

FASCINATION FOR PRECISION®



# STEP DRILLS

THE NEXT GENERATION

# SMOOTH RUN. PRECISE CUT. LONG LIFE.

- + Up to 4 times longer service life
- + Improved centring with quicker hole drilling
- + Extremely smooth run eliminates 'grabbing' material
- + Significantly reduced cutting forces
- + Highly efficient chip removal, reduces heat build up
- + Reduced 'feathering' in the hole
- + Drilling productivity significantly increased
- + Optimal performance in all drilling machines including hand-held drills

## HELIX ANGLE

The helix angle optimisation leads to reduced axial feed forces, enabling the drilling cycle to be performed significantly faster in less time.

## POINT CUT

The improved point cut geometry facilitates easier centring whilst supporting faster drilling in the workpiece. The new point cut geometry dramatically reduces lateral forces.

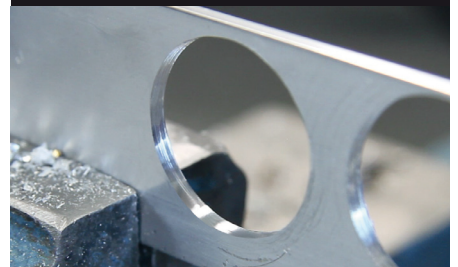
Improved centring / drilling



Very smooth run



Considerably reduced feathering





### 3-EDGE SHANK

The 3-edge shank provides a secure hold within the chuck, eliminating any possibility of slippage. This provides the maximum force transfer to the cutting edges of the tool. Ideal for use in hand-held drilling machines.

### CUTTING EDGES

The optimised cutting geometry enables very smooth operating performance. Hole roundness and surface finish quality of the hole is significantly improved, avoiding any feathering on the edges.

The specially modified cutting geometries facilitates an extremely smooth transition between each of the steps. Radial forces are dramatically reduced by up to 80% when drilling.

### CHIP SPACE GEOMETRY

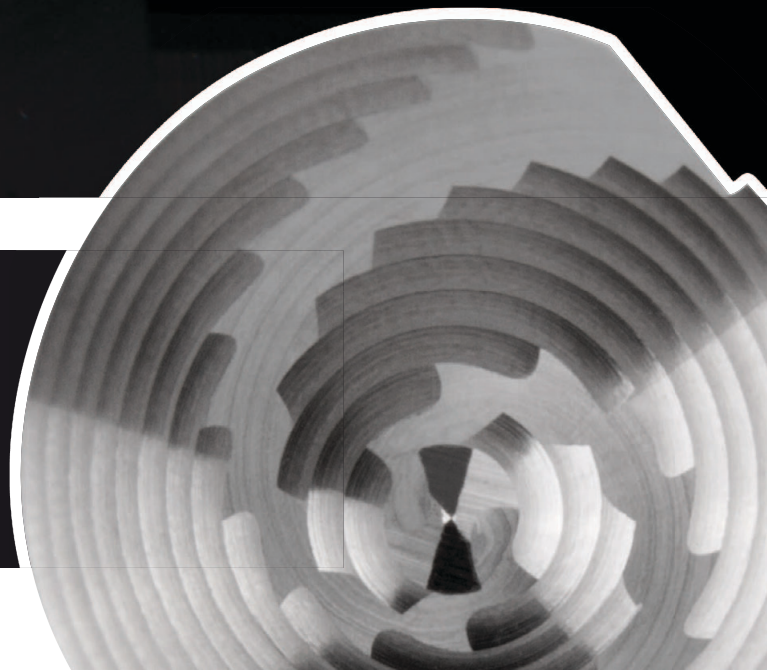
The optimised chip geometry ensures ideal chip and heat removal. The service life of the step drill is substantially improved thanks to the significant reduction in heat development. The ideal balance between optimised cutting and service life is achieved through the step drills special wedge angle.

Every step on the tool is designed with a special optimised relief, clearance angle, which prevents the edge from breaking out and from catching in the workpiece.



The smooth drilling operation of the step drill means there is no 'warping' when drilling thinner materials.

Reductions in torque forces from the step drill, protect the drilling machine from overload and enable an 'easy to use' hole making solution.





## N Step drills HSS and HSSE-Co 5, CBN ground, 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 cone makes it easier to withdraw the tool from the material.

**Available July 2018**

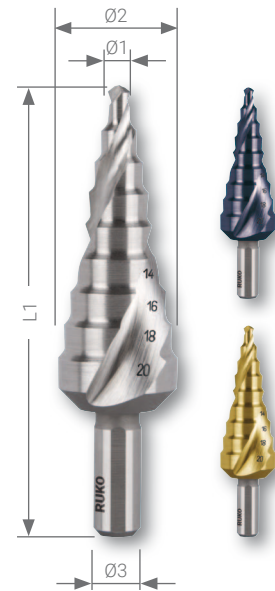
Packing unit: in plastic tubes of 1



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

Steel (N/mm <sup>2</sup> ) < 900	■	■	■	■
Steel (N/mm <sup>2</sup> ) < 1100		■	□	■
Steel (N/mm <sup>2</sup> ) < 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 TITAN	
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



**N** Step drill sets HSS and HSSE-Co 5 in steel case

3-piece set of step drills spiral fluted, sizes 0/9, 1, 2	101 026	101 026 E	101 026 T	101 026 F



**N** Step drill sets HSS and HSSE-Co 5 in plastic case

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



# STEP DRILLS

THE NEXT GENERATION

## VARIATIONS



### Outstanding performance in:

Sheets made from construction steels, high alloyed steel, stainless steel, brass, Perspex®, wood, chrome plated steel, aluminium.



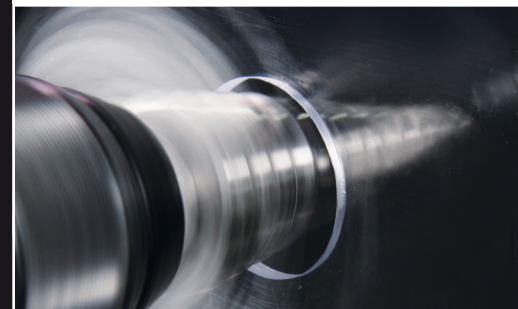
Steel, aluminium, cast iron



Wood and coated panels



Plastics



Available **July 2018**

[www.ruko.de](http://www.ruko.de)



**RUKO GmbH** PRÄZISIONSWERKZEUGE

Robert-Bosch-Straße 7-11  
71088 Holzgerlingen  
Germany

Tel.: +49(0) 7031 / 6800-0  
[www.ruko.de](http://www.ruko.de) | [www.ultimatecut.de](http://www.ultimatecut.de)  
[info@ruko.de](mailto:info@ruko.de)

Export sales  
Tel.: +49(0) 7031 / 6800-54 / 84 / 85 / 790  
Fax: +49(0) 7031 / 6800-21 / 66

