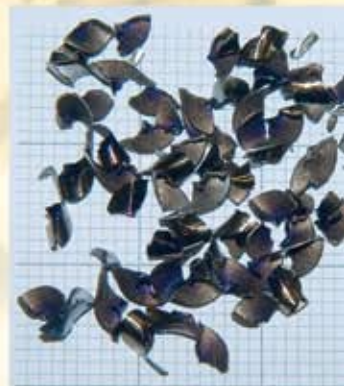


# **GUHRING**

The Tool Company

## **RT 100 T Deep-Hole Drills**



**Coolant fed carbide  
Spiral flute deep-hole drill  
Many \*NEW\* fractional sizes**

**Now Available:** The spiral-flute deep hole drill RT 100 T. The offering includes stock standard drills for drilling depths up to 20xD, 25xD and 30xD with diameter range from 3.5 up to 8.0 mm. The RT 100 T offers an outstanding cost-performance-ratio as well as immediate availability. This coolant-fed drill series permits exceptional speed and feed rates and provides a considerable reduction in machining time.

### Designed for Performance:

#### Optimized flute geometry

These spiral-flute deep hole drills possess an advanced flute geometry that is designed for optimal chip evacuation from deep holes. (fig. 1)

#### Maximized coolant duct profile

To provide the cutting edge with an optimum coolant supply, the tools possess a maximized coolant duct profile. It ensures an efficient coolant supply to the cutting edge as well as excellent chip evacuation. (fig. 2)

#### Problem-free chips

The design features of this drill – with the appropriate cutting parameters – result in chips that are evacuated problem-free even from deep holes. Chip packing and a subsequent jamming of the tool is effectively prevented. (fig. 3)

#### Special tooling possibilities

Of course, Guhring RT 100 T drills can be quoted to specific customer requirements, for conventional cooling and for minimum quantity lubrication from 3.5 to 20.0 mm.

#### Ultimate cost-efficiency:

Applied on machining centers, where the drilling operation is a time-relevant criterion, RT 100 T can display its superiority. Its high feed rates lead to a shorter production time, its long tool life reduces the number of tool changes.

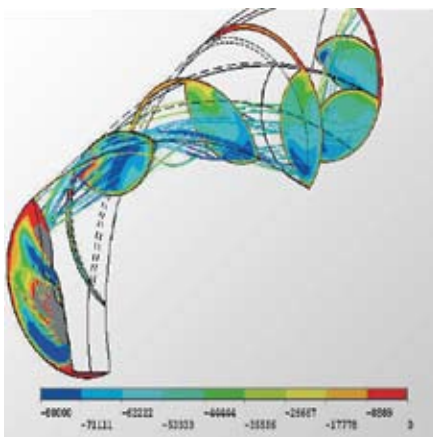
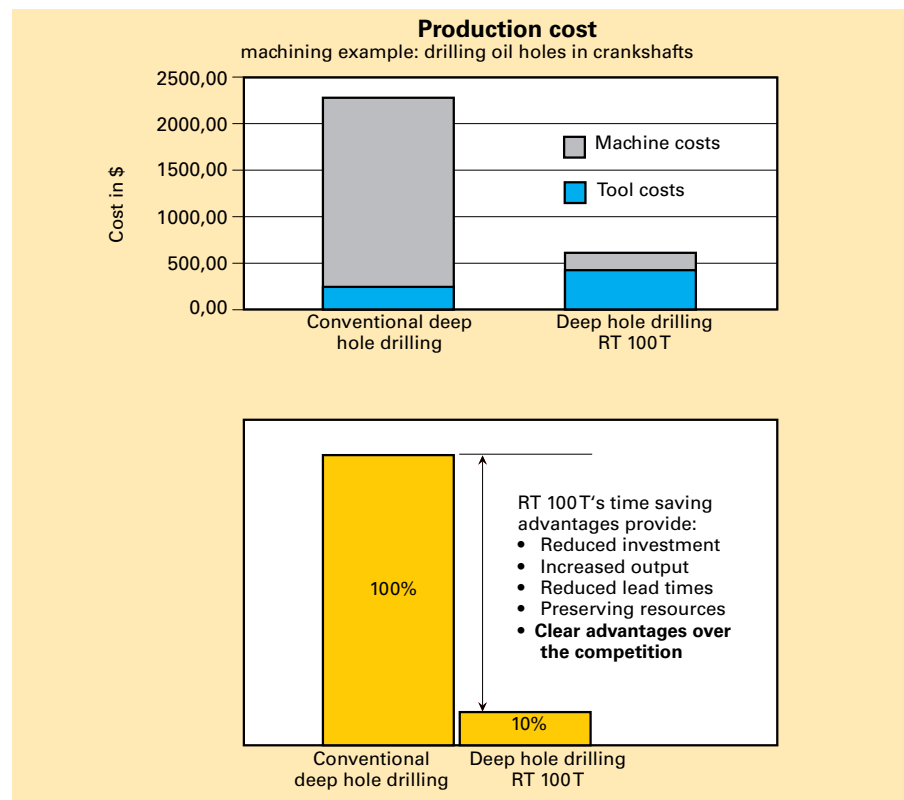


Fig. 1 Optimized flute geometry for optimal chip evacuation.

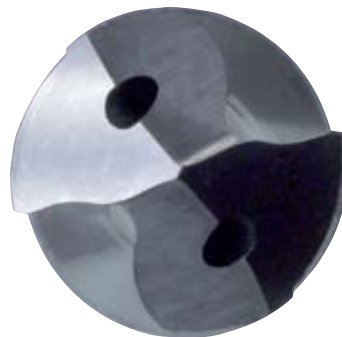


Fig. 2 Maximized coolant duct profile for effective cooling/lubrication.

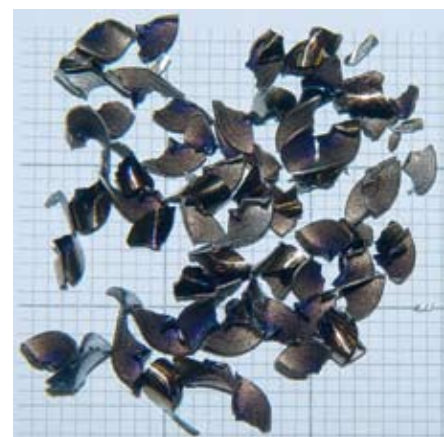
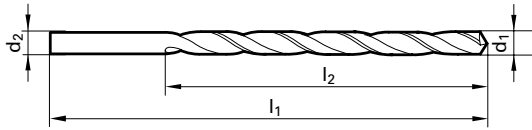


Fig. 3 Problem-free chips preventing chip packing and jamming of the tool.

# GUHRING

## RT 100 T Deep Hole Drill



- Unique double margin design
- Specialized flute form
- High polished flute
- TiAlN coated tip
- 135° point angle



### Series 6511 20 x D

d1 dec. in.	d1 fract.	d1 wire	d1 mm	d2 mm	l1 mm	l2 mm
0.1181			3.00	6.000	110.00	70.00
0.1250	1/8		3.17	6.000	123.00	83.00
0.1378			3.50	6.000	136.00	96.00
0.1406	9/64		3.57	6.000	136.00	96.00
0.1563	5/32		3.97	6.000	136.00	96.00
0.1575			4.00	6.000	136.00	96.00
0.1719	11/64		4.37	6.000	158.00	118.00
0.1772			4.50	6.000	158.00	118.00
0.1874	3/16		4.76	6.000	158.00	118.00
0.1969			5.00	6.000	158.00	118.00
0.2008			5.10	6.000	158.00	118.00
0.2030	13/64		5.16	6.000	158.00	118.00
0.2130		3	5.41	6.000	180.00	140.00
0.2165			5.50	6.000	180.00	140.00
0.2189	7/32		5.56	6.000	180.00	140.00
0.2344	15/64		5.95	6.000	180.00	140.00
0.2362			6.00	6.000	180.00	140.00
0.2500	1/4		6.35	8.000	202.00	162.00
0.2559			6.50	8.000	202.00	162.00
0.2656	17/64		6.75	8.000	202.00	162.00
0.2756			7.00	8.000	202.00	162.00
0.2811	9/32		7.14	8.000	223.00	183.00
0.2953			7.50	8.000	223.00	183.00
0.2969	19/64		7.54	8.000	223.00	183.00
0.3120	5/16		7.94	8.000	223.00	183.00
0.3150			8.00	8.000	223.00	183.00
0.3281	21/64		8.33	10.000	249.00	205.00
0.3346			8.50	10.000	249.00	205.00
0.3438	11/32		8.73	10.000	249.00	205.00
0.3543			9.00	10.000	249.00	205.00
0.3594	23/64		9.13	10.000	249.00	205.00
0.3750	3/8		9.52	10.000	271.00	227.00
0.3937			10.00	10.000	271.00	227.00
0.4063	13/32		10.32	12.000	302.00	242.00
0.4219	27/64		10.72	12.000	302.00	242.00
0.4370	7/16		11.11	12.000	323.00	274.00
0.4531	29/64		11.51	12.000	323.00	274.00
0.4688	15/32		11.91	12.000	323.00	274.00
0.4724			12.00	12.000	323.00	274.00
0.5000	1/2		12.70	14.000	367.00	318.00
0.5512			14.00	14.000	367.00	318.00

Red indicates  
NEW sizes!

### Series 6512 25 x D

d1 dec. in.	d1 fract.	d1 wire	d1 mm	d2 mm	l1 mm	l2 mm
0.1181			3.00	6.000	125.00	85.00
0.1250	1/8		3.17	6.000	141.00	101.00
0.1378			3.50	6.000	156.00	116.00
0.1406	9/64		3.57	6.000	156.00	116.00
0.1563	5/32		3.97	6.000	156.00	116.00
0.1575			4.00	6.000	156.00	116.00
0.1719	11/64		4.37	6.000	183.00	143.00
0.1772			4.50	6.000	183.00	143.00
0.1874	3/16		4.76	6.000	183.00	143.00
0.1969			5.00	6.000	183.00	143.00
0.2008			5.10	6.000	183.00	143.00
0.2030	13/64		5.16	6.000	183.00	143.00
0.2130		3	5.41	6.000	210.00	170.00
0.2165			5.50	6.000	210.00	170.00
0.2189	7/32		5.56	6.000	210.00	170.00
0.2344	15/64		5.95	6.000	210.00	170.00
0.2362			6.00	6.000	210.00	170.00
0.2500	1/4		6.35	8.000	237.00	197.00
0.2559			6.50	8.000	237.00	197.00
0.2656	17/64		6.75	8.000	237.00	197.00
0.2756			7.00	8.000	237.00	197.00
0.2811	9/32		7.14	8.000	263.00	223.00
0.2953			7.50	8.000	263.00	223.00
0.2969	19/64		7.54	8.000	263.00	223.00
0.3120	5/16		7.94	8.000	263.00	223.00
0.3150			8.00	8.000	263.00	223.00
0.3281	21/64		8.33	10.000	294.00	250.00
0.3346			8.50	10.000	294.00	250.00
0.3438	11/32		8.73	10.000	294.00	250.00
0.3543			9.00	10.000	294.00	250.00
0.3594	23/64		9.13	10.000	294.00	250.00
0.3750	3/8		9.52	10.000	321.00	277.00
0.3937			10.00	10.000	321.00	277.00
0.4219	27/64		10.72	12.000	359.00	310.00
0.4370	7/16		11.11	12.000	386.00	337.00
0.4724			12.00	12.000	386.00	337.00

### Series 6513 30 x D

d1 dec. in.	d1 fract.	d1 wire	d1 mm	d2 mm	l1 mm	l2 mm
0.1181			3.00	6.000	140.00	100.00
0.1250	1/8		3.17	6.000	158.00	118.00
0.1378			3.50	6.000	176.00	136.00
0.1406	9/64		3.57	6.000	176.00	136.00
0.1563	5/32		3.97	6.000	176.00	136.00
0.1575			4.00	6.000	176.00	136.00
0.1719	11/64		4.37	6.000	208.00	168.00
0.1772			4.50	6.000	208.00	168.00
0.1874	3/16		4.76	6.000	208.00	168.00
0.1969			5.00	6.000	208.00	168.00
0.2008			5.10	6.000	208.00	168.00
0.2030	13/64		5.16	6.000	208.00	168.00
0.2130		3	5.41	6.000	240.00	200.00
0.2165			5.50	6.000	240.00	200.00
0.2189	7/32		5.56	6.000	240.00	200.00
0.2344	15/64		5.95	6.000	240.00	200.00
0.2362			6.00	6.000	240.00	200.00
0.2500	1/4		6.35	8.000	272.00	232.00
0.2559			6.50	8.000	272.00	232.00
0.2656	17/64		6.75	8.000	272.00	232.00
0.2756			7.00	8.000	272.00	232.00
0.2811	9/32		7.14	8.000	303.00	263.00
0.2953			7.50	8.000	303.00	263.00
0.2969	19/64		7.54	8.000	303.00	263.00
0.3120	5/16		7.94	8.000	303.00	263.00
0.3150			8.00	8.000	303.00	263.00
0.3281	21/64		8.33	10.000	339.00	295.00
0.3346			8.50	10.000	339.00	295.00
0.3438	11/32		8.73	10.000	339.00	295.00
0.3543			9.00	10.000	339.00	295.00
0.3594	23/64		9.13	10.000	339.00	295.00
0.3750	3/8		9.52	10.000	371.00	327.00
0.3937			10.00	10.000	371.00	327.00



# RT 100 T Deep Hole Drill - Procedures and Cutting Parameters

- Minimum of 250 PSI coolant pressure recommended -

## Procedure:

- Machine a pilot hole with an m7 toleranced series 5514 RT 100 drill to a minimum pilot depth of 1 to 1.5 x D.
- Enter the pilot hole at a speed of approx. 300 RPM, and with a feed rate of approx. 19 - 20 IPM
- Start high coolant pressure and increase RPM.
- Continuous drilling to complete hole depth without peck cycle.
- For through holes with oblique exit, reduce the feed rate  $v_f$  to 40% approx. 1 mm prior to break-through.
- After reaching hole depth reduce machine spindle RPM and withdraw.

IPM = IPR x RPM

$$RPM = \frac{SFM}{DIAM. \text{ in.}} \times 3.82$$

$$\frac{HOLE \text{ DEPTH in.}}{IPM} \times 60 = \text{CutTime}$$

mm = in. x 25.40

m/min. = SFM ÷ 3.28    Bar = PSI ÷ 14.50  
mm/rev. = IPR ÷ 25.40    Liter = Gal. ÷ 3.79



All deep hole drills must utilize a pilot hole.  
Deep hole drills must never operate at full speed without support in the pilot hole.

Material group	Hardness	SFM	Feed Rate - IPR									
			1/16 in. 1.590 mm	1/8 in. 3.170 mm	1/4 in. 6.350 mm	3/8 in. 9.520 mm	1/2 in. 12.700 mm	5/8 in. 15.870 mm	3/4 in. 19.050 mm	1 in. 24.400 mm	1 1/4 in. 31.750 mm	1 1/2 in. 38.100 mm
Common structural steels	≤100 Bhn	265		0.006	0.010	0.016	0.016	0.020				
	>100-260 Bhn	265		0.006	0.010	0.016	0.016	0.020				
Free-cutting steels	≤24 Rc	265		0.006	0.010	0.016	0.016	0.020				
	>24-30 Rc	265		0.006	0.010	0.016	0.016	0.020				
Unalloyed heat-treatable steels	≤16 Rc	265		0.006	0.010	0.016	0.016	0.020				
	16-24 Rc	265		0.006	0.010	0.016	0.016	0.020				
	24-30 Rc	265		0.006	0.010	0.016	0.016	0.020				
Alloyed heat-treatable steels	24-30 Rc	330		0.005	0.008	0.012	0.012	0.016				
	>30-38 Rc	265		0.005	0.008	0.012	0.012	0.016				
Unalloyed case hardened steels	≤230 Bhn											
Alloyed case hardened steels	24-30 Rc											
	>30-38 Rc											
Nitriding steels	≥24-30 Rc											
	>30-38 Rc											
Tool steels	≤24 Rc	230		0.005	0.008	0.012	0.012	0.016				
	>24-30 Rc	200		0.005	0.008	0.012	0.012	0.016				
High speed steels	≥14-30 Rc											
Spring steels	≤330 Bhn											
Stainless steels, sulphured austenitic martensitic	≤24 Rc	230										
	≤24 Rc											
	≤24 Rc			0.004	0.006	0.010	0.010	0.012				
Hardened steels	≤40-48 Rc											
	>48-60 Rc											
Special alloys	≤38 Rc	115		0.002	0.004	0.006	0.007	0.007				
Cast iron	≤240 Bhn	330		0.004	0.006	0.010	0.010	0.012				
	<300 Bhn	265		0.004	0.006	0.010	0.010	0.012				
Spheroidal graphite iron and malleable cast iron	≤240 Bhn	295		0.005	0.008	0.012	0.012	0.016				
	<300 Bhn	265		0.005	0.008	0.012	0.012	0.016				
Chilled cast iron	≤350 Bhn											
Ti and Ti-alloys	≤24 Rc	130		0.002	0.004	0.006	0.007	0.007				
	>24-38 Rc											
Aluminium and Al-alloys	≤120 Bhn	250		0.003	0.005	0.008	0.010	0.010				
Al wrought alloys	≤150 Bhn											
Al cast alloys ≤ 10 % Si > 10 % Si	≤200 Bhn	250										
	≤200 Bhn			0.003	0.005	0.008	0.010	0.010				
Magnesium alloys	≤150 Bhn											
Copper, low-alloyed	≤120 Bhn											
Brass, short-chipping long-chipping	≤200 Bhn											
	≤200 Bhn											
Bronze, short-chipping	≤200 Bhn											
	>200-260 Bhn											
Bronze, long-chipping	≤24 Rc											
	>24-30 Rc											
Duroplastics	-											
Thermoplastics	-											
Reinforced plastics - Kevlar	-											
Reinforced plastics - GFK / CFK	-											

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## GUHRING®

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