



Your technology partner for cost-effective machining

Tritan-Drill-Alu

Tritan-Drill-Alu

The high-feed drilling specialist for applications in aluminium

MAPAL has developed the Tritan-Drill-Alu especially for high-feed machining of aluminium. The three-edged solid carbide drill has a customised, precision-ground flute profile. Large chip spaces and a special, sharp cutting edge preparation ensure optimum chip formation, reduce heat build-up and ensure reliable chip evacuation.

1 Three cutting edges

- For high-feed machining with maximum feed rates

2 Extra large chip spaces with precision-ground flute profile

- Safe removal of the chips

3 Self-centring drill tip

- Best positioning accuracy

4 Sharply prepared cutting edge

- Optimum chip formation

5 Three guide phases

- For perfect leadership qualities



Features

Dimensions:

- Number of cutting edges: 3
- Shank shape: HA
- 5xD with internal coolant supply

Preferred series in stock:

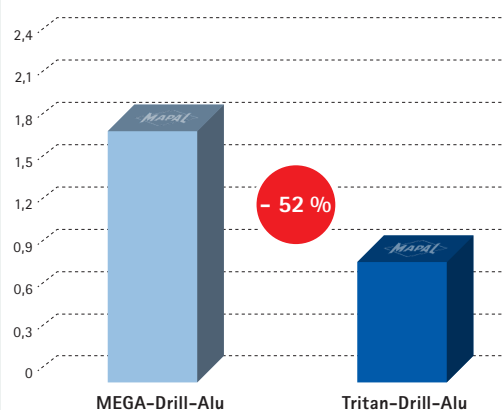
- ϕ -range: 4,00 to 16,00 mm

Configurable features:

- ϕ -range: 4,00 to 20,00 mm
- Shank shape: HB, HE
- Coating: DLC coating



Machining time in AlSi1MgMn [Sec.]



MEGA-Drill-Alu (z=2)

Tool- ϕ : 10,00 mm
 l_B : 50 (5xD)
 v_C : 300 m/min
 f_u : 0,19 mm/U
 t_h : 1,78 s

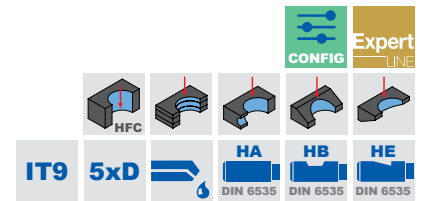
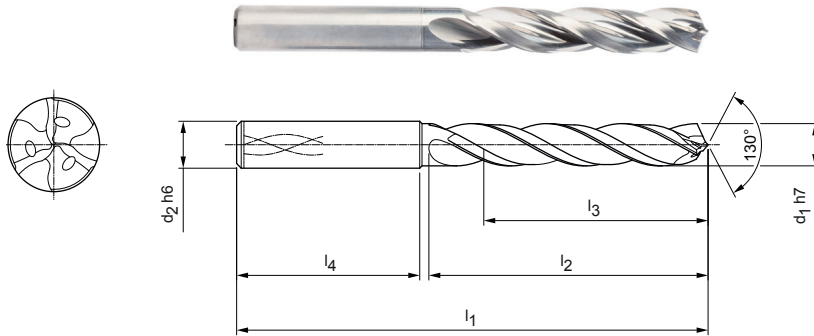
Tritan-Drill-Alu (z=3)

Tool- ϕ : 10,00 mm
 l_B : 50 (5xD)
 v_C : 300 m/min
 f_u : 0,4 mm/U
 t_h : 0,85 s

Tritan-Drill-Alu

Solid carbide twist drill
SCD681 (5xD), internal coolant supply

Design:
 Drill diameter: 4,00 – 20,00 mm
 Bore tolerance: \geq IT 9
 Cutting material: HU318
 Number of cutting edges: 3
 Guiding chamfers: 3
 Tip angle: 130°
 Helix angle: 30°



Preferred series in stock

Dimensions						Shank form HA	
d ₁ h7	d ₂ h6	l ₁	l ₂	l ₃	l ₄	Specification	Order no.
4,00	6	74	36	29	36	SCD681-0400-3-3-130HA05-HU318	31307609
4,10	6	74	36	29	36	SCD681-0410-3-3-130HA05-HU318	31307610
4,20	6	74	36	29	36	SCD681-0420-3-3-130HA05-HU318	31307611
4,30	6	74	36	29	36	SCD681-0430-3-3-130HA05-HU318	31307612
4,50	6	74	36	29	36	SCD681-0450-3-3-130HA05-HU318	31307613
4,60	6	74	36	29	36	SCD681-0460-3-3-130HA05-HU318	31307614
4,65	6	74	36	29	36	SCD681-0465-3-3-130HA05-HU318	31307615
4,80	6	82	44	35	36	SCD681-0480-3-3-130HA05-HU318	31307616
4,90	6	82	44	35	36	SCD681-0490-3-3-130HA05-HU318	31307617
5,00	6	82	44	35	36	SCD681-0500-3-3-130HA05-HU318	31307618
5,10	6	82	44	35	36	SCD681-0510-3-3-130HA05-HU318	31307619
5,20	6	82	44	35	36	SCD681-0520-3-3-130HA05-HU318	31307620
5,30	6	82	44	35	36	SCD681-0530-3-3-130HA05-HU318	31307621
5,50	6	82	44	35	36	SCD681-0550-3-3-130HA05-HU318	31307622
5,55	6	82	44	35	36	SCD681-0555-3-3-130HA05-HU318	31307623
5,60	6	82	44	35	36	SCD681-0560-3-3-130HA05-HU318	31307624
5,80	6	82	44	35	36	SCD681-0580-3-3-130HA05-HU318	31307625
5,90	6	82	44	35	36	SCD681-0590-3-3-130HA05-HU318	31307626
6,00	6	82	44	35	36	SCD681-0600-3-3-130HA05-HU318	31307627
6,10	8	91	53	43	36	SCD681-0610-3-3-130HA05-HU318	31307628
6,20	8	91	53	43	36	SCD681-0620-3-3-130HA05-HU318	31307629
6,30	8	91	53	43	36	SCD681-0630-3-3-130HA05-HU318	31307630
6,40	8	91	53	43	36	SCD681-0640-3-3-130HA05-HU318	31307631
6,50	8	91	53	43	36	SCD681-0650-3-3-130HA05-HU318	31307632
6,60	8	91	53	43	36	SCD681-0660-3-3-130HA05-HU318	31307633
6,80	8	91	53	43	36	SCD681-0680-3-3-130HA05-HU318	31307634
6,90	8	91	53	43	36	SCD681-0690-3-3-130HA05-HU318	31307635
7,00	8	91	53	43	36	SCD681-0700-3-3-130HA05-HU318	31307636
7,40	8	91	53	43	36	SCD681-0740-3-3-130HA05-HU318	31307637
7,45	8	91	53	43	36	SCD681-0745-3-3-130HA05-HU318	31307638
7,50	8	91	53	43	36	SCD681-0750-3-3-130HA05-HU318	31307639
7,80	8	91	53	43	36	SCD681-0780-3-3-130HA05-HU318	31307640
8,00	8	91	53	43	36	SCD681-0800-3-3-130HA05-HU318	31307641
8,10	10	103	61	49	40	SCD681-0810-3-3-130HA05-HU318	31307642
8,40	10	103	61	49	40	SCD681-0840-3-3-130HA05-HU318	31307643

Tritan-Drill-Alu | Solid carbide twist drill SCD681 (5xD), internal coolant supply

Dimensions						Shank form HA	
d ₁ h7	d ₂ h6	l ₁	l ₂	l ₃	l ₄	Specification	Order no.
8,50	10	103	61	49	40	SCD681-0850-3-3-130HA05-HU318	31307644
8,80	10	103	61	49	40	SCD681-0880-3-3-130HA05-HU318	31307645
9,00	10	103	61	49	40	SCD681-0900-3-3-130HA05-HU318	31307646
9,10	10	103	61	49	40	SCD681-0910-3-3-130HA05-HU318	31307647
9,80	10	103	61	49	40	SCD681-0980-3-3-130HA05-HU318	31307648
10,00	10	103	61	49	40	SCD681-1000-3-3-130HA05-HU318	31307649
10,20	12	118	71	56	45	SCD681-1020-3-3-130HA05-HU318	31307650
10,50	12	118	71	56	45	SCD681-1050-3-3-130HA05-HU318	31307651
11,00	12	118	71	56	45	SCD681-1100-3-3-130HA05-HU318	31307652
11,50	12	118	71	56	45	SCD681-1150-3-3-130HA05-HU318	31307653
11,80	12	118	71	56	45	SCD681-1180-3-3-130HA05-HU318	31307654
12,00	12	118	71	56	45	SCD681-1200-3-3-130HA05-HU318	31307655
12,50	14	124	77	60	45	SCD681-1250-3-3-130HA05-HU318	31307656
13,00	14	124	77	60	45	SCD681-1300-3-3-130HA05-HU318	31307657
14,00	14	124	77	60	45	SCD681-1400-3-3-130HA05-HU318	31307658
15,00	16	133	83	63	48	SCD681-1500-3-3-130HA05-HU318	31307659
16,00	16	133	83	63	48	SCD681-1600-3-3-130HA05-HU318	31307660

Configurable features

**Diameter:**

Diameter in increments of 0.01 mm freely selectable

**Shank form:**

Shank form: HB | HE

**Coating:**

Available as a DLC coating with cutting material HP910

**Specification:**

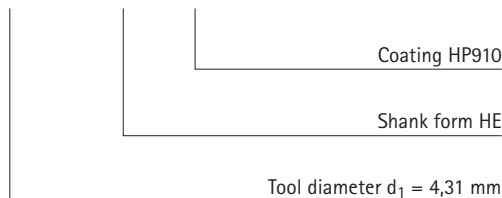
SCD681-[diameter]-3-3-130[shank form]05-[coating]

Dimensions of configurable series

d ₁ min.	d ₁ max.	d ₂ h6	l ₁	l ₂	l ₃	l ₄
4,00	4,70	6	74	36	29	36
4,71	6,00	6	82	44	35	36
6,01	7,00	8	91	53	43	36
7,01	8,00	8	91	53	43	36
8,01	9,00	10	103	61	49	40
9,01	10,00	10	103	61	49	40
10,01	11,00	12	118	71	56	45
11,01	12,00	12	118	71	56	45
12,01	14,00	14	124	77	60	45
14,01	16,00	16	133	83	63	48
16,01	18,00	18	143	93	71	48
18,01	20,00	20	153	101	77	50

Example:

SCD681-0431-3-3-130HE05-HP910



Dimensions in mm.

For cutting data recommendations, see next page.

Special designs and other coatings available upon request.

Cutting data recommendations for solid carbide drills

Feed and cutting speed

Tritan-Drill-Alu | SCD681

MMG*	Workpiece material	Strength/ hardness [N/mm ²] [HRC]	Cutting speed v_c [m/min]				Feed f [mm] for drill diameter						
			Internal cooling	External cooling	MQL	Air	4,00	5,50	7,50	10,50	14,50	20,00	
N	N1	N1.1 Aluminium, unalloyed and alloyed < 3% Si		300	200	250		0,42	0,53	0,66	0,82	1,00	1,15
		N1.2 Aluminium, alloyed \leq 7% Si		250	180	200		0,53	0,68	0,85	1,07	1,31	1,52
		N1.3 Aluminium, alloyed > 7-12% Si		220	150	180		0,53	0,68	0,85	1,07	1,31	1,52
		N1.4 Aluminium, alloyed > 12% Si		180	120	150		0,53	0,68	0,85	1,07	1,31	1,52
	N2	N2.1 Copper, unalloyed and low alloyed	< 300	140	100			0,42	0,53	0,66	0,82	1,00	1,15
		N2.2 Copper, alloyed	> 300	120	90			0,53	0,68	0,85	1,07	1,31	1,52
		N2.3 Brass, bronze, gunmetal	< 1.200	200	160	160	120	0,46	0,61	0,79	1,02	1,26	1,48

* MAPAL machining groups

The specified machining values are guide values.

The optimum data for the respective machining task should be determined during the test or machining.



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