

GÜHRING



Special carbide
developed for
stainless steels

Wear resistant
coating
TiAlN nanoA

Special tool geometry
perfected for
stainless steels

RT 100 VA

The easy and safe stainless steels drill!
Top performance in

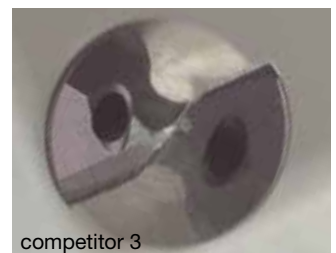
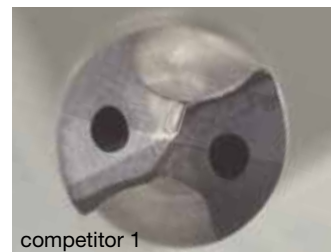
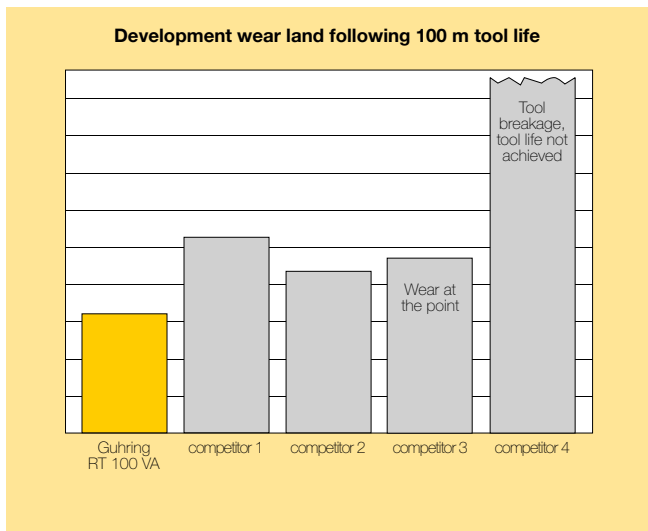
- **wear**
- **tool life**
- **rigidity**

Selected machining results RT 100 VA

Guhring no.	8510	8511	8511	8611
Diameter	10.6	8.0	15.0	6.8
Coating	TiAlN nanoA	TiAlN nanoA	TiAlN nanoA	TiAlN nanoA
Material group	stainless steel	stainless steel	stainless steel	stainless steel
Material description	X10CrNiS18-9 1.4305	X5CrNi18 10 1.4301	X6CrNiMoTi17-12-2 1.4571	X6CrNiTi1810 1.4541
Drilling depth [mm]	9	34	58	28
Hole type	blind hole	through hole	blind hole	blind hole
Cooling	internal	internal	internal	internal
Lubricant	oil	soluble oil	soluble oil	soluble oil
Machine type	rotary transfer machine	machining centre	machining centre	machining centre
v_c [m/min]	40	50	90	60
f [mm/rev.]	0.16	0.2	0.14	0.1
Tool life [m]	1800	190	63	150

Wear development

The RT 100 VA has demonstrated low wear in various applications against competitor tools. The graphic below shows the development of the wear land following 100 m tool life for the machining of a heat exchanger plate in stainless steel X6CrNiMo-Ti17-12-2 (1.4571). While Guhring's RT 100 VA shows the lowest corner wear and no wear at the point, the wear values of the competitor tools were considerably higher. In addition, they showed considerable wear at the point. A further competitor tool didn't achieve the required tool life, it failed through premature tool breakage.



RT 100 VA

For the production of accurate holes in stainless steels with highest cutting rates and long tool life, Guhring has developed the new RT 100 VA. The RT 100 VA achieves its extraordinary efficiency thanks to

- carbide developed for the machining of stainless steels
- the TiAlN nanoA wear resistant coating
- tool geometry perfected for the machining of stainless steels

In addition, the high feed rates achievable with the RT 100 VA are thanks to the optimal heat dissipation via the chips. Additionally the highly effective coolant supply via the internal coolant ducts, having maximum cross section, supports the heat dissipation as well as chip evacuation and also counteracts the risk of localised hardening.

The program

The RT 100 VA is available in four designs as part of the standard program:

Standard	Type	Shank form	Cooling	Cutting direction	Drilling depth	Tolerance	Tool description	Tool material	Surface finish	Diameter	Guhring no.
DIN 6537 K	RT 100 VA	HA			3xD	m7		Solid carbide	TiAlN nanoA	3,00 - 20,00	8510
DIN 6537 K	RT 100 VA	HE			3xD	m7		Solid carbide	TiAlN nanoA	3,00 - 20,00	8610
DIN 6537 L	RT 100 VA	HA			5xD	m7		Solid carbide	TiAlN nanoA	3,00 - 20,00	8511
DIN 6537 L	RT 100 VA	HE			5xD	m7		Solid carbide	TiAlN nanoA	3,00 - 20,00	8611

Special solutions

Furthermore, we supply intermediate sizes or step drills as special tools for your specific application tasks on request. Designs are also possible for drilling depths in excess of 5xD. Complete the form on page 15 or contact us!

Notes regarding application

A cutting speed should be chosen out of the Navigator and can greatly depend on the material composition. Machining tests are paramount for selecting the optimal cutting speed.

Due to the high cutting load particular attention must be paid to maximum rigidity of the machine as well as the workpiece and tool clamping. Always select the shortest possible tool for your machining task.

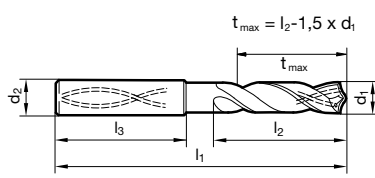
Application recommendations for Guhring RT 100 high-performance Ratio drills

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

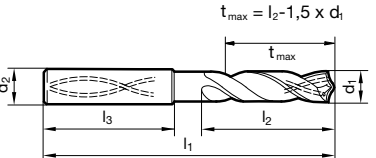
- optimal suitability
- limited suitability
- not suitable

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

[illegible]

DIN 6537 K	RT 100 VA	3xD			m7		
Order no. = Guhring no. + code no.	Guhring no.						
	P M K N S H Surface finish Discount group						
							
Code	d1	d1	d2	l1	l2	l3	
no.	mm	inch	mm	mm	mm	mm	
5,900	5.900	15/64	6.000	66.000	28.000	36.000	
5,950	5.950		6.000	66.000	28.000	36.000	
6,000	6.000		6.000	66.000	28.000	36.000	
6,100	6.100		1/4	8.000	79.000	34.000	36.000
6,200	6.200			8.000	79.000	34.000	36.000
6,300	6.300	8.000		79.000	34.000	36.000	
6,350	6.350	8.000		79.000	34.000	36.000	
6,400	6.400	8.000		79.000	34.000	36.000	
6,500	6.500	17/64	8.000	79.000	34.000	36.000	
6,600	6.600		8.000	79.000	34.000	36.000	
6,700	6.700		8.000	79.000	34.000	36.000	
6,750	6.750		8.000	79.000	34.000	36.000	
6,800	6.800		9/32	8.000	79.000	34.000	36.000
6,900	6.900	8.000		79.000	34.000	36.000	
7,000	7.000	8.000		79.000	34.000	36.000	
7,100	7.100	19/64		8.000	79.000	41.000	36.000
7,140	7.140			8.000	79.000	41.000	36.000
7,200	7.200		8.000	79.000	41.000	36.000	
7,300	7.300		5/16	8.000	79.000	41.000	36.000
7,400	7.400			8.000	79.000	41.000	36.000
7,500	7.500	8.000		79.000	41.000	36.000	
7,540	7.540	21/64		8.000	79.000	41.000	36.000
7,600	7.600			8.000	79.000	41.000	36.000
7,700	7.700		8.000	79.000	41.000	36.000	
7,800	7.800		11/32	8.000	79.000	41.000	36.000
7,900	7.900			8.000	79.000	41.000	36.000
7,940	7.940	8.000		79.000	41.000	36.000	
8,000	8.000	10.000		79.000	41.000	36.000	
8,100	8.100			10.000	89.000	47.000	40.000
8,200	8.200		10.000	89.000	47.000	40.000	
8,300	8.300		10.000	89.000	47.000	40.000	
8,330	8.330			89.000	47.000	40.000	
8,400	8.400	89.000		47.000	40.000		
8,500	8.500	10.000		89.000	47.000	40.000	
8,600	8.600			89.000	47.000	40.000	
8,700	8.700		89.000	47.000	40.000		
8,730	8.730		10.000	89.000	47.000	40.000	
8,800	8.800			89.000	47.000	40.000	
8,900	8.900	89.000		47.000	40.000		

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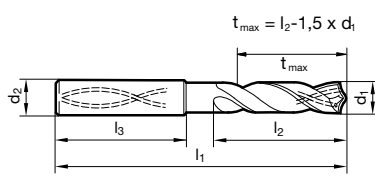
DIN 6537 K	RT 100 VA	3xD			m7	
Order no. = Guhring no. + code no.	Guhring no.					
	P M K N S H					
	Surface finish Discount group					
						
Code	d1	d1	d2	l1	l2	l3
no.	mm	inch	mm	mm	mm	mm
9,000	9.000	23/64	10.000	89.000	47.000	40.000
9,100	9.100		10.000	89.000	47.000	40.000
9,130	9.130		10.000	89.000	47.000	40.000
9,200	9.200		10.000	89.000	47.000	40.000
9,250	9.250		10.000	89.000	47.000	40.000
9,300	9.300	3/8	10.000	89.000	47.000	40.000
9,400	9.400		10.000	89.000	47.000	40.000
9,500	9.500		10.000	89.000	47.000	40.000
9,520	9.520		10.000	89.000	47.000	40.000
9,600	9.600		10.000	89.000	47.000	40.000
9,700	9.700	25/64	10.000	89.000	47.000	40.000
9,800	9.800		10.000	89.000	47.000	40.000
9,900	9.900		10.000	89.000	47.000	40.000
9,920	9.920		10.000	89.000	47.000	40.000
10,000	10.000		10.000	89.000	47.000	40.000
10,100	10.100	13/32	12.000	102.000	55.000	45.000
10,200	10.200		12.000	102.000	55.000	45.000
10,300	10.300		12.000	102.000	55.000	45.000
10,320	10.320		12.000	102.000	55.000	45.000
10,400	10.400		12.000	102.000	55.000	45.000
10,500	10.500	7/16	12.000	102.000	55.000	45.000
10,600	10.600		12.000	102.000	55.000	45.000
10,700	10.700		12.000	102.000	55.000	45.000
10,800	10.800		12.000	102.000	55.000	45.000
10,900	10.900		12.000	102.000	55.000	45.000
11,000	11.000	15/32	12.000	102.000	55.000	45.000
11,100	11.100		12.000	102.000	55.000	45.000
11,110	11.110		12.000	102.000	55.000	45.000
11,200	11.200		12.000	102.000	55.000	45.000
11,300	11.300		12.000	102.000	55.000	45.000
11,400	11.400	15/32	12.000	102.000	55.000	45.000
11,500	11.500		12.000	102.000	55.000	45.000
11,600	11.600		12.000	102.000	55.000	45.000
11,700	11.700		12.000	102.000	55.000	45.000
11,800	11.800		12.000	102.000	55.000	45.000
11,900	11.900	15/32	12.000	102.000	55.000	45.000
11,910	11.910		12.000	102.000	55.000	45.000
12,000	12.000		12.000	102.000	55.000	45.000
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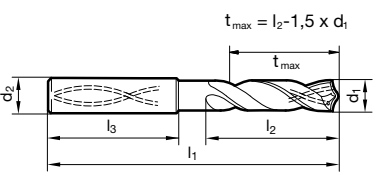
DIN 6537 K	RT 100 VA	3xD			m7		
Order no. = Guhring no. + code no.	Guhring no. P M K N S H Surface finish Discount group						
	Code	d1	d1	d2	l1	l2	l3
	no.	mm	inch	mm	mm	mm	mm
	12,500	12.500	1/2	14.000	107.000	60.000	45.000
	12,700	12.700		14.000	107.000	60.000	45.000
	12,800	12.800		14.000	107.000	60.000	45.000
	13,000	13.000		14.000	107.000	60.000	45.000
	13,300	13.300		14.000	107.000	60.000	45.000
	13,500	13.500	9/16	14.000	107.000	60.000	45.000
13,700	13.700	14.000		107.000	60.000	45.000	
14,000	14.000	14.000		107.000	60.000	45.000	
14,200	14.200	16.000		115.000	65.000	48.000	
14,290	14.290	16.000		115.000	65.000	48.000	
14,300	14.300	3/4	16.000	115.000	65.000	48.000	
14,500	14.500		16.000	115.000	65.000	48.000	
14,700	14.700		16.000	115.000	65.000	48.000	
15,000	15.000		16.000	115.000	65.000	48.000	
15,200	15.200		16.000	115.000	65.000	48.000	
15,300	15.300	1	16.000	115.000	65.000	48.000	
15,500	15.500		16.000	115.000	65.000	48.000	
15,700	15.700		16.000	115.000	65.000	48.000	
16,000	16.000		16.000	115.000	65.000	48.000	
16,300	16.300		18.000	123.000	73.000	48.000	
16,500	16.500	1 1/4	18.000	123.000	73.000	48.000	
16,900	16.900		18.000	123.000	73.000	48.000	
17,000	17.000		18.000	123.000	73.000	48.000	
17,300	17.300		18.000	123.000	73.000	48.000	
17,500	17.500		18.000	123.000	73.000	48.000	
18,000	18.000	1 1/2	18.000	123.000	73.000	48.000	
18,500	18.500		20.000	131.000	79.000	50.000	
18,900	18.900		20.000	131.000	79.000	50.000	
19,000	19.000		20.000	131.000	79.000	50.000	
19,050	19.050		20.000	131.000	79.000	50.000	
19,300	19.300	2	20.000	131.000	79.000	50.000	
19,500	19.500		20.000	131.000	79.000	50.000	
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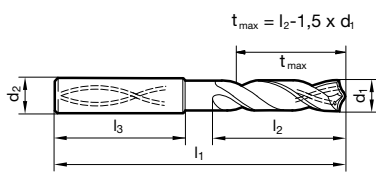
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	P M K N S H						
	Surface finish						
	Discount group						
							
	Code	d1	d1	d2	l1	l2	l3
	no.	mm	inch	mm	mm	mm	mm
	5,900	5.900	15/64	6.000	82.000	44.000	36.000
	5,950	5.950		6.000	82.000	44.000	36.000
	6,000	6.000		6.000	82.000	44.000	36.000
6,100	6.100	1/4		8.000	91.000	53.000	36.000
6,200	6.200			8.000	91.000	53.000	36.000
6,300	6.300		8.000	91.000	53.000	36.000	
6,350	6.350		17/64	8.000	91.000	53.000	36.000
6,400	6.400			8.000	91.000	53.000	36.000
6,500	6.500	8.000		91.000	53.000	36.000	
6,600	6.600	9/32		8.000	91.000	53.000	36.000
6,700	6.700			8.000	91.000	53.000	36.000
6,750	6.750		8.000	91.000	53.000	36.000	
6,800	6.800		19/64	8.000	91.000	53.000	36.000
6,900	6.900			8.000	91.000	53.000	36.000
7,000	7.000	8.000		91.000	53.000	36.000	
7,100	7.100	5/16		8.000	91.000	53.000	36.000
7,140	7.140			8.000	91.000	53.000	36.000
7,200	7.200		8.000	91.000	53.000	36.000	
7,300	7.300		21/64	8.000	91.000	53.000	36.000
7,400	7.400			8.000	91.000	53.000	36.000
7,500	7.500	8.000		91.000	53.000	36.000	
7,540	7.540	11/32		8.000	91.000	53.000	36.000
7,600	7.600			8.000	91.000	53.000	36.000
7,700	7.700		8.000	91.000	53.000	36.000	
7,800	7.800		11/32	8.000	91.000	53.000	36.000
7,900	7.900			8.000	91.000	53.000	36.000
7,940	7.940	8.000		91.000	53.000	36.000	
8,000	8.000	11/32		8.000	91.000	53.000	36.000
8,100	8.100			10.000	103.000	61.000	40.000
8,200	8.200		10.000	103.000	61.000	40.000	
8,300	8.300		11/32	10.000	103.000	61.000	40.000
8,330	8.330			10.000	103.000	61.000	40.000
8,400	8.400	10.000		103.000	61.000	40.000	
8,500	8.500	11/32		10.000	103.000	61.000	40.000
8,600	8.600			10.000	103.000	61.000	40.000
8,700	8.700		10.000	103.000	61.000	40.000	
8,730	8.730		11/32	10.000	103.000	61.000	40.000
8,800	8.800			10.000	103.000	61.000	40.000
8,900	8.900	10.000		103.000	61.000	40.000	

[illegible]

DIN 6537 L	RT 100 VA	5xD			m7	
Order no. = Guhring no. + code no.	Guhring no.					
	P M K N S H Surface finish Discount group					
						
Code	d1	d1	d2	l1	l2	l3
no.	mm	inch	mm	mm	mm	mm
9,000	9.000	23/64	10.000	103.000	61.000	40.000
9,100	9.100		10.000	103.000	61.000	40.000
9,130	9.130		10.000	103.000	61.000	40.000
9,200	9.200		10.000	103.000	61.000	40.000
9,250	9.250		10.000	103.000	61.000	40.000
9,300	9.300	3/8	10.000	103.000	61.000	40.000
9,400	9.400		10.000	103.000	61.000	40.000
9,500	9.500		10.000	103.000	61.000	40.000
9,520	9.520		10.000	103.000	61.000	40.000
9,600	9.600		10.000	103.000	61.000	40.000
9,700	9.700	25/64	10.000	103.000	61.000	40.000
9,800	9.800		10.000	103.000	61.000	40.000
9,900	9.900		10.000	103.000	61.000	40.000
9,920	9.920		10.000	103.000	61.000	40.000
10,000	10.000		10.000	103.000	61.000	40.000
10,100	10.100	13/32	12.000	118.000	71.000	45.000
10,200	10.200		12.000	118.000	71.000	45.000
10,300	10.300		12.000	118.000	71.000	45.000
10,320	10.320		12.000	118.000	71.000	45.000
10,400	10.400		12.000	118.000	71.000	45.000
10,500	10.500	7/16	12.000	118.000	71.000	45.000
10,600	10.600		12.000	118.000	71.000	45.000
10,700	10.700		12.000	118.000	71.000	45.000
10,800	10.800		12.000	118.000	71.000	45.000
10,900	10.900		12.000	118.000	71.000	45.000
11,000	11.000	15/32	12.000	118.000	71.000	45.000
11,100	11.100		12.000	118.000	71.000	45.000
11,110	11.110		12.000	118.000	71.000	45.000
11,200	11.200		12.000	118.000	71.000	45.000
11,300	11.300		12.000	118.000	71.000	45.000
11,400	11.400	15/32	12.000	118.000	71.000	45.000
11,500	11.500		12.000	118.000	71.000	45.000
11,600	11.600		12.000	118.000	71.000	45.000
11,700	11.700		12.000	118.000	71.000	45.000
11,800	11.800		12.000	118.000	71.000	45.000
11,900	11.900	15/32	12.000	118.000	71.000	45.000
11,910	11.910		12.000	118.000	71.000	45.000
12,000	12.000		12.000	118.000	71.000	45.000
12,200	12.200		14.000	124.000	77.000	45.000

[illegible]

DIN 6537 L	RT 100 VA	5xD			m7	
Order no. = Guhring no. + code no.	Guhring no.					
	P M K N S H					
	Surface finish					
	Discount group					
						
Code	d1	d1	d2	l1	l2	l3
no.	mm	inch	mm	mm	mm	mm
12,500	12.500	1/2	14.000	124.000	77.000	45.000
12,700	12.700		14.000	124.000	77.000	45.000
12,800	12.800		14.000	124.000	77.000	45.000
13,000	13.000		14.000	124.000	77.000	45.000
13,300	13.300		14.000	124.000	77.000	45.000
13,500	13.500	9/16	14.000	124.000	77.000	45.000
13,700	13.700		14.000	124.000	77.000	45.000
14,000	14.000		14.000	124.000	77.000	45.000
14,200	14.200		16.000	133.000	83.000	48.000
14,290	14.290		16.000	133.000	83.000	48.000
14,300	14.300	3/4	16.000	133.000	83.000	48.000
14,500	14.500		16.000	133.000	83.000	48.000
14,700	14.700		16.000	133.000	83.000	48.000
15,000	15.000		16.000	133.000	83.000	48.000
15,200	15.200		16.000	133.000	83.000	48.000
15,300	15.300		16.000	133.000	83.000	48.000
15,500	15.500		16.000	133.000	83.000	48.000
15,700	15.700		16.000	133.000	83.000	48.000
16,000	16.000		16.000	133.000	83.000	48.000
16,300	16.300		18.000	143.000	93.000	48.000
16,500	16.500		18.000	143.000	93.000	48.000
16,900	16.900		18.000	143.000	93.000	48.000
17,000	17.000		18.000	143.000	93.000	48.000
17,300	17.300		18.000	143.000	93.000	48.000
17,500	17.500		18.000	143.000	93.000	48.000
18,000	18.000	3/4	18.000	143.000	93.000	48.000
18,500	18.500		20.000	153.000	101.000	50.000
18,900	18.900		20.000	153.000	101.000	50.000
19,000	19.000		20.000	153.000	101.000	50.000
19,050	19.050		20.000	153.000	101.000	50.000
19,300	19.300		20.000	153.000	101.000	50.000
19,500	19.500		20.000	153.000	101.000	50.000
20,000	20.000		20.000	153.000	101.000	50.000

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General hints:

Powerful machines, no play in spindle bearings, alignment accurate tool holders. Max. concentricity error of clamped tools 0.02 mm, high coolant pressures. We recommend the application of hydraulic chucks or shrink fit chucks.

Coolant hints:

We recommend lubrication by soluble oil or neat oil. Under special conditions cooling just by air is possible. But instead of air cooling we would always prefer minimal quantity lubrication, that the tools are especially suited for. With MQL we recommend the conical shank end and the Guhring MQL components. Please contact our technical service department for further information.

Guhring no.
Standard/DIN
Tool material
Carbide grade
Type
Surface finish
Cooling
for dia. range

drill-Ø mm	Feed column no.								
	1	2	3	4	5	6	7	8	9
	f (mm/rev.)								
2.50	0.025	0.032	0.040	0.050	0.063	0.080	0.100	0.125	0.160
3.15	0.032	0.040	0.050	0.063	0.080	0.100	0.125	0.160	0.160
4.00	0.040	0.050	0.063	0.080	0.100	0.125	0.160	0.200	0.200
5.00	0.040	0.050	0.063	0.080	0.100	0.125	0.160	0.200	0.250
6.30	0.050	0.063	0.080	0.100	0.125	0.160	0.200	0.250	0.315
8.00	0.063	0.080	0.100	0.125	0.160	0.200	0.250	0.315	0.315
10.00	0.080	0.100	0.125	0.160	0.200	0.250	0.315	0.400	0.400
12.50	0.080	0.100	0.125	0.160	0.200	0.250	0.315	0.400	0.500
16.00	0.100	0.125	0.160	0.200	0.250	0.315	0.400	0.500	0.630
20.00	0.125	0.160	0.200	0.250	0.315	0.400	0.500	0.630	0.630
25.00	0.160	0.200	0.250	0.315	0.400	0.500	0.630	0.800	0.800

Coolant:

- Air
- Neat oil
- Soluble oil

Material group	Material examples, new description (old description in brackets) Figures in bold = material no. to DIN EN	Tensile strength MPa (N/mm ²)	Hardness	Coolant
Common structural steels	1.0035 S185(St33), 1.0486 P275N(StE285), 1.0345 P235GH(H1), 1.0425 P265GH(H2) 1.0050 E295 (St50-2), 1.0070 E360 (St70-2), 1.8937 P500NH (WStE500)	≤500 ≤1000		○
Free-cutting steels	1.0718 11SMnPb30 (9SMnPb28), 1.0736 11SMn37 (9SMn36) 1.0727 46S20 (45S20), 1.0728 (60S20), 1.0757 46SPb20 (45SPb20)	≤850 ≤1000		○
Unalloyed heat-treatable steels	1.0402 C22, 1.1178 C30E (Ck30) 1.0503 C45, 1.1191 C45E (Ck45) 1.0601 C60, 1.1221 C60E (Ck60)	≤700 ≤850 ≤1000		○
Alloyed heat-treatable steels	1.5131 50MnSi4, 1.7003 38Cr2, 1.7030 28Cr4 1.5710 36NiCr6, 1.7035 41Cr4, 1.7225 42CrMo4	≤1000 ≤1400		○
Unalloyed case hardened steels	1.0301 (C10), 1.1121 C10E (Ck10)	≤850		○
Alloyed case hardened steels	1.7276 10CrMo11, 1.5125 11MnSi6 1.5752 15NiCr13, 1.7131 16MnCr5, 1.7264 20CrMo5	≤1000 ≤1400		●
Nitriding steels	1.8504 34CrAl6 1.8519 31CrMoV9, 1.8550 34CrAlNi7	≤1000 ≤1400		○
Tool steels	1.1750 C75W, 1.2067 102Cr6, 1.2307 29CrMoV9 1.2080 X210Cr12, 1.2083 X42Cr13, 1.2419 105WCr6, 1.2767 X45NiCrMo4	≤850 ≤1400		○
High speed steels	1.3243 S 6-5-2-5, 1.3343 S 6-5-2, 1.3344 S 6-5-3	≤1400		○
Spring steels	1.5026 55Si7, 1.7176 55Cr3, 1.8159 51CrV4 (51CrV4)		≤350 HB	○
Stainless steels, sulphured	1.4005 X12CrS13, 1.4104 X14CrMoS17, 1.4105 X6CrMoS17, 1.4305 X8CrNiS18-9	≤900		○
austenitic	1.4301 X5CrNi18-10 (V2A), 1.4541 X6CrNiTi18-10, 1.4571 X6CrNiMoTi 17-12-2 (V4A)	≤1100		○
martensitic	1.4057 X20CrNi172 (X17CrNi16-2), 1.4122 X39CrMo17-1, 1.4521 X2CrMoTi18-2	≤1500		○
Hardened steels	-		≤48 HRC ≤66 HRC	○
Special alloys	Nimonic, Inconel, Monel, Hastelloy	≤2000		○
Cast iron	0.6010 EN-GJL-100 (GG10), 0.6020 EN-GJL-200 (GG20) 0.6025 EN-GJL-250 (GG25), 0.6035 EN-GJL-350 (GG35)		≤240 HB ≤350 HB	○
Spheroidal graphite iron and malleable cast iron	0.7050 EN-GJS-500-7 (GGG50), 0.8035 EN-GJMW-350-4 (GTW35) 0.7070 EN-GJS-700-2 (GGG70), 0.8170 EN-GJMB-700-2 (GTS70)		≤240 HB ≤350 HB	○
Chilled cast iron	-		≤350 HB	○
Ti and Ti-alloys	3.7024 Ti99.5, 3.7114 TiAl5Sn2.5, 3.7124 TiCu2 3.7154 TiAl6Zr5, 3.7165 TiAl6V4, 3.7184 TiAl4Mo4Sn2.5, - TiAl8Mo1V1	≤850 ≤1400		○
Aluminium and 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	≤400 ≤650		○
Al wrought alloys	3.2131 G-AlSi5Cu1, 3.2153 G-AlSi7Cu3, 3.2573 G-AlSi9	≤600		○
Al cast alloys ≤ 10 % Si	3.2581 G-AlSi12, 3.2583 G-AlSi12Cu, - G-AlSi12CuNiMg	≤600		○
≤ 24 % Si	3.5200 MgMn2, 3.5812.05 G-MgAl8Zn1, 3.5612.05 G-MgAl6Zn1	≤400		○
Magnesium alloys	2.0070 SE-Cu, 2.1020 CuSn6, 2.1096 G-CuSn5ZnPB	≤500		○
Copper, low-alloyed	2.0380 CuZn39Pb2, 2.0401 CuZn39Pb3, 2.0410 CuZn43Pb2	≤600		○
Brass, short-chipping	2.0250 CuZn20, 2.0280 CuZn33, 2.0332 CuZn37Pb0.5	≤600		○
long-chipping	2.1090 CuSn7ZnPB, 2.1170 CuPb5Sn5, 2.1176 CuPb10Sn	≤600		○
Bronze, short-chipping	2.0790 CuNi18Zn19Pb	≤850		○
Bronze, long-chipping	2.0916 CuAl5, 2.0960 CuAl9Mn, 2.1050 CuSn10 2.0980 CuAl11Ni, 2.1247 CuBe2	≤850 ≤1000		○
Duroplastics	Bakelit, Resopal, Pertinax, Moltopren	≤150		○
Thermoplastics	Plexiglass, Hostalen, Novodur, Makralon	≤100		○
New cast materials GGV	EN-GJV250 (GGV25), EN-GJV350 (GGV35) EN-GJV400 (GGV40), EN-GJV500 (GGV50), SiMo 6		≤220 HB ≤300 HB	○
New cast materials ADI	EN-GJS-800-8 (ADI800), EN-GJS-1000-5 (ADI1000) EN-GJS-1200-2 (ADI1200), EN-GJS-1400-1 (ADI1400)	≤1000 ≤1400		○
Kevlar	Kevlar	≤1000		○
Glass, carbon concentrated plastics	GFK/CFK	≤1000		○

$\leq 3 \times D$ Drilling depth

8510	8610
6537K	6537K
Solid carbide	
K/P	K/P
RT 100 VA	
TiAlN nanoA	
axial	axial
d1 ≤ 10 mm	

8510	8610
6537K	6537K
Solid carbide	
K/P	K/P
RT 100 VA	
TiAlN nanoA	
axial	axial
d1 > 10 mm	

$\leq 5 \times D$ Drilling depth

8511	8611
6537L	6537L
Solid carbide	
K/P	K/P
RT 100 VA	
TiAlN nanoA	
axial	axial
d1 ≤ 10 mm	

8511	8611
6537L	6537L
Solid carbide	
K/P	K/P
RT 100 VA	
TiAlN nanoA	
axial	axial
d1 > 10 mm	

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Pictograms

Tool material

Solid
carbide

Solid carbide finest grain (carbide-UF)

Standard

DIN
6537 K

DIN
6537 L

to DIN

Type

RT 100
VA

Cooling



with internal cooling

Cutting direction



right-hand cutting

Drilling depth

3xD

5xD

maximum drilling depth, based on the nominal diameter

Tolerance

m7

Hole tolerance

Shank form



to DIN 6535

☐ **Order**
☐ **Inquiry**

Name/customer no. if available

☐ New customer

Street no.

Telephone

Date

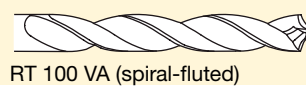
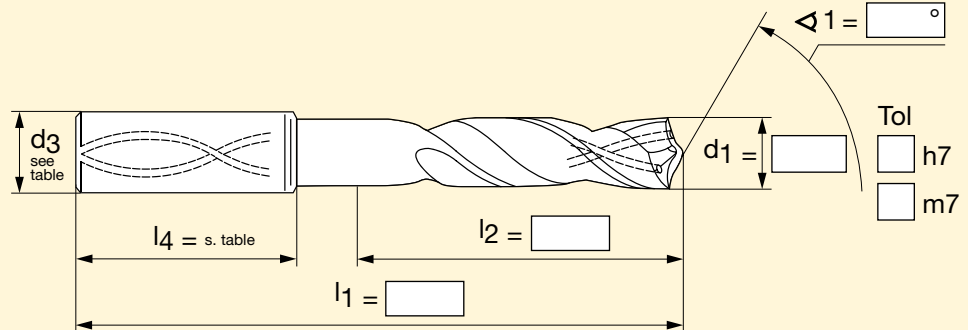
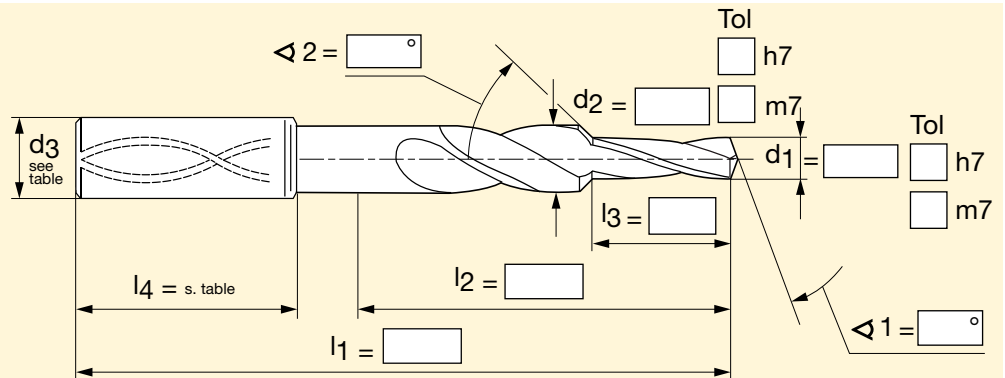
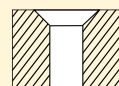
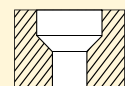
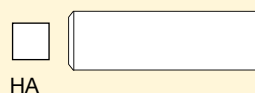
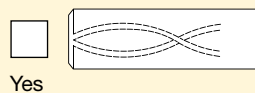
Contact for questions

Order no.

Town/post code

Fax

Signature

Quantity**Tool type****Dimensions****Step version****Machining****Shank form****Internal cooling****Coating**

nanoA



bright

Drilling



Tapping/thread milling/fluteless tapping



Reaming



Countersinking/de-burring



Milling



PCD/PCB



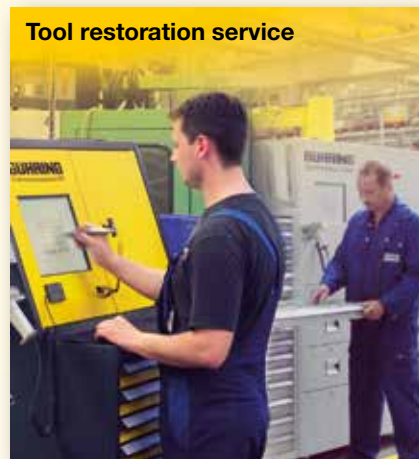
Modular tooling systems



Special tooling solutions



Tool restoration service



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