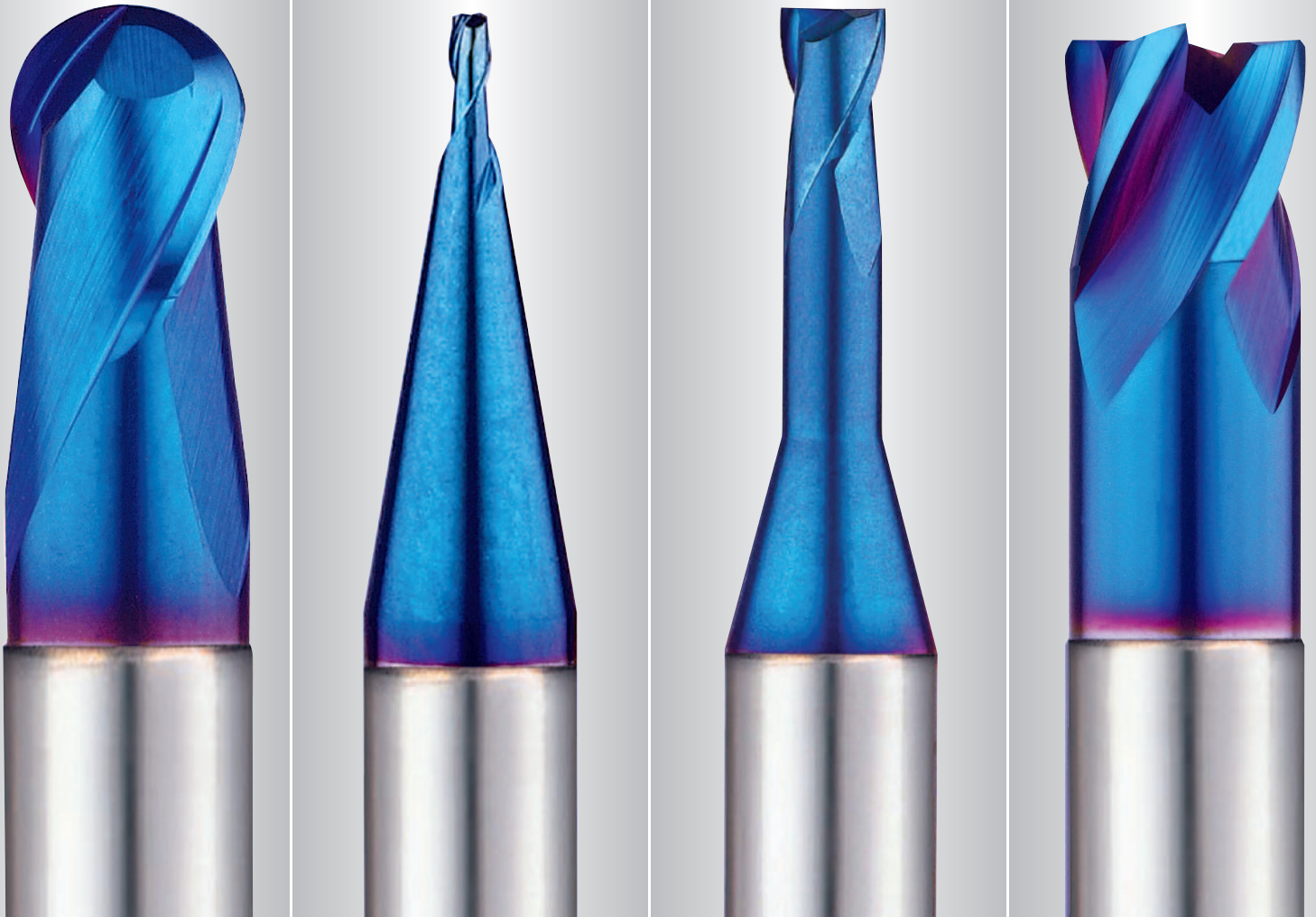


CARBIDE



Being the best through innovation

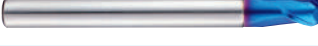
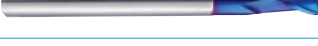
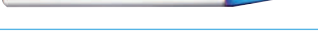
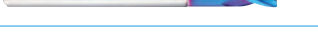
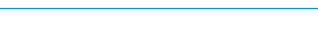


X5070

X5070 FRÄSER

- High Hardened Steels HRc45 to HRc70, High Speed Machining, Dry Cutting
- Für hoch gehärtete Stähle von Hrc45 bis HRc70. HSC-Technik. Trockenfräsen

SELECTION GUIDE

ITEM	MODEL	DESCRIPTION	SIZE		PAGE
			MIN	MAX	
G8A46		CARBIDE, 2 FLUTE BALL NOSE for RIB PROCESSING VOLLHARTMETALL, 2 SCHNEIDEN STIRNRADIUS für SCHMALE RIPPEN	R0.05	R2.0	574
G8A54		CARBIDE, 2 FLUTE BALL NOSE for RIB PROCESSING VOLLHARTMETALL, 2 SCHNEIDEN STIRNRADIUS für SCHMALE RIPPEN	R0.25	R1.0	577
G8A28		CARBIDE, 2 FLUTE BALL NOSE VOLLHARTMETALL, 2 SCHNEIDEN STIRNRADIUS	R0.05	R6.0	578
G8A38		CARBIDE, 2 FLUTE STUB LENGTH BALL NOSE with EXTENDED NECK VOLLHARTMETALL, 2 SCHNEIDEN EXTER KURZ STIRNRADIUS mit ABGESETZTEM SCHAFTTETL	R0.5	R12.5	579
G8A53		CARBIDE, 2 FLUTE MINIATURE BALL NOSE VOLLHARTMETALL, 2 SCHNEIDEN MINI STIRNRADIUS	R0.2	R1.0	580
G8A59		CARBIDE, 3 FLUTE BALL NOSE VOLLHARTMETALL, 3 SCHNEIDEN STIRNRADIUS	R1.5	R10.0	581
G8A60		CARBIDE, 2 FLUTE CORNER RADIUS for RIB PROCESSING VOLLHARTMETALL, 2 SCHNEIDEN ECKENRADIUS für SCHMALE RIPPEN	D0.5	D12.0	582
G8A36		CARBIDE, 2 FLUTE STUB LENGTH CORNER RADIUS with EXTENDED NECK VOLLHARTMETALL, 2 SCHNEIDEN EXTER KURZ ECKENRADIUS mit ABGESETZTEM SCHAFTTETL	D0.3	D20.0	585
G8A52		CARBIDE, 2 FLUTE CORNER RADIUS for RIB PROCESSING VOLLHARTMETALL, 2 SCHNEIDEN ECKENRADIUS für SCHMALE RIPPEN	D0.5	D2.0	587
G8A50		CARBIDE, 2 FLUTE MINIATURE CORNER RADIUS VOLLHARTMETALL, 2 SCHNEIDEN MINI ECKENRADIUS	D0.3	D2.0	588
G8A47		CARBIDE, 4 FLUTE CORNER RADIUS VOLLHARTMETALL, 4 SCHNEIDEN ECKENRADIUS	D3.0	D12.0	589
G8A37		CARBIDE, 4 FLUTE STUB LENGTH CORNER RADIUS with EXTENDED NECK VOLLHARTMETALL, 4 SCHNEIDEN EXTER KURZ ECKENRADIUS mit ABGESETZTEM SCHAFTTETL	D1.0	D20.0	590
G8B08		CARBIDE, 4 FLUTE CORNER RADIUS with EXTENDED NECK VOLLHARTMETALL, 4 SCHNEIDEN ECKENRADIUS mit ABGESETZTEM SCHAFTTETL	D6.0	D12.0	591
G8A39		CARBIDE, 6 FLUTE 45° HELIX CORNER RADIUS VOLLHARTMETALL, 6 SCHNEIDEN 45° RECHTSSPIRALE ECKENRADIUS	D6.0	D20.0	592
G8A45		CARBIDE, 2 FLUTE for RIB PROCESSING VOLLHARTMETALL, 2 SCHNEIDEN für SCHMALE RIPPEN	D0.1	D4.0	593
G8A01		CARBIDE, 2 FLUTE VOLLHARTMETALL, 2 SCHNEIDEN	D0.1	D20.0	596
G8A02		CARBIDE, 4 FLUTE VOLLHARTMETALL, 4 SCHNEIDEN	D1.0	D20.0	597
RECOMMENDED CUTTING CONDITIONS EMPFOHLENE SCHNEIDKONDITIONEN					598

X5070 END MILLS

◎ : Excellent, ○ : Good

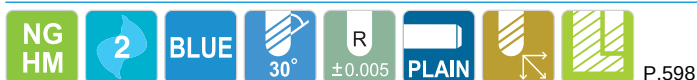
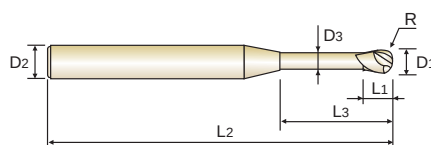
Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels		High Hardened Steels	Copper	Graphite	Cast Iron	Aluminum	Stainless Steels	Titanium	Inconel
~HB225	HB225~325	HRc30~40	HRc40~45	HRc45~55	HRc55~70							
	○	○	○	◎	◎							
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**X5070
END MILLS**
G8A46 SERIES
**PLAIN SHANK
GLATTER ZYLINDERSCHAFT**

CARBIDE, 2 FLUTE BALL NOSE for RIB PROCESSING VOLLHARTMETALL, 2 SCHNEIDEN STIRNRADIUS 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.
- Designed for high precision milling operation.
- Higher wear-resistance.

- Geeignet zum Fräsen hochgehärteter Stähle.
- Geeignet zum Trockenfräsen und HSC-Fräsen dank neuentwickeltem Material und Beschichtung.
- Excellente Werkstückoberflächen.
- Geeignet für hochpräzises Fräsen.
- Höhere Verschleißfestigkeit.



Unit : mm

EDP No.	Radius of Ball Nose R (±0.005)	Mill Diameter D1	Shank Diameter D2	Length of Cut L1	Length Below Shank L3	Overall Length L2	Neck Diameter D3
G8A46805	RO.05	0.1	4	0.1	0.3	45	0.085
G8A46806	RO.05	0.1	4	0.1	0.5	45	0.085
G8A46002	RO.1	0.2	4	0.2	0.5	45	0.17
G8A46977	RO.1	0.2	4	0.2	1	45	0.17
G8A46958	RO.1	0.2	4	0.2	1.5	45	0.17
G8A46003	RO.15	0.3	4	0.3	1	45	0.27
G8A46959	RO.15	0.3	4	0.3	2	45	0.27
G8A46986	RO.15	0.3	4	0.3	3	45	0.27
G8A46004	RO.2	0.4	4	0.4	1	45	0.37
G8A46960	RO.2	0.4	4	0.4	2	45	0.37
G8A46961	RO.2	0.4	4	0.4	3	45	0.37
G8A46981	RO.2	0.4	4	0.4	4	45	0.37
G8A46987	RO.25	0.5	4	0.4	5	45	0.45
G8A46005	RO.25	0.5	4	0.4	2	45	0.45
G8A46804	RO.25	0.5	4	0.4	2.5	45	0.45
G8A46962	RO.25	0.5	4	0.4	4	45	0.45
G8A46963	RO.3	0.6	4	0.5	6	45	0.55
G8A46964	RO.3	0.6	4	0.5	8	45	0.55
G8A46957	RO.3	0.6	4	0.5	2	45	0.55
G8A46988	RO.3	0.6	4	0.5	3	45	0.55
G8A46915	RO.3	0.6	4	0.5	4	45	0.55
G8A46989	RO.3	0.6	4	0.5	5	45	0.55
G8A46916	RO.3	0.6	4	0.5	6	45	0.55
G8A46917	RO.4	0.8	4	0.6	8	45	0.75
G8A46990	RO.4	0.8	4	0.6	10	45	0.75
G8A46918	RO.4	0.8	4	0.6	2	45	0.75
G8A46919	RO.4	0.8	4	0.6	4	45	0.75
G8A46008	RO.4	0.8	4	0.6	6	45	0.75
G8A46901	RO.4	0.8	4	0.6	8	45	0.75



Due to the characteristics of blue decoration layer which might be earased during short term using, the color layer might not be uniform moreover.

However, it doesn't effect on performance of tool.

◎ : Excellent ○ : Good

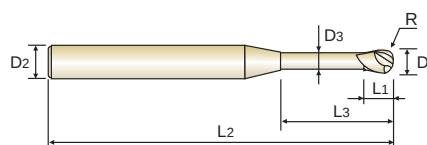
Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels		High Hardened Steels	Copper	Graphite	Cast Iron	Aluminum	Stainless Steels	Titanium	Inconel
~HB225	HB225~325	HRC30~40	HRC40~45	HRC45~55	HRC55~70							
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CARBIDE, 2 FLUTE BALL NOSE for RIB PROCESSING

VOLLHARTMETALL, 2 SCHNEIDEN STIRNRADIUS 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 finishes.
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- ▶ Higher wear-resistance.

- ▶ Geeignet zum Fräsen hochgehärteter Stähle.
- ▶ Geeignet zum Trockenfräsen und HSC-Fräsen dank neuentwickeltem Material und Beschichtung.
- ▶ Exzellente Werkstückoberflächen.
- ▶ Geeignet für hochpräzises Fräsen.
- ▶ Höhere Verschleißfestigkeit.



Unit : mm

EDP No.	Radius of Ball Nose R (±0.005)	Mill Diameter D1	Shank Diameter D2	Length of Cut L1	Length Below Shank L3	Overall Length L2	Neck Diameter D3
G8A46965	R0.4	0.8	4	0.6	10	45	0.75
G8A46920	R0.5	1.0	4	0.8	3	45	0.95
G8A46921	R0.5	1.0	4	0.8	4	45	0.95
G8A46923	R0.5	1.0	4	0.8	5	45	0.95
G8A46010	R0.5	1.0	4	0.8	6	45	0.95
G8A46924	R0.5	1.0	4	0.8	7	45	0.95
G8A46902	R0.5	1.0	4	0.8	8	45	0.95
G8A46925	R0.5	1.0	4	0.8	9	45	0.95
G8A46903	R0.5	1.0	4	0.8	10	45	0.95
G8A46904	R0.5	1.0	4	0.8	12	45	0.95
G8A46926	R0.5	1.0	4	0.8	14	50	0.95
G8A46927	R0.5	1.0	4	0.8	16	50	0.95
G8A46966	R0.5	1.0	4	0.8	20	55	0.95
G8A46982	R0.6	1.2	4	1.0	6	45	1.15
G8A46012	R0.6	1.2	4	1.0	8	45	1.15
G8A46983	R0.6	1.2	4	1.0	10	45	1.15
G8A46905	R0.6	1.2	4	1.0	12	45	1.15
G8A46930	R0.75	1.5	4	1.2	6	45	1.45
G8A46015	R0.75	1.5	4	1.2	8	45	1.45
G8A46931	R0.75	1.5	4	1.2	10	45	1.45
G8A46906	R0.75	1.5	4	1.2	12	45	1.45
G8A46992	R0.75	1.5	4	1.2	14	50	1.45
G8A46907	R0.75	1.5	4	1.2	16	50	1.45
G8A46932	R0.75	1.5	4	1.2	20	55	1.45
G8A46939	R1.0	2.0	4	1.6	4	45	1.95
G8A46940	R1.0	2.0	4	1.6	6	45	1.95
G8A46020	R1.0	2.0	4	1.6	8	45	1.95
G8A46941	R1.0	2.0	4	1.6	10	45	1.95
G8A46942	R1.0	2.0	4	1.6	12	50	1.95



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However, it doesn' t effect on performance of tool.

◎ : Excellent ○ : Good

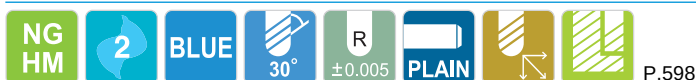
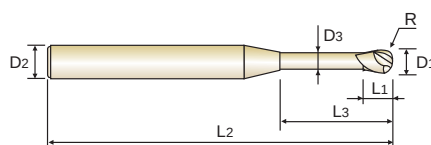
Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels		High Hardened Steels	Copper	Graphite	Cast Iron	Aluminum	Stainless Steels	Titanium	Inconel
~HB225	HB225~325	HRC30~40	HRC40~45	HRC45~55	HRC55~70							
	○	○	○	◎	◎							


**X5070
END MILLS**
G8A46 SERIES
**PLAIN SHANK
GLATTER ZYLINDERSCHAFT**

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Unit : mm

EDP No.	Radius of Ball Nose R (±0.005)	Mill Diameter D1	Shank Diameter D2	Length of Cut L1	Length Below Shank L3	Overall Length L2	Neck Diameter D3
G8A46943	R1.0	2.0	4	1.6	14	50	1.95
G8A46909	R1.0	2.0	4	1.6	16	50	1.95
G8A46993	R1.0	2.0	4	1.6	18	55	1.95
G8A46910	R1.0	2.0	4	1.6	20	55	1.95
G8A46944	R1.0	2.0	4	1.6	22	60	1.95
G8A46945	R1.0	2.0	4	1.6	25	60	1.95
G8A46967	R1.0	2.0	4	1.6	30	70	1.95
G8A46948	R1.5	3.0	6	2.4	12	50	2.85
G8A46984	R1.5	3.0	6	2.4	14	55	2.85
G8A46030	R1.5	3.0	6	2.4	16	55	2.85
G8A46985	R1.5	3.0	6	2.4	18	60	2.85
G8A46911	R1.5	3.0	6	2.4	20	60	2.85
G8A46968	R1.5	3.0	6	2.4	25	65	2.85
G8A46969	R1.5	3.0	6	2.4	30	70	2.85
G8A46970	R1.5	3.0	6	2.4	35	80	2.85
G8A46950	R2.0	4.0	6	3.2	12	60	3.85
G8A46040	R2.0	4.0	6	3.2	16	60	3.85
G8A46912	R2.0	4.0	6	3.2	20	65	3.85
G8A46913	R2.0	4.0	6	3.2	25	70	3.85
G8A46971	R2.0	4.0	6	3.2	30	70	3.85
G8A46972	R2.0	4.0	6	3.2	35	80	3.85
G8A46973	R2.0	4.0	6	3.2	40	90	3.85
G8A46974	R2.0	4.0	6	3.2	45	90	3.85
G8A46975	R2.0	4.0	6	3.2	50	100	3.85



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Mill Dia. Tolerance(mm)	Shank Dia. Tolerance
0~-0.012	h6

◎ : Excellent ○ : Good

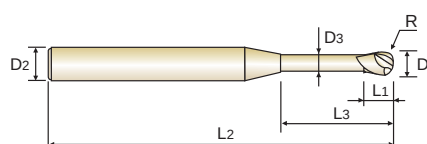
Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels		High Hardened Steels	Copper	Graphite	Cast Iron	Aluminum	Stainless Steels	Titanium	Inconel
~HB225	HB225~325	HRc30~40	HRc40~45	HRc45~55	HRc55~70							
	○	○	○	◎	◎							

CARBIDE, 2 FLUTE BALL NOSE for RIB PROCESSING

VOLLHARTMETALL, 2 SCHNEIDEN STIRNRADIUS für SCHMALE RIPPEN

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- Höhere Verschleißfestigkeit.



Unit : mm

EDP No.	Radius of Ball Nose R (±0.005)	Mill Diameter D1	Shank Diameter D2	Length of Cut L1	Length Below Shank L3	Overall Length L2	Neck Diameter D3
G8A54005	R0.25	0.5	6	0.5	1.5	50	0.45
G8A54901	R0.25	0.5	6	0.5	3.3	50	0.45
G8A54006	R0.3	0.6	6	0.6	2	50	0.55
G8A54902	R0.3	0.6	6	0.6	4	50	0.55
G8A54008	R0.4	0.8	6	0.8	2.5	50	0.75
G8A54903	R0.4	0.8	6	0.8	5.5	50	0.75
G8A54010	R0.5	1.0	6	1	3.3	50	0.95
G8A54904	R0.5	1.0	6	1	6.7	50	0.95
G8A54905	R0.5	1.0	6	1	12	50	0.95
G8A54012	R0.6	1.2	6	1.2	4.4	50	1.15
G8A54906	R0.6	1.2	6	1.2	8	50	1.15
G8A54015	R0.75	1.5	6	1.5	5	50	1.45
G8A54907	R0.75	1.5	6	1.5	9.7	50	1.45
G8A54908	R0.75	1.5	6	1.5	15	50	1.45
G8A54020	R1.0	2.0	6	2	6	50	1.95
G8A54909	R1.0	2.0	6	2	13	50	1.95
G8A54910	R1.0	2.0	6	2	20	60	1.95



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Mill Dia. Tolerance(mm)	Shank Dia. Tolerance
0~-0.012	h6

◎ : Excellent ○ : Good

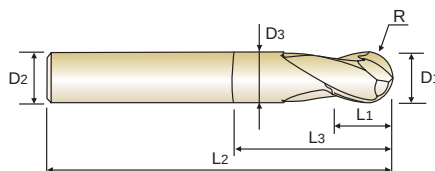
Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels	High Hardened Steels	Copper	Graphite	Cast Iron	Aluminum	Stainless Steels	Titanium	Inconel
~HB225	HB225~325	HRC30~40	HRc40~45 HRc45~55	HRC55~70							
	○	○	○	◎	◎						


**X5070
END MILLS**
G8A28 SERIES
**PLAIN SHANK
GLATTER ZYLINDERSCHAFT**

CARBIDE, 2 FLUTE BALL NOSE VOLLHARTMETALL, 2 SCHNEIDEN STIRNRADIUS

- ▶ Designed to machine high hardened materials.
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- ▶ Excellent workpiece finish.
- ▶ Designed for high precision milling operation.
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- ▶ Geeignet zum Trockenfräsen und HSC-Fräsen dank neuentwickeltem Material und Beschichtung.
- ▶ Excellente Werkstückoberflächen.
- ▶ Geeignet für hochpräzises Fräsen.
- ▶ Höhere Verschleißfestigkeit.



R0.05-R3 R4-R6

Unit : mm

EDP No.	Radius of Ball Nose R	Mill Diameter D1	Shank Diameter D2	Length of Cut L1	Length Below Shank L3	Overall Length L2	Neck Diameter D3
G8A28001	R0.05	0.1	4	0.2	-	40	-
G8A28002	R0.1	0.2	4	0.3	-	40	-
G8A28003	R0.15	0.3	4	0.5	-	40	-
G8A28004	R0.2	0.4	4	0.6	-	40	-
G8A28005	R0.25	0.5	4	0.7	-	40	-
G8A28006	R0.3	0.6	4	0.9	-	40	-
G8A28007	R0.35	0.7	4	1.1	-	40	-
G8A28008	R0.4	0.8	4	1.2	-	40	-
G8A28009	R0.45	0.9	4	1.4	-	40	-
G8A28010	R0.5	1.0	6	1.5	3	50	0.95
G8A28015	R0.75	1.5	6	2	4	50	1.45
G8A28020	R1.0	2.0	6	2.5	5	50	1.95
G8A28025	R1.25	2.5	6	3	7	50	2.4
G8A28030	R1.5	3.0	6	4	10	60	2.85
G8A28035	R1.75	3.5	6	4.5	10	60	3.35
G8A28040	R2.0	4.0	6	5	10	60	3.85
G8A28045	R2.25	4.5	6	5.5	10	60	4.35
G8A28050	R2.5	5.0	6	6	12	60	4.85
G8A28055	R2.75	5.5	6	6.5	12	60	5.35
G8A28060	R3.0	6.0	6	7	15	60	5.85
G8A28903	R3.0	6.0	6	9	30	90	5.85
G8A28901	R4.0	8.0	8	9	15	60	7.7
G8A28080	R4.0	8.0	8	9	15	80	7.7
G8A28904	R4.0	8.0	8	12	30	100	7.7
G8A28902	R5.0	10.0	10	11	25	60	9.7
G8A28100	R5.0	10.0	10	11	25	80	9.7
G8A28905	R5.0	10.0	10	15	30	100	9.7
G8A28120	R6.0	12.0	12	14	25	80	11.7



Due to the characteristics of blue decoration layer which might be earased during short term using, the color layer might not be uniform moreover.

However, it doesn' t effect on performance of tool.

Size	Radius Tolerance (mm)	Mill Dia. Tolerance (mm)	Shank Dia. Tolerance
up to R3	±0.005	0~-0.012	h6
over R3	±0.010	0~-0.015	

© : Excellent ○ : Good

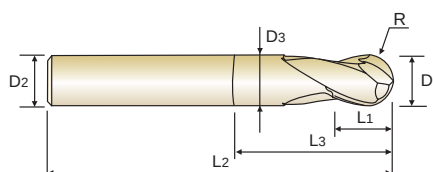
Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels		High Hardened Steels	Copper	Graphite	Cast Iron	Aluminum	Stainless Steels	Titanium	Inconel
~HB225	HB225~325	HRc30~40	HRc40~45	HRc45~55	HRc55~70							
	○	○	○	◎	◎							

CARBIDE, 2 FLUTE STUB LENGTH BALL NOSE with EXTENDED NECK

VOLLHARTMETALL, 2 SCHNEIDEN EXTRA KURZ STIRNRADIUS mit ABGESETZTEM SCHAFTTEIL

- 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.
- Designed for high precision milling operation.
- Higher wear-resistance.

- Geeignet zum Fräsen hochgehärteter Stähle.
- Geeignet zum Trockenfräsen und HSC-Fräsen dank neuentwickeltem Material und Beschichtung.
- Excellente Werkstückoberflächen.
- Geeignet für hochpräzises Fräsen.
- Höhere Verschleißfestigkeit.



R0.05-R3 R3.5-R12.5

Unit : mm

EDP No.	Radius of Ball Nose R	Mill Diameter D1	Shank Diameter D2	Length of Cut L1	Length Below Shank L3	Overall Length L2	Neck Diameter D3
G8A38010	R0.5	1.0	4	1	2.2	50	0.95
G8A38012	R0.6	1.2	4	1.2	2.6	50	1.15
G8A38015	R0.75	1.5	4	1.5	3	50	1.45
G8A38020	R1.0	2.0	6	2	4	50	1.95
G8A38030	R1.5	3.0	6	3	6	60	2.85
G8A38040	R2.0	4.0	6	4	8	70	3.85
G8A38050	R2.5	5.0	6	5	10	80	4.85
G8A38060	R3.0	6.0	6	6	12	90	5.85
G8A38070	R3.5	7.0	8	7	14	90	6.7
G8A38080	R4.0	8.0	8	8	16	100	7.7
G8A38090	R4.5	9.0	10	9	18	100	8.7
G8A38100	R5.0	10.0	10	10	20	100	9.7
G8A38120	R6.0	12.0	12	12	24	110	11.7
G8A38140	R7.0	14.0	14	14	28	110	13.7
G8A38160	R8.0	16.0	16	16	32	140	15.7
G8A38180	R9.0	18.0	18	18	36	140	17.7
G8A38200	R10.0	20.0	20	20	40	160	19.7
G8A38250	R12.5	25.0	25	25	50	180	24.7



Due to the characteristics of blue decoration layer which might be earased during short term using, the color layer might not be uniform moreover.

However, it doesn't effect on performance of tool.

Size	Radius Tolerance (mm)	Mill Dia. Tolerance (mm)	Shank Dia. Tolerance
up to R3	±0.005	0~-0.012	h6
over R3	±0.010	0~-0.015	

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							
	○	○	○	◎	◎						

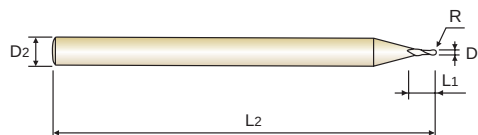
◎ : Excellent ○ : Good


**X5070
END MILLS**
G8A53 SERIES
**PLAIN SHANK
GLATTER ZYLINDERSCHAFT**

CARBIDE, 2 FLUTE MINIATURE BALL NOSE VOLLHARTMETALL, 2 SCHNEIDEN MINI STIRNRADIUS

- ▶ 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.
- ▶ Designed for high precision milling operation.
- ▶ Higher wear-resistance.

- ▶ Geeignet zum Fräsen hochgehärteter Stähle.
- ▶ Geeignet zum Trockenfräsen und HSC-Fräsen dank neuentwickeltem Material und Beschichtung.
- ▶ Excellente Werkstückoberflächen.
- ▶ Geeignet für hochpräzises Fräsen.
- ▶ Höhere Verschleißfestigkeit.


**NG
HM**
2
BLUE
30°
**R
±0.005**
PLAIN

P.599

Unit : mm

EDP No.	Radius of Ball Nose R (±0.005)	Mill Diameter D1	Shank Diameter D2	Length of Cut L1	Overall Length L2
G8A53004	RO.2	0.4	6	0.4	50
G8A53005	RO.25	0.5	6	0.5	50
G8A53006	RO.3	0.6	6	0.6	50
G8A53008	RO.4	0.8	6	0.8	50
G8A53010	RO.5	1.0	6	1.0	50
G8A53012	RO.6	1.2	6	1.2	50
G8A53015	RO.75	1.5	6	1.5	50
G8A53020	R1.0	2.0	6	2.0	50



Due to the characteristics of blue decoration layer which might be earased during short term using, the color layer might not be uniform moreover.

However, it doesn't effect on performance of tool.

Mill Dia. Tolerance(mm)	Shank Dia. Tolerance
0~-0.012	h6

◎ : Excellent ○ : Good

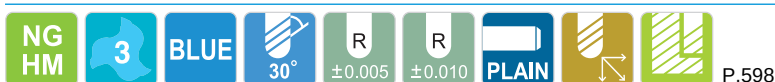
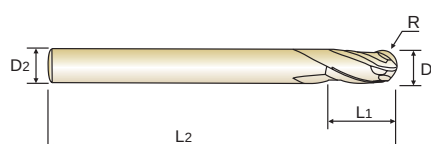
Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels		High Hardened Steels	Copper	Graphite	Cast Iron	Aluminum	Stainless Steels	Titanium	Inconel
~HB225	HB225~325	HRc30~40	HRc40~45	HRc45~55	HRc55~70							
	○	○	○	◎	◎							

CARBIDE, 3 FLUTE BALL NOSE

VOLLHARTMETALL, 3 SCHNEIDEN STIRNRADIUS

- ▶ 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.
- ▶ Designed for high precision milling operation.
- ▶ Higher wear-resistance.

- ▶ Geeignet zum Fräsen hochgehärteter Stähle.
- ▶ Geeignet zum Trockenfräsen und HSC-Fräsen dank neuentwickeltem Material und Beschichtung.
- ▶ Excellente Werkstückoberflächen.
- ▶ Geeignet für hochpräzises Fräsen.
- ▶ Höhere Verschleißfestigkeit.



R1.5-R3 R4-R10

Unit : mm

EDP No.	Radius of Ball Nose R	Mill Diameter D1	Shank Diameter D2	Length of Cut L1	Overall Length L2
G8A59030	R1.5	3.0	6	8	60
G8A59040	R2.0	4.0	6	8	70
G8A59050	R2.5	5.0	6	10	80
G8A59060	R3.0	6.0	6	12	90
G8A59080	R4.0	8.0	8	14	100
G8A59100	R5.0	10.0	10	18	100
G8A59120	R6.0	12.0	12	22	110
G8A59160	R8.0	16.0	16	30	140
G8A59200	R10.0	20.0	20	38	160



Due to the characteristics of blue decoration layer which might be earased during short term using, the color layer might not be uniform moreover.

However, it doesn' t effect on performance of tool.

Size	Radius Tolerance (mm)	Mill Dia. Tolerance (mm)	Shank Dia. Tolerance
up to R3	±0.005	0~-0.012	h6
over R3	±0.010	0~-0.015	

◎ : Excellent ○ : Good

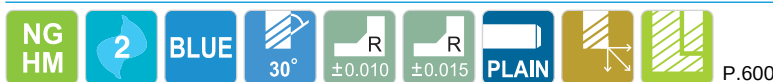
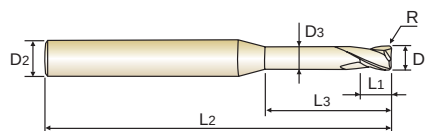
Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels		High Hardened Steels	Copper	Graphite	Cast Iron	Aluminum	Stainless Steels	Titanium	Inconel
~HB225	HB225~325	HRC30~40	HRC40~45	HRC45~55	HRC55~70							
	○	○	○	◎	◎							


**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 Trockenfräsen und HSC-Fräsen dank neuentwickeltem Material und Beschichtung.
- ▶ Excellente Werkstückoberflächen.
- ▶ Abgesetzter Schaft für größere Reichweite.
- ▶ Schneidkantenschutz durch definierten Radius.
- ▶ Höhere Verschleißfestigkeit.



Ø0.5-Ø6 Ø8-Ø12

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	RO.05	0.5	4	0.7	1.5	45	0.45
G8A60932	RO.05	0.5	4	0.7	2.5	45	0.45
G8A60935	RO.05	0.5	4	0.7	4	45	0.45
G8A60931	RO.05	0.6	4	0.9	2	45	0.55
G8A60933	RO.05	0.6	4	0.9	3	45	0.55
G8A60934	RO.05	0.6	4	0.9	4	45	0.55
G8A600060102	RO.1	0.6	4	0.9	2	45	0.55
G8A600070104	RO.1	0.7	4	1	4	45	0.65
G8A600080102	RO.1	0.8	4	1.2	2	45	0.75
G8A60008	RO.1	0.8	4	1.2	4	45	0.75
G8A60924	RO.1	0.8	4	1.2	6	45	0.75
G8A60925	RO.1	1.0	6	1.5	4	50	0.95
G8A60926	RO.1	1.0	6	1.5	6	50	0.95
G8A60010	RO.2	1.0	6	1.5	4	50	0.95
G8A60910	RO.2	1.0	6	1.5	6	50	0.95
G8A60911	RO.2	1.0	6	1.5	8	50	0.95
G8A60912	RO.3	1.0	6	1.5	4	50	0.95
G8A60930	RO.3	1.0	6	1.5	6	50	0.95
G8A600100308	RO.3	1.0	6	1.5	8	50	0.95
G8A60015	RO.2	1.5	6	2.5	4	50	1.45
G8A600150206	RO.2	1.5	6	2.5	6	50	1.45
G8A600150208	RO.2	1.5	6	2.5	8	50	1.45
G8A60913	RO.2	1.5	6	2.5	10	50	1.45
G8A60914	RO.2	1.5	6	2.5	12	50	1.45
G8A60915	RO.3	1.5	6	2.5	4	50	1.45
G8A600150306	RO.3	1.5	6	2.5	6	50	1.45
G8A600150308	RO.3	1.5	6	2.5	8	50	1.45
G8A60927	RO.2	2.0	6	3	6	50	1.95
G8A600200208	RO.2	2.0	6	3	8	50	1.95



Due to the characteristics of blue decoration layer which might be earased during short term using, the color layer might not be uniform moreover.

However, it doesn't effect on performance of tool.

◎ : Excellent ○ : Good

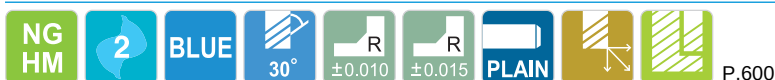
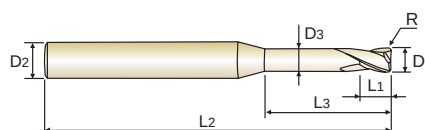
Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels		High Hardened Steels	Copper	Graphite	Cast Iron	Aluminum	Stainless Steels	Titanium	Inconel
~HB225	HB225~325	HRc30~40	HRc40~45	HRc45~55	HRc55~70							
	○	○	○	◎	◎							

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 Trockenfräsen und HSC-Fräsen dank neuentwickeltem Material und Beschichtung.
- ▶ Excellente Werkstückoberflächen.
- ▶ Abgesetzter Schaft für größere Reichweite.
- ▶ Schneidkantenschutz durch definierten Radius.
- ▶ Höhere Verschleißfestigkeit.



Ø0.5-Ø6 Ø8-Ø12

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



Due to the characteristics of blue decoration layer which might be earased during short term using, the color layer might not be uniform moreover.

However, it doesn' t effect on performance of tool.

◎ : Excellent ○ : Good

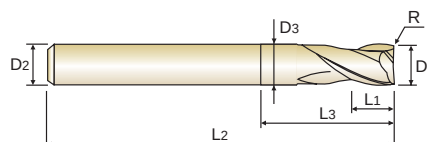
Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels		High Hardened Steels	Copper	Graphite	Cast Iron	Aluminum	Stainless Steels	Titanium	Inconel
~HB225	HB225~325	HRC30~40	HRC40~45	HRC45~55	HRC55~70							
	○	○	○	◎	◎							


**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 Trockenfräsen und HSC-Fräsen dank neuentwickeltem Material und Beschichtung.
- ▶ Excellente Werkstückoberflächen.
- ▶ Abgesetzter Schaft für größere Reichweite.
- ▶ Schneidkantenschutz durch definierten Radius.
- ▶ Höhere Verschleißfestigkeit.



P.600

Ø0.5~Ø6 Ø8~Ø12

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



Due to the characteristics of blue decoration layer which might be earased during short term using, the color layer might not be uniform moreover.

However, it doesn' t effect on performance of tool.

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	

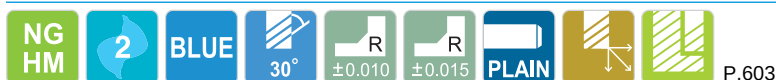
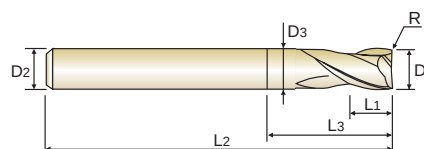
◎ : Excellent ○ : Good

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

CARBIDE, 2 FLUTE STUB LENGTH CORNER RADIUS with EXTENDED NECK **VOLLHARTMETALL, 2 SCHNEIDEN EXTRA KURZ EXKENRADIUS mit ABGESETZTEM SCHAFTTEIL**

- 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 Trockenfräsen und HSC-Fräsen dank neuentwickeltem Material und Beschichtung.
- Excellente Werkstückoberflächen.
- Abgesetzter Schaft für größere Reichweite.
- Schneidkantenschutz durch definierten Radius.
- Höhere Verschleißfestigkeit.



Ø0.3~Ø6 Ø8~Ø20

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
G8A36003	-	0.3	3	0.45	-	40	-
G8A36004	-	0.4	3	0.6	-	40	-
G8A36005	RO.05	0.5	3	0.7	-	40	-
G8A36907	RO.05	0.5	4	1	-	40	-
G8A36006	RO.05	0.6	3	0.9	-	40	-
G8A36908	RO.05	0.6	4	1.2	-	40	-
G8A36909	RO.05	0.7	4	1.4	-	40	-
G8A36008	RO.05	0.8	3	1.2	-	40	-
G8A36910	RO.05	0.8	4	1.6	-	40	-
G8A36911	RO.05	0.9	4	2	-	40	-
G8A36010	RO.1	1.0	3	1.5	-	40	-
G8A36901	RO.1	1.0	4	1.5	-	40	-
G8A36903	RO.1	1.0	6	1.5	-	40	-
G8A36015	RO.1	1.5	3	2.2	-	40	-
G8A36904	RO.1	1.5	6	2.2	-	40	-
G8A36020	RO.1	2.0	3	3	6	40	1.95
G8A36902	RO.1	2.0	4	3	6	40	1.95
G8A36905	RO.1	2.0	6	3	6	40	1.95
G8A36025	RO.1	2.5	3	4	6	40	2.4
G8A36906	RO.1	2.5	6	4	6	40	2.4
G8A36030	RO.1	3.0	6	4	7	45	2.85
G8A36035	RO.1	3.5	6	5	9	45	3.35
G8A36040	RO.1	4.0	6	5	9	45	3.85
G8A36045	RO.1	4.5	6	6	10	45	4.35



Due to the characteristics of blue decoration layer which might be earased 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
~HB225	HB225~325	HRc30~40	HRc40~45	HRc45~55	HRc55~70							
	○	○	○	◎	◎							



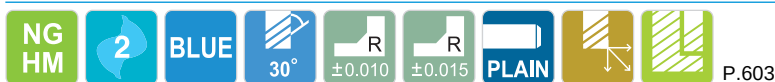
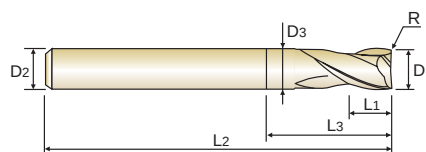
G8A36 SERIES

PLAIN SHANK
GLATTER ZYLINDERSCHAFT

CARBIDE, 2 FLUTE STUB LENGTH CORNER RADIUS with EXTENDED NECK VOLLHARTMETALL, 2 SCHNEIDEN EXTRA KURZ EXKENRADIUS mit ABGESETZTEM SCHAFTTEIL

- ▶ 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 Trockenfräsen und HSC-Fräsen dank neuentwickeltem Material und Beschichtung.
- ▶ Excellente Werkstückoberflächen.
- ▶ Abgesetzter Schaft für größere Reichweite.
- ▶ Schneidkantenschutz durch definierten Radius.
- ▶ Höhere Verschleißfestigkeit.



Ø0.3~Ø6 Ø8~Ø20

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
G8A36050	RO.2	5.0	6	6	11	50	4.85
G8A36060	RO.2	6.0	6	7	14	50	5.85
G8A36080	RO.2	8.0	8	9	18	60	7.7
G8A36100	RO.2	10.0	10	12	25	75	9.7
G8A36120	RO.3	12.0	12	15	30	75	11.7
G8A36160	RO.3	16.0	16	18	38	90	15.7
G8A36200	RO.3	20.0	20	24	45	100	19.7



Due to the characteristics of blue decoration layer which might be earased during short term using, the color layer might not be uniform moreover.

However, it doesn't effect on performance of tool.

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

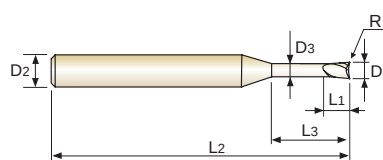
Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels		High Hardened Steels	Copper	Graphite	Cast Iron	Aluminum	Stainless Steels	Titanium	Inconel
~HB225	HB225~325	HRC30~40	HRc40~45	HRc45~55	HRc55~70							
	○	○	○	◎	◎							

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 Trockenfräsen und HSC-Fräsen dank neuentwickeltem Material und Beschichtung.
- ▶ Excellente Werkstückoberflächen.
- ▶ Abgesetzter Schaft für größere Reichweite.
- ▶ Schneidkantenschutz durch definierten Radius.
- ▶ Höhere Verschleißfestigkeit.



Unit : mm

EDP No.	Corner Radius R (±0.010)	Mill Diameter D1	Shank Diameter D2	Length of Cut L1	Length Below Shank L3	Overall Length L2	Neck Diameter D3
G8A52005	RO.05	0.5	6	0.7	1.5	50	0.45
G8A52901	RO.05	0.5	6	0.7	3.3	50	0.45
G8A52006	RO.05	0.6	6	0.9	2	50	0.55
G8A52902	RO.05	0.6	6	0.9	4	50	0.55
G8A52008	RO.05	0.8	6	1.2	2.5	50	0.75
G8A52903	RO.05	0.8	6	1.2	5.5	50	0.75
G8A52010	RO.10	1.0	6	1.5	3.3	50	0.95
G8A52904	RO.10	1.0	6	1.5	6.7	50	0.95
G8A52012	RO.10	1.2	6	1.8	4.4	50	1.15
G8A52905	RO.10	1.2	6	1.8	8	50	1.15
G8A52015	RO.15	1.5	6	2.2	5	50	1.45
G8A52906	RO.15	1.5	6	2.2	9.7	50	1.45
G8A52020	RO.15	2.0	6	2.2	6	50	1.95
G8A52907	RO.15	2.0	6	2.2	13	50	1.95



Due to the characteristics of blue decoration layer which might be earased during short term using, the color layer might not be uniform moreover.

However, it doesn' t effect on performance of tool.

Mill Dia. Tolerance(mm)	Shank Dia. Tolerance
0~-0.012	h6

◎ : Excellent ○ : Good

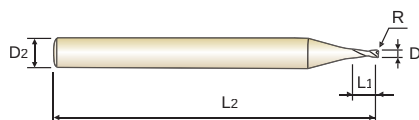
Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels		High Hardened Steels	Copper	Graphite	Cast Iron	Aluminum	Stainless Steels	Titanium	Inconel
~HB225	HB225~325	HRC30~40	HRc40~45	HRc45~55	HRC55~70							
	○	○	○	◎	◎							


**X5070
END MILLS**
G8A50 SERIES
**PLAIN SHANK
GLATTER ZYLINDERSCHAFT**

CARBIDE, 2 FLUTE MINIATURE CORNER RADIUS VOLLHARTMETALL, 2 SCHNEIDEN MINI ECKENRADIUS

- ▶ 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 Trockenfräsen und HSC-Fräsen dank neuentwickeltem Material und Beschichtung.
- ▶ Excellente Werkstückoberflächen.
- ▶ Abgesetzter Schaft für größere Reichweite.
- ▶ Schneidkantenschutz durch definierten Radius.
- ▶ Höhere Verschleißfestigkeit.



Unit : mm

EDP No.	Corner Radius R (±0.010)	Mill Diameter D1	Shank Diameter D2	Length of Cut L1	Overall Length L2
G8A50003	-	0.3	6	0.45	50
G8A50004	-	0.4	6	0.6	50
G8A50005	RO.05	0.5	6	0.7	50
G8A50006	RO.05	0.6	6	0.9	50
G8A50008	RO.05	0.8	6	1.2	50
G8A50010	RO.10	1.0	6	1.5	50
G8A50012	RO.10	1.2	6	1.8	50
G8A50015	RO.15	1.5	6	2.2	50
G8A50020	RO.15	2.0	6	2.2	50



Due to the characteristics of blue decoration layer which might be earased during short term using, the color layer might not be uniform moreover.

However, it doesn't effect on performance of tool.

Mill Dia. Tolerance(mm)	Shank Dia. Tolerance
0~-0.012	h6

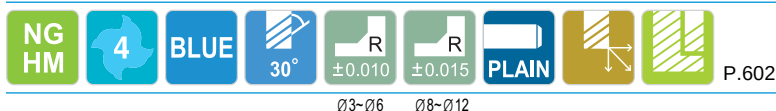
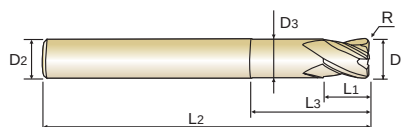
◎ : Excellent ○ : Good

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 CORNER RADIUS VOLLHARTMETALL, 4 SCHNEIDEN ECKENRADIUS

- ▶ 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 Trockenfräsen und HSC-Fräsen dank neuentwickeltem Material und Beschichtung.
- ▶ Excellente Werkstückoberflächen.
- ▶ Abgesetzter Schaft für größere Reichweite.
- ▶ Schneidkantenschutz durch definierten Radius.
- ▶ Höhere Verschleißfestigkeit.



Ø3-Ø6 Ø8-Ø12

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
G8A47916	R0.3	3.0	6	4	12	55	2.85
G8A47917	R0.3	3.0	6	4	16	55	2.85
G8A47918	R0.3	3.0	6	4	20	55	2.85
G8A47030	R0.5	3.0	6	4	10	55	2.85
G8A47901	R0.5	3.0	6	4	16	55	2.85
G8A47902	R0.5	3.0	6	4	20	55	2.85
G8A47919	R0.3	4.0	6	5	12	55	3.85
G8A47920	R0.3	4.0	6	5	16	55	3.85
G8A47921	R0.3	4.0	6	5	20	55	3.85
G8A47040	R0.5	4.0	6	5	12	55	3.85
G8A47903	R0.5	4.0	6	5	16	55	3.85
G8A47904	R0.5	4.0	6	5	20	55	3.85
G8A47922	R1.0	4.0	6	5	12	55	3.85
G8A47060	R0.5	6.0	6	7	20	60	5.85
G8A47905	R1.0	6.0	6	7	20	60	5.85
G8A47906	R1.5	6.0	6	7	20	60	5.85
G8A47910	R0.5	8.0	8	9	25	60	7.7
G8A47080	R1.0	8.0	8	9	25	60	7.7
G8A47907	R1.5	8.0	8	9	25	60	7.7
G8A47913	R2.0	8.0	8	9	25	60	7.7
G8A47911	R0.5	10.0	10	11	32	70	9.7
G8A47100	R1.0	10.0	10	11	32	70	9.7
G8A47908	R1.5	10.0	10	11	32	70	9.7
G8A47914	R2.0	10.0	10	11	32	70	9.7
G8A47912	R0.5	12.0	12	12	38	80	11.7
G8A47120	R1.0	12.0	12	12	38	80	11.7
G8A47909	R1.5	12.0	12	12	38	80	11.7
G8A47915	R2.0	12.0	12	12	38	80	11.7



Due to the characteristics of blue decoration layer which might be earased during short term using, the color layer might not be uniform moreover.

However, it doesn' t effect on performance of tool.

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

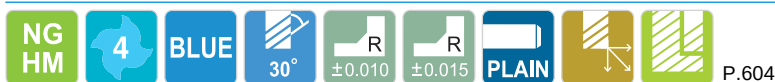
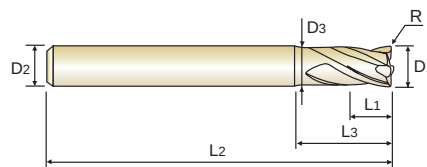
Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels	High Hardened Steels	Copper	Graphite	Cast Iron	Aluminum	Stainless Steels	Titanium	Inconel
~HB225	HB225~325	HRC30~40	HRC40~45 HRC45~55	HRC55~70							
	○	○	○	◎							


**X5070
END MILLS**
G8A37 SERIES
**PLAIN SHANK
GLATTER ZYLINDERSCHAFT**

CARBIDE, 4 FLUTE STUB LENGTH CORNER RADIUS with EXTENDED NECK **VOLLHARTMETALL, 4 SCHNEIDEN EXTRA KURZ ECKENRADIUS mit ABGESETZTEM SCHAFTTEIL**

- ▶ 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 Trockenfräsen und HSC-Fräsen dank neuentwickeltem Material und Beschichtung.
- ▶ Excellente Werkstückoberflächen.
- ▶ Abgesetzter Schaft für größere Reichweite.
- ▶ Schneidkantenschutz durch definierten Radius.
- ▶ Höhere Verschleißfestigkeit.



Ø1~Ø6 Ø8~Ø20

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
G8A37010	RO.1	1.0	3	1.5	-	40	-
G8A37901	RO.1	1.0	6	1.5	-	40	-
G8A37015	RO.1	1.5	3	2.2	-	40	-
G8A37902	RO.1	1.5	6	2.2	-	40	-
G8A37020	RO.1	2.0	3	3	6	40	1.95
G8A37903	RO.1	2.0	6	3	6	40	1.95
G8A37025	RO.1	2.5	3	4	6	40	2.4
G8A37904	RO.1	2.5	6	4	6	40	2.4
G8A37030	RO.1	3.0	6	4	7	45	2.85
G8A37035	RO.1	3.5	6	5	9	45	3.35
G8A37040	RO.1	4.0	6	5	9	45	3.85
G8A37045	RO.1	4.5	6	6	10	45	4.35
G8A37050	RO.2	5.0	6	6	11	50	4.85
G8A37060	RO.2	6.0	6	7	14	50	5.85
G8A37080	RO.2	8.0	8	9	18	60	7.7
G8A37100	RO.2	10.0	10	12	25	75	9.7
G8A37120	RO.3	12.0	12	15	30	75	11.7
G8A37160	RO.3	16.0	16	18	38	90	15.7
G8A37200	RO.3	20.0	20	24	45	100	19.7



Due to the characteristics of blue decoration layer which might be earased during short term using, the color layer might not be uniform moreover.

However, it doesn't effect on performance of tool.

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	

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							
	○	○	○	◎	◎							

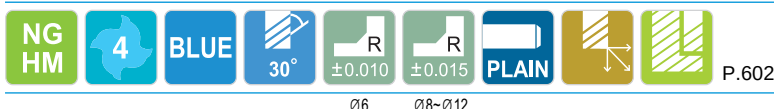
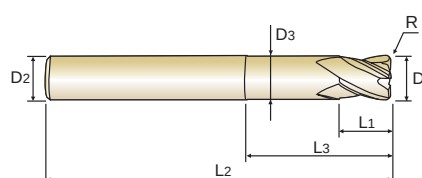
◎ : Excellent ○ : Good

CARBIDE, 4 FLUTE CORNER RADIUS with EXTENDED NECK

VOLLHARTMETALL, 4 SCHNEIDEN ECKENRADIUS mit ABGESETZTEM SCHAFTTETTEL

- 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 Trockenfräsen und HSC-Fräsen dank neuentwickeltem Material und Beschichtung.
- Excellente Werkstückoberflächen.
- Abgesetzter Schaft für größere Reichweite.
- Schneidkantenschutz durch definierten Radius.
- Höhere Verschleißfestigkeit.



Ø6 Ø8-Ø12

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
G8B0806005090	R0.5	6.0	6	9	20	90	5.85
G8B0806010090	R1.0	6.0	6	9	20	90	5.85
G8B0808005100	R0.5	8.0	8	12	25	100	7.7
G8B0808010100	R1.0	8.0	8	12	25	100	7.7
G8B0810005100	R0.5	10.0	10	15	32	100	9.7
G8B0810010100	R1.0	10.0	10	15	32	100	9.7
G8B0810020100	R2.0	10.0	10	15	32	100	9.7
G8B0812005110	R0.5	12.0	12	18	38	110	11.7
G8B0812010110	R1.0	12.0	12	18	38	110	11.7
G8B0812020110	R2.0	12.0	12	18	38	110	11.7

Due to the characteristics of blue decoration layer which might be earased during short term using, the color layer might not be uniform moreover.

However, it doesn't effect on performance of tool.

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

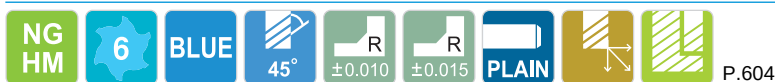
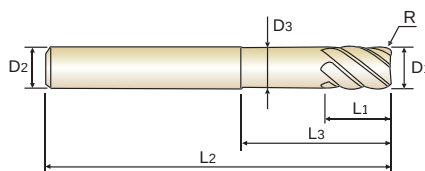
Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels		High Hardened Steels	Copper	Graphite	Cast Iron	Aluminum	Stainless Steels	Titanium	Inconel
~HB225	HB225~325	HRC30~40	HRC40~45	HRC45~55	HRC55~70							
	○	○	○	◎	◎							


**X5070
END MILLS**
G8A39 SERIES
**PLAIN SHANK
GLATTER ZYLINDERSCHAFT**

CARBIDE, 6 FLUTE 45° HELIX CORNER RADIUS VOLLHARTMETALL, 6 SCHNEIDEN 45° RECHTSSPIRALE ECKENRADIUS

- ▶ 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 Trockenfräsen und HSC-Fräsen dank neuentwickeltem Material und Beschichtung.
- ▶ Excellente Werkstückoberflächen.
- ▶ Abgesetzter Schaft für größere Reichweite.
- ▶ Schneidkantenschutz durch definierten Radius.
- ▶ Höhere Verschleißfestigkeit.



Ø6 Ø8-Ø20

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
G8A39916	R0.25	6.0	6	6	14	50	5.85
G8A39060	R0.5	6.0	6	6	14	50	5.85
G8A39901	R0.5	6.0	6	13	-	70	-
G8A39910	R0.5	6.0	* 6	26	-	70	-
G8A39080	R0.5	8.0	8	8	24	60	7.7
G8A39902	R0.5	8.0	8	19	-	90	-
G8A39911	R0.5	8.0	* 8	36	-	90	-
G8A39903	R0.5	10.0	10	22	-	100	-
G8A39100	R1.0	10.0	10	10	30	70	9.7
G8A39904	R1.0	10.0	10	22	-	100	-
G8A39912	R1.0	10.0	* 10	46	-	100	-
G8A39905	R0.5	12.0	12	26	-	110	-
G8A39120	R1.0	12.0	12	12	30	75	11.7
G8A39906	R1.0	12.0	12	26	-	110	-
G8A39913	R1.0	12.0	* 12	56	-	110	-
G8A39160	R1.0	16.0	16	32	-	130	-
G8A39907	R1.5	16.0	16	32	-	130	-
G8A39914	R1.5	16.0	* 16	66	-	130	-
G8A39200	R1.0	20.0	20	38	-	140	-
G8A39908	R1.5	20.0	20	38	-	140	-
G8A39909	R2.0	20.0	20	38	-	140	-
G8A39915	R2.0	20.0	* 20	76	-	140	-



Due to the characteristics of blue decoration layer which might be earased during short term using, the color layer might not be uniform moreover.

However, it doesn't effect on performance of tool.

Size	Corner Radius Tolerance (mm)	Mill Dia. Tolerance (mm)	Shank Dia. Tolerance
up to Ø6	±0.010	0~0.02	h6
over Ø6	±0.015	(*Extra Long Type: 0~0.03)	

◎ : Excellent ○ : Good

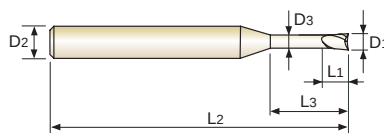
Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels		High Hardened Steels	Copper	Graphite	Cast Iron	Aluminum	Stainless Steels	Titanium	Inconel
~HB225	HB225~325	HRc30~40	HRc40~45	HRc45~55	HRc55~70							
	○	○	○	◎	◎							

CARBIDE, 2 FLUTE for RIB PROCESSING

VOLLHARTMETALL, 2 SCHNEIDEN 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.
- ▶ Designed for high precision milling operation.
- ▶ Higher wear-resistance.

- ▶ Geeignet zum Fräsen hochgeharteter Stähle.
- ▶ Geeignet zum Trockenfräsen und HSC-Fräsen dank neuentwickeltem Material und Beschichtung.
- ▶ Excellente Werkstückoberflächen.
- ▶ Geeignet für hochpräzises Fräsen.
- ▶ Höhere Verschleißfestigkeit.



Unit : mm

EDP No.	Mill Diameter D1	Shank Diameter D2	Length of Cut L1	Length Below Shank L3	Overall Length L2	Neck Diameter D3
G8A45863	0.1	4	0.15	0.3	45	0.085
G8A45864	0.1	4	0.15	0.5	45	0.085
G8A45002	0.2	4	0.3	0.5	45	0.17
G8A45815	0.2	4	0.3	1	45	0.17
G8A45816	0.2	4	0.3	1.5	45	0.17
G8A45003	0.3	4	0.45	1	45	0.27
G8A45844	0.3	4	0.45	1.5	45	0.27
G8A45817	0.3	4	0.45	2	45	0.27
G8A45818	0.3	4	0.45	3	45	0.27
G8A45842	0.3	4	0.45	4	45	0.27
G8A45843	0.4	4	0.6	1	45	0.37
G8A45004	0.4	4	0.6	2	45	0.37
G8A45984	0.4	4	0.6	3	45	0.37
G8A45985	0.4	4	0.6	4	45	0.37
G8A45986	0.4	4	0.6	5	45	0.37
G8A45005	0.5	4	0.7	2	45	0.45
G8A45861	0.5	4	0.7	2.5	45	0.45
G8A45988	0.5	4	0.7	4	45	0.45
G8A45989	0.5	4	0.7	6	45	0.45
G8A45990	0.5	4	0.7	8	45	0.45
G8A45006	0.6	4	0.9	2	45	0.55
G8A45860	0.6	4	0.9	3	45	0.55
G8A45991	0.6	4	0.9	4	45	0.55
G8A45992	0.6	4	0.9	6	45	0.55
G8A45993	0.6	4	0.9	8	45	0.55
G8A45819	0.6	4	0.9	10	45	0.55
G8A45862	0.8	4	1.2	2	45	0.75
G8A45008	0.8	4	1.2	4	45	0.75
G8A45908	0.8	4	1.2	6	45	0.75



Due to the characteristics of blue decoration layer which might be earased during short term using, the color layer might not be uniform moreover.

However, it doesn't effect on performance of tool.

◎ : Excellent ○ : Good

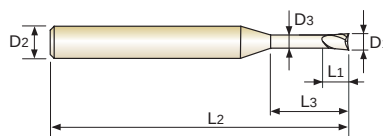
Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels		High Hardened Steels	Copper	Graphite	Cast Iron	Aluminum	Stainless Steels	Titanium	Inconel
~HB225	HB225~325	HRC30~40	HRC40~45	HRC45~55	HRC55~70							
	○	○	○	◎	◎							


**X5070
END MILLS**
G8A45 SERIES
**PLAIN SHANK
GLATTER ZYLINDERSCHAFT**

CARBIDE, 2 FLUTE for RIB PROCESSING VOLLHARTMETALL, 2 SCHNEIDEN 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.
- ▶ Designed for high precision milling operation.
- ▶ Higher wear-resistance.

- ▶ Geeignet zum Fräsen hochgehärteter Stähle.
- ▶ Geeignet zum Trockenfräsen und HSC-Fräsen dank neuentwickeltem Material und Beschichtung.
- ▶ Excellente Werkstückoberflächen.
- ▶ Geeignet für hochpräzises Fräsen.
- ▶ Höhere Verschleißfestigkeit.


**NG
HM**
2
BLUE
30°
PLAIN


P.602

Unit : mm

EDP No.	Mill Diameter D1	Shank Diameter D2	Length of Cut L1	Length Below Shank L3	Overall Length L2	Neck Diameter D3
G8A45909	0.8	4	1.2	8	45	0.75
G8A45994	0.8	4	1.2	10	45	0.75
G8A45995	0.8	4	1.2	12	45	0.75
G8A45996	1.0	4	1.5	4	45	0.95
G8A45010	1.0	4	1.5	6	45	0.95
G8A45912	1.0	4	1.5	8	45	0.95
G8A45913	1.0	4	1.5	10	45	0.95
G8A45914	1.0	4	1.5	12	45	0.95
G8A45997	1.0	4	1.5	16	50	0.95
G8A45998	1.0	4	1.5	20	55	0.95
G8A45012	1.2	4	1.8	6	45	1.15
G8A45915	1.2	4	1.8	8	45	1.15
G8A45916	1.2	4	1.8	10	45	1.15
G8A45917	1.2	4	1.8	12	45	1.15
G8A45999	1.2	4	1.8	16	50	1.15
G8A45015	1.5	4	2.3	6	45	1.45
G8A45923	1.5	4	2.3	8	45	1.45
G8A45924	1.5	4	2.3	10	45	1.45
G8A45925	1.5	4	2.3	12	45	1.45
G8A45926	1.5	4	2.3	14	50	1.45
G8A45927	1.5	4	2.3	16	50	1.45
G8A45928	1.5	4	2.3	18	55	1.45
G8A45810	1.5	4	2.3	20	55	1.45
G8A45958	2.0	4	3.0	6	45	1.95
G8A45020	2.0	4	3.0	8	45	1.95
G8A45959	2.0	4	3.0	10	45	1.95
G8A45960	2.0	4	3.0	12	45	1.95
G8A45961	2.0	4	3.0	14	50	1.95
G8A45962	2.0	4	3.0	16	50	1.95



Due to the characteristics of blue decoration layer which might be earased during short term using, the color layer might not be uniform moreover.

However, it doesn't effect on performance of tool.

◎ : Excellent ○ : Good

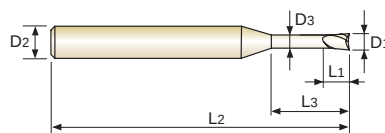
Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels		High Hardened Steels	Copper	Graphite	Cast Iron	Aluminum	Stainless Steels	Titanium	Inconel
~HB225	HB225~325	HRc30~40	HRc40~45	HRc45~55	HRc55~70							
	○	○	○	◎	◎							

CARBIDE, 2 FLUTE for RIB PROCESSING

VOLLHARTMETALL, 2 SCHNEIDEN 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.
- ▶ Designed for high precision milling operation.
- ▶ Higher wear-resistance.

- ▶ Geeignet zum Fräsen hochgeharteter Stähle.
- ▶ Geeignet zum Trockenfräsen und HSC-Fräsen dank neuentwickeltem Material und Beschichtung.
- ▶ Excellente Werkstückoberflächen.
- ▶ Geeignet für hochpräzises Fräsen.
- ▶ Höhere Verschleißfestigkeit.



Unit : mm

EDP No.	Mill Diameter D1	Shank Diameter D2	Length of Cut L1	Length Below Shank L3	Overall Length L2	Neck Diameter D3
G8A45963	2.0	4	3.0	18	55	1.95
G8A45964	2.0	4	3.0	20	55	1.95
G8A45966	2.0	4	3.0	25	60	1.95
G8A45814	2.0	4	3.0	30	70	1.95
G8A45975	3.0	6	4.5	10	45	2.85
G8A45976	3.0	6	4.5	12	45	2.85
G8A45977	3.0	6	4.5	14	50	2.85
G8A45978	3.0	6	4.5	16	55	2.85
G8A45979	3.0	6	4.5	18	55	2.85
G8A45980	3.0	6	4.5	20	60	2.85
G8A45981	3.0	6	4.5	25	65	2.85
G8A45832	3.0	6	4.5	30	70	2.85
G8A45833	3.0	6	4.5	35	80	2.85
G8A45983	3.0	6	4.5	40	90	2.85
G8A45040	4.0	6	6	12	50	3.85
G8A45801	4.0	6	6	16	60	3.85
G8A45802	4.0	6	6	20	60	3.85
G8A45803	4.0	6	6	25	70	3.85
G8A45834	4.0	6	6	30	70	3.85
G8A45835	4.0	6	6	35	80	3.85
G8A45836	4.0	6	6	40	90	3.85
G8A45837	4.0	6	6	45	90	3.85
G8A45838	4.0	6	6	50	100	3.85



Due to the characteristics of blue decoration layer which might be earased during short term using, the color layer might not be uniform moreover.

However, it doesn' t effect on performance of tool.

Mill Dia. Tolerance(mm)	Shank Dia. Tolerance
0~-0.012	h6

◎ : Excellent ○ : Good

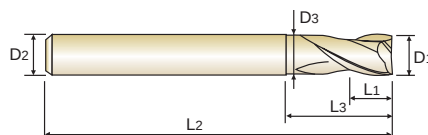
Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels		High Hardened Steels	Copper	Graphite	Cast Iron	Aluminum	Stainless Steels	Titanium	Inconel
~HB225	HB225~325	HRC30~40	HRC40~45	HRC45~55	HRC55~70							
	○	○	○	◎	◎							


**X5070
END MILLS**
G8A01 SERIES
**PLAIN SHANK
GLATTER ZYLINDERSCHAFT**

CARBIDE, 2 FLUTE VOLLHARTMETALL, 2 SCHNEIDEN

- ▶ 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.
- ▶ Designed for high precision milling operation.
- ▶ Higher wear-resistance.

- ▶ Geeignet zum Fräsen hochgehärteter Stähle.
- ▶ Geeignet zum Trockenfräsen und HSC-Fräsen dank neuentwickeltem Material und Beschichtung.
- ▶ Excellente Werkstückoberflächen.
- ▶ Geeignet für hochpräzises Fräsen.
- ▶ Höhere Verschleißfestigkeit.



P.603

Unit : mm

EDP No.	Mill Diameter D1	Shank Diameter D2	Length of Cut L1	Length Below Shank L3	Overall Length L2	Neck Diameter D3
G8A01001	0.1	4	0.2	-	40	-
G8A01002	0.2	4	0.4	-	40	-
G8A01003	0.3	4	0.6	-	40	-
G8A01004	0.4	4	0.8	-	40	-
G8A01005	0.5	4	1	-	40	-
G8A01006	0.6	4	1.2	-	40	-
G8A01007	0.7	4	1.4	-	40	-
G8A01008	0.8	4	1.6	-	40	-
G8A01009	0.9	4	2	-	40	-
G8A01010	1.0	6	1.5	3	50	0.95
G8A01015	1.5	6	1.7	4	50	1.45
G8A01020	2.0	6	2	5	50	1.95
G8A01025	2.5	6	2.5	6	55	2.4
G8A01030	3.0	6	3	8	55	2.85
G8A01035	3.5	6	3.5	9	55	3.35
G8A01040	4.0	6	4	10	55	3.85
G8A01050	5.0	6	5	13	55	4.85
G8A01060	6.0	6	6	15	55	5.85
G8A01080	8.0	8	8	20	65	7.7
G8A01100	10.0	10	10	25	75	9.7
G8A01120	12.0	12	12	28	85	11.7
G8A01160	16.0	16	16	32	90	15.7
G8A01200	20.0	20	20	40	105	19.7



Due to the characteristics of blue decoration layer which might be earased during short term using, the color layer might not be uniform moreover.

However, it doesn' t effect on performance of tool.

Size	Mill Dia. Tolerance (mm)	Shank Dia. Tolerance
up to Ø6	0~-0.012	h6
over Ø6	0~-0.015	

◎ : Excellent ○ : Good

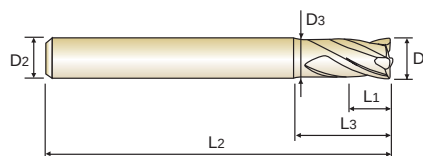
Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels		High Hardened Steels	Copper	Graphite	Cast Iron	Aluminum	Stainless Steels	Titanium	Inconel
~HB225	HB225~325	HRC30~40	HRC40~45	HRC45~55	HRC55~70							
	○	○	○	◎	◎							

CARBIDE, 4 FLUTE

VOLLHARTMETALL, 4 SCHNEIDEN

- ▶ 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.
- ▶ Designed for high precision milling operation.
- ▶ Higher wear-resistance.

- ▶ Geeignet zum Fräsen hochgehärteter Stähle.
- ▶ Geeignet zum Trockenfräsen und HSC-Fräsen dank neuentwickeltem Material und Beschichtung.
- ▶ Excellente Werkstückoberflächen.
- ▶ Geeignet für hochpräzises Fräsen.
- ▶ Höhere Verschleißfestigkeit.



Unit : mm

EDP No.	Mill Diameter D1	Shank Diameter D2	Length of Cut L1	Length Below Shank L3	Overall Length L2	Neck Diameter D3
G8A02010	1.0	6	1.5	3	50	0.95
G8A02020	2.0	6	2	5	50	1.95
G8A02030	3.0	6	3	8	55	2.85
G8A02040	4.0	6	4	10	55	3.85
G8A02050	5.0	6	5	13	55	4.85
G8A02060	6.0	6	6	15	55	5.85
G8A02080	8.0	8	8	20	65	7.7
G8A02100	10.0	10	10	25	75	9.7
G8A02120	12.0	12	12	28	85	11.7
G8A02160	16.0	16	16	32	90	15.7
G8A02200	20.0	20	20	40	105	19.7



Due to the characteristics of blue decoration layer which might be earased during short term using, the color layer might not be uniform moreover.

However, it doesn' t effect on performance of tool.

Size	Mill Dia. Tolerance (mm)	Shank Dia. Tolerance
up to Ø6	0~-0.012	h6
over Ø6	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
~HB225	HB225~325	HRC30~40	HRC40~45	HRC45~55	HRC55~70							
	○	○	○	◎	◎							



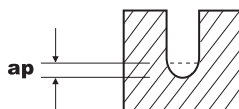
X5070 END MILLS

RECOMMENDED CUTTING CONDITIONS EMPFOHLENE SCHNEIDKONDITIONEN

CARBIDE, 2 FLUTE BALL NOSE for RIB PROCESSING VOLLHARTMETALL, 2 SCHNEIDEN STIRNRADIUS für SCHMALE RIPPEN

G8A46, G8A54 SERIES

MATERIAL	ALLOY STEELS HEAT RESISTANT STEELS			HARDENED STEELS						COPPER		
HARDNESS	HRc 30 ~ HRc 45			HRc 45 ~ HRc 55			HRc 55 ~ HRc 65					
DIAMETER	RPM	FEED	ap (mm)	RPM	FEED	ap (mm)	RPM	FEED	ap (mm)	RPM	FEED	ap (mm)
R0.1 × 0.2	50000	300~350	0.006~0.016	50000	265~310	0.005~0.013	50000	225~265	0.005~0.012	50000	455~530	0.010~0.022
R0.15 × 0.3	48000~50000	480~520	0.010~0.017	48000~50000	440~460	0.008~0.014	46000~50000	390~420	0.007~0.013	48000~50000	690~790	0.002~0.023
R0.2 × 0.4	48000~50000	720~790	0.013~0.032	48000~50000	450~550	0.011~0.026	46000~50000	400~460	0.010~0.024	48000~50000	1000~1150	0.019~0.048
R0.25 × 0.5	34100~49500	600~870	0.007~0.028	31900~35200	490~540	0.005~0.023	31900~35200	440~480	0.005~0.021	49000~50000	1100~1400	0.010~0.042
R0.3 × 0.6	28600~40700	590~850	0.007~0.034	26400~29700	480~540	0.006~0.028	26400~29700	400~480	0.006~0.025	42000~50000	1100~1700	0.011~0.050
R0.4 × 0.8	22000~30800	640~890	0.016~0.064	19800~22000	490~550	0.013~0.052	19800~22000	440~500	0.012~0.048	31000~50000	1100~2250	0.024~0.096
R0.5 × 1.0	17600~24200	600~850	0.008~0.080	15400~17600	470~540	0.007~0.065	15400~17600	440~500	0.006~0.060	24000~49500	1100~2200	0.012~0.120
R0.6 × 1.2	14300~18700	590~780	0.024~0.032	12000~14000	480~540	0.020~0.026	12000~14000	420~480	0.018~0.024	28500~38500	1480~1950	0.036~0.048
R0.75 × 1.5	11000~14300	580~760	0.031~0.048	10000~11500	480~540	0.025~0.039	10000~11500	420~480	0.023~0.036	17000~28500	1100~1950	0.046~0.072
R1.0 × 2.0	8500~11000	590~800	0.024~0.160	7900~8800	470~530	0.020~0.130	7900~8800	440~480	0.018~0.120	12600~24000	1100~2150	0.036~0.240
R1.5 × 3.0	5700~8200	730~1000	0.064~0.240	5300~5800	590~650	0.052~0.195	5300~5800	550~620	0.048~0.120	11900~17000	1850~2700	0.096~0.360
R2.0 × 4.0	4300~6200	680~990	0.080~0.320	3950~4400	550~620	0.065~0.026	3850~4400	530~570	0.060~0.240	6600~12500	1260~2500	0.120~0.480

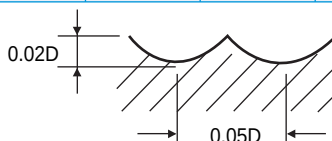


RPM = rev./min.
FEED = mm/min.

3 FLUTE, BALL NOSE 3 SCHNEIDEN, STIRNRADIUS

G8A59 SERIES

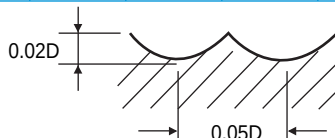
MATERIAL	HARDENED STEELS HEAT RESISTANT STEELS		HARDENED STEELS							
HARDNESS	HRc 30 ~ HRc 45		HRc 45 ~ HRc 55		HRc 55 ~ HRc 60		HRc 60 ~ HRc 65		HRc 65 ~ HRc 70	
DIAMETER	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED
R1.5 × 3.0	32000	8600	26840	5800	19840	4280	18680	4040	12780	2760
R2.0 × 4.0	24080	7700	20130	5430	14880	3880	14220	3650	9580	2500
R2.5 × 5.0	20000	7250	16780	5430	12400	3690	11670	3470	8000	2370
R3.0 × 6.0	18000	8570	15200	6220	12200	4500	11100	3830	7590	2460
R4.0 × 8.0	13500	7350	11300	5250	9200	3980	8320	3350	5690	2130
R5.0 × 10.0	10800	6530	9100	4590	7350	3450	6660	2870	4550	1960
R6.0 × 12.0	9050	6100	7590	4260	6130	3190	5530	2400	3800	1640
R8.0 × 16.0	6700	4600	5690	3250	4600	2480	4160	1800	2850	1230
R10.0 × 20.0	5400	3600	4550	2620	3670	1980	3300	1440	2280	980



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

CARBIDE, 3 FLUTE BALL NOSE
VOLLHARTMETALL, 3 SCHNEIDEN STIRNRADIUS
G8A28, G8A38, G8A53 SERIES

MATERIAL	HARDENED STEELS HEAT RESISTANT STEELS		HARDENED STEELS									
	HRc 30 ~ HRc 40		HRc 40 ~ HRc 50		HRc 50 ~ HRc 55		HRc 55 ~ HRc 60		HRc 60 ~ HRc 65		HRc 65 ~ HRc 70	
HARDNESS DIAMETER	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED
R0.1 × 0.2	50000	1200	50000	1050	45000	960	40000	770	35000	674	31500	570
R0.15 × 0.3	50000	1500	50000	1350	45000	1200	40000	965	35000	840	31500	700
R0.2 × 0.4	50000	1900	50000	1700	45000	1500	40000	1200	35000	1050	31500	890
R0.25 × 0.5	50000	2400	50000	2100	45000	1900	40000	1500	35000	1300	31500	1100
R0.3 × 0.6	50000	2900	50000	2500	45000	2200	40000	1800	35000	1600	31500	1400
R0.4 × 0.8	50000	3900	50000	3300	45000	3000	40000	2400	35000	2100	31500	1800
R0.5 × 1.0	50000	4800	50000	4200	45000	3800	40000	3000	35000	2600	35000	2300
R0.6 × 1.2	50000	5100	48000	4300	43000	3850	38000	3000	34000	2700	30600	2300
R0.75 × 1.5	50000	5400	48000	4500	43000	4000	37000	3100	33000	2700	29700	2300
R1.0 × 2.0	49700	5700	47800	4800	40000	4000	35000	3150	32000	2800	28500	2300
R1.5 × 3.0	33100	6000	31800	5300	26500	4000	23500	3150	21000	2800	19000	2300
R2.0 × 4.0	24900	6000	23900	5300	20000	4000	17500	3150	16000	2800	14500	2300
R2.5 × 5.0	18600	5800	17800	4900	15000	3750	13500	3050	11500	2550	10500	2100
R3.0 × 6.0	13900	4850	13400	4100	11000	3100	10000	2500	8800	2150	8000	1750
R4.0 × 8.0	11100	4200	10700	3500	9000	2700	8000	2150	7000	1850	6500	1550
R5.0 × 10.0	9300	3700	8900	3100	7500	2400	6600	1900	5800	1650	5300	1380
R6.0 × 12.0	6950	2950	6680	2500	5600	1900	5000	1550	4400	1250	4000	1050
R8.0 × 16.0	5570	2650	5350	2200	4500	1700	4000	1350	3500	1000	3200	850
R10.0 × 20.0	4450	2350	4300	1950	3600	1500	3200	1200	2800	800	2550	660



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



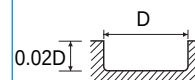
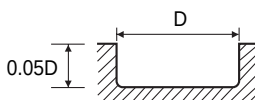
X5070 END MILLS

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 HARDNESS DIAMETER	HARDENED STEELS HEAT RESISTANT STEELS		HARDENED STEELS									
	HRc 30 ~ HRc 40		HRc 40 ~ HRc 50		HRc 50 ~ HRc 55		HRc 55 ~ HRc 60		HRc 60 ~ HRc 65		HRc 65 ~ HRc 70	
	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED
0.5	50000	295	45000	225	40000	175	33000	110	25000	65	20000	40
0.6	50000	375	45000	285	40000	225	30000	125	25000	85	20000	50
0.8	50000	480	45000	350	30000	235	25000	145	19000	90	16000	55
1.0	48000	600	38000	456	25500	288	20500	172	16000	108	12500	70
2.0	33300	680	26000	544	17500	336	14500	208	11000	128	9500	92
3.0	21800	680	17300	544	11500	336	9500	208	7500	128	6400	92
4.0	16700	704	13200	560	8800	352	7200	216	5600	136	4750	94
5.0	15700	800	12500	644	8300	400	6400	228	5100	144	4450	106
6.0	13100	760	10350	616	6900	384	5300	224	4200	144	3700	104
8.0	9880	744	7800	576	5200	356	4000	204	3200	132	2800	96
10.0	7800	680	6150	544	4100	332	3200	192	2550	124	2200	90
12.0	6650	680	5250	544	3500	332	2650	192	2100	124	1860	90

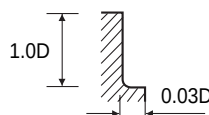


RPM = rev./min.
FEED = mm/min.

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

G8A60 SERIES

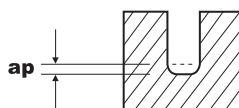
MATERIAL HARDNESS DIAMETER	HARDENED STEELS HEAT RESISTANT STEELS		HARDENED STEELS									
	HRc 30 ~ HRc 40		HRc 40 ~ HRc 50		HRc 50 ~ HRc 55		HRc 55 ~ HRc 60		HRc 60 ~ HRc 65		HRc 65 ~ HRc 70	
	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED
0.5	50000	205	45000	160	40000	125	33000	80	25000	45	20000	30
0.6	50000	265	45000	200	40000	160	30000	90	25000	60	20000	35
0.8	50000	335	40000	245	30000	165	25000	100	19000	65	16000	40
1.0	48000	840	38000	656	25500	408	20500	248	16000	152	12500	100
2.0	33300	960	26000	776	17500	480	14500	296	11000	184	9500	132
3.0	21800	960	17300	776	11500	480	9500	296	7500	184	6400	132
4.0	16700	1000	13200	800	8800	500	7200	308	5600	192	4750	136
5.0	15700	1160	12500	920	8300	568	6400	328	5100	208	4450	152
6.0	13100	1080	10350	880	6900	552	5300	320	4200	204	3700	148
8.0	9880	1056	7800	824	5200	508	4000	292	3200	188	2800	136
10.0	7800	960	6150	776	4100	472	3200	272	2550	176	2200	128
12.0	6650	960	5250	776	3500	472	2650	272	2100	176	1860	128



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

CARBIDE, 2 FLUTE CORNER RADIUS for RIB PROCESSING
VOLLHARTMETALL, 2 SCHNEIDEN ECKENRADIUS für SCHMALE RIPPEN
G8A52 SERIES

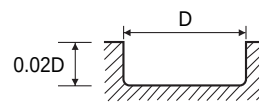
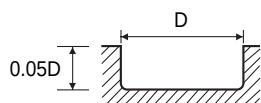
MATERIAL	ALLOY STEELS HEAT RESISTANT STEELS			HARDENED STEELS					
	HRc 30 ~ HRc 45			HRc 45 ~ HRc 55			HRc 55 ~ HRc 60		
HARDNESS DIAMETER	RPM	FEED	ap (mm)	RPM	FEED	ap (mm)	RPM	FEED	ap (mm)
0.5	25650~33000	370~470	0.0056~0.0350	23750~26000	285~315	0.0040~0.0250	14200~18000	115~130	0.0024~0.0150
0.6	20900~35200	330~560	0.0063~0.0294	19900~22000	260~290	0.0450~0.0210	11900~15500	100~120	0.0027~0.0126
0.8	16150~26400	360~590	0.0084~0.0392	15200~16700	280~310	0.0060~0.0280	9000~11700	110~125	0.0036~0.0168
1.0	12300~18700	350~540	0.0105~0.0280	10500~11500	250~280	0.0075~0.0200	6300~8050	100~115	0.0045~0.0120
1.2	10450~17600	350~590	0.0245~0.0700	9100~10000	250~280	0.0150~0.0420	5400~7000	100~115	0.0090~0.0252
1.5	9100~17600	430~830	0.0161~0.0770	7000~8000	250~280	0.0115~0.0550	4300~5500	100~115	0.0069~0.0330
2.0	6350~10550	340~570	0.0210~0.1400	6100~6700	270~300	0.0150~0.1000	3600~4700	100~120	0.0090~0.0600



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

CARBIDE, 2 FLUTE MINIATURE CORNER RADIUS - SLOTTING
VOLLHARTMETALL, 2 SCHNEIDEN MINI ECKENRADIUS - NUTENFRÄSEN
G8A50 SERIES

MATERIAL	HARDENED STEELS HEAT RESISTANT STEELS		HARDENED STEELS							
	HRc 30 ~ HRc 40		HRc 40 ~ HRc 50		HRc 50 ~ HRc 55		HRc 55 ~ HRc 60		HRc 60 ~ HRc 65	
HARDNESS DIAMETER	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED
0.3	50000	190	45000	140	40000	115	33000	70	25000	40
0.4	50000	235	45000	180	40000	140	33000	90	25000	55
0.5	50000	370	45000	280	40000	220	33000	140	25000	85
0.6	50000	470	45000	360	40000	285	30000	160	25000	105
0.8	50000	600	40000	440	30000	295	25000	185	19000	110
1.0	48000	750	38000	570	25500	360	20500	215	16000	135
1.2	42000	790	34000	640	22500	380	20000	250	14500	145
1.5	37000	800	30500	670	21000	410	17000	250	13000	155
2.0	33300	850	26000	680	17500	420	14500	260	11000	160



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

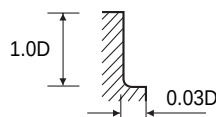


RECOMMENDED CUTTING CONDITIONS EMPFOHLENE SCHNEIDKONDITIONEN

CARBIDE, 4 FLUTE CORNER RADIUS VOLLHARTMETALL, 4 SCHNEIDEN ECKENRADIUS

G8A47, G8B08 SERIES

MATERIAL HARDNESS DIAMETER	HARDENED STEELS HEAT RESISTANT STEELS		HARDENED STEELS									
	HRc 30 ~ HRc 40		HRc 40 ~ HRc 50		HRc 50 ~ HRc 55		HRc 55 ~ HRc 60		HRc 60 ~ HRc 65		HRc 65 ~ HRc 70	
	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED
1.0	48000	1184	38000	840	25500	568	20500	344	16000	216	12500	140
2.0	33300	1400	26000	1000	17500	672	14500	416	11000	256	9500	184
3.0	21800	1400	17300	1000	11500	672	9500	416	7500	256	6400	184
4.0	16700	1440	13200	1040	8800	704	7200	432	5600	268	4750	192
5.0	15700	1600	12500	1200	8300	800	6400	464	5100	296	4450	216
6.0	13100	1560	10350	1120	6900	760	5300	448	4200	280	3700	208
8.0	9880	1504	7800	1080	5200	720	4000	416	3200	264	2800	192
10.0	7800	1400	6150	1008	4100	672	3200	384	2550	248	2200	176
12.0	6650	1400	5250	1008	3500	672	2650	384	2100	240	1860	176
16.0	4900	1200	3900	880	2600	584	2000	336	1600	216	1400	160
20.0	3900	1040	3100	776	2050	520	1600	304	1300	200	1100	144

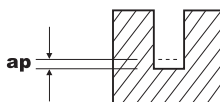


RPM = rev./min.
FEED = mm/min.

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

G8A45 SERIES

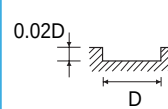
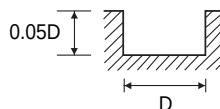
MATERIAL HARDNESS DIAMETER	ALLOY STEELS HEAT RESISTANT STEELS			HARDENED STEELS						COPPER		
	HRc 30 ~ HRc 45			HRc 45 ~ HRc 55			HRc 55 ~ HRc 65					
	RPM	FEED	ap (mm)	RPM	FEED	ap (mm)	RPM	FEED	ap (mm)	RPM	FEED	ap (mm)
0.2	50000	300-350	0.006-0.016	50000	265-310	0.005-0.013	50000	225-265	0.005-0.012	50000	455-530	0.010-0.022
0.3	43000-50000	330-420	0.006-0.015	39900-46200	265-310	0.004-0.011	23900-32300	105-185	0.003-0.007	48000-50000	550-640	0.010-0.025
0.4	31400-50000	350-590	0.005-0.028	30500-35200	295-340	0.003-0.020	18300-24600	120-200	0.002-0.012	48000-50000	790-920	0.008-0.048
0.5	25650-33000	370-470	0.006-0.035	23750-26000	285-315	0.004-0.025	14200-18000	115-130	0.003-0.015	44000-50000	800-1150	0.010-0.060
0.6	20900-35200	330-560	0.007-0.030	19900-22000	260-290	0.005-0.021	11900-15500	100-120	0.003-0.013	37500-50000	770-1250	0.011-0.051
0.8	16150-26400	360-590	0.009-0.040	15200-16700	280-310	0.006-0.028	9000-11700	110-125	0.004-0.017	28500-47000	770-1300	0.015-0.068
1.0	12300-18700	350-540	0.011-0.028	10500-11500	250-280	0.008-0.020	6300-8050	100-115	0.005-0.012	22500-34000	810-1300	0.018-0.048
1.2	10450-17600	350-590	0.025-0.070	9100-10000	250-280	0.015-0.042	5400-7000	100-115	0.009-0.026	22500-31500	950-1350	0.036-0.101
1.5	9100-17600	430-830	0.017-0.077	7000-8000	250-280	0.012-0.055	4300-5500	100-115	0.007-0.033	14500-25000	770-1320	0.028-0.132
2.0	6350-10550	340-570	0.021-0.140	6100-6700	270-300	0.015-0.0100	3600-4700	100-120	0.009-0.060	11500-18500	770-1250	0.036-0.240
3.0	4300-7050	550-900	0.056-0.210	3990-4600	445-515	0.040-0.150	2400-3200	105-310	0.024-0.090	9000-13000	1400-2110	0.096-0.360
4.0	3200-5300	400-675	0.074-0.280	3000-3400	335-380	0.053-0.200	1800-2400	75-230	0.032-0.120	6750-9750	1050-1575	0.128-0.480



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

CARBIDE, 2 FLUTE - SLOTTING
VOLLHARTMETALL, 2 SCHNEIDEN - NUTENFRÄSEN
G8A01, G8A36 SERIES

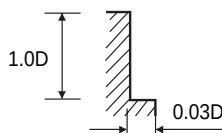
MATERIAL	HARDENED STEELS HEAT RESISTANT STEELS		HARDENED STEELS									
	HRc 30 ~ HRc 40		HRc 40 ~ HRc 50		HRc 50 ~ HRc 55		HRc 55 ~ HRc 60		HRc 60 ~ HRc 65		HRc 65 ~ HRc 70	
HARDNESS DIAMETER	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED
0.2	50000	130	45000	115	40000	95	33000	60	33000	45	26400	30
0.3	50000	190	45000	140	40000	115	33000	70	25000	50	20000	35
0.4	50000	235	45000	180	40000	140	33000	90	25000	55	20000	40
0.5	50000	370	45000	280	40000	220	33000	140	25000	85	20000	60
0.6	50000	470	45000	360	40000	285	30000	160	25000	105	20000	75
0.8	50000	600	40000	440	30000	295	25000	185	19000	110	15200	80
0.9	49000	655	39000	520	27800	330	22700	205	17500	125	14000	90
1.0	48000	750	38000	570	25500	360	20500	215	16000	135	12500	85
2.0	33300	850	26000	680	17500	420	14500	260	11000	160	9500	115
3.0	21800	850	17300	680	11500	420	9500	260	7500	160	6400	115
4.0	16700	880	13200	700	8800	440	7200	270	5600	170	4750	118
5.0	15700	1000	12500	805	8300	500	6400	285	5100	180	4450	132
6.0	13100	950	10350	770	6900	480	5300	280	4200	180	3700	130
8.0	9880	930	7800	720	5200	445	4000	255	3200	165	2800	120
10.0	7800	850	6150	680	4100	415	3200	240	2550	155	2200	112
12.0	6650	850	5250	680	3500	415	2650	240	2100	155	1860	112
16.0	4900	730	3900	580	2600	365	2000	210	1600	135	1400	95
20.0	3900	660	3100	525	2050	335	1600	195	1300	125	1100	85



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

CARBIDE, 2 FLUTE - SIDE CUTTING
VOLLHARTMETALL, 2 SCHNEIDEN - SEITENFRÄSEN
G8A01, G8A36 SERIES

MATERIAL	HARDENED STEELS HEAT RESISTANT STEELS		HARDENED STEELS									
	HRc 30 ~ HRc 40		HRc 40 ~ HRc 50		HRc 50 ~ HRc 55		HRc 55 ~ HRc 60		HRc 60 ~ HRc 65		HRc 65 ~ HRc 70	
HARDNESS DIAMETER	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED
1.0	48000	1050	38000	820	25500	510	20500	310	16000	190	12500	125
2.0	33300	1200	26000	970	17500	600	14500	370	11000	230	9500	165
3.0	21800	1200	17300	970	11500	600	9500	370	7500	230	6400	165
4.0	16700	1250	13200	1000	8800	625	7200	385	5600	240	4750	170
5.0	15700	1450	12500	1150	8300	710	6400	410	5100	260	4450	190
6.0	13100	1350	10350	1100	6900	690	5300	400	4200	255	3700	185
8.0	9880	1320	7800	1030	5200	635	4000	365	3200	235	2800	170
10.0	7800	1200	6150	970	4100	590	3200	340	2550	220	2200	160
12.0	6650	1200	5250	970	3500	590	2650	340	2100	220	1860	160
16.0	4900	1050	3900	840	2600	520	2000	300	1600	190	1400	140
20.0	3900	950	3100	750	2050	475	1600	275	1300	175	1100	125


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



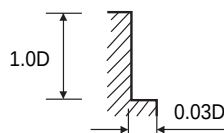
X5070 END MILLS

RECOMMENDED CUTTING CONDITIONS EMPFOHLENE SCHNEIDKONDITIONEN

CARBIDE, 4 FLUTE - SIDE CUTTING VOLLHARTMETALL, 4 SCHNEIDEN - SEITENFRÄSEN

G8A02, G8A37 SERIES

MATERIAL	HARDENED STEELS HEAT RESISTANT STEELS		HARDENED STEELS									
HARDNESS	HRc 30 ~ HRc 40		HRc 40 ~ HRc 50		HRc 50 ~ HRc 55		HRc 55 ~ HRc 60		HRc 60 ~ HRc 65		HRc 65 ~ HRc 70	
DIAMETER	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED
1.0	48000	1480	38000	1050	25500	710	20500	430	16000	270	12500	175
2.0	33300	1750	26000	1250	17500	840	14500	520	11000	320	9500	230
3.0	21800	1750	17300	1250	11500	840	9500	520	7500	320	6400	230
4.0	16700	1800	13200	1300	8800	880	7200	540	5600	335	4750	240
5.0	15700	2000	12500	1500	8300	1000	6400	580	5100	370	4450	270
6.0	13100	1950	10350	1400	6900	950	5300	560	4200	350	3700	260
8.0	9880	1880	7800	1350	5200	900	4000	520	3200	330	2800	240
10.0	7800	1750	6150	1260	4100	840	3200	480	2550	310	2200	220
12.0	6650	1750	5250	1260	3500	840	2650	480	2100	300	1860	220
16.0	4900	1500	3900	1100	2600	730	2000	420	1600	270	1400	200
20.0	3900	1300	3100	970	2050	650	1600	380	1300	250	1100	180

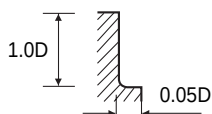


RPM = rev./min.
FEED = mm/min.

CARBIDE, 6 FLUTE 45° HELIX CORNER RADIUS VOLLHARTMETALL, 6 SCHNEIDEN 45° RECHTSSPIRALE, ECKENRADIUS

G8A39 SERIES

MATERIAL	HARDENED STEELS HEAT RESISTANT STEELS		HARDENED STEELS									
HARDNESS	HRc 30 ~ HRc 40		HRc 40 ~ HRc 50		HRc 50 ~ HRc 55		HRc 55 ~ HRc 60		HRc 60 ~ HRc 65		HRc 65 ~ HRc 70	
DIAMETER	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED
6.0	24800	5350	23500	4900	16000	4900	13500	3300	10500	2100	8000	1450
8.0	20000	5500	19000	5000	12000	4600	10000	3100	8000	2000	6000	1400
10.0	16000	4900	15500	4500	9500	4100	8000	2900	6400	1800	4800	1300
12.0	13000	4500	12500	4100	8000	3800	6600	2500	5300	1600	4000	1150
16.0	10000	4000	9700	3700	6000	3400	5000	2300	4000	1250	3000	870
20.0	8000	3350	7800	3400	4800	3200	4000	2100	3200	1020	2400	690



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

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