

GÜHRING



RT 100 **XF**

TOUGH. EXTREME. POWERFUL.

TOUGH. *EXTREME.* POWERFUL.


- ▶ **EXCEPTIONAL** METAL REMOVAL RATE
- ▶ **POWERFUL** MACHINING

120 years of manufacturing expertise, innovation and synergy: These are the pillars of our success that have allowed Gühring, once a pioneer of drilling solutions, to develop into an industry-leading full-service provider. This was made possible by our own R&D departments in geometry, production and coating, the production of proprietary cutting materials, as well as grinding and coating systems. These elements find their way into the performance of our products, enabling us to continually set new standards for the industry.

This leading expertise serves as the basis for the RT 100 XF. Exceptional performance and a qualitative advantage. With unbridled power and guaranteed outstanding results for your processes.

The RT 100 XF. Tough. Extreme. Powerful.

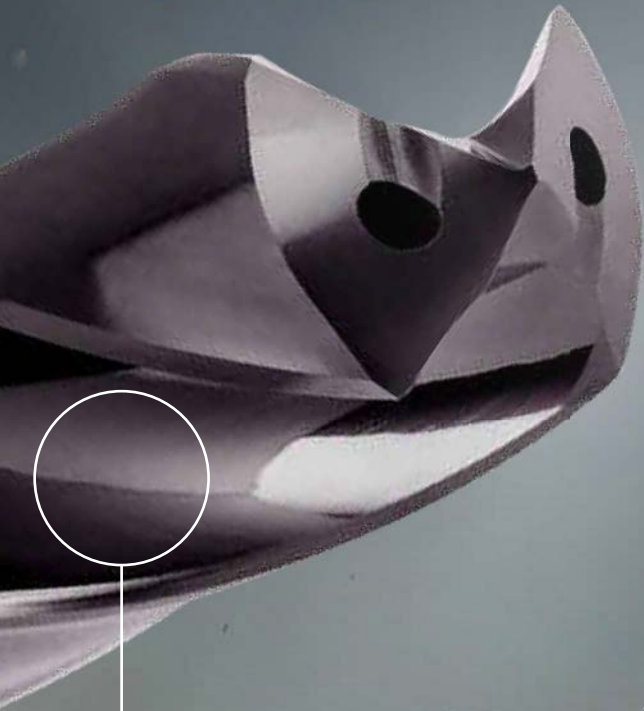




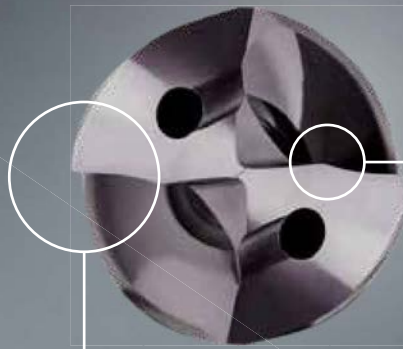
Extremely hard, almost unbreakable: The carbide developed for the RT 100 XF **performs a balancing act between hardness and toughness**. Due to its special structure, this Gühring-created carbide grade has a **re-sharpening effect**. Breakages that normally accelerate tool wear no longer occur.

Double margin grips extremely early, thus perfecting the coaxiality, ensuring perfect drilling results and are therefore standard on the RT 100 XF from **3xD upwards**. The third and fourth support chamfers ensure excellent running smoothness.

The proven **nanoFire coating system** was developed by a specially designed **pre- and post-treatment**. This surface treatment smooths the coating and makes it significantly more robust.



Polished flutes reduce the heat input into the component. The chip flows off faster; thermal changes such as hardening are avoided.



The **point geometry, protected by a negative chamfer along the side cutting edge**, makes the cutting edge ultra-robust and durable. For exceptional performance.

The **rounding of the cutting edge** produces a stable and efficient cutting edge. The **accurate reproducibility** of this rounding (to the nearest micrometre) is made possible by our manufacturing competence. Original quality is restored in the in-house regrinding and re-coating centres.

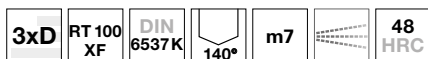
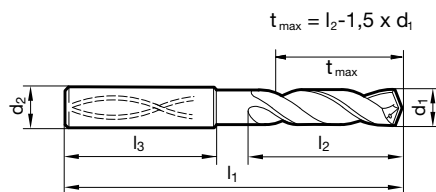
- Combined optimisation of all tool parameters enables **outstanding feed rates** and **exceptional metal removal rates**
- In-house high-end finishing for **maximum performance utilisation**
- **Reduced cycle times** for difficult-to-machine materials and special applications in series production

RT 100 **XF**

TOUGH. EXTREME. POWERFUL.



Ratio drills with coolant ducts

Tool material **Solid carbide**Surface **F**Shank form **HA****P** ● relieved cone • main cutting edge form concave • optimised cutting geometry • maximum performance • double margin**M** ○**K** ○**N** ○structural and case hardened steels • free-cutting steels, heat-treatable steels • steels (alloyed/unalloyed) up to 1400 N/mm²**S** ○**H** ○Article no. **6498**

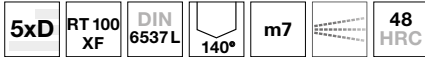
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mm	inch	mm	mm	mm		mm	inch	mm	mm	mm		mm	
3.000		6.00	62.00	20.00	36.00	6498 3.000	5.900		6.00	66.00	28.00	36.00	6498 5.900
3.100		6.00	62.00	20.00	36.00	6498 3.100	5.950	15/64	6.00	66.00	28.00	36.00	6498 5.950
3.170	1/8	6.00	62.00	20.00	36.00	6498 3.170	6.000		6.00	66.00	28.00	36.00	6498 6.000
3.200		6.00	62.00	20.00	36.00	6498 3.200	6.100		8.00	79.00	34.00	36.00	6498 6.100
3.250		6.00	62.00	20.00	36.00	6498 3.250	6.200		8.00	79.00	34.00	36.00	6498 6.200
3.300		6.00	62.00	20.00	36.00	6498 3.300	6.300		8.00	79.00	34.00	36.00	6498 6.300
3.400		6.00	62.00	20.00	36.00	6498 3.400	6.350	1/4	8.00	79.00	34.00	36.00	6498 6.350
3.500		6.00	62.00	20.00	36.00	6498 3.500	6.400		8.00	79.00	34.00	36.00	6498 6.400
3.570	9/64	6.00	62.00	20.00	36.00	6498 3.570	6.500		8.00	79.00	34.00	36.00	6498 6.500
3.600		6.00	62.00	20.00	36.00	6498 3.600	6.530		8.00	79.00	34.00	36.00	6498 6.530
3.700		6.00	62.00	20.00	36.00	6498 3.700	6.550		8.00	79.00	34.00	36.00	6498 6.550
3.800		6.00	66.00	24.00	36.00	6498 3.800	6.600		8.00	79.00	34.00	36.00	6498 6.600
3.900		6.00	66.00	24.00	36.00	6498 3.900	6.700		8.00	79.00	34.00	36.00	6498 6.700
3.970	5/32	6.00	66.00	24.00	36.00	6498 3.970	6.750	17/64	8.00	79.00	34.00	36.00	6498 6.750
4.000		6.00	66.00	24.00	36.00	6498 4.000	6.800		8.00	79.00	34.00	36.00	6498 6.800
4.040		6.00	66.00	24.00	36.00	6498 4.040	6.900		8.00	79.00	34.00	36.00	6498 6.900
4.100		6.00	66.00	24.00	36.00	6498 4.100	7.000		8.00	79.00	34.00	36.00	6498 7.000
4.200		6.00	66.00	24.00	36.00	6498 4.200	7.100		8.00	79.00	41.00	36.00	6498 7.100
4.300		6.00	66.00	24.00	36.00	6498 4.300	7.140	9/32	8.00	79.00	41.00	36.00	6498 7.140
4.370	11/64	6.00	66.00	24.00	36.00	6498 4.370	7.200		8.00	79.00	41.00	36.00	6498 7.200
4.400		6.00	66.00	24.00	36.00	6498 4.400	7.300		8.00	79.00	41.00	36.00	6498 7.300
4.500		6.00	66.00	24.00	36.00	6498 4.500	7.400		8.00	79.00	41.00	36.00	6498 7.400
4.600		6.00	66.00	24.00	36.00	6498 4.600	7.500		8.00	79.00	41.00	36.00	6498 7.500
4.650		6.00	66.00	24.00	36.00	6498 4.650	7.540	19/64	8.00	79.00	41.00	36.00	6498 7.540
4.700		6.00	66.00	24.00	36.00	6498 4.700	7.550		8.00	79.00	41.00	36.00	6498 7.550
4.760	3/16	6.00	66.00	28.00	36.00	6498 4.760	7.600		8.00	79.00	41.00	36.00	6498 7.600
4.800		6.00	66.00	28.00	36.00	6498 4.800	7.650		8.00	79.00	41.00	36.00	6498 7.650
4.900		6.00	66.00	28.00	36.00	6498 4.900	7.700		8.00	79.00	41.00	36.00	6498 7.700
5.000		6.00	66.00	28.00	36.00	6498 5.000	7.800		8.00	79.00	41.00	36.00	6498 7.800
5.100		6.00	66.00	28.00	36.00	6498 5.100	7.900		8.00	79.00	41.00	36.00	6498 7.900
5.110		6.00	66.00	28.00	36.00	6498 5.110	7.940	5/16	8.00	79.00	41.00	36.00	6498 7.940
5.160	13/64	6.00	66.00	28.00	36.00	6498 5.160	8.000		8.00	79.00	41.00	36.00	6498 8.000
5.200		6.00	66.00	28.00	36.00	6498 5.200	8.100		10.00	89.00	47.00	40.00	6498 8.100
5.300		6.00	66.00	28.00	36.00	6498 5.300	8.200		10.00	89.00	47.00	40.00	6498 8.200
5.400		6.00	66.00	28.00	36.00	6498 5.400	8.300		10.00	89.00	47.00	40.00	6498 8.300
5.410		6.00	66.00	28.00	36.00	6498 5.410	8.330	21/64	10.00	89.00	47.00	40.00	6498 8.330
5.500		6.00	66.00	28.00	36.00	6498 5.500	8.400		10.00	89.00	47.00	40.00	6498 8.400
5.550		6.00	66.00	28.00	36.00	6498 5.550	8.500		10.00	89.00	47.00	40.00	6498 8.500
5.560	7/32	6.00	66.00	28.00	36.00	6498 5.560	8.600		10.00	89.00	47.00	40.00	6498 8.600
5.600		6.00	66.00	28.00	36.00	6498 5.600	8.700		10.00	89.00	47.00	40.00	6498 8.700
5.700		6.00	66.00	28.00	36.00	6498 5.700	8.730	11/32	10.00	89.00	47.00	40.00	6498 8.730
5.800		6.00	66.00	28.00	36.00	6498 5.800	8.800		10.00	89.00	47.00	40.00	6498 8.800



d1		d2	l1	l2	l3	Order no.	d1		d2	l1	l2	l3	Order no.
mm	inch	mm	mm	mm	mm		mm	inch	mm	mm	mm	mm	
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9.100		10.00	89.00	47.00	40.00	6498 9.100	14.290	9/16	16.00	115.00	65.00	48.00	6498 14.290
9.130	23/64	10.00	89.00	47.00	40.00	6498 9.130	14.300		16.00	115.00	65.00	48.00	6498 14.300
9.200		10.00	89.00	47.00	40.00	6498 9.200	14.400		16.00	115.00	65.00	48.00	6498 14.400
9.250		10.00	89.00	47.00	40.00	6498 9.250	14.500		16.00	115.00	65.00	48.00	6498 14.500
9.300		10.00	89.00	47.00	40.00	6498 9.300	14.600		16.00	115.00	65.00	48.00	6498 14.600
9.340		10.00	89.00	47.00	40.00	6498 9.340	14.680	37/64	16.00	115.00	65.00	48.00	6498 14.680
9.400		10.00	89.00	47.00	40.00	6498 9.400	14.700		16.00	115.00	65.00	48.00	6498 14.700
9.500		10.00	89.00	47.00	40.00	6498 9.500	14.800		16.00	115.00	65.00	48.00	6498 14.800
9.520	3/8	10.00	89.00	47.00	40.00	6498 9.520	14.900		16.00	115.00	65.00	48.00	6498 14.900
9.550		10.00	89.00	47.00	40.00	6498 9.550	15.000		16.00	115.00	65.00	48.00	6498 15.000
9.600		10.00	89.00	47.00	40.00	6498 9.600	15.080	19/32	16.00	115.00	65.00	48.00	6498 15.080
9.700		10.00	89.00	47.00	40.00	6498 9.700	15.100		16.00	115.00	65.00	48.00	6498 15.100
9.800		10.00	89.00	47.00	40.00	6498 9.800	15.200		16.00	115.00	65.00	48.00	6498 15.200
9.900		10.00	89.00	47.00	40.00	6498 9.900	15.300		16.00	115.00	65.00	48.00	6498 15.300
9.920	25/64	10.00	89.00	47.00	40.00	6498 9.920	15.400		16.00	115.00	65.00	48.00	6498 15.400
10.000		10.00	89.00	47.00	40.00	6498 10.000	15.480	39/64	16.00	115.00	65.00	48.00	6498 15.480
10.100		12.00	102.00	55.00	45.00	6498 10.100	15.500		16.00	115.00	65.00	48.00	6498 15.500
10.200		12.00	102.00	55.00	45.00	6498 10.200	15.550		16.00	115.00	65.00	48.00	6498 15.550
10.300		12.00	102.00	55.00	45.00	6498 10.300	15.600		16.00	115.00	65.00	48.00	6498 15.600
10.320	13/32	12.00	102.00	55.00	45.00	6498 10.320	15.700		16.00	115.00	65.00	48.00	6498 15.700
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10.600		12.00	102.00	55.00	45.00	6498 10.600	15.900		16.00	115.00	65.00	48.00	6498 15.900
10.700		12.00	102.00	55.00	45.00	6498 10.700	16.000		16.00	115.00	65.00	48.00	6498 16.000
10.720	27/64	12.00	102.00	55.00	45.00	6498 10.720	16.270	41/64	18.00	123.00	73.00	48.00	6498 16.270
10.800		12.00	102.00	55.00	45.00	6498 10.800	16.300		18.00	123.00	73.00	48.00	6498 16.300
10.900		12.00	102.00	55.00	45.00	6498 10.900	16.500		18.00	123.00	73.00	48.00	6498 16.500
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11.400		12.00	102.00	55.00	45.00	6498 11.400	17.460	11/16	18.00	123.00	73.00	48.00	6498 17.460
11.500		12.00	102.00	55.00	45.00	6498 11.500	17.500		18.00	123.00	73.00	48.00	6498 17.500
11.510	29/64	12.00	102.00	55.00	45.00	6498 11.510	17.550		18.00	123.00	73.00	48.00	6498 17.550
11.550		12.00	102.00	55.00	45.00	6498 11.550	17.700		18.00	123.00	73.00	48.00	6498 17.700
11.600		12.00	102.00	55.00	45.00	6498 11.600	17.860	45/64	18.00	123.00	73.00	48.00	6498 17.860
11.700		12.00	102.00	55.00	45.00	6498 11.700	18.000		18.00	123.00	73.00	48.00	6498 18.000
11.800		12.00	102.00	55.00	45.00	6498 11.800	18.260	23/32	20.00	131.00	79.00	50.00	6498 18.260
11.900		12.00	102.00	55.00	45.00	6498 11.900	18.500		20.00	131.00	79.00	50.00	6498 18.500
11.910	15/32	12.00	102.00	55.00	45.00	6498 11.910	18.700		20.00	131.00	79.00	50.00	6498 18.700
12.000		12.00	102.00	55.00	45.00	6498 12.000	18.900		20.00	131.00	79.00	50.00	6498 18.900
12.100		14.00	107.00	60.00	45.00	6498 12.100	19.000		20.00	131.00	79.00	50.00	6498 19.000
12.200		14.00	107.00	60.00	45.00	6498 12.200	19.050	3/4	20.00	131.00	79.00	50.00	6498 19.050
12.300	31/64	14.00	107.00	60.00	45.00	6498 12.300	19.250		20.00	131.00	79.00	50.00	6498 19.250
12.400		14.00	107.00	60.00	45.00	6498 12.400	19.300		20.00	131.00	79.00	50.00	6498 19.300
12.500		14.00	107.00	60.00	45.00	6498 12.500	19.450	49/64	20.00	131.00	79.00	50.00	6498 19.450
12.600		14.00	107.00	60.00	45.00	6498 12.600	19.500		20.00	131.00	79.00	50.00	6498 19.500
12.700	1/2	14.00	107.00	60.00	45.00	6498 12.700	19.550		20.00	131.00	79.00	50.00	6498 19.550
12.800		14.00	107.00	60.00	45.00	6498 12.800	19.700		20.00	131.00	79.00	50.00	6498 19.700
12.900		14.00	107.00	60.00	45.00	6498 12.900	19.800		20.00	131.00	79.00	50.00	6498 19.800
13.000		14.00	107.00	60.00	45.00	6498 13.000	19.840	25/32	20.00	131.00	79.00	50.00	6498 19.840
13.100	33/64	14.00	107.00	60.00	45.00	6498 13.100	20.000		20.00	131.00	79.00	50.00	6498 20.000
13.200		14.00	107.00	60.00	45.00	6498 13.200							
13.300		14.00	107.00	60.00	45.00	6498 13.300							
13.400		14.00	107.00	60.00	45.00	6498 13.400							
13.490	17/32	14.00	107.00	60.00	45.00	6498 13.490							
13.500		14.00	107.00	60.00	45.00	6498 13.500							
13.600		14.00	107.00	60.00	45.00	6498 13.600							
13.700		14.00	107.00	60.00	45.00	6498 13.700							
13.800		14.00	107.00	60.00	45.00	6498 13.800							
13.890	35/64	14.00	107.00	60.00	45.00	6498 13.890							
13.900		14.00	107.00	60.00	45.00	6498 13.900							
14.000		14.00	107.00	60.00	45.00	6498 14.000							

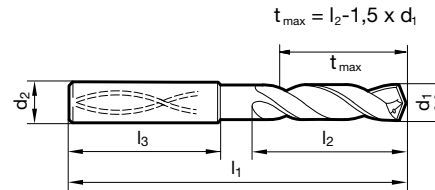


Ratio drills with coolant ducts

Tool material **Solid carbide**Surface **F**

Shank form HA

- P** ● web thinning $\geq \varnothing 3.000$ • relieved cone • main cutting edge form concave • optimised cutting geometry • maximum performance • double margin
- M** ○
- K** ○
- N** structural and case hardened steels • free-cutting steels, heat-treatable steels • steels (alloyed/unalloyed) up to 1400 N/mm²
- S** ○
- H** ○

Article no. **5498**

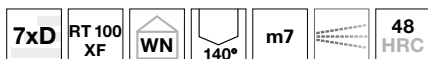
d1	d2	l1	l2	l3	Order no.	d1	d2	l1	l2	l3	Order no.		
mm	inch	mm	mm	mm		mm	inch	mm	mm	mm			
3.000		6.00	66.00	28.00	36.00	5498 3.000	5.900		6.00	82.00	44.00	36.00	5498 5.900
3.100		6.00	66.00	28.00	36.00	5498 3.100	5.950	15/64	6.00	82.00	44.00	36.00	5498 5.950
3.170	1/8	6.00	66.00	28.00	36.00	5498 3.170	6.000		6.00	82.00	44.00	36.00	5498 6.000
3.200		6.00	66.00	28.00	36.00	5498 3.200	6.100		8.00	91.00	53.00	36.00	5498 6.100
3.250		6.00	66.00	28.00	36.00	5498 3.250	6.200		8.00	91.00	53.00	36.00	5498 6.200
3.300		6.00	66.00	28.00	36.00	5498 3.300	6.300		8.00	91.00	53.00	36.00	5498 6.300
3.400		6.00	66.00	28.00	36.00	5498 3.400	6.350	1/4	8.00	91.00	53.00	36.00	5498 6.350
3.500		6.00	66.00	28.00	36.00	5498 3.500	6.400		8.00	91.00	53.00	36.00	5498 6.400
3.570	9/64	6.00	66.00	28.00	36.00	5498 3.570	6.500		8.00	91.00	53.00	36.00	5498 6.500
3.600		6.00	66.00	28.00	36.00	5498 3.600	6.530		8.00	91.00	53.00	36.00	5498 6.530
3.700		6.00	66.00	28.00	36.00	5498 3.700	6.550		8.00	91.00	53.00	36.00	5498 6.550
3.800		6.00	74.00	36.00	36.00	5498 3.800	6.600		8.00	91.00	53.00	36.00	5498 6.600
3.900		6.00	74.00	36.00	36.00	5498 3.900	6.700		8.00	91.00	53.00	36.00	5498 6.700
3.970	5/32	6.00	74.00	36.00	36.00	5498 3.970	6.750	17/64	8.00	91.00	53.00	36.00	5498 6.750
4.000		6.00	74.00	36.00	36.00	5498 4.000	6.800		8.00	91.00	53.00	36.00	5498 6.800
4.040		6.00	74.00	36.00	36.00	5498 4.040	6.900		8.00	91.00	53.00	36.00	5498 6.900
4.100		6.00	74.00	36.00	36.00	5498 4.100	7.000		8.00	91.00	53.00	36.00	5498 7.000
4.200		6.00	74.00	36.00	36.00	5498 4.200	7.100		8.00	91.00	53.00	36.00	5498 7.100
4.300		6.00	74.00	36.00	36.00	5498 4.300	7.140	9/32	8.00	91.00	53.00	36.00	5498 7.140
4.370	11/64	6.00	74.00	36.00	36.00	5498 4.370	7.200		8.00	91.00	53.00	36.00	5498 7.200
4.400		6.00	74.00	36.00	36.00	5498 4.400	7.300		8.00	91.00	53.00	36.00	5498 7.300
4.500		6.00	74.00	36.00	36.00	5498 4.500	7.400		8.00	91.00	53.00	36.00	5498 7.400
4.600		6.00	74.00	36.00	36.00	5498 4.600	7.500		8.00	91.00	53.00	36.00	5498 7.500
4.650		6.00	74.00	36.00	36.00	5498 4.650	7.540	19/64	8.00	91.00	53.00	36.00	5498 7.540
4.700		6.00	74.00	36.00	36.00	5498 4.700	7.550		8.00	91.00	53.00	36.00	5498 7.550
4.760	3/16	6.00	82.00	44.00	36.00	5498 4.760	7.600		8.00	91.00	53.00	36.00	5498 7.600
4.800		6.00	82.00	44.00	36.00	5498 4.800	7.650		8.00	91.00	53.00	36.00	5498 7.650
4.900		6.00	82.00	44.00	36.00	5498 4.900	7.700		8.00	91.00	53.00	36.00	5498 7.700
5.000		6.00	82.00	44.00	36.00	5498 5.000	7.800		8.00	91.00	53.00	36.00	5498 7.800
5.100		6.00	82.00	44.00	36.00	5498 5.100	7.900		8.00	91.00	53.00	36.00	5498 7.900
5.110		6.00	82.00	44.00	36.00	5498 5.110	7.940	5/16	8.00	91.00	53.00	36.00	5498 7.940
5.160	13/64	6.00	82.00	44.00	36.00	5498 5.160	8.000		8.00	91.00	53.00	36.00	5498 8.000
5.200		6.00	82.00	44.00	36.00	5498 5.200	8.100		10.00	103.00	61.00	40.00	5498 8.100
5.300		6.00	82.00	44.00	36.00	5498 5.300	8.200		10.00	103.00	61.00	40.00	5498 8.200
5.400		6.00	82.00	44.00	36.00	5498 5.400	8.300		10.00	103.00	61.00	40.00	5498 8.300
5.410		6.00	82.00	44.00	36.00	5498 5.410	8.330	21/64	10.00	103.00	61.00	40.00	5498 8.330
5.500		6.00	82.00	44.00	36.00	5498 5.500	8.400		10.00	103.00	61.00	40.00	5498 8.400
5.550		6.00	82.00	44.00	36.00	5498 5.550	8.500		10.00	103.00	61.00	40.00	5498 8.500
5.560	7/32	6.00	82.00	44.00	36.00	5498 5.560	8.600		10.00	103.00	61.00	40.00	5498 8.600
5.600		6.00	82.00	44.00	36.00	5498 5.600	8.700		10.00	103.00	61.00	40.00	5498 8.700
5.700		6.00	82.00	44.00	36.00	5498 5.700	8.730	11/32	10.00	103.00	61.00	40.00	5498 8.730
5.800		6.00	82.00	44.00	36.00	5498 5.800	8.800		10.00	103.00	61.00	40.00	5498 8.800



d1		d2	l1	l2	l3	Order no.	d1		d2	l1	l2	l3	Order no.
mm	inch	mm	mm	mm	mm		mm	inch	mm	mm	mm	mm	
8.900		10.00	103.00	61.00	40.00	5498 8.900	14.100		16.00	133.00	83.00	48.00	5498 14.100
9.000		10.00	103.00	61.00	40.00	5498 9.000	14.200		16.00	133.00	83.00	48.00	5498 14.200
9.100		10.00	103.00	61.00	40.00	5498 9.100	14.290	9/16	16.00	133.00	83.00	48.00	5498 14.290
9.130	23/64	10.00	103.00	61.00	40.00	5498 9.130	14.300		16.00	133.00	83.00	48.00	5498 14.300
9.200		10.00	103.00	61.00	40.00	5498 9.200	14.400		16.00	133.00	83.00	48.00	5498 14.400
9.250		10.00	103.00	61.00	40.00	5498 9.250	14.500		16.00	133.00	83.00	48.00	5498 14.500
9.300		10.00	103.00	61.00	40.00	5498 9.300	14.600		16.00	133.00	83.00	48.00	5498 14.600
9.340		10.00	103.00	61.00	40.00	5498 9.340	14.680	37/64	16.00	133.00	83.00	48.00	5498 14.680
9.400		10.00	103.00	61.00	40.00	5498 9.400	14.700		16.00	133.00	83.00	48.00	5498 14.700
9.500		10.00	103.00	61.00	40.00	5498 9.500	14.800		16.00	133.00	83.00	48.00	5498 14.800
9.520	3/8	10.00	103.00	61.00	40.00	5498 9.520	14.900		16.00	133.00	83.00	48.00	5498 14.900
9.550		10.00	103.00	61.00	40.00	5498 9.550	15.000		16.00	133.00	83.00	48.00	5498 15.000
9.600		10.00	103.00	61.00	40.00	5498 9.600	15.080	19/32	16.00	133.00	83.00	48.00	5498 15.080
9.700		10.00	103.00	61.00	40.00	5498 9.700	15.100		16.00	133.00	83.00	48.00	5498 15.100
9.800		10.00	103.00	61.00	40.00	5498 9.800	15.200		16.00	133.00	83.00	48.00	5498 15.200
9.900		10.00	103.00	61.00	40.00	5498 9.900	15.300		16.00	133.00	83.00	48.00	5498 15.300
9.920	25/64	10.00	103.00	61.00	40.00	5498 9.920	15.400		16.00	133.00	83.00	48.00	5498 15.400
10.000		10.00	103.00	61.00	40.00	5498 10.000	15.480	39/64	16.00	133.00	83.00	48.00	5498 15.480
10.100		12.00	118.00	71.00	45.00	5498 10.100	15.500		16.00	133.00	83.00	48.00	5498 15.500
10.200		12.00	118.00	71.00	45.00	5498 10.200	15.550		16.00	133.00	83.00	48.00	5498 15.550
10.300		12.00	118.00	71.00	45.00	5498 10.300	15.600		16.00	133.00	83.00	48.00	5498 15.600
10.320	13/32	12.00	118.00	71.00	45.00	5498 10.320	15.700		16.00	133.00	83.00	48.00	5498 15.700
10.400		12.00	118.00	71.00	45.00	5498 10.400	15.800		16.00	133.00	83.00	48.00	5498 15.800
10.500		12.00	118.00	71.00	45.00	5498 10.500	15.870	5/8	16.00	133.00	83.00	48.00	5498 15.870
10.600		12.00	118.00	71.00	45.00	5498 10.600	15.900		16.00	133.00	83.00	48.00	5498 15.900
10.700		12.00	118.00	71.00	45.00	5498 10.700	16.000		16.00	133.00	83.00	48.00	5498 16.000
10.720	27/64	12.00	118.00	71.00	45.00	5498 10.720	16.270	41/64	18.00	143.00	93.00	48.00	5498 16.270
10.800		12.00	118.00	71.00	45.00	5498 10.800	16.300		18.00	143.00	93.00	48.00	5498 16.300
10.900		12.00	118.00	71.00	45.00	5498 10.900	16.500		18.00	143.00	93.00	48.00	5498 16.500
11.000		12.00	118.00	71.00	45.00	5498 11.000	16.670	21/32	18.00	143.00	93.00	48.00	5498 16.670
11.100		12.00	118.00	71.00	45.00	5498 11.100	16.700		18.00	143.00	93.00	48.00	5498 16.700
11.110	7/16	12.00	118.00	71.00	45.00	5498 11.110	16.900		18.00	143.00	93.00	48.00	5498 16.900
11.200		12.00	118.00	71.00	45.00	5498 11.200	17.000		18.00	143.00	93.00	48.00	5498 17.000
11.300		12.00	118.00	71.00	45.00	5498 11.300	17.070	43/64	18.00	143.00	93.00	48.00	5498 17.070
11.400		12.00	118.00	71.00	45.00	5498 11.400	17.460	11/16	18.00	143.00	93.00	48.00	5498 17.460
11.500		12.00	118.00	71.00	45.00	5498 11.500	17.500		18.00	143.00	93.00	48.00	5498 17.500
11.510	29/64	12.00	118.00	71.00	45.00	5498 11.510	17.550		18.00	143.00	93.00	48.00	5498 17.550
11.550		12.00	118.00	71.00	45.00	5498 11.550	17.700		18.00	143.00	93.00	48.00	5498 17.700
11.600		12.00	118.00	71.00	45.00	5498 11.600	17.860	45/64	18.00	143.00	93.00	48.00	5498 17.860
11.700		12.00	118.00	71.00	45.00	5498 11.700	18.000		18.00	143.00	93.00	48.00	5498 18.000
11.800		12.00	118.00	71.00	45.00	5498 11.800	18.260	23/32	20.00	153.00	101.00	50.00	5498 18.260
11.900		12.00	118.00	71.00	45.00	5498 11.900	18.500		20.00	153.00	101.00	50.00	5498 18.500
11.910	15/32	12.00	118.00	71.00	45.00	5498 11.910	18.700		20.00	153.00	101.00	50.00	5498 18.700
12.000		12.00	118.00	71.00	45.00	5498 12.000	18.900		20.00	153.00	101.00	50.00	5498 18.900
12.100		14.00	124.00	77.00	45.00	5498 12.100	19.000		20.00	153.00	101.00	50.00	5498 19.000
12.200		14.00	124.00	77.00	45.00	5498 12.200	19.050	3/4	20.00	153.00	101.00	50.00	5498 19.050
12.300	31/64	14.00	124.00	77.00	45.00	5498 12.300	19.250		20.00	153.00	101.00	50.00	5498 19.250
12.400		14.00	124.00	77.00	45.00	5498 12.400	19.300		20.00	153.00	101.00	50.00	5498 19.300
12.500		14.00	124.00	77.00	45.00	5498 12.500	19.446		20.00	153.00	101.00	50.00	5498 19.446
12.600		14.00	124.00	77.00	45.00	5498 12.600	19.500		20.00	153.00	101.00	50.00	5498 19.500
12.700	1/2	14.00	124.00	77.00	45.00	5498 12.700	19.550		20.00	153.00	101.00	50.00	5498 19.550
12.800		14.00	124.00	77.00	45.00	5498 12.800	19.700		20.00	153.00	101.00	50.00	5498 19.700
12.900		14.00	124.00	77.00	45.00	5498 12.900	19.800		20.00	153.00	101.00	50.00	5498 19.800
13.000		14.00	124.00	77.00	45.00	5498 13.000	19.840	25/32	20.00	153.00	101.00	50.00	5498 19.840
13.100	33/64	14.00	124.00	77.00	45.00	5498 13.100	20.000		20.00	153.00	101.00	50.00	5498 20.000
13.200		14.00	124.00	77.00	45.00	5498 13.200							
13.300		14.00	124.00	77.00	45.00	5498 13.300							
13.400		14.00	124.00	77.00	45.00	5498 13.400							
13.490	17/32	14.00	124.00	77.00	45.00	5498 13.490							
13.500		14.00	124.00	77.00	45.00	5498 13.500							
13.600		14.00	124.00	77.00	45.00	5498 13.600							
13.700		14.00	124.00	77.00	45.00	5498 13.700							
13.800		14.00	124.00	77.00	45.00	5498 13.800							
13.890	35/64	14.00	124.00	77.00	45.00	5498 13.890							
13.900		14.00	124.00	77.00	45.00	5498 13.900							
14.000		14.00	124.00	77.00	45.00	5498 14.000							



Ratio drills with coolant ducts

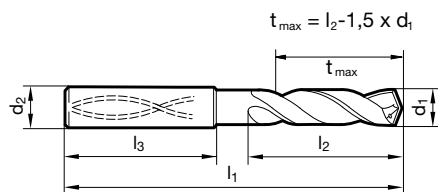


Tool material **Solid carbide**

Surface **F**

Shank form **HA**

- P** ● web thinning ≥ Ø 3.000 • relieved cone • main cutting edge form concave • optimised cutting geometry • maximum performance • double margin
- M** ○
- K** ○
- N** ● structural and case hardened steels • free-cutting steels, heat-treatable steels • steels (alloyed/unalloyed) up to 1400 N/mm²
- S** ○
- H** ○



Article no. **5499**

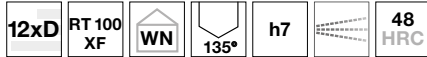
d1	d2	l1	l2	l3	Order no.	d1	d2	l1	l2	l3	Order no.		
mm	inch	mm	mm	mm		mm	inch	mm	mm	mm			
3.000		6.00	70.00	30.00	36.00	5499 3.000	5.900		6.00	97.00	57.00	36.00	5499 5.900
3.100		6.00	70.00	30.00	36.00	5499 3.100	5.950	15/64	6.00	97.00	57.00	36.00	5499 5.950
3.170	1/8	6.00	70.00	30.00	36.00	5499 3.170	6.000		6.00	97.00	57.00	36.00	5499 6.000
3.200		6.00	70.00	30.00	36.00	5499 3.200	6.100		8.00	106.00	66.00	36.00	5499 6.100
3.250		6.00	70.00	30.00	36.00	5499 3.250	6.200		8.00	106.00	66.00	36.00	5499 6.200
3.300		6.00	70.00	30.00	36.00	5499 3.300	6.300		8.00	106.00	66.00	36.00	5499 6.300
3.400		6.00	75.00	35.50	36.00	5499 3.400	6.350	1/4	8.00	106.00	66.00	36.00	5499 6.350
3.500		6.00	75.00	35.50	36.00	5499 3.500	6.400		8.00	106.00	66.00	36.00	5499 6.400
3.570	9/64	6.00	75.00	35.50	36.00	5499 3.570	6.500		8.00	106.00	66.00	36.00	5499 6.500
3.600		6.00	75.00	35.50	36.00	5499 3.600	6.530		8.00	106.00	66.00	36.00	5499 6.530
3.700		6.00	75.00	35.50	36.00	5499 3.700	6.550		8.00	106.00	66.00	36.00	5499 6.550
3.800		6.00	75.00	37.50	36.00	5499 3.800	6.600		8.00	106.00	66.00	36.00	5499 6.600
3.900		6.00	75.00	37.50	36.00	5499 3.900	6.700		8.00	106.00	66.00	36.00	5499 6.700
3.970	5/32	6.00	75.00	37.50	36.00	5499 3.970	6.750	17/64	8.00	106.00	66.00	36.00	5499 6.750
4.000		6.00	75.00	37.50	36.00	5499 4.000	6.800		8.00	106.00	66.00	36.00	5499 6.800
4.040		6.00	75.00	37.50	36.00	5499 4.040	6.900		8.00	116.00	76.00	36.00	5499 6.900
4.100		6.00	75.00	37.50	36.00	5499 4.100	7.000		8.00	116.00	76.00	36.00	5499 7.000
4.200		6.00	75.00	37.50	36.00	5499 4.200	7.100		8.00	116.00	76.00	36.00	5499 7.100
4.300		6.00	85.00	45.00	36.00	5499 4.300	7.140	9/32	8.00	116.00	76.00	36.00	5499 7.140
4.370	11/64	6.00	85.00	45.00	36.00	5499 4.370	7.200		8.00	116.00	76.00	36.00	5499 7.200
4.400		6.00	85.00	45.00	36.00	5499 4.400	7.300		8.00	116.00	76.00	36.00	5499 7.300
4.500		6.00	85.00	45.00	36.00	5499 4.500	7.400		8.00	116.00	76.00	36.00	5499 7.400
4.600		6.00	85.00	45.00	36.00	5499 4.600	7.500		8.00	116.00	76.00	36.00	5499 7.500
4.650		6.00	85.00	45.00	36.00	5499 4.650	7.540	19/64	8.00	116.00	76.00	36.00	5499 7.540
4.700		6.00	85.00	45.00	36.00	5499 4.700	7.600		8.00	116.00	76.00	36.00	5499 7.600
4.760	3/16	6.00	90.00	50.00	36.00	5499 4.760	7.700		8.00	116.00	76.00	36.00	5499 7.700
4.800		6.00	90.00	50.00	36.00	5499 4.800	7.800		8.00	116.00	76.00	36.00	5499 7.800
4.900		6.00	90.00	50.00	36.00	5499 4.900	7.900		8.00	116.00	76.00	36.00	5499 7.900
5.000		6.00	90.00	50.00	36.00	5499 5.000	7.940	5/16	8.00	116.00	76.00	36.00	5499 7.940
5.100		6.00	90.00	50.00	36.00	5499 5.100	8.000		8.00	116.00	76.00	36.00	5499 8.000
5.110		6.00	90.00	50.00	36.00	5499 5.110	8.100		10.00	131.00	87.00	40.00	5499 8.100
5.160	13/64	6.00	90.00	50.00	36.00	5499 5.160	8.200		10.00	131.00	87.00	40.00	5499 8.200
5.200		6.00	90.00	50.00	36.00	5499 5.200	8.300		10.00	131.00	87.00	40.00	5499 8.300
5.300		6.00	90.00	50.00	36.00	5499 5.300	8.330	21/64	10.00	131.00	87.00	40.00	5499 8.330
5.400		6.00	97.00	57.00	36.00	5499 5.400	8.400		10.00	131.00	87.00	40.00	5499 8.400
5.410		6.00	97.00	57.00	36.00	5499 5.410	8.500		10.00	131.00	87.00	40.00	5499 8.500
5.500		6.00	97.00	57.00	36.00	5499 5.500	8.600		10.00	131.00	87.00	40.00	5499 8.600
5.550		6.00	97.00	57.00	36.00	5499 5.550	8.700		10.00	131.00	87.00	40.00	5499 8.700
5.560	7/32	6.00	97.00	57.00	36.00	5499 5.560	8.730	11/32	10.00	131.00	87.00	40.00	5499 8.730
5.600		6.00	97.00	57.00	36.00	5499 5.600	8.800		10.00	131.00	87.00	40.00	5499 8.800
5.700		6.00	97.00	57.00	36.00	5499 5.700	8.900		10.00	131.00	87.00	40.00	5499 8.900
5.800		6.00	97.00	57.00	36.00	5499 5.800	9.000		10.00	131.00	87.00	40.00	5499 9.000



d1		d2	l1	l2	l3	Order no.	d1		d2	l1	l2	l3	Order no.
mm	inch	mm	mm	mm	mm		mm	inch	mm	mm	mm	mm	
9.100		10.00	139.00	95.00	40.00	5499 9.100	12.900		14.00	182.00	133.00	45.00	5499 12.900
9.130	23/64	10.00	139.00	95.00	40.00	5499 9.130	13.000		14.00	182.00	133.00	45.00	5499 13.000
9.200		10.00	139.00	95.00	40.00	5499 9.200	13.100	33/64	14.00	182.00	133.00	45.00	5499 13.100
9.250		10.00	139.00	95.00	40.00	5499 9.250	13.490	17/32	14.00	182.00	133.00	45.00	5499 13.490
9.300		10.00	139.00	95.00	40.00	5499 9.300	13.500		14.00	182.00	133.00	45.00	5499 13.500
9.340		10.00	139.00	95.00	40.00	5499 9.340	13.700		14.00	182.00	133.00	45.00	5499 13.700
9.400		10.00	139.00	95.00	40.00	5499 9.400	13.890	35/64	14.00	182.00	133.00	45.00	5499 13.890
9.500		10.00	139.00	95.00	40.00	5499 9.500	14.000		14.00	182.00	133.00	45.00	5499 14.000
9.520	3/8	10.00	139.00	95.00	40.00	5499 9.520	14.100		16.00	204.00	152.00	48.00	5499 14.100
9.600		10.00	139.00	95.00	40.00	5499 9.600	14.200		16.00	204.00	152.00	48.00	5499 14.200
9.700		10.00	139.00	95.00	40.00	5499 9.700	14.290	9/16	16.00	204.00	152.00	48.00	5499 14.290
9.800		10.00	139.00	95.00	40.00	5499 9.800	14.300		16.00	204.00	152.00	48.00	5499 14.300
9.900		10.00	139.00	95.00	40.00	5499 9.900	14.500		16.00	204.00	152.00	48.00	5499 14.500
9.920	25/64	10.00	139.00	95.00	40.00	5499 9.920	14.700		16.00	204.00	152.00	48.00	5499 14.700
10.000		10.00	139.00	95.00	40.00	5499 10.000	14.800		16.00	204.00	152.00	48.00	5499 14.800
10.100		12.00	155.00	106.00	45.00	5499 10.100	15.000		16.00	204.00	152.00	48.00	5499 15.000
10.200		12.00	155.00	106.00	45.00	5499 10.200	15.100		16.00	204.00	152.00	48.00	5499 15.100
10.300		12.00	155.00	106.00	45.00	5499 10.300	15.300		16.00	204.00	152.00	48.00	5499 15.300
10.320	13/32	12.00	155.00	106.00	45.00	5499 10.320	15.480	39/64	16.00	204.00	152.00	48.00	5499 15.480
10.400		12.00	155.00	106.00	45.00	5499 10.400	15.500		16.00	204.00	152.00	48.00	5499 15.500
10.500		12.00	155.00	106.00	45.00	5499 10.500	15.700		16.00	204.00	152.00	48.00	5499 15.700
10.600		12.00	155.00	106.00	45.00	5499 10.600	15.800		16.00	204.00	152.00	48.00	5499 15.800
10.700		12.00	155.00	106.00	45.00	5499 10.700	15.870	5/8	16.00	204.00	152.00	48.00	5499 15.870
10.720	27/64	12.00	155.00	106.00	45.00	5499 10.720	16.000		16.00	204.00	152.00	48.00	5499 16.000
10.800		12.00	155.00	106.00	45.00	5499 10.800	16.300		18.00	223.00	171.00	48.00	5499 16.300
10.900		12.00	155.00	106.00	45.00	5499 10.900	16.500		18.00	223.00	171.00	48.00	5499 16.500
11.000		12.00	155.00	106.00	45.00	5499 11.000	16.700		18.00	223.00	171.00	48.00	5499 16.700
11.100		12.00	163.00	114.00	45.00	5499 11.100	16.900		18.00	223.00	171.00	48.00	5499 16.900
11.110	7/16	12.00	163.00	114.00	45.00	5499 11.110	17.000		18.00	223.00	171.00	48.00	5499 17.000
11.200		12.00	163.00	114.00	45.00	5499 11.200	17.500		18.00	223.00	171.00	48.00	5499 17.500
11.300		12.00	163.00	114.00	45.00	5499 11.300	17.700		18.00	223.00	171.00	48.00	5499 17.700
11.400		12.00	163.00	114.00	45.00	5499 11.400	18.000		18.00	223.00	171.00	48.00	5499 18.000
11.500		12.00	163.00	114.00	45.00	5499 11.500	18.500		20.00	244.00	190.00	50.00	5499 18.500
11.510	29/64	12.00	163.00	114.00	45.00	5499 11.510	18.900		20.00	244.00	190.00	50.00	5499 18.900
11.600		12.00	163.00	114.00	45.00	5499 11.600	19.000		20.00	244.00	190.00	50.00	5499 19.000
11.700		12.00	163.00	114.00	45.00	5499 11.700	19.050	3/4	20.00	244.00	190.00	50.00	5499 19.050
11.800		12.00	163.00	114.00	45.00	5499 11.800	19.500		20.00	244.00	190.00	50.00	5499 19.500
11.900		12.00	163.00	114.00	45.00	5499 11.900	19.800		20.00	244.00	190.00	50.00	5499 19.800
11.910	15/32	12.00	163.00	114.00	45.00	5499 11.910	20.000		20.00	244.00	190.00	50.00	5499 20.000
12.000		12.00	163.00	114.00	45.00	5499 12.000							
12.100		14.00	182.00	133.00	45.00	5499 12.100							
12.200		14.00	182.00	133.00	45.00	5499 12.200							
12.300	31/64	14.00	182.00	133.00	45.00	5499 12.300							
12.400		14.00	182.00	133.00	45.00	5499 12.400							
12.500		14.00	182.00	133.00	45.00	5499 12.500							
12.600		14.00	182.00	133.00	45.00	5499 12.600							
12.700	1/2	14.00	182.00	133.00	45.00	5499 12.700							
12.800		14.00	182.00	133.00	45.00	5499 12.800							



Ratio drills with coolant ducts



P ● relieved cone • main cutting edge form concave • optimised cutting geometry • maximum performance • double margin

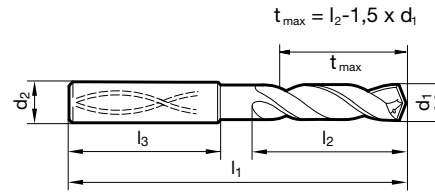
M ○

K ○

N structural and case hardened steels • free-cutting steels, heat-treatable steels • steels (alloyed/unalloyed) up to 1400 N/mm²

S ○

H ○

Tool material **Solid carbide**Surface **F**Shank form **HA****NEW**Article no. **6499**

d1	d2	l1	l2	l3	Order no.	d1	d2	l1	l2	l3	Order no.		
mm	inch	mm	mm	mm		mm	inch	mm	mm	mm			
3.000		6.00	95.00	55.00	36.00	6499 3.000	5.900		6.00	130.00	90.00	36.00	6499 5.900
3.100		6.00	95.00	55.00	36.00	6499 3.100	5.950	15/64	6.00	130.00	90.00	36.00	6499 5.950
3.170	1/8	6.00	95.00	55.00	36.00	6499 3.170	6.000		6.00	130.00	90.00	36.00	6499 6.000
3.200		6.00	95.00	55.00	36.00	6499 3.200	6.100		8.00	158.00	118.00	36.00	6499 6.100
3.250		6.00	95.00	55.00	36.00	6499 3.250	6.200		8.00	158.00	118.00	36.00	6499 6.200
3.300		6.00	95.00	55.00	36.00	6499 3.300	6.300		8.00	158.00	118.00	36.00	6499 6.300
3.400		6.00	95.00	55.00	36.00	6499 3.400	6.350	1/4	8.00	158.00	118.00	36.00	6499 6.350
3.500		6.00	102.00	62.00	36.00	6499 3.500	6.400		8.00	158.00	118.00	36.00	6499 6.400
3.570	9/64	6.00	102.00	62.00	36.00	6499 3.570	6.500		8.00	158.00	118.00	36.00	6499 6.500
3.600		6.00	102.00	62.00	36.00	6499 3.600	6.530		8.00	158.00	118.00	36.00	6499 6.530
3.700		6.00	102.00	62.00	36.00	6499 3.700	6.550		8.00	158.00	118.00	36.00	6499 6.550
3.800		6.00	102.00	62.00	36.00	6499 3.800	6.600		8.00	158.00	118.00	36.00	6499 6.600
3.900		6.00	102.00	62.00	36.00	6499 3.900	6.700		8.00	158.00	118.00	36.00	6499 6.700
3.970	5/32	6.00	102.00	62.00	36.00	6499 3.970	6.750	17/64	8.00	158.00	118.00	36.00	6499 6.750
4.000		6.00	102.00	62.00	36.00	6499 4.000	6.800		8.00	158.00	118.00	36.00	6499 6.800
4.040		6.00	109.00	69.00	36.00	6499 4.040	6.900		8.00	158.00	118.00	36.00	6499 6.900
4.100		6.00	109.00	69.00	36.00	6499 4.100	7.000		8.00	158.00	118.00	36.00	6499 7.000
4.200		6.00	109.00	69.00	36.00	6499 4.200	7.100		8.00	158.00	118.00	36.00	6499 7.100
4.300		6.00	109.00	69.00	36.00	6499 4.300	7.140	9/32	8.00	158.00	118.00	36.00	6499 7.140
4.370	11/64	6.00	109.00	69.00	36.00	6499 4.370	7.200		8.00	158.00	118.00	36.00	6499 7.200
4.400		6.00	109.00	69.00	36.00	6499 4.400	7.300		8.00	158.00	118.00	36.00	6499 7.300
4.500		6.00	116.00	76.00	36.00	6499 4.500	7.400		8.00	158.00	118.00	36.00	6499 7.400
4.600		6.00	116.00	76.00	36.00	6499 4.600	7.500		8.00	158.00	118.00	36.00	6499 7.500
4.650		6.00	116.00	76.00	36.00	6499 4.650	7.540	19/64	8.00	158.00	118.00	36.00	6499 7.540
4.700		6.00	116.00	76.00	36.00	6499 4.700	7.550		8.00	158.00	118.00	36.00	6499 7.550
4.760	3/16	6.00	116.00	76.00	36.00	6499 4.760	7.600		8.00	158.00	118.00	36.00	6499 7.600
4.800		6.00	116.00	76.00	36.00	6499 4.800	7.650		8.00	158.00	118.00	36.00	6499 7.650
4.900		6.00	116.00	76.00	36.00	6499 4.900	7.700		8.00	158.00	118.00	36.00	6499 7.700
5.000		6.00	116.00	76.00	36.00	6499 5.000	7.800		8.00	158.00	118.00	36.00	6499 7.800
5.100		6.00	123.00	83.00	36.00	6499 5.100	7.900		8.00	158.00	118.00	36.00	6499 7.900
5.110		6.00	123.00	83.00	36.00	6499 5.110	7.940	5/16	8.00	158.00	118.00	36.00	6499 7.940
5.160	13/64	6.00	123.00	83.00	36.00	6499 5.160	8.000		8.00	158.00	118.00	36.00	6499 8.000
5.200		6.00	123.00	83.00	36.00	6499 5.200	8.100		10.00	190.00	146.00	40.00	6499 8.100
5.300		6.00	123.00	83.00	36.00	6499 5.300	8.200		10.00	190.00	146.00	40.00	6499 8.200
5.400		6.00	123.00	83.00	36.00	6499 5.400	8.300		10.00	190.00	146.00	40.00	6499 8.300
5.410		6.00	123.00	83.00	36.00	6499 5.410	8.330	21/64	10.00	190.00	146.00	40.00	6499 8.330
5.500		6.00	130.00	90.00	36.00	6499 5.500	8.400		10.00	190.00	146.00	40.00	6499 8.400
5.550		6.00	130.00	90.00	36.00	6499 5.550	8.500		10.00	190.00	146.00	40.00	6499 8.500
5.560	7/32	6.00	130.00	90.00	36.00	6499 5.560	8.600		10.00	190.00	146.00	40.00	6499 8.600
5.600		6.00	130.00	90.00	36.00	6499 5.600	8.700		10.00	190.00	146.00	40.00	6499 8.700
5.700		6.00	130.00	90.00	36.00	6499 5.700	8.730	11/32	10.00	190.00	146.00	40.00	6499 8.730
5.800		6.00	130.00	90.00	36.00	6499 5.800	8.800		10.00	190.00	146.00	40.00	6499 8.800



GÜHRING NAVIGATOR

Tools with bold feed column no. are preferred choice.

To select the optimal tool and the recommended machining parameters for your application, please also use the electronic version of the GühringNavigator on the internet: www.guehring.com.

Article no.
Standard/DIN
Tool material
Carbide grade
Type
Surface finish
Coolant
Std. range page

Drill Ø mm	Feed column no.								
	1	2	3	4	5	6	7	8	9
	f (mm/rev.)								
0.50	0.004	0.006	0.007	0.008	0.010	0.012	0.014	0.016	0.019
1.00	0.006	0.008	0.012	0.014	0.016	0.018	0.020	0.023	0.025
2.00	0.020	0.025	0.032	0.040	0.050	0.063	0.080	0.100	0.125
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
31.50	0.160	0.200	0.250	0.315	0.400	0.500	0.630	0.800	1.000
40.00	0.200	0.250	0.315	0.400	0.500	0.630	0.800	1.000	1.250
50.00	0.250	0.310	0.400	0.500	0.630	0.800	1.000	1.250	1.250
63.00	0.315	0.400	0.500	0.630	0.800	1.000	1.250	1.600	1.600
80.00	0.400	0.500	0.630	0.800	1.000	1.250	1.600	1.600	2.000

Coolant:

- Air
● Neat oil
⊙ Soluble oil

Cutting direction:

- Ⓜ right-hand cutting
Ⓛ left-hand cutting

Material group	Material examples Figures in bold = material no. to DIN EN 10 027	Tensile strength 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 hard. 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	●
Hardened steels	-		≤48 HRC ≤66 HRC	●
Stainless steels, sulphured austenitic martensitic	1.4005 X12CrS13, 1.4104 X14CrMoS17, 1.4105 X6CrMoS17, 1.4305 X8CrNiS18-9 1.4301 X5CrNi18-10 (V2A), 1.4541 X6CrNiTi18-10, 1.4571 X6CrNiMoTi 17-12-2 (V4A) 1.4057 X20CrNi172 (X17CrNi16-2), 1.4122 X39CrMo17-1, 1.4521 X2CrMoTi18-2	≤900 ≤1100 ≤1500		●
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	○
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		○
Special alloys	Nimonic, Inconel, Monel, Hastelloy	≤2000		●
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	≤400		○
Al wrought alloys	3.0615 AlMgSiPb, 3.1325 AlCuMg1, 3.3245 AlMg3Si, 3.4365 AlZnMgCu1,5	≤650		○
Al cast alloys ≤ 10 % Si ≤ 24 % Si	3.2131 G-AlSi5Cu1, 3.2153 G-AlSi7Cu3, 3.2573 G-AlSi9 3.2581 G-AlSi12, 3.2583 G-AlSi12Cu, - G-AlSi12CuNiMg	≤600 ≤600		○
Magnesium alloys	3.5200 MgMn2, 3.5812.05 G-MgAl8Zn1, 3.5612.05 G-MgAl6Zn1	≤400		○
Copper, low-alloyed	2.0070 SE-Cu, 2.1020 CuSn6, 2.1096 G-CuSn5ZnPb	≤500		○
Brass, short-chipping long-chipping	2.0380 CuZn39Pb2, 2.0401 CuZn39Pb3, 2.0410 CuZn43Pb2 2.0250 CuZn20, 2.0280 CuZn33, 2.0332 CuZn37Pb0,5	≤600 ≤600		○
Bronze, short-chipping	2.1090 CuSn7ZnPb, 2.1170 CuPb5Sn5, 2.1176 CuPb10Sn 2.0790 CuNi18Zn19Pb	≤600 ≤850		○
Bronze, long-chipping	2.0916 CuAl5, 2.0960 CuAl9Mn, 2.1050 CuSn10 2.0980 CuAl11Ni, 2.1247 CuBe2	≤850 ≤1000		○
Duroplastics	Epoxy resin, Resopal, Pertinax, Moltopren	≤150		○
Thermoplastics	Plexiglass, Hostalen, Novodur, Makralon	≤100		○
Kevlar	Kevlar	≤1000		○
Glass, carbon concentr. plastics	GFK/CFK	≤1000		○



≤3xD drilling depth

6498
6537K
Solid carbide
K/P
RT 100 XF
F
axial
6



≤5xD drilling depth

5498
6537L
Solid carbide
K/P
RT 100 XF
F
axial
8



≤7xD drilling depth

5499
WN
Solid carbide
K/P
RT100 XF
F
axial
10



≤12xD drilling depth

6499
WN
Solid carbide
K/P
RT100 XF
F
axial
12



V _c m/min	Feed col. no.
200	8
200	7
200	8
200	8
180	8
160	8
130	8
120	8
120	7
180	8
120	8
110	7
110	7
100	5
90	7
65	6
60	5
60	5
55	3
80	5
60	5
180	9
160	9
140	9
140	8
140	8
140	8
80	7
80	7
30	4
40	4
35	3

V _c m/min	Feed col. no.
200	8
200	7
200	8
200	8
180	8
160	8
130	8
120	8
120	7
180	8
120	8
110	7
110	7
100	5
90	7
65	6
60	5
60	5
55	3
80	5
60	5
180	9
160	9
140	9
140	8
140	8
140	8
80	7
80	7
30	4
40	4
35	3

V _c m/min	Feed col. no.
180	8
180	7
180	8
180	8
160	8
140	8
120	8
110	8
110	7
160	8
110	8
100	7
100	7
90	5
80	7
60	6
55	5
55	5
45	3
70	5
50	5
165	9
145	9
130	9
130	8
130	8
130	8
70	7
70	7
25	4
35	4
30	3

V _c m/min	Feed col. no.
180	8
180	7
180	8
180	8
160	8
140	8
120	8
110	8
110	7
160	8
110	8
100	7
100	7
90	5
80	7
60	6
55	5
55	5
45	3
70	5
50	5
165	9
145	9
130	9
130	8
130	8
130	8
70	7
70	7
25	4
35	4
30	3

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