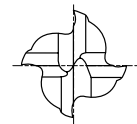


HSS-PM, 4 FLUTE LONG LENGTH

- HSS-PM, 4 SCHNEIDEN LANG
- FRAISES HSS-PM, 4 DENTS, SÉRIE LONGUE
- 4 TAGLIENTI, SERIE LUNGA, HSS-PM

- ▶ Designed to machine carbon steels, alloyed steels, stainless steels.
- ▶ Recommended for pocketing, cam milling, die sinking and slotting.
- ▶ Designed for high speed cutting of difficult-to-cut materials.
- ▶ YG-1's new developed TANK-POWER Coating suitable for high speed cutting.

- ▶ Geeignet zum Fräsen von Stahl, legiertem Stahl und rostfreier Stahl.
- ▶ Empfohlen für Taschenfräsen, Nockenfräsen, Gussformen und Nutenfräsen.
- ▶ Geeignet für Hochgeschwindigkeitsfräsen von schwer zu zerspanenden Materialien.
- ▶ Neuentwickelte Beschichtung für Hochgeschwindigkeitsfräsen.



HSS PM
DIN 844
4
30°
DIN 1835B
P.662-663

Unit : mm

EDP No.		Mill Diameter	Shank Diameter	Length of Cut	Overall Length
UNCOATED	TiAIN based				
E9A31020	GAA31020	2.0	6	10	54
E9A31030	GAA31030	3.0	6	12	56
E9A31040	GAA31040	4.0	6	19	63
E9A31050	GAA31050	5.0	6	24	68
E9A31060	GAA31060	6.0	6	24	68
E9A31070	GAA31070	7.0	10	30	80
E9A31080	GAA31080	8.0	10	38	88
E9A31090	GAA31090	9.0	10	38	88
E9A31100	GAA31100	10.0	10	45	95
E9A31120	GAA31120	12.0	12	53	110
E9A31140	GAA31140	14.0	12	53	110
E9A31160	GAA31160	16.0	16	63	123
E9A31180	GAA31180	18.0	16	63	123
E9A31200	GAA31200	20.0	20	75	141
E9A31220	GAA31220	22.0	20	75	141
E9A31250	GAA31250	25.0	25	90	166

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

◎ : Excellent ○ : Good

ISO Material Description	P										M			K							
	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel			Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21	
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230	
Recommend	◎	◎	◎	◎	◎	◎	◎	◎	○	◎	○	◎	◎	◎	◎	◎	◎	◎	◎	◎	

ISO Material Description	N					S										H					
	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron	
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommend						○	○	○													

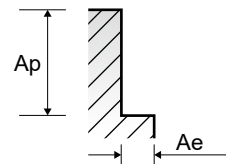
- CBN END MILLS
- i-Xmill END MILLS
- i-SMART MODULAR END MILLS
- X5070 END MILLS
- 4G MILL END MILLS
- X-POWER PRO END MILLS
- TitaNox-POWER END MILLS
- JET-POWER END MILLS
- V7 PLUS END MILLS
- ALU-POWER HPC END MILLS
- ALU-POWER END MILLS
- D-POWER GRAPHITE END MILLS
- D-POWER CFRP END MILLS
- ROUTERS
- CRX S END MILLS
- K-2 END MILLS
- ONLY ONE COATED PM60 END MILLS
- TANK-POWER END MILLS
- GENERAL HSS END MILLS
- MILLING CUTTERS
- TECHNICAL DATA

E9938 , E9A31 SERIES 4 FLUTE - SIDE CUTTING

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

ISO	VDI 3323	Material Description	Ae	Ap	Parameter	Diameter (Ø)															
						2.0	3.0	4.0	5.0	6.0	8.0	10.0	12.0	14.0	16.0	18.0	20.0	22.0	25.0		
P	1	Non-alloy steel	0.1D	1.5D	Vc	40	40	45	45	50	55	50	50	55	55	55	55	55	50	55	
					fz	0.007	0.014	0.021	0.026	0.032	0.043	0.061	0.069	0.071	0.07	0.07	0.079	0.092	0.085		
					RPM	6366	4244	3581	2865	2653	2188	1592	1326	1251	1094	973	875	723	700		
	2		0.1D	1.5D	Vc	35	40	40	40	45	45	45	45	50	45	50	45	45	45		
					fz	0.007	0.013	0.02	0.025	0.029	0.042	0.059	0.063	0.065	0.074	0.074	0.081	0.078	0.083		
					RPM	5570	4244	3183	2546	2387	1790	1432	1194	1137	895	884	716	651	573		
	3-4		0.1D	1.5D	Vc	25	30	30	30	35	35	35	35	35	35	35	35	30	35		
					fz	0.007	0.013	0.02	0.024	0.028	0.041	0.053	0.064	0.069	0.075	0.079	0.081	0.087	0.081		
					RPM	3979	3183	2387	1910	1857	1393	1114	928	796	696	619	557	434	446		
	5		0.1D	1.5D	Vc	20	20	20	20	25	25	20	25	25	25	25	25	20	20		
					fz	0.007	0.014	0.02	0.024	0.029	0.042	0.058	0.063	0.066	0.075	0.07	0.076	0.078	0.085		
RPM		3183			2122	1592	1273	1326	995	637	663	568	497	442	398	289	255				
6	0.1D	1.5D	Vc	35	40	40	40	45	45	45	45	50	45	50	45	45	45				
			fz	0.007	0.013	0.02	0.025	0.029	0.042	0.059	0.063	0.065	0.074	0.074	0.081	0.078	0.083				
			RPM	5570	4244	3183	2546	2387	1790	1432	1194	1137	895	884	716	651	573				
7	0.1D	1.5D	Vc	25	30	30	30	35	35	35	35	35	35	35	30	35					
			fz	0.007	0.013	0.02	0.024	0.028	0.041	0.053	0.064	0.069	0.075	0.079	0.081	0.087	0.081				
			RPM	3979	3183	2387	1910	1857	1393	1114	928	796	696	619	557	434	446				
8	0.1D	1.5D	Vc	20	20	20	20	25	25	20	25	25	25	25	20	20					
			fz	0.007	0.014	0.02	0.024	0.029	0.042	0.058	0.063	0.066	0.075	0.07	0.076	0.078	0.085				
			RPM	3183	2122	1592	1273	1326	995	637	663	568	497	442	398	289	255				
9	0.1D	1.5D	Vc	15	15	15	20	20	20	20	20	20	20	20	20	20	20				
			fz	0.006	0.012	0.018	0.022	0.028	0.038	0.052	0.058	0.061	0.067	0.07	0.071	0.074	0.083				
			RPM	2387	1592	1194	1273	1061	796	637	531	455	398	354	318	289	255				
10	0.1D	High alloyed steel, and tool steel	1.5D	Vc	35	40	40	40	45	45	45	45	50	45	50	45	45	45			
				fz	0.007	0.013	0.02	0.025	0.029	0.042	0.059	0.063	0.065	0.074	0.074	0.081	0.078	0.083			
				RPM	5570	4244	3183	2546	2387	1790	1432	1194	1137	895	884	716	651	573			
11.1	0.1D		1.5D	Vc	20	20	20	20	25	25	20	25	25	25	25	20	20				
				fz	0.007	0.014	0.02	0.024	0.029	0.042	0.058	0.063	0.066	0.075	0.07	0.076	0.078	0.085			
				RPM	3183	2122	1592	1273	1326	995	637	663	568	497	442	398	289	255			
K	15-20		Grey cast iron Nodular cast iron Malleable cast iron	0.1D	1.5D	Vc	35	40	40	40	45	45	45	45	50	45	50	45	45	45	
						fz	0.007	0.013	0.02	0.025	0.029	0.042	0.059	0.063	0.065	0.074	0.074	0.081	0.078	0.083	
						RPM	5570	4244	3183	2546	2387	1790	1432	1194	1137	895	884	716	651	573	
						FEED	156	221	255	255	277	301	338	301	296	265	262	232	203	190	

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



SELECTION GUIDE



SERIES	E9940 GA940	E9A32 GAA32	E9936 GA936	E9A29 GAA29
FLUTE	2	2	2	2
HELIX ANGLE	30°	30°	30°	30°
CUTTING EDGE SHAPE	BALL NOSE	BALL NOSE	SQUARE	SQUARE
SIZE MIN	R0.5	R1.0	D1.0	D1.0
SIZE MAX	R12.5	R12.5	D25.0	D25.0
PAGE	640	641	642	643

CBN
END MILLS

i-Xmill
END MILLS

i-SMART
MODULAR
END MILLS

X5070
END MILLS

4G MILL
END MILLS

X-POWER
PRO
END MILLS

TitaNox-
POWER
END MILLS

JET-POWER
END MILLS

V7 PLUS
END MILLS

ALU-POWER
HPC
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ALU-
POWER
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D-POWER
GRAPHITE
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CFRP
END MILLS

ROUTERS

CRX S
END MILLS

K-2
END MILLS

ONLY ONE
COATED PM60
END MILLS

TANK-
POWER
END MILLS

GENERAL
HSS
END MILLS

MILLING
CUTTERS

TECHNICAL
DATA

HSS-PM TANK-POWER END MILLS

High Toughness, for Stainless Steels, Carbon steels, Alloy Steels
For General Application, Rough & Finish



Please visit
globalyg1.com/mat
for material search

◎ : Excellent ○ : Good

Recommended cutting conditions : P 654

	SHORT LENGTH	LONG LENGTH	SHORT LENGTH	LONG LENGTH
	TiAlN based	TiAlN based	TiAlN based	TiAlN based
P	◎	◎	◎	◎
M	◎	◎	◎	◎
K	◎	◎	◎	◎
N	○	○	○	○
S	○	○	○	○
H	○	○	○	○

E9942 GA942	E9A30 GAA30	E9938 GA938	E9A31 GAA31	E9941 GA941	E9A35 GAA35	E9A26 GAA26	E9A33 GAA33	E9A34 GAA34	E9E43 GAE43
3	3	4	4	Multi Flute	Multi Flute	Multi Flute	Multi Flute	Multi Flute	Multi Flute
30°	30°	30°	30°	30°	30°	45°	30°	30°	30°
SQUARE	SQUARE	SQUARE	SQUARE	ROUGHING	ROUGHING	ROUGHING	ROUGHING	ROUGHING	ROUGHING
D1.0	D1.0	D1.0	D2.0	D6.0	D6.0	D4.0	D6.0	D6.0	D10.0
D25.0	D25.0	D25.0	D25.0	D25.0	D25.0	D25.0	D25.0	D25.0	D25.0
644	645	646	647	648	649	650	651	652	653
STUB LENGTH	SHORT LENGTH	SHORT LENGTH	LONG LENGTH	SHORT LENGTH	LONG LENGTH	SHORT LENGTH	SHORT LENGTH	LONG LENGTH	WITH NECK
TiAlN based	TiAlN based	TiAlN based	TiAlN based	X-Coating	X-Coating	X-Coating	X-Coating	X-Coating	X-Coating



⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	1
⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	2
⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	3
⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	4
⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	5
⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	6 P
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⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	13 M
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⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	15
⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	16
⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	17 K
⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	18
⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	19
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										23
										24
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										40
										41

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i-SMART
MODULAR
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X5070
END MILLS

4G MILL
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X-POWER
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