GUHRING

Edition 2014

RF 100 Diver – multifunctional with plunge angle capability of up to 45°

RF 100

High-performance end mills with unequal helix angle

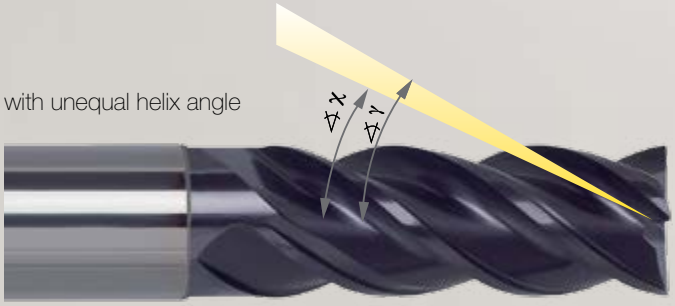
GUHRING - YOUR WORLD-WIDE PARTNER

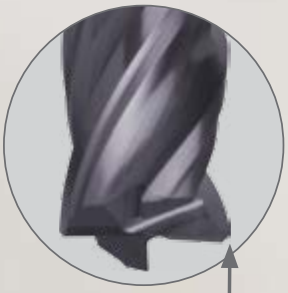
RF 100 high-performance end mills

the best solution for material specific milling

RF 100 high-performance end mills excel thanks to unequal helix angles which considerably reduces vibration. The unequal helix angle vastly improves surface quality for finishing operations and considerable higher feed rates for slot drilling and roughing operations are possible.

with unequal helix angle





with micro-corner protection
for longer tool life

High wear protection thanks to constant rake angle
in radius area

Seamless radius area for high form and
contour accuracy

SUITABLE FOR ROUGHING AND FINISHING

UP TO 60% HIGHER FEED RATES

UP TO 4-TIMES LONGER TOOL LIFE

UNEQUAL HELIX ANGLE

MINIMUM POWER CONSUMPTION

VIBRATION-FREE OPERATION

HIGH FORM AND CONTOUR ACCURACY

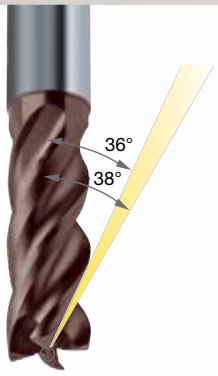
IMPROVED WORKPIECE SURFACE QUALITY

MICRO-CORNER PROTECTION FOR LONGER TOOL LIFE

RF 100 high-performance end mills –
the best solution for material specific milling

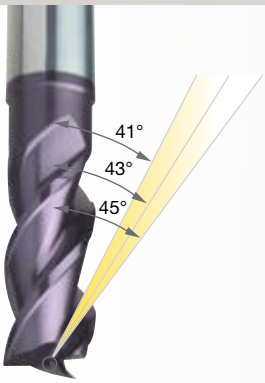
RF 100 U

- for materials up to 1600 N/mm^2 (48 HRC)
- slotting, roughing, finishing in steel, cast iron and high-tensile materials
- short machining times thanks to maximum rate of metal removal
- unequal helix angle 35/39° for vibration-free operation
- feed depths up to a_p 3xD for HPC applications



RF 100 Diver

- suitable for all materials
- ramping, drilling, slotting, roughing and finishing with only one tool
- plunge angle up to 45° reduces machining time of slotting and pockets
- high rate of metal removal achievable
- thanks to undersize dia all tolerances for holes and slots can be produced

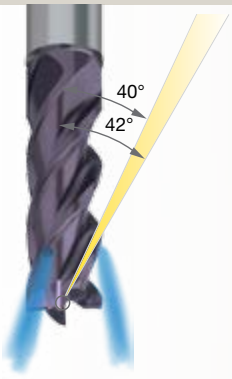


RF 100 U (3-fluted)

- can be applied for extreme cutting depths thanks to increased flute space
- for materials up to 1400 N/mm^2 (44 HRC)
- ow power consumption allows application on less powerful machines
- wide range of length options, intermediate dimensions and undersize options

RF 100 U/HF

- innovative roughing geometry produces smaller chips
- slotting and roughing with large cutting widths and depths
- low power consumption and cutting forces
  therefore suitability on non-rigid machines

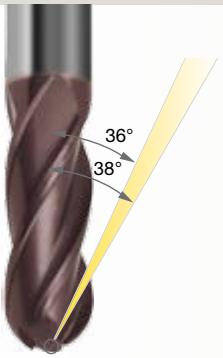


RF 100 F

- for materials up to 850 N/mm^2 (25 HRC)
- slotting and roughing in soft, tough and long-chipping steels
- perfect for HPC/HSC strategies such as trochoidal milling or i-machining

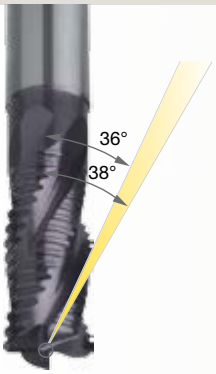
RF 100 VA

- for slotting, roughing and finishing operations in VA and stainless steels
- improved chip evacuation and low machining temperature thanks to optimised flute profile
- high contour accuracy and low deflection
- applicable with large protrusion lengths



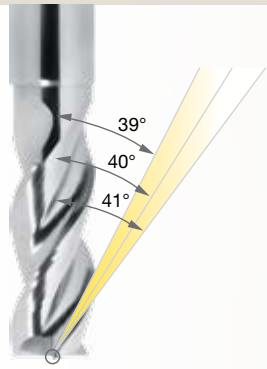
RF 100 VA (Vollradius)

- copy end mill with special flute profile
- machining of stainless steels, cast iron, steels up to 1200 N/mm^2 and aluminium
- improved chip evacuation
- high contour accuracy



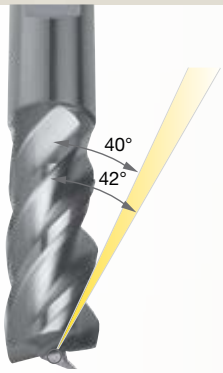
RF 100 VA/NF

- 36/38° helix and innovative roughing geometry for very good surface quality
- low power consumption and cutting forces
- applicable for slotting and roughing with long protrusion lengths



RF 100 A

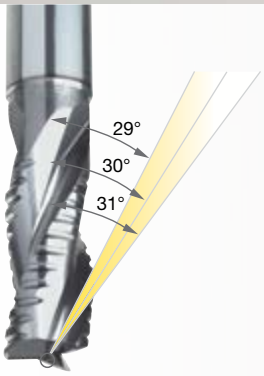
- slotting, roughing, finishing in aluminium and aluminium alloys
- symmetrical face grind for drilling, recessing, ramping at high feed rates
- low-vibration thanks to nano-polished cutting edges with micro guide chamfers
- 39/40/41° helix for the machining of long-chipping materials



RF 100 A (4-fluted)

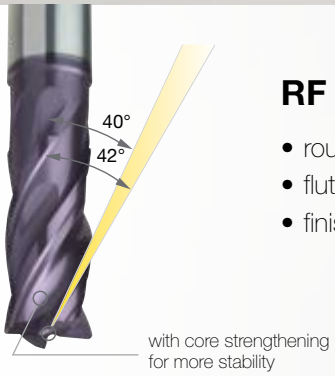
- suitable for roughing and finishing
- with good cooling also for slotting in aluminium and aluminium alloys
- unequal helix for long-chipping materials and non-ferrous metals

RF 100 high-performance end mills –
the best solution for material specific milling



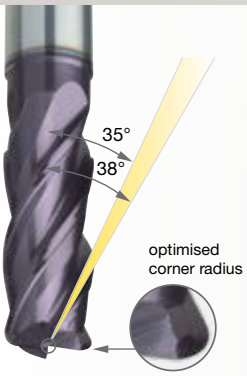
RF 100 A/WF

- 3-fluted with 29/30/31° helix for optimal chip evacuation
- large cutting depths and widths possible
- low cutting forces for difficult machine conditions
- innovative roughing geometry produces small chips



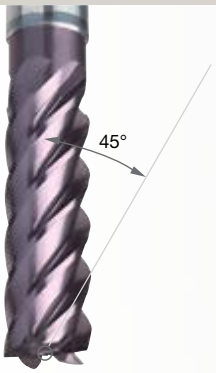
RF 100 H

- roughing and finishing of hardened steels, tool steels and hard cast iron
- flute design with re-inforced core for roughing up to a_p 1xD (from 32 to 54 HRC)
- finishing and HPC milling over the complete cutting edge length up to in excess of 63 HRC



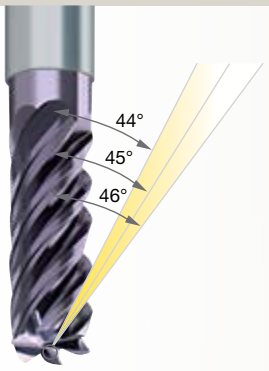
RF 100 Ti

- milling in high tensile titanium alloys and special materials
- slotting and roughing also with great cutting depths
- very smooth running and optimal surface finish thanks to adapted cutting edge design
- optimised corner radius for long tool life
- precise form accuracy



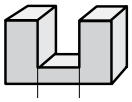
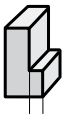
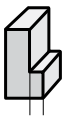
RF 100 S/F (5-fluted)

- for semi-roughing with a_e up to 0.3xD with complete cutting edge length
- optimal surface finish with fine-finishing or HSC operations
- universal for all materials up to 1600 N/mm^2 (48 HRC)
- with HPC strategy for roughing over the complete cutting edge length
- also available in 3xD cutting edge length



RF 100 S/F (6-fluted)

- for semi-roughing with a_e up to 0.3xD with complete cutting edge length
- optimal surface finish with fine-finishing or HSC operations
- universal for all materials up to 1600 N/mm^2 (48 HRC)
- with HPC strategy for roughing over the complete cutting edge length

		Application	**Slot drilling**  **1 x d**	**Roughing**  **0.3-0.8 x d**	**Finishing**  **> 0.1 x d**	**Super finishing**  **0.1 x d**
Material/ Application group	Hardness tensile strength	Example material	Rigid conditions:  - good cooling - sufficient performance - short-chipping	Unstable conditions:  - standard cooling - average performance - medium- to long-chipping		
Steel **P**	up to 850 Nmm²	C45/ 16MnCr5	RF 100 F Guhring no. 3366 page 29	RF 100 VA/NF Guhring no. 3696 page 36	RF 100 S/F Guhring no. 3631 page 56	
	above 850 Nmm²	42CrMo4	RF 100 U Guhring no. 3732 page 15	RF 100 U/HF Guhring no. 3508 page 25		
Stainless steel **M**	up to 750 Nmm²	1.4301 1.4305	RF 100 VA Guhring no. 3803 page 32	RF 100 VA/NF Guhring no. 3696 page 36		
	above 750 Nmm²	1.4571	RF 100 F Guhring no. 3366 page 29	RF 100 VA/NF Guhring no. 3696 page 36		
Cast iron **K**	up to 180 HB 30	GG	RF 100 F Guhring no. 3366 page 29	RF 100 U/HF Guhring no. 3508 page 25		
	above 180 HB 30	GGG / GGT / GGv	RF 100 U Guhring no. 3732 page 15	RF 100 U/HF Guhring no. 3508 page 25		
Aluminium **N**	up to 3% Si	AlMgSi1	RF 100 A Guhring no. 3472 page 39	RF 100 A/WF Guhring no. 3469 page 46	RF 100 A Guhring no. 3202 page 45	
	above 3% Si	G-AlSi7Cu3	RF 100 F Guhring no. 3366 page 29	RF 100 A/WF Guhring no. 3469 page 46	RF 100 F Guhring no. 3629 page 28	
Ti-special alloys **S**	Ti-basis	TiAl6V4 Inconel 625	RF 100 Ti Guhring no. 3499 page 51-52	RF 100 U/HF Guhring no. 3508 page 25	RF 100 S/F Guhring no. 3631 page 56	
	Ni-basis	Inconel 728	RF 100 F Guhring no. 3366 page 29	RF 100 U/HF Guhring no. 3508 page 25		
Hardened steel **H**	up to 52 HRC	1.2343	RF 100 U Guhring no. 3732 page 15	RF 100 U/HF Guhring no. 3508 page 25		
	above 52 HRC	1.2379	RF 100 H Guhring no. 3896 page 49	-	RF 100 H Guhring no. 3895 page 49	

Pictograms

Tool material

Solid carbide finest grain (carbide-UF)

Standard

to DIN

to Guhring standard

Type

Application range to DIN 1835

Helix angle

Size of helix angle / number of different helix angles

No. of cutting edges

Number of cutting edges

Length

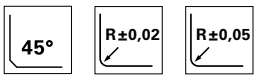
short (DIN) | long (DIN) | medium long | extra long

Application

for lateral feed
and for oblique plunging
with centre cutting

for lateral feed,
for oblique plunging and drilling
with centre cutting

Cutting edge corner

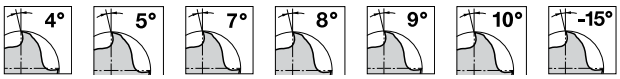


Size of corner margin or radius, dependent on diameter

Shank form

to DIN 6535

Rake angle



Rake angle of circumference cutting edges

Application recommendations for Guhring RF 100 high-performance end mills

Recommendations regarding tool suitability for the following application groups can be found on the following price and program pages:

Application group	Material examples
P	Steel, high-alloyed steel
M	Stainless steel
K	Grey cast iron, spheroidal and malleable cast iron
N	Aluminium and other non-ferrous metals
S	Special-, super- and Ti-alloys
H	Hardened steel and hard cast iron

RF 100 High-performance end mills

Standard	Type	Helix angle	Teeth	Length	Feed	Tool description		Tool material / Surface finish	Guhring no. HA	Guhring no. HB	Discount group	Page
RF 100 U centre cutting								**Solid carbide**				
DIN 6527	N	35° 38°	4					FIRE	6706	3731	106	14
DIN 6527	N	35° 38°	4					FIRE	3736	3732	106	15
G	N	35° 38°	4					FIRE	3837	3838	106	16
G	N	35° 38°	4	3xD				FIRE	3839	3871	106	17
G	N	35° 38°	4					FIRE	3627		106	18
DIN 6527	N	35° 38°	4					FIRE	3872	3873	106	19
RF 100 Diver centre cutting								**Solid carbide**				
DIN 6527	N	36° 38°	4				NEW	Signum	6737	6736	106	21
RF 100 U (3-fluted) centre cutting								**Solid carbide**				
G	NH	41° 43° 45°	3					FIRE	3891	3892	106	23
G	NH	41° 43° 45°	3					FIRE	3893	3894	106	24
RF 100 U/HF centre cutting								**Solid carbide**				
DIN 6527	HF	30° 32°	4					FIRE	3507	3508	106	25
G	HF	30° 32°	4	3xD				FIRE	3509	3522	106	26
G	HF	30° 32°	4					FIRE	3598	3600	106	27

RF 100 High-performance end mills

Standard	Type	Helix angle	Teeth	Length	Feed	Tool description	Tool material / Surface finish	Guhring no. HA	Guhring no. HB	Discount group	Page
RF 100 F centre cutting							**Solid carbide**				
DIN 6527	NH	40° 42°	4				FIRE	3629	3630	106	28
DIN 6527	NH	40° 42°	4				FIRE		3366	106	29
RF 100 VA centre cutting							**Solid carbide**				
DIN 6527	N	36° 38°	4				TiAlN-nanoA	3804	3805	106	31
DIN 6527	N	36° 38°	4				TiAlN-nanoA	3800	3803	106	32
G	N	36° 38°	4				TiAlN-nanoA	3806	3807	106	33
DIN 6527	N	36° 38°	4				TiAlN-nanoA	6700	6701	106	34
RF 100 VA ball nosed centre cutting							**Solid carbide**				
DIN 6527	N	36° 38°	4				TiAlN-nanoA	6707	6708	106	35
RF 100 VA/NF centre cutting							**Solid carbide**				
DIN 6527	NF	36° 38°	4				TiAlN-nanoA	3696	3718	106	36
G	NF	36° 38°	4				TiAlN-nanoA	3733	3885	106	37

RF 100 High-performance end mills

Standard	Type	Helix angle	Teeth	Length	Feed	Tool description		Tool material / Surface finish	Guhring no. HA	Guhring no. HB	Discount group	Page
RF 100 A centre cutting								**Solid carbide**				
G	W	39° 40° 41°	3					bright	3472	6702	106	39
G	W	39° 40° 41°	3				NEW	bright	3599	6729	106	40
G	W	39° 40° 41°	3					bright	3473	6703	106	41
G	W	39° 40° 41°	3	3xD			NEW	bright	6730	6731	106	42
G	W	39° 40° 41°	3	4xD			NEW	bright	6732	6733	106	43
G	W	39° 40° 41°	3	5xD			NEW	bright	6734	6735	106	44
DIN 6527	W	40° 42°	4					bright	3202	3319	106	45
RF 100 A/WF centre cutting								**Solid carbide**				
G	WF	29° 30° 31°	3					bright	3468	3469	106	46
G	WF	29° 30° 31°	3					bright	3470	3471	106	47

RF 100 High-performance end mills

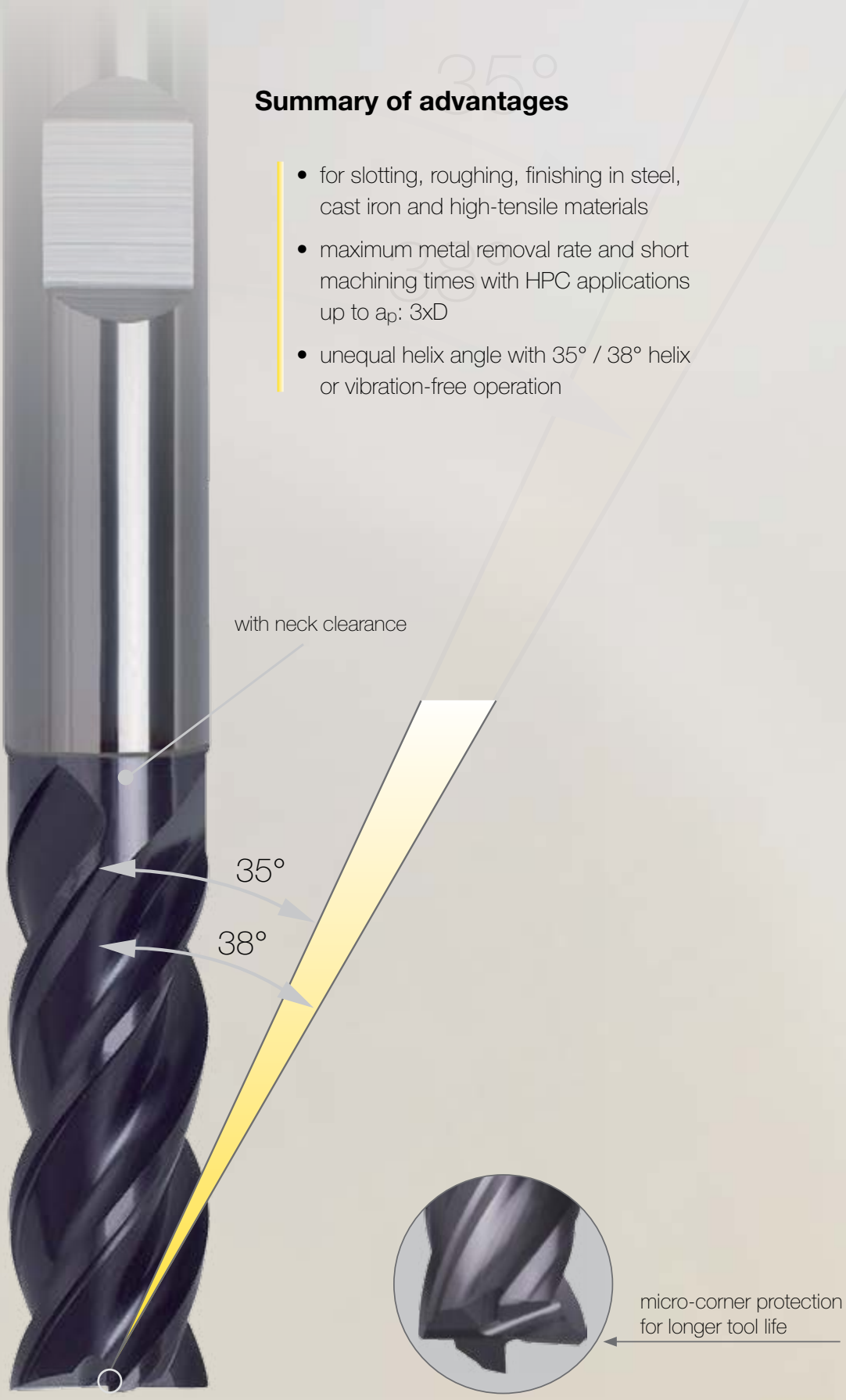
Standard	Type	Helix angle	Teeth	Length	Feed	Tool description	Tool material Surface finish	Guhring no. HA	Guhring no. HB	Discount group	Page
RF 100 H **centre cutting**							**Solid carbide**				
DIN 6527	H	40° 42°	4				TiAlN	**3895**	**3896**	106	49
RF 100 Ti **centre cutting**							**Solid carbide**				
DIN 6527	N	35° 38°	4				TiAlN-SuperA	**3498**	**3499**	106	51
RF 100 S/F (5-fluted) **centre cutting**							**Solid carbide**				
G	NH	45°	5				FIRE	**6709**	**6710**	106	54
G	NH	45°	5	3xD			FIRE	**3897**	**3898**	106	55
RF 100 S/F (6-fluted) **centre cutting**							**Solid carbide**				
G	NH	44° 45° 46°	6				FIRE	**3631**	**3632**	106	56

RF 100 U - high-performance end mills

for materials up to 1600 N/mm^2 (48 HRC)

Summary of advantages

- for slotting, roughing, finishing in steel, cast iron and high-tensile materials
- maximum metal removal rate and short machining times with HPC applications up to a_p: 3xD
- unequal helix angle with 35° / 38° helix or vibration-free operation



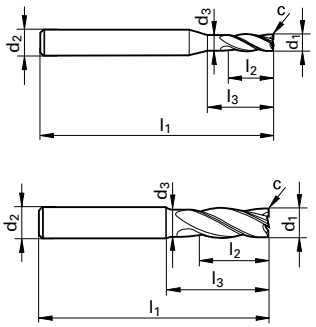
RF 100 U

centre cutting

Solid carbide

DIN 6527 | N | 35° 38° | 4 | | | 45° | 4°

	HA	HB
Guhring no.	**6706**	**3731**
Surface finish	FIRE	FIRE
Discount group	106	106



Code no.	d1 h10	d2	d3	l1	l2	l3	c	Availability	
	mm	mm	mm	mm	mm	mm	mm x 45°		
3.000	3.000	6.000	2.800	50.00	5.00	15.00	0.10	●	●
4.000	4.000	6.000	3.800	54.00	8.00	15.00	0.10	●	●
5.000	5.000	6.000	4.800	54.00	9.00	15.00	0.10	●	●
6.000	6.000	6.000	5.700	54.00	10.00	17.00	0.15	●	●
8.000	8.000	8.000	7.700	58.00	12.00	21.00	0.15	●	●
10.000	10.000	10.000	9.500	66.00	14.00	24.00	0.20	●	●
12.000	12.000	12.000	11.500	73.00	16.00	26.00	0.20	●	●
14.000	14.000	14.000	13.500	75.00	18.00	28.00	0.25	●	●
16.000	16.000	16.000	15.500	82.00	22.00	32.00	0.35	●	●
18.000	18.000	18.000	17.500	84.00	24.00	34.00	0.40	●	●
20.000	20.000	20.000	19.500	92.00	26.00	40.00	0.45	●	●

Cutting values: HPC roughing* (detailed cutting values see p. 58)

ISO Code	Hardness	Feed depth a_p	Feed width** a_e	Cutting speed v_c	fz (mm/z) with nom. Ø							
					3	6	8	10	12	16	20	25
P Steel	≤ 850 N/mm²	2 x d	0.3 x d	200	0.02	0.04	0.055	0.07	0.085	0.1	0.12	0.17
	850 - 1400 N/mm²	2 x d	0.3 x d	180	0.02	0.04	0.055	0.07	0.085	0.1	0.12	0.17
K Cast mat.	≥ 240 HB 30	2 x d	0.4 x d	180	0.02	0.04	0.05	0.065	0.08	0.095	0.11	0.16

* peripheral cooling „Guhrojet“ is recommended or optimal chip evacuation and tool life

** for trochoidal milling and imachining with a_e = 0.1-0.2 xd the cutting speed and feed rate can be increased by 50 %

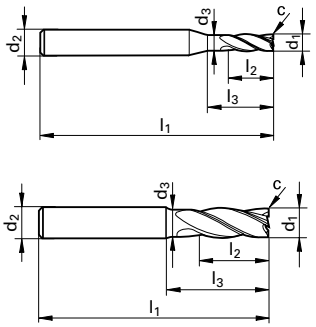
RF 100 U

centre cutting

Solid carbide

DIN 6527 | N | 35° 38° | 4 | 45° | 4°

	HA	HB
Guhring no.	**3736**	**3732**
Surface finish	FIRE	FIRE
Discount group	106	106



Code no.	d1 h10	d2	d3	l1	l2	l3	c	Availability	
	mm	mm	mm	mm	mm	mm	mm x 45°		
3.000	3.000	6.000	2.800	57.00	8.00	15.00	0.10	●	●
4.000	4.000	6.000	3.800	57.00	11.00	18.00	0.10	●	●
5.000	5.000	6.000	4.800	57.00	13.00	18.00	0.10	●	●
6.000	6.000	6.000	5.700	57.00	13.00	20.00	0.15	●	●
8.000	8.000	8.000	7.700	63.00	19.00	26.00	0.15	●	●
10.000	10.000	10.000	9.500	72.00	22.00	30.00	0.20	●	●
12.000	12.000	12.000	11.500	83.00	26.00	36.00	0.20	●	●
14.000	14.000	14.000	13.500	83.00	26.00	36.00	0.25	●	●
16.000	16.000	16.000	15.500	92.00	32.00	42.00	0.35	●	●
18.000	18.000	18.000	17.500	92.00	32.00	42.00	0.40	●	●
20.000	20.000	20.000	19.500	104.00	38.00	52.00	0.45	●	●
25.000	25.000	25.000	24.000	121.00	45.00	63.00	0.60	●	●

Cutting values: HPC roughing* (detailed cutting values see p. 58)

ISO Code	Hardness	Feed depth a_p	Feed width** a_e	Cutting speed v_c	fz (mm/z) with nom. Ø							
					3	6	8	10	12	16	20	25
P Steel	≤ 850 N/mm²	2 x d	0.3 x d	200	0.02	0.04	0.055	0.07	0.085	0.1	0.12	0.17
	850 - 1400 N/mm²	2 x d	0.3 x d	180	0.02	0.04	0.055	0.07	0.085	0.1	0.12	0.17
K Cast mat.	≥ 240 HB 30	2 x d	0.4 x d	180	0.02	0.04	0.05	0.065	0.08	0.095	0.11	0.16

* peripheral cooling „Guhrojet“ is recommended or optimal chip evacuation and tool life

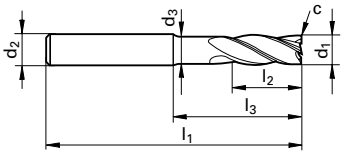
** for trochoidal milling and imachining with a_e = 0.1-0.2 xd the cutting speed and feed rate can be increased by 50 %

RF 100 U

centre cutting

Solid carbide

								HA	HB
G	N	35° 38°	4			45°	4°		
							Guhring no.	**3837**	**3838**
							Surface finish	FIRE	FIRE
							Discount group	106	106



Code no.	d1 h10	d2	d3	l1	l2	l3	c	Availability	
	mm	mm	mm	mm	mm	mm	mm x 45°		
6.000	6.000	6.000	5.700	65.00	13.00	28.00	0.15	●	●
8.000	8.000	8.000	7.700	75.00	19.00	38.00	0.15	●	●
10.000	10.000	10.000	9.500	80.00	22.00	38.00	0.20	●	●
12.000	12.000	12.000	11.500	93.00	26.00	46.00	0.20	●	●
16.000	16.000	16.000	15.500	108.00	32.00	58.00	0.35	●	●
20.000	20.000	20.000	19.500	126.00	38.00	74.00	0.45	●	●

Cutting values: HPC roughing* (detailed cutting values see p. 58)

ISO Code	Hardness	Feed depth a_p	Feed width** a_e	Cutting speed v_c	fz (mm/z) with nom. Ø							
					3	6	8	10	12	16	20	25
P Steel	≤ 850 N/mm²	2 x d	0.3 x d	200	0.02	0.04	0.055	0.07	0.085	0.1	0.12	0.17
	850 - 1400 N/mm²	2 x d	0.3 x d	180	0.02	0.04	0.055	0.07	0.085	0.1	0.12	0.17
K Cast mat.	≥ 240 HB 30	2 x d	0.4 x d	180	0.02	0.04	0.05	0.065	0.08	0.095	0.11	0.16

* peripheral cooling „Guhrojet“ is recommended or optimal chip evacuation and tool life

** for trochoidal milling and imachining with a_e = 0.1-0.2 xd the cutting speed and feed rate can be increased by 50 %

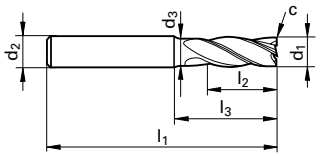
RF 100 U

centre cutting

Solid carbide

G	N	35° 38°	4	3xD		45°	4°	HA	HB

	HA	HB
Guhring no.	**3839**	**3871**
Surface finish	FIRE	FIRE
Discount group	106	106



Code no.	d1 h10	d2	d3	l1	l2	l3	c	Availability	
	mm	mm	mm	mm	mm	mm	mm x 45°		
6.000	6.000	6.000	5.700	65.00	18.00	28.00	0.15	●	●
8.000	8.000	8.000	7.700	75.00	24.00	38.00	0.15	●	●
10.000	10.000	10.000	9.500	80.00	30.00	38.00	0.20	●	●
12.000	12.000	12.000	11.500	93.00	36.00	46.00	0.20	●	●
16.000	16.000	16.000	15.500	108.00	48.00	58.00	0.35	●	●
20.000	20.000	20.000	19.500	126.00	60.00	74.00	0.45	●	●

Cutting values: HPC roughing* (detailed cutting values see p. 58)

ISO Code	Hardness	Feed depth a_p	Feed width** a_e	Cutting speed v_c	fz (mm/z) with nom. Ø							
					3	6	8	10	12	16	20	25
P Steel	≤ 850 N/mm²	3 x d	0.25xd	200	0.02	0.04	0.055	0.07	0.085	0.1	0.12	0.17
	850 - 1400 N/mm²	3 x d	0.15xd	180	0.02	0.04	0.055	0.07	0.085	0.1	0.12	0.17
K Cast mat.	≥ 240 HB 30	3 x d	0.25xd	180	0.02	0.04	0.05	0.065	0.08	0.095	0.11	0.16

* peripheral cooling „Guhrojet“ is recommended or optimal chip evacuation and tool life

** for trochoidal milling and imachining with a_e = 0.1-0.2 xd the cutting speed and feed rate can be increased by 50 %

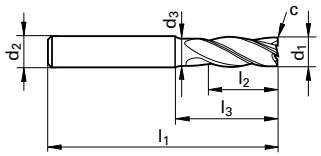
RF 100 U

centre cutting

Solid carbide

G	N	35° 38°	4			45°	4°	~HA

Guhring no.	**3627**
Surface finish	FIRE
Discount group	106



Code no.	d1 h10	d2	d3	l1	l2	l3	c	Availability
	mm	mm	mm	mm	mm	mm	mm x 45°	
10.000	10.000	10.000	9.500	100.00	40.00	48.00	0.20	●
12.000	12.000	12.000	11.500	150.00	45.00	58.00	0.20	●
14.000	14.000	14.000	13.500	150.00	45.00	58.00	0.25	●
16.000	16.000	16.000	15.500	150.00	65.00	78.00	0.35	●
18.000	18.000	18.000	17.500	150.00	65.00	78.00	0.40	●
20.000	20.000	20.000	19.500	150.00	65.00	78.00	0.45	●
25.000	25.000	25.000	24.000	150.00	75.00	92.00	0.60	●

Cutting values: HPC roughing* (detailed cutting values see p. 58)

ISO Code	Hardness	Feed depth a_p	Feed width** a_e	Cutting speed v_c	fz (mm/z) with nom. Ø							
					3	6	8	10	12	16	20	25
P Steel	≤ 850 N/mm²	3 x d	0.25xd	200	0.02	0.04	0.055	0.07	0.085	0.1	0.12	0.17
	850 - 1400 N/mm²	3 x d	0.15xd	180	0.02	0.04	0.055	0.07	0.085	0.1	0.12	0.17
K Cast mat.	≥ 240 HB 30	3 x d	0.25xd	180	0.02	0.04	0.05	0.065	0.08	0.095	0.11	0.16

* peripheral cooling „Guhrojet“ is recommended or optimal chip evacuation and tool life

** for trochoidal milling and imachining with a_e = 0.1-0.2 xd the cutting speed and feed rate can be increased by 50 %

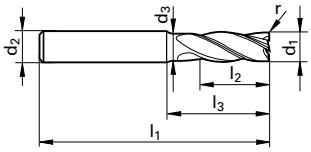
RF 100 U

centre cutting

Solid carbide

DIN 6527 | N | 35° 38° | 4 | R±0,02 | 5°

	HA	HB
Guhring no.	**3872**	**3873**
Surface finish	FIRE	FIRE
Discount group	106	106



Code no.	d1 h10	d2	d3	l1	l2	l3	r	Availability	
	mm	mm	mm	mm	mm	mm	mm		
6.005	6.000	6.000	5.700	57.00	13.00	20.00	0.50	●	●
6.010	6.000	6.000	5.700	57.00	13.00	20.00	1.00	●	●
6.020	6.000	6.000	5.700	57.00	13.00	20.00	2.00	●	●
8.005	8.000	8.000	7.700	63.00	19.00	26.00	0.50	●	●
8.010	8.000	8.000	7.700	63.00	19.00	26.00	1.00	●	●
8.020	8.000	8.000	7.700	63.00	19.00	26.00	2.00	●	●
10.005	10.000	10.000	9.500	72.00	22.00	30.00	0.50	●	●
10.010	10.000	10.000	9.500	72.00	22.00	30.00	1.00	●	●
10.020	10.000	10.000	9.500	72.00	22.00	30.00	2.00	●	●
12.005	12.000	12.000	11.500	83.00	26.00	36.00	0.50	●	●
12.010	12.000	12.000	11.500	83.00	26.00	36.00	1.00	●	●
12.020	12.000	12.000	11.500	83.00	26.00	36.00	2.00	●	●
16.005	16.000	16.000	15.500	92.00	32.00	42.00	0.50	●	●
16.010	16.000	16.000	15.500	92.00	32.00	42.00	1.00	●	●
16.020	16.000	16.000	15.500	92.00	32.00	42.00	2.00	●	●
16.030	16.000	16.000	15.500	92.00	32.00	42.00	3.00	●	●
20.005	20.000	20.000	19.500	104.00	38.00	52.00	0.50	●	●
20.010	20.000	20.000	19.500	104.00	38.00	52.00	1.00	●	●
20.020	20.000	20.000	19.500	104.00	38.00	52.00	2.00	●	●
20.030	20.000	20.000	19.500	104.00	38.00	52.00	3.00	●	●
25.020	25.000	25.000	24.000	121.00	45.00	63.00	2.00	●	●
25.030	25.000	25.000	24.000	121.00	45.00	63.00	3.00	●	●

Cutting values: HPC roughing* (detailed cutting values see p. 58)

ISO Code	Hardness	Feed depth a_p	Feed width** a_e	Cutting speed v_c	fz (mm/z) with nom. Ø							
					3	6	8	10	12	16	20	25
P Steel	≤ 850 N/mm²	2 x d	0.3 x d	200	0.02	0.04	0.055	0.07	0.085	0.1	0.12	0.17
	850 - 1400 N/mm²	2 x d	0.3 x d	180	0.02	0.04	0.055	0.07	0.085	0.1	0.12	0.17
K Cast mat.	≥ 240 HB 30	2 x d	0.4 x d	180	0.02	0.04	0.05	0.065	0.08	0.095	0.11	0.16

* peripheral cooling „Guhrojet“ is recommended or optimal chip evacuation and tool life

** for trochoidal milling and imachining with a_e = 0.1-0.2 xd the cutting speed and feed rate can be increased by 50 %

www.guehring.de

45° plunging, milling with extreme metal removal rate: RF 100 Diver

Ramping, driling, slotting roughing & finishing:
at maximum speed, with only one tool,
in all materials

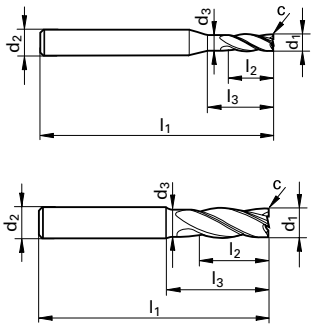
RF 100 Diver

centre cutting

Solid carbide

DIN 6527 | N | 36° 38° | 4 | | | 45° | 7°

	HA	HB
Guhring no.	**6737**	**6736**
Surface finish	Signum	Signum
Discount group	106	106
	NEW	NEW



Code no.	d1 h10	d2	d3	l1	l2	l3	c	Availability	
	mm	mm	mm	mm	mm	mm	mm x 45°		
5.700	5.700	6.000	5.500	57.00	13.00	20.40	0.057	●	●
7.700	7.700	8.000	7.400	63.00	19.00	25.50	0.077	●	●
9.700	9.700	10.000	9.400	72.00	22.00	30.00	0.097	●	●
11.700	11.700	12.000	11.200	83.00	26.00	35.00	0.117	●	●
13.700	13.700	14.000	13.200	83.00	26.00	37.00	0.137	●	●
15.600	15.600	16.000	15.100	92.00	32.00	44.00	0.156	●	●
19.500	19.500	20.000	19.000	104.00	38.00	52.00	0.195	●	●

Cutting values: Ramping, slotting* and HPC milling (detailed cutting values see p. 58)**

ISO Code	Hardness	Feed depth a_p	Ramping max. angle	Cutting speed v_c	fz (mm/z) with nom. Ø 5.7	7.7	9.7	11.7	15.6	19.5
P Steel	≤ 850 N/mm²	1 x d	45°	270	0.025	0.035	0.05	0.06	0.08	0.1
	850 - 1400 N/mm²	1 x d	30°	240	0.025	0.03	0.045	0.05	0.07	0.085
M Stainless steel	≤ 750 N/mm²	1 x d	10°	120	0.02	0.03	0.045	0.06	0.065	0.075
	≥ 750 N/mm²	1 x d	5°	80	0.02	0.03	0.04	0.045	0.06	0.07
K Cast mat.	≥ 240 HB 30	1 x d	45°	180	0.025	0.035	0.05	0.06	0.08	0.1
N Aluminium	≤ 7% Si	1 x d	30°	420	0.03	0.04	0.065	0.08	0.095	0.11

* peripheral cooling „Guhrojet“ is recommended or optimal chip evacuation and tool life

** for trochoidal milling and imachining with a_p 2xd and a_e 0.15 xd the cutting speed and feed rate can be increased by 50 %

RF 100 U - High-performance end mills

for materials up to 1600 N/mm^2 (48 HRC)

Summary of advantages

- 3-fluted for extremely high feed rates thanks to especially light cut
- low power consumption allows application on less powerful machines
- wide range of length options, intermediate dimensions and undersize options

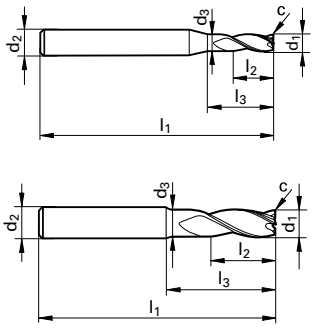
RF 100 U (3-fluted)

centre cutting

Solid carbide

G	N	41° 43° 45°	3			45°	7°

	HA	HB
Guhring no.	**3891**	**3892**
Surface finish	FIRE	FIRE
Discount group	106	106



Code no.	d1 e8	d2	d3	l1	l2	l3	c	Availability	
	mm	mm	mm	mm	mm	mm	mm x 45°		
3.000	3.000	6.000	2.800	57.00	8.00	11.90	0.03	●	●
3.500	3.500	6.000	3.300	57.00	10.00	13.90	0.052	●	●
3.700	3.700	6.000	3.500	57.00	11.00	14.90	0.056	●	●
4.000	4.000	6.000	3.800	57.00	11.00	14.90	0.06	●	●
4.500	4.500	6.000	4.300	57.00	11.00	16.40	0.068	●	●
4.700	4.700	6.000	4.500	57.00	13.00	18.40	0.07	●	●
5.000	5.000	6.000	4.800	57.00	13.00	18.40	0.075	●	●
5.500	5.500	6.000	5.300	57.00	13.00	19.40	0.082	●	●
5.700	5.700	6.000	5.500	57.00	13.00	20.40	0.085	●	●
6.000	6.000	6.000	5.700	57.00	13.00	20.00	0.09	●	●
6.500	6.500	8.000	6.200	63.00	16.00	23.00	0.098	●	●
7.000	7.000	8.000	6.700	63.00	16.00	23.00	0.105	●	●
7.500	7.500	8.000	7.200	63.00	19.00	26.00	0.112	●	●
8.000	8.000	8.000	7.700	63.00	19.00	26.00	0.12	●	●
8.500	8.500	10.000	8.200	72.00	19.00	27.00	0.128	●	●
9.000	9.000	10.000	8.700	72.00	19.00	27.00	0.135	●	●
9.500	9.500	10.000	9.200	72.00	22.00	30.00	0.142	●	●
10.000	10.000	10.000	9.500	72.00	22.00	30.00	0.15	●	●
12.000	12.000	12.000	11.500	83.00	26.00	36.00	0.18	●	●
16.000	16.000	16.000	15.500	92.00	32.00	42.00	0.192	●	●
20.000	20.000	20.000	19.500	104.00	38.00	52.00	0.24	●	●

Cutting values: Slotting * (detailed cutting values see p. 58)

ISO Code	Hardness	Feed depth a_p	Feed width a_e	Cutting speed v_c	fz (mm/z) with nom. Ø 3	6	8	10	12	16	20
P Steel	≤ 850 N/mm²	1 x d	1 x d	180	0.018	0.035	0.045	0.06	0.07	0.09	0.1
	850 - 1400 N/mm²	1 x d	1 x d	160	0.018	0.035	0.045	0.06	0.07	0.09	0.1
M Stainless steel	≤ 750 N/mm²	1 x d	1 x d	120	0.015	0.03	0.04	0.05	0.06	0.07	0.09
	≥ 750 N/mm²	1 x d	1 x d	80	0.015	0.025	0.035	0.045	0.05	0.065	0.08
K Cast mat.	≥ 240 HB 30	1 x d	1 x d	140	0.02	0.04	0.05	0.065	0.08	0.095	0.11

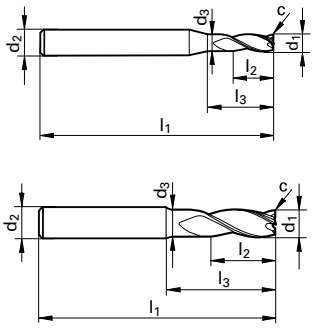
* peripheral cooling „Guhrojet“ is recommended or optimal chip evacuation and tool life

RF 100 U (3-fluted)

centre cutting

Solid carbide

G	N	41° 43° 45°	3			45°	7°	HA	HB
							Guhring no.	**3893**	**3894**
							Surface finish	FIRE	FIRE
							Discount group	106	106



Code no.	d1 e8	d2	d3	l1	l2	l3	c	Availability	
	mm	mm	mm	mm	mm	mm	mm x 45°		
3.000	3.000	6.000	2.800	57.00	4.00	15.00	0.03	●	●
4.000	4.000	6.000	3.800	57.00	5.00	18.00	0.06	●	●
5.000	5.000	6.000	4.800	57.00	6.00	18.00	0.075	●	●
6.000	6.000	6.000	5.700	57.00	7.00	20.00	0.09	●	●
8.000	8.000	8.000	7.700	63.00	9.00	26.00	0.12	●	●
10.000	10.000	10.000	9.500	72.00	11.00	30.00	0.15	●	●
12.000	12.000	12.000	11.500	83.00	12.00	36.00	0.18	●	●
16.000	16.000	16.000	15.500	92.00	16.00	42.00	0.192	●	●

Cutting values: Slotting * (detailed cutting values see p. 58)

ISO Code	Hardness	Feed depth a_p	Feed width a_e	Cutting speed v_c	fz (mm/z) with nom. Ø 3	6	8	10	12	16	20
P Steel	≤ 850 N/mm²	1 x d	1 x d	180	0.018	0.035	0.045	0.06	0.07	0.09	0.1
	850 - 1400 N/mm²	1 x d	1 x d	160	0.018	0.035	0.045	0.06	0.07	0.09	0.1
M Stainless steel	≤ 750 N/mm²	1 x d	1 x d	120	0.015	0.03	0.04	0.05	0.06	0.07	0.09
	≥ 750 N/mm²	1 x d	1 x d	80	0.015	0.025	0.035	0.045	0.05	0.065	0.08
K Cast mat.	≥ 240 HB 30	1 x d	1 x d	140	0.02	0.04	0.05	0.065	0.08	0.095	0.11

* peripheral cooling „Guhrojet“ is recommended or optimal chip evacuation and tool life

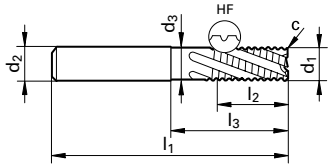
Rf 100 U/HF

centre cutting

Solid carbide

DIN 6527 | HF | 30° 32° | 4 | 45° | 4°

	HA	HB
Guhring no.	**3507**	**3508**
Surface finish	FIRE	FIRE
Discount group	106	106



Code no.	d1 h10	d2	d3	l1	l2	l3	c	Availability	
	mm	mm	mm	mm	mm	mm	mm x 45°		
6.000	6.000	6.000	5.700	57.00	13.00	20.00	0.30	●	●
8.000	8.000	8.000	7.700	63.00	19.00	26.00	0.30	●	●
10.000	10.000	10.000	9.500	72.00	22.00	30.00	0.30	●	●
12.000	12.000	12.000	11.500	83.00	26.00	36.00	0.50	●	●
16.000	16.000	16.000	15.500	92.00	32.00	42.00	0.50	●	●
20.000	20.000	20.000	19.500	104.00	38.00	52.00	0.50	●	●
25.000	25.000	25.000	24.000	121.00	45.00	63.00	0.60	●	●

Cutting values: HPC roughing* (detailed cutting values see p. 57)

ISO Code	Hardness	Feed depth a_p	Feed width** a_e	Cutting speed v_c	fz (mm/z) with nom. Ø							
					3	6	8	10	12	16	20	25
P Steel	≤ 850 N/mm²	2 x d	0.5 x d	180	0.015	0.025	0.035	0.045	0.05	0.065	0.08	0.12
	850 - 1400 N/mm²	2 x d	0.4 x d	160	0.015	0.025	0.035	0.045	0.05	0.065	0.08	0.12
K Cast mat.	≥ 240 HB 30	2 x d	0.4 x d	160	0.015	0.025	0.035	0.045	0.05	0.065	0.08	0.12

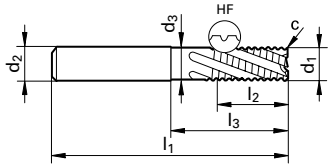
* peripheral cooling „Guhrojet“ is recommended or optimal chip evacuation and tool life
** for slotting the cutting speed and feed rate should be reduced by 30 %

Rf 100 U/HF

centre cutting

Solid carbide

								HA	HB
G	HF	30° 32°	4	3xD		45°	4°		
								Guhring no.	**3509**	**3522**
								Surface finish	FIRE	FIRE
								Discount group	106	106



Code no.	d1 h10	d2	d3	l1	l2	l3	c	Availability	
	mm	mm	mm	mm	mm	mm	mm x 45°		
6.000	6.000	6.000	5.700	65.00	18.00	28.00	0.30	●	●
8.000	8.000	8.000	7.700	75.00	24.00	38.00	0.30	●	●
10.000	10.000	10.000	9.500	80.00	30.00	38.00	0.30	●	●
12.000	12.000	12.000	11.500	93.00	36.00	46.00	0.50	●	●
16.000	16.000	16.000	15.500	108.00	48.00	58.00	0.50	●	●
20.000	20.000	20.000	19.500	126.00	60.00	74.00	0.50	●	●

Cutting values: HPC roughing* (detailed cutting values see p. 57)

ISO Code	Hardness	Feed depth a_p	Feed width a_e	Cutting speed ** v_c	fz (mm/z) with nom. Ø 3	6	8	10	12	16	20	25
P Steel	≤ 850 N/mm²	2 x d	0.2 x d	160	0.015	0.025	0.035	0.045	0.05	0.065	0.08	0.12
	850 - 1400 N/mm²	2 x d	0.15 x d	130	0.015	0.025	0.035	0.045	0.05	0.065	0.08	0.12
K Cast mat.	≥ 240 HB 30	2 x d	0.25 x d	140	0.015	0.025	0.035	0.045	0.05	0.065	0.08	0.12

* peripheral cooling „Guhrojet“ is recommended or optimal chip evacuation and tool life
** for slotting the cutting speed and feed rate should be reduced by 50 %

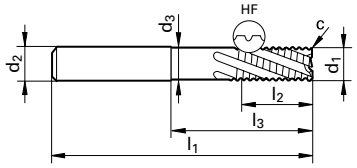
Rf 100 U/HF

centre cutting

Solid carbide

G	HF	30° 32°	4			45°	4°	~HA	~HB

	~HA	~HB
Guhring no.	**3598**	**3600**
Surface finish	FIRE	FIRE
Discount group	106	106



Code no.	d1 h10	d2	d3	l1	l2	l3	c	Availability	
	mm	mm	mm	mm	mm	mm	mm x 45°		
6.000	6.000	6.000	5.700	75.00	13.00	34.00	0.30	●	●
8.000	8.000	8.000	7.700	100.00	19.00	49.00	0.30	●	●
10.000	10.000	10.000	9.500	100.00	22.00	48.00	0.30	●	●
12.000	12.000	12.000	11.500	150.00	26.00	58.00	0.50	●	●
16.000	16.000	16.000	15.500	150.00	32.00	78.00	0.50	●	●
20.000	20.000	20.000	19.500	150.00	38.00	78.00	0.50	●	●

Cutting values: HPC roughing* (detailed cutting values see p. 57)

ISO Code	Hardness	Feed depth a_p	Feed width a_e	Cutting speed ** v_c	fz (mm/z) with nom. Ø 3	6	8	10	12	16	20	25
P Steel	≤ 850 N/mm²	2 x d	0.2 x d	160	0.015	0.025	0.035	0.045	0.05	0.065	0.08	0.12
	850 - 1400 N/mm²	2 x d	0.15 x d	130	0.015	0.025	0.035	0.045	0.05	0.065	0.08	0.12
K Cast mat.	≥ 240 HB 30	2 x d	0.25 x d	140	0.015	0.025	0.035	0.045	0.05	0.065	0.08	0.12

* peripheral cooling „Guhrojet“ is recommended or optimal chip evacuation and tool life
** for slotting the cutting speed and feed rate should be reduced by 50 %

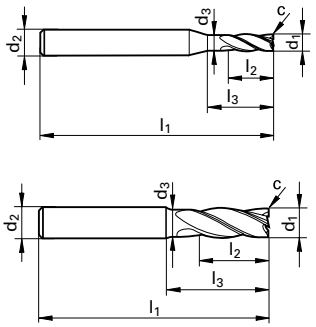
RF 100 F

centre cutting

Solid carbide

DIN 6527 | NH | 40° 42° | 4 | 45° | 9°

	HA	HB
Guhring no.	**3629**	**3630**
Surface finish	FIRE	FIRE
Discount group	106	106



Code no.	d1 h10	d2	d3	l1	l2	l3	c	Availability	
	mm	mm	mm	mm	mm	mm	mm x 45°		
4.000	4.000	6.000	3.800	57.00	11.00	18.00	0.10	●	●
5.000	5.000	6.000	4.800	57.00	13.00	18.00	0.10	●	●
6.000	6.000	6.000	5.700	57.00	13.00	20.00	0.15	●	●
8.000	8.000	8.000	7.700	63.00	19.00	26.00	0.15	●	●
10.000	10.000	10.000	9.500	72.00	22.00	30.00	0.20	●	●
12.000	12.000	12.000	11.500	83.00	26.00	36.00	0.20	●	●
16.000	16.000	16.000	15.500	92.00	32.00	42.00	0.35	●	●
20.000	20.000	20.000	19.500	104.00	38.00	52.00	0.45	●	●

Cutting values: HPC roughing* (detailed cutting values see p. 58)

ISO Code	Hardness	Feed depth a_p	Feed width** a_e	Cutting speed v_c	fz (mm/z) with nom. Ø							
					3	6	8	10	12	16	20	25
P Steel	≤ 850 N/mm²	2 x d	0.3 x d	200	0.02	0.04	0.055	0.07	0.085	0.1	0.12	0.17
	850 - 1400 N/mm²	2 x d	0.3 x d	180	0.02	0.04	0.055	0.07	0.085	0.1	0.12	0.17
M Stainless steel	≤ 750 N/mm²	2 x d	0.3 x d	140	0.018	0.035	0.045	0.06	0.07	0.09	0.1	0.15
	≥ 750 N/mm²	2 x d	0.3 x d	120	0.016	0.03	0.04	0.055	0.065	0.08	0.095	0.014

* peripheral cooling „Guhrojet“ is recommended or optimal chip evacuation and tool life
** for trochoidal milling and imachining with a_e = 0.1-0.2 xd the cutting speed and feed rate can be increased by 50 %

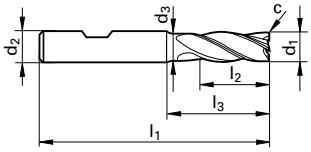
RF 100 F

centre cutting

Solid carbide

DIN 6527 | NH | 40° 42° | 4 | 45° | 9° | HB

Guhring no.	**3366**
Surface finish	FIRE
Discount group	106



Code no.	d1 h10	d2	d3	l1	l2	l3	c	Availability
	mm	mm	mm	mm	mm	mm	mm x 45°	
6.000	6.000	6.000	5.700	57.00	13.00	20.00	0.15	●
8.000	8.000	8.000	7.700	63.00	19.00	26.00	0.15	●
10.000	10.000	10.000	9.500	72.00	22.00	30.00	0.20	●
12.000	12.000	12.000	11.500	83.00	26.00	36.00	0.20	●
16.000	16.000	16.000	15.500	92.00	32.00	42.00	0.35	●
20.000	20.000	20.000	19.500	104.00	38.00	52.00	0.45	●

Cutting values: HPC roughing* (detailed cutting values see p. 58)

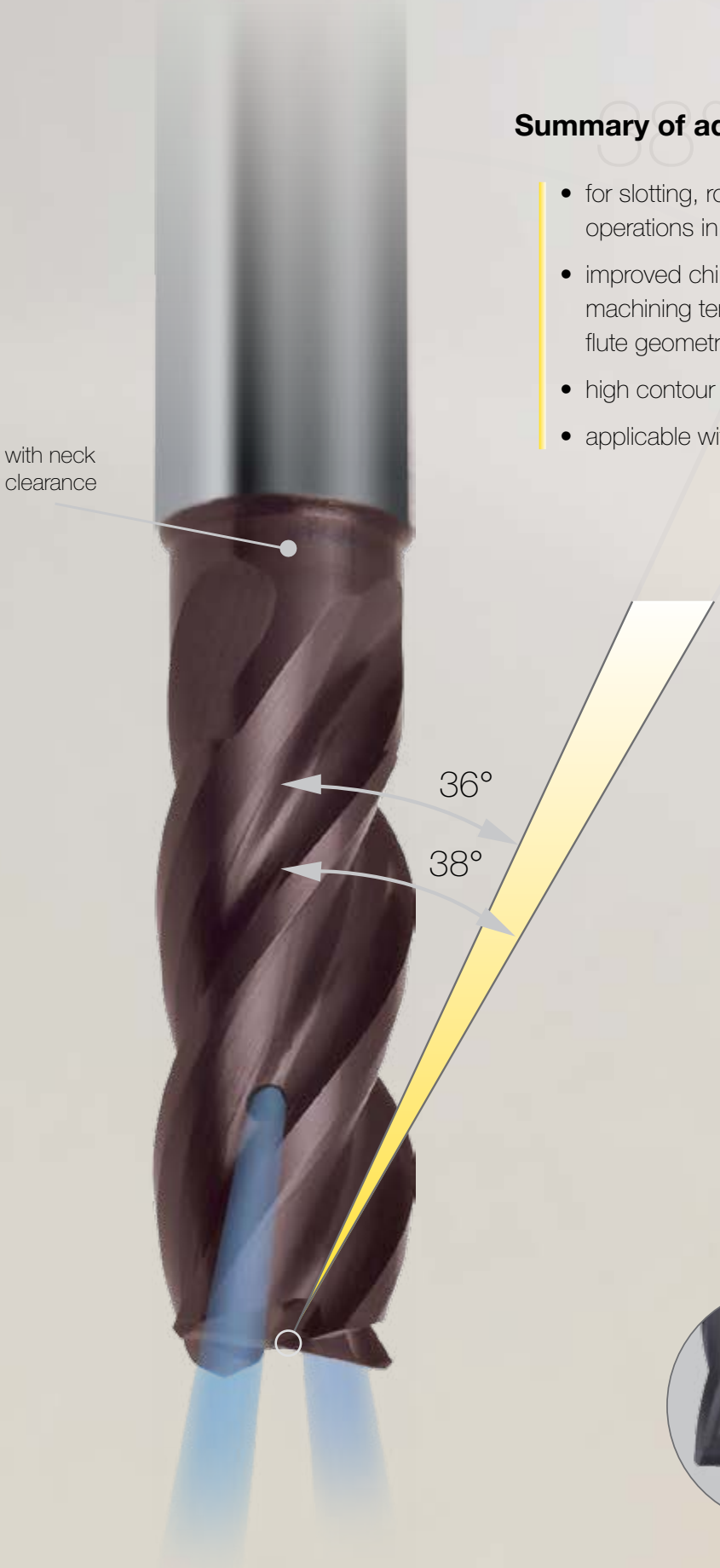
ISO Code	Hardness	Feed depth a_p	Feed width** a_e	Cutting speed v_c	fz (mm/z) with nom. Ø 3	6	8	10	12	16	20	25
P Steel	≤ 850 N/mm²	2 x d	0.3 x d	200	0.02	0.04	0.055	0.07	0.085	0.1	0.12	0.17
	850 - 1400 N/mm²	2 x d	0.3 x d	180	0.02	0.04	0.055	0.07	0.085	0.1	0.12	0.17
M Stainless steel	≤ 750 N/mm²	2 x d	0.3 x d	140	0.018	0.035	0.045	0.06	0.07	0.09	0.1	0.15
	≥ 750 N/mm²	2 x d	0.3 x d	120	0.016	0.03	0.04	0.055	0.065	0.08	0.095	0.014

* peripheral cooling „Guhrojet“ is recommended or optimal chip evacuation and tool life
** for trochoidal milling and imachining with a_e = 0.1-0.2 xd the cutting speed and feed rate can be increased by 50 %

RF 100 VA - High-performance end mills
for stainless steel

Summary of advantages

- for slotting, roughing, copying and finishing operations in VA and stainless steels
- improved chip evacuation and reduced machining temperatures thanks to optimised flute geometry
- high contour accuracy and minimum deflection
- applicable with long projection lengths



micro-corner protection for longer tool life

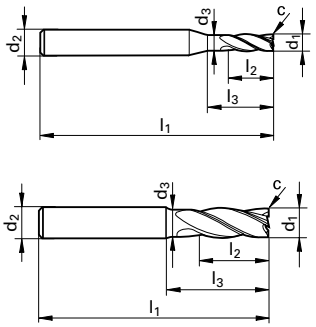
RF 100 VA

centre cutting

Solid carbide

DIN 6527 | N | 36° 38° | 4 | | | 45° | 7°

	HA	HB
Guhring no.	**3804**	**3805**
Surface finish	TiAlN-nanoA	TiAlN-nanoA
Discount group	106	106



Code no.	d1 h10	d2	d3	l1	l2	l3	c	Availability	
	mm	mm	mm	mm	mm	mm	mm x 45°		
4.000	4.000	6.000	3.800	54.00	8.00	15.00	0.15	●	●
5.000	5.000	6.000	4.800	54.00	9.00	15.00	0.15	●	●
6.000	6.000	6.000	5.700	54.00	10.00	17.00	0.20	●	●
8.000	8.000	8.000	7.700	58.00	12.00	21.00	0.25	●	●
10.000	10.000	10.000	9.500	66.00	14.00	24.00	0.30	●	●
12.000	12.000	12.000	11.500	73.00	16.00	26.00	0.35	●	●
16.000	16.000	16.000	15.500	82.00	22.00	32.00	0.50	●	●
20.000	20.000	20.000	19.500	92.00	26.00	40.00	0.60	●	●

Cutting values: HPC roughing* (detailed cutting values see p. 58)

ISO Code	Hardness	Feed depth a_p	Feed width** a_e	Cutting speed v_c	fz (mm/z) with nom. Ø							
					3	6	8	10	12	16	20	25
P Steel	≤ 850 N/mm²	2 x d	0.3 x d	200	0.02	0.04	0.055	0.07	0.085	0.1	0.12	0.17
M Stainless steel	≤ 750 N/mm²	2 x d	0.3 x d	140	0.018	0.035	0.045	0.06	0.07	0.09	0.1	0.15
	≥ 750 N/mm²	2 x d	0.3 x d	120	0.016	0.03	0.04	0.055	0.065	0.08	0.095	0.14

* peripheral cooling „Guhrojet“ is recommended or optimal chip evacuation and tool life

** for trochoidal milling and imachining with a_e = 0.1-0.2 xd the cutting speed and feed rate can be increased by 50 %

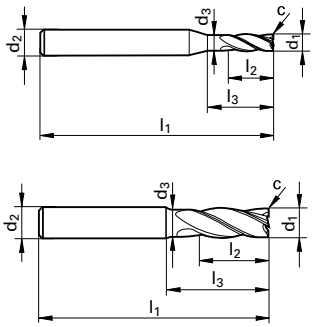
RF 100 VA

centre cutting

Solid carbide

DIN 6527 | N | 36° 38° | 4 | | | 45° | 7°

	HA	HB
Guhring no.	**3800**	**3803**
Surface finish	TiAlN-nanoA	TiAlN-nanoA
Discount group	106	106



Code no.	d1 h10	d2	d3	l1	l2	l3	c	Availability	
	mm	mm	mm	mm	mm	mm	mm x 45°		
3.000	3.000	6.000	2.800	57.00	8.00	15.00	0.10	●	●
3.500	3.500	6.000	3.300	57.00	10.00	14.90	0.10	●	●
4.000	4.000	6.000	3.800	57.00	11.00	15.90	0.15	●	●
4.500	4.500	6.000	4.300	57.00	11.00	17.40	0.15	●	●
5.000	5.000	6.000	4.800	57.00	13.00	19.40	0.15	●	●
5.500	5.500	6.000	5.300	57.00	13.00	20.40	0.20	●	●
6.000	6.000	6.000	5.700	57.00	13.00	20.00	0.20	●	●
6.500	6.500	8.000	6.200	63.00	16.00	22.50	0.25	●	●
7.000	7.000	8.000	6.700	63.00	16.00	22.50	0.25	●	●
7.500	7.500	8.000	7.200	63.00	19.00	25.50	0.25	●	●
8.000	8.000	8.000	7.700	63.00	19.00	26.00	0.25	●	●
8.500	8.500	10.000	8.200	72.00	19.00	27.00	0.30	●	●
9.000	9.000	10.000	8.700	72.00	19.00	27.00	0.30	●	●
9.500	9.500	10.000	9.200	72.00	22.00	30.00	0.30	●	●
10.000	10.000	10.000	9.500	72.00	22.00	30.00	0.30	●	●
11.000	11.000	12.000	10.500	83.00	26.00	35.00	0.35	●	●
12.000	12.000	12.000	11.500	83.00	26.00	36.00	0.35	●	●
14.000	14.000	14.000	13.500	83.00	26.00	36.00	0.40	●	●
16.000	16.000	16.000	15.500	92.00	32.00	42.00	0.50	●	●
18.000	18.000	18.000	17.500	92.00	32.00	42.00	0.60	●	●
20.000	20.000	20.000	19.500	104.00	38.00	52.00	0.60	●	●
25.000	25.000	25.000	24.000	121.00	45.00	63.00	0.75	●	●

Cutting values: HPC roughing* (detailed cutting values see p. 58)

ISO Code	Hardness	Feed depth a_p	Feed width** a_e	Cutting speed v_c	fz (mm/z) with nom. Ø							
					3	6	8	10	12	16	20	25
P Steel	≤ 850 N/mm²	2 x d	0.3 x d	200	0.02	0.04	0.055	0.07	0.085	0.1	0.12	0.17
M Stainless steel	≤ 750 N/mm²	2 x d	0.3 x d	140	0.018	0.035	0.045	0.06	0.07	0.09	0.1	0.15
	≥ 750 N/mm²	2 x d	0.3 x d	120	0.016	0.03	0.04	0.055	0.065	0.08	0.095	0.14

* peripheral cooling „Guhrojet“ is recommended or optimal chip evacuation and tool life

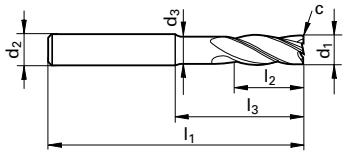
** for trochoidal milling and imachining with a_e = 0.1-0.2 xd the cutting speed and feed rate can be increased by 50 %

RF 100 VA

centre cutting

Solid carbide

	HA	HB
Guhring no.	**3806**	**3807**
Surface finish	TiAlN-nanoA	TiAlN-nanoA
Discount group	106	106



Code no.	d1 h10	d2	d3	l1	l2	l3	c	Availability	
	mm	mm	mm	mm	mm	mm	mm x 45°		
6.000	6.000	6.000	5.700	65.00	10.00	28.00	0.20	●	●
8.000	8.000	8.000	7.700	75.00	12.00	38.00	0.25	●	●
10.000	10.000	10.000	9.500	80.00	14.00	38.00	0.30	●	●
12.000	12.000	12.000	11.500	93.00	16.00	46.00	0.35	●	●
16.000	16.000	16.000	15.500	108.00	22.00	58.00	0.50	●	●
20.000	20.000	20.000	19.500	126.00	26.00	74.00	0.60	●	●

Cutting values: HPC roughing* (detailed cutting values see p. 58)

ISO Code	Hardness	Feed depth a_p	Feed width** a_e	Cutting speed v_c	fz (mm/z) with nom. Ø							
					3	6	8	10	12	16	20	25
P Steel	≤ 850 N/mm²	2 x d	0.3 x d	200	0.02	0.04	0.055	0.07	0.085	0.1	0.12	0.17
M Stainless steel	≤ 750 N/mm²	2 x d	0.3 x d	140	0.018	0.035	0.045	0.06	0.07	0.09	0.1	0.15
	≥ 750 N/mm²	2 x d	0.3 x d	120	0.016	0.03	0.04	0.055	0.065	0.08	0.095	0.14

* peripheral cooling „Guhrojet“ is recommended or optimal chip evacuation and tool life

** for trochoidal milling and imachining with a_e = 0.1-0.2 xd the cutting speed and feed rate can be increased by 50 %

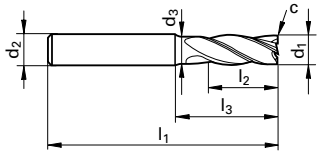
RF 100 VA

centre cutting

Solid carbide

DIN 6527 | N | 36° 38° | 4 | 45° | 7°

	HA	HB
Guhring no.	**6700**	**6701**
Surface finish	TiAlN-nanoA	TiAlN-nanoA
Discount group	106	106



Code no.	d1 h10	d2	d3	l1	l2	l3	c	Availability	
	mm	mm	mm	mm	mm	mm	mm x 45°		
6.000	6.000	6.000	5.700	57.00	13.00	20.00	0.20	●	●
8.000	8.000	8.000	7.700	63.00	19.00	26.00	0.25	●	●
10.000	10.000	10.000	9.500	72.00	22.00	30.00	0.30	●	●
12.000	12.000	12.000	11.500	83.00	26.00	36.00	0.35	●	●
16.000	16.000	16.000	15.500	92.00	32.00	42.00	0.50	●	●
20.000	20.000	20.000	19.500	104.00	38.00	52.00	0.60	●	●
25.000	25.000	25.000	24.000	121.00	45.00	63.00	0.75	●	●

Cutting values: HPC roughing* (detailed cutting values see p. 58)

ISO Code	Hardness	Feed depth a_p	Feed width** a_e	Cutting speed v_c	fz (mm/z) with nom. Ø							
					3	6	8	10	12	16	20	25
P Steel	≤ 850 N/mm²	2 x d	0.3 x d	200	0.02	0.04	0.055	0.07	0.085	0.1	0.12	0.17
M Stainless steel	≤ 750 N/mm²	2 x d	0.3 x d	140	0.018	0.035	0.045	0.06	0.07	0.09	0.1	0.15
	≥ 750 N/mm²	2 x d	0.3 x d	120	0.016	0.03	0.04	0.055	0.065	0.08	0.095	0.14

* peripheral cooling „Guhrojet“ is recommended or optimal chip evacuation and tool life

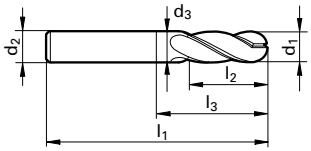
** for trochoidal milling and imachining with a_e = 0.1-0.2 xd the cutting speed and feed rate can be increased by 50 %

RF 100 VA with ball nose

centre cutting

DIN 6527	N	36° 38°	4			R±0,05	7°

	HA	HB
Guhring no.	**6707**	**6708**
Surface finish	TiAlN-nanoA	TiAlN-nanoA
Discount group	106	106



Code no.	d1 h10	d2	d3	l1	l2	l3	r	Availability	
	mm	mm	mm	mm	mm	mm	mm		
4.000	4.000	6.000	3.800	57.00	11.00	18.00	2.00	●	●
5.000	5.000	6.000	4.800	57.00	13.00	18.00	2.50	●	●
6.000	6.000	6.000	5.700	57.00	13.00	20.00	3.00	●	●
8.000	8.000	8.000	7.700	63.00	19.00	26.00	4.00	●	●
10.000	10.000	10.000	9.500	72.00	22.00	30.00	5.00	●	●
12.000	12.000	12.000	11.500	83.00	26.00	36.00	6.00	●	●
16.000	16.000	16.000	15.500	92.00	32.00	42.00	8.00	●	●
20.000	20.000	20.000	19.500	104.00	38.00	52.00	10.00	●	●
25.000	25.000	25.000	24.000	121.00	45.00	63.00	12.50	●	●

Cutting values: HPC roughing* (detailed cutting values see p. 58)

ISO Code	Hardness	Feed depth a_p	Feed width** a_e	Cutting speed v_c	fz (mm/z) with nom. Ø							
					3	6	8	10	12	16	20	25
P Steel	≤ 850 N/mm²	1 x d	0,3 x d	200	0,02	0,04	0,055	0,07	0,085	0,1	0,12	0,17
M Stainless steel	≤ 750 N/mm²	1 x d	0,3 x d	140	0,018	0,035	0,045	0,06	0,07	0,09	0,1	0,15
	≥ 750 N/mm²	1 x d	0,3 x d	120	0,016	0,03	0,04	0,055	0,065	0,08	0,095	0,014
N Aluminium	≤ 7% Si	1 x d	0,3 x d	600	0,018	0,035	0,045	0,06	0,07	0,09	0,1	0,15

* peripheral cooling „Guhrojet“ is recommended or optimal chip evacuation and tool life
** for copy milling and imachining with a_e = 0.1-0.2 xd the cutting speed and feed rate can be increased by 50 %

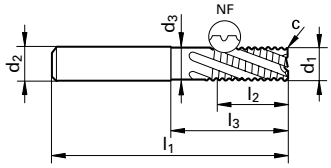
RF 100 VA/NF

centre cutting

Solid carbide

DIN 6527 | NF | 36° 38° | 4 | 45° | 7°

	HA	HB
Guhring no.	**3696**	**3718**
Surface finish	TiAlN-nanoA	TiAlN-nanoA
Discount group	106	106



Code no.	d1 h10	d2	d3	l1	l2	l3	c	Availability	
	mm	mm	mm	mm	mm	mm	mm x 45°		
5.000	5.000	6.000	4.800	57.00	13.00	18.00	0.20	●	●
6.000	6.000	6.000	5.700	57.00	13.00	20.00	0.30	●	●
7.000	7.000	8.000	6.700	63.00	16.00	22.50	0.30	●	●
8.000	8.000	8.000	7.700	63.00	19.00	26.00	0.30	●	●
9.000	9.000	10.000	8.700	72.00	19.00	27.00	0.30	●	●
10.000	10.000	10.000	9.500	72.00	22.00	30.00	0.30	●	●
12.000	12.000	12.000	11.500	83.00	26.00	36.00	0.50	●	●
14.000	14.000	14.000	13.500	83.00	26.00	36.00	0.50	●	●
16.000	16.000	16.000	15.500	92.00	32.00	42.00	0.50	●	●
18.000	18.000	20.000	17.500	92.00	32.00	42.00	0.50	●	●
20.000	20.000	20.000	19.500	104.00	38.00	52.00	0.50	●	●
25.000	25.000	25.000	24.000	121.00	45.00	63.00	0.60	●	●

Cutting values: HPC roughing* (detailed cutting values see p. 57)

ISO Code	Hardness	Feed depth a_p	Feed width** a_e	Cutting speed v_c	fz (mm/z) with nom. Ø							
					3	6	8	10	12	16	20	25
P Steel	≤ 850 N/mm²	1.5 x d	0.5 x d	180	0.018	0.025	0.035	0.045	0.05	0.065	0.08	0.12
M Stainless steel	≤ 750 N/mm²	1.5 x d	0.5 x d	120	0.015	0.025	0.035	0.045	0.05	0.065	0.08	0.12
	≥ 750 N/mm²	1.5 x d	0.4 x d	100	0.012	0.015	0.025	0.035	0.045	0.05	0.065	0.08

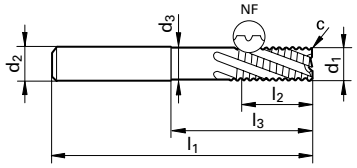
* peripheral cooling „Guhrojet“ is recommended or optimal chip evacuation and tool life
** for slotting the cutting speed and feed rate should be reduced by 30 %

RF 100 VA/NF

centre cutting

Solid carbide

G	NF	36° 38°	4			45°	7°	HA	HB
								Guhring no.	**3733**	**3885**
								Surface finish	TiAlN-nanoA	TiAlN-nanoA
								Discount group	106	106



Code no.	d1 h10	d2	d3	l1	l2	l3	c	Availability	
	mm	mm	mm	mm	mm	mm	mm x 45°		
6.000	6.000	6.000	5.700	65.00	10.00	28.00	0.30	●	●
8.000	8.000	8.000	7.700	75.00	12.00	38.00	0.30	●	●
10.000	10.000	10.000	9.500	80.00	14.00	38.00	0.30	●	●
12.000	12.000	12.000	11.500	93.00	16.00	46.00	0.50	●	●
16.000	16.000	16.000	15.500	108.00	22.00	58.00	0.50	●	●
20.000	20.000	20.000	19.500	126.00	26.00	74.00	0.50	●	●

Cutting values: HPC roughing* (detailed cutting values see p. 57)

ISO Code	Hardness	Feed depth a_p	Feed width** a_e	Cutting speed v_c	fz (mm/z) with nom. Ø							
					3	6	8	10	12	16	20	25
P Steel	≤ 850 N/mm²	1.5 x d	0.5 x d	180	0.018	0.025	0.035	0.045	0.05	0.065	0.08	0.12
M Stainless steel	≤ 750 N/mm²	1.5 x d	0.5 x d	120	0.015	0.025	0.035	0.045	0.05	0.065	0.08	0.12
	≥ 750 N/mm²	1.5 x d	0.4 x d	100	0.012	0.015	0.025	0.035	0.045	0.05	0.065	0.08

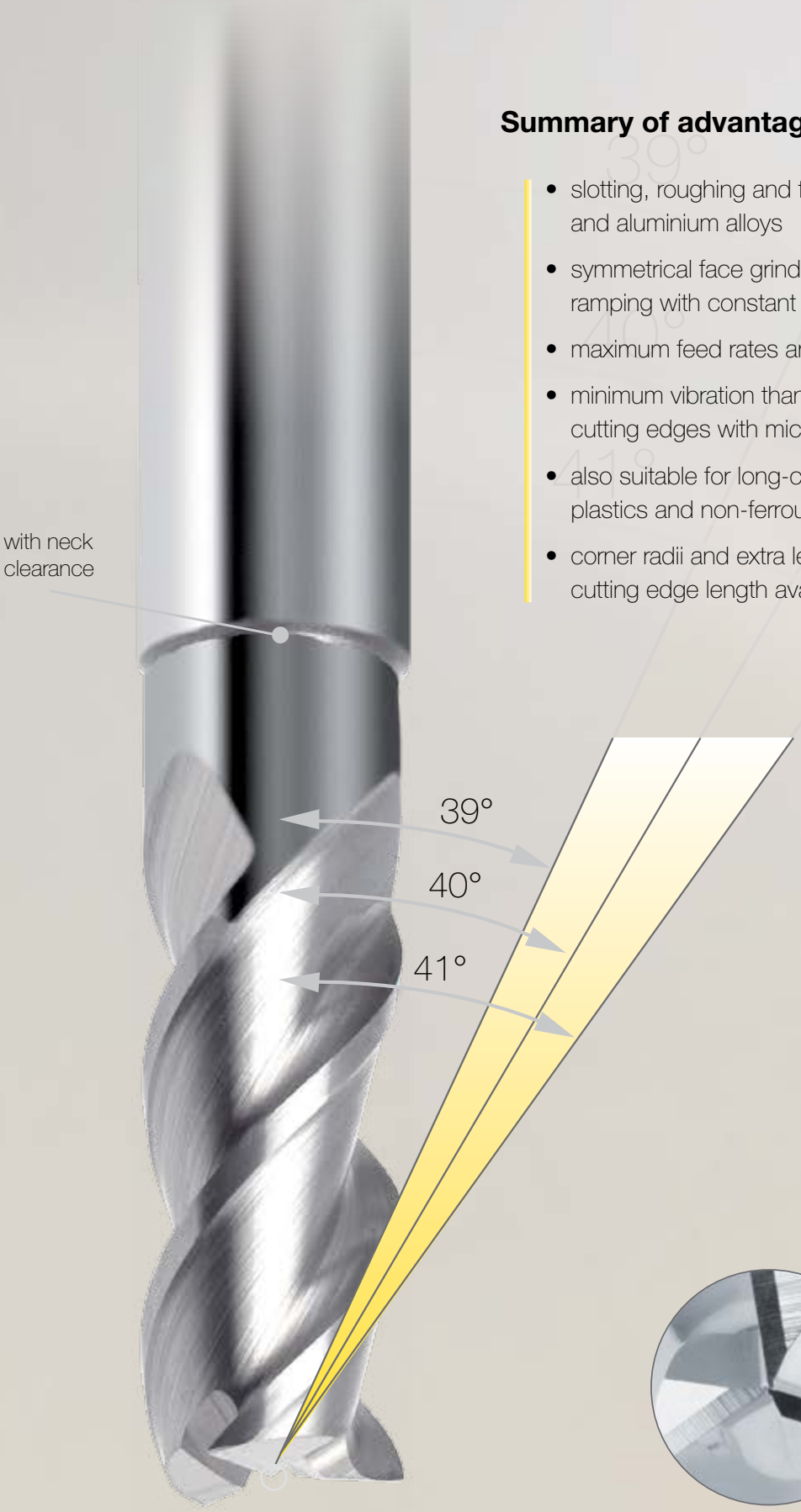
* peripheral cooling „Guhrojet“ is recommended or optimal chip evacuation and tool life
** for slotting the cutting speed and feed rate should be reduced by 30 %

RF 100 A - High-performance end mills

for Aluminium and Aluminium-alloys

Summary of advantages

- slotting, roughing and finishing in aluminium and aluminium alloys
- symmetrical face grind for drilling, grooving, ramping with constant feed rate
- maximum feed rates and machining volume
- minimum vibration thanks to nano-polished cutting edges with micro support chamfers
- also suitable for long-chipping materials, plastics and non-ferrous materials
- corner radii and extra lengths up to 5 x D cutting edge length available



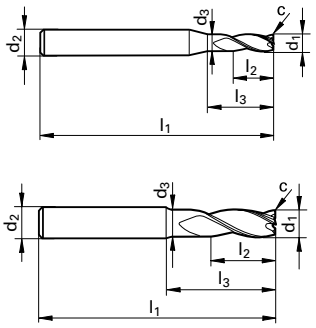
cross grind with reinforced cutting edges and increased chip chamber for drilling and ramping operations

RF 100 A

centre cutting

Solid carbide

								HA	HB
G	W	39° 40° 41°	3			45°	10°		
								Guhring no.	**3472**	**6702**
								Surface finish	bright	bright
								Discount group	106	106



Code no.	d1 e8	d2 h6	d3	l1	l2	l3	c	Availability	
	mm	mm	mm	mm	mm	mm	mm x 45°		
3.000	3.000	6.000	2.800	57.00	8.00	15.00	0.045	●	●
4.000	4.000	6.000	3.800	57.00	11.00	18.00	0.04	●	●
5.000	5.000	6.000	4.800	57.00	13.00	18.00	0.05	●	●
6.000	6.000	6.000	5.700	57.00	13.00	20.00	0.06	●	●
8.000	8.000	8.000	7.700	63.00	19.00	26.00	0.08	●	●
10.000	10.000	10.000	9.500	72.00	22.00	30.00	0.10	●	●
12.000	12.000	12.000	11.500	83.00	26.00	36.00	0.12	●	●
16.000	16.000	16.000	15.500	92.00	32.00	42.00	0.16	●	●
20.000	20.000	20.000	19.500	104.00	38.00	52.00	0.20	●	●

Cutting values: Slotting and HPC roughing* (detailed cutting values see p. 58)

ISO Code	Hardness***	Feed depth a_p	Feed width** a_e	Cutting speed v_c	fz (mm/z) with nom. Ø							
					3	6	8	10	12	16	20	25
N Aluminium	≤ 3% Si	1 x d	1 x d	600	0.045	0.05	0.065	0.08	0.12	0.15	0.18	0.25
	≤ 7% Si	1 x d	1 x d	280	0.03	0.045	0.05	0.065	0.08	0.12	0.15	0.18

* peripheral cooling „Guhrojet“ is recommended or optimal chip evacuation and tool life
** for trochoidal milling and imachining with a_p 2xd and a_e 0.15 xd the cutting speed and feed rate can be increased by 50 %
*** as an option we can provide our Carbo-coating as a special tool for soft and sticky aluminium alloys and plastics

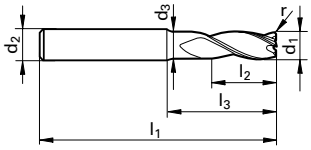
RF 100 A

centre cutting

Solid carbide

G	W	39° 40° 41°	3			R±0,05	10°

	HA	HB
Guhring no.	**3599**	**6729**
Surface finish	bright	bright
Discount group	106	106
	NEW	NEW



Code no.	d1 e8	d2 h6	d3	l1	l2	l3	r	Availability	
	mm	mm	mm	mm	mm	mm	mm		
6.005	6.000	6.000	5.700	57.00	13.00	20.00	0.50	●	●
6.010	6.000	6.000	5.700	57.00	13.00	20.00	1.00	●	●
8.005	8.000	8.000	7.700	63.00	19.00	26.00	0.50	●	●
8.010	8.000	8.000	7.700	63.00	19.00	26.00	1.00	●	●
10.005	10.000	10.000	9.500	72.00	22.00	30.00	0.50	●	●
10.010	10.000	10.000	9.500	72.00	22.00	30.00	1.00	●	●
10.015	10.000	10.000	9.500	72.00	22.00	30.00	1.50	●	●
12.005	12.000	12.000	11.500	83.00	26.00	36.00	0.50	●	●
12.010	12.000	12.000	11.500	83.00	26.00	36.00	1.00	●	●
12.015	12.000	12.000	11.500	83.00	26.00	36.00	1.50	●	●
12.020	12.000	12.000	11.500	83.00	26.00	36.00	2.00	●	●
12.025	12.000	12.000	11.500	83.00	26.00	36.00	2.50	●	●
12.030	12.000	12.000	11.500	83.00	26.00	36.00	3.00	●	●
12.040	12.000	12.000	11.500	83.00	26.00	36.00	4.00	●	●
16.010	16.000	16.000	15.500	92.00	32.00	42.00	1.00	●	●
16.020	16.000	16.000	15.500	92.00	32.00	42.00	2.00	●	●
16.025	16.000	16.000	15.500	92.00	32.00	42.00	2.50	●	●
16.030	16.000	16.000	15.500	92.00	32.00	42.00	3.00	●	●
16.040	16.000	16.000	15.500	92.00	32.00	42.00	4.00	●	●
20.010	20.000	20.000	19.500	104.00	38.00	52.00	1.00	●	●
20.020	20.000	20.000	19.500	104.00	38.00	52.00	2.00	●	●
20.025	20.000	20.000	19.500	104.00	38.00	52.00	2.50	●	●
20.030	20.000	20.000	19.500	104.00	38.00	52.00	3.00	●	●
20.040	20.000	20.000	19.500	104.00	38.00	52.00	4.00	●	●
25.020	25.000	25.000	24.000	121.00	45.00	63.00	2.00	●	●
25.030	25.000	25.000	24.000	121.00	45.00	63.00	3.00	●	●
25.040	25.000	25.000	24.000	121.00	45.00	63.00	4.00	●	●

Cutting values: Slotting and HPC roughing* (detailed cutting values see p. 58)

ISO Code	Hardness***	Feed depth a_p	Feed width** a_e	Cutting speed v_c	fz (mm/z) with nom. Ø							
					3	6	8	10	12	16	20	25
N Aluminium	≤ 3% Si	1 x d	1 x d	600	0.045	0.05	0.065	0.08	0.12	0.15	0.18	0.25
	≤ 7% Si	1 x d	1 x d	280	0.03	0.045	0.05	0.065	0.08	0.12	0.15	0.18

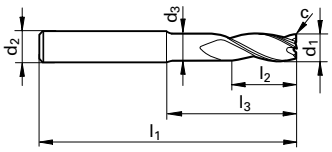
* peripheral cooling „Guhrojet“ is recommended or optimal chip evacuation and tool life
** for trochoidal milling and imachining with a_p 2xd and a_e 0.15 xd the cutting speed and feed rate can be increased by 50 %
*** as an option we can provide our Carbo-coating as a special tool for soft and sticky aluminium alloys and plastics

RF 100 A

centre cutting

Solid carbide

								HA	HB
G	W	39° 40° 41°	3			45°	10°		
								Guhring no.	**3473**	**6703**
								Surface finish	bright	bright
								Discount group	106	106



Code no.	d1 e8	d2 h6	d3	l1	l2	l3	c	Availability	
	mm	mm	mm	mm	mm	mm	mm x 45°		
6.000	6.000	6.000	5.700	65.00	13.00	28.00	0.06	●	●
8.000	8.000	8.000	7.700	75.00	19.00	38.00	0.08	●	●
10.000	10.000	10.000	9.500	80.00	22.00	38.00	0.10	●	●
12.000	12.000	12.000	11.500	93.00	26.00	46.00	0.12	●	●
16.000	16.000	16.000	15.500	108.00	32.00	58.00	0.16	●	●
20.000	20.000	20.000	19.500	126.00	38.00	74.00	0.20	●	●

Cutting values: Slotting and HPC roughing* (detailed cutting values see p. 58)

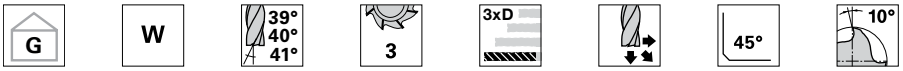
ISO Code	Hardness***	Feed depth a_p	Feed width** a_e	Cutting speed v_c	fz (mm/z) with nom. Ø							
					3	6	8	10	12	16	20	25
N Aluminium	≤ 3% Si	1 x d	1 x d	600	0.045	0.05	0.065	0.08	0.12	0.15	0.18	0.25
	≤ 7% Si	1 x d	1 x d	280	0.03	0.045	0.05	0.065	0.08	0.12	0.15	0.18

* peripheral cooling „Guhrojet“ is recommended or optimal chip evacuation and tool life
** for trochoidal milling and imachining with a_p 2xd and a_e 0.15 xd the cutting speed and feed rate can be increased by 50 %
*** as an option we can provide our Carbo-coating as a special tool for soft and sticky aluminium alloys and plastics

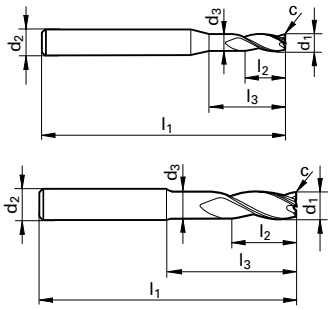
RF 100 A

Solid carbide

xcentre cutting



	HA	HB
Guhring no.	**6730**	**6731**
Surface finish	bright	bright
Discount group	106	106
	NEW	NEW



Code no.	d1 e8	d2 h6	d3	l1	l2	l3	c	Availability	
	mm	mm	mm	mm	mm	mm	mm x 45°		
5.000	5.000	6.000	4.800	57.00	15.00	19.40	0.05	●	●
6.000	6.000	6.000	5.700	65.00	18.00	28.00	0.06	●	●
8.000	8.000	8.000	7.700	75.00	24.00	38.00	0.08	●	●
10.000	10.000	10.000	9.500	80.00	30.00	38.00	0.10	●	●
12.000	12.000	12.000	11.500	93.00	36.00	46.00	0.12	●	●
16.000	16.000	16.000	15.500	108.00	48.00	58.00	0.16	●	●
20.000	20.000	20.000	19.500	126.00	60.00	74.00	0.20	●	●

Cutting values: HPC roughing* (detailed cutting values see p. 58)

ISO Code	Hardness***	Feed depth a_p	Feed width** a_e	Cutting speed v_c	fz (mm/z) with nom. Ø							
					3	6	8	10	12	16	20	25
N Aluminium	≤ 3% Si	3 x d	0.25 x d	600	0.03	0.045	0.05	0.065	0.08	0.12	0.15	0.20
	≤ 7% Si	3 x d	0.2 x d	280	0.025	0.03	0.045	0.05	0.065	0.08	0.12	0.18

* peripheral cooling „Guhrojet“ is recommended or optimal chip evacuation and tool life
** for trochoidal milling and imachining with a_p >2xd and a_e 0.15 xd the cutting speed and feed rate can be increased by 50 %
*** as an option we can provide our Carbo-coating as a special tool for soft and sticky aluminium alloys and plastics

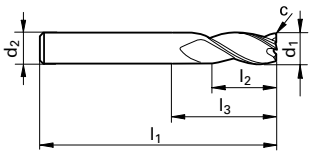
RF 100 A

centre cutting

Solid carbide

G | W | 39° 40° 41° | 3 | 4xD | 45° | 10° | HA | HB

	HA	HB
Guhring no.	**6732**	**6733**
Surface finish	bright	bright
Discount group	106	106
	NEW	NEW



Code no.	d1 e8	d2 h6	l1	l2	l3	c	Availability	
	mm	mm	mm	mm	mm	mm x 45°		
6.000	6.000	6.000	65.00	24.00	28.00	0.06	●	●
8.000	8.000	8.000	75.00	32.00	38.00	0.08	●	●
10.000	10.000	10.000	100.00	40.00	58.00	0.10	●	●
12.000	12.000	12.000	100.00	48.00	53.00	0.12	●	●
16.000	16.000	16.000	125.00	64.00	75.00	0.16	●	●
20.000	20.000	20.000	150.00	80.00	98.00	0.20	●	●

Cutting values: HPC roughing* (detailed cutting values see p. 58)

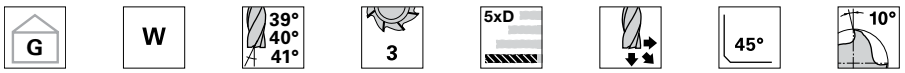
ISO Code	Hardness***	Feed depth a_p	Feed width** a_e	Cutting speed v_c	fz (mm/z) with nom. Ø							
					3	6	8	10	12	16	20	25
N Aluminium	≤ 3% Si	3 x d	0.25 x d	600	0.03	0.045	0.05	0.065	0.08	0.12	0.15	0.18
	≤ 7% Si	3 x d	0.2 x d	280	0.025	0.03	0.045	0.05	0.065	0.08	0.12	0.15

* peripheral cooling „Guhrojet“ is recommended or optimal chip evacuation and tool life
** for trochoidal milling and imachining with a_p >2xd and a_e 0.15 xd the cutting speed and feed rate can be increased by 50 %
*** as an option we can provide our Carbo-coating as a special tool for soft and sticky aluminium alloys and plastics

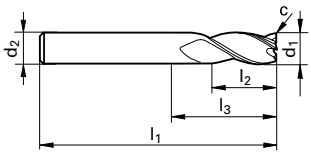
RF 100 A

centre cutting

Solid carbide



	HA	HB
Guhring no.	**6734**	**6735**
Surface finish	bright	bright
Discount group	106	106
	NEW	NEW



Code no.	d1 e8	d2 h6	l1	l2	l3	c	Availability	
	mm	mm	mm	mm	mm	mm x 45°		
6.000	6.000	6.000	75.00	30.00	38.00	0.06	●	●
8.000	8.000	8.000	86.00	40.00	49.00	0.08	●	●
10.000	10.000	10.000	100.00	50.00	58.00	0.10	●	●
12.000	12.000	12.000	120.00	60.00	73.00	0.12	●	●
16.000	16.000	16.000	150.00	80.00	100.00	0.16	●	●
20.000	20.000	20.000	175.00	100.00	123.00	0.20	●	●

Cutting values: HPC roughing* (detailed cutting values see p. 58)

ISO Code	Hardness***	Feed depth a_p	Feed width** a_e	Cutting speed v_c	fz (mm/z) with nom. Ø							
					3	6	8	10	12	16	20	25
N Aluminium	≤ 3% Si	3 x d	0.25 x d	600	0.03	0.045	0.05	0.065	0.08	0.12	0.15	0.18
	≤ 7% Si	3 x d	0.2 x d	280	0.025	0.03	0.045	0.05	0.065	0.08	0.12	0.15

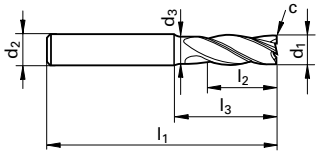
* peripheral cooling „Guhrojet“ is recommended or optimal chip evacuation and tool life
** for trochoidal milling and imachining with a_p >2xd and a_e 0.15 xd the cutting speed and feed rate can be increased by 50 %
*** as an option we can provide our Carbo-coating as a special tool for soft and sticky aluminium alloys and plastics

RF 100 A

centre cutting

Solid carbide

								HA	HB
DIN 6527	W	40° 42°	4			45°	9°		
							Guhring no.	**3202**	**3319**
							Surface finish	bright	bright
							Discount group	106	106



Code no.	d1 h10	d2 h6	d3	l1	l2	l3	c	Availability	
	mm	mm	mm	mm	mm	mm	mm x 45°		
4.000	4.000	6.000	3.800	57.00	11.00	18.00	0.10	●	●
5.000	5.000	6.000	4.800	57.00	13.00	18.00	0.10	●	●
6.000	6.000	6.000	5.700	57.00	13.00	20.00	0.15	●	●
8.000	8.000	8.000	7.700	63.00	19.00	26.00	0.15	●	●
10.000	10.000	10.000	9.500	72.00	22.00	30.00	0.20	●	●
12.000	12.000	12.000	11.500	83.00	26.00	36.00	0.20	●	●
16.000	16.000	16.000	15.500	92.00	32.00	42.00	0.35	●	●
20.000	20.000	20.000	19.500	104.00	38.00	52.00	0.45	●	●

Cutting values: HPC milling and HPC finishing* (detailed cutting values see p. 58)

ISO Code	Hardness***	Feed depth a_p	Feed width** a_e	Cutting speed v_c	fz (mm/z) with nom. Ø							
					3	6	8	10	12	16	20	25
N Aluminium	≤ 3% Si	2 x d	0.25 x d	1000	0.025	0.03	0.045	0.05	0.065	0.08	0.12	0.15
	≤ 7% Si	2 x d	0.2 x d	400	0.025	0.03	0.045	0.05	0.065	0.08	0.12	0.15

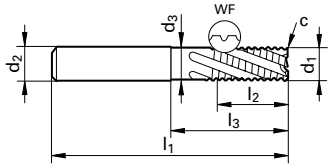
* peripheral cooling „Guhrojet“ is recommended or optimal chip evacuation and tool life
** for trochoidal milling and imachining with a_p 2xd and a_e 0.15 xd the cutting speed and feed rate can be increased by 50 %
*** as an option we can provide our Carbo-coating as a special tool for soft and sticky aluminium alloys and plastics

RF 100 A/WF

centre cutting

Solid carbide

G	WF	29° 30° 31°	3			45°	8°	HA	HB
								Guhring no.	**3468**	**3469**
								Surface finish	bright	bright
								Discount group	106	106



Code no.	d1 h10	d2 h6	d3	l1	l2	l3	c	Availability	
	mm	mm	mm	mm	mm	mm	mm x 45°		
6.000	6.000	6.000	5.700	57.00	13.00	20.00	0.30	●	●
8.000	8.000	8.000	7.700	63.00	19.00	26.00	0.30	●	●
10.000	10.000	10.000	9.500	72.00	22.00	30.00	0.30	●	●
12.000	12.000	12.000	11.500	83.00	26.00	36.00	0.50	●	●
16.000	16.000	16.000	15.500	92.00	32.00	42.00	0.50	●	●
20.000	20.000	20.000	19.500	104.00	38.00	52.00	0.50	●	●
25.000	25.000	25.000	24.000	121.00	45.00	63.00	0.60	●	●

Cutting values: Slotting and HPC roughing* (detailed cutting values see p. 57)

ISO Code	Hardness	Feed depth a_p	Feed width** a_e	Cutting speed v_c	fz (mm/z) with nom. Ø							
					3	6	8	10	12	16	20	25
N Aluminium	≤ 3% Si	1 x d	1 x d	600	0.018	0.035	0.045	0.06	0.07	0.09	0.1	0.15
	≤ 7% Si	1 x d	1 x d	280	0.015	0.03	0.04	0.05	0.06	0.07	0.09	0.13

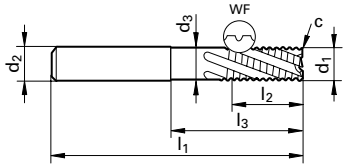
* peripheral cooling „Guhrojet“ is recommended or optimal chip evacuation and tool life
** for slotting the cutting speed and feed rate should be reduced by 30 %

RF 100 A/WF

centre cutting

Solid carbide

								HA	HB
G	WF	29° 30° 31°	3			45°	8°		
								Guhring no.	**3470**	**3471**
								Surface finish	bright	bright
								Discount group	106	106



Code no.	d1 h10	d2 h6	d3	l1	l2	l3	c	Availability	
	mm	mm	mm	mm	mm	mm	mm x 45°		
6.000	6.000	6.000	5.700	65.00	13.00	28.00	0.30	●	●
8.000	8.000	8.000	7.700	75.00	19.00	38.00	0.30	●	●
10.000	10.000	10.000	9.500	80.00	22.00	38.00	0.30	●	●
12.000	12.000	12.000	11.500	93.00	26.00	46.00	0.50	●	●
16.000	16.000	16.000	15.500	108.00	32.00	58.00	0.50	●	●
20.000	20.000	20.000	19.500	126.00	38.00	74.00	0.50	●	●

Cutting values: Slotting and HPC roughing* (detailed cutting values see p. 57)

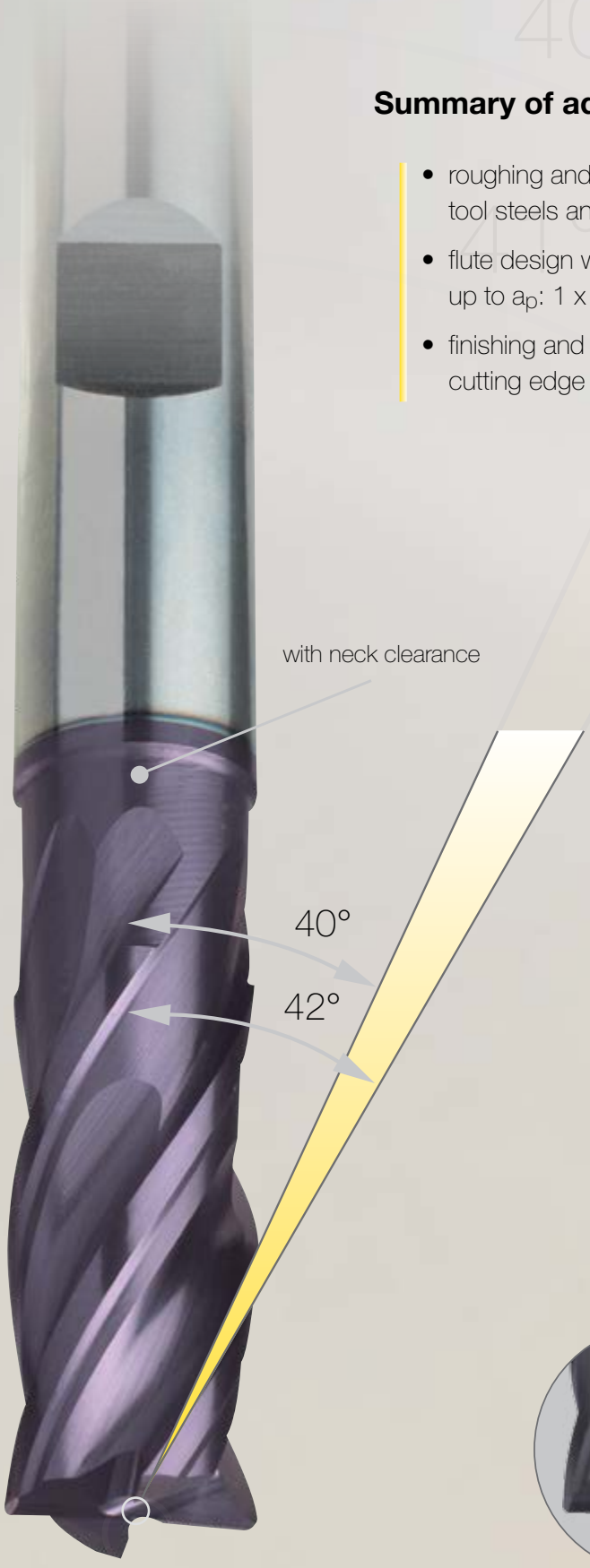
ISO Code	Hardness	Feed depth a_p	Feed width** a_e	Cutting speed v_c	fz (mm/z) with nom. Ø							
					3	6	8	10	12	16	20	25
N Aluminium	≤ 3% Si	1 x d	1 x d	600	0.018	0.035	0.045	0.06	0.07	0.09	0.1	0.15
	≤ 7% Si	1 x d	1 x d	280	0.015	0.03	0.04	0.05	0.06	0.07	0.09	0.13

* peripheral cooling „Guhrojet“ is recommended or optimal chip evacuation and tool life
** for slotting the cutting speed and feed rate should be reduced by 30 %

RF 100 H - High-performance end mills
for hardened steels up to 63 HRC

Summary of advantages

- roughing and finishing hardened steels, tool steels and hard cast iron
- flute design with reinforced core for roughing up to a_p: 1 x D (from 32 to 54 HRC)
- finishing and HPC milling over the entire cutting edge up to in excess of 63 HRC



micro-corner protection
for longer tool life

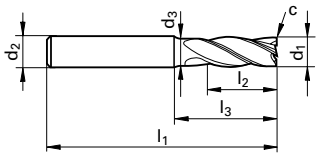
RF 100 H

Solid carbide

centre cutting

DIN 6527 | H | 40° 42° | 4 | 45° | -15°

	HA	HB
Guhring no.	**3895**	**3896**
Surface finish	TiAlN	TiAlN
Discount group	106	106



Code no.	d1 h10	d2	d3	l1	l2	l3	c	Availability	
	mm	mm	mm	mm	mm	mm	mm x 45°		
6.000	6.000	6.000	5.700	57.00	13.00	20.00	0.15	●	●
8.000	8.000	8.000	7.700	63.00	19.00	26.00	0.15	●	●
10.000	10.000	10.000	9.500	72.00	22.00	30.00	0.20	●	●
12.000	12.000	12.000	11.500	83.00	26.00	36.00	0.20	●	●
16.000	16.000	16.000	15.500	92.00	32.00	42.00	0.35	●	●
20.000	20.000	20.000	19.500	104.00	38.00	52.00	0.45	●	●

Cutting values: HPC roughing and hard finishing (detailed cutting values see p. 58)

ISO Code	Hardness	Feed depth a_p	Feed width** a_e	Cutting speed v_c	fz (mm/z) with nom. Ø							
					3	6	8	10	12	16	20	25
H Hardened steel	≤ 54 HRC	1 x d	0.15 x d	110	0.015	0.03	0.04	0.05	0.06	0.07	0.09	0.11
	≤ 63 HRC	2 x d	0.03 x d	80	0.01	0.015	0.025	0.035	0.042	0.05	0.08	0.10

* air cooling is recommended for optimal chip evacuation and tool life
** for slotting (up to 54 HRC) the cutting speed and feed rate should be reduced by 30 %

RF 100 Ti - high-performance end mills
for titanium and special alloys

Summary of advantages

- milling in high-tensile titanium alloys and special materials
- slotting and roughing including deep cutting depths
- very smooth operation and optimal surface finish thanks to adapted cutting edge design
- optimised corner radius or long tool life and optimal form accuracy

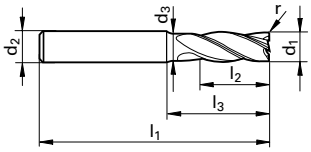
RF 100 Ti

centre cutting

Solid carbide

DIN 6527 | N | 35° 38° | 4 | R±0,02 | 5°

	HA	HB
Guhring no.	**3498**	**3499**
Surface finish	TiAlN-SuperA	TiAlN-SuperA
Discount group	106	106



Code no.	d1 h10	d2	d3	l1	l2	l3	r	Availability	
	mm	mm	mm	mm	mm	mm	mm		
6.005	6.000	6.000	5.700	57.00	13.00	20.00	0.50	●	●
6.008	6.000	6.000	5.700	57.00	13.00	20.00	0.80	●	●
6.010	6.000	6.000	5.700	57.00	13.00	20.00	1.00	●	●
6.015	6.000	6.000	5.700	57.00	13.00	20.00	1.50	●	●
6.020	6.000	6.000	5.700	57.00	13.00	20.00	2.00	●	●
8.005	8.000	8.000	7.700	63.00	19.00	26.00	0.50	●	●
8.008	8.000	8.000	7.700	63.00	19.00	26.00	0.80	●	●
8.010	8.000	8.000	7.700	63.00	19.00	26.00	1.00	●	●
8.015	8.000	8.000	7.700	63.00	19.00	26.00	1.50	●	●
8.020	8.000	8.000	7.700	63.00	19.00	26.00	2.00	●	●
10.005	10.000	10.000	9.500	72.00	22.00	30.00	0.50	●	●
10.008	10.000	10.000	9.500	72.00	22.00	30.00	0.80	●	●
10.010	10.000	10.000	9.500	72.00	22.00	30.00	1.00	●	●
10.015	10.000	10.000	9.500	72.00	22.00	30.00	1.50	●	●
10.020	10.000	10.000	9.500	72.00	22.00	30.00	2.00	●	●
12.005	12.000	12.000	11.500	83.00	26.00	36.00	0.50	●	●
12.008	12.000	12.000	11.500	83.00	26.00	36.00	0.80	●	●
12.010	12.000	12.000	11.500	83.00	26.00	36.00	1.00	●	●
12.015	12.000	12.000	11.500	83.00	26.00	36.00	1.50	●	●
12.020	12.000	12.000	11.500	83.00	26.00	36.00	2.00	●	●
12.025	12.000	12.000	11.500	83.00	26.00	36.00	2.50	●	●
12.030	12.000	12.000	11.500	83.00	26.00	36.00	3.00	●	●
12.031	12.000	12.000	11.500	83.00	26.00	36.00	3.175	●	●
12.040	12.000	12.000	11.500	83.00	26.00	36.00	4.00	●	●
16.005	16.000	16.000	15.500	92.00	32.00	42.00	0.50	●	●
16.008	16.000	16.000	15.500	92.00	32.00	42.00	0.80	●	●
16.010	16.000	16.000	15.500	92.00	32.00	42.00	1.00	●	●
16.015	16.000	16.000	15.500	92.00	32.00	42.00	1.50	●	●
16.020	16.000	16.000	15.500	92.00	32.00	42.00	2.00	●	●
16.025	16.000	16.000	15.500	92.00	32.00	42.00	2.50	●	●
16.030	16.000	16.000	15.500	92.00	32.00	42.00	3.00	●	●
16.031	16.000	16.000	15.500	92.00	32.00	42.00	3.175	●	●
16.040	16.000	16.000	15.500	92.00	32.00	42.00	4.00	●	●

Cutting values: HPC roughing* (detailed cutting values see p. 58)

ISO Code	Hardness	Feed depth a_p	Feed width** a_e	Cutting speed v_c	fz (mm/z) with nom. Ø 3	6	8	10	12	16	20	25
S Titanium special alloys	≤ 1300 N/mm²	1 x d	0.6 x d	90	0.015	0.03	0.04	0.05	0.06	0.07	0.09	0.14
	≥ 1300 N/mm²	0.8 x d	0.4 x d	35	0.01	0.015	0.025	0.035	0.042	0.05	0.08	0.12

* peripheral cooling „Guhrojet“ is recommended or optimal chip evacuation and tool life
** for slotting the cutting speed and feed rate should be reduced by 30 %

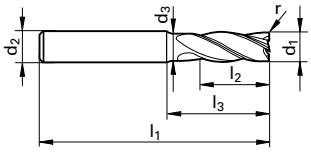
RF 100 Ti

Solid carbide

centre cutting

DIN 6527 | N | 35° 38° | 4 | R±0,02 | 5°

	HA	HB
Guhring no.	**3498**	**3499**
Surface finish	TiAlN-SuperA	TiAlN-SuperA
Discount group	106	106



Code no.	d1 h10	d2	d3	l1	l2	l3	r	Availability	
	mm	mm	mm	mm	mm	mm	mm		
20.005	20.000	20.000	19.500	104.00	38.00	52.00	0.50	●	●
20.010	20.000	20.000	19.500	104.00	38.00	52.00	1.00	●	●
20.015	20.000	20.000	19.500	104.00	38.00	52.00	1.50	●	●
20.020	20.000	20.000	19.500	104.00	38.00	52.00	2.00	●	●
20.025	20.000	20.000	19.500	104.00	38.00	52.00	2.50	●	●
20.030	20.000	20.000	19.500	104.00	38.00	52.00	3.00	●	●
20.031	20.000	20.000	19.500	104.00	38.00	52.00	3.175	●	●
20.040	20.000	20.000	19.500	104.00	38.00	52.00	4.00	●	●
25.015	25.000	25.000	24.000	121.00	45.00	63.00	1.50	●	●
25.020	25.000	25.000	24.000	121.00	45.00	63.00	2.00	●	●
25.025	25.000	25.000	24.000	121.00	45.00	63.00	2.50	●	●
25.030	25.000	25.000	24.000	121.00	45.00	63.00	3.00	●	●
25.031	25.000	25.000	24.000	121.00	45.00	63.00	3.175	●	●
25.040	25.000	25.000	24.000	121.00	45.00	63.00	4.00	●	●
25.050	25.000	25.000	24.000	121.00	45.00	63.00	5.00	●	●

Cutting values: HPC roughing* (detailed cutting values see p. 58)

ISO Code	Hardness	Feed depth a_p	Feed width** a_e	Cutting speed v_c	fz (mm/z) with nom. Ø							
					3	6	8	10	12	16	20	25
S Titanium special alloys	≤ 1300 N/mm²	1 x d	0.6 x d	90	0.015	0.03	0.04	0.05	0.06	0.07	0.09	0.14
	≥ 1300 N/mm²	0.8 x d	0.4 x d	35	0.01	0.015	0.025	0.035	0.042	0.05	0.08	0.12

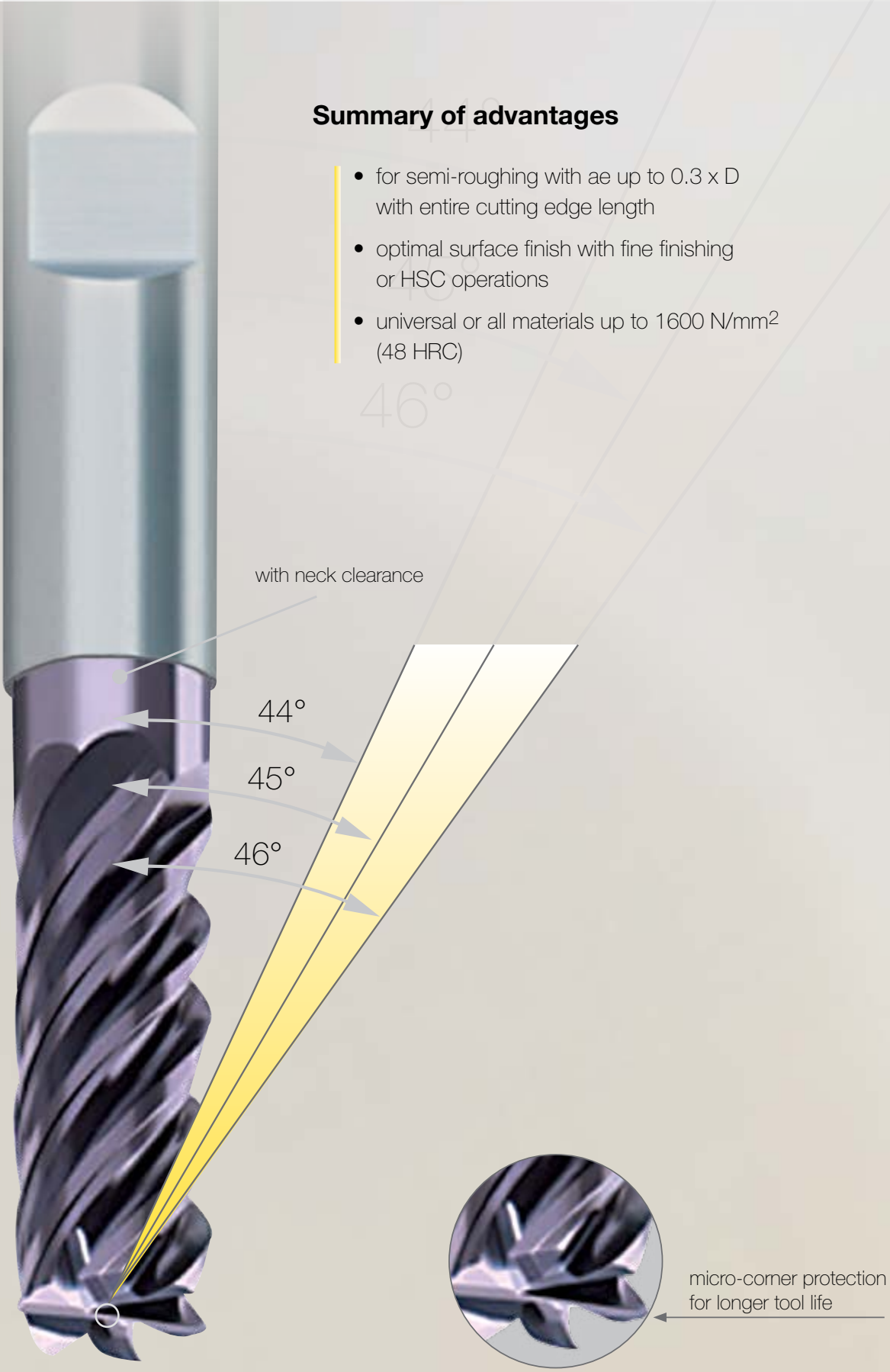
* peripheral cooling „Guhrojet“ is recommended or optimal chip evacuation and tool life
** for slotting the cutting speed and feed rate should be reduced by 30 %

RF 100 S/F - high-performance semi-roughing end mills

for materials up to 1600 N/mm^2 (48 HRC)

Summary of advantages

- for semi-roughing with ae up to 0.3 x D with entire cutting edge length
- optimal surface finish with fine finishing or HSC operations
- universal or all materials up to 1600 N/mm^2 (48 HRC)

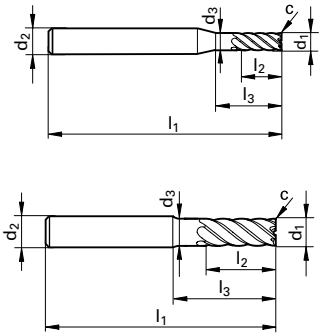


RF 100 S/F (5-fluted)

centre cutting

Solid carbide

G	NH	45°	5			45°	7°	HA	HB
								Guhring no.	**6709**	**6710**
								Surface finish	FIRE	FIRE
								Discount group	106	106



Code no.	d1 h10	d2	d3	l1	l2	l3	c	Availability	
	mm	mm	mm	mm	mm	mm	mm x 45°		
4.000	4.000	6.000	3.800	57.00	11.00	18.00	0.05	●	●
5.000	5.000	6.000	4.800	57.00	13.00	18.00	0.05	●	●
6.000	6.000	6.000	5.700	57.00	13.00	20.00	0.05	●	●
8.000	8.000	8.000	7.700	63.00	19.00	26.00	0.10	●	●
10.000	10.000	10.000	9.500	72.00	22.00	30.00	0.10	●	●
12.000	12.000	12.000	11.500	83.00	26.00	36.00	0.10	●	●
16.000	16.000	16.000	15.500	92.00	32.00	42.00	0.15	●	●
20.000	20.000	20.000	19.500	104.00	38.00	52.00	0.15	●	●
25.000	25.000	25.000	24.000	121.00	45.00	63.00	0.20	●	●

Cutting values: Finishing* and HPC roughing ** (detailed cutting values see p. 58)**

ISO Code	Hardness	Feed depth* a_p	Feed width ** a_e	Cutting speed v_c	fz (mm/z) with nom. Ø 3	6	8	10	12	16	20	25
P Steel	≤ 850 N/mm²	2 x d	0.3 x d	280	0.016	0.03	0.04	0.055	0.065	0.08	0.095	0.14
	850 - 1400 N/mm²	2 x d	0.2 x d	220	0.015	0.025	0.035	0.045	0.05	0.065	0.08	0.12
M Stainless steel	≤ 750 N/mm²	2 x d	0.2 x d	180	0.015	0.025	0.035	0.045	0.05	0.065	0.08	0.12
	≥ 750 N/mm²	2 x d	0.2 x d	120	0.015	0.025	0.035	0.045	0.05	0.065	0.08	0.12
K Cast mat.	≥ 240 HB 30	2 x d	0.2 x d	200	0.018	0.035	0.045	0.05	0.065	0.08	0.12	0.15
N Aluminium	≤ 7% Si	2 x d	0.2 x d	1000	0.018	0.035	0.045	0.05	0.065	0.08	0.12	0.15

* peripheral cooling „Guhrojet“ is recommended or optimal chip evacuation and tool life

** for trochoidal milling and imachining with a_e 0.1-0.2 xd the cutting speed and feed rate can be increased by 50 %

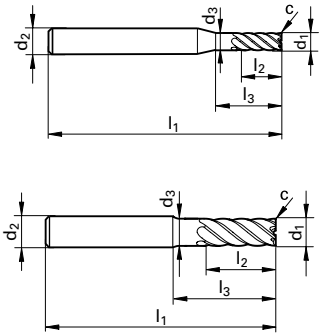
*** for finishing with a_e 0.01xD the feed rate should be reduced by 25% to achieve an optimal surface finish

RF 100 S/F (5-fluted)

centre cutting

Solid carbide

								HA	HB
G	NH	45°	5	3xD		45°	7°		
								Guhring no.	**3897**	**3898**
								Surface finish	FIRE	FIRE
								Discount group	106	106



Code no.	d1 h10	d2	d3	l1	l2	l3	c	Availability	
	mm	mm	mm	mm	mm	mm	mm x 45°		
4.000	4.000	6.000	3.800	65.00	12.00	26.00	0.05	●	●
5.000	5.000	6.000	4.800	65.00	15.00	26.00	0.05	●	●
6.000	6.000	6.000	5.700	65.00	18.00	28.00	0.05	●	●
8.000	8.000	8.000	7.700	75.00	24.00	38.00	0.10	●	●
10.000	10.000	10.000	9.500	80.00	30.00	38.00	0.10	●	●
12.000	12.000	12.000	11.500	93.00	36.00	46.00	0.10	●	●
16.000	16.000	16.000	15.500	108.00	48.00	58.00	0.15	●	●
20.000	20.000	20.000	19.500	126.00	60.00	74.00	0.15	●	●

Cutting values: Finishing* and HPC roughing ** (detailed cutting values see p. 58)**

ISO Code	Hardness	Feed depth* a_p	Feed width** a_e	Cutting speed v_c	fz (mm/z) with nom. Ø 3	6	8	10	12	16	20	25
P Steel	≤ 850 N/mm²	2 x d	0.3 x d	280	0.016	0.03	0.04	0.055	0.065	0.08	0.095	0.14
	850 - 1400 N/mm²	2 x d	0.2 x d	220	0.015	0.025	0.035	0.045	0.05	0.065	0.08	0.12
M Stainless steel	≤ 750 N/mm²	2 x d	0.2 x d	180	0.015	0.025	0.035	0.045	0.05	0.065	0.08	0.12
	≥ 750 N/mm²	2 x d	0.2 x d	120	0.015	0.025	0.035	0.045	0.05	0.065	0.08	0.12
K Cast mat.	≥ 240 HB 30	2 x d	0.2 x d	200	0.018	0.035	0.045	0.05	0.065	0.08	0.12	0.15
N Aluminium	≤ 7% Si	2 x d	0.2 x d	1000	0.018	0.035	0.045	0.05	0.065	0.08	0.12	0.15

* peripheral cooling „Guhrojet“ is recommended or optimal chip evacuation and tool life

** for trochoidal milling and imachining with a_e 0.1-0.2 xd the cutting speed and feed rate can be increased by 50 %

*** for finishing with a_e 0.01xD the feed rate should be reduced by 25% to achieve an optimal surface finish

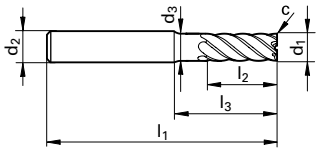
RF 100 S/F (6-fluted)

Solid carbide

centre cutting

G	NH	44° 45° 46°	6			45°	7°	HA	HB

	HA	HB
Guhring no.	**3631**	**3632**
Surface finish	FIRE	FIRE
Discount group	106	106



Code no.	d1 h10	d2	d3	l1	l2	l3	c	Availability	
	mm	mm	mm	mm	mm	mm	mm x 45°		
8.000	8.000	8.000	7.700	63.00	19.00	26.00	0.10	●	●
10.000	10.000	10.000	9.500	72.00	22.00	30.00	0.10	●	●
12.000	12.000	12.000	11.500	83.00	26.00	36.00	0.10	●	●
16.000	16.000	16.000	15.500	92.00	32.00	42.00	0.15	●	●
20.000	20.000	20.000	19.500	104.00	38.00	52.00	0.15	●	●
25.000	25.000	25.000	24.000	121.00	45.00	63.00	0.20	●	●

Cutting values: Finishing* and HPC roughing ** (detailed cutting values see p. 58)**

ISO Code	Hardness	Feed depth* a_p	Feed width** a_e	Cutting speed v_c	fz (mm/z) with nom. Ø 3	6	8	10	12	16	20	25
P Steel	≤ 850 N/mm²	2 x d	0.3 x d	280	0.016	0.03	0.04	0.055	0.065	0.08	0.095	0.14
	850 - 1400 N/mm²	2 x d	0.2 x d	220	0.015	0.025	0.035	0.045	0.05	0.065	0.08	0.12
M Stainless steel	≤ 750 N/mm²	2 x d	0.2 x d	180	0.015	0.025	0.035	0.045	0.05	0.065	0.08	0.12
	≥ 750 N/mm²	2 x d	0.2 x d	120	0.015	0.025	0.035	0.045	0.05	0.065	0.08	0.12
K Cast mat.	≥ 240 HB 30	2 x d	0.2 x d	200	0.018	0.035	0.045	0.05	0.065	0.08	0.12	0.15
N Aluminium	≤ 7% Si	2 x d	0.2 x d	1000	0.018	0.035	0.045	0.05	0.065	0.08	0.12	0.15

* peripheral cooling „Guhrojet“ is recommended or optimal chip evacuation and tool life

** for trochoidal milling and imachining with a_e 0.1-0.2 xd the cutting speed and feed rate can be increased by 50 %

*** for finishing with a_e 0.01xD the feed rate should be reduced by 25% to achieve an optimal surface finish

fz-corrections:*
ap = 2 x d; fz -30%
fz-corrections:**
ap = 1-2 x d; fz +25%
fz-corrections:***
ap = 1-2 x d; fz +60%

Unstable conditions:
- standard cooling
- average performance
- medium- to long-chipping

Application	Feed width (ae)	Feed depth (ap)
Slotting*	1 x d	0.5 up to 1.0 x d
Roughing*	0.5 up to 0.9 x d	0.5 up to 1.0 x d
Finishing	0.05 up to 0.1 x d	1.0 up to 2.0 x d
HPC-roughing**	0.25 up to 0.5 x d	1.0 up to 2.0 x d
HSC-roughing***	0.1 up to 0.25 x d	1.0 up to 2.0 x d

Material	Hardness	recom-mended RF 100 type	Type of application	cut Vc	fz (mm/z) with nom. Ø							
					3	6	8	10	12	16	20	25
Structural + free-cutting steels, unalloyed heat-treatable + case hardened steels 1.0035 S185, 1.0486 P275N, 1.0345 P235GH, 1.0050, 1.0070, 1.8937 1.0718 11SMnPb30, 1.0736 11SMn37 1.0402 C22, 1.1178 C30E 1.0503 C45, 1.1191 C30E 1.0301 C10, 1.1121 C10E 1.1750 C75W, 1.2076 102Cr6, 1.2307 29CrMoV9	up to 850 N/mm²	VA/NF	Slotting	180	0.012	0.025	0.03	0.04	0.045	0.06	0.07	0.1
		VA/NF	Roughing	200	0.015	0.025	0.035	0.045	0.05	0.065	0.08	0.12
			Finishing									
Free-cutting steels, unalloyed case hardened steels, nitriding steels 1.0727 46 S20, 1.0728 60 S20, 1.0757 46SPb20 1.0601 C60, 1.1221 C60E 1.7043 38Cr4 1.5752 15NiCr13, 1.7131 16MnCr5, 1.7264 20CrMo5 1.8504 34CrAl6 1.8519 31CrMoV9, 1.8550 34CrAlNi7	850-1.200 N/mm²	VA/NF	Slotting	160	0.012	0.025	0.03	0.04	0.045	0.06	0.07	0.1
		VA/NF	Roughing	180	0.015	0.025	0.035	0.045	0.05	0.065	0.08	0.12
			Finishing									
Alloyed heat-treatable, tool and high speed steels 1.5131 50MnSi4, 1.7003 38Cr2, 1.7030 28Cr4 1.5710 36NiCr6, 1.7035 41Cr4, 1.7225 42CrMo4 1.2080 X210Cr12, 1.2083 X42Cr13, 1.2419 105WCr6, 1.2379 X155CrVMo12-1 1.3243 S 6-5-2-5, 1.3343 S 6-5-2, 1.3344 S 6-5-3 Spring steel = 1.5026 55Si7, 1.7176 55Cr3, 1.8159 51CrV4	850-1.400 N/mm²	U/HF	Slotting	135	0.01	0.015	0.025	0.03	0.035	0.045	0.06	0.07
		U/HF	Roughing	160	0.01	0.02	0.03	0.035	0.04	0.055	0.065	0.08
			Finishing									
Hardened steel Tool steel, heat-treatable steel, spring steel, high-speed steel, case hardened steel, etc. Z.B.: 1.2344 X40CrMoV5-1; 1.2767 X45NiCrMo4; 1.2379 X155CrVMo12-1 ;1.2080 X210Cr12 1.3343 S 6-5-2	up to 54 HRC	U/HF	Slotting	70	0.01	0.015	0.02	0.025	0.03	0.04	0.05	0.06
		U/HF	Roughing	110	0.012	0.015	0.025	0.03	0.035	0.045	0.06	0.07
			Finishing									
	54-60 HRC		Slotting									
			Roughing									
			Finishing									
Stainless steel 1.4104 X14CrMoS17, 1.4105 X6CrMoS17, 1.4305 X10CrNiS18-9 USA = 303, 410, 420F, 430, 430F	up to 750 N/mm²	VA/NF	Slotting	120	0.012	0.025	0.03	0.04	0.045	0.06	0.07	0.1
		VA/NF	Roughing	140	0.015	0.025	0.035	0.045	0.05	0.065	0.08	0.12
			Finishing									
Stainless steel 1.4301X5CrNi18-10, 1.4303 X5CrNi18-12 1.4310 XCrNi18-8 USA = 304, 304L, 420	750-850 N/mm²	VA/NF	Slotting	80	0.01	0.015	0.025	0.03	0.035	0.045	0.06	0.07
		VA/NF	Roughing	120	0.012	0.02	0.03	0.035	0.04	0.055	0.065	0.08
			Finishing									
Stainless steel 1.4438 X2CrNiMo18-15-4, 1.4404 X2CrNiMo17-12-2, 1.4571 X6CrNiTi18-10 USA = 310, 316, 316B, 316L, 317	above 850 N/mm²	VA/NF	Slotting	70	0.01	0.015	0.02	0.025	0.03	0.04	0.05	0.06
		VA/NF	Roughing	100	0.012	0.015	0.025	0.03	0.035	0.045	0.06	0.07
			Finishing									
Special alloys (nickel based "Ni") Nimonic, Inconel, Monel, Hastelloy	up to 1.300 N/mm²	U/HF	Slotting	30	0.008	0.01	0.015	0.02	0.025	0.035	0.04	0.05
		U/HF	Roughing	35	0.01	0.015	0.02	0.025	0.03	0.04	0.05	0.06
			Finishing									
Titanium alloys ("Ti") 3.7024 Ti99,5, 3.7114 TiAl5Sn2,5, 3.7124 TiCu2 3.7154 TiAl6Zr5, 3.7164 TiAl6V4, 3.7184 TiAl4Mo4Sn2,5	up to 1.300 N/mm²	U/HF	Slotting	60	0.01	0.015	0.025	0.03	0.035	0.045	0.06	0.07
		U/HF	Roughing	90	0.012	0.02	0.03	0.035	0.04	0.055	0.065	0.08
			Finishing									
Cast iron, grey cast iron, spheroidal graphite and malleable cast iron 0.6010 EN-GL100 (GG10), 0.6020 EN-GJL-200 (GG20), 0.7050 EN-GJS-500-7 (GGG50), 0.8535 EN-GJMW-350-4 (GTW35)	up to 240 HB 30	VA/NF	Slotting	160	0.015	0.025	0.035	0.045	0.05	0.065	0.08	0.12
		VA/NF	Roughing	180	0.015	0.03	0.04	0.05	0.06	0.07	0.09	0.13
			Finishing									
Cast iron, grey cast iron, spheroidal graphite and malleable cast iron 0.6025 EN-GL250 (GG25), 0.6035 EN-GJL-350 (GG35), 0.7070 EN-GJS-700-2 (GGG70), 0.8170 EN-GJMB-700-2 (GTS70)	above 240 HB 30	U/HF	Slotting	140	0.012	0.025	0.03	0.04	0.045	0.06	0.07	0.1
		U/HF	Roughing	160	0.015	0.025	0.035	0.045	0.05	0.065	0.08	0.12
			Finishing									
Aluminium, Al-wrought alloys, Al-alloys 3.0255 Al99,5, 3.2315 AlMgSi1, 3.3515 AlMg1 3.0615 AlMgSiPb, 3.1325 AlCuMg1, 3.3245 AlMg3Si, 3.4365 AlZnMgCu1,5	up to 3% Si	A/WF	Slotting	500	0.016	0.03	0.04	0.055	0.065	0.08	0.095	0.14
		A/WF	Roughing	600	0.018	0.035	0.045	0.06	0.07	0.09	0.1	0.15
			Finishing									
Aluminium-cast alloys 3.2131 G-AlSi5Cu1, 3.2153 G-AlSi7Cu3, 3.2573 G-AlSi9 3.2581 G-AlSi12, 3.2583 G-AlSi12Cu, - G-AlSi12CuNiMg	above 3% Si	A/WF	Slotting	230	0.015	0.025	0.035	0.045	0.05	0.065	0.08	0.12
		A/WF	Roughing	280	0.015	0.03	0.04	0.05	0.06	0.07	0.09	0.13
			Finishing									
Magnesium-alloys MgMn2, G-MgAl8Zn1, G-MgAl6Zn3	-	A/WF	Slotting	180	0.012	0.025	0.03	0.04	0.045	0.06	0.07	0.1
		A/WF	Roughing	220	0.015	0.03	0.04	0.05	0.06	0.07	0.09	0.13
			Finishing									
Non-ferrous metals (copper, short- or long-chipping brass) 2.0070 SE-Cu, 2.1020 CuSn6, 2.1096 G-CuSn5ZnPb 2.0380 CuZn39Pb2, 2.0401 CuZn39Pb3, 2.0410 CuZn43Pb2 2.0250 CuZn20, 2.0280 CuZn33, 2.0332 CuZn37Pb0,5 2.1090 CuSn7ZnPb, 2.1170 CuPb5Sn5, 2.1176 CuPb10Sn 2.0916 CuAl5, 2.0960 CuAl9Mn, 2.1050 CuSn10	up to 850 N/mm²	VA/NF	Slotting	250	0.012	0.025	0.03	0.04	0.045	0.06	0.07	0.1
		VA/NF	Roughing	300	0.015	0.03	0.04	0.05	0.06	0.07	0.09	0.13
			Finishing									

fz-corrections:*
ap = 2 x d; fz -30%
fz-corrections:**
ap = 1-2 x d; fz +25%
fz-corrections:***
ap = 1-2 x d; fz +60%

Stable conditions:
- good cooling
- sufficient performance
- short-chipping

Application	Feed width (ae)	Feed depth (ap)
Slotting*	1 x d	0.5 to 1.0 x d
Roughing*	0.5 to 0.9 x d	0.5 to 1.0 x d
Finishing	0.05 to 0.1 x d	1.0 to 2.0 x d
HPC-roughing**	0.25 to 0.5 x d	1.0 to 2.0 x d
HSC-roughing***	0.1 to 0.25 x d	1.0 to 2.0 x d

Material	Hardness	recom-mended RF 100 type	Type of application	cut Vc	fz (mm/z) with nom. Ø							
					3	6	8	10	12	16	20	25
Structural + free-cutting steels, unalloyed heat-treatable + case hardened steels 1.0035 S185, 1.0486 P275N, 1.0345 P235GH, 1.0050, 1.0070, 1.8937 1.0718 11SMnPb30, 1.0736 11SMn37 1.0402 C22, 1.1178 C30E 1.0503 C45, 1.1191 C30E 1.0301 C10, 1.1121 C10E 1.1750 C75W, 1.2076 102Cr6, 1.2307 29CrMoV9	up to 850 N/mm²	F	Slotting	180	0.018	0.035	0.045	0.06	0.07	0.09	0.1	0.15
		F	Roughing	200	0.02	0.04	0.055	0.07	0.085	0.1	0.12	0.17
		SF	Finishing	280	0.016	0.03	0.04	0.055	0.065	0.08	0.095	0.14
Free-cutting steels, unalloyed case hardened steels, nitriding steels 1.0727 46 S20, 1.0728 60 S20, 1.0757 46SPb20 1.0601 C60, 1.1221 C60E 1.7043 38Cr4 1.5752 15NiCr13, 1.7131 16MnCr5, 1.7264 20CrMo5 1.8504 34CrAl6 1.8519 31CrMoV9, 1.8550 34CrAlNi7	850-1.200 N/mm²	F	Slotting	160	0.018	0.035	0.045	0.06	0.07	0.09	0.1	0.15
		F	Roughing	180	0.02	0.04	0.055	0.07	0.085	0.1	0.12	0.17
		SF	Finishing	220	0.016	0.03	0.04	0.055	0.065	0.08	0.095	0.14
Alloyed heat-treatable, tool and high speed steels 1.5131 50MnSi4, 1.7003 38Cr2, 1.7030 28Cr4 1.5710 36NiCr6, 1.7035 41Cr4, 1.7225 42CrMo4 1.2080 X210Cr12, 1.2083 X42Cr13, 1.2419 105WCr6, 1.2379 X155CrVMo12-1 1.3243 S 6-5-2-5, 1.3343 S 6-5-2, 1.3344 S 6-5-3 Spring steel = 1.5026 55Si7, 1.7176 55Cr3, 1.8159 51CrV4	850-1.400 N/mm²	U	Slotting	135	0.016	0.03	0.04	0.055	0.065	0.08	0.095	0.14
		U	Roughing	160	0.02	0.04	0.05	0.065	0.08	0.095	0.11	0.16
		SF	Finishing	200	0.015	0.03	0.04	0.05	0.06	0.07	0.09	0.13
Hardened steel Tool steel, heat-treatable steel, spring steel, high-speed steel, case hardened steel, etc. Z.B.: 1.2344 X40CrMoV5-1; 1.2767 X45NiCrMo4; 1.2379 X155CrVMo12-1 ;1.2080 X210Cr12 1.3343 S 6-5-2	up to 54 HRC	U	Slotting	70	0.012	0.025	0.03	0.04	0.045	0.06	0.07	0.1
		U	Roughing	110	0.015	0.025	0.035	0.045	0.05	0.065	0.08	0.12
		SF	Finishing	150	0.015	0.03	0.04	0.05	0.06	0.07	0.09	0.13
	54-60 HRC		Slotting									
		H	Roughing									
		H	Finishing	110	0.01	0.015	0.025	0.035	0.042	0.05	0.08	0.09
Stainless steel 1.4104 X14CrMoS17, 1.4105 X6CrMoS17, 1.4305 X10CrNiS18-9 USA = 303, 410, 420F, 430, 430F	up to 750 N/mm²	VA	Slotting	120	0.015	0.03	0.04	0.05	0.06	0.07	0.09	0.13
		VA	Roughing	140	0.018	0.035	0.045	0.06	0.07	0.09	0.1	0.15
		SF	Finishing	180	0.016	0.03	0.04	0.055	0.065	0.08	0.095	0.14
Stainless steel 1.4301X5CrNi18-10, 1.4303 X5CrNi18-12 1.4310 XCrNi18-8 USA = 304, 304L, 420	750-850 N/mm²	VA	Slotting	80	0.015	0.025	0.035	0.045	0.05	0.065	0.08	0.12
		VA	Roughing	120	0.016	0.03	0.04	0.055	0.065	0.08	0.095	0.14
		SF	Finishing	140	0.015	0.03	0.04	0.05	0.06	0.07	0.09	0.13
Stainless steel 1.4438 X2CrNiMo18-15-4, 1.4404 X2CrNiMo17-12-2, 1.4571 X6CrNiTi18-10 USA = 310, 316, 316B, 316L, 317	above 850 N/mm²	VA/F	Slotting	70	0.012	0.025	0.03	0.04	0.045	0.06	0.07	0.1
		VA/F	Roughing	100	0.015	0.025	0.035	0.045	0.05	0.065	0.08	0.12
		SF	Finishing	120	0.015	0.025	0.035	0.045	0.05	0.065	0.08	0.12
Special alloys (nickel based "Ni") Nimonic, Inconel, Monel, Hastelloy	up to 1.300 N/mm²	Ti/U	Slotting	30	0.01	0.015	0.02	0.025	0.03	0.04	0.05	0.06
		Ti/U	Roughing	35	0.01	0.02	0.03	0.035	0.04	0.055	0.065	0.08
		SF	Finishing	45	0.015	0.025	0.035	0.045	0.05	0.065	0.08	0.12
Titanium alloys ("Ti") 3.7024 Ti99,5, 3.7114 TiAl5Sn2,5, 3.7124 TiCu2 3.7154 TiAl6Zr5, 3.7164 TiAl6V4, 3.7184 TiAl4Mo4Sn2,5	up to 1.300 N/mm²	Ti/U	Slotting	60	0.015	0.025	0.035	0.045	0.05	0.065	0.08	0.12
		Ti/U	Roughing	90	0.016	0.03	0.04	0.055	0.065	0.08	0.095	0.14
		SF	Finishing	130	0.016	0.03	0.04	0.055	0.065	0.08	0.095	0.14
Cast iron, grey cast iron, spheroidal graphite and malleable cast iron 0.6010 EN-GL100 (GG10), 0.6020 EN-GJL-200 (GG20), 0.7050 EN-GJS-500-7 (GGG50), 0.8535 EN-GJMW-350-4 (GTW35)	up to 240 HB 30	F	Slotting	160	0.02	0.04	0.05	0.065	0.08	0.095	0.11	0.16
		F	Roughing	180	0.02	0.04	0.055	0.07	0.085	0.1	0.12	0.17
		SF	Finishing	220	0.018	0.035	0.045	0.06	0.07	0.09	0.1	0.15
Cast iron, grey cast iron, spheroidal graphite and malleable cast iron 0.6025 EN-GL250 (GG25), 0.6035 EN-GJL-350 (GG35), 0.7070 EN-GJS-700-2 (GGG70), 0.8170 EN-GJMB-700-2 (GTS70)	above 240 HB 30	U	Slotting	140	0.016	0.03	0.04	0.055	0.065	0.08	0.095	0.14
		U	Roughing	160	0.02	0.04	0.05	0.065	0.08	0.095	0.11	0.16
		SF	Finishing	200	0.018	0.035	0.045	0.06	0.07	0.09	0.1	0.15
Aluminium, Al-wrought alloys, Al-alloys 3.0255 Al99,5, 3.2315 AlMgSi1, 3.3515 AlMg1 3.0615 AlMgSiPb, 3.1325 AlCuMg1, 3.3245 AlMg3Si, 3.4365 AlZnMgCu1,5	up to 3% Si	A	Slotting	500	0.02	0.04	0.05	0.065	0.08	0.095	0.11	0.16
		A	Roughing	600	0.02	0.04	0.055	0.07	0.085	0.1	0.12	0.17
		A	Finishing	1000	0.018	0.035	0.045	0.06	0.07	0.09	0.1	0.15
Aluminium-cast alloys 3.2131 G-AlSi5Cu1, 3.2153 G-AlSi7Cu3, 3.2573 G-AlSi9 3.2581 G-AlSi12, 3.2583 G-AlSi12Cu, - G-AlSi12CuNiMg	above 3% Si	A	Slotting	230	0.016	0.03	0.04	0.055	0.065	0.08	0.095	0.14
		A	Roughing	280	0.02	0.04	0.05	0.065	0.08	0.095	0.11	0.16
		A	Finishing	350	0.018	0.035	0.045	0.06	0.07	0.09	0.1	0.15
Magnesium-alloys MgMn2, G-MgAl8Zn1, G-MgAl6Zn3	-	A	Slotting	180	0.016	0.03	0.04	0.055	0.065	0.08	0.095	0.14
		A	Roughing	220	0.02	0.04	0.05	0.065	0.08	0.095	0.11	0.16
		A	Finishing	280	0.018	0.035	0.045	0.06	0.07	0.09	0.1	0.15
Non-ferrous metals (copper, short- or long-chipping brass) 2.0070 SE-Cu, 2.1020 CuSn6, 2.1096 G-CuSn5ZnPb 2.0380 CuZn39Pb2, 2.0401 CuZn39Pb3, 2.0410 CuZn43Pb2 2.0250 CuZn20, 2.0280 CuZn33, 2.0332 CuZn37Pb0,5 2.1090 CuSn7ZnPb, 2.1170 CuPb5Sn5, 2.1176 CuPb10Sn 2.0916 CuAl5, 2.0960 CuAl9Mn, 2.1050 CuSn10	up to 850 N/mm²	A	Slotting	250	0.015	0.025	0.035	0.045	0.05	0.065	0.08	0.12
		A	Roughing	300	0.016	0.03	0.04	0.055	0.065	0.08	0.095	0.14
		SF	Finishing	400	0.016	0.03	0.04	0.055	0.065	0.08	0.095	0.14

RF 100 high-performance end mills

	Guhring no.	Page	Discount group	Standard	Tool description	Tool material	Type
	3202	45	106	6527L	RF 100 A	Solid carbide	W
	3319	45	106	6527L	RF 100 A	Solid carbide	W
	3366	29	106	6527L	RF 100 F	Solid carbide	NH
	3468	46	106	Guhring std.	RF 100 A/WF	Solid carbide	WF
	3469	46	106	Guhring std.	RF 100 A/WF	Solid carbide	WF
	3470	47	106	Guhring std.	RF 100 A/WF	Solid carbide	WF
	3471	47	106	Guhring std.	RF 100 A/WF	Solid carbide	WF
	3472	39	106	Guhring std.	RF 100 A	Solid carbide	W
	3473	41	106	Guhring std.	RF 100 A	Solid carbide	W
	3498	51	106	6527L	RF 100 Ti	Solid carbide	N
	3499	51	106	6527L	RF 100 Ti	Solid carbide	N
	3507	25	106	6527L	RF 100 U/HF	Solid carbide	HF
	3508	25	106	6527L	RF 100 U/HF	Solid carbide	HF
	3509	26	106	Guhring std.	RF 100 U/HF	Solid carbide	HF
	3522	26	106	Guhring std.	RF 100 U/HF	Solid carbide	HF
	3598	27	106	Guhring std.	RF 100 U/HF	Solid carbide	HF
NEW	**3599**	40	106	Guhring std.	RF 100 A	Solid carbide	RF W
	3600	27	106	Guhring std.	RF 100 U/HF	Solid carbide	HF
	3627	18	106	Guhring std.	RF 100 U	Solid carbide	N
	3629	28	106	6527L	RF 100 F	Solid carbide	NH
	3630	28	106	6527L	RF 100 F	Solid carbide	NH
	3631	56	106	Guhring std.	RF 100 S/F (6-fluted)	Solid carbide	NH
	3632	56	106	Guhring std.	RF 100 S/F (6-fluted)	Solid carbide	NH
	3696	36	106	6527L	RF 100 VA/NF	Solid carbide	NF
	3718	36	106	6527L	RF 100 VA/NF	Solid carbide	NF
	3731	14	106	6527K	RF 100 U	Solid carbide	N
	3732	15	106	6527L	RF 100 U	Solid carbide	N
	3733	37	106	Guhring std.	RF 100 VA/NF	Solid carbide	NF
	3736	15	106	6527L	RF 100 U	Solid carbide	N
	3800	32	106	6527L	RF 100 VA	Solid carbide	N
	3803	32	106	6527L	RF 100 VA	Solid carbide	N
	3804	31	106	6527K	RF 100 VA	Solid carbide	N
	3805	31	106	6527K	RF 100 VA	Solid carbide	N
	3806	33	106	Guhring std.	RF 100 VA	Solid carbide	N
	3807	33	106	Guhring std.	RF 100 VA	Solid carbide	N
	3837	16	106	Guhring std.	RF 100 U	Solid carbide	N
	3838	16	106	Guhring std.	RF 100 U	Solid carbide	N
	3839	17	106	Guhring std.	RF 100 U	Solid carbide	N
	3871	17	106	Guhring std.	RF 100 U	Solid carbide	N
	3872	19	106	6527L	RF 100 U	Solid carbide	N
	3873	19	106	6527L	RF 100 U	Solid carbide	N
	3885	37	106	Guhring std.	RF 100 VA/NF	Solid carbide	NF
	3891	23	106	Guhring std.	RF 100 U (3-fluted)	Solid carbide	N
	3892	23	106	Guhring std.	RF 100 U (3-fluted)	Solid carbide	N
	3893	24	106	Guhring std.	RF 100 U (3-fluted)	Solid carbide	N
	3894	24	106	Guhring std.	RF 100 U (3-fluted)	Solid carbide	N
	3895	49	106	6527L	RF 100 H	Solid carbide	H
	3896	49	106	6527L	RF 100 H	Solid carbide	H
	3897	55	106	Guhring std.	RF 100 S/F (5-fluted)	Solid carbide	NH
	3898	55	106	Guhring std.	RF 100 S/F (5-fluted)	Solid carbide	NH
	6700	34	106	6527L	RF 100 VA	Solid carbide	N
	6701	34	106	6527L	RF 100 VA	Solid carbide	N
	6702	39	106	Guhring std.	RF 100 A	Solid carbide	W
	6703	41	106	Guhring std.	RF 100 A	Solid carbide	W
	6706	14	106	6527K	RF 100 U	Solid carbide	N
	6707	35	106	6527L	RF 100 VA ball nosed	Solid carbide	N
	6708	35	106	6527L	RF 100 VA ball nosed	Solid carbide	N
	6709	54	106	Guhring std.	RF 100 S/F (5-fluted)	Solid carbide	NH
	6710	54	106	Guhring std.	RF 100 S/F (5-fluted)	Solid carbide	NH
NEW	**6729**	40	106	Guhring std.	RF 100 A	Solid carbide	RF W
NEW	**6730**	42	106	Guhring std.	RF 100 A	Solid carbide	RF W
NEW	**6731**	42	106	Guhring std.	RF 100 A	Solid carbide	RF W
NEW	**6732**	43	106	Guhring std.	RF 100 A	Solid carbide	RF W
NEW	**6733**	43	106	Guhring std.	RF 100 A	Solid carbide	RF W
NEW	**6734**	44	106	Guhring std.	RF 100 A	Solid carbide	RF W
NEW	**6735**	44	106	Guhring std.	RF 100 A	Solid carbide	RF W
NEW	**6736**	21	106	6527L	RF 100 Diver	Solid carbide	N
NEW	**6737**	21	106	6527L	RF 100 Diver	Solid carbide	N

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GUHRING

Guhring KG
P.O. Box 100247 • 72423 Albstadt
Herderstraße 50-54 • 72458 Albstadt

Tel. +49 74 31 17-0
Fax +49 74 31 17-21279
info@guehring.de
www.guehring.de