



FLAT SHANK  
SEITLICHE MITNAHMEFLÄCHEN

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## PREMIUM HSS-PM, 2 FLUTE SHORT LENGTH BALL NOSE PREMIUM HSS-PM, 2 SCHNEIDEN STIRNRADIUS KURZ

- ▶ Designed to machine carbon steels, alloyed steels, stainless steels.
- ▶ Designed for milling of radius bottom slots, fillets and special contours.
- ▶ YG-1's new developed TANK-POWER Coating suitable for high speed cutting.
- ▶ Geeignet zum Fräsen von Stahl, legiertem Stahl und rostfreier Stahl.
- ▶ Entworfen zum Fräsen von Nuten mit Radien, Rippen und speziellen Konturen.
- ▶ Neuentwickelte Beschichtung für Hochgeschwindigkeitsfräsen.



Unit : mm

EDP No.		Radius of Ball Nose	Mill Diameter	Shank Diameter	Length of Cut	Overall Length
UNCOATED	TANK-POWER COATED	R (±0.02)				
E9940010	GA940010	R0.5	1.0	6	2.5	47
E9940020	GA940020	R1.0	2.0	6	4	48
E9940030	GA940030	R1.5	3.0	6	5	49
E9940040	GA940040	R2.0	4.0	6	7	51
E9940050	GA940050	R2.5	5.0	6	8	52
E9940060	GA940060	R3.0	6.0	6	8	52
E9940070	GA940070	R3.5	7.0	10	10	60
E9940080	GA940080	R4.0	8.0	10	11	61
E9940090	GA940090	R4.5	9.0	10	11	61
E9940100	GA940100	R5.0	10.0	10	13	63
E9940120	GA940120	R6.0	12.0	12	16	73
E9940140	GA940140	R7.0	14.0	12	16	73
E9940160	GA940160	R8.0	16.0	16	19	79
E9940180	GA940180	R9.0	18.0	16	19	79
E9940200	GA940200	R10.0	20.0	20	22	88
E9940220	GA940220	R11.0	22.0	20	22	88
E9940250	GA940250	R12.5	25.0	25	26	102

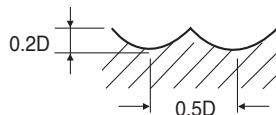
Mill Dia. Tolerance(mm)	Shank Dia. Tolerance
0~-0.03	h6

Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels		High Hardened Steels	Copper	Graphite	Cast Iron	Aluminum	Stainless Steels	Titanium	Inconel	Acrylic	CFRP
~HB225	HB225~325	HRC30~40	HRc40~45	HRc45~55	HRc55~70									
◎	◎	○				○		◎		◎				


**PREMIUM HSS-PM, 2 FLUTE BALL NOSE - PROFILING  
PREMIUM HSS-PM, 2 SCHNEIDEN STIRNRADIUS - PROFILFRÄSEN**
**GA940, GAA32 SERIES**

MATERIAL	STRUCTURAL STEELS CARBON STEELS				STRUCTURAL STEELS CARBON STEELS CAST IRONS				CARBON STEELS ALLOY STEELS TOOL STEELS			
	~ 500N/mm <sup>2</sup>				500 ~ 800N/mm <sup>2</sup>				800 ~ 1000N/mm <sup>2</sup>			
HARDNESS	~ HRC20				~ HRC20				HRC20 ~ HRC30			
STRENGTH	~ 500N/mm <sup>2</sup>				500 ~ 800N/mm <sup>2</sup>				800 ~ 1000N/mm <sup>2</sup>			
DIAMETER	RPM	FEED	Vc	fz	RPM	FEED	Vc	fz	RPM	FEED	Vc	fz
<b>R1.5 × 3.0</b>	7300	340	70	0.023	5800	230	55	0.020	3900	125	35	0.016
<b>R2.0 × 4.0</b>	6000	430	75	0.036	4620	290	60	0.031	3000	160	40	0.027
<b>R3.0 × 6.0</b>	4400	480	85	0.055	3500	320	65	0.046	2300	180	45	0.039
<b>R4.0 × 8.0</b>	3350	530	85	0.079	2600	350	65	0.067	1800	200	45	0.056
<b>R5.0 × 10.0</b>	2750	600	85	0.109	2100	400	65	0.095	1400	230	45	0.082
<b>R6.0 × 12.0</b>	2300	530	85	0.115	1800	350	70	0.097	1200	200	45	0.083
<b>R8.0 × 16.0</b>	1700	480	85	0.141	1300	320	65	0.123	890	180	45	0.101
<b>R10.0 × 20.0</b>	1350	420	85	0.156	1000	280	65	0.140	680	150	45	0.110
<b>R12.5 × 25.0</b>	950	310	75	0.163	740	210	60	0.142	470	115	35	0.122

MATERIAL	PREHARDENED STEELS ALLOY STEELS TOOL STEELS				STAINLESS STEELS			
	HRC30 ~ HRC40							
STRENGTH	1000 ~ 1300N/mm <sup>2</sup>							
DIAMETER	RPM	FEED	Vc	fz	RPM	FEED	Vc	fz
<b>R1.5 × 3.0</b>	2000	55	20	0.014	2200	60	20	0.014
<b>R2.0 × 4.0</b>	1600	75	20	0.023	1760	80	20	0.023
<b>R3.0 × 6.0</b>	1200	85	25	0.035	1320	95	25	0.036
<b>R4.0 × 8.0</b>	890	85	20	0.048	980	95	25	0.048
<b>R5.0 × 10.0</b>	680	102	20	0.075	750	110	25	0.073
<b>R6.0 × 12.0</b>	580	85	20	0.073	640	95	25	0.074
<b>R8.0 × 16.0</b>	440	80	20	0.091	490	90	25	0.092
<b>R10.0 × 20.0</b>	360	70	25	0.097	400	80	25	0.100
<b>R12.5 × 25.0</b>	250	52	20	0.104	275	55	20	0.100



※ The FEED, in long & long reach types, should be reduced by around 50%

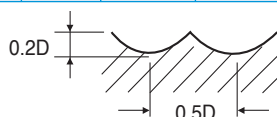
RPM = rev./min.  
FEED = mm/min.  
Vc = m/min.  
fz = mm/t

**PREMIUM HSS-PM, 2 FLUTE BALL NOSE - PROFILING**  
**PREMIUM HSS-PM, 2 SCHNEIDEN STIRNRADIUS - PROFILFRÄSEN**

**E9940, E9A32 SERIES**

MATERIAL	STRUCTURAL STEELS CARBON STEELS				STRUCTURAL STEELS CARBON STEELS CAST IRONS				CARBON STEELS ALLOY STEELS TOOL STEELS			
HARDNESS					~ HRc20				HRc20 ~ HRc30			
STRENGTH	~ 500N/mm <sup>2</sup>				500 ~ 800N/mm <sup>2</sup>				800 ~ 1000N/mm <sup>2</sup>			
DIAMETER	RPM	FEED	Vc	fz	RPM	FEED	Vc	fz	RPM	FEED	Vc	fz
R1.5 × 3.0	5000	210	45	0.021	3900	140	35	0.018	2600	80	25	0.015
R2.0 × 4.0	4000	260	50	0.033	3100	180	40	0.029	2100	100	25	0.024
R3.0 × 6.0	3000	300	55	0.050	2300	200	45	0.043	1600	110	30	0.034
R4.0 × 8.0	2300	330	60	0.072	1800	220	45	0.061	1200	125	30	0.052
R5.0 × 10.0	1800	370	55	0.103	1400	250	45	0.089	1000	140	30	0.070
R6.0 × 12.0	1500	330	55	0.110	1200	220	45	0.092	820	125	30	0.076
R8.0 × 16.0	1100	300	55	0.136	900	200	45	0.111	600	110	30	0.092
R10.0 × 20.0	930	260	60	0.140	710	170	45	0.120	480	95	30	0.099
R12.5 × 25.0	640	190	50	0.148	500	130	40	0.130	340	70	25	0.103

MATERIAL	PREHARDENED STEELS ALLOY STEELS TOOL STEELS				STAINLESS STEELS			
HARDNESS	HRc30 ~ HRc40							
STRENGTH	1000 ~ 1300N/mm <sup>2</sup>							
DIAMETER	RPM	FEED	Vc	fz	RPM	FEED	Vc	fz
R1.5 × 3.0	1300	35	10	0.013	1430	40	15	0.014
R2.0 × 4.0	1000	45	15	0.023	1100	55	15	0.025
R3.0 × 6.0	820	55	15	0.034	900	65	15	0.036
R4.0 × 8.0	600	55	15	0.046	660	65	15	0.049
R5.0 × 10.0	480	65	15	0.068	530	80	15	0.075
R6.0 × 12.0	400	55	15	0.069	440	65	15	0.074
R8.0 × 16.0	300	50	15	0.083	330	60	15	0.091
R10.0 × 20.0	240	45	15	0.094	265	55	15	0.104
R12.5 × 25.0	175	30	15	0.086	195	35	15	0.090



※ The FEED, in long & long reach types, should be reduced by around 50%

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