TUBE AND SHEET DRILLS

CMS
Industrial Equipment Company
6112 N. Mesa St. #127, El Paso, TX 79912
Ph: 1-866-566-0222

RUKO

Tube and sheet drills

The flutes of the RUKO high performance tube and sheet drills are CBN ground from the solid hardened form. Because CBN (cubical boron nitride) is a much harder abrasive than even silicium 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. The ideal tool for sheet metal working in the following sectors of industries: electrical, sanitary engineering, heating technics, automotive, mechanical engineering, switching systems, aviation.

This tough tool is suitable for all standard industrial materials: nonferrous metal, special steel, thermoplastics and duroplastics as well as sheet metals up to 4,0 mm thickness.

This durable and versatile tool will center, spot-drill and bore - all in one smooth, high performance working cycle. By using RUKO cutting spray or RUKO cutting paste tool life will be considerably prolonged.

Special sizes available on request.

- Cooling
- Adjust speed
- Do not press

Hole cutter drill is pulled automatically into the plate.

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Overview of symbols

HSS — High-speed steel

118° — Point angle: 118°

Point cut: work´s specification

bright surface

HSSE Co 5 — High-speed steel with 5 % Cobalt content, ground

C — Shape C: split point

Ø tolerance: work´s specification

TiN — TiN coating

right hand cutting

20-30° — Cone angle: 20-30°

3 ≥Ø4,0 mm — Shank: 3-way clamping surface

Bit shank: 6,35 mm x 27,0 mm

Product Information

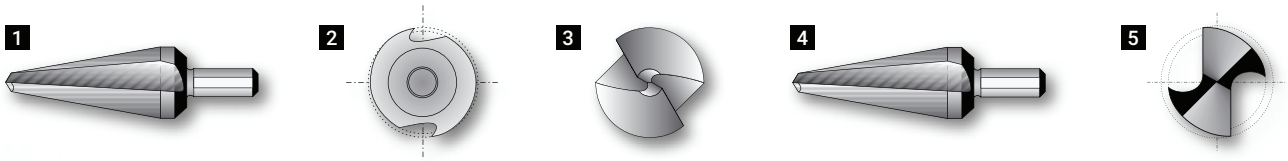
1 CBN ground flute
Because CBN ground flutes have better and sharper cutting edges - without burrs - unlike the conventional milled flutes. This guarantees a superior cutting edge and longer tool life.

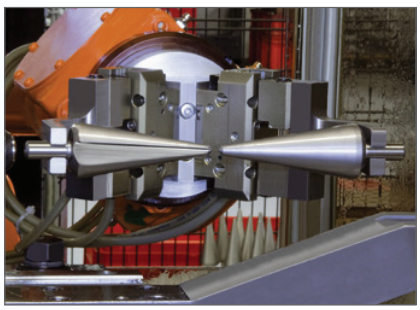
2 Radially adjusted relief produced by CBN grinding
Because radially adjusted relief produced by CBN grinding relates directly to its diameter, the cutting edge is always the highest point of the diameter.

3 Flute
The straight or spiral flute offers absolute running smoothness and high cutting performance.
In the spiral flute non-breaking chips in particular are transported away cleanly as with a spiral drill.

4 Cone at the end
The cone at the end of these tube and sheet drills makes it easier to withdraw the tool from the material.

5 CBN ground bit with split point DIN 1412 C
The CBN ground bit ensures centering and spot-drilling even in thin-walled material.





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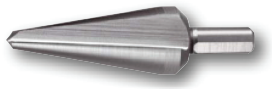
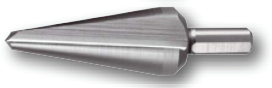
Parts and applications overview:

	Material	Surface	Shape	Point angle	Cone angle	Shank	Ø mm	Article no.	Page
	HSS		C	118°		3	3,0 - 22,5	101 001 - 101 022	101
	HSS	TiN	C			3	3,0 - 22,5	101 001 E - 101 008 E	101
	HSSE Co 5		C	118°		3	3,0 - 22,5	101 001 T - 101 008 T	101
	HSS		C	118°			5,0 - 22,0	101 049 H	101
	HSS		C	118°		3	2,0 - 11,8	101 041 - 101 045	103

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

■ Main application □ Other application

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Tube and sheet drills HSS and HSSE-Co 5, CBN ground with split point

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

	HSS	HSSE Co 5	TiN
Steel (N/mm2) < 900	■	■	■
Steel (N/mm2) < 1100		■	
Steel (N/mm2) < 1300			
Stainless steel		■	□
Aluminium	■	■	

	HSS	HSSE Co 5	TiN
Brass	■	■	■
Bronze	□	□	□
Plastics	■	■	■
Cast iron	□	□	□
Titanium alloyed			

Size no.	Ø1 - Ø2 mm	L1 mm	Ø3 mm	HSS	HSSE Co 5	HSS TiN	
1	3,0 - 14,0	58,0	6,0	101 001	101 001 E	101 001 T	1
2	4,0 - 20,0	71,0	8,0	101 002	101 002 E	101 002 T	1
3	16,0 - 30,5	76,0	9,0	101 003	101 003 E	101 003 T	1
4	24,0 - 40,0	89,0	10,0	101 004	–	101 004 T	1
5	36,0 - 50,0	97,0	12,0	101 005	–	–	1
6	40,0 - 61,0	103,0	13,0	101 006	–	–	1
7	5,0 - 25,4	87,0	10,0	101 007	–	–	1
8	5,0 - 31,0	103,0	9,0	101 008	101 008 E	101 008 T	1
9	5,0 - 22,5	79,0	8,0	101 022	–	–	1

Tube and sheet drill bits HSS, 1/4", CBN ground with split point

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

	HSS
Steel (N/mm2) < 900	■
Steel (N/mm2) < 1100	
Steel (N/mm2) < 1300	
Stainless steel	
Aluminium	■

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

Size no.	Ø1 - Ø2 mm	L1 mm	Ø3 mm	Ø3 inch	HSS	
2	5,0 - 20,0	78,0	6,35 x 27,0	1/4"	101 049 H	1

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Tube and sheet drill sets HSS and HSSE-Co 5 in steel case

	HSS	HSSE Co 5	HSS TiN
4-piece set of tube and sheet drills sizes 1, 2, 3 and 1 cutting spray 50 ml in polystyrene case	101 009	–	–
4-piece set of tube and sheet drills sizes 1, 2, 3 and 1 cutting paste 30 g in steel case	101 020	101 020 E	101 020 T

101 009

101 020 E

101 020 T

Tube and sheet drill sets HSS and HSSE-Co 5 in plastic case

	HSS	HSSE Co 5	HSS TiN
4-piece set of tube and sheet drills sizes 1, 2, 3 and 1 cutting paste 30 g	101 020 RO	101 020 ERO	101 020 TRO

101 020 RO

101 020 ERO

101 020 TRO

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■ Main application ☐ Other application

Tube and sheet drills HSS with stopper and spot facer for cavity sealing, CBN ground with split point

The CBN ground flutes guarantee quiet running and high cutting performance.

Packing unit: in plastic boxes

Steel (N/mm2) < 900	■
Steel (N/mm2) < 1100	
Steel (N/mm2) < 1300	
Stainless steel	
Aluminium	■

Brass	■
Bronze	□
Plastics	■
Cast iron	□
Titanium alloyed	

Size no.	Ø1 - Ø2 mm	L1 mm	Ø3 mm	HSS	
1	3,0 - 7,8	48,0	6,0	101 041	1
2	3,0 - 10,2	52,0	6,0	101 042	1
3	3,0 - 11,8	56,0	6,0	101 043	1
5	2,0 - 7,8	48,0	6,0	101 045	1

Hexagonal magnetic holder

Packing unit: in plastic boxes

	Article no.	
Hexagonal magnetic holder	270 013	1

Coolants and lubricants

The RUKO coolants and lubricants provide an outstanding separation and cooling effect. They generate a high surface quality and increase the service life of the tools, even with hard and brittle materials.

Suitably aligned to our product range, you will find the coolants and lubricants in our section 14 from page 319.

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Table of cutting speeds for tube and sheet drills

Material:		High carbon struc. steel up to 700 N/mm²	High carbon struc. steel over 700 N/mm²	Alloyed steel over 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:		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	Cutting spray	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.
No. 1	3,0-14,0	3185-682	2123-455	2123-455	1592-341	1062-227	6369-1365	3715-796	3185-682	2123-455	1592-341
No. 2	4,0-20,0	1911-478	1274-318	1274-318	955-239	637-159	3822- 955	2229-557	1911-478	1274-318	955-239
No. 3	16,0-30,5	597-313	398-209	398-209	299-157	199-104	1194- 627	697-365	597-313	398-209	299-157
No. 4	24,0-40,0	398-239	265-159	265-159	199-119	133- 80	796- 478	464-279	398-239	265-159	199-119
No. 5	36,0-50,0	265-191	177-127	177-127	133- 96	88- 64	531- 382	310-223	265-191	177-127	133- 96
No. 6	40,0-61,0	239-157	159-104	159-104	119- 78	80- 52	478- 313	279-183	239-157	159-104	119- 78
No. 7	5,0-25,4	1911-376	1274-251	1274-251	955-188	637-125	3822- 752	2229-439	1911-376	1274-251	955-188
No. 8	5,0-31,0	1911-308	1274-205	1274-205	955-154	637-103	3822- 616	2229-360	1911-308	1274-205	955-154
No. 9	5,0-22,5	1911-425	1274-283	1274-283	955-212	637-142	3822- 849	2229-495	1911-425	1274-283	955-212

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