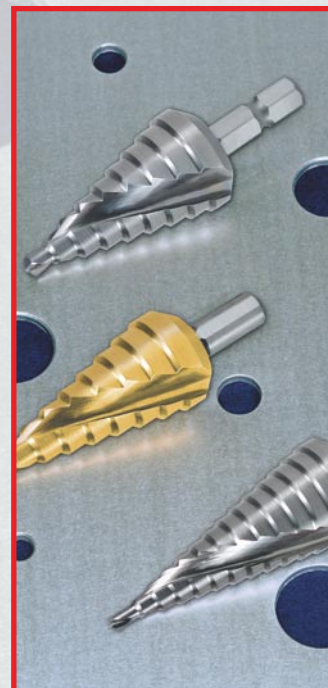




COMPETENCE
IN PRECISION
AND QUALITY

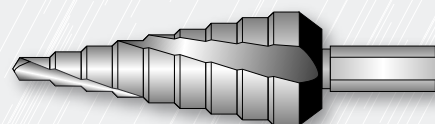
STEP DRILLS



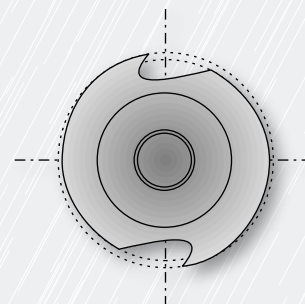
Product information

The flutes of new RUKO high performance step drills are CBN ground from the solid hardened form. Because CBN (cubical boron nitride) is a much harder abrasive than even silicon carbide or corundum, a better and sharper cutting edge is achieved - without burrs. And, with higher dimensional precision the drills will last considerably longer while maintaining the precise process tolerances.

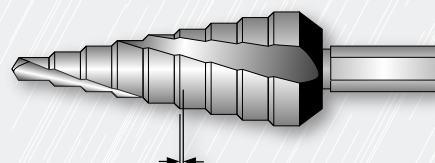
1. CBN ground spiral flutes enable very sharp and burr-free cutting edges compared to the ordinary milled flutes. Especially the chip flow is optimized, so even long, non-breaking chips will be removed easily. The optimized chip flow protects the cutting edges and reduces built-up edges and cold weld marks. Due to these special features, cutting performance and tool life are extended significantly.
2. Each step has a radially adjusted relief produced by CBN grinding that relates directly to the diameter of the step. This means the cutting edge is always the highest point of the diameter.
3. Each step is axially CBN relief ground. This means the cutting edge is always the highest point of the axial cutting axis.
4. The cutting edge of each step has relief angle. This means the cutting edge is also the highest point in advance direction.
5. The CBN ground bit ensures centering and spot-drilling even in thin-walled material.



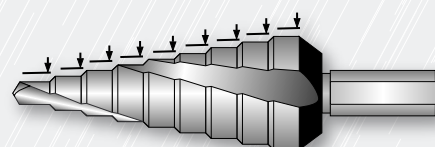
1. CBN ground spiral flute



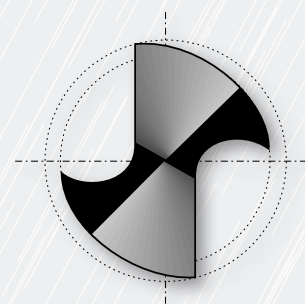
2. Radially adjusted relief produced by CBN grinding



3. Axially relief produced by CBN grinding



4. CBN ground relief angle



5. CBN ground bit with split point DIN 1412 C

Product application

1. The ideal tool for sheet metal working in the following sectors of industries: electrical (size 4 + size 9), sanitary engineering and heating technics (size 6 + size 7) or automotive, mechanical engineering, aviation (size 0/5, size 0/9, size 1, size 2, size 3, size 5) and switching systems (size 0/9k, size 1k, size 2k) up to 2 mm sheet thickness.
2. This tough tool is suitable for all standard industrial materials: nonferrous metal, special steel, thermoplastics and duroplastics as well as sheet metals up to 4 mm thickness.
3. This durable and versatile tool will center, spot-drill, bore and debur - all in one smooth, high performance working cycle.
4. By using RUKO cutting spray or RUKO cutting paste tool life will be considerably prolonged.

Step drills HSS, CBN ground, spiral fluted with split point

Point cut: work's specification with split point
DIN 1412 C

Point- / Step angle: 118° / 90°

Ø-tolerance: work's specification

Surface: bright

Right hand cutting

Packing unit: in plastic tubes of 1

The CBN ground and spiral flutes guarantee quiet running and high cutting performance. Especially the chip flow is optimized, so even long, non-breaking chips will be removed easily. The optimized chip flow protects the cutting edges and reduces built-up edges and cold weld marks. The cone makes it easier to withdraw the tool from the material.

Size no.	Drilling range mm	Total length mm	Steps	Shank-Ø mm	Article no.	Price / each €
0/5	4,0 - 12,00	65	5	6	101 050-5	
0/9	4,0 - 12,00	65	9	6	101 050-9	
1	4,0 - 20,00	75	9	8	101 051	
2	4,0 - 30,00	100	14	10	101 052	
3	6,0 - 38,00	100	12	10	101 053	
4	6,0 - 26,75	75	8	10	101 055	
5	4,0 - 39,00	107	13	10	101 056	
6	6,0 - 32,00	75	8	10	101 057	
7	5,0 - 28,00	69	7	10	101 058	
8	6,0 - 30,50	80	9	10	101 098	
9	6,0 - 37,00	100	12	10	101 060	
10	4,8 - 10,65	54	5	6	101 094	
11	6,0 - 25,00	65	7	10	101 095	
12	6,0 - 32,00	76	9	10	101 096	
13*	6,0 - 40,00	105	16	13	101 097	

Step drills HSS Co 5, CBN ground, spiral fluted with split point

Point cut: work's specification with split point DIN 1412 C

Point- / Step angle: 118° / 90°

Ø-tolerance: work's specification

Surface: bright

Right hand cutting

Packing unit: in plastic tubes of 1

The CBN ground and spiral flutes guarantee quiet running and high cutting performance. Especially the chip flow is optimized, so even long, non-breaking chips will be removed easily. The optimized chip flow protects the cutting edges and reduces built-up edges and cold weld marks. The cone makes it easier to withdraw the tool from the material.

Size no.	Drilling range mm	Total length mm	Steps	Shank-Ø mm	Article no.	Price / each €
0/9	4,0 - 12,00	65	9	6	101 050-9 E	
1	4,0 - 20,00	75	9	8	101 051 E	
2	4,0 - 30,00	100	14	10	101 052 E	
9	6,0 - 37,00	100	12	10	101 060 E	

Step drills HSS-TiN, CBN ground, spiral fluted with split point

Point cut: work's specification with split point
DIN 1412 C

Point- / Step angle: 118° / 90°

Ø-tolerance: work's specification

Surface: titanium-nitride coated

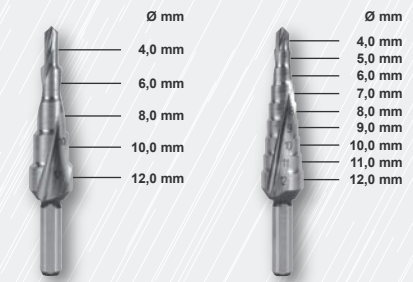
Right hand cutting

Packing unit: in plastic tubes of 1

The CBN ground and spiral flutes guarantee quiet running and high cutting performance. Especially the chip flow is optimized, so even long, non-breaking chips will be removed easily. The optimized chip flow protects the cutting edges and reduces built-up edges and cold weld marks. The cone makes it easier to withdraw the tool from the material.

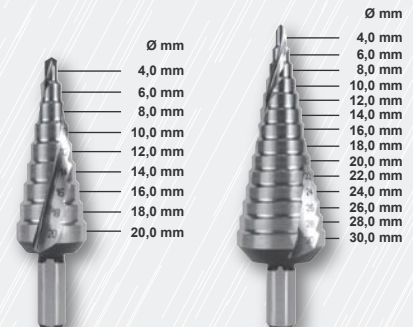
Size no.	Drilling range mm	Total length mm	Steps	Shank-Ø mm	Article no.	Price / each €
0/9	4,0 - 12,00	65	9	6	101 050-9 T	
1	4,0 - 20,00	75	9	8	101 051 T	
2	4,0 - 30,00	100	14	10	101 052 T	
9	6,0 - 37,00	100	12	10	101 060 T	

* straight fluted



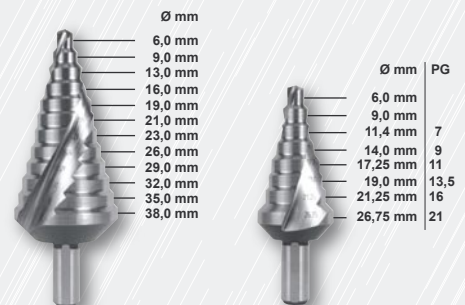
No. 0/5

No. 0/9



No. 1

No. 2



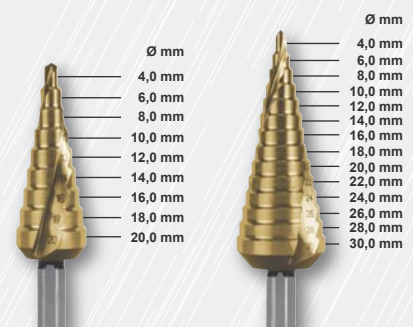
No. 3

No. 4



No. 5

No. 6



No. 1

No. 2

Step drills HSS, CBN ground, spiral fluted with split point

Point cut: work's specification with split point
DIN 1412 C
Point angle: 118°
Step angle: 90°
Ø-Tolerance: work's specification
Surface: bright
Right-hand cutting

The CBN ground and spiral flutes guarantee quiet running and high cutting performance. Especially the chip flow is optimized, so even long, non-breaking chips will be removed easily. The optimized chip flow protects the cutting edges and reduces built-up edges and cold weld marks. The cone makes it easier to withdraw the tool from the material. Step height 2 mm. **Ideal to produce switchboards.**

Packing unit: in plastic tubes of 1

Size no.	Drilling range mm	Total length mm	Steps	Shank-Ø mm	Article no.	Price / each €
0/9k	4,0 - 12,00	48	9	6	101 061	
1k	4,0 - 20,00	58	9	8	101 062	
2k	4,0 - 30,00	72	14	10	101 063	

Step drills HSS, CBN ground, spiral fluted with split point for metric cable connections, through holes after DIN/EN 50262

Point cut: work's specification with split point
DIN 1412 C
Point angle: 118°
Step angle: 90°
Ø-Tolerance: work's specification
Surface: bright
Right-hand cutting

The CBN ground and spiral flutes guarantee quiet running and high cutting performance. Especially the chip flow is optimized, so even long, non-breaking chips will be removed easily. The optimized chip flow protects the cutting edges and reduces built-up edges and cold weld marks. The cone makes it easier to withdraw the tool from the material. Step height 4 mm.

Packing unit: in plastic tubes of 1

Size no.	Drilling range mm	Total length mm	Steps	Shank-Ø mm	Article no.	Price / each €
15	6,5 - 32,5	79	9	10	101 092	
17	6,5 - 40,5	96	11	10	101 090	

Step drills HSS, CBN ground, spiral fluted with split point for metric cable connections, core holes after DIN/EN 60423

Point cut: work's specification with split point
DIN 1412 C
Point angle: 118°
Step angle: 90°
Ø-Tolerance: work's specification
Surface: bright
Right-hand cutting

The CBN ground and spiral flutes guarantee quiet running and high cutting performance. Especially the chip flow is optimized, so even long, non-breaking chips will be removed easily. The optimized chip flow protects the cutting edges and reduces built-up edges and cold weld marks. The cone makes it easier to withdraw the tool from the material. Step height 4 mm.

Packing unit: in plastic tubes of 1

Size no.	Drilling range mm	Total length mm	Steps	Shank-Ø mm	Article no.	Price / each €
14	5,3 - 30,5	79	9	10	101 093	
16	5,3 - 38,5	96	11	10	101 091	

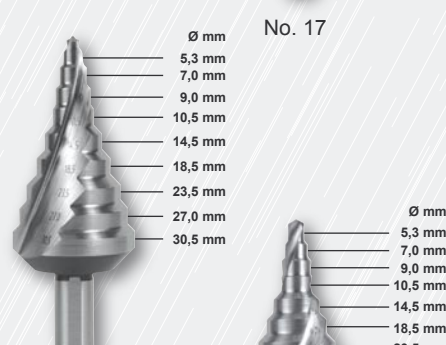
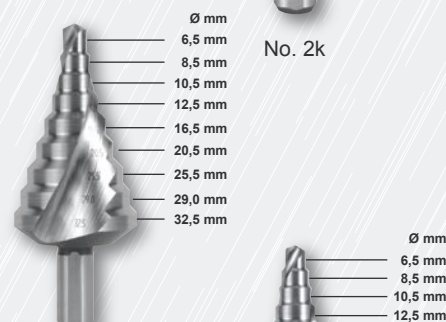
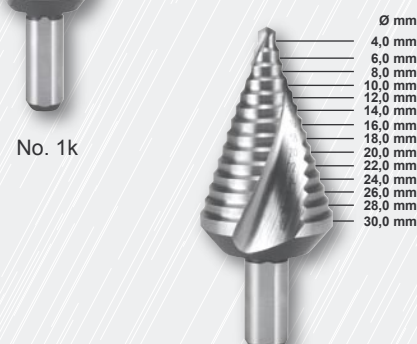
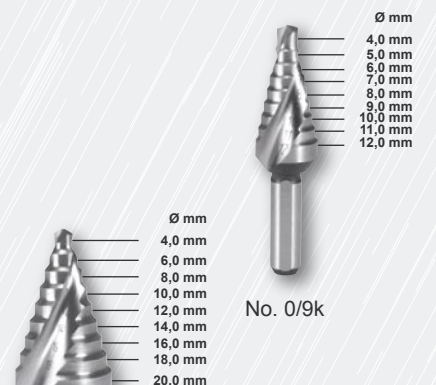
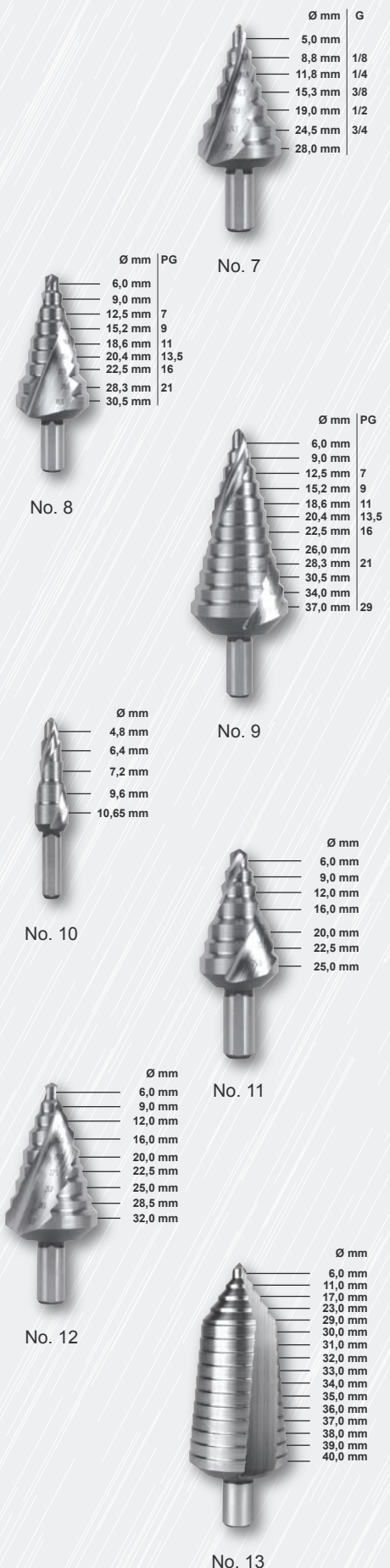


Table of application for step drills HSS, HSS Co 5, HSS-TiN, CBN ground

Size	Description						
No. 0/5	for metric hole diameters						
	Ø 4,0 mm	Ø 6,0 mm	Ø 8,0 mm	Ø 10,0 mm	Ø 12,0 mm		
No. 0/9	for metric hole diameters						
	Ø 4,0 mm	Ø 5,0 mm	Ø 6,0 mm	Ø 7,0 mm	Ø 8,0 mm	Ø 9,0 mm	Ø 10,0 mm
	Ø 11,0 mm	Ø 12,0 mm					
No. 1	for metric hole diameters						
	Ø 4,0 mm	Ø 6,0 mm	Ø 8,0 mm	Ø 10,0 mm	Ø 12,0 mm	Ø 14,0 mm	Ø 16,0 mm
	Ø 18,0 mm	Ø 20,0 mm					
No. 2	for metric hole diameters						
	Ø 4,0 mm	Ø 6,0 mm	Ø 8,0 mm	Ø 10,0 mm	Ø 12,0 mm	Ø 14,0 mm	Ø 16,0 mm
	Ø 18,0 mm	Ø 20,0 mm	Ø 22,0 mm	Ø 24,0 mm	Ø 26,0 mm	Ø 28,0 mm	Ø 30,0 mm
No. 3	for metric hole diameters						
	Ø 6,0 mm	Ø 9,0 mm	Ø 13,0 mm	Ø 16,0 mm	Ø 19,0 mm	Ø 21,0 mm	Ø 23,0 mm
	Ø 26,0 mm	Ø 29,0 mm	Ø 32,0 mm	Ø 35,0 mm	Ø 38,0 mm		
No. 4	for steel conduit threads (core holes)						
	PG 7	PG 9	PG 11	PG 13,5	PG 16	PG 21	
	Ø 11,4 mm	Ø 14,0 mm	Ø 17,25 mm	Ø 19,0 mm	Ø 21,25 mm	Ø 26,75 mm	
No. 5	for metric hole diameters						
	Ø 4,0 mm	Ø 6,0 mm	Ø 9,0 mm	Ø 12,0 mm	Ø 15,0 mm	Ø 18,0 mm	Ø 21,0 mm
	Ø 24,0 mm	Ø 27,0 mm	Ø 30,0 mm	Ø 33,0 mm	Ø 36,0 mm	Ø 39,0 mm	
No. 6	for pipe threads (external Ø, through holes)						
	R 1/8"	R 1/4"	R 3/8"	R 1/2"	R 3/4"		
	Ø 11,2 mm	Ø 14,5 mm	Ø 18,2 mm	Ø 22,3 mm	Ø 27,9 mm		
No. 7	for pipe threads (core holes)						
	G 1/8"	G 1/4"	G 3/8"	G 1/2"	G 3/4"		
	Ø 8,8 mm	Ø 11,8 mm	Ø 15,3 mm	Ø 19 mm	Ø 24,5 mm		
No. 8	for steel conduit threads (through holes)						
	PG 7	PG 9	PG 11	PG 13,5	PG 16	PG 21	
	Ø 12,5 mm	Ø 15,2 mm	Ø 18,6 mm	Ø 20,4 mm	Ø 22,5 mm	Ø 28,3 mm	
No. 9	for steel conduit threads (through holes)						
	PG 7	PG 9	PG 11	PG 13,5	PG 16	PG 21	PG 29
	Ø 12,5 mm	Ø 15,2 mm	Ø 18,6 mm	Ø 20,4 mm	Ø 22,5 mm	Ø 28,3 mm	Ø 37 mm
No. 10	for blind rivets M3 - M4 - M5 - M6 - M8						
	Ø 4,8 mm	Ø 6,4 mm	Ø 7,2 mm	Ø 9,6 mm	Ø 10,65 mm		
No. 11	for metric hole diameters with high steps						
	Ø 6,0 mm	Ø 9,0 mm	Ø 12,0 mm	Ø 16,0 mm	Ø 20,0 mm	Ø 22,5 mm	Ø 25,0 mm
No. 12	for metric hole diameters with high steps						
	Ø 6,0 mm	Ø 9,0 mm	Ø 12,0 mm	Ø 16,0 mm	Ø 20,0 mm	Ø 22,5 mm	Ø 25,0 mm
	Ø 28,5 mm	Ø 32,0 mm					
No. 13	for metric hole diameters and large diameters						
	Ø 6,0 mm	Ø 11,0 mm	Ø 17,0 mm	Ø 23,0 mm	Ø 29,0 mm	Ø 30,0 mm	Ø 31,0 mm
	Ø 32,0 mm	Ø 33,0 mm	Ø 34,0 mm	Ø 35,0 mm	Ø 36,0 mm	Ø 37,0 mm	Ø 38,0 mm
	Ø 39,0 mm	Ø 40,0 mm					
No. 14	for metric cable connections, core holes after DIN/EN 60423						
	M 6	M 8	M 10	M 12	M 16	M 20	M 25
	Ø 5,3 mm	Ø 7,0 mm	Ø 9,0 mm	Ø 10,5 mm	Ø 14,5 mm	Ø 18,5 mm	Ø 23,5 mm
	M 32						
	Ø 30,5 mm						
No. 15	for metric cable connections, through holes after DIN/EN 50262						
	M 6	M 8	M 10	M 12	M 16	M 20	M 25
	Ø 6,5 mm	Ø 8,5 mm	Ø 10,5 mm	Ø 12,5 mm	Ø 16,5 mm	Ø 20,5 mm	Ø 25,5 mm
	M 32						
	Ø 32,5 mm						
No. 16	for metric cable connections, core holes after DIN/EN 60423						
	M 6	M 8	M 10	M 12	M 16	M 20	M 25
	Ø 5,3 mm	Ø 7,0 mm	Ø 9,0 mm	Ø 10,5 mm	Ø 14,5 mm	Ø 18,5 mm	Ø 23,5 mm
	M 32	M 40					
	Ø 30,5 mm	Ø 38,5 mm					
No. 17	for metric cable connections, through holes after DIN/EN 50262						
	M 6	M 8	M 10	M 12	M 16	M 20	M 25
	Ø 6,5 mm	Ø 8,5 mm	Ø 10,5 mm	Ø 12,5 mm	Ø 16,5 mm	Ø 20,5 mm	Ø 25,5 mm
	M 32	M 40					
	Ø 32,5 mm	Ø 40,5 mm					



Step drills bit HSS, CBN ground, spiral fluted with split point

1.4

Point cut: work's specification
with split point DIN 1412 C
Point angle: 118°
Step angle: 90°
Ø-tolerance: work's specification
Surface: bright
Shank: 6,35 x 27 mm
Right hand cutting

The CBN ground and spiral flutes guarantee quiet running and high cutting performance. Especially the chip flow is optimized, so even long, non-breaking chips will be removed easily. The optimized chip flow protects the cutting edges and reduces built-up edges and cold weld marks. The cone makes it easier to withdraw the tool from the material.

Packing unit:
in plastic tubes of 1

Size no.	Drilling range mm	Total length mm	Steps	Shank hexagon	Article no.	Price / each €
0/9	4,0 - 12,0	72	9	1/4"	101 050-9H	
1	4,0 - 20,0	81	9	1/4"	101 051 H	
2	4,0 - 30,0	105	14	1/4"	101 052 H	

Emphasised articles are new additions.

Step drills HSS, inch size, CBN ground, with split point

Point cut: work's specification
with split point DIN 1412 C
Point angle: 118°
Step angle: 90°
Ø-tolerance: work's specification
Surface: bright
Right hand cutting

The CBN ground flutes guarantee quiet running and high cutting performance. The cone makes it easier to withdraw the tool from the material.

Packing unit:
in plastic tubes of 1

Size no.	Drilling range inch	Total length inch	Steps	Shank Ø inch	Article no.	Price / each €
1	3/16 - 1/2	3 1/8	6	1/4	101 701	
2	1/8 - 1/2	3 1/8	13	1/4	101 702	
3	1/4 - 3/4	2 3/4	9	3/8	101 703	
4	3/16 - 7/8	3 1/4	12	3/8	101 704	
5	1/2 - 1	3 1/4	9	3/8	101 705	
6	7/8 - 1 3/8	3 1/4	5	3/8	101 706	
7	3/8 - 1/2	1 7/8	2	1/4	101 707	
8	7/8	2 19/32	1	3/8	101 708	
9	7/8 - 1 1/8	3 7/64	2	3/8	101 709	



No. 0/9



No. 1



No. 2



No. 1



No. 2



No. 3



No. 4



No. 5

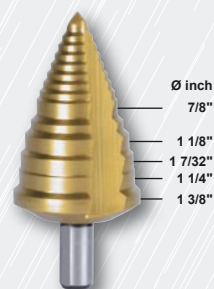
Step drills HSS-TiN, inch size, CBN ground, with split point

Point cut: work's specification
with split point DIN 1412 C
Point angle: 118°
Step angle: 90°
Ø-tolerance: work's specification
Surface: titanium-nitride coated
Right hand cutting

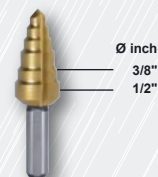
The CBN ground flutes guarantee quiet running and high cutting performance. The cone makes it easier to withdraw the tool from the material.

Packing unit:
in plastic tubes of 1

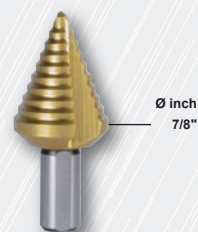
Size no.	Drilling range inch	Total length inch	Steps	Shank Ø inch	Article no.	Price / each €
1	3/16 - 1/2	3 1/8	6	1/4	101 701 T	
2	1/8 - 1/2	3 1/8	13	1/4	101 702 T	
3	1/4 - 3/4	2 3/4	9	3/8	101 703 T	
4	3/16 - 7/8	3 1/4	12	3/8	101 704 T	
5	1/2 - 1	3 1/4	9	3/8	101 705 T	
6	7/8 - 1 3/8	3 1/4	5	3/8	101 706 T	
7	3/8 - 1/2	1 7/8	2	1/4	101 707 T	
8	7/8	2 19/32	1	3/8	101 708 T	
9	7/8 - 1 1/8	3 7/64	2	3/8	101 709 T	



No. 6



No. 7



No. 8



No. 9

Step drill set HSS, CBN ground, spiral fluted in steel case

Description	Article no.	Price / set €
Step drills HSS spiral fluted, sizes 0/9, 1, 2	101 026	

No. 101 026 E



Step drill set HSS Co 5, CBN ground, spiral fluted in steel case

Description	Article no.	Price / set €
Step drills HSS Co 5 spiral fluted, sizes 0/9, 1, 2	101 026 E	

No. 101 026 T



Step drill set HSS-TiN, CBN ground, spiral fluted in steel case

Description	Article no.	Price / set €
Step drills HSS-TiN spiral fluted, sizes 0/9, 1, 2	101 026 T	

Step drill set Combi HSS, CBN ground, spiral fluted in steel case

Description	Article no.	Price / set €
Step drills HSS spiral fluted, sizes 1, 2 + 1 milling drill HSS Ø 6,0 mm x 90 mm	101 027	

No. 101 027



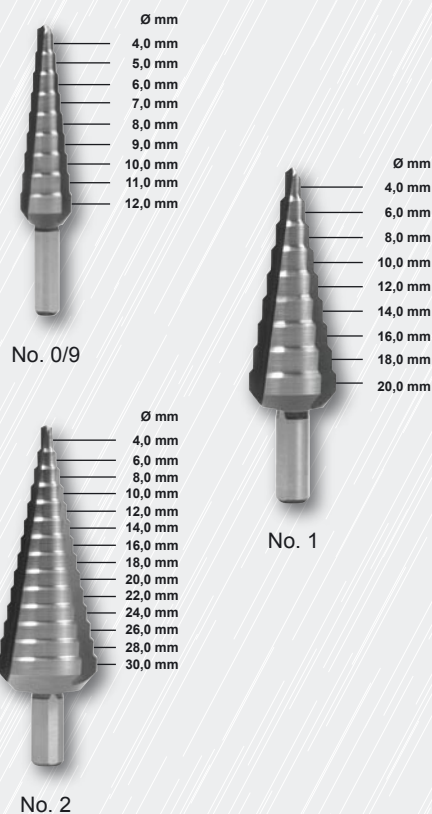
Step drills HSS, CBN ground with 3 cutting edges

Point cut: work's specification
Point angle: 118°
Step angle: 90°
Ø-tolerance: work's specification
Surface: bright
Right hand cutting

The deep-ground flutes of step drills with 3 cutting edges guarantee absolutely chatter-free working. The reduced load of the cutting edges allows a higher feed rate especially for soft materials like non-ferrous metals. The cone makes it easier to withdraw the tool from the material.

Packing unit:
in plastic boxes of 1

Size no.	Drilling range mm	Total length mm	Steps	Shank-Ø mm	Article no.	Price / each €
0/9	4,0 - 12,00	65	9	6	101 350-9	
1	4,0 - 20,00	75	9	8	101 351	
2	4,0 - 30,00	100	14	10	101 352	



Step drill set HSS, CBN ground with 3 cutting edges in steel case

Description	Article no.	Price / set €
Step drills HSS with 3 cutting edges, sizes 0/9, 1, 2	101 326	



No. 101 326

Milling drills HSS, HSS-TiN

Point cut: helical point
Point angle: 118°
Surface: bright / TiN
Right hand cutting

For drilling and milling contours into wood, sheet metal, plastics and other thin-walled materials. Twist drill at the front, turning into a milling cutter with chip breakers.

Packing unit:
in plastic boxes of 1

Ø mm	Total length mm	Material	Article no.	Price / each €
6,0	90	HSS	101 201	
8,0	90	HSS	101 202	
6,0	90	HSS-TiN	101 201 T	
8,0	90	HSS-TiN	101 202 T	



No. 101 201



No. 101 201 T

Step drills HSS, CBN ground

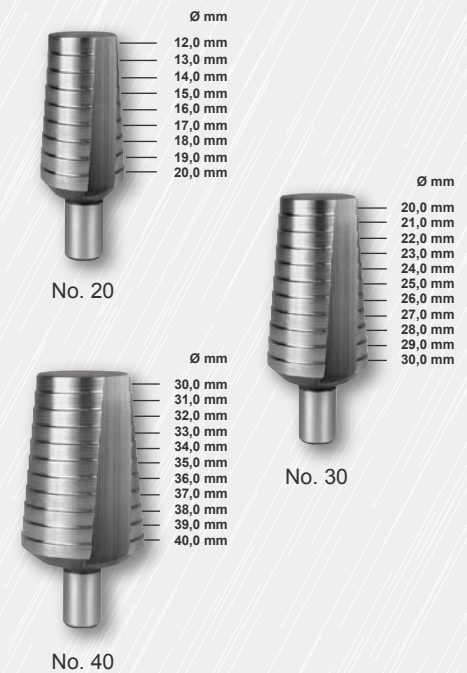
Point cut: without point
 Step angle: 90°
 Ø-tolerance: work's specification
 Surface: bright
 Right hand cutting

The CBN ground flutes guarantee quiet running and high cutting performance. The cone makes it easier to withdraw the tool from the material.



Packing unit:
 in plastic boxes of 1

Size no.	Drilling range mm	Total length mm	Steps	Shank-Ø mm	Article no.	Price / each €
20	12,0 - 20,00	66	9	8	101 361	
30	20,0 - 30,00	78	11	10	101 362	
40	30,0 - 40,00	78	11	10	101 363	



Step drills - table of cutting speeds

Material		High carbon struc. steel up to 700 N/mm²	High carbon struc. steel over 700 N/mm²	Alloyed steel up to 1000 N/mm²	Cast iron up to 250 N/mm²	Cast iron over 250 N/mm²	CuZn-alloy brittle	CuZn-alloy tough	Al-alloy up to 11% Si	Thermo-plastics	Duro-plastics
Sheet thickness mm		up to 4	up to 4	up to 4	up to 4	up to 4	up to 4	up to 4	up to 4	up to 4	up to 4
Vc = m/min		30	20	20	15	10	60	35	30	20	15
Cooling lubricant		Cutting spray	Cutting spray	Cutting spray	Air	Air	Air	Air	Cutting spray	Water	Air
Size	Ø mm	r.p.m.	r.p.m.	r.p.m.	r.p.m.	r.p.m.	r.p.m.	r.p.m.	r.p.m.	r.p.m.	r.p.m.
No. 0/5	4,0-12,0	2389-796	1592-531	1592-531	1194-398	796-265	4777-1592	2787-929	2389-796	1592-531	1194-398
No. 0/9	4,0-12,0	2389-796	1592-531	1592-531	1194-398	796-265	4777-1592	2787-929	2389-796	1592-531	1194-398
No. 1	4,0-20,0	2389-478	1592-318	1592-318	1194-239	796-159	4777-955	2787-557	2389-478	1592-318	1194-239
No. 2	4,0-30,0	2389-318	1592-212	1592-212	1194-159	796-106	4777-637	2787-372	2389-318	1592-212	1194-159
No. 3	6,0-38,0	1592-251	1062-168	1062-168	796-126	531-84	3185-503	1858-293	1592-251	1062-168	796-126
No. 4	6,0-26,8	1592-357	1062-238	1062-238	796-179	531-119	3185-714	1858-417	1592-357	1062-238	796-179
No. 5	4,0-32,0	2389-299	1592-199	1592-199	1194-149	796-100	4777-597	2787-348	2389-299	1592-199	1194-149
No. 6	6,0-32,0	1592-299	1062-199	1062-199	796-149	531-100	3185-597	1858-348	1592-299	1062-199	796-149
No. 7	5,0-28,0	1911-341	1274-227	1274-227	955-171	637-114	3822-682	2229-398	1911-341	1274-227	955-171
No. 8	6,0-30,5	1592-313	1062-209	1062-209	796-157	531-104	3185-627	1858-365	1592-313	1062-209	796-157
No. 9	6,0-37,0	1592-258	1062-172	1062-172	796-129	531-86	3185-516	1858-301	1592-258	1062-172	796-129
No. 10	4,8-10,7	1990-897	1327-598	1327-598	995-449	663-299	3981-1794	2322-1047	1990-897	1327-598	995-449
No. 11	6,0-25,0	1592-382	1062-255	1062-255	796-191	531-127	3185-764	1858-446	1592-382	1062-255	796-191
No. 12	6,0-32,0	1592-299	1062-199	1062-199	796-149	531-100	3185-597	1858-348	1592-299	1062-199	796-149
No. 13	6,0-40,0	1592-239	1062-159	1062-159	796-119	531-80	3185-478	1858-279	1592-239	1062-159	796-119
No. 14	5,3-30,5	1803-313	1202-209	1202-209	901-157	601-104	3605-627	2103-365	1803-313	1202-209	901-157
No. 15	6,5-32,5	1470-294	980-196	980-196	735-147	490-98	2940-588	1715-343	1470-294	980-196	735-147
No. 16	5,3-38,5	1803-248	1202-165	1202-165	901-124	601-83	3605-496	2103-290	1803-248	1202-165	901-124
No. 17	6,5-40,5	1470-236	980-157	980-157	735-118	490-79	2940-472	1715-275	1470-236	980-157	735-118
No. 20	12,0-20,0	796-478	531-318	531-318	398-239	265-159	1592-955	929-557	796-478	531-318	398-239
No. 30	20,0-30,0	478-318	318-212	318-212	239-159	159-106	955-637	557-372	478-318	318-212	239-159
No. 40	30,0-40,0	318-239	212-159	212-159	159-119	106-80	637-478	372-279	318-239	212-159	159-119
Size	Ø inch	r.p.m.	r.p.m.	r.p.m.	r.p.m.	r.p.m.	r.p.m.	r.p.m.	r.p.m.	r.p.m.	r.p.m.
No. 1	3/16 - 1/2	2006-752	1337-502	1337-502	1003-376	669-251	4012-1505	2340-878	2006-752	1337-502	1003-376
No. 2	1/8 - 1/2	3009-752	2006-502	2006-502	1505-376	1003-251	6018-1505	3511-878	3009-752	2006-502	1505-376
No. 3	1/4 - 3/4	1505-502	1003-334	1003-334	752-251	502-167	3009-1003	1755-585	1505-502	1003-334	752-251
No. 4	3/16 - 7/8	2006-430	1337-287	1337-287	1003-215	669-143	4012-860	2340-502	2006-430	1337-287	1003-215
No. 5	1/4 - 1	1505-376	1003-251	1003-251	752-188	502-125	3009-752	1755-439	1505-376	1003-251	752-188
No. 6	1/4 - 1 3/8	1505-274	1003-182	1003-182	752-137	502-91	3009-547	1755-319	1505-274	1003-182	752-137
No. 7	5/32 - 1/2	2407-752	1605-502	1605-502	1204-376	802-251	4815-1505	2809-878	2407-752	1605-502	1204-376
No. 8	5/32 - 7/8	2407-430	1605-287	1605-287	1204-215	802-143	4815-860	2809-502	2407-430	1605-287	1204-215
No. 9	5/32 - 1 1/8	2407-334	1605-223	1605-223	1204-167	802-111	4815-669	2809-390	2407-334	1605-223	1204-167

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