10200	880	95	0.043	9800	850	90	0.043
R2.0 × 4.0	6720	420	85	0.031	8500	880	105	0.052	8200	850	105	0.052
R2.5 × 5.0	5840	460	90	0.039	7500	880	120	0.059	7200	850	115	0.059
R3.0 × 6.0	5500	660	105	0.060	6900	920	130	0.067	6500	880	125	0.068
R4.0 × 8.0	4600	740	115	0.080	5600	840	140	0.075	5300	800	135	0.075
R5.0 × 10.0	4070	820	130	0.101	4850	800	150	0.082	4650	770	145	0.083
R6.0 × 12.0	3700	890	140	0.120	4350	800	165	0.092	4150	770	155	0.093



 ap: D1~D6=0.2mm
 D8~D12=0.3mm
 ae: 0.2 × D

ap: D1~D4=0.05 × D
 D5~D8=0.25mm
 D10~D12=0.30mm
 ae: 0.1 × D

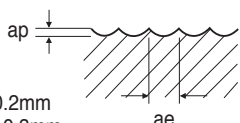


 ap: D1~D4=0.05 × D
 D5~D8=0.25mm
 D10~D12=0.30mm
 ae: 0.1 × D

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

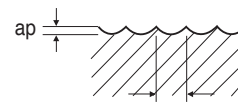
■ HIGH SPEED

MATERIAL	NON-ALLOY STEELS ALLOY STEELS CAST IRON				HARDENED STEELS				HARDENED STEELS			
HARDNESS	~ HRC45				HRC45 ~ HRC50				HRC50 ~ HRC55			
STRENGTH	~ 1500N/mm ²				1250 ~ 1750N/mm ²				1750 ~ 2000N/mm ²			
DIAMETER	RPM	FEED	Vc	fz	RPM	FEED	Vc	fz	RPM	FEED	Vc	fz
R0.5 × 1.0	20000	1040	65	0.026	16000	620	50	0.019	16000	550	50	0.017
R1.0 × 2.0	16800	1200	105	0.036	11500	850	70	0.037	11400	980	70	0.043
R1.5 × 3.0	16800	1600	160	0.048	10200	1400	95	0.069	9800	1300	90	0.066
R2.0 × 4.0	16800	2350	210	0.070	8500	1350	105	0.079	8200	1300	105	0.079
R2.5 × 5.0	16800	2880	265	0.086	7500	1320	120	0.088	7200	1250	115	0.087
R3.0 × 6.0	16800	3200	315	0.095	6900	1400	130	0.101	6600	1350	125	0.102
R4.0 × 8.0	13400	3200	335	0.119	5600	1250	140	0.112	5300	1150	135	0.108
R5.0 × 10.0	11200	3100	350	0.138	4800	1150	150	0.120	4600	1100	145	0.120
R6.0 × 12.0	9800	3100	370	0.158	4350	1130	165	0.130	4150	1050	155	0.127



 ap: D1~D6=0.2mm
 D8~D12=0.3mm
 ae: 0.05 × D

ap: D1~D4=0.05 × D
 D5~D8=0.25mm
 D10~D20=0.30mm
 ae: 0.05 × D



 ap: D1~D4=0.05 × D
 D5~D8=0.25mm
 D10~D20=0.30mm
 ae: 0.05 × D

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