GUHRING

Ratio®

Milling of high-tensile titanium alloys, stainless steels and special materials

Slotting and **roughing** even at great depths

Very smooth operation and optimal surface finish

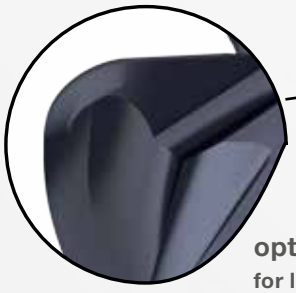
RF 100 Ti Aircraft

GUHRING - YOUR WORLD-WIDE PARTNER

RT 100 Ti AIRCRAFT

High-performance end mill

for titanium and special alloys

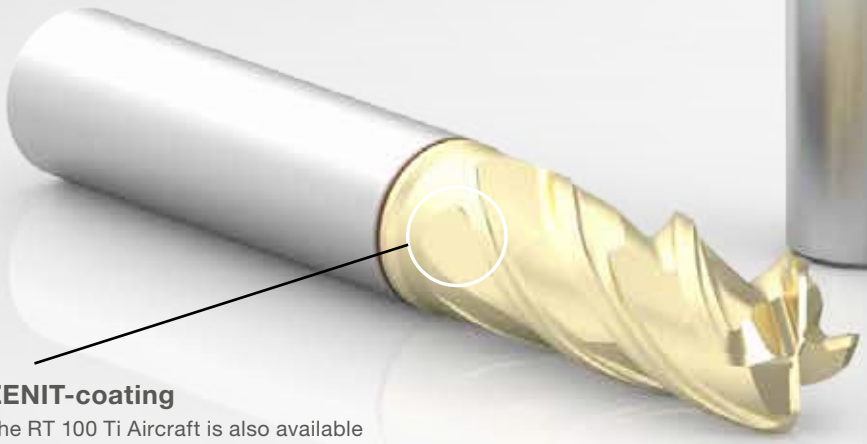


optimised corner radius
for long tool life

optimised flute spacing

deeper flute geometry
in front of cutting edge area for
improved chip evacuation.

optimised
transition angle
for improved stability.

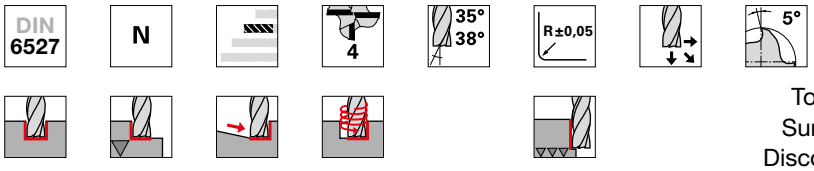


ZENIT-coating
The RT 100 Ti Aircraft is also available
with ZENIT coating. The coating impresses through even
better glide characteristics and reduced adhesion.

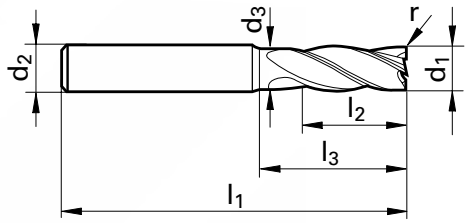
Large face chip pockets and improved web thinning allow reliable plunging and orbital drilling.

Ratio end mills RF 100 Ti Aircraft

centre cutting



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



Code no.	d1 h10	d2 h6	d3	l1	l2	l3	r	Z	Availability	
	mm	mm	mm	mm	mm	mm	mm			
6.005	6.000	6.000	5.700	57.00	13.00	20.00	0.50	4	●	●
6.008	6.000	6.000	5.700	57.00	13.00	20.00	0.80	4	●	●
6.010	6.000	6.000	5.700	57.00	13.00	20.00	1.00	4	●	●
6.015	6.000	6.000	5.700	57.00	13.00	20.00	1.50	4	●	●
6.020	6.000	6.000	5.700	57.00	13.00	20.00	2.00	4	●	●
8.005	8.000	8.000	7.700	63.00	19.00	26.00	0.50	4	●	●
8.008	8.000	8.000	7.700	63.00	19.00	26.00	0.80	4	●	●
8.010	8.000	8.000	7.700	63.00	19.00	26.00	1.00	4	●	●
8.015	8.000	8.000	7.700	63.00	19.00	26.00	1.50	4	●	●
8.020	8.000	8.000	7.700	63.00	19.00	26.00	2.00	4	●	●
10.005	10.000	10.000	9.500	72.00	22.00	30.00	0.50	4	●	●
10.008	10.000	10.000	9.500	72.00	22.00	30.00	0.80	4	●	●
10.010	10.000	10.000	9.500	72.00	22.00	30.00	1.00	4	●	●
10.015	10.000	10.000	9.500	72.00	22.00	30.00	1.50	4	●	●
10.020	10.000	10.000	9.500	72.00	22.00	30.00	2.00	4	●	●
12.005	12.000	12.000	11.500	83.00	26.00	36.00	0.50	4	●	●
12.008	12.000	12.000	11.500	83.00	26.00	36.00	0.80	4	●	●
12.010	12.000	12.000	11.500	83.00	26.00	36.00	1.00	4	●	●
12.015	12.000	12.000	11.500	83.00	26.00	36.00	1.50	4	●	●
12.020	12.000	12.000	11.500	83.00	26.00	36.00	2.00	4	●	●
12.025	12.000	12.000	11.500	83.00	26.00	36.00	2.50	4	●	●
12.030	12.000	12.000	11.500	83.00	26.00	36.00	3.00	4	●	●
12.031	12.000	12.000	11.500	83.00	26.00	36.00	3.175	4	●	●
12.040	12.000	12.000	11.500	83.00	26.00	36.00	4.00	4	●	●

Cutting values: HPC-roughing*

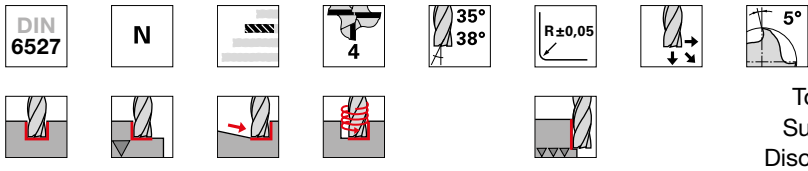
ISO Code	Hardness	Feed depth a_p	Feed width** a_e	Cutting speed v_c	fz (mm/z) with nom. Ø 3	6	8	10	12	16	20	25
P Steel	≤ 850 N/mm²	-	-	-	-	-	-	-	-	-	-	-
	850 - 1400 N/mm²	1xd	0.6xd	160	0.015	0.03	0.04	0.05	0.06	0.07	0.09	0.14
M Stainless steel	≤ 750 N/mm²	1xd	0.6xd	120	0.015	0.03	0.04	0.05	0.06	0.07	0.09	0.14
	≥ 750 N/mm²	1xd	0.4xd	80	0.01	0.015	0.025	0.035	0.042	0.05	0.08	0.12
S Titan sp. alloys	≤ 1300 N/mm²	1xd	0.6xd	90	0.015	0.03	0.04	0.05	0.06	0.07	0.09	0.14
	≥ 1300 N/mm²	0.8xd	0.4xd	35	0.01	0.015	0.025	0.035	0.042	0.05	0.08	0.12

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

** for slotting the cutting speed and feed rate should be reduced by 30 %

Ratio end mills RF 100 Ti Aircraft

centre cutting



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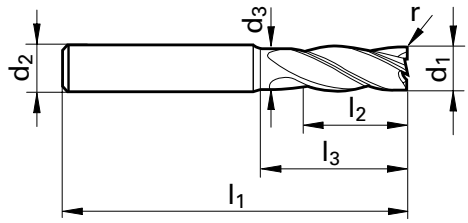

Code no.	d1 h10	d2 h6	d3	l1	l2	l3	r	Z	Availability	
	mm	mm	mm	mm	mm	mm	mm			
16.005	16.000	16.000	15.500	92.00	32.00	42.00	0.50	4	●	●
16.008	16.000	16.000	15.500	92.00	32.00	42.00	0.80	4	●	●
16.010	16.000	16.000	15.500	92.00	32.00	42.00	1.00	4	●	●
16.015	16.000	16.000	15.500	92.00	32.00	42.00	1.50	4	●	●
16.020	16.000	16.000	15.500	92.00	32.00	42.00	2.00	4	●	●
16.025	16.000	16.000	15.500	92.00	32.00	42.00	2.50	4	●	●
16.030	16.000	16.000	15.500	92.00	32.00	42.00	3.00	4	●	●
16.031	16.000	16.000	15.500	92.00	32.00	42.00	3.175	4	●	●
16.040	16.000	16.000	15.500	92.00	32.00	42.00	4.00	4	●	●
20.005	20.000	20.000	19.500	104.00	38.00	52.00	0.50	4	●	●
20.010	20.000	20.000	19.500	104.00	38.00	52.00	1.00	4	●	●
20.015	20.000	20.000	19.500	104.00	38.00	52.00	1.50	4	●	●
20.020	20.000	20.000	19.500	104.00	38.00	52.00	2.00	4	●	●
20.025	20.000	20.000	19.500	104.00	38.00	52.00	2.50	4	●	●
20.030	20.000	20.000	19.500	104.00	38.00	52.00	3.00	4	●	●
20.031	20.000	20.000	19.500	104.00	38.00	52.00	3.175	4	●	●
20.040	20.000	20.000	19.500	104.00	38.00	52.00	4.00	4	●	●
25.015	25.000	25.000	24.000	121.00	45.00	63.00	1.50	4	●	●
25.020	25.000	25.000	24.000	121.00	45.00	63.00	2.00	4	●	●
25.025	25.000	25.000	24.000	121.00	45.00	63.00	2.50	4	●	●
25.030	25.000	25.000	24.000	121.00	45.00	63.00	3.00	4	●	●
25.031	25.000	25.000	24.000	121.00	45.00	63.00	3.175	4	●	●
25.040	25.000	25.000	24.000	121.00	45.00	63.00	4.00	4	●	●
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RF 100 Ti Aircraft application

RF100 Ti Aircraft, Code no. 3498 12,020,
aviation structural component

Application:
Wet machining in TiAl6V4

Cutting parameters:

a_p: 24 mm	a_e: up to 0.53 mm
v_c: 155 m/min	S: 4125 min-1
f_z: up to 0.18mm	v_f: up to 3100 mm/min

imachining

Metal removal rate Q = 36 cm^3/min
Tool life in excess of 135 min for roughing!

Its toughness, chemical resistance and low thermal expansion makes titanium indispensable for heavily stressed components. At the same time these characteristics bring about enormous machining challenges Guhring's RF 100 Ti Aircraft was especially developed to satisfy these demands. Its new face and flute geometry as well as its transition angle enable the process reliable milling, slotting and roughing in special and titanium alloys. The optimised corner radius ensures long tool life.

DRILLING

TAPPING/THREAD MILLING/
FLUTELESS TAPPING

MILLING

REAMING

PCD

SPECIAL SOLUTIONS

COUNTERSINKING

MODULAR SYSTEMS

SERVICES

GUHRING

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