

botek[®]

DEEP HOLE DRILLING SYSTEMS
SOLID CARBIDE TOOLS



Solid drill heads Type 11, Type 61

botek



Deep hole drilling tools, system BTA

with indexable inserts

and guide pads for solid drilling

Drilling range Type 11: Ø 14.55 - 36.99 mm

Type 61: Ø 15.65 - 36.20 mm



The botek company

Manufacturing deep and precise holes is a technical challenge when processing metal. Accordingly specialising in deep hole drilling technology was the founding idea in 1974 of botek Präzisionsbohrtechnik GmbH in Riederich.

botek grew to be an international supplier of deep hole drilling tools. Over 500 employees in the main company develop and manufacture single and two fluted drills, deep hole drilling tools BTA and Ejector systems as well as special tools.

A complete product program, regarding all deep hole drilling aspects and a team of highly qualified and dedicated cutting specialists make botek a competent partner for the automobile industry and their suppliers, shipbuilding industry, hydraulic industry and aviation industry as well as motor, gear and machine building companies.



- Our General Terms and Conditions which we assume are known to be applied.
- The values specified in this catalogue (e. g. for feedrate, coolant, pressure and coolant quantity, etc.) are guide values only and can vary depending on your application.
- We reserve the right to make changes of any nature in the interests of technical progress. Such changes cannot, in principle, be accepted as a complaint.
- Subject to change without prior notice. Errors excepted.
- Please see our application notes, www.botek.de

© botek Präzisionsbohrtechnik GmbH

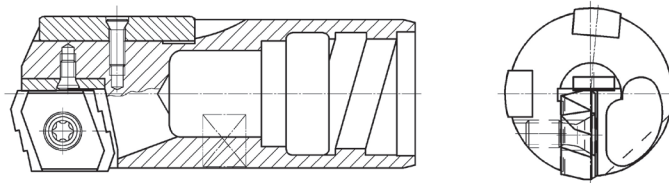


botek advantages

1. New, high-performance solid drill heads with a modern, user-friendly design.
2. Very high operational efficiency combined with optimum cutting performance.
3. Ideally suited to deep hole drilling machines.
4. No regrinding needed.
5. Various indexable insert chip breakers are available according to material to be processed.
Coated indexable inserts and guide pads are also available.
6. Easy exchange of indexable inserts and guide pads.
No need to adjust setting within ± 0.01 mm diameter.
7. When using matching interchangeable parts, the drill head diameter may, however, be adjusted within a range of 1.0 mm.
8. Easy assembly onto the drill tube with an open-end wrench.
9. Drilling tolerance up to IT7 is possible under favourable conditions.

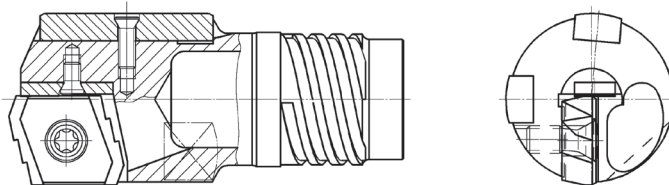
Type 11

Solid drill head system BTA
1-start connection thread



Type 61

Solid drill head system BTA
4-start connection thread



Information about botek solid drill heads Type 11/Type 61

- The chip breaker has a decisive part to play with the chip formation.
- To obtain trouble-free chip flow along with optimum tool life, it is essential to aim for the most ideal chip formation possible.
- The chips should be broken just short enough to ensure that there is no chip congestion in the flute or the drill.
- Excessively short, crushed chips place strain on the cutting edges and lead to premature wear and will destroy the cutting edge.
- For processing commonly used materials, indexable inserts are available from stock with chip breakers SP 1 or SP 2.

Chip breaker SP 1

- Unalloyed steels $C > 0.2$
- Alloyed steels
- Toughened steels
- Case hardened steels
- Tool steels
- Stainless and acid-proof steels

Chip breaker SP 2

- Unalloyed steels $C < 0.2$
- Long chip-forming special steels
- Stainless and acid-proof steels

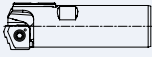
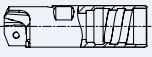
Chip breaker SP 3

- According to b, t, r, or drawing

Drilling range (mm)	Indexable insert	Chip breaker SP 1			Chip breaker SP 2		
		b	t	r	b	t	r
14.55 - 15.50		1.50	0.35	0.40	—	—	—
15.55 - 17.95		1.70	0.40	0.40	—	—	—
18.00 - 23.99		1.70	0.45	0.40	1.40	0.45	0.40
24.00 - 29.99		2.10	0.55	0.50	1.80	0.55	0.50
30.00 - 36.99		2.40	0.55	0.50	2.00	0.55	0.50

Order data solid drill head Type 11

Drilling range from 14.55 to 17.95 mm

Drill head size	Drill tube- Ø (mm)	Drilling range from - to Ø (mm)	Tool number	Drill head body	key
					
93	12	14.55 - 15.00	11-9300-001	11-9300-111	SW 11
94	13-1	15.05 - 15.50	11-9400-001	11-9400-111	SW 12
95	13-2	15.55 - 16.00	11-9500-001	11-9500-111	
96	14-1	16.05 - 16.50	11-9600-001	11-9600-111	SW 13
97	14-2	16.55 - 17.00	11-9710-001	11-9710-111	
97	14-2	17.05 - 17.25	11-9720-001	11-9720-111	
98	15-1	17.30 - 17.50	11-9810-001	11-9810-111	
98	15-1	17.55 - 17.95	11-9820-001	11-9820-111	SW 14

The tools are available in steps of 0.05 mm in diameter. Dimensions in between can be achieved in steps of 0.025 mm by setting in a smaller guide pad only.

The tool diameter tolerance is within ± 0.01 mm.

Drill Ø					Replaceable insert	Screw/Key	Indexable guide pads	Screw/Key
								
Ø in mm					1x	1x	2x	2x
			14.55	15.05	01-0777-311	22-0610-840 screw M2.5 x 5.9 key 22-0600-925	01-0501-410/13	01-1300-840 screw M2.2 x 4 key 01-1300-945
			14.60	15.10	01-0780-311		01-0502-410/13	
			14.65	15.15	01-0782-311		01-0503-410/13	
			14.70	15.20	01-0785-311		01-0504-410/13	
			14.75	15.25	01-0787-311		01-0505-410/13	
			14.80	15.30	01-0790-311		01-0506-410/13	
			14.85	15.35	01-0792-311		01-0507-410/13	
			14.90	15.40	01-0795-311		01-0508-410/13	
			14.95	15.45	01-0797-311		01-0509-410/13	
			15.00	15.50	01-0799-311		01-0510-410/13	
15.55	16.05	16.55	17.05	17.55	01-0907-311	22-0610-840 screw M2.5 x 5.9 key 22-0600-925	01-0501-410/15	01-1300-840 screw M2.2 x 4 key 01-1300-945
15.60	16.10	16.60	17.10	17.60	01-0910-311		01-0502-410/15	
15.65	16.15	16.65	17.15	17.65	01-0912-311		01-0503-410/15	
15.70	16.20	16.70	17.20	17.70	01-0915-311		01-0504-410/15	
15.75	16.25	16.75	17.25	17.75	01-0917-311		01-0505-410/15	
15.80	16.30	16.80	17.30	17.80	01-0920-311		01-0506-410/15	
15.85	16.35	16.85	17.35	17.85	01-0922-311		01-0507-410/15	
15.90	16.40	16.90	17.40	17.90	01-0925-311		01-0508-410/15	
15.95	16.45	16.95	17.45	17.95	01-0927-311		01-0509-410/15	
16.00	16.50	17.00	17.50	—	01-0929-311		01-0510-410/15	

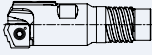
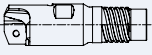
Order data solid drill head Type 11

Diameter range from 18.00 to 36.99 mm

Drill head size	Drill tube- Ø (mm)	Drilling range from - to	Drill head			Indexable insert		Guide pads		Stop plate					
			Drill head complete	Drill head body	open-end wrench	Indexable insert	Screw/Key	Guide pads	Screw/Key	Stop plate	Screw/Key				
		Ø (mm)													
01	16.5	18.00 - 18.49	11-0111-000	11-0110-110	SW 16	01-1810-310	21-0100-830 (M 3 x 6.9) 22-0600-935	21-0110-410	21-0200-860 (M 2.5 x 4.7) 22-0600-925	01-2050-610-S... Please specify thickness dimension S when ordering.	01-0200-860 (M 2.5 x 4.3) 22-0600-925				
		18.50 - 18.99	11-0112-000			01-1820-310									
		19.00 - 19.49	11-0121-000	11-0120-110	SW 17	01-1910-310		21-0120-410							
		19.50 - 19.99	11-0122-000			01-1920-310									
02	18	20.00 - 20.49	11-0211-000	11-0210-110	SW 18	01-2010-310		21-0200-410	22-0610-840 (M 2.5 x 5.9) 22-0600-925						
		20.50 - 20.99	11-0212-000			01-2020-310									
		21.00 - 21.49	11-0221-000	11-0220-110	SW 19	01-2110-310						21-0300-410			
		21.50 - 21.99	11-0222-000			01-2120-310									
03	20	22.00 - 22.49	11-0311-000	11-0310-110	SW 20	01-2210-310	21-0400-830 (M 4 x 9) 22-0900-935		21-0400-410	22-0600-820 (M 2.5 x 8.2) 22-0600-925	01-2400-610-S... Please specify thickness dimension S when ordering.	21-0200-860 (M 2.5 x 4.7) 22-0600-925			
		22.50 - 22.99	11-0312-000			01-2220-310									
		23.00 - 23.49	11-0321-000	11-0320-110	SW 21	01-2310-310			21-0500-410						
		23.50 - 23.99	11-0322-000			01-2320-310									
04	22	24.00 - 24.49	11-0411-000	11-0410-110	SW 22	01-2410-310		21-0600-410	22-0800-840 (M 3 x 8.2) 22-0600-935						
		24.50 - 24.99	11-0412-000			01-2420-310									
		25.00 - 25.49	11-0421-000	11-0420-110	SW 23	01-2510-310				21-0700-410					
		25.50 - 25.99	11-0422-000			01-2520-310									
		26.00 - 26.49	11-0431-000	11-0430-110	SW 24	01-2610-310	21-0800-410								
		26.50 - 26.99	11-0432-000			01-2620-310									
05	24	27.00 - 27.49	11-0511-000	11-0510-110	SW 25	01-2710-310	22-1200-830 (M 5 x 12.5) 22-1200-935		21-0900-410						
		27.50 - 27.99	11-0512-000			01-2720-310									
		28.00 - 28.49	11-0521-000	11-0520-110	SW 26	01-2810-310				21-1000-410					
		28.50 - 28.99	11-0522-000			01-2820-310									
		29.00 - 29.49	11-0531-000	11-0530-110	SW 27	01-2910-310				21-1100-410					
		29.50 - 29.99	11-0532-000			01-2920-310									
06	26	30.00 - 30.49	11-0611-000	11-0610-110	SW 28	01-3010-310		22-1200-830 (M 5 x 12.5) 22-1200-935	21-1200-410	22-1200-840 (M 3.5 x 11.4) 22-0900-935					
		30.50 - 30.99	11-0612-000			01-3020-310									
		31.00 - 31.49	11-0621-000	11-0620-110	SW 29	01-3110-310					21-1300-410				
		31.50 - 31.99	11-0622-000			01-3120-310									
07	28	32.00 - 32.49	11-0711-000	11-0710-110	SW 30	01-3210-310			22-1200-830 (M 5 x 12.5) 22-1200-935		21-1400-410				
		32.50 - 32.99	11-0712-000			01-3220-310									
		33.00 - 33.49	11-0721-000	11-0720-110	SW 31	01-3310-310	21-1500-410								
		33.50 - 33.99	11-0722-000			01-3320-310									
08	30	34.00 - 34.49	11-0811-000	11-0810-110	SW 32	01-3410-310	22-1200-830 (M 5 x 12.5) 22-1200-935	21-1600-410			22-1200-840 (M 3.5 x 11.4) 22-0900-935				
		34.50 - 34.99	11-0812-000			01-3420-310									
		35.00 - 35.49	11-0821-000	11-0820-110	SW 33	01-3510-310						21-1700-410			
		35.50 - 35.99	11-0822-000			01-3520-310									
		36.00 - 36.49	11-0831-000	11-0830-110	SW 34	01-3610-310			21-1800-410						
		36.50 - 36.99	11-0832-000			01-3620-310									
09	32	37.00 - 37.49	11-0911-000	11-0910-110	SW 35	01-3710-310		22-1200-830 (M 5 x 12.5) 22-1200-935	21-1900-410						
		37.50 - 37.99	11-0912-000			01-3720-310									
		38.00 - 38.49	11-0921-000	11-0920-110	SW 36	01-3810-310				21-2000-410					
		38.50 - 38.99	11-0922-000			01-3820-310									
10	34	39.00 - 39.49	11-1011-000	11-1010-110	SW 37	01-3910-310			22-1200-830 (M 5 x 12.5) 22-1200-935	21-2100-410					
		39.50 - 39.99	11-1012-000			01-3920-310									
		40.00 - 40.49	11-1021-000	11-1020-110	SW 38	01-4010-310	21-2200-410								
		40.50 - 40.99	11-1022-000			01-4020-310									
11	36	41.00 - 41.49	11-1111-000	11-1110-110	SW 39	01-4110-310	22-1200-830 (M 5 x 12.5) 22-1200-935	21-2300-410							
		41.50 - 41.99	11-1112-000			01-4120-310									
		42.00 - 42.49	11-1121-000	11-1120-110	SW 40	01-4210-310				21-2400-410					
		42.50 - 42.99	11-1122-000			01-4220-310									
12	36.99	43.00 - 43.49	11-1211-000	11-1210-110	SW 41	01-4310-310		22-1200-830 (M 5 x 12.5) 22-1200-935	21-2500-410						
		43.50 - 43.99	11-1212-000			01-4320-310									
		44.00 - 44.49	11-1221-000	11-1220-110	SW 42	01-4410-310				21-2600-410					
		44.50 - 44.99	11-1222-000			01-4420-310									
13	39	45.00 - 45.49	11-1311-000	11-1310-110	SW 43	01-4510-310	22-1200-830 (M 5 x 12.5) 22-1200-935		21-2700-410						
		45.50 - 45.99	11-1312-000			01-4520-310									
		46.00 - 46.49	11-1321-000	11-1320-110	SW 44	01-4610-310				21-2800-410					
		46.50 - 46.99	11-1322-000			01-4620-310									
14	42	47.00 - 47.49	11-1411-000	11-1410-110	SW 45	01-4710-310		22-1200-830 (M 5 x 12.5) 22-1200-935	21-2900-410						
		47.50 - 47.99	11-1412-000			01-4720-310									
		48.00 - 48.49	11-1421-000	11-1420-110	SW 46	01-4810-310				21-3000-410					
		48.50 - 48.99	11-1422-000			01-4820-310									
15	45	49.00 - 49.49	11-1511-000	11-1510-110	SW 47	01-4910-310	22-1200-830 (M 5 x 12.5) 22-1200-935		21-3100-410						
		49.50 - 49.99	11-1512-000			01-4920-310									
		50.00 - 50.49	11-1521-000	11-1520-110	SW 48	01-5010-310				21-3200-410					
		50.50 - 50.99	11-1522-000			01-5020-310									
16	48	51.00 - 51.49	11-1611-000	11-1610-110	SW 49	01-5110-310		22-1200-830 (M 5 x 12.5) 22-1200-935	21-3300-410						
		51.50 - 51.99	11-1612-000			01-5120-310									
		52.00 - 52.49	11-1621-000	11-1620-110	SW 50	01-5210-310				21-3400-410					
		52.50 - 52.99	11-1622-000			01-5220-310									
17	51	53.00 - 53.49	11-1711-000	11-1710-110	SW 51	01-5310-310	22-1200-830 (M 5 x 12.5) 22-1200-935		21-3500-410						
		53.50 - 53.99	11-1712-000			01-5320-310									
		54.00 - 54.49	11-1721-000	11-1720-110	SW 52	01-5410-310				21-3600-410					
		54.50 - 54.99	11-1722-000			01-5420-310									
18	54	55.00 - 55.49	11-1811-000	11-1810-110	SW 53	01-5510-310		22-1200-830 (M 5 x 12.5) 22-1200-935	21-3700-410						
		55.50 - 55.99	11-1812-000			01-5520-310									
		56.00 - 56.49	11-1821-000	11-1820-110	SW 54	01-5610-310				21-3800-410					
		56.50 - 56.99	11-1822-000			01-5620-310									
19	57	57.00 - 57.49	11-1911-000	11-1910-110	SW 55	01-5710-310	22-1200-830 (M 5 x 12.5) 22-1200-935		21-3900-410						
		57.50 - 57.99	11-1912-000			01-5720-310									
		58.00 - 58.49	11-1921-000	11-1920-110	SW 56	01-5810-310				21-4000-410					
		58.50 - 58.99	11-1922-000			01-5820-310									
20	60	59.00 - 59.49	11-2011-000	11-2010-110	SW 57	01-5910-310		22-1200-830 (M 5 x 12.5) 22-1200-935	21-4100-410						
		59.50 - 59.99	11-2012-000			01-5920-310									
		60.00 - 60.49	11-2021-000	11-2020-110	SW 58	01-6010-310				21-4200-410					
		60.50 - 60.99	11-2022-000			01-6020-310									
21	63	61.00 - 61.49	11-2111-000	11-2110-110	SW 59	01-6110-310	22-1200-830 (M 5 x 12.5) 22-1200-935		21-4300-410						
		61.50 - 61.99	11-2112-000			01-6120-310									
		62.00 - 62.49	11-2121-000	11-2120-110	SW 60	01-6210-310				21-4400-410					
		62.50 - 62.99	11-2122-000			01-6220-310									
22	66	63.00 - 63.49	11-2211-000	11-2210-110	SW 61	01-6310-310		22-1200-830 (M 5 x 12.5) 22-1200-935	21-4500-410						
		63.50 - 63.99	11-2212-000			01-6320-310									
		64.00 - 64.49	11-2221-000	11-2220-110	SW 62	01-6410-310				21-4600-410					
		64.50 - 64.99	11-2222-000			01-6420-310									
23	69	65.00 - 65.49	11-2311-000	11-2310-110	SW 63	01-6510-310	22-1200-830 (M 5 x 12.5) 22-1200-935		21-4700-410						
		65.50 - 65.99	11-2312-000			01-6520-310									
		66.00 - 66.49	11-2321-000	11-2320-110	SW 64	01-6610-310				21-4800-410					
		66.50 - 66.99	11-2322-000			01-6620-310									
24	72	67.00 - 67.49	11-2411-000	11-2410-110	SW 65	01-6710-310		22-1200-830 (M 5 x 12.5) 22-1200-935	21-4900-410						
		67.50 - 67.99	11-2412-000			01-6720-310									
		68.00 - 68.49	11-2421-000	11-2420-110	SW 66	01-6810-310				21-5000-410					
		68.50 - 68.99	11-2422-000			01-6820-310									
25	75	69.00 - 69.49	11-2511-000	11-2510-110	SW 67	01-6910-310	22-1200-830 (M 5 x 12.5) 22-1200-935		21-5100-410						
		69.50 - 69.99	11-2512-000			01-6920-310									
		70.00 - 70.49	11-2521-000	11-2520-110	SW 68	01-7010-310				21-5200-410					
		70.50 - 70.99	11-2522-000			01-7020-310									
26	78	71.00 - 71.49	11-2611-000	11-2610-110	SW 69	01-7110-310		22-1200-830 (M 5 x 12.5) 22-1200-935	21-5300-410						
		71.50 - 71.99	11-2612-000			01-7120-310									
		72.00 - 72.49	11-2621-000	11-2620-110	SW 70	01-7210-310				21-5400-410					
		72.50 - 72.99	11-2622-000			01-7220-310									
27	81	73.00 - 73.49	11-2711-000	11-2710-110	SW 71	01-7310-310	22-1200-830 (M 5 x 12.5) 22-1200-935		21-5500-410						
		73.50 - 73.99	11-2712-000			01-7320-310									
		74.00 - 74.49	11-2721-000	11-2720-110	SW 72	01-7410-310				21-5600-410					
		74.50 - 74.99	11-2722-000			01-7420-310									
28	84	75.00 - 75.49	11-2811-000	11-2810-110	SW 73	01-7510-310		22-1200-830 (M 5 x 12.5) 22-1200-935	21-5700-410						
		75.50 - 75.99	11-2812-000			01-7520-310									
		76.00 - 76.49	11-2821-000	11-2820-110	SW 74	01-7610-310				21-5800-410					
		76.50 - 76.99	11-2822-000			01-7620-310									
29	87	77.00 - 77.49	11-2911-000	11-2910-110	SW 75	01-7710-310	22-1200-830 (M 5 x 12.5) 22-1200-935		21-5900-410						
		77.50 - 77.99	11-2912-000			01-7720-310									
		78.00 - 78.49	11-2921-000	11-2920-110	SW 76	01-7810-310				21-6000-410					
		78.50 - 78.99	11-2922-000			01-7820-310									
30	90														

Order data solid drill head Type 61

Drilling range from 15.65 to 17.95 mm

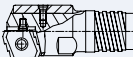
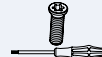
Drill head size	Drill tube- Ø (mm)	Drilling range from - to Ø (mm)	Tool number	Drill head body	Key
					
97	14	15.65 - 16.00	61-9710-001	61-9710-111	SW 12
97	14	16.05 - 16.50	61-9720-001	61-9720-111	SW 13
97	14	16.55 - 16.70	61-9730-001	61-9730-111	
98	15	16.75 - 17.00	61-9810-001	61-9810-111	
98	15	17.05 - 17.50	61-9820-001	61-9820-111	SW 14
98	15	17.55 - 17.70	61-9830-001	61-9830-111	
99	16	17.75 - 17.95	61-9900-001	61-9900-111	

The tools are available in steps of 0.05 mm in diameter. Dimensions in between can be achieved in steps of 0.025 mm by setting in a smaller guide pad only. The tool diameter tolerance is within ± 0.01 mm.

Drill Ø					Replaceable insert	Screw/Key	Indexable guide pads	Screw/Key
								
Ø in mm					1x	1x	2x	2x
–	16.05	16.55	17.05	17.55	01-0907-311	22-0610-840 screw M2.5 x 5.9 key 22-0600-925	01-0501-410/15	01-1300-840 screw M2.2 x 4 key 01-1300-945
–	16.10	16.60	17.10	17.60	01-0910-311		01-0502-410/15	
15.65	16.15	16.65	17.15	17.65	01-0912-311		01-0503-410/15	
15.70	16.20	16.70	17.20	17.70	01-0915-311		01-0504-410/15	
15.75	16.25	16.75	17.25	17.75	01-0917-311		01-0505-410/15	
15.80	16.30	16.80	17.30	17.80	01-0920-311		01-0506-410/15	
15.85	16.35	16.85	17.35	17.85	01-0922-311		01-0507-410/15	
15.90	16.40	16.90	17.40	17.90	01-0925-311		01-0508-410/15	
15.95	16.45	16.95	17.45	17.95	01-0927-311		01-0509-410/15	
16.00	16.50	17.00	17.50	–	01-0929-311		01-0510-410/15	

Order data solid drill head Type 61

Diameter range from 18.00 to 36.20 mm

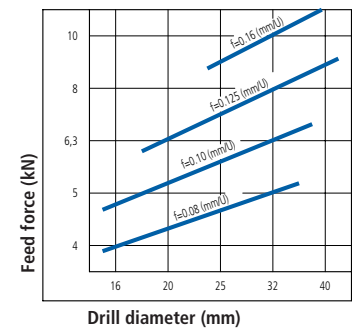
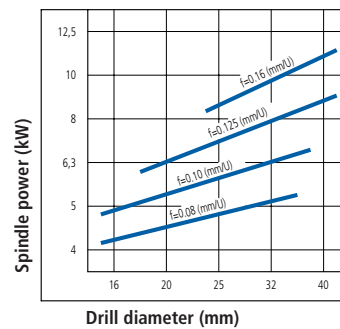
Drill head size	Drill tube- Ø (mm)	Drilling range from - to	Drill head			Indexable insert		Guide pads		Stop plate		
			Drill head complete	Drill head body	open-end wrench	Indexable insert	Screw/Key	Guide pads	Screw/Key	Stop plate	Screw/Key	
		Ø (mm)										
99	16	18.00 - 18.49	61-9911-000	61-9910-110	SW 16	01-1810-310	21-0100-830 (M 3 x 6.9) 22-0600-935	21-0110-410	21-0200-860 (M 2.5 x 4.7) 22-0600-925	01-2050-610-S... Please specify thickness dimension S when ordering.	01-0200-860 (M 2.5 x 4.3) 22-0600-925	
		18.50 - 18.99	61-9912-000					01-1820-310				
01	17	19.00 - 19.49	61-0121-000	61-0120-110	SW 17	01-1910-310		21-0120-410				
		19.50 - 19.99	61-0122-000			01-1920-310						
02	18	20.00 - 20.49	61-0211-000	61-0210-110	SW 18	01-2010-310		21-0200-410	22-0610-840 (M 2.5 x 5.9) 22-0600-925			
		20.50 - 20.99	61-0212-000			01-2020-310						
		21.00 - 21.49	61-0221-000	61-0220-110		01-2110-310						
		21.50 - 21.80	61-0222-000			01-2120-310						
03	20	21.81 - 21.99	61-0311-000	61-0310-110	SW 19	01-2120-310		21-0300-410				
		22.00 - 22.49	61-0312-000			01-2210-310						
		22.50 - 22.99	61-0313-000			01-2220-310						
		23.00 - 23.49	61-0321-000	61-0320-110	SW 20	01-2310-310						
		23.50 - 23.99	61-0322-000			01-2320-310						
04	22	24.00 - 24.49	61-0411-000	61-0410-110	SW 21	01-2410-310	21-0400-830 (M 4 x 9) 22-0900-935	21-0400-410				
		24.50 - 24.99	61-0412-000			01-2420-310						
		25.00 - 25.49	61-0421-000	61-0420-110	SW 22	01-2510-310						
		25.50 - 25.99	61-0422-000			01-2520-310						
		26.00 - 26.49	61-0423-000	61-0430-110	01-2610-310							
05	24	26.50 - 26.99	61-0511-000	61-0500-110	SW 24	01-2620-310	21-0400-830 (M 4 x 9) 22-0900-935	21-0500-410	22-0600-820 (M 2.5 x 8.2) 22-0600-925			
		27.00 - 27.49	61-0512-000	61-0510-110		01-2710-310						
		27.50 - 27.99	61-0513-000			01-2720-310						
		28.00 - 28.49	61-0521-000	61-0520-110	SW 25	01-2810-310						
		28.50 - 28.70	61-0522-000			01-2820-310						
06	26	28.71 - 28.99	61-0611-000	61-0610-110	SW 26	01-2820-310	21-0400-830 (M 4 x 9) 22-0900-935	21-0600-410	22-0800-840 (M 3 x 8.2) 22-0600-935			
		29.00 - 29.49	61-0612-000			01-2910-310						
		29.50 - 29.99	61-0613-000			01-2920-310						
		30.00 - 30.49	61-0621-000	61-0620-110		01-3010-310						
		30.50 - 30.99	61-0622-000			01-3020-310						
07	28	31.00 - 31.49	61-0711-000	61-0710-110	SW 28	01-3110-310	22-1200-830 (M 5 x 12.5) 22-1200-935	21-0700-410	22-0800-840 (M 3 x 8.2) 22-0600-935			
		31.50 - 31.99	61-0712-000			01-3120-310						
		32.00 - 32.49	61-0721-000	61-0720-110		01-3210-310						
		32.50 - 32.99	61-0722-000			01-3220-310						
		33.00 - 33.30	61-0723-000			01-3310-310						
08	30	33.31 - 33.49	61-0811-000	61-0810-110	SW 30	01-3310-310	21-0800-410	22-1200-840 (M 3.5 x 11.4) 22-0900-935				
		33.50 - 33.99	61-0812-000			01-3320-310						
		34.00 - 34.49	61-0821-000	61-0820-110		01-3410-310						
		34.50 - 34.99	61-0822-000			01-3420-310						
		35.00 - 35.49	61-0831-000	61-0830-110		01-3510-310						
		35.50 - 35.99	61-0832-000			01-3520-310						
		36.00 - 36.20	61-0833-000			01-3610-310						
Drill head size	Drill tube- Ø (mm)	Drilling range from - to	Drill head complete	Drill head body	open-end wrench	Indexable insert	Screw/Key	Guide pads	Screw/Key	Stop plate	Screw/Key	
Drill head						Indexable insert		Guide pads		Stop plate		

Technical Information

Type 11 / Type 61

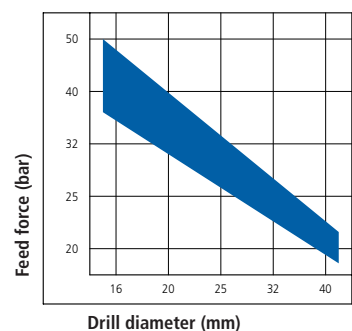
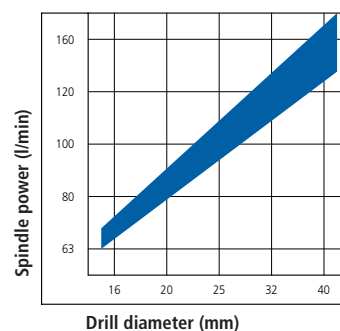
Performance diagrams

These values are guide values for drilling alloyed steel rated $\sim 800 \text{ N/mm}^2$ and may vary depending on workpiece material and characteristics, as well as tool condition.



Coolant information

Correct chip removal is only assured if the coolant is supplied to the tool in sufficient quantity and under sufficient pressure.



Guide values for solid drilling of various materials:

Guide values for cutting speed and feed rate are shown in the table below.

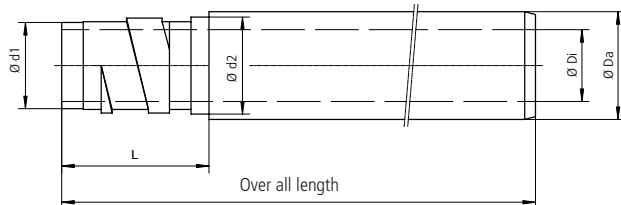
As there are many factors that can affect the results of deep-hole drilling, these values must be corrected if necessary.

Material + Mechanical strength properties	Cutting speed (m/min)	Feed (mm/rev) for drill diameter (mm)				Carbide grades		
		14.55 - 18	18 - 25	25 - 32	32 - ...	Indexable inserts		Guide pads
						to Ø 17.99	from Ø 18.00	
Construction steel ≤ 700 N/mm²	80 - 100	0.06 - 0.10	0.08 - 0.11	0.10 - 0.14	0.13 - 0.16	K30B-1	P25B-1* P40B-1	P20
Case-hardened steel ≤ 700 N/mm²								
Case-hardened steel ≤ 1100 N/mm²	70 - 80	0.06 - 0.10	0.08 - 0.11	0.10 - 0.13	0.12 - 0.15			
Heat treated steel ≤ 700 N/mm²	70 - 90	0.06 - 0.10	0.08 - 0.11	0.10 - 0.14	0.13 - 0.16			
Heat treated steel ≤ 1100 N/mm²	55 - 75	0.06 - 0.10	0.08 - 0.11	0.10 - 0.13	0.12 - 0.15			
Nitriding steel ≤ 1100 N/mm²	55 - 75	0.06 - 0.09	0.08 - 0.10	0.09 - 0.12	0.11 - 0.14			
Ferritic steel ≤ 900 N/mm²	60 - 80	0.06 - 0.10	0.08 - 0.11	0.10 - 0.14	0.13 - 0.16			P20B
Austenitic steel (stainless)	60 - 80	0.06 - 0.09	0.08 - 0.10	0.10 - 0.12	0.12 - 0.14	K10-1	P25-1	P20
Heat-resisting steel (stainless) Tool steel	50 - 70	0.06 - 0.09	0.08 - 0.10	0.10 - 0.12	0.12 - 0.14	K30B-1	P25B-1* P40B-1	
Steel castings ≤ 700 N/mm²	60 - 80	0.06 - 0.10	0.08 - 0.11	0.10 - 0.14	0.13 - 0.16			
Nodular cast iron ≤ 1000 N/mm²	65 - 80	0.08 - 0.12	0.10 - 0.13	0.12 - 0.15	0.14 - 0.18			
Cast iron, alloyed and unalloyed	70 - 100	0.08 - 0.12	0.10 - 0.13	0.12 - 0.15	0.14 - 0.18			
Aluminium and aluminium alloys	100 - 200	0.07 - 0.11	0.09 - 0.12	0.10 - 0.14	0.12 - 0.18			
Copper Cu-content < 99%	120 - ...	0.04 - 0.09	0.06 - 0.10	0.08 - 0.12	0.10 - 0.14			

* first recommendation

Drill tube Type 25

with 1-start connection thread for solid drill heads Type 11



Drill tubes for solid drill head Type 11

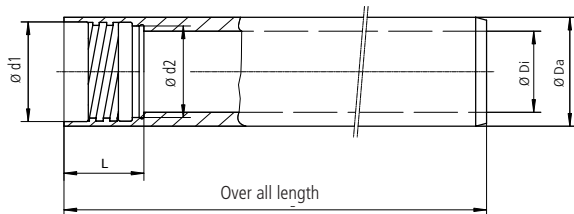
Drill head size	Drill tube Type 25 with 1-start connection thread					
	Drilling range from - to	Da	Di	d1	d2	L
93	14.55 - 15.00	12	8	9.9	11.5	23.3
94	15.05 - 15.50	13	8.5	10.2	11.8	
95	15.55 - 16.00	13	8.5	10.8	12.4	
96	16.05 - 16.50	14	9	11.1	12.7	
97	16.55 - 17.25	14	9	11.8	13.4	
98	17.30 - 17.95	15	10	12.1	13.7	
01	18.00 - 19.99	16.5	11	13.5	15.5	23
02	20.00 - 21.99	18	12	14.5	16.5	26
03	22.00 - 23.99	20	13	16	19	
04	24.00 - 26.99	22	14	17	20	
05	27.00 - 29.99	24	15.5	19	22	
06	30.00 - 31.99	26	17	21	24	
07	32.00 - 33.99	28	18.5	23	26	
08	34.00 - 36.99	30	20	24	27	41

Technical Information

Drill tube dimensions

Drill tube Type 45

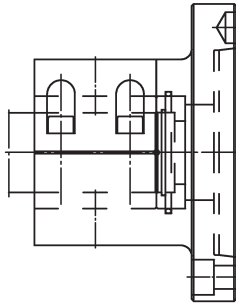
with 4-start connection thread for solid drill heads Type 61



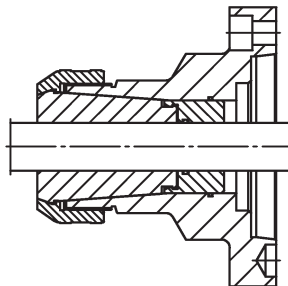
Drill tubes for solid drill head Type 61

Drill head size	Drill tube Type 45 with 4-start connection thread					
	Drilling range from - to	Da	Di	d1	d2	L
97	15.65 - 16.70	14	9	12.6	10.8	21
98	16.75 - 17.70	15	10	13.6	11.8	
99	17.75 - 18.99	16	10.5	14.5	12.5	22
01	19.00 - 19.99	17	11.5	15.5	13.5	
02	20.00 - 21.80	18	12	16	14	21.5
03	21.81 - 23.99	20	13	18	16	
04	24.00 - 26.49	22	14	19.5	17.5	
05	26.50 - 28.70	24	15.5	21	19	
06	28.71 - 30.99	26	17	23.5	21	24.5
07	31.00 - 33.30	28	18.5	25.5	23	
08	33.31 - 36.20	30	20	28	25.5	

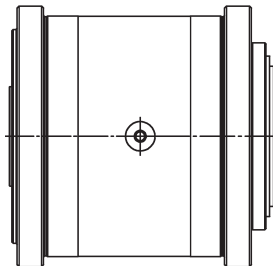
Drill tube drivers
(split style)



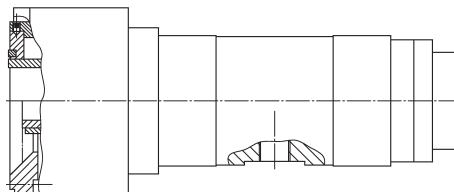
Drill tube drivers
(collet style)



Vibration dampers

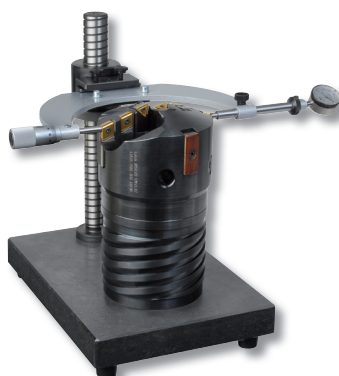


Pressure heads (BOZA)
for rotating and non-rotating
workpieces with clamping
cones or face sealing



Drill Head Setting Gauge

Process reliable diameter
setting of drill heads





DEEP HOLE DRILLING SYSTEMS
SOLID CARBIDE TOOLS

botech
Präzisionsbohrtechnik GmbH

Längenfeldstraße 4
72585 Riederich
Germany

P +49 7123 3808-0
F +49 7123 3808-138

Info@botech.de
www.botech.de

