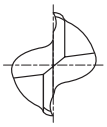
X5070 END MILLS

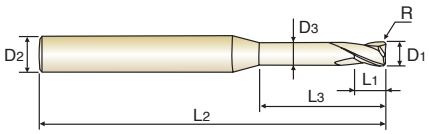
G8A60 SERIES PLAIN SHANK / GLATTER ZYLINDERSCHAFT

CARBIDE, 2 FLUTE CORNER RADIUS for RIB PROCESSING
VOLLHARTMETALL, 2 SCHNEIDEN ECKENRADIUS für SCHMALE RIPPEN

- Designed to machine high hardened materials.
- Suitable for dry cutting, high speed cutting thanks to newly developed raw-material and new coating.
- Excellent workpiece finish.
- Deep slotting is possible by reduced neck.
- Corner radius for preventing the chipping in high speed machining.
- Higher wear-resistance.

- Geeignet zum Fräsen hochgehärteter Stähle.
- Geeignet zum Trockenfrasen und HSC-Frasen dank neuentwickeltem Material und Beschichtung.
- Excellente Werkstückoberflächen.
- Abgesetzter Schaft für größere Reichweite.
- Schneidkantenschutz durch definierten Radius.
- Höhere Verschleißfestigkeit.





NG HM | 2 | BLUE | 30° | R ±0.010 Ø0.5~Ø6 | R ±0.015 Ø8~Ø12 | PLAIN

P.692

Unit : mm

EDP No.	Corner Radius R	Mill Diameter D1	Shank Diameter D2	Length of Cut L1	Length Below Shank L3	Overall Length L2	Neck Diameter D3
G8A60936	R0.05	0.5	4	0.7	1.5	45	0.45
G8A60932	R0.05	0.5	4	0.7	2.5	45	0.45
G8A60935	R0.05	0.5	4	0.7	4	45	0.45
G8A60931	R0.05	0.6	4	0.9	2	45	0.55
G8A60933	R0.05	0.6	4	0.9	3	45	0.55
G8A60934	R0.05	0.6	4	0.9	4	45	0.55
G8A600060102	R0.1	0.6	4	0.9	2	45	0.55
G8A600070104	R0.1	0.7	4	1	4	45	0.65
G8A600080102	R0.1	0.8	4	1.2	2	45	0.75
G8A60008	R0.1	0.8	4	1.2	4	45	0.75
G8A60924	R0.1	0.8	4	1.2	6	45	0.75
G8A60925	R0.1	1.0	6	1.5	4	50	0.95
G8A60926	R0.1	1.0	6	1.5	6	50	0.95
G8A60010	R0.2	1.0	6	1.5	4	50	0.95
G8A60910	R0.2	1.0	6	1.5	6	50	0.95
G8A60911	R0.2	1.0	6	1.5	8	50	0.95
G8A60912	R0.3	1.0	6	1.5	4	50	0.95
G8A60930	R0.3	1.0	6	1.5	6	50	0.95
G8A600100308	R0.3	1.0	6	1.5	8	50	0.95
G8A60015	R0.2	1.5	6	2.5	4	50	1.45
G8A600150206	R0.2	1.5	6	2.5	6	50	1.45
G8A600150208	R0.2	1.5	6	2.5	8	50	1.45
G8A60913	R0.2	1.5	6	2.5	10	50	1.45
G8A60914	R0.2	1.5	6	2.5	12	50	1.45
G8A60915	R0.3	1.5	6	2.5	4	50	1.45
G8A600150306	R0.3	1.5	6	2.5	6	50	1.45
G8A600150308	R0.3	1.5	6	2.5	8	50	1.45
G8A60927	R0.2	2.0	6	3	6	50	1.95
G8A600200208	R0.2	2.0	6	3	8	50	1.95

Due to the characteristics of blue decoration layer which might be erased during short term using, the color layer might not be uniform moreover.
However, it doesn't effect on performance of tool.

◎ : 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									
		○	○	◎	◎									

X5070 END MILLS

G8A60 SERIES PLAIN SHANK / GLATTER ZYLINDERSCHAFT

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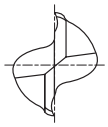

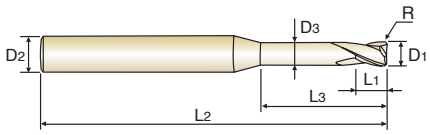

NG HM | 2 | BLUE | 30° | R ±0.010 (Ø0.5~Ø6) | R ±0.015 (Ø8~Ø12) | PLAIN

P.692

Unit : mm

EDP No.	Corner Radius R	Mill Diameter D1	Shank Diameter D2	Length of Cut L1	Length Below Shank L3	Overall Length L2	Neck Diameter D3
G8A600200210	RO.2	2.0	6	3	10	55	1.95
G8A600200212	RO.2	2.0	6	3	12	55	1.95
G8A60916	RO.3	2.0	6	3	6	50	1.95
G8A600200308	RO.3	2.0	6	3	8	50	1.95
G8A600200310	RO.3	2.0	6	3	10	55	1.95
G8A600200312	RO.3	2.0	6	3	12	55	1.95
G8A600200316	RO.3	2.0	6	3	16	55	1.95
G8A60917	RO.5	2.0	6	3	6	50	1.95
G8A60020	RO.5	2.0	6	3	10	55	1.95
G8A60918	RO.5	2.0	6	3	12	55	1.95
G8A600300208	RO.2	3.0	6	4	8	55	2.85
G8A600300210	RO.2	3.0	6	4	10	55	2.85
G8A600300212	RO.2	3.0	6	4	12	55	2.85
G8A600300216	RO.2	3.0	6	4	16	55	2.85
G8A600300308	RO.3	3.0	6	4	8	55	2.85
G8A60919	RO.3	3.0	6	4	10	55	2.85
G8A600300312	RO.3	3.0	6	4	12	55	2.85
G8A600300316	RO.3	3.0	6	4	16	55	2.85
G8A60030	RO.5	3.0	6	4	10	55	2.85
G8A600300512	RO.5	3.0	6	4	12	55	2.85
G8A60901	RO.5	3.0	6	4	16	55	2.85
G8A60902	RO.5	3.0	6	4	20	55	2.85
G8A600400212	RO.2	4.0	6	5	12	55	3.85
G8A600400216	RO.2	4.0	6	5	16	55	3.85
G8A600400220	RO.2	4.0	6	5	20	55	3.85
G8A600400310	RO.3	4.0	6	5	10	55	3.85
G8A60920	RO.3	4.0	6	5	12	55	3.85
G8A600400316	RO.3	4.0	6	5	16	55	3.85
G8A600400320	RO.3	4.0	6	5	20	55	3.85

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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									
		○	○	◎	◎									

X5070 END MILLS

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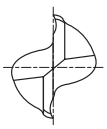

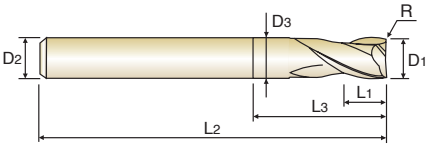

NG HM | 2 | BLUE | 30° | R ±0.010 Ø0.5~Ø6 | R ±0.015 Ø8~Ø12 | PLAIN

P.692

Unit : mm

EDP No.	Corner Radius R	Mill Diameter D1	Shank Diameter D2	Length of Cut L1	Length Below Shank L3	Overall Length L2	Neck Diameter D3
G8A60040	R0.5	4.0	6	5	12	55	3.85
G8A60903	R0.5	4.0	6	5	16	55	3.85
G8A60904	R0.5	4.0	6	5	20	55	3.85
G8A600401012	R1.0	4.0	6	5	12	55	3.85
G8A600401016	R1.0	4.0	6	5	16	55	3.85
G8A60921	R0.3	6.0	6	7	20	60	5.85
G8A60060	R0.5	6.0	6	7	20	60	5.85
G8A60905	R1.0	6.0	6	7	20	60	5.85
G8A60906	R1.5	6.0	6	7	20	60	5.85
G8A600602020	R2.0	6.0	6	7	20	60	5.85
G8A60922	R0.3	8.0	8	9	25	60	7.7
G8A60929	R0.5	8.0	8	9	25	60	7.7
G8A60080	R1.0	8.0	8	9	25	60	7.7
G8A60907	R1.5	8.0	8	9	25	60	7.7
G8A600802025	R2.0	8.0	8	9	25	60	7.7
G8A60923	R0.3	10.0	10	11	32	70	9.7
G8A601000532	R0.5	10.0	10	11	32	70	9.7
G8A60100	R1.0	10.0	10	11	32	70	9.7
G8A60908	R1.5	10.0	10	11	32	70	9.7
G8A601002032	R2.0	10.0	10	11	32	70	9.7
G8A601200538	R0.5	12.0	12	12	38	80	11.7
G8A60120	R1.0	12.0	12	12	38	80	11.7
G8A60909	R1.5	12.0	12	12	38	80	11.7
G8A601202038	R2.0	12.0	12	12	38	80	11.7

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Size	Corner Radius Tolerance (mm)	Mill Dia. Tolerance (mm)	Shank Dia. Tolerance
up to Ø6	±0.010	0~−0.012	h6
over Ø6	±0.015	0~−0.015	

◎ : 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									
		○	○	◎	◎									

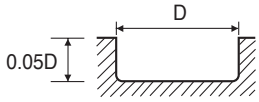
X5070 END MILLS

RECOMMENDED CUTTING CONDITIONS
EMPFOHLENE SCHNEIDKONDITIONEN

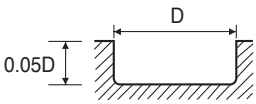
CARBIDE, 2 FLUTE CORNER RADIUS for RIB PROCESSING - SLOTTING
VOLLHARTMETALL, 2 SCHNEIDEN ECKENRADIUS für SCHMALE RIPPEN - NUTENFRÄSEN

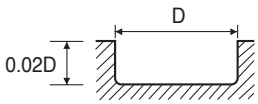
G8A60 SERIES

MATERIAL	ALLOY STEELS HEAT RESISTANT STEELS				HARDENED STEELS							
HARDNESS	HRc 30 ~ HRc 40				HRc 40 ~ HRc 50				HRc 50 ~ HRc 55			
DIAMETER	RPM	FEED	Vc	fz	RPM	FEED	Vc	fz	RPM	FEED	Vc	fz
0.5	50000	144	80	0.001	45000	110	70	0.001	40000	85	65	0.001
0.6	50000	185	95	0.002	45000	140	85	0.002	40000	110	75	0.001
0.8	50000	235	125	0.002	40000	170	100	0.002	30000	115	75	0.002
1.0	48000	590	150	0.006	38000	460	120	0.006	25500	285	80	0.006
2.0	33300	670	210	0.010	26000	540	165	0.010	17500	335	110	0.010
3.0	21800	670	205	0.015	17300	540	165	0.016	11500	335	110	0.015
4.0	16700	700	210	0.021	13200	560	165	0.021	8800	350	110	0.020
5.0	15700	810	245	0.026	12500	645	195	0.026	8300	395	130	0.024
6.0	13100	755	245	0.029	10350	615	195	0.030	6900	385	130	0.028
8.0	9880	740	250	0.037	7800	575	195	0.037	5200	355	130	0.034
10.0	7800	670	245	0.043	6150	540	195	0.044	4100	330	130	0.040
12.0	6650	672	250	0.051	5250	540	200	0.051	3500	330	130	0.047



MATERIAL	HARDENED STEELS											
HARDNESS	HRc 55 ~ HRc 60				HRc 60 ~ HRc 65				HRc 65 ~ HRc 70			
DIAMETER	RPM	FEED	Vc	fz	RPM	FEED	Vc	fz	RPM	FEED	Vc	fz
0.5	33000	55	50	0.001	25000	30	40	0.001	20000	20	30	0.250
0.6	30000	65	55	0.001	25000	40	45	0.001	20000	25	40	0.278
0.8	25000	70	65	0.001	19000	45	50	0.001	16000	28	40	0.280
1.0	20500	170	65	0.004	16000	105	50	0.003	12500	70	40	0.700
2.0	14500	205	90	0.007	11000	130	70	0.006	9500	90	60	0.643
3.0	9500	205	90	0.011	7500	130	70	0.009	6400	90	60	0.643
4.0	7200	215	90	0.015	5600	135	70	0.012	4750	95	60	0.679
5.0	6400	230	100	0.018	5100	145	80	0.014	4450	105	70	0.656
6.0	5300	225	100	0.021	4200	140	80	0.017	3700	100	70	0.625
8.0	4000	205	100	0.026	3200	130	80	0.020	2800	95	70	0.594
10.0	3200	190	100	0.030	2550	120	80	0.024	2200	90	70	0.563
12.0	2650	190	100	0.036	2100	120	80	0.029	1860	90	70	0.563





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

X5070 END MILLS

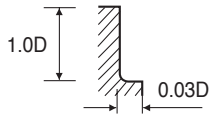
RECOMMENDED CUTTING CONDITIONS
EMPFOHLENE SCHNEIDKONDITIONEN

CARBIDE, 2 FLUTE CORNER RADIUS for RIB PROCESSING - SIDE CUTTING
VOLLHARTMETALL, 2 SCHNEIDEN ECKENRADIUS für SCHMALE RIPPEN - SEITENFRÄSEN

G8A60 SERIES

MATERIAL	ALLOY STEELS HEAT RESISTANT STEELS				HARDENED STEELS							
HARDNESS	HRc 30 ~ HRc 40				HRc 40 ~ HRc 50				HRc 50 ~ HRc 55			
DIAMETER	RPM	FEED	Vc	fz	RPM	FEED	Vc	fz	RPM	FEED	Vc	fz
0.5	50000	205	80	0.002	45000	160	70	0.002	40000	125	65	0.002
0.6	50000	265	95	0.003	45000	200	85	0.002	40000	160	75	0.002
0.8	50000	335	125	0.003	40000	245	100	0.003	30000	165	75	0.003
1.0	48000	840	150	0.009	38000	656	120	0.009	25500	408	80	0.008
2.0	33300	960	210	0.014	26000	776	165	0.015	17500	480	110	0.014
3.0	21800	960	205	0.022	17300	776	165	0.022	11500	480	110	0.021
4.0	16700	1000	210	0.030	13200	800	165	0.030	8800	500	110	0.028
5.0	15700	1160	245	0.037	12500	920	195	0.037	8300	568	130	0.034
6.0	13100	1080	245	0.041	10350	880	195	0.043	6900	552	130	0.040
8.0	9880	1056	250	0.053	7800	824	195	0.053	5200	508	130	0.049
10.0	7800	960	245	0.062	6150	776	195	0.063	4100	472	130	0.058
12.0	6650	960	250	0.072	5250	776	200	0.074	3500	472	130	0.067

MATERIAL	HARDENED STEELS											
HARDNESS	HRc 55 ~ HRc 60				HRc 60 ~ HRc 65				HRc 65 ~ HRc 70			
DIAMETER	RPM	FEED	Vc	fz	RPM	FEED	Vc	fz	RPM	FEED	Vc	fz
0.5	33000	80	50	0.001	25000	45	40	0.001	20000	30	30	0.001
0.6	30000	90	55	0.002	25000	60	45	0.001	20000	35	40	0.001
0.8	25000	100	65	0.002	19000	65	50	0.002	16000	40	40	0.001
1.0	20500	248	65	0.006	16000	152	50	0.005	12500	100	40	0.004
2.0	14500	296	90	0.010	11000	184	70	0.008	9500	132	60	0.007
3.0	9500	296	90	0.016	7500	184	70	0.012	6400	132	60	0.010
4.0	7200	308	90	0.021	5600	192	70	0.017	4750	136	60	0.014
5.0	6400	328	100	0.026	5100	208	80	0.020	4450	152	70	0.017
6.0	5300	320	100	0.030	4200	204	80	0.024	3700	148	70	0.020
8.0	4000	292	100	0.037	3200	188	80	0.029	2800	136	70	0.024
10.0	3200	272	100	0.043	2550	176	80	0.035	2200	128	70	0.029
12.0	2650	272	100	0.051	2100	176	80	0.042	1860	128	70	0.034



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