

GUHRING



RT 100 T AL *deep hole drill for* **ALUMINUM**

GUHRING – YOUR WORLDWIDE PARTNER

GUHRING'S DEEP HOLE AL SOLUTION

The RT 100 T AL solid carbide deep hole twist drill was designed specifically for machining aluminum alloys.

It features specialized web thinning with highly polished surface finish on point and flutes, resulting in optimal drilling performance. Low machining temperature reduces the potential of built-up edges when drilling non-ferrous metals.

Pilot drilling is required for the RT 100 T AL deep hole drills, and the Guhring series 5768 drill (page 3) is the perfect pilot drill choice.

Sharp, micro-treated cutting edges

for ideal cutting performance;
excels in aluminum with <7% silicon.

Highly polished flute (Rz 0.5µ) reduces the risk
of chip adhesion, maximizing chip evacuation

Double margin design improves stability
in the cut

ADVANTAGES:

- Reduction of machining time
- Ideal chip control and evacuation
- Optimum drilling results with excellent hole quality
- Ultimate performance when machining non-ferrous metals

Available from stock in 15xD, 20xD and 25xD lengths, diameters from 3 to 14mm

**Customized solutions
available on request.**



RT 100 T AL - Deep hole drill for aluminum



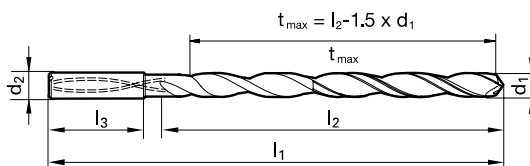
Tool material	Solid carbide
Coating	Uncoated
Shank form	HA

Material	Suitability
P Steel	
M Stainless steel	
K Cast iron	
N Aluminum	●
S Ni / Ti alloys	
H Hardened steel	

●=Optimal ○=Limited

facet point grind • main cutting edge form concave • optimized flute design • maximum diameter of coolant ducts • observe coolant pressure • for piloting we recommend RT 100 Al, Series 5768

aluminum and Al-alloys



Series

6517

d1	d1	d1	d1	d2	l1	l2	t _{max}	l3	Code	EDP No.
inch	fract. in	wire/ltr	mm	mm	mm	mm	mm	mm	no.	
0.1181			3.00	6.00	125.00	85.00	80.50	36.00	3.00	9065170030000
0.1220			3.10	6.00	141.00	101.00	96.35	36.00	3.10	9065170031000
0.1248	1/8		3.17	6.00	141.00	101.00	96.25	36.00	3.17	9065170031700
0.1260			3.20	6.00	141.00	101.00	96.20	36.00	3.20	9065170032000
0.1280			3.25	6.00	141.00	101.00	96.13	36.00	3.25	9065170032500
0.1299			3.30	6.00	141.00	101.00	96.05	36.00	3.30	9065170033000
0.1339			3.40	6.00	141.00	101.00	95.90	36.00	3.40	9065170034000
0.1378			3.50	6.00	156.00	116.00	110.75	36.00	3.50	9065170035000
0.1406	9/64		3.57	6.00	156.00	116.00	110.65	36.00	3.57	9065170035700
0.1417			3.60	6.00	156.00	116.00	110.60	36.00	3.60	9065170036000
0.1457			3.70	6.00	156.00	116.00	110.45	36.00	3.70	9065170037000
0.1496			3.80	6.00	156.00	116.00	110.30	36.00	3.80	9065170038000
0.1535			3.90	6.00	156.00	116.00	110.15	36.00	3.90	9065170039000
0.1563	5/32		3.97	6.00	156.00	116.00	110.05	36.00	3.97	9065170039700
0.1575			4.00	6.00	156.00	116.00	110.00	36.00	4.00	9065170040000
0.1614			4.10	6.00	183.00	143.00	136.85	36.00	4.10	9065170041000
0.1654			4.20	6.00	183.00	143.00	136.70	36.00	4.20	9065170042000
0.1693			4.30	6.00	183.00	143.00	136.55	36.00	4.30	9065170043000
0.1720	11/64		4.37	6.00	183.00	143.00	136.45	36.00	4.37	9065170043700
0.1732			4.40	6.00	183.00	143.00	136.40	36.00	4.40	9065170044000
0.1772			4.50	6.00	183.00	143.00	136.25	36.00	4.50	9065170045000
0.1811			4.60	6.00	183.00	143.00	136.10	36.00	4.60	9065170046000
0.1831			4.65	6.00	183.00	143.00	136.03	36.00	4.65	9065170046500
0.1850		#13	4.70	6.00	183.00	143.00	135.95	36.00	4.70	9065170047000
0.1874	3/16		4.76	6.00	183.00	143.00	135.86	36.00	4.76	9065170047600
0.1890		#12	4.80	6.00	183.00	143.00	135.80	36.00	4.80	9065170048000
0.1929			4.90	6.00	183.00	143.00	135.65	36.00	4.90	9065170049000
0.1969			5.00	6.00	183.00	143.00	135.50	36.00	5.00	9065170050000
0.2008			5.10	6.00	210.00	170.00	162.35	36.00	5.10	9065170051000
0.2031	13/64		5.16	6.00	210.00	170.00	162.26	36.00	5.16	9065170051600
0.2047			5.20	6.00	210.00	170.00	162.20	36.00	5.20	9065170052000
0.2087			5.30	6.00	210.00	170.00	162.05	36.00	5.30	9065170053000
0.2126			5.40	6.00	210.00	170.00	161.90	36.00	5.40	9065170054000
0.2165			5.50	6.00	210.00	170.00	161.75	36.00	5.50	9065170055000
0.2185			5.55	6.00	210.00	170.00	161.68	36.00	5.55	9065170055500
0.2189	7/32		5.56	6.00	210.00	170.00	161.66	36.00	5.56	9065170055600



Series										6517
d1	d1	d1	d1	d2	l1	l2	t _{max}	l3	Code	EDP No.
inch	fract. in	wire/ltr	mm	mm	mm	mm	mm	mm	no.	
0.2205			5.60	6.00	210.00	170.00	161.60	36.00	5.60	9065170056000
0.2244			5.70	6.00	210.00	170.00	161.45	36.00	5.70	9065170057000
0.2283			5.80	6.00	210.00	170.00	161.30	36.00	5.80	9065170058000
0.2323			5.90	6.00	210.00	170.00	161.15	36.00	5.90	9065170059000
0.2343	15/64		5.95	6.00	210.00	170.00	161.08	36.00	5.95	9065170059500
0.2362			6.00	6.00	210.00	170.00	161.00	36.00	6.00	9065170060000
0.2402			6.10	8.00	237.00	197.00	187.85	36.00	6.10	9065170061000
0.2441			6.20	8.00	237.00	197.00	187.70	36.00	6.20	9065170062000
0.2480			6.30	8.00	237.00	197.00	187.55	36.00	6.30	9065170063000
0.2500	1/4	E	6.35	8.00	237.00	197.00	187.48	36.00	6.35	9065170063500
0.2520			6.40	8.00	237.00	197.00	187.40	36.00	6.40	9065170064000
0.2559			6.50	8.00	237.00	197.00	187.25	36.00	6.50	9065170065000
0.2598			6.60	8.00	237.00	197.00	187.10	36.00	6.60	9065170066000
0.2638			6.70	8.00	237.00	197.00	186.95	36.00	6.70	9065170067000
0.2657	17/64		6.75	8.00	237.00	197.00	186.88	36.00	6.75	9065170067500
0.2677			6.80	8.00	237.00	197.00	186.80	36.00	6.80	9065170068000
0.2717			6.90	8.00	237.00	197.00	186.65	36.00	6.90	9065170069000
0.2756			7.00	8.00	237.00	197.00	186.50	36.00	7.00	9065170070000
0.2795			7.10	8.00	263.00	223.00	212.35	36.00	7.10	9065170071000
0.2811	9/32		7.14	8.00	263.00	223.00	212.29	36.00	7.14	9065170071400
0.2835			7.20	8.00	263.00	223.00	212.20	36.00	7.20	9065170072000
0.2874			7.30	8.00	263.00	223.00	212.05	36.00	7.30	9065170073000
0.2913			7.40	8.00	263.00	223.00	211.90	36.00	7.40	9065170074000
0.2953			7.50	8.00	263.00	223.00	211.75	36.00	7.50	9065170075000
0.2969	19/64		7.54	8.00	263.00	223.00	211.69	36.00	7.54	9065170075400
0.2992			7.60	8.00	263.00	223.00	211.60	36.00	7.60	9065170076000
0.3031			7.70	8.00	263.00	223.00	211.45	36.00	7.70	9065170077000
0.3071			7.80	8.00	263.00	223.00	211.30	36.00	7.80	9065170078000
0.3110			7.90	8.00	263.00	223.00	211.15	36.00	7.90	9065170079000
0.3126	5/16		7.94	8.00	263.00	223.00	211.09	36.00	7.94	9065170079400
0.3150			8.00	8.00	263.00	223.00	211.00	36.00	8.00	9065170080000
0.3189			8.10	10.00	294.00	250.00	237.85	40.00	8.10	9065170081000
0.3228			8.20	10.00	294.00	250.00	237.70	40.00	8.20	9065170082000
0.3268			8.30	10.00	294.00	250.00	237.55	40.00	8.30	9065170083000
0.3280	21/64		8.33	10.00	294.00	250.00	237.51	40.00	8.33	9065170083300
0.3307			8.40	10.00	294.00	250.00	237.40	40.00	8.40	9065170084000
0.3346			8.50	10.00	294.00	250.00	237.25	40.00	8.50	9065170085000
0.3386			8.60	10.00	294.00	250.00	237.10	40.00	8.60	9065170086000
0.3425			8.70	10.00	294.00	250.00	236.95	40.00	8.70	9065170087000
0.3437	11/32		8.73	10.00	294.00	250.00	236.91	40.00	8.73	9065170087300
0.3465			8.80	10.00	294.00	250.00	236.80	40.00	8.80	9065170088000
0.3504			8.90	10.00	294.00	250.00	236.65	40.00	8.90	9065170089000
0.3543			9.00	10.00	294.00	250.00	236.50	40.00	9.00	9065170090000
0.3583			9.10	10.00	321.00	277.00	263.35	40.00	9.10	9065170091000
0.3594	23/64		9.13	10.00	321.00	277.00	263.31	40.00	9.13	9065170091300
0.3622			9.20	10.00	321.00	277.00	263.20	40.00	9.20	9065170092000
0.3642			9.25	10.00	321.00	277.00	263.13	40.00	9.25	9065170092500
0.3661			9.30	10.00	321.00	277.00	263.05	40.00	9.30	9065170093000
0.3677			9.34	10.00	321.00	277.00	262.99	40.00	9.34	9065170093400
0.3701			9.40	10.00	321.00	277.00	262.90	40.00	9.40	9065170094000
0.3740			9.50	10.00	321.00	277.00	262.75	40.00	9.50	9065170095000
0.3748	3/8		9.52	10.00	321.00	277.00	262.72	40.00	9.52	9065170095200
0.3780			9.60	10.00	321.00	277.00	262.60	40.00	9.60	9065170096000
0.3819			9.70	10.00	321.00	277.00	262.45	40.00	9.70	9065170097000
0.3858			9.80	10.00	321.00	277.00	262.30	40.00	9.80	9065170098000
0.3898			9.90	10.00	321.00	277.00	262.15	40.00	9.90	9065170099000
0.3906	25/64		9.92	10.00	321.00	277.00	262.12	40.00	9.92	9065170099200
0.3937			10.00	10.00	321.00	277.00	262.00	40.00	10.00	9065170100000
0.3976			10.10	12.00	359.00	310.00	294.85	45.00	10.10	9065170101000



Series										6517
d1	d1	d1	d1	d2	I1	I2	t _{max}	I3	Code	EDP No.
inch	fract. in	wire/ltr	mm	mm	mm	mm	mm	mm	no.	
0.4016	13/32		10.20	12.00	359.00	310.00	294.70	45.00	10.20	9065170102000
0.4055			10.30	12.00	359.00	310.00	294.55	45.00	10.30	9065170103000
0.4063			10.32	12.00	359.00	310.00	294.52	45.00	10.32	9065170103200
0.4094			10.40	12.00	359.00	310.00	294.40	45.00	10.40	9065170104000
0.4134			10.50	12.00	359.00	310.00	294.25	45.00	10.50	9065170105000
0.4173			10.60	12.00	359.00	310.00	294.10	45.00	10.60	9065170106000
0.4213			10.70	12.00	359.00	310.00	293.95	45.00	10.70	9065170107000
0.4252			10.80	12.00	359.00	310.00	293.80	45.00	10.80	9065170108000
0.4291			10.90	12.00	359.00	310.00	293.65	45.00	10.90	9065170109000
0.4331			11.00	12.00	359.00	310.00	293.50	45.00	11.00	9065170110000
0.4370			11.10	12.00	386.00	337.00	320.35	45.00	11.10	9065170111000
0.4374			11.11	12.00	386.00	337.00	320.34	45.00	11.11	9065170111100
0.4409	7/16		11.20	12.00	386.00	337.00	320.20	45.00	11.20	9065170112000
0.4449			11.30	12.00	386.00	337.00	320.05	45.00	11.30	9065170113000
0.4488			11.40	12.00	386.00	337.00	319.90	45.00	11.40	9065170114000
0.4528			11.50	12.00	386.00	337.00	319.75	45.00	11.50	9065170115000
0.4567			11.60	12.00	386.00	337.00	319.60	45.00	11.60	9065170116000
0.4606			11.70	12.00	386.00	337.00	319.45	45.00	11.70	9065170117000
0.4646			11.80	12.00	386.00	337.00	319.30	45.00	11.80	9065170118000
0.4685			11.90	12.00	386.00	337.00	319.15	45.00	11.90	9065170119000
0.4689			11.91	12.00	386.00	337.00	319.14	45.00	11.91	9065170119100
0.4724	15/32		12.00	12.00	386.00	337.00	319.00	45.00	12.00	9065170120000
0.4764			12.10	14.00	437.00	388.00	369.85	45.00	12.10	9065170121000
0.4803			12.20	14.00	437.00	388.00	369.70	45.00	12.20	9065170122000
0.4921			12.50	14.00	437.00	388.00	369.25	45.00	12.50	9065170125000
0.4961			12.60	14.00	437.00	388.00	369.10	45.00	12.60	9065170126000
0.5000			12.70	14.00	437.00	388.00	368.95	45.00	12.70	9065170127000
0.5039			12.80	14.00	437.00	388.00	368.80	45.00	12.80	9065170128000
0.5079			12.90	14.00	437.00	388.00	368.65	45.00	12.90	9065170129000
0.5118			13.00	14.00	437.00	388.00	368.50	45.00	13.00	9065170130000
0.5157	33/64		13.10	14.00	437.00	388.00	368.35	45.00	13.10	9065170131000
0.5236			13.30	14.00	437.00	388.00	368.05	45.00	13.30	9065170133000
0.5276			13.40	14.00	437.00	388.00	367.90	45.00	13.40	9065170134000
0.5315			13.50	14.00	437.00	388.00	367.75	45.00	13.50	9065170135000
0.5394			13.70	14.00	437.00	388.00	367.45	45.00	13.70	9065170137000
0.5433			13.80	14.00	437.00	388.00	367.30	45.00	13.80	9065170138000
0.5512			14.00	14.00	437.00	388.00	367.00	45.00	14.00	9065170140000

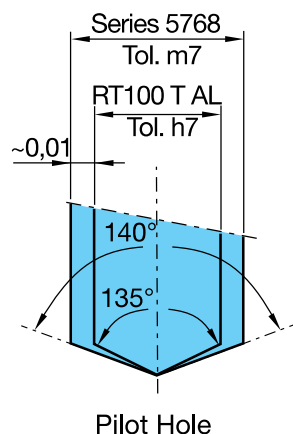


6515, 6516, 6517 (RT 100 T AL) Operating Parameters

Material group	Hardness		SFM	Feed Rate - IPR					
	HRc	Bhn		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
Aluminium and Al-alloys	-	≤ 120	395	0.0050	0.0080	0.0125	0.0125	0.0155	0.0195
Al wrought alloys	-	≤ 200	395	0.0050	0.0080	0.0125	0.0125	0.0155	0.0195
Al cast alloys ≤ 10 % Si	-	≤ 180	460	0.0065	0.0125	0.0155	0.0195	0.0250	0.0250
> 10 % Si	-	≤ 180	395	0.0065	0.0125	0.0155	0.0195	0.0250	0.0250
Magnesium alloys	-	≤ 120	510	0.0065	0.0100	0.0155	0.0155	0.0195	0.0250
Copper, low-alloyed	-	≤ 150	395	0.0025	0.0040	0.0065	0.0065	0.0080	0.0100
Brass, short-chipping	-	≤ 180	460	0.0050	0.0080	0.0125	0.0125	0.0155	0.0195
long-chipping	-	≤ 180	460	0.0050	0.0080	0.0125	0.0125	0.0155	0.0195
Bronze, short-chipping	-	≤ 180	395	0.0050	0.0080	0.0125	0.0125	0.0155	0.0195
	≤ 25	≤ 255	395	0.0040	0.0065	0.0100	0.0100	0.0125	0.0155
Bronze, long-chipping	≤ 25	≤ 255							
	≤ 32	≤ 301							
Duroplastics			330	0.0020	0.0030	0.0050	0.0050	0.0065	0.0080
Thermoplastics			330	0.0020	0.0030	0.0050	0.0050	0.0065	0.0080
Reinforced plastics - Kevlar									
Reinforced plastics - GFK / CFK									

5768 (Recommended pilot drill) Operating Parameters

Material group	Hardness		SFM	Feed Rate - IPR					
	HRc	Bhn		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
Aluminium and Al-alloys	-	≤ 120	1150	0.0065	0.0125	0.0155	0.0195	0.0250	0.0250
Al wrought alloys	-	≤ 200	1150	0.0065	0.0125	0.0155	0.0195	0.0250	0.0250
Al cast alloys ≤ 10 % Si	-	≤ 180	1050	0.0065	0.0100	0.0155	0.0155	0.0195	0.0250
> 10 % Si	-	≤ 180	920	0.0050	0.0080	0.0125	0.0125	0.0155	0.0195
Magnesium alloys	-	≤ 120	1050	0.0050	0.0080	0.0125	0.0125	0.0155	0.0195
Copper, low-alloyed	-	≤ 150	625	0.0050	0.0080	0.0125	0.0125	0.0155	0.0195
Brass, short-chipping	-	≤ 180	525	0.0040	0.0065	0.0100	0.0100	0.0125	0.0155
long-chipping	-	≤ 180	525	0.0040	0.0065	0.0100	0.0100	0.0125	0.0155
Bronze, short-chipping	-	≤ 180	525	0.0040	0.0065	0.0100	0.0100	0.0125	0.0155
	≤ 25	≤ 255	525	0.0040	0.0065	0.0100	0.0100	0.0125	0.0155
Bronze, long-chipping	≤ 25	≤ 255	490	0.0040	0.0065	0.0100	0.0100	0.0125	0.0155
	≤ 32	≤ 301	490	0.0040	0.0065	0.0100	0.0100	0.0125	0.0155
Duroplastics			330	0.0020	0.0030	0.0050	0.0050	0.0065	0.0080
Thermoplastics			330	0.0020	0.0030	0.0050	0.0050	0.0065	0.0080
Reinforced plastics - Kevlar									
Reinforced plastics - GFK / CFK			330	0.0015	0.0025	0.0040	0.0040	0.0050	0.0065



Recommended drilling procedure for RT100 T AL drills:

- Machine a pilot hole with an m7 toleranced Gühring series 5768 drill to a pilot depth of 2xD to 3xD.
- Enter the pilot hole at a speed of approx. 300 RPM, and with a feed rate of approx. 20 IPM stopping just shy of the bottom of the hole.
- Start high coolant pressure and increase RPM to recommended value.
- Feed drill at recommended feed rate to final hole depth. No peck cycle required.
- For through holes with oblique exit, reduce the feed rate to 40% approx. 1 mm prior to break-through.
- After reaching hole depth, turn off coolant, reduce machine spindle speed to 300RPM and withdraw the drill at a maximum feed rate of 200IPM.