



STEP DRILLS

FASCINATION FOR PRECISION®

Range and applications overview:

ULTIMATECUT®



NEXT GENERATION



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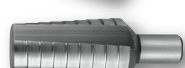
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









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	Material	Surface	Cutting edges	Material thickness	Point angle	Point cut	Shank	Ø mm	Article no.	Page
	HSS	RUna TEC	4	max 10,0 mm	130°			6,0 - 12,0 - 6,0 - 27,0	101 082 P - 101 084 P	92 - 95
	HSS		2	max 4,0 mm	118°			4,0 - 12,0 - 6,0 - 40,0	101 050-5 - 101 097	96 - 99
	HSSE Co 5		2	max 4,0 mm	118°			4,0 - 12,0 - 6,5 - 32,5	101 050-9 E - 101 534 E	96 - 99
	HSS	TIN	2	max 4,0 mm	118°			4,0 - 12,0 - 6,0 - 40,0	101 050-5 T - 101 097 T	96 - 99
	HSS	TiAlN	2	max 4,0 mm	118°			4,0 - 12,0 - 6,0 - 40,0	101 050-5 F - 101 097 F	96 - 99
	HSS	TiAlN	2	max 3,5 mm	118°			6,0 - 18,0	101 068 F-1	100
	HSS		2	max 4,0 mm	118°			4,0 - 12,0 - 4,0 - 30,0	101 050-9 H - 101 052 H	101
	HSS	TIN	2	max 4,0 mm	118°			4,0 - 12,0 - 4,0 - 30,0	101 050-9 TH - 101 052 TH	101
	HSS		2	max 2,0 mm	118°			4,0 - 12,0 - 4,0 - 30,0	101 061 - 101 063	101
	HSS		2	max 4,0 mm	118°			3/16 - 1/2 - 7/8 - 1 1/8	101 701 - 101 709	102
	HSSE Co 5		2	max 4,0 mm	118°			3/16 - 1/2 - 7/8 - 1 1/8	101 701 E - 101 709 E	102
	HSS	TIN	2	max 4,0 mm	118°			3/16 - 1/2 - 7/8 - 1 1/8	101 701 T - 101 709 T	102
	HSS	TiAlN	2	max 4,0 mm	118°			3/16 - 1/2 - 7/8 - 1 1/8	101 701 F - 101 709 F	102
	HSS		3	max 4,0 mm	118°			4,0 - 12,0 - 4,0 - 30,0	101 350-9 - 101 352	103
	HSS		2	max 4,0 mm	118°			5,3 - 30,5 - 6,5 - 32,5	101 090 - 101 093	104
	HSS	TIN	2	max 4,0 mm	118°			5,3 - 30,5 - 6,5 - 32,5	101 090 T - 101 093 T	104
	HSS	TiAlN	2	max 4,0 mm	118°			5,3 - 30,5 - 6,5 - 32,5	101 090 F - 101 093 F	104
	HSS		2	max 4,0 mm				12,0 - 20,0 - 30,0 - 40,0	101 361 - 101 363	104

Steel (N/mm ²) < 900 	Steel (N/mm ²) < 1100 	Steel (N/mm ²) < 1300 	Stainless steel 	Aluminium 	Brass 	Bronze 	Plastics 	Cast iron 	Titanium alloyed 
■	■	□	□	■	■	□	■	□	
■				■	■	□	■	□	
■	■		■	■	■	□	■	□	
■	□		□		■	□	■	□	
■	■	□	□	■	■	□	■	□	
■	■	□	□	■	■	□	■	□	
■				■	■	□	■	□	
■	□		□		■	□	■	□	
■				■	■	□	■	□	
■	■		■	■	■	□	■	□	
■	□		□		■	□	■	□	
■	■		■	■	■	■	■	□	
■				■	■	□	■	□	
■				■	■	□	■	□	
■			□		■	□	■	□	
■	■		■	■	■	■	■	□	
■				■	■	□	■	□	

■ Main application □ Other application

Welcome to the world's first.

The new RUKO
ULTIMATECUT®
step drill

- 5 in 1 tool
- Up to 75% time savings
- Ultimate flexibility



OUT NOW

Information
and videos



RUna
TEC



↑ 10
↓ mm

Unique in every step.

- No **center punching** thanks to specially developed turbo tip.
- No **tool changes** due to pre-drilling and different drill hole diameters, which would occur with for e.g. **twist drills**.
- No problems in **hard-to-reach places**, for e.g. T-beams, where the use of big machines with **core drills** is problematic.
- No problems with **low holding forces** of magnetic stand drilling machines for materials < 10 mm, since it can be drilled with a manual drilling machine.
- No extra **deburring** necessary, the next step takes over this function.





ULTIMATECUT Step drills HSS RUnaTEC, spiral fluted with turbo tip

The **ULTIMATECUT** step drill revolutionizes the work process and sets new standards in machining time with time savings of up to 75%. The step drill from RUKO achieves this through its revolutionary cutting edge geometry by combining the most diverse applications and tools. This means less tools needed, no tool changes and ultimate flexibility.

Packing unit: in plastic tubes of 1

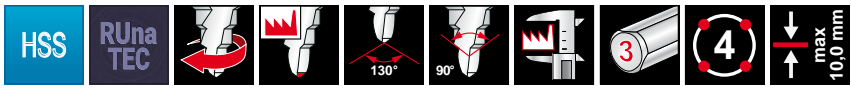


- Cooling
- Adjust speed
- Low speeds for hand drills
- Follow table of application for **ULTIMATECUT** step drills
- Pay attention to total length while drilling

Steel (N/mm2) < 900		Brass	
Steel (N/mm2) < 1100		Bronze	
Steel (N/mm2) < 1300		Plastics	
Rust-resistant steel		Cast iron	
Aluminium		Titanium alloyed	



Size no.	Ø1 - Ø2 mm	Drilling range Ø mm	L1 mm	Steps	Ø3 mm			
S1	6,0 - 12,00	6,0 / 7,0 / 8,0 / 9,0 / 10,0 / 11,0 / 12,0	105,0	7	8,0	101 082 P	1	
M2	6,0 - 20,00	6,0 / 8,0 / 10,0 / 12,0 / 14,0 / 16,0 / 18,0 / 20,0	120,0	8	10,0	101 083 P	1	
L3	6,0 - 27,00	6,0 / 9,0 / 12,0 / 15,0 / 18,0 / 21,0 / 24,0 / 27,0	125,0	8	12,0	101 084 P	1	



ULTIMATECUT Step drill set HSS RUnaTEC, in plastic case

3-piece set of ULTIMATECUT step drills spiral fluted, sizes S1, M2, L3	101 087 PRO	





Table of cutting speeds for ULTIMATECUT step drills

Material	Application	Working step	Hand drill	Pillar drill manual feed	Pillar drill / CNC machine automatic feed
Structural steel (e.g. S235JR) Non-ferrous metals / Plexiglas / Plastics / Wood	■	tapping (drilling through 1st step)	up to 1000 rpm cooling recommended	up to 1000 rpm cooling recommended	approx. 750 rpm f = 0,1mm/rev cooling necessary
		reaming (from 2nd step)	100 - 250 rpm cooling recommended	250- 350 rpm cooling recommended	
Stainless steel up to V2A	□	tapping (drilling through 1st step)	up to 600 rpm cooling necessary	up to 600 rpm cooling necessary	approx. 600 rpm f = 0,05mm/rev cooling necessary
		reaming (from 2nd step)	100 - 200 rpm cooling necessary	200 - 300 rpm cooling necessary	

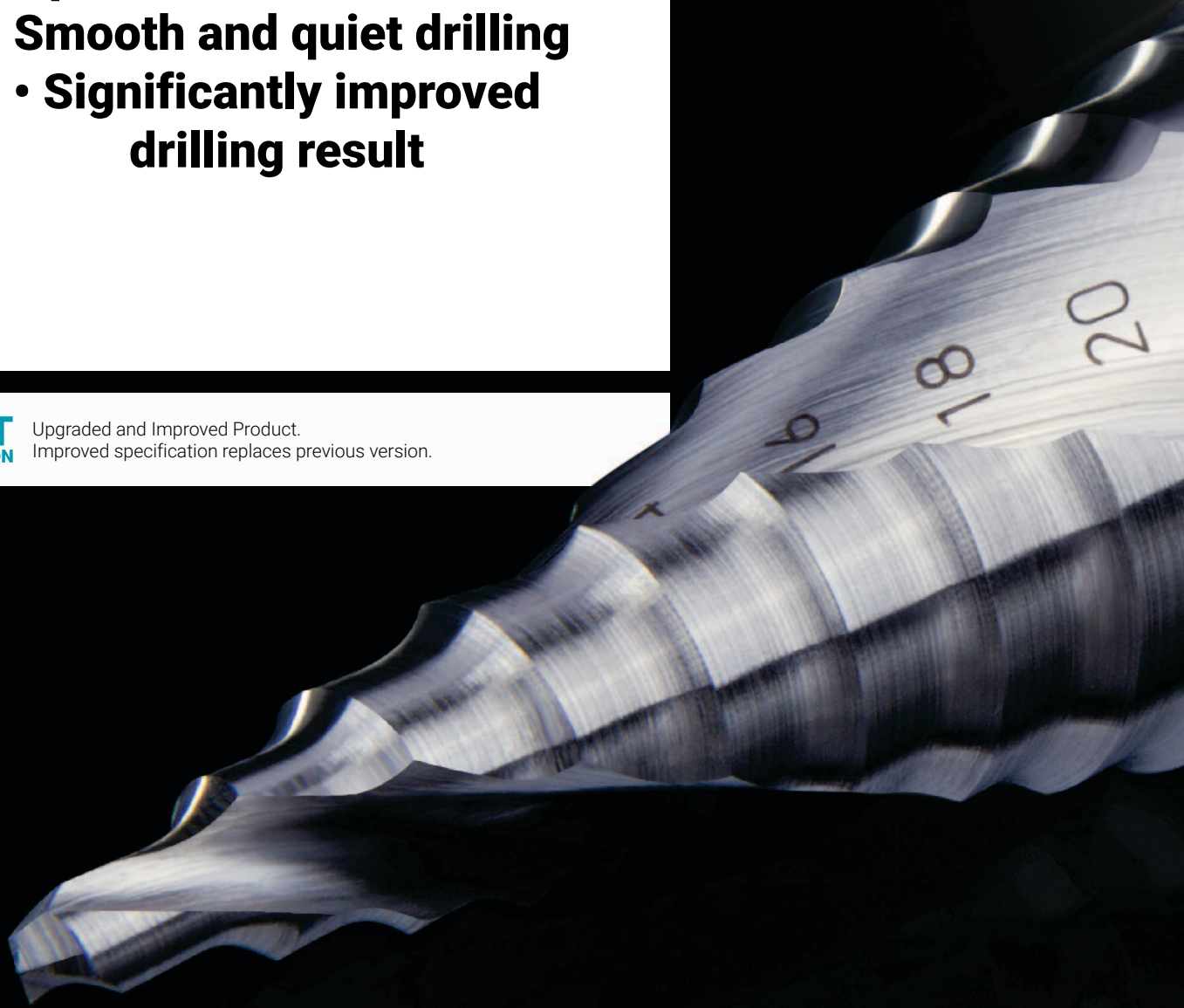
Effective without compromises.

The new RUKO
step drill generation

- **Up to 4 times more holes**
- **Smooth and quiet drilling**
- **Significantly improved drilling result**

**NEXT
GENERATION**

Upgraded and Improved Product.
Improved specification replaces previous version.



NEXT GENERATION

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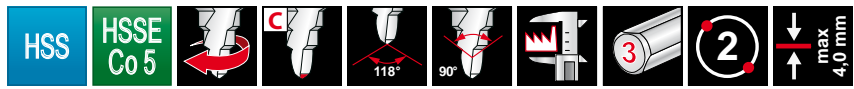
FlowStep Technology

Improved control on more difficult to cut materials, such as thin sheet and Plexiglas, whilst still providing outstanding performance on tougher materials such as stainless steel.

Unique new cutting geometry design provides an easy, low force, seamless transition between the increasing hole diameters.

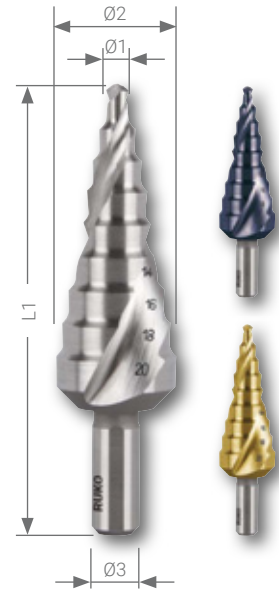
Information
and videos





NEXT GENERATION Step drills HSS and HSSE-Co 5, spiral fluted with split point

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 chamfer on the base of the cone makes withdrawal of the tool from the material simple when through hole drilling.



Packing unit: in plastic tubes of 1

- Cooling
- Adjust speed
- Do not press
- Step drill is pulled automatically into the plate

Steel (N/mm ²) < 900	■	■	■	■
Steel (N/mm ²) < 1100		■	□	■
Steel (N/mm ²) < 1300				□
Rust-resistant steel		■	□	□
Aluminium	■	■		■

Brass	■	■	■	■
Bronze	□	□	□	□
Plastics	■	■	■	■
Cast iron	□	□	□	□
Titanium alloyed				

Size no.	Ø1 - Ø2 mm	L1 mm	Steps	Ø3 mm	HSS	HSSE Co 5	HSS TiN	HSS TiAlN	
0/5	4,0 - 12,00	65,0	5	6,0	101 050-5	—	101 050-5 T	101 050-5 F	1
0/9	4,0 - 12,00	65,0	9	6,0	101 050-9	101 050-9 E	101 050-9 T	101 050-9 F	1
1	4,0 - 20,00	75,0	9	8,0	101 051	101 051 E	101 051 T	101 051 F	1
2	4,0 - 30,00	100,0	14	10,0	101 052	101 052 E	101 052 T	101 052 F	1
3	6,0 - 38,00	100,0	12	10,0	101 053	—	101 053 T	101 053 F	1
4	6,0 - 26,75	75,0	8	10,0	101 055	—	101 055 T	101 055 F	1
5	4,0 - 39,00	107,0	13	10,0	101 056	101 056 E	101 056 T	101 056 F	1
6	6,0 - 32,00	75,0	8	10,0	101 057	—	101 057 T	101 057 F	1
7	5,0 - 28,00	69,0	7	10,0	101 058	—	101 058 T	101 058 F	1
8	6,0 - 30,50	80,0	9	10,0	101 098	—	101 098 T	101 098 F	1
9	6,0 - 37,00	100,0	12	10,0	101 060	101 060 E	101 060 T	101 060 F	1
12	6,0 - 32,00	76,0	9	10,0	101 096	—	101 096 T	101 096 F	1
13	6,0 - 40,00	105,0	16	13,0	101 097*	—	101 097 T*	101 097 F*	1
18	6,5 - 32,50	91,0	12	10,0	—	101 534 E	—	—	1

* straight flute

Size no.	Drilling range Ø mm
0/5	4,0 / 6,0 / 8,0 / 10,0 / 12,0
0/9	4,0 / 5,0 / 6,0 / 7,0 / 8,0 / 9,0 / 10,0 / 11,0 / 12,0
1	4,0 / 6,0 / 8,0 / 10,0 / 12,0 / 14,0 / 16,0 / 18,0 / 20,0
2	4,0 / 6,0 / 8,0 / 10,0 / 12,0 / 14,0 / 16,0 / 18,0 / 20,0 / 22,0 / 24,0 / 26,0 / 28,0 / 30,0
3	6,0 / 9,0 / 13,0 / 16,0 / 19,0 / 21,0 / 23,0 / 26,0 / 29,0 / 32,0 / 35,0 / 38,0
4	6,0 / 9,0 / 11,4 (PG7) / 14,0 (PG9) / 17,25 (PG11) / 19,0 (PG13,5) / 21,25 (PG16) / 26,75 (PG21)
5	4,0 / 6,0 / 12,0 / 15,0 / 18,0 / 21,0 / 24,0 / 27,0 / 30,0 / 33,0 / 36,0 / 39,0
6	6,0 / 9,0 / 11,2 (R1/8) / 14,5 (R1/4) / 18,2 (R3/8) / 22,3 (R1/2) / 27,9 (R3/4) / 32,0
7	5,0 / 8,8 (G1/8) / 11,8 (G1/4) / 15,3 (G3/8) / 19,0 (G1/2) / 24,5 (G3/4) / 28,0
8	6,0 / 9,0 / 12,5 (PG7) / 15,2 (PG9) / 18,6 (PG11) / 20,4 (PG13,5) / 22,5 (PG16) / 28,3 (PG21) / 30,5
9	6,0 / 9,0 / 12,5 (PG7) / 15,2 (PG9) / 18,6 (PG11) / 20,4 (PG13,5) / 22,5 (PG16) / 26,0 / 28,3 (PG21) / 30,5 / 34,0 / 37,0 (PG29)
12	6,0 / 9,0 / 12,0 / 16,0 / 20,0 / 22,5 / 25,0 / 28,5 / 32,0
13	6,0 / 11,0 / 17,0 / 23,0 / 29,0 / 30,0 / 31,0 / 32,0 / 33,0 / 34,0 / 35,0 / 36,0 / 37,0 / 38,0 / 39,0 / 40,0
18	6,5 / 8,5 / 10,5 / 12,7 / 15,2 (PG9) / 16,2 / 18,6 (PG11) / 20,4 (PG13,5) / 22,5 (PG16) / 25,5 / 28,3 (PG21) / 32,5



NEXT GENERATION Step drill sets HSS and HSSE-Co 5 in steel case

	HSS	HSSE Co 5	HSS TIN	HSS TiAIN
3-piece set of step drills spiral fluted, sizes 0/9, 1, 2	101 026	101 026 E	101 026 T	101 026 F



NEXT GENERATION Step drill sets HSS and HSSE-Co 5 in plastic case

	HSS	HSSE Co 5	HSS TIN	HSS TiAIN
3-piece set of step drills spiral fluted, sizes 0/9, 1, 2	101 026 RO	101 026 ERO	101 026 TRO	101 026 FRO





NEXT GENERATION Crash barrier step drill HSS-TiAlN spiral fluted with split point

Specially designed for drilling crash barriers.
 For use on material strengths of up to 3,5 mm.
 Cooling recommended but not required (increased service life)
 Steps \varnothing : 6,0 / 8,0 / 10,0 / 12,0 / 14,0 / 16,0 / 18,0 mm

Packing unit: in plastic tubes of 1



Steel (N/mm2) < 900	<input checked="" type="checkbox"/>	Brass	<input checked="" type="checkbox"/>
Steel (N/mm2) < 1100	<input checked="" type="checkbox"/>	Bronze	<input type="checkbox"/>
Steel (N/mm2) < 1300	<input type="checkbox"/>	Plastics	<input checked="" type="checkbox"/>
Rust-resistant steel	<input type="checkbox"/>	Cast iron	<input type="checkbox"/>
Aluminium	<input checked="" type="checkbox"/>	Titanium alloyed	<input type="checkbox"/>

$\varnothing 1 - \varnothing 2$ mm	L1 mm	Steps	$\varnothing 3$ mm	HSS TiAlN	
6,0 - 18,00	68,0	7	10,0	101 068 F-1	1

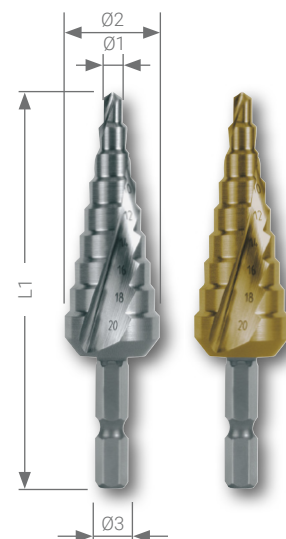




NEXT GENERATION Step drills bit HSS, spiral fluted with split point

Packing unit: in plastic tubes of 1

Steel (N/mm2) < 900	■	■	Brass	■	■
Steel (N/mm2) < 1100		□	Bronze	□	□
Steel (N/mm2) < 1300			Plastics	■	■
Rust-resistant steel		□	Cast iron	□	□
Aluminium	■		Titanium alloyed		



Size no.	Ø1 - Ø2 mm	L1 mm	Steps	Ø3 mm	Ø3 inch	HSS	HSS TIN	
0/9	4,0 - 12,00	72,0	9	6,35 x 27,0	1/4"	101 050-9 H	101 050-9 TH	1
1	4,0 - 20,00	81,0	9	6,35 x 27,0	1/4"	101 051 H	101 051 TH	1
2	4,0 - 30,00	105,0	14	6,35 x 27,0	1/4"	101 052 H	101 052 TH	1

0/9	4,0 / 5,0 / 6,0 / 7,0 / 8,0 / 9,0 / 10,0 / 11,0 / 12,0							
1	4,0 / 6,0 / 8,0 / 10,0 / 12,0 / 14,0 / 16,0 / 18,0 / 20,0							
2	4,0 / 6,0 / 8,0 / 10,0 / 12,0 / 14,0 / 16,0 / 18,0 / 20,0 / 22,0 / 24,0 / 26,0 / 28,0 / 30,0							

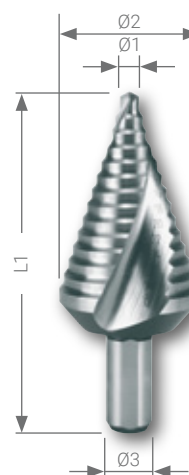


Step drills HSS, spiral fluted with split point, short design

Step height 2,0 mm ideal to produce switchboards.

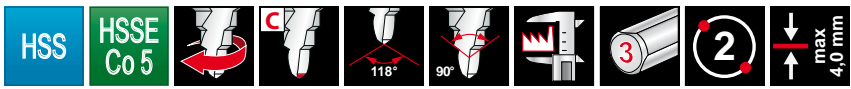
Packing unit: in plastic tubes of 1

Steel (N/mm2) < 900	■	■	Brass	■	■
Steel (N/mm2) < 1100		□	Bronze	□	□
Steel (N/mm2) < 1300			Plastics	■	■
Rust-resistant steel		□	Cast iron	□	□
Aluminium	■		Titanium alloyed		



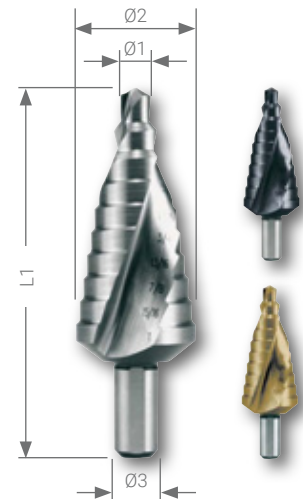
Size no.	Ø1 - Ø2 mm	L1 mm	Steps	Ø3 mm	HSS	
0/9k	4,0 - 12,00	48,0	9	6,0	101 061	1
1k	4,0 - 20,00	58,0	9	8,0	101 062	1
2k	4,0 - 30,00	72,0	14	10,0	101 063	1

0/9k	4,0 / 5,0 / 6,0 / 7,0 / 8,0 / 9,0 / 10,0 / 11,0 / 12,0					
1k	4,0 / 6,0 / 8,0 / 10,0 / 12,0 / 14,0 / 16,0 / 18,0 / 20,0					
2k	4,0 / 6,0 / 8,0 / 10,0 / 12,0 / 14,0 / 16,0 / 18,0 / 20,0 / 22,0 / 24,0 / 26,0 / 28,0 / 30,0					



NEXT GENERATION Step drills HSS and HSSE-Co 5, fractional sizes, spiral fluted with split point

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 chamfer on the base of the cone makes withdrawal of the tool from the material simple when through hole drilling.



Packing unit: in plastic tubes of 1

Steel (N/mm ²) < 900	■	■	■	■	Brass	■	■	■	■
Steel (N/mm ²) < 1100		■	□	■	Bronze	□	□	□	■
Steel (N/mm ²) < 1300					Plastics	■	■	■	■
Rust-resistant steel		■	□	■	Cast iron	□	□	□	□
Aluminium	■	■		■	Titanium alloyed				

Size no.	Ø1 - Ø2 inch	L1 inch	Steps	Ø3 inch	HSS	HSSE Co 5	HSS TIN	HSS TiAIN	
1	3/16 - 1/2	3 1/8	6	1/4	101 701	101 701 E	101 701 T	101 701 F	1
2	1/8 - 1/2	3 1/8	13	1/4	101 702	101 702 E	101 702 T	101 702 F	1
3	1/4 - 3/4	2 3/4	9	3/8	101 703	101 703 E	101 703 T	101 703 F	1
4	3/16 - 7/8	3 1/4	12	3/8	101 704	101 704 E	101 704 T	101 704 F	1
5	5/16 - 1	3 1/4	9	3/8	101 705	101 705 E	101 705 T	101 705 F	1
6	7/8 - 1 3/8	3 1/4	5	3/8	101 706	101 706 E	101 706 T	101 706 F	1
7	3/8 - 1/2	1 7/8	2	1/4	101 707	101 707 E	101 707 T	101 707 F	1
8	7/8	2 19/32	1	3/8	101 708	101 708 E	101 708 T	101 708 F	1
9	7/8 - 1 1/8	3 7/64	2	3/8	101 709	101 709 E	101 709 T	101 709 F	1

Size no.	Drilling range Ø mm
1	3/16 - 1/4 - 5/16 - 3/8 - 7/16 - 1/2
2	1/8 - 5/32 - 3/16 - 7/32 - 1/4 - 9/32 - 5/16 - 11/32 - 3/8 - 19/32 - 3/16 - 15/32 - 1/2
3	1/4 - 5/16 - 3/8 - 7/16 - 1/2 - 9/16 - 5/8 - 11/16 - 3/4
4	3/16 - 1/4 - 5/16 - 3/8 - 7/16 - 1/2 - 9/16 - 5/8 - 11/16 - 3/4 - 13/16 - 7/8
5	5/16 - 1/2 - 9/16 - 5/8 - 11/16 - 3/4 - 13/16 - 7/8 - 15/16 - 1"
6	7/8 - 1 1/8 - 1 7/32 - 1 1/4 - 1 3/8
7	3/8 - 1/2
8	7/8
9	7/8 - 1 1/8

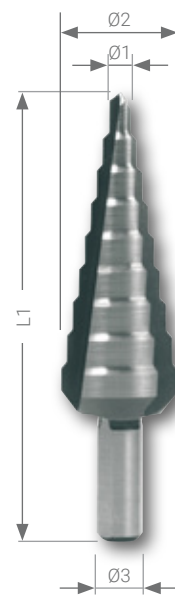




NEXT GENERATION Step drills HSS, with 3 cutting edges

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 chamfer on the base of the cone makes withdrawal of the tool from the material simple when through hole drilling.

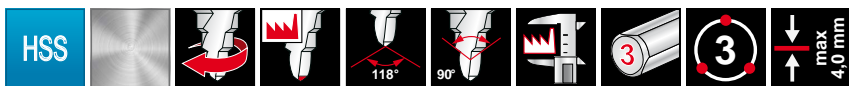
Packing unit: in plastic tubes of 1



Steel (N/mm ²) < 900	■	Brass	■
Steel (N/mm ²) < 1100		Bronze	□
Steel (N/mm ²) < 1300		Plastics	■
Rust-resistant steel		Cast iron	□
Aluminium	■	Titanium alloyed	

Size no.	Ø1 - Ø2 mm	L1 mm	Steps	Ø3 mm	HSS		
0/9	4,0 - 12,00	65,0	9	6,0	101 350-9		1
1	4,0 - 20,00	75,0	9	8,0	101 351		1
2	4,0 - 30,00	100,0	14	10,0	101 352		1

0/9	4,0 / 5,0 / 6,0 / 7,0 / 8,0 / 9,0 / 10,0 / 11,0 / 12,0
1	4,0 / 6,0 / 8,0 / 10,0 / 12,0 / 14,0 / 16,0 / 18,0 / 20,0
2	4,0 / 6,0 / 8,0 / 10,0 / 12,0 / 14,0 / 16,0 / 18,0 / 20,0 / 22,0 / 24,0 / 26,0 / 28,0 / 30,0



NEXT GENERATION Step drill sets HSS, with 3 cutting edges in steel case

Description	
3-piece set of step drills with 3 cutting edges, sizes 0/9, 1, 2	101 326



101 326

Hexagonal magnetic holder

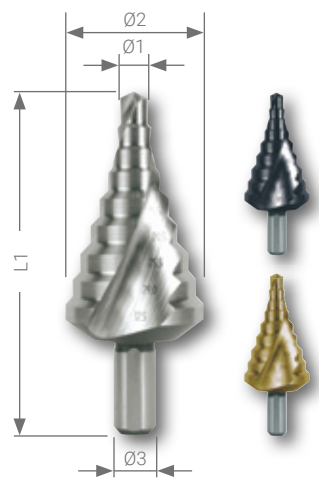
Packing unit: in plastic tubes of 1

Description	Article no.	
Hexagonal magnetic holder	270 013	1





NEXT GENERATION Step drills HSS, spiral fluted with split point for metric cable connections



Packing unit: in plastic tubes of 1

Steel (N/mm2) < 900	■	■	■	Brass	■	■	■
Steel (N/mm2) < 1100			■	Bronze	□	□	■
Steel (N/mm2) < 1300				Plastics	■	■	■
Rust-resistant steel		□	■	Cast iron	□	□	□
Aluminium	■		■	Titanium alloyed			

Size no.	Measurements	Ø1 - Ø2 mm	L1 mm	Steps	Ø3 mm	HSS	HSS TIN	HSS TiAIN	
14	Core holes	5,3 - 30,5	79,0	9	10,0	101 093	101 093 T	101 093 F	1
15	Through holes	6,5 - 32,5	79,0	9	10,0	101 092	101 092 T	101 092 F	1
16	Core holes	5,3 - 38,5	96,0	11	10,0	101 091	101 091 T	101 091 F	1
17	Through holes	6,5 - 40,5	96,0	11	10,0	101 090	101 090 T	101 090 F	1

14	DIN/EN 60423	5,3 / 7,0 / 9,0 / 10,5 / 14,5 / 18,5 / 23,5 / 27,0 / 30,5								
15	DIN/EN 50262	6,5 / 8,5 / 10,5 / 12,5 / 16,5 / 20,5 / 25,5 / 29,0 / 32,5								
16	DIN/EN 60423	5,3 / 7,0 / 9,0 / 10,5 / 14,5 / 18,5 / 23,5 / 27,0 / 30,5 / 34,5 / 38,5								
17	DIN/EN 50262	6,5 / 8,5 / 10,5 / 12,5 / 16,5 / 20,5 / 25,5 / 29,0 / 32,5 / 36,5 / 40,5								



Step drills HSS without point

Packing unit: in plastic tubes of 1

Steel (N/mm2) < 900	■	Brass	■
Steel (N/mm2) < 1100		Bronze	□
Steel (N/mm2) < 1300		Plastics	■
Rust-resistant steel		Cast iron	□
Aluminium	■	Titanium alloyed	



Size no.	Ø1 - Ø2 mm	L1 mm	Steps	Ø3 mm	HSS	
20	12,0 - 20,00	66,0	9	8,0	101 361	1
30	20,0 - 30,00	78,0	11	10,0	101 362	1
40	30,0 - 40,00	78,0	11	10,0	101 363	1

20	12,0 / 13,0 / 14,0 / 15,0 / 16,0 / 17,0 / 18,0 / 19,0 / 20,0								
30	20,0 / 21,0 / 22,0 / 23,0 / 24,0 / 25,0 / 26,0 / 27,0 / 28,0 / 29,0 / 30,0								
40	30,0 / 31,0 / 32,0 / 33,0 / 34,0 / 35,0 / 36,0 / 37,0 / 38,0 / 39,0 / 40,0								

Material:		High carbon struc. steel up to 700 N/mm ²	High carbon struc. steel over 700 N/mm ²	Alloyed steel over 1000 N/mm ²	Cast iron up to 250 N/mm ²	Cast iron over 250 N/mm ²	CuZn-alloy brittle	CuZn-alloy tough	Al-alloy up to 11% Si	Thermo-plastics	Duro-plastics
Sheet thickness mm:		up to 4,0	up to 4,0	up to 4,0	up to 4,0	up to 4,0	up to 4,0	up to 4,0	up to 4,0	up to 4,0	up to 4,0
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	n = r.p.m	n = r.p.m	n = r.p.m	n = r.p.m	n = r.p.m	n = r.p.m	n = r.p.m	n = r.p.m	n = r.p.m	n = r.p.m
0/5	4,0- 12,0	800- 2400	500- 1600	500- 1600	400- 1200	300- 800	1600- 4800	900- 2800	800- 2400	500- 1600	400- 1200
0/9	4,0- 12,0	800- 2400	500- 1600	500- 1600	400- 1200	300- 800	1600- 4800	900- 2800	800- 2400	500- 1600	400- 1200
1	4,0- 20,0	500- 2400	300- 1600	300- 1600	200- 1200	200- 800	1000- 4800	600- 2800	500- 2400	300- 1600	200- 1200
2	4,0- 30,0	300- 2400	200- 1600	200- 1600	200- 1200	100- 800	600- 4800	400- 2800	300- 2400	200- 1600	200- 1200
3	6,0- 38,0	300- 1600	200- 1100	200- 1100	100- 800	100- 500	500- 3200	300- 1900	300- 1600	200- 1100	100- 800
4	6,0- 26,8	400- 1600	200- 1100	200- 1100	200- 800	100- 500	700- 3200	400- 1900	400- 1600	200- 1100	200- 800
5	4,0- 32,0	300- 2400	200- 1600	200- 1600	1200- 100	100- 800	600- 4800	300- 2800	300- 2400	200- 1600	100- 1200
6	6,0- 32,0	300- 1600	200- 1100	200- 1100	800- 100	100- 500	600- 3200	300- 1900	300- 1600	200- 1100	100- 800
7	5,0- 28,0	300- 1900	200- 1300	200- 1300	200- 1000	100- 600	700- 3800	400- 2200	300- 1900	200- 1300	200- 1000
8	6,0- 30,5	300- 1600	200- 1100	200- 1100	200- 800	100- 500	600- 3200	400- 1900	300- 1600	200- 1100	200- 800
9	6,0- 37,0	300- 1600	200- 1100	200- 1100	100- 800	100- 500	500- 3200	300- 1900	300- 1600	200- 1100	100- 800
10	4,8- 10,7	900- 2000	600- 1300	600- 1300	400- 1000	300- 700	1800- 4000	1000- 2300	900- 2000	600- 1300	400- 1000
11	6,0- 25,0	400- 1600	300- 1100	300- 1100	200- 800	100- 500	800- 3200	400- 1900	400- 1600	300- 1100	200- 800
12	6,0- 32,0	300- 1600	200- 1100	200- 1100	100- 800	100- 500	600- 3200	300- 1900	300- 1600	200- 1100	100- 800
13	6,0- 40,0	200- 1600	200- 1100	200- 1100	100- 800	100- 500	500- 3200	300- 1900	200- 1600	200- 1100	100- 800
14	5,3- 30,5	300- 1800	200- 1200	200- 1200	200- 900	100- 600	600- 3600	400- 2100	300- 1800	200- 1200	200- 900
15	6,5- 32,5	300- 1500	200- 1000	200- 1000	100- 700	100- 500	600- 2900	300- 700	300- 1500	200- 1000	100- 700
16	5,3- 38,5	200- 1800	200- 1200	200- 1200	100- 900	100- 600	500- 3600	300- 2100	200- 1800	200- 1200	100- 900
17	6,5- 40,5	200- 1500	200- 1000	200- 1000	100- 700	100- 500	500- 2900	300- 1700	200- 1500	200- 1000	100- 700
18	6,5- 32,5	300- 1500	200- 1000	200- 1000	100- 700	100- 500	600- 2900	300- 1700	300- 1500	200- 1000	100- 700
20	12,0- 20,0	500- 800	300- 500	300- 500	200- 400	200- 300	600- 1600	600- 900	500- 800	300- 500	200- 400
30	20,0- 30,0	300- 500	200- 300	200- 300	200- 200	100- 200	600- 1000	400- 600	300- 500	200- 300	200- 200
40	30,0- 40,0	200- 300	200- 200	200- 200	100- 200	100- 100	500- 600	300- 400	200- 300	200- 200	100- 200

Size	Ø inch	n = r.p.m	n = r.p.m	n = r.p.m	n = r.p.m	n = r.p.m	n = r.p.m	n = r.p.m	n = r.p.m	n = r.p.m	n = r.p.m
1	3/16 - 1/2	800- 2000	500- 1300	1300- 500	400- 1000	300- 700	1500- 4000	900- 2300	800- 2000	500- 1300	400- 1000
2	1/8 - 1/2	800- 3000	500- 2000	2000- 500	400- 1500	300- 1000	1500- 6000	900- 3500	800- 3000	500- 2000	400- 1500
3	1/4 - 3/4	500- 1500	300- 1000	1000- 300	300- 800	200- 500	1000- 3000	600- 1800	500- 1500	300- 1000	300- 800
4	3/16 - 7/8	400- 2000	300- 1300	1300- 300	200- 1000	100- 700	900- 4000	500- 2300	400- 2000	300- 1300	200- 1000
5	5/16 - 1	400- 1200	300- 800	800- 300	200- 600	100- 400	800- 2400	400- 1400	400- 1200	300- 800	200- 600
6	7/8 - 1 3/8	300- 400	200- 300	300- 200	100- 200	100- 100	500- 900	300- 500	300- 400	200- 300	100- 200
7	3/8 - 1/2	800- 1000	500- 700	700- 500	400- 500	300- 300	1500- 2000	900- 1200	800- 1000	500- 700	400- 500
8	7/8	400	300	300	200	100	900	500	400	300	200
9	7/8 - 1 1/8	300- 400	200- 300	300- 200	200- 200	100- 100	700- 900	400- 500	300- 400	200- 300	200- 200

NEXT GENERATION Table of application for step drills

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