

GUHRING



RT 100 S

- ▶ for the machining of steel materials
 - ▶ high cutting values and tool life
 - ▶ minimum machining times and consistently good hole quality
-

RT 100 S





STEEL MACHINING

P



Strong in steel

RT 100

RT 100 S was especially developed for the complex **machining of steel materials**.

It scores points thanks to high cutting values and consistently good hole quality. An especially stable and accurate cutting edge is produced thanks to the **special micro-geometry**.

The extremely **smooth surface finish** of the RT 100 S web thinning and flute profile reduces the friction between drill and chip. The machining temperature is reduced and chip evacuation improved. Cutting forces are reduced. These tool features result in **maximum hole quality** and **tool life**.



S

The ideal tool for application in:

- ▶ structural and free-cutting steels
- ▶ alloyed and unalloyed heat-treatable steels
- ▶ alloyed and unalloyed case hardened steels
- ▶ tool steels and high speed steels

Maximum performance thanks to maximum tool quality:

- ▶ long and consistent tool life minimises tooling costs and reduces machine down-times
- ▶ optimal component quality
- ▶ high cutting parameters ensure short machining times as well as a reduction in "cost per part"

RT 10

Head-coating

- ▶ wear-resistant head-coating on TiAlN basis

Polished flute with maximum surface finish quality

- ▶ optimal chip evacuation without chip congestion/chip blockage
- ▶ reduction in process forces thanks to reduction of friction between chip and tool

Carbide

- ▶ own carbide production
- ▶ robust and wear-resistant with high toughness
- ▶ low tendency to crumble even under difficult machining conditions

HA-shank to DIN6535

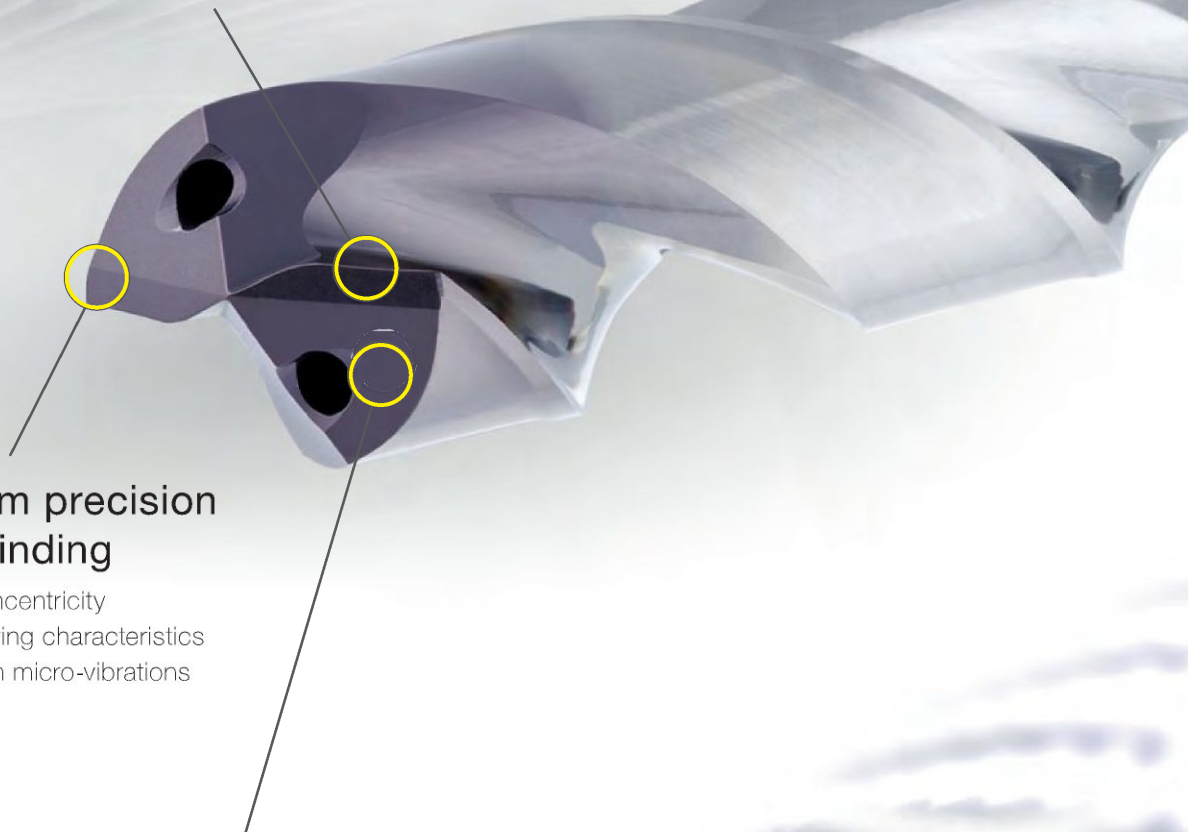
Tool clamping in Guhring's GM300 hydraulic or shrink fit chucks:

- ▶ optimal concentricity
- ▶ maximum rigidity
- ▶ minimum tool runout
- ▶ reliable tool clamping

Optimised cutting edge preparation

Stable and simultaneously cutting friendly cutting edge geometry combined with maximum surface finish quality in the cutting edge area:

- ▶ increased tool life
- ▶ counteracting the development of micro-crumbling and built-up edges
- ▶ reduction in cutting forces and process temperatures
- ▶ light cut thanks to improved material penetration characteristics



Maximum precision when grinding

- ▶ optimal concentricity
- ▶ best centering characteristics
- ▶ reduction in micro-vibrations

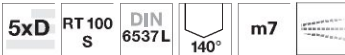
Geometry

Point geometry designed as facet point grind with straight cutting edge:

- ▶ robust cutting edge form with additional corner protection
- ▶ optimal spotting characteristics
- ▶ short chip fracture



Ratio drills with oil feed



P • facet point grinding • main cutting edge form straight • optimised cutting geometry • maximum performance

M ○

K ○

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

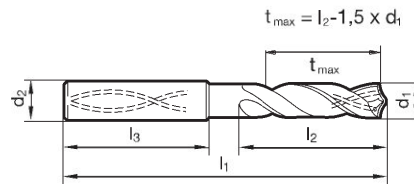
S ○

H ○

Tool material **Solid carbide**

Surface **F**

Shank form **HA**



Article no. **5759**

Discount group **121**

Cutting direction **(R)**

d1		d2	l1	l2	l3	Availability
mm	inch	mm	mm	mm	mm	
3.000		6.00	66.00	28.00	36.00	●
3.100		6.00	66.00	28.00	36.00	●
3.170	1/8	6.00	66.00	28.00	36.00	●
3.200		6.00	66.00	28.00	36.00	●
3.250		6.00	66.00	28.00	36.00	●
3.300		6.00	66.00	28.00	36.00	●
3.400		6.00	66.00	28.00	36.00	●
3.500		6.00	66.00	28.00	36.00	●
3.570	9/64	6.00	66.00	28.00	36.00	●
3.600		6.00	66.00	28.00	36.00	●
3.700		6.00	66.00	28.00	36.00	●
3.800		6.00	74.00	36.00	36.00	●
3.900		6.00	74.00	36.00	36.00	●
3.970	5/32	6.00	74.00	36.00	36.00	●
4.000		6.00	74.00	36.00	36.00	●
4.040		6.00	74.00	36.00	36.00	●
4.100		6.00	74.00	36.00	36.00	●
4.200		6.00	74.00	36.00	36.00	●
4.300		6.00	74.00	36.00	36.00	●
4.370	11/64	6.00	74.00	36.00	36.00	●
4.400		6.00	74.00	36.00	36.00	●
4.500		6.00	74.00	36.00	36.00	●
4.600		6.00	74.00	36.00	36.00	●
4.650		6.00	74.00	36.00	36.00	●
4.700		6.00	74.00	36.00	36.00	●
4.760	3/16	6.00	82.00	44.00	36.00	●
4.800		6.00	82.00	44.00	36.00	●
4.900		6.00	82.00	44.00	36.00	●
5.000		6.00	82.00	44.00	36.00	●
5.100		6.00	82.00	44.00	36.00	●
5.110		6.00	82.00	44.00	36.00	●
5.160	13/64	6.00	82.00	44.00	36.00	●
5.200		6.00	82.00	44.00	36.00	●
5.300		6.00	82.00	44.00	36.00	●
5.400		6.00	82.00	44.00	36.00	●
5.410		6.00	82.00	44.00	36.00	●



Article no.

5759

Discount group

121

Cutting direction



d1		d2	l1	l2	l3	Availability
mm	inch	mm	mm	mm	mm	
5.500	7/32	6.00	82.00	44.00	36.00	●
5.550		6.00	82.00	44.00	36.00	●
5.560		6.00	82.00	44.00	36.00	●
5.600		6.00	82.00	44.00	36.00	●
5.650		6.00	82.00	44.00	36.00	●
5.700		6.00	82.00	44.00	36.00	●
5.800	15/64	6.00	82.00	44.00	36.00	●
5.900		6.00	82.00	44.00	36.00	●
5.950		6.00	82.00	44.00	36.00	●
6.000		6.00	82.00	44.00	36.00	●
6.100		8.00	91.00	53.00	36.00	●
6.200		8.00	91.00	53.00	36.00	●
6.300	1/4	8.00	91.00	53.00	36.00	●
6.350		8.00	91.00	53.00	36.00	●
6.400		8.00	91.00	53.00	36.00	●
6.500		8.00	91.00	53.00	36.00	●
6.530		8.00	91.00	53.00	36.00	●
6.600		8.00	91.00	53.00	36.00	●
6.700	17/64	8.00	91.00	53.00	36.00	●
6.750		8.00	91.00	53.00	36.00	●
6.800		8.00	91.00	53.00	36.00	●
6.900		8.00	91.00	53.00	36.00	●
7.000		8.00	91.00	53.00	36.00	●
7.100		8.00	91.00	53.00	36.00	●
7.140	9/32	8.00	91.00	53.00	36.00	●
7.200		8.00	91.00	53.00	36.00	●
7.300		8.00	91.00	53.00	36.00	●
7.400		8.00	91.00	53.00	36.00	●
7.500		8.00	91.00	53.00	36.00	●
7.540		8.00	91.00	53.00	36.00	●
7.550	19/64	8.00	91.00	53.00	36.00	●
7.600		8.00	91.00	53.00	36.00	●
7.650		8.00	91.00	53.00	36.00	●
7.700		8.00	91.00	53.00	36.00	●
7.800		8.00	91.00	53.00	36.00	●
7.900		8.00	91.00	53.00	36.00	●
7.940	5/16	8.00	91.00	53.00	36.00	●
8.000		8.00	91.00	53.00	36.00	●
8.100		10.00	103.00	61.00	40.00	●
8.200		10.00	103.00	61.00	40.00	●
8.300		10.00	103.00	61.00	40.00	●
8.330		10.00	103.00	61.00	40.00	●
8.400	21/64	10.00	103.00	61.00	40.00	●
8.500		10.00	103.00	61.00	40.00	●
8.600		10.00	103.00	61.00	40.00	●
8.700		10.00	103.00	61.00	40.00	●
8.730		10.00	103.00	61.00	40.00	●
8.800		10.00	103.00	61.00	40.00	●
8.900	11/32	10.00	103.00	61.00	40.00	●
9.000		10.00	103.00	61.00	40.00	●
9.100		10.00	103.00	61.00	40.00	●
9.130	23/64	10.00	103.00	61.00	40.00	●
9.200		10.00	103.00	61.00	40.00	●
9.250		10.00	103.00	61.00	40.00	●
9.300		10.00	103.00	61.00	40.00	●
9.340		10.00	103.00	61.00	40.00	●
9.400		10.00	103.00	61.00	40.00	●
9.500	3/8	10.00	103.00	61.00	40.00	●
9.520		10.00	103.00	61.00	40.00	●
9.550		10.00	103.00	61.00	40.00	●



Article no.

5759

Discount group

121

Cutting direction



d1		d2	l1	l2	l3	Availability
mm	inch	mm	mm	mm	mm	
9.600		10.00	103.00	61.00	40.00	●
9.700		10.00	103.00	61.00	40.00	●
9.800		10.00	103.00	61.00	40.00	●
9.900		10.00	103.00	61.00	40.00	●
9.920	25/64	10.00	103.00	61.00	40.00	●
10.000		10.00	103.00	61.00	40.00	●
10.100		12.00	118.00	71.00	45.00	●
10.200		12.00	118.00	71.00	45.00	●
10.300		12.00	118.00	71.00	45.00	●
10.320	13/32	12.00	118.00	71.00	45.00	●
10.400		12.00	118.00	71.00	45.00	●
10.500		12.00	118.00	71.00	45.00	●
10.600		12.00	118.00	71.00	45.00	●
10.700		12.00	118.00	71.00	45.00	●
10.720		12.00	118.00	71.00	45.00	●
10.800		12.00	118.00	71.00	45.00	●
10.900		12.00	118.00	71.00	45.00	●
11.000		12.00	118.00	71.00	45.00	●
11.100		12.00	118.00	71.00	45.00	●
11.110	7/16	12.00	118.00	71.00	45.00	●
11.200		12.00	118.00	71.00	45.00	●
11.300		12.00	118.00	71.00	45.00	●
11.400		12.00	118.00	71.00	45.00	●
11.500		12.00	118.00	71.00	45.00	●
11.510		12.00	118.00	71.00	45.00	●
11.550		12.00	118.00	71.00	45.00	●
11.600		12.00	118.00	71.00	45.00	●
11.700		12.00	118.00	71.00	45.00	●
11.800		12.00	118.00	71.00	45.00	●
11.900		12.00	118.00	71.00	45.00	●
11.910	15/32	12.00	118.00	71.00	45.00	●
12.000		12.00	118.00	71.00	45.00	●
12.100		14.00	124.00	77.00	45.00	●
12.200		14.00	124.00	77.00	45.00	●
12.300		14.00	124.00	77.00	45.00	●
12.400		14.00	124.00	77.00	45.00	●
12.500		14.00	124.00	77.00	45.00	●
12.600		14.00	124.00	77.00	45.00	●
12.700	1/2	14.00	124.00	77.00	45.00	●
12.800		14.00	124.00	77.00	45.00	●
12.900		14.00	124.00	77.00	45.00	●
13.000		14.00	124.00	77.00	45.00	●
13.100		14.00	124.00	77.00	45.00	●
13.200		14.00	124.00	77.00	45.00	●
13.300		14.00	124.00	77.00	45.00	●
13.400		14.00	124.00	77.00	45.00	●
13.490		14.00	124.00	77.00	45.00	●
13.500		14.00	124.00	77.00	45.00	●
13.600		14.00	124.00	77.00	45.00	●
13.700		14.00	124.00	77.00	45.00	●
13.800		14.00	124.00	77.00	45.00	●
13.890		14.00	124.00	77.00	45.00	●
13.900		14.00	124.00	77.00	45.00	●
14.000		14.00	124.00	77.00	45.00	●
14.100		16.00	133.00	83.00	48.00	●
14.200		16.00	133.00	83.00	48.00	●
14.290	9/16	16.00	133.00	83.00	48.00	●
14.400		16.00	133.00	83.00	48.00	●
14.500		16.00	133.00	83.00	48.00	●
14.600		16.00	133.00	83.00	48.00	●



Article no.

5759

Discount group

121

Cutting direction



d1		d2	l1	l2	l3	Availability
mm	inch	mm	mm	mm	mm	
14,680		16,00	133,00	83,00	48,00	●
14,700		16,00	133,00	83,00	48,00	●
14,800		16,00	133,00	83,00	48,00	●
14,900		16,00	133,00	83,00	48,00	●
15,000		16,00	133,00	83,00	48,00	●
15,080		16,00	133,00	83,00	48,00	●
15,100		16,00	133,00	83,00	48,00	●
15,200		16,00	133,00	83,00	48,00	●
15,300		16,00	133,00	83,00	48,00	●
15,400		16,00	133,00	83,00	48,00	●
15,480		16,00	133,00	83,00	48,00	●
15,500		16,00	133,00	83,00	48,00	●
15,550		16,00	133,00	83,00	48,00	●
15,600		16,00	133,00	83,00	48,00	●
15,700		16,00	133,00	83,00	48,00	●
15,800		16,00	133,00	83,00	48,00	●
15,870		16,00	133,00	83,00	48,00	●
15,900		16,00	133,00	83,00	48,00	●
16,000		16,00	133,00	83,00	48,00	●
16,270		18,00	143,00	93,00	48,00	●
16,500		18,00	143,00	93,00	48,00	●
16,670		18,00	143,00	93,00	48,00	●
16,700		18,00	143,00	93,00	48,00	●
16,900		18,00	143,00	93,00	48,00	●
17,000		18,00	143,00	93,00	48,00	●
17,070		18,00	143,00	93,00	48,00	●
17,460		18,00	143,00	93,00	48,00	●
17,500		18,00	143,00	93,00	48,00	●
17,550		18,00	143,00	93,00	48,00	●
17,700		18,00	143,00	93,00	48,00	●
17,860		18,00	143,00	93,00	48,00	●
18,000		18,00	143,00	93,00	48,00	●
18,260		20,00	153,00	101,00	50,00	●
18,500		20,00	153,00	101,00	50,00	●
18,700		20,00	153,00	101,00	50,00	●
18,900		20,00	153,00	101,00	50,00	●
19,000	3/4	20,00	153,00	101,00	50,00	●
19,050		20,00	153,00	101,00	50,00	●
19,250		20,00	153,00	101,00	50,00	●
19,300		20,00	153,00	101,00	50,00	●
19,446		20,00	153,00	101,00	50,00	●
19,500		20,00	153,00	101,00	50,00	●
19,550		20,00	153,00	101,00	50,00	●
19,700		20,00	153,00	101,00	50,00	●
19,840		20,00	153,00	101,00	50,00	●
20,000		20,00	153,00	101,00	50,00	●



Ratio drills with oil feed



P • facet point grinding • main cutting edge form straight • optimised cutting geometry • maximum performance

M ○

K ○

N ○

S ○

H ○

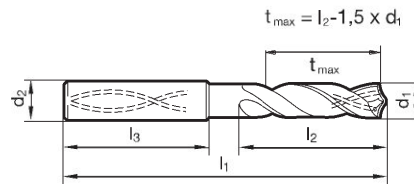
structural and case hardened steels • free-cutting steels, heat-treatable steels • steels (alloyed/unalloyed) up to 1400 N/mm²

Tool material **Solid carbide**

Surface **F**

Shank form **HA**

NEW



Article no. **5760**

Discount group **121**

Cutting direction **(R)**

d1		d2	l1	l2	l3	Availability
mm	inch	mm	mm	mm	mm	
3.000		6.000	70.000	30.000	36.000	●
3.100		6.000	70.000	30.000	36.000	●
3.170	1/8	6.000	70.000	30.000	36.000	●
3.200		6.000	70.000	30.000	36.000	●
3.250		6.000	70.000	30.000	36.000	●
3.300		6.000	70.000	30.000	36.000	●
3.400		6.000	75.000	35.500	36.000	●
3.500		6.000	75.000	35.500	36.000	●
3.570	9/64	6.000	75.000	35.500	36.000	●
3.600		6.000	75.000	35.500	36.000	●
3.700		6.000	75.000	35.500	36.000	●
3.800		6.000	75.000	37.500	36.000	●
3.900		6.000	75.000	37.500	36.000	●
3.970	5/32	6.000	75.000	37.500	36.000	●
4.000		6.000	75.000	37.500	36.000	●
4.040		6.000	75.000	37.500	36.000	●
4.100		6.000	75.000	37.500	36.000	●
4.200		6.000	75.000	37.500	36.000	●
4.300		6.000	85.000	45.000	36.000	●
4.370	11/64	6.000	85.000	45.000	36.000	●
4.400		6.000	85.000	45.000	36.000	●
4.500		6.000	85.000	45.000	36.000	●
4.600		6.000	85.000	45.000	36.000	●
4.650		6.000	85.000	45.000	36.000	●
4.700		6.000	85.000	45.000	36.000	●
4.760	3/16	6.000	90.000	50.000	36.000	●
4.800		6.000	90.000	50.000	36.000	●
4.900		6.000	90.000	50.000	36.000	●
5.000		6.000	90.000	50.000	36.000	●
5.100		6.000	90.000	50.000	36.000	●
5.110		6.000	90.000	50.000	36.000	●
5.160	13/64	6.000	90.000	50.000	36.000	●
5.200		6.000	90.000	50.000	36.000	●
5.300		6.000	90.000	50.000	36.000	●
5.400		6.000	97.000	57.000	36.000	●
5.410		6.000	97.000	57.000	36.000	●



Article no.

5760

Discount group

121

Cutting direction



d1		d2	l1	l2	l3	Availability
mm	inch	mm	mm	mm	mm	
5.500		6.000	97.000	57.000	36.000	●
5.550		6.000	97.000	57.000	36.000	●
5.560		6.000	97.000	57.000	36.000	●
5.600		6.000	97.000	57.000	36.000	●
5.700		6.000	97.000	57.000	36.000	●
5.800		6.000	97.000	57.000	36.000	●
5.900		6.000	97.000	57.000	36.000	●
5.950		6.000	97.000	57.000	36.000	●
6.000		6.000	97.000	57.000	36.000	●
6.100		8.000	106.000	66.000	36.000	●
6.200		8.000	106.000	66.000	36.000	●
6.300		8.000	106.000	66.000	36.000	●
6.350	1/4	8.000	106.000	66.000	36.000	●
6.400		8.000	106.000	66.000	36.000	●
6.500		8.000	106.000	66.000	36.000	●
6.530		8.000	106.000	66.000	36.000	●
6.600		8.000	106.000	66.000	36.000	●
6.700		8.000	106.000	66.000	36.000	●
6.750		8.000	106.000	66.000	36.000	●
6.800		8.000	106.000	66.000	36.000	●
6.900		8.000	116.000	76.000	36.000	●
7.000		8.000	116.000	76.000	36.000	●
7.100		8.000	116.000	76.000	36.000	●
7.140		8.000	116.000	76.000	36.000	●
7.200		8.000	116.000	76.000	36.000	●
7.300		8.000	116.000	76.000	36.000	●
7.400		8.000	116.000	76.000	36.000	●
7.500		8.000	116.000	76.000	36.000	●
7.540		8.000	116.000	76.000	36.000	●
7.600		8.000	116.000	76.000	36.000	●
7.700		8.000	116.000	76.000	36.000	●
7.800		8.000	116.000	76.000	36.000	●
7.900		8.000	116.000	76.000	36.000	●
7.940		8.000	116.000	76.000	36.000	●
8.000		8.000	116.000	76.000	36.000	●
8.100		10.000	131.000	87.000	40.000	●
8.200		10.000	131.000	87.000	40.000	●
8.300		10.000	131.000	87.000	40.000	●
8.330		10.000	131.000	87.000	40.000	●
8.400		10.000	131.000	87.000	40.000	●
8.500		10.000	131.000	87.000	40.000	●
8.600		10.000	131.000	87.000	40.000	●
8.700		10.000	131.000	87.000	40.000	●
8.730		10.000	131.000	87.000	40.000	●
8.800		10.000	131.000	87.000	40.000	●
8.900		10.000	131.000	87.000	40.000	●
9.000		10.000	131.000	87.000	40.000	●
9.100		10.000	139.000	95.000	40.000	●
9.130		10.000	139.000	95.000	40.000	●
9.200		10.000	139.000	95.000	40.000	●
9.250		10.000	139.000	95.000	40.000	●
9.300		10.000	139.000	95.000	40.000	●
9.340		10.000	139.000	95.000	40.000	●
9.400		10.000	139.000	95.000	40.000	●
9.500		10.000	139.000	95.000	40.000	●
9.520	3/8	10.000	139.000	95.000	40.000	●
9.600		10.000	139.000	95.000	40.000	●
9.700		10.000	139.000	95.000	40.000	●
9.800		10.000	139.000	95.000	40.000	●
9.900		10.000	139.000	95.000	40.000	●



Article no.

5760

Discount group

121

Cutting direction



d1		d2	l1	l2	l3	Availability
mm	inch	mm	mm	mm	mm	
9.920		10.000	139.000	95.000	40.000	●
10.000		10.000	139.000	95.000	40.000	●
10.100		12.000	155.000	106.000	45.000	●
10.200		12.000	155.000	106.000	45.000	●
10.300		12.000	155.000	106.000	45.000	●
10.320		12.000	155.000	106.000	45.000	●
10.400		12.000	155.000	106.000	45.000	●
10.500		12.000	155.000	106.000	45.000	●
10.600		12.000	155.000	106.000	45.000	●
10.700		12.000	155.000	106.000	45.000	●
10.720		12.000	155.000	106.000	45.000	●
10.800		12.000	155.000	106.000	45.000	●
10.900		12.000	155.000	106.000	45.000	●
11.000		12.000	155.000	106.000	45.000	●
11.100		12.000	163.000	114.000	45.000	●
11.110		12.000	163.000	114.000	45.000	●
11.200		12.000	163.000	114.000	45.000	●
11.300		12.000	163.000	114.000	45.000	●
11.400		12.000	163.000	114.000	45.000	●
11.500		12.000	163.000	114.000	45.000	●
11.510		12.000	163.000	114.000	45.000	●
11.600		12.000	163.000	114.000	45.000	●
11.700		12.000	163.000	114.000	45.000	●
11.800		12.000	163.000	114.000	45.000	●
11.900		12.000	163.000	114.000	45.000	●
11.910		12.000	163.000	114.000	45.000	●
12.000		12.000	163.000	114.000	45.000	●
12.100		14.000	182.000	133.000	45.000	●
12.200		14.000	182.000	133.000	45.000	●
12.300		14.000	182.000	133.000	45.000	●
12.500		14.000	182.000	133.000	45.000	●
12.700	1/2	14.000	182.000	133.000	45.000	●
13.000		14.000	182.000	133.000	45.000	●
13.100		14.000	182.000	133.000	45.000	●
13.490		14.000	182.000	133.000	45.000	●
13.500		14.000	182.000	133.000	45.000	●
13.700		14.000	182.000	133.000	45.000	●
13.890		14.000	182.000	133.000	45.000	●
14.000		14.000	182.000	133.000	45.000	●
14.100		16.000	204.000	152.000	48.000	●
14.200		16.000	204.000	152.000	48.000	●
14.290		16.000	204.000	152.000	48.000	●
14.500		16.000	204.000	152.000	48.000	●
14.700		16.000	204.000	152.000	48.000	●
15.000		16.000	204.000	152.000	48.000	●
15.100		16.000	204.000	152.000	48.000	●
15.480		16.000	204.000	152.000	48.000	●
15.500		16.000	204.000	152.000	48.000	●
15.700		16.000	204.000	152.000	48.000	●
15.870		16.000	204.000	152.000	48.000	●
16.000		16.000	204.000	152.000	48.000	●
16.500		18.000	223.000	171.000	48.000	●
16.900		18.000	223.000	171.000	48.000	●
17.000		18.000	223.000	171.000	48.000	●
17.500		18.000	223.000	171.000	48.000	●
17.700		18.000	223.000	171.000	48.000	●
18.000		18.000	223.000	171.000	48.000	●
18.500		20.000	244.000	190.000	50.000	●
18.900		20.000	244.000	190.000	50.000	●
19.000		20.000	244.000	190.000	50.000	●



Article no.

5760

Discount group

121

Cutting direction



d1		d2	l1	l2	l3	Availability
mm	inch	mm	mm	mm	mm	
19,050	3/4	20,000	244,000	190,000	50,000	●
19,500		20,000	244,000	190,000	50,000	●
20,000		20,000	244,000	190,000	50,000	●





GUHRINGNAVIGATOR

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.de.

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/mm²	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	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		○
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 (ADJ800), 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	3.2131 G-AlSi5Cu1, 3.2153 G-AlSi7Cu3, 3.2573 G-AlSi9	≤600		○
≤ 24 % Si	3.2581 G-AlSi12, 3.2583 G-AlSi12Cu, - G-AlSi12CuNiMg	≤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-CuSn5Zn1Pb	≤500		○
Brass, short-chipping	2.0380 CuZn39Pb2, 2.0401 CuZn39Pb3, 2.0410 CuZn43Pb2	≤600		○
long-chipping	2.0250 CuZn20, 2.0280 CuZn33, 2.0332 CuZn37Pb0.5	≤600		○
Bronze, short-chipping	2.1090 CuSn7Zn1Pb, 2.1170 CuPb5Sn5, 2.1176 CuPb10Sn	≤600		○
long-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	Epoxy resin, Resopal, Pertinax, Moltopren	≤150		○
Thermoplastics	Plexiglass, Hostalen, Novodur, Makralon	≤100		○
Kevlar	Kevlar	≤1000		○
Glass, carbon concentr. plastics	GFK/CFK	≤1000		○



≤5xD drilling depth ≤8xD drilling depth

5759
6537L
VHM
K/P
RT 100 S

axial
6

5760
6537L
VHM
K/P
RT100 S

axial
10



v _c m/min	Feed col. no.
145-230	8
120-220	7
170-260	8
145-230	8
130-220	8
125-210	7
120-200	7
120-210	7
105-200	7
145-230	8
120-210	7
105-200	6
110-150	7
100-150	5
70-120	6
55-100	5
60-100	5
60-100	5

v _c m/min	Feed col. no.
145-230	7
120-220	6
170-260	7
145-230	7
130-220	7
125-210	6
120-200	6
120-210	6
105-200	6
145-230	7
120-210	6
105-200	5
110-150	6
100-150	4
70-120	5
65-100	4
60-100	4
60-100	4

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